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## Test Report FOR HAC T-coil

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Report No. : SRTC2020-9004(F)-20111901(M)

Product Name: LTE/WCDMA/GSM(GPRS) Multi-Mode

Digital Mobile Phone

Product Model: Z2335L

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

Specification: FCC Part 20.19

ANSI C63.19

FCC ID: SRQ-Z2335L

The State Radio\_monitoring\_center Testing Center (SRTC)  
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## **1 GENERAL INFORMATION**

### **1.1 Notes of the test report**

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### **1.2 Information about the testing laboratory**

|                    |                                                                                 |
|--------------------|---------------------------------------------------------------------------------|
| Company:           | The State Radio_monitoring_center Testing Center (SRTC)                         |
| Address:           | 15th Building, No.30 Shixing Street, Shijingshan District, Beijing<br>P.R.China |
| City:              | Beijing                                                                         |
| Country or Region: | P.R.China                                                                       |
| Contacted person:  | Liu Jia                                                                         |
| Tel:               | +86 10 57996183                                                                 |
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| Email:             | liujiaf@srtc.org.cn                                                             |

### **1.3 Applicant's details**

|                    |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| Company:           | ZTE Corporation                                                                                         |
| Address:           | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park,<br>Nanshan District,Shenzhen, Guangdong,P.R.China |
| City:              | Shenzhen                                                                                                |
| Country or Region: | P.R.China                                                                                               |
| Contacted person:  | Gong Yu                                                                                                 |
| Tel:               | 021-68895397                                                                                            |
| Email:             | gongyu@zte.com.cn                                                                                       |

### **1.4 Manufacturer's details**

|                    |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| Company:           | ZTE Corporation                                                                                         |
| Address:           | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park,<br>Nanshan District,Shenzhen, Guangdong,P.R.China |
| City:              | Shenzhen                                                                                                |
| Country or Region: | P.R.China                                                                                               |
| Contacted person:  | Gong Yu                                                                                                 |
| Tel:               | 021-68895397                                                                                            |
| Email:             | gongyu@zte.com.cn                                                                                       |

## 1.5 Test Environment

|                                         |            |
|-----------------------------------------|------------|
| Date of Receipt of test sample at SRTC: | 2020.06.03 |
| Testing Start Date:                     | 2020.06.03 |
| Testing End Date:                       | 2020.11.30 |

|                     |                  |              |
|---------------------|------------------|--------------|
| Environmental Data: | Temperature (°C) | Humidity (%) |
| Ambient             | 25               | 35           |

|                                 |     |
|---------------------------------|-----|
| Normal Supply Voltage (V d.c.): | 3.8 |
|---------------------------------|-----|

## **2 DESCRIPTION OF THE DEVICE UNDER TEST**

### **2.1 Final Equipment Build Status**

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wireless<br>Technology and<br>Frequency<br>Bands | <input checked="" type="checkbox"/> GSM Band: GSM850/PCS1900<br><input checked="" type="checkbox"/> WCDMA Band: FDD2/4/5<br><input checked="" type="checkbox"/> LTE Band: 2/4/5/7/12/13/66<br><input checked="" type="checkbox"/> Bluetooth Band:2.4GHz<br><input checked="" type="checkbox"/> Wi-Fi Band:2.4GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mode                                             | GSM<br><input checked="" type="checkbox"/> Voice (GMSK)<br><input checked="" type="checkbox"/> GPRS (GMSK)<br><input checked="" type="checkbox"/> EGPRS (GMSK/8PSK)<br>WCDMA<br><input checked="" type="checkbox"/> UMTS Rel. 99 (Voice & Data)<br><input checked="" type="checkbox"/> HSDPA (Rel. 5)<br><input checked="" type="checkbox"/> HSUPA (Rel. 6)<br><input type="checkbox"/> HSPA+ (Rel.7 )<br><input type="checkbox"/> DC-HSDPA (Rel.8 )<br>Wi-Fi (802.11b/g/n/ac)<br><input type="checkbox"/> 802.11a<br><input checked="" type="checkbox"/> 802.11b<br><input checked="" type="checkbox"/> 802.11g<br><input checked="" type="checkbox"/> 802.11n(20MHz)<br><input type="checkbox"/> 802.11n(40MHz)<br><input type="checkbox"/> 802.11ac (20MHz)<br><input type="checkbox"/> 802.11ac (40MHz)<br><input type="checkbox"/> 802.11ac (80MHz)<br><input type="checkbox"/> 802.11ac (160MHz)<br>Bluetooth<br><input checked="" type="checkbox"/> BR(GFSK)<br><input checked="" type="checkbox"/> EDR( $\pi/4$ DQPSK , 8-DPSK)<br><input checked="" type="checkbox"/> BLE(GFSK)<br>LTE<br><input checked="" type="checkbox"/> QPSK<br><input checked="" type="checkbox"/> 16QAM<br><input checked="" type="checkbox"/> 64QAM<br>OTT Mode<br><input type="checkbox"/> Support<br><input checked="" type="checkbox"/> Not Support<br>VoWiFi<br><input checked="" type="checkbox"/> Support<br><input type="checkbox"/> Not Support |

## 2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

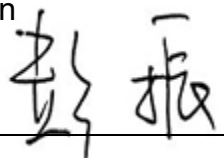
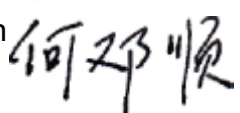
|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| State of sample            | Normal                                                                                                                                                                                                                                                                                      |
| Batteries                  | Battery1:Li3816T43P4h604550/Jiada Energy Technolog Co.,Ltd<br>Battery2:Li3816T43P4h604550/Shanghai BYD Company Ltd.                                                                                                                                                                         |
| H/W Version<br>S/W Version | Z2335CCHW1.0<br>Z2335CCV1.0.0B01                                                                                                                                                                                                                                                            |
| IMEI                       | Original Sample:862674040000693<br>Variant Sample:862741040005429                                                                                                                                                                                                                           |
| Normal                     | operation                                                                                                                                                                                                                                                                                   |
| Notes                      | We verified the results of the two batteries and selected battery 1 as the worst case to perform the test.<br>The variant EUT update the software to add the VoWIFI function.<br>The test results of variant product derive from original product Report No.: SRTC2020-9004(F)-20060301(M). |

## 3 REFERENCE SPECIFICATIONS

| Specification | Version | Title                                                                                                                             |
|---------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|
| Part 20.19    | 2019    | Hearing aid-compatible mobile handsets.                                                                                           |
| C63.19        | 2011    | American National Standard Methods of<br>Measurement of Compatibility between<br>Wireless Communications Devices and Hearing Aids |
| 285076 D01    | v05     | HAC Guidance                                                                                                                      |
| 285076 D02    | v03     | T-Coil Testing                                                                                                                    |

#### 4 RESULT SUMMAR

| Band                    | Category assessment<br>T-coil signal quality | Pass/Fail   |
|-------------------------|----------------------------------------------|-------------|
| GSM850                  | T4                                           | PASS        |
| GSM1900                 | T4                                           | PASS        |
| WCDMA BAND2             | T4                                           | PASS        |
| WCDMA BAND4             | T4                                           | PASS        |
| WCDMA BAND5             | T4                                           | PASS        |
| LTE BAND2               | T4                                           | PASS        |
| LTE BAND4               | T4                                           | PASS        |
| LTE BAND5               | T4                                           | PASS        |
| LTE BAND7               | T4                                           | PASS        |
| LTE BAND12              | T4                                           | PASS        |
| LTE BAND13              | T4                                           | PASS        |
| LTE BAND66              | T4                                           | PASS        |
| WIFI 2.4GHz             | T4                                           | PASS        |
| <b>Final T Category</b> | <b>T4</b>                                    | <b>PASS</b> |

|                                                                                                                                        |                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| This Test Report Is Issued by:<br>Mr. Peng Zhen<br> | Checked by:<br>Mr. Li Bin<br> |
| Tested by:<br>Mr. He Dengshun<br>                   | Issued date:<br><br>20201130                                                                                      |

## **5 Test Procedures for all Technologies**

Referenced to ANSI C63.19, Section 7.4,

This section describes the describes the procedures used to measure the ABM (T-Coil) performance of the WD. In addition to measuring the absolute signal levels, the A-weighted magnitude of the unintended signal shall also be determined. In order to assure that the required signal quality is measured, the measurement of the intended signal and the measurement of the unintended signal must be made at the same location for all measurement positions. In addition, the RF field strength at each measurement location must be at or below that required for the assigned category.

Measurements shall not include undesired properties from the WD's RF field; therefore, use of a coaxial connection to a base station simulator or non-radiating load may be necessary. However, even then with a coaxial connection to a base station simulator or non-radiating load there may still be RF leakage from the WD, which may interfere with the desired measurement. Pre-measurement checks should be made to avoid this possibility. All measurements shall be done with the WD operating on battery power with an appropriate normal speech audio signal input level given in Table 7.1. If the device display can be turned off during a phone call then that may be done during the measurement as well.

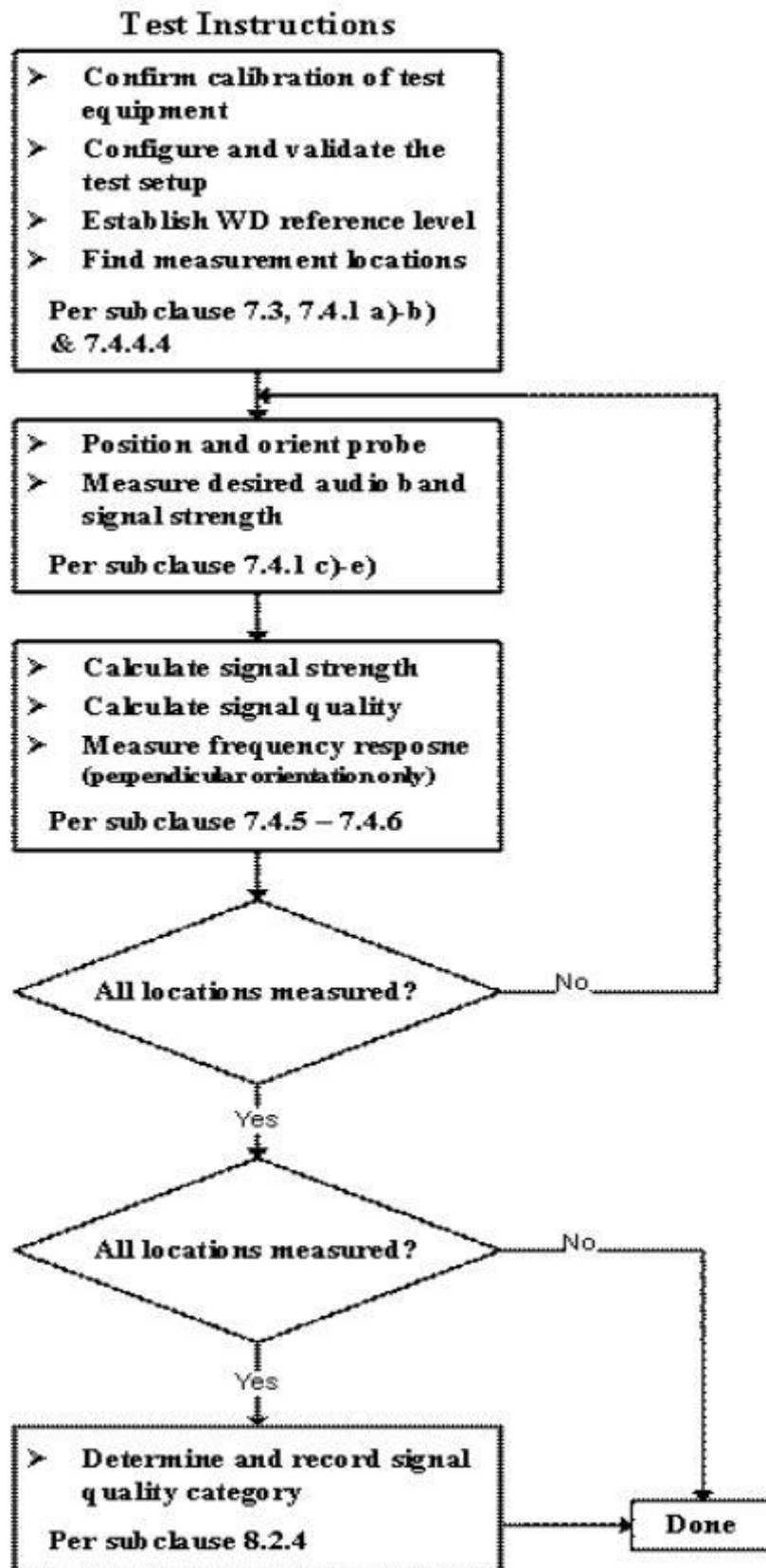
Measurements shall be performed at two locations specified in A.3, with the correct probe orientation for a particular location, in a multistage sequence by first measuring the field intensity of the desired T-Coil signal (ABM1) that is useful to a hearing aid T-Coil. The undesired magnetic components (ABM2) must be measured at the same location as the desired ABM or T-Coil signal (ABM1), and the ratio of desired to undesired ABM signals must be calculated. For the perpendicular field location, only the ABM1 frequency response shall be determined in a third measurement stage. The flow chart in Figure 7.3 illustrates this three-stage, two orientation process.

The following steps summarize the basic test flow for determining ABM1 and ABM2. These steps assume that a sine wave or narrowband 1/3 octave signal can be used for the measurement of ABM1.

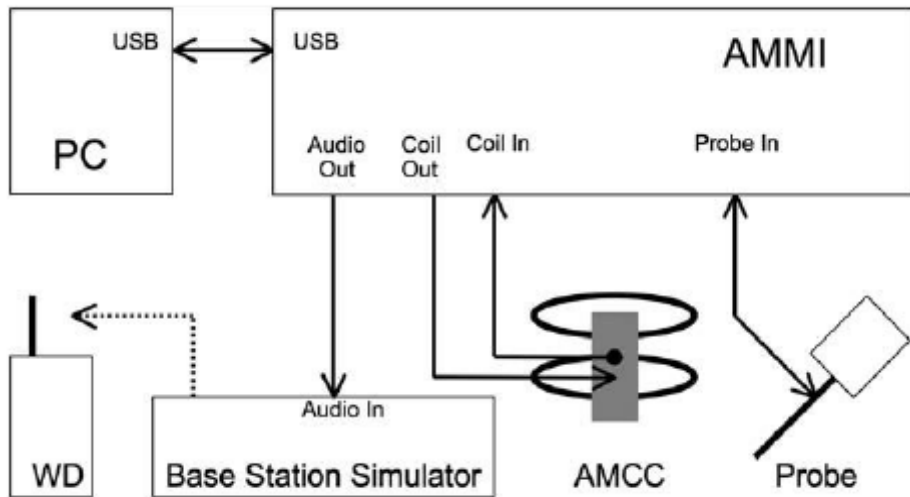
- a. A validation of the test setup and instrumentation may be performed using a TMFS or Helmholtz coil. Measure the emissions and confirm that they are within the specified tolerance.
- b. Position the WD in the test setup and connect the WD RF connector to a base station simulator or a non-radiating load as shown in Figure 7.1 or Figure 7.2. Confirm that equipment that requires calibration has been calibrated, and that the noise level meets the requirements given in 7.3.1.
- c. The drive level to the WD is set such that the reference input level specified in Table 7.1 is input to the base station simulator (or manufacturer's test

mode equivalent) in the 1 kHz, 1/3 octave band. This drive level shall be used for the T-Coil signal test (ABM1) at  $f = 1$  kHz. Either a sine wave at 1025 Hz or a voice-like signal, band-limited to the 1 kHz 1/3 octave, as defined in 7.4.2, shall be used for the reference audio signal. If interference is found at 1025 Hz an alternative nearby reference audio signal frequency may be used.<sup>46</sup> The same drive level will be used for the ABM1 frequency response measurements at each 1/3 octave band center frequency. The WD volume control may be set at any level up to maximum, provided that a signal at any frequency at maximum modulation would not result in clipping or signal overload.

- d. Determine the magnetic measurement locations for the WD device (A.3), if not already specified by the manufacturer, as described in 7.4.4.1.1 and 7.4.4.2.
- e. At each measurement location, measure and record the desired T-Coil magnetic signals (ABM1 at  $f_i$ ) as described in 7.4.4.2 in each individual ISO 266-1975 R10 standard 1/3 octave band. The desired audio band input frequency ( $f_i$ ) shall be centered in each 1/3 octave band maintaining the same drive level as determined in item c) and the reading taken for that band.
- f. Equivalent methods of determining the frequency response may also be employed, such as fast Fourier transform (FFT) analysis using noise excitation or input-output comparison using simulated speech. The full-band integrated probe output, as specified in D.9, may be used, as long as the appropriate calibration curve is applied to the measured result, so as to yield an accurate measurement of the field magnitude. (The resulting measurement shall be an accurate measurement in dB A/m.)
- g. All Measurements of the desired signal shall be shown to be of the desired signal and not of an undesired signal. This may be shown by turning the desired signal ON and OFF with the probe measuring the same location. If the scanning method is used the scans shall show that all measurement points selected for the ABM1 measurement meet the ambient and test system noise criteria in ANSI C63.19 clause 7.3.1.
- h. At the measurement location for each orientation, measure and record the undesired broadband audio magnetic signal (ABM2) as specified in 7.4.4.4 with no audio signal applied (or digital zero applied, if appropriate) using A-weighting and the half-band integrator. Calculate the ratio of the desired to undesired signal strength (i.e., signal quality).
- i. Obtain the data from the postprocessor, SEMCAD, and determine the category that properly classifies the signal quality based on Table 8.5.



WD T-Coil signal test flowchart



Test Setup Diagram

For GSM / UMTS test setup and input level, the correct input level definition is via a communication tester CMU200's "Decoder Cal" and "Codec Cal" with audio option to set the correct audio input levels.

For VoLTE and VoWiFi the test setup used is via the callbox of CMW500 for T-coil measurement, The DAU of the CMW500 was used to simulate the IMS(CDMA2000 do not need IMS registration). The CMW500 can be manually configured to ensure and control the speech input level result is -16dBm0 for VoLTE, -20dBm0 for VoWiFi when the device during the IMS connection.

For GSM / UMTS test setup and input level, the correct input level definition is via a communication tester **CMU200**'s "Decoder Cal" and "Codec Cal" with audio option B52 and B85

The following options units on **CMW500** were used to simulate the VoLTE /VOWIFI (IMS,EPDG,DNS inside DAU with Audio Board) for testing.

| Firmware License Keys | Software Name                |
|-----------------------|------------------------------|
| CMW-PS505             | Basic Assembly               |
| CMW-S052S             | SSD Driver                   |
| CMW-S100D             | Baseband Measurement Unit    |
| CMW-S550N             | Flexible Internal Connection |
| CMW-S570B             | RF Converter                 |
| CMW-S590D             | Advanced Frontend            |
| CMW-S600B             | Front Panel with Display     |
| CMW-PS505             | Basic Assembly               |
| CMW-S052S             | SSD Driver                   |

Hardware Options and Accessory:

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| <b>CMW-B400B</b> | <b>Audio Board</b>                                                 |
| <b>CMW-B405A</b> | <b>CODEC Board</b>                                                 |
| <b>CMW-B500I</b> | <b>Signaling Unit for LTE and WLAN</b>                             |
| CMW-B612A        | GPIO Connector                                                     |
| CMW-B660H        | Option Carrier                                                     |
| CMW-B661H        | Ethernet Switch Board                                              |
| CMW-B690B        | OXCO                                                               |
| CMW-KB036        | 6 GHz Extension                                                    |
| CMW-Z06          | Test USIM Card                                                     |
| <b>CMW-B450H</b> | <b>Data Application Unit (DAU) for IMS Server and IP Emulation</b> |

Software Options:

|           |                                                   |
|-----------|---------------------------------------------------|
| CMW-K0    |                                                   |
| CMW-KS104 | Software License for EVS                          |
| CMW-PK45  | Software License Package for IP Network Emulation |
| CMW-PK50  | Software License Package for LTE                  |
| CMW-PK65  | Software License Package for WLAN                 |

## **6 Audio Level and Gain Measurements**

According to C63 .19and KDB 285076 D02v03 , the input audio level showing below:

- GSM input level: -16dBm0
- UMTS input level: -16dBm0
- VoLTE input level: -16dBm0
- VoWiFi input level: -20dBm0

The table of **Required gain** showing below is given by SPEAG, and we used these parameters to determine the **Gain setting** on the software DASY52 perform HAC T-coil test.

| Signal<br>[file name]          | Duration<br>[s] | Peak-to-RMS<br>[dB] | RMS<br>[dB] | Required gain<br>factor *) | Gain<br>setting |
|--------------------------------|-----------------|---------------------|-------------|----------------------------|-----------------|
| 1kHz sine                      | ---             | 3.0                 | 0.0         | 1.00                       |                 |
| 48k_1.025kHz_10s.wav           | 10              | 3.0                 | 0.0         | 1.00                       |                 |
| 48k_1kHz_3.15kHz_10s.wav       | 10              | 6.0                 | -3.0        | 1.42                       |                 |
| 48k_315Hz_1kHz_10s.wav         | 10              | 6.0                 | -2.9        | 1.40                       |                 |
| 48k_csek_8k_441_white_10s.wav  | 10              | 13.8                | -10.5       | 3.34                       |                 |
| 48k_multisine_50-5000_10s.wav  | 10              | 11.1                | -7.9        | 2.49                       |                 |
| 48k_multisine_50-10000_10s.wav | 10              | 10.8                | -7.7        | 2.42                       |                 |
| 48k_voice_1kHz_1s.wav          | 1               | 16.2                | -12.7       | 4.33                       |                 |
| 48k_voice_300-3000_2s.wav      | 2               | 21.6                | -18.6       | 8.48                       |                 |
| 48k_normal (example)           | 51              | 25.4                | -22.42      | 13.21                      |                 |

(\*) The gain for the specific signal shall typically be multiplied by this factor to achieve approx. the same level as for the 1kHz sine signal.

**Note:** For protocols not listed in Table 7.1 of ANSI C63.19 or the ANSI C63.19 VoLTE interpretation, the average speech level of -20 dBm0 should be used

**For GSM/UMTS test**, we use uncalibrated simulator CMU200 the reference level in dBm0 depend on the instrument, the signaling unit used and on the AMMI.

The gain level determination to obtain a specific level in dBm0 with R&S CMU200 describe as following procedure.

Step1: **Decoder Calibration** on the CMU200.

The value of AMCC coil in\_RMS (dBv) is -2.42dBV is equal to the reference input level of 3.14dBm0

Step2: **Codec Calibration** on the CMU200.

Measure the AMMI 1KHz sine with gain 10(20dB) looped through the CMU200 using AMMI 'Coil\_In' and "Coil\_In' signal reading is -19.71dBV corresponds to a level -14.15 dBm0

Step3: **Calculate the required gain** for a '1 kHz Sine'.

The desire input level is -16dBm0 for GSM and WCDMA, so the **required gain** is  $(-16\text{dBm0}) - (-14.15\text{dBm0}) + 20\text{ dB} = 18.15\text{ dB}$  (gain dB)=8.08 (gain linear)

The desire input level is -18dBm0 for CDMA, so the **required gain** is  $(-18\text{dBm0}) - (-14.15\text{dBm0}) + 20\text{ dB} = 16.15\text{ dB}$  (gain dB)= 6.42 (gain linear)

Step4: **Gain setting for several audio files (required gain\* gain factor).**

| Mode                       | Signal Type            | Duration (s) | Peak to RMS (dB) | Peak to RMS (dB) | Required Gain Factor | Calculated Gain Setting |
|----------------------------|------------------------|--------------|------------------|------------------|----------------------|-------------------------|
| GSM/<br>WCDMA<br>(-16dBm0) | 1kHz sine              | ---          | 3                | 0                | 1                    | <b>8.08</b>             |
|                            | 48k_voice_1kHz         | 1            | 16.2             | -12.7            | 4.33                 | <b>34.99</b>            |
|                            | 48k_voice_300Hz ~ 3kHz | 2            | 21.6             | -18.6            | 8.48                 | <b>68.52</b>            |

**For VoLTE/VoWIFI test**, we use simulators with calibrated inputs CMW500 where the input sensitivity dBm0 per input voltage is known or can be set, the relation between the analog input voltage and the internal level in dBm0 can be determined.

The gain level determination to obtain a specific level in dBm0 with CMW500 describe as following procedure.

**Step1: Define CMW500 analog input voltage** on the CMW500.

The value of Speech\_In Sensitivity is 1.8V\_fullscale is equal to the reference input level of 3.14dBm0, Full scale input level converted to dBV\_RMS is 2.10

**Step2: Connect AMMI “Audio Out” to “AMMI Coil In” via BNC-XLR adapter.**

Measure the AMMI 1KHz sine with gain 100(40dB) "Coil\_In" signal reading is 3.37 dBV ,Impedence corrected "Coil\_In" signal reading is 3.37 dBV -0.15dB= 3.22dBV corresponds to a level 4.26 dBm0

**Step3: Calculate the required gain** for a '1 kHz Sine'.

When the desire input level is -18dBm0 for CDMA, the **required gain** is

$(-18\text{dBm0}) - (4.26\text{dBm0}) + 40\text{ dB} = 17.74\text{ dB (gain dB)} = 7.71\text{ (gain linear)}$

When the desire input level is -16dBm0 for LTE, the **required gain** is  $(-16\text{dBm0})$

$- (4.26\text{dBm0}) + 40\text{ dB} = 19.74\text{ dB (gain dB)} = 9.70\text{ (gain linear)}$

When the desire input level is -20dBm0 for WIFI, the **required gain** is  $(-20\text{dBm0})$

$- (4.26\text{dBm0}) + 40\text{ dB} = 15.74\text{ dB (gain dB)} = 6.12\text{ (gain linear)}$

**Step4: Gain setting for several audio files (required gain\* gain factor).**

| Mode              | Signal Type             | Duration (s) | Peak to RMS (dB) | Peak to RMS (dB) | Required Gain Factor | Calculated Gain Setting |
|-------------------|-------------------------|--------------|------------------|------------------|----------------------|-------------------------|
| LTE<br>(-16dBm0)  | 1kHz sine               | ---          | 3                | 0                | 1                    | <b>9.70</b>             |
|                   | 48k_voice_1k Hz         | 1            | 16.2             | -12.7            | 4.33                 | <b>42.00</b>            |
|                   | 48k_voice_30 0Hz ~ 3kHz | 2            | 21.6             | -18.6            | 8.48                 | <b>82.26</b>            |
| WIFI<br>(-20dBm0) | 1kHz sine               | ---          | 3                | 0                | 1                    | <b>6.12</b>             |
|                   | 48k_voice_1k Hz         | 1            | 16.2             | -12.7            | 4.33                 | <b>26.50</b>            |
|                   | 48k_voice_30 0Hz ~ 3kHz | 2            | 21.6             | -18.6            | 8.48                 | <b>51.90</b>            |

## 7 Description of the test Position

### 7.1 Test positions

The device was positioned such that Device Reference plane was touching the bottom of the Test Arch. The scan is centered at the acoustic output by aligning the acoustic output with the intersection of the Test Arch's middle bar and dielectric wire. The WD is positioned always this way to ensure repeatability of the measurements. Coordinate system depicted below is used to define exact locations of measurement points relative to the center of the acoustic output.

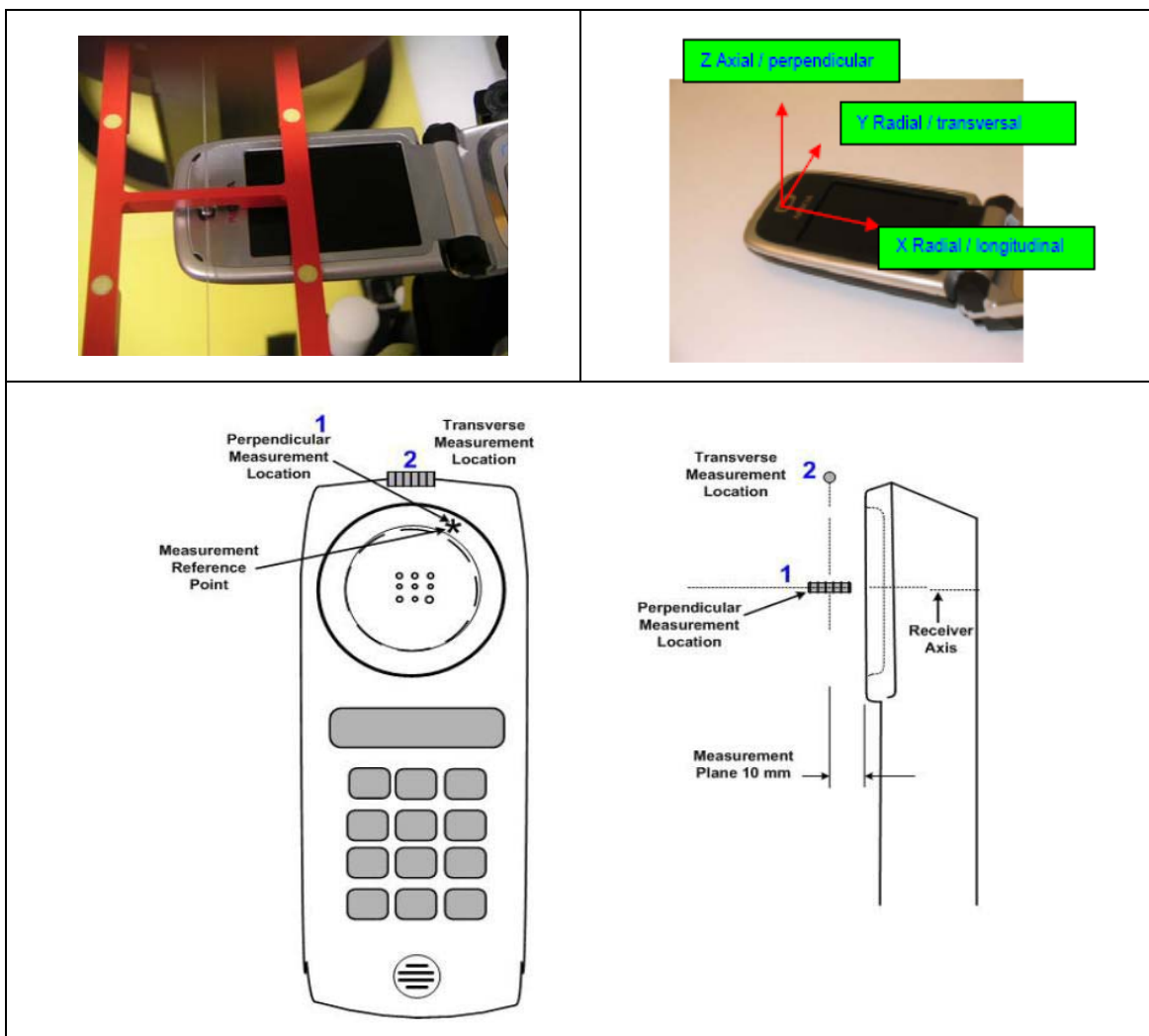


Photo of the device positioned under Test Arch and coordinate system (The EUT in picture is generic phone sample and does not represent the actual equipment under test)

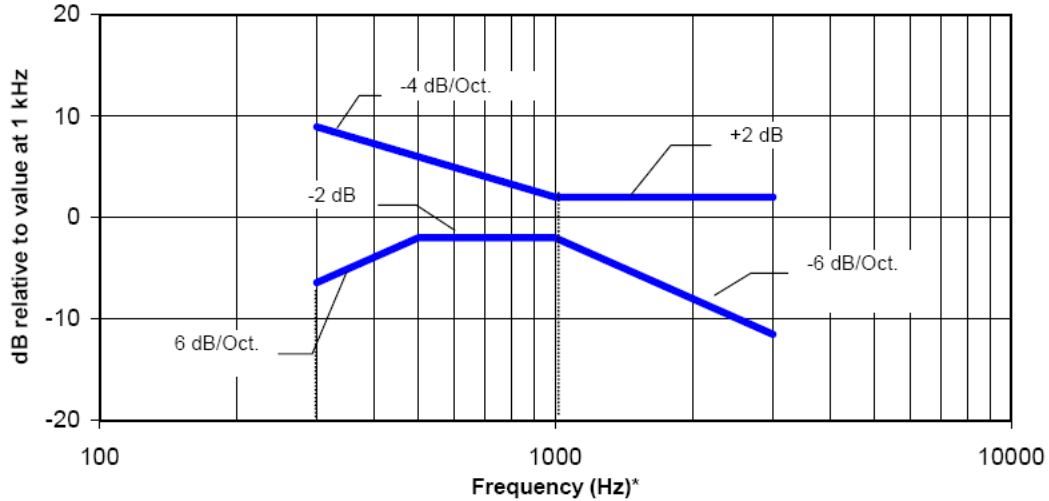
## 7.2 T-coil Requirements and Category Limits

**Signal to Noise** :This section provides the signal quality requirement for the intended T-Coil signal from a WD. Only the RF immunity of the hearing aid is measured in T-Coil mode. It is assumed that a hearing aid can have no immunity to an interference signal in the audio band, which is the intended reception band for this mode. So, the only criterion that can be measured is the RF immunity in T-Coil Mode.The RF measurements made for the T-Coil evaluation are used to assign the category T1 through T4.

| Category    | Telephone parameters<br>WD signal quality<br>[(signal + noise)-to-noise ratio in decibels] |
|-------------|--------------------------------------------------------------------------------------------|
| Category T1 | 0 dB to 10 dB                                                                              |
| Category T2 | 10 dB to 20 dB                                                                             |
| Category T3 | 20 dB to 30 dB                                                                             |
| Category T4 | > 30 dB                                                                                    |

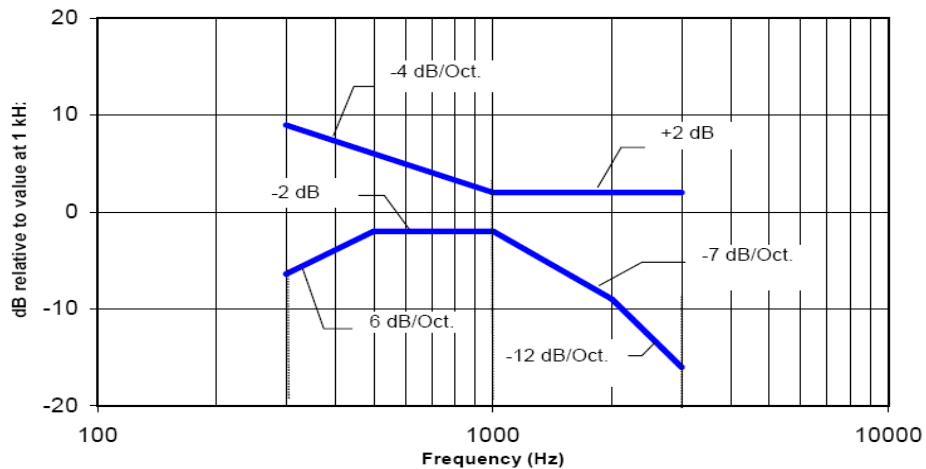
## Frequency Response

The frequency response of the perpendicular component of the magnetic field, measured in 1/3 octave bands, shall follow the response curve specified in this sub-clause, over the frequency range 300 Hz to 3000 Hz.



NOTE—Frequency response is between 300 Hz and 3000 Hz.

### Magnetic field frequency response for WDs with a field $\leq -15$ dB (A/m) at 1 kHz



NOTE—Frequency response is between 300 Hz and 3000 Hz.

### Magnetic field frequency response for WDs with a field that exceeds $-15$ dB(A/m) at 1 kHz

## 8 Measurement uncertainty

| Uncertainty of Audio Band Magnetic Measurements |            |             |            |                |                |                |                |
|-------------------------------------------------|------------|-------------|------------|----------------|----------------|----------------|----------------|
| Error Description                               | Unc. Value | Prob. Dist. | Div.       | ( $c_1$ ) ABM1 | ( $c_1$ ) ABM2 | Std. Unc. ABM1 | Std. Unc. ABM2 |
| Probe Sensitivity                               |            |             |            |                |                |                |                |
| Reference Level                                 | ±3.0 %     | N           | 1          | 1              | 1              | ±3.0 %         | ±3.0 %         |
| AMCC Geometry                                   | ±0.4 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.2 %         | ±0.2 %         |
| AMCC Current                                    | ±1.0 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.6 %         | ±0.6 %         |
| Probe Positioning during Calibr.                | ±0.1 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.1 %         | ±0.1 %         |
| Noise Contribution                              | ±0.7 %     | R           | $\sqrt{3}$ | 0.0143         | 1              | ±0.0 %         | ±0.4 %         |
| Frequency Slope                                 | ±5.9 %     | R           | $\sqrt{3}$ | 0.1            | 1.0            | ±0.3 %         | ±3.5 %         |
| Probe System                                    |            |             |            |                |                |                |                |
| Repeatability / Drift                           | ±1.0 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.6 %         | ±0.6 %         |
| Linearity / Dynamic Range                       | ±0.6 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.4 %         | ±0.4 %         |
| Acoustic Noise                                  | ±1.0 %     | R           | $\sqrt{3}$ | 0.1            | 1              | ±0.1 %         | ±0.6 %         |
| Probe Angle                                     | ±2.3 %     | R           | $\sqrt{3}$ | 1              | 1              | ±1.4 %         | ±1.4 %         |
| Spectral Processing                             | ±0.9 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.5 %         | ±0.5 %         |
| Integration Time                                | ±0.6 %     | N           | 1          | 1              | 5              | ±0.6 %         | ±3.0 %         |
| Field Disturbance                               | ±0.2 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.1 %         | ±0.1 %         |
| Test Signal                                     |            |             |            |                |                |                |                |
| Ref. Signal Spectral Response                   | ±0.6 %     | R           | $\sqrt{3}$ | 0              | 1              | ±0.0 %         | ±0.4 %         |
| Positioning                                     |            |             |            |                |                |                |                |
| Probe Positioning                               | ±1.9 %     | R           | $\sqrt{3}$ | 1              | 1              | ±1.1 %         | ±1.1 %         |
| Phantom Thickness                               | ±0.9 %     | R           | $\sqrt{3}$ | 1              | 1              | ±0.5 %         | ±0.5 %         |
| DUT Positioning                                 | ±1.9 %     | R           | $\sqrt{3}$ | 1              | 1              | ±1.1 %         | ±1.1 %         |
| External Contributions                          |            |             |            |                |                |                |                |
| RF Interference                                 | ±0.0 %     | R           | $\sqrt{3}$ | 1              | 0.3            | ±0.0 %         | ±0.0 %         |
| Test Signal Variation                           | ±2.0 %     | R           | $\sqrt{3}$ | 1              | 1              | ±1.2 %         | ±1.2 %         |
| Combined Uncertainty                            |            |             |            |                |                |                |                |
| Combined Std. Uncertainty (ABM Field)           |            |             |            |                |                | ±4.1 %         | ±6.1 %         |
| Expanded Std. Uncertainty                       |            |             |            |                |                | ±8.1 %         | ±12.3 %        |

## 9 Air Interfaces and Operating Mode

CMRS mode

| Air interface | Bands (MHz) | Type | ANSI C63.19 Tested | Simultaneous Transmitter | Voice Service | Power Reduction |
|---------------|-------------|------|--------------------|--------------------------|---------------|-----------------|
| GSM           | GSM850      | VD   | YES                | WLAN, BT                 | GSMCS Voice   | NA              |
|               | GSM1900     |      | YES                | WLAN, BT                 | GSMCS Voice   | NA              |
| WCDMA (UMTS)  | Band 2      | VD   | YES                | WLAN, BT                 | WCDMACS Voice | NA              |
|               | Band 4      | VD   | YES                | WLAN, BT                 | WCDMACS Voice | NA              |
|               | Band 5      | VD   | YES                | WLAN, BT                 | WCDMACS Voice | NA              |
| LTE (FDD)     | LTE BAND2   | VD   | YES                | WLAN, BT                 | VoLTE         | NA              |
|               | LTE BAND4   |      |                    | WLAN, BT                 |               | NA              |
|               | LTE BAND5   |      |                    | WLAN, BT                 |               | NA              |
|               | LTE BAND7   |      |                    | WLAN, BT                 |               | NA              |
|               | LTE BAND12  |      |                    | WLAN, BT                 |               | NA              |
|               | LTE BAND13  |      |                    | WLAN, BT                 |               | NA              |
|               | LTE BAND66  |      |                    | WLAN, BT                 |               | NA              |
| WLAN          | 2.4GHz      | VD   | YES                | WWAN                     | VoWiFi        | NA              |

Abbreviation Type

VO=CMRS Voice Service

DT = Digital Transport

VD= Voice Service and Digital Transport

BT=Bluetooth (include BLE)

### Note:

1). For Simultaneous transmission, WLAN and BT share the same antenna, so they can't work together at the same time.

2): According to KDB 285076, we don't need consider OTT mode as there are no 3<sup>rd</sup> VOIP Apps pre-installed by the manufacturer.

## **10 T-Coil testing**

### **General illustration:**

1. The middle channel of each frequency band is used for T-Coil testing according ANSI C63.19.
2. For VoLTE or VoWiFi ,Codec investigation is choose either one radio configuration and an investigation was performed, the following tests use worst codec for the handset.
3. For VoLTE or VoWiFi, Radio configuration investigation is chosen worst codec from codec investigation to determine the worst radio configuration on all frequency band, data rates and modulations and RB configuration,
4. All the data showing on the section “Tests Results” used the worst features (codec and radio configuration) determined by codec investigation (illustration2) and Radio configuration investigation (illustration3).
5. According to 3GPP 36.211 Table 4.2-2, TDD-LTE supports uplink-downlink configuration from 0 to 6, an additional parameter investigation was performed to determine the worst-case uplink-downlink and with the FDD-LTE worst case radio configuration.
6. Phone Condition: Mute on; Backlight off; Max Volume

## 10.1 GSM Test Result

### Codec Investigation

| codec         | Full rate version1 | Half rate version1 | Worst Orientation | Band/channel      |
|---------------|--------------------|--------------------|-------------------|-------------------|
| ABM1 [dB A/m] | <b>-9.02</b>       | -9.12              | Axial(Y)          | GSM850 /CH<br>189 |
| ABM2 [dB A/m] | <b>-58.55</b>      | -58.90             |                   |                   |
| SNR [dB]      | <b>49.53</b>       | 49.78              |                   |                   |

### Tests Results

We use codec **Full rate version1** perform all the test below.

| Air interface | Channel | Orientation | ABM1<br>dB(A/m) | ABM2<br>dB(A/m) | Signal<br>Quality<br>dB | T-Rating<br>ANSI<br>C63.19 | Freq.<br>Response |
|---------------|---------|-------------|-----------------|-----------------|-------------------------|----------------------------|-------------------|
| GSM850        | 189     | Radial (Y)  | -9.02           | -58.55          | 49.53                   | T4                         | ---               |
|               |         | Axial (Z)   | -0.60           | -52.27          | 51.67                   | T4                         | Pass              |
| GSM1900       | 661     | Radial (Y)  | -9.05           | -59.01          | 49.96                   | T4                         | ---               |
|               |         | Axial (Z)   | -0.54           | -54.58          | 54.04                   | T4                         | Pass              |

## 10.2 WCDMA Test Result

### Codec Investigation

| codec         | AMR-NB<br>4.75Kbps | AMR-NB7.95Kbps | AMR-NB<br>12.2Kbps | Worst<br>Orientation | Band/channel          |
|---------------|--------------------|----------------|--------------------|----------------------|-----------------------|
| ABM1 [dB A/m] | <b>-8.95</b>       | -9.01          | -9.12              | Axial(Y)             | WCDMA<br>Band2/CH9400 |
| ABM2 [dB A/m] | <b>-58.91</b>      | -59.13         | -59.20             |                      |                       |
| SNR [dB]      | <b>49.96</b>       | 50.12          | 50.08              |                      |                       |

### Tests Results

We use codec **AMR-NB 4.75Kbps** perform all the test below.

| Air interface  | Channel | Orientation | ABM1<br>dB(A/m) | ABM2<br>dB(A/m) | Signal<br>Quality<br>dB | T-Rating<br>ANSI<br>C63.19 | Freq.<br>Response |
|----------------|---------|-------------|-----------------|-----------------|-------------------------|----------------------------|-------------------|
| WCDMA<br>BAND2 | 9400    | Radial (Y)  | -8.95           | -58.91          | 49.96                   | T4                         | ---               |
|                |         | Axial (Z)   | -0.45           | -57.94          | 57.49                   | T4                         | Pass              |
| WCDMA<br>BAND4 | 1413    | Radial (Y)  | -8.89           | -59.23          | 50.34                   | T4                         | ---               |
|                |         | Axial (Z)   | -0.29           | -57.73          | 57.44                   | T4                         | Pass              |
| WCDMA<br>BAND5 | 4182    | Radial (Y)  | -8.72           | -58.79          | 50.07                   | T4                         | ---               |
|                |         | Axial (Z)   | -0.37           | -57.74          | 57.37                   | T4                         | Pass              |

## 10 .3VOLTE Test Result

### Codec Investigation

AMR Codec Investigation

| codec         | AMR -NB<br>4.75Kbps | AMR -NB<br>12.2Kbps | AMR -WB<br>6.6Kbps | AMR -WB<br>23.85Kbps | Worst<br>Orientation | Band/ BW/<br>channel/<br>Modulation   |
|---------------|---------------------|---------------------|--------------------|----------------------|----------------------|---------------------------------------|
| ABM1 [dB A/m] | <b>-11.76</b>       | -11.82              | -11.78             | -11.92               | Axial( Y)            | LTE BAND2 /<br>20MHz/CH18<br>900/QPSK |
| ABM2 [dB A/m] | <b>-59.22</b>       | -59.40              | -59.30             | -59.53               |                      |                                       |
| SNR [dB]      | <b>47.46</b>        | 47.58               | 47.52              | 47.61                |                      |                                       |

Note: The product does not support EVS Codec.

### Radio Configuration Investigation

For the radio configuration investigation (FDD-LTE), we use codec **AMR -NB4.75Kbps** determined by Codec Investigation which represents the worst codec future.

| Air<br>interface | BW        | Modulation  | RB<br>Size/<br>offset | Channel      | Power<br>Class | UL-DL<br>Configuration | ABM1<br>withWors<br>t<br>Orientati<br>on [dB<br>A/m] | ABM2<br>withWors<br>t<br>Orientati<br>on [dB<br>A/m] | Signal<br>Quality<br>dB |
|------------------|-----------|-------------|-----------------------|--------------|----------------|------------------------|------------------------------------------------------|------------------------------------------------------|-------------------------|
| FDD-LTE<br>BAND2 | 1.4       | QPSK        | 1/0                   | 18900        | 3              | ---                    | -11.84                                               | -59.36                                               | 47.52                   |
|                  | 3         | QPSK        | 1/0                   | 18900        | 3              | ---                    | -11.81                                               | -59.42                                               | 47.61                   |
|                  | 5         | QPSK        | 1/0                   | 18900        | 3              | ---                    | -11.92                                               | -59.75                                               | 47.83                   |
|                  | 10        | QPSK        | 1/0                   | 18900        | 3              | ---                    | -12.03                                               | -59.54                                               | 47.51                   |
|                  | 15        | QPSK        | 1/0                   | 18900        | 3              | ---                    | -11.89                                               | -59.52                                               | 47.63                   |
|                  | <b>20</b> | <b>QPSK</b> | <b>1/0</b>            | <b>18900</b> | <b>3</b>       | ---                    | <b>-11.76</b>                                        | <b>-59.22</b>                                        | <b>47.46</b>            |
|                  | 20        | 16QAM       | 1/0                   | 18900        | 3              | ---                    | -11.98                                               | -59.56                                               | 47.58                   |
|                  | 20        | 64QAM       | 1/0                   | 18900        | 3              | ---                    | -11.86                                               | -59.35                                               | 47.49                   |
|                  | 20        | QPSK        | 50/0                  | 18900        | 3              | ---                    | -11.78                                               | -59.34                                               | 47.56                   |
|                  | 20        | QPSK        | 100/0                 | 18900        | 3              | ---                    | -11.93                                               | -59.64                                               | 47.71                   |

#### FDD:

Step1: SRTC evaluate the worst bandwidth.

Step2: then evaluate the worst modulation type based on step1.

Step3: and finally evaluate the RB allocation based on previous steps.

## Summary Tests Results

Refers to previous investigation, we use the worst codec **AMR –NB4.75Kbps** and the worst configuration showing below perform all the test for each LTE bands.

Configuration for FDD-LTE:

MAX Bandwidth, QPSK,1RB@0

| Air interface  | Channel | Orientation | ABM1 dB(A/m) | ABM2 dB(A/m) | Signal Quality dB | T-Rating ANSI C63.19 | Freq. Response |
|----------------|---------|-------------|--------------|--------------|-------------------|----------------------|----------------|
| FDD-LTE BAND2  | 18900   | Radial (Y)  | -11.76       | -59.22       | 47.46             | T4                   | ---            |
|                |         | Axial (Z)   | -4.57        | -59.49       | 54.92             | T4                   | Pass           |
| FDD-LTE BAND4  | 20175   | Radial (Y)  | -8.41        | -59.09       | 50.68             | T4                   | ---            |
|                |         | Axial (Z)   | -2.77        | -58.43       | 55.66             | T4                   | Pass           |
| FDD-LTE BAND5  | 20525   | Radial (Y)  | -12.03       | -59.28       | 47.25             | T4                   | ---            |
|                |         | Axial (Z)   | -3.60        | -58.21       | 54.61             | T4                   | Pass           |
| FDD-LTE BAND7  | 21100   | Radial (Y)  | -11.96       | -59.33       | 47.37             | T4                   | ---            |
|                |         | Axial (Z)   | -3.49        | -57.67       | 54.18             | T4                   | Pass           |
| FDD-LTE BAND12 | 23095   | Radial (Y)  | -8.82        | -59.23       | 50.41             | T4                   | ---            |
|                |         | Axial (Z)   | -3.59        | -58.12       | 54.53             | T4                   | Pass           |
| FDD-LTE BAND13 | 23230   | Radial (Y)  | -8.71        | -59.31       | 50.60             | T4                   | ---            |
|                |         | Axial (Z)   | -0.20        | -58.05       | 57.85             | T4                   | Pass           |
| FDD-LTE BAND66 | 132322  | Radial (Y)  | -12.15       | -59.67       | 47.52             | T4                   | ---            |
|                |         | Axial (Z)   | -3.53        | -57.62       | 54.09             | T4                   | Pass           |

## 10.4 VOWIFI Test Result

### Codec Investigation

AMR Codec Investigation

| codec         | AMR -NB<br>4.75Kbps | AMR -NB<br>12.2Kbps | AMR-WB<br>6.6Kbps | AMR -WB<br>23.85Kbps | Worst<br>Orientation | Band/channel/Rate         |
|---------------|---------------------|---------------------|-------------------|----------------------|----------------------|---------------------------|
| ABM1 [dB A/m] | -10.26              | -10.31              | -10.34            | -10.28               | Axial(Y)             | 802.11b<br>2.4GHz/6/1Mbps |
| ABM2 [dB A/m] | -53.85              | -53.98              | -53.93            | -54.02               |                      |                           |
| SNR [dB]      | 43.59               | 43.67               | 43.59             | 43.74                |                      |                           |

### Radio Configuration Investigation

For WIFI radio configuration investigation, we use codec **AMR-NB 4.75 Kbps** determined by Codec Investigation which represents the worst codec future.

| Air interface |              | BW | Data rate | Channel | ABM1<br>[dB A/m]<br>Axial(Y) | ABM2[dB<br>A/m]<br>Axial(Y) | Signal<br>Quality<br>dB |
|---------------|--------------|----|-----------|---------|------------------------------|-----------------------------|-------------------------|
| 2.4GHz        | 802.11b      | 20 | 1M        | 6       | -10.26                       | -53.85                      | 43.59                   |
|               | 802.11b      | 20 | 11M       | 6       | -10.31                       | -53.93                      | 43.62                   |
|               | 802.11g      | 20 | 6M        | 6       | -10.34                       | -54.12                      | 43.78                   |
|               | 802.11g      | 20 | 54M       | 6       | -10.28                       | -53.89                      | 43.61                   |
|               | 802.11n-HT20 | 20 | MCS0      | 6       | -10.27                       | -54.08                      | 43.81                   |
|               | 802.11n-HT20 | 20 | MCS7      | 6       | -10.42                       | -54.06                      | 43.64                   |

### Summary Tests Results

We use codec **AMR-NB 4.75 Kbps** and the worst configuration describe as below perform the test for each WIFI bands.

Configuration for WIFI 2.4GHz use **802.11b 1Mbps**

| Air interface | Mode             | Channel | Orientation | ABM1<br>dB(A/m) | ABM2<br>dB(A/m) | Signal<br>Quality<br>dB | T-Rating<br>ANSI<br>C63.19 | Freq.<br>Response |
|---------------|------------------|---------|-------------|-----------------|-----------------|-------------------------|----------------------------|-------------------|
| WIFI2.4GHz    | 802.11b<br>1Mbps | 6       | Radial(Y)   | -10.26          | -53.85          | 43.59                   | T4                         | ---               |
|               |                  |         | Axial (Z)   | -3.52           | -52.11          | 48.59                   | T4                         | Pass              |

## 11 Test Equipments

The measurements were performed using an automated near-field scanning system, DASY5, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland.

The following table lists calibration dates of components:

| Test equipment                        | Model  | S/N    | Cal Date   | Cal Due Date |
|---------------------------------------|--------|--------|------------|--------------|
| DAE                                   | DAE4   | 720    | 2020.09.30 | 2021.09.29   |
| DAE                                   | DAE4   | 546    | 2020.08.13 | 2021.08.12   |
| Audio Magnetic Probe                  | AM1DV2 | 1021   | 2020.10.22 | 2021.10.21   |
| Audio Magnetic Measurement Instrument | TMFS   | 1013   | 2020.08.20 | 2021.08.19   |
| Radio Tester                          | CMU200 | 114666 | 2020.08.20 | 2021.08.19   |
| Radio Tester                          | CMW500 | 102143 | 2020.08.20 | 2021.08.19   |

| Support equipment | S/N  |
|-------------------|------|
| AMMI              | 1045 |
| HAC Phantom part1 | 1080 |
| HAC Phantom part2 | 1042 |

### 11.1 Audio Magnetic Probe AM1DV2

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Construction       | Fully RF shielded metal construction (RF sensitivity<-100 dB)                      |
| System Calibration | Calibrated using Helmholtz coil according to manufacturers instructions            |
| Frequency          | 0.1-20kHz(HOX!test signal is limited to required BW of 300 to 3000Hz,ANSI C63.19); |
| Sensitivity        | <-50dB A/m                                                                         |
| Dimensions         | Overall length:290mm; Tip diameter:6mm                                             |

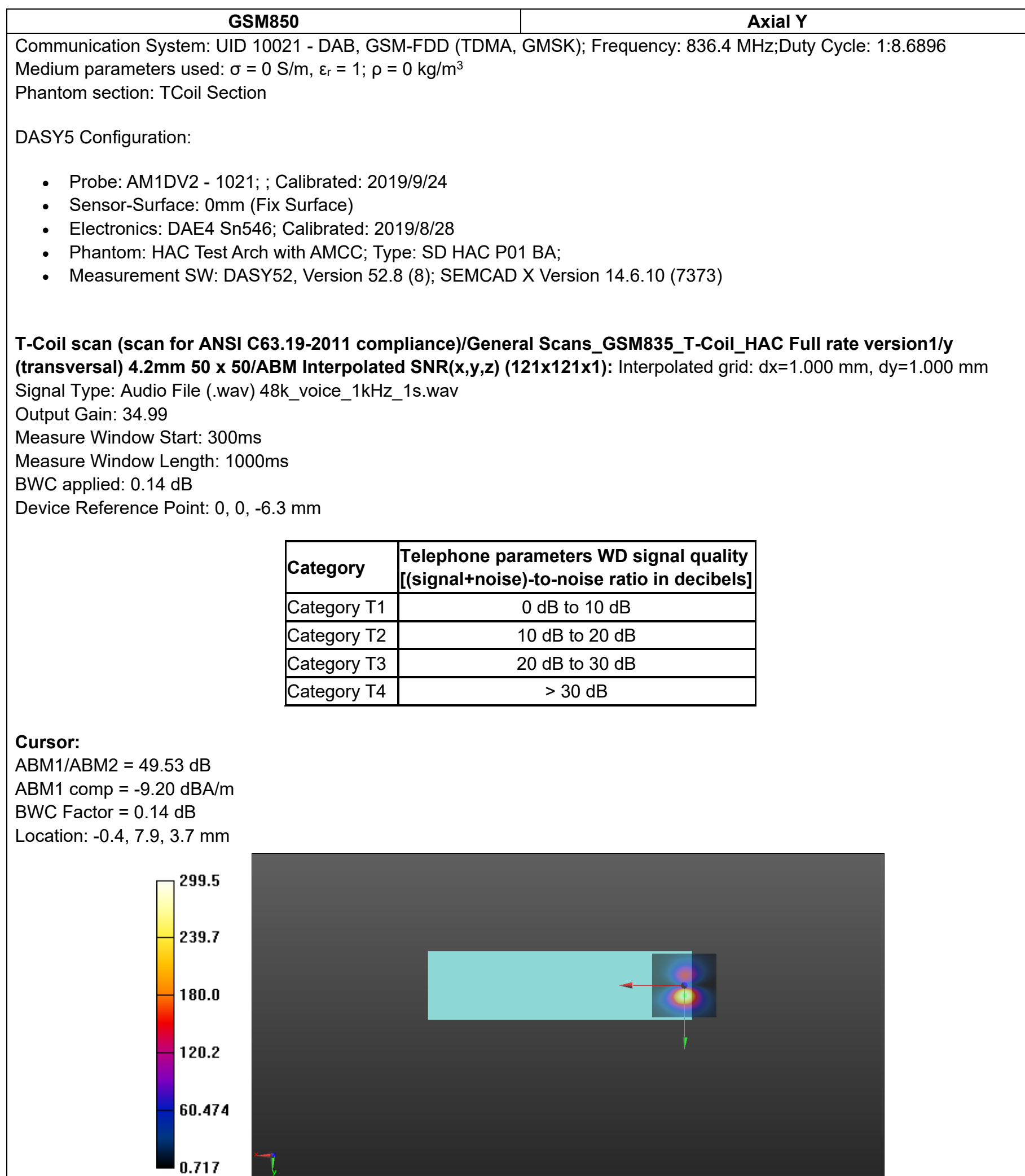
### 11.2 Audio Magnetic Measurement Instrument AMMI

|                        |                                                                         |
|------------------------|-------------------------------------------------------------------------|
| Sampling rate          | 48kHz/24bit                                                             |
| Dynamic Range          | 85dB                                                                    |
| Test Signal generation | User selectable and predefined(via pc)                                  |
| System calibration     | Auto-calibration/full system calibration using AMCC with monitor output |

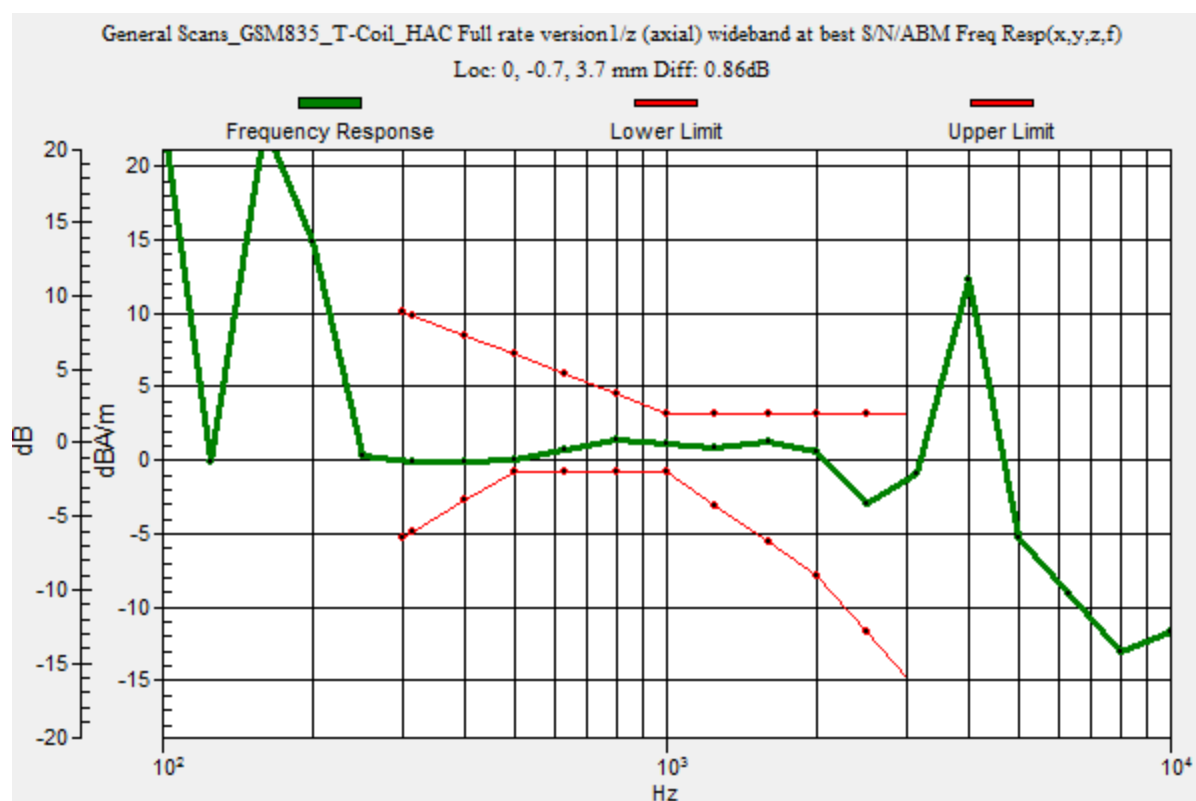
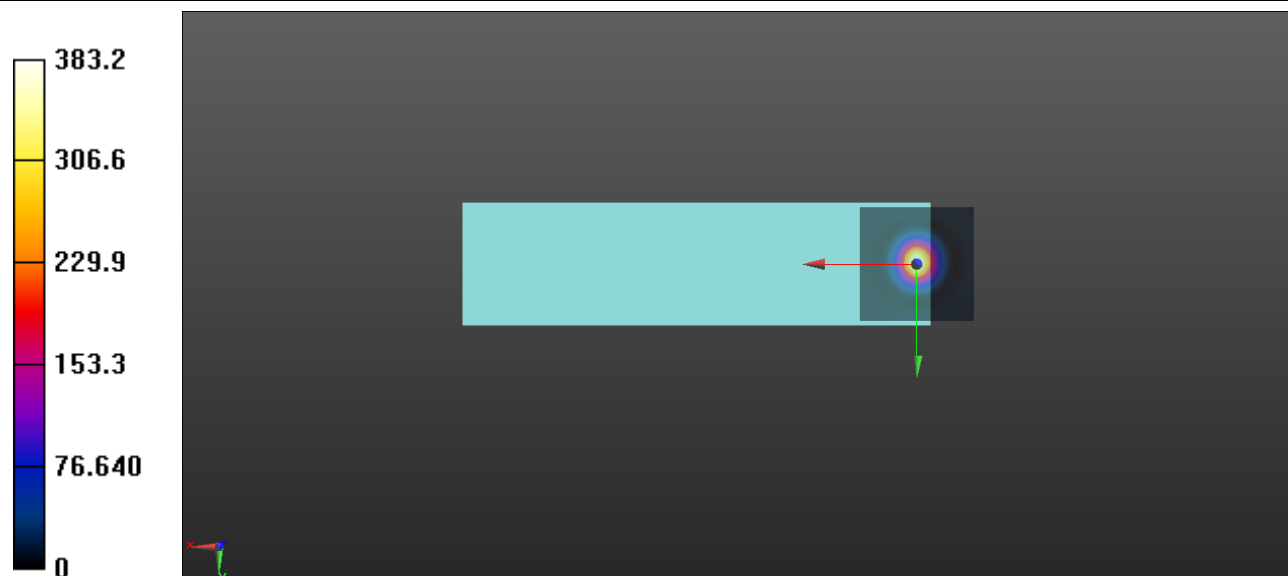
### 11.3 Audio Magnetic calibration Coil AMCC

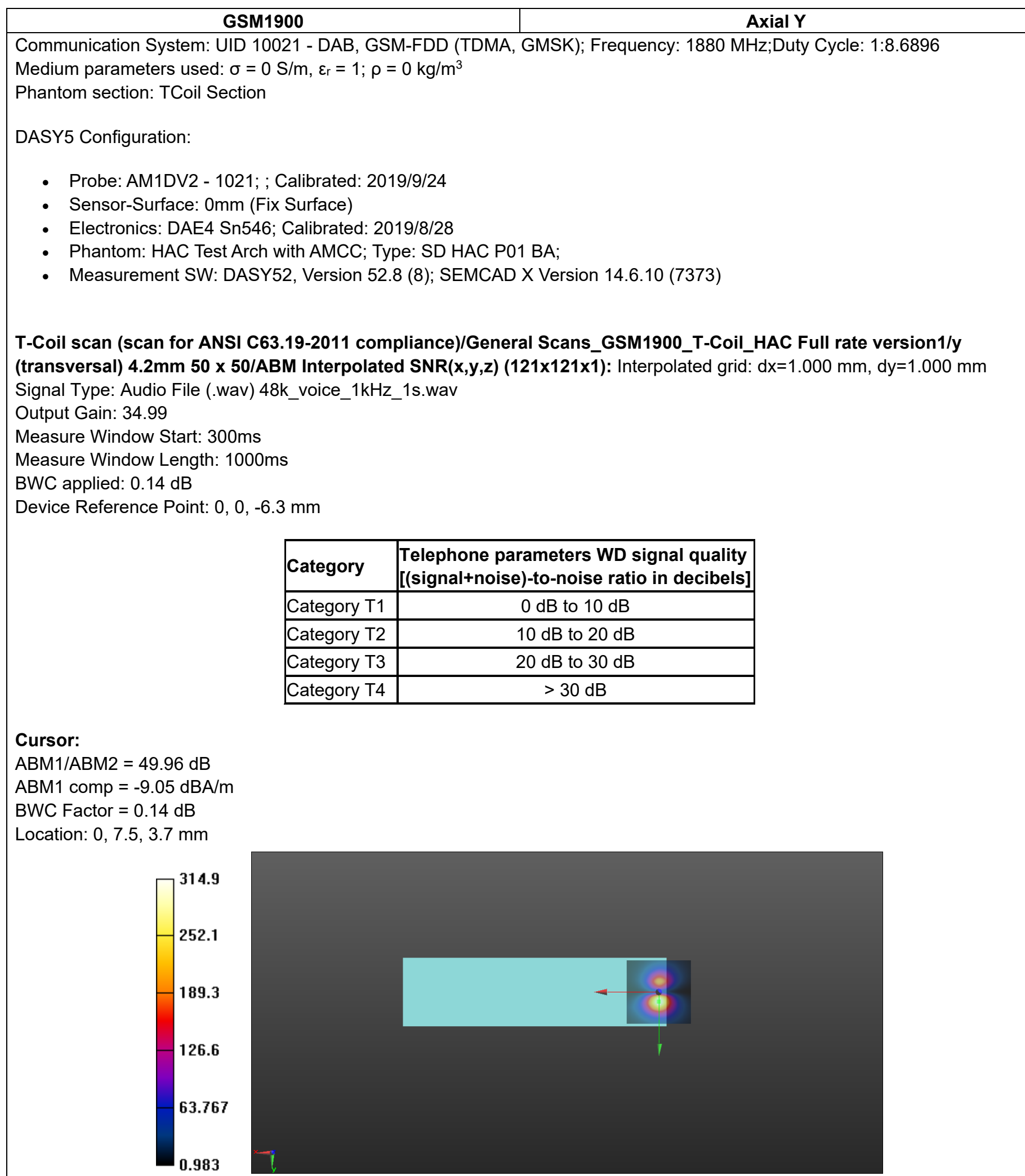
|            |                                            |
|------------|--------------------------------------------|
| Dimensions | 370 x 370 x 196 mm (ANSI-C63.19 compliant) |
|------------|--------------------------------------------|

## ANNEX A: TEST PLOTS

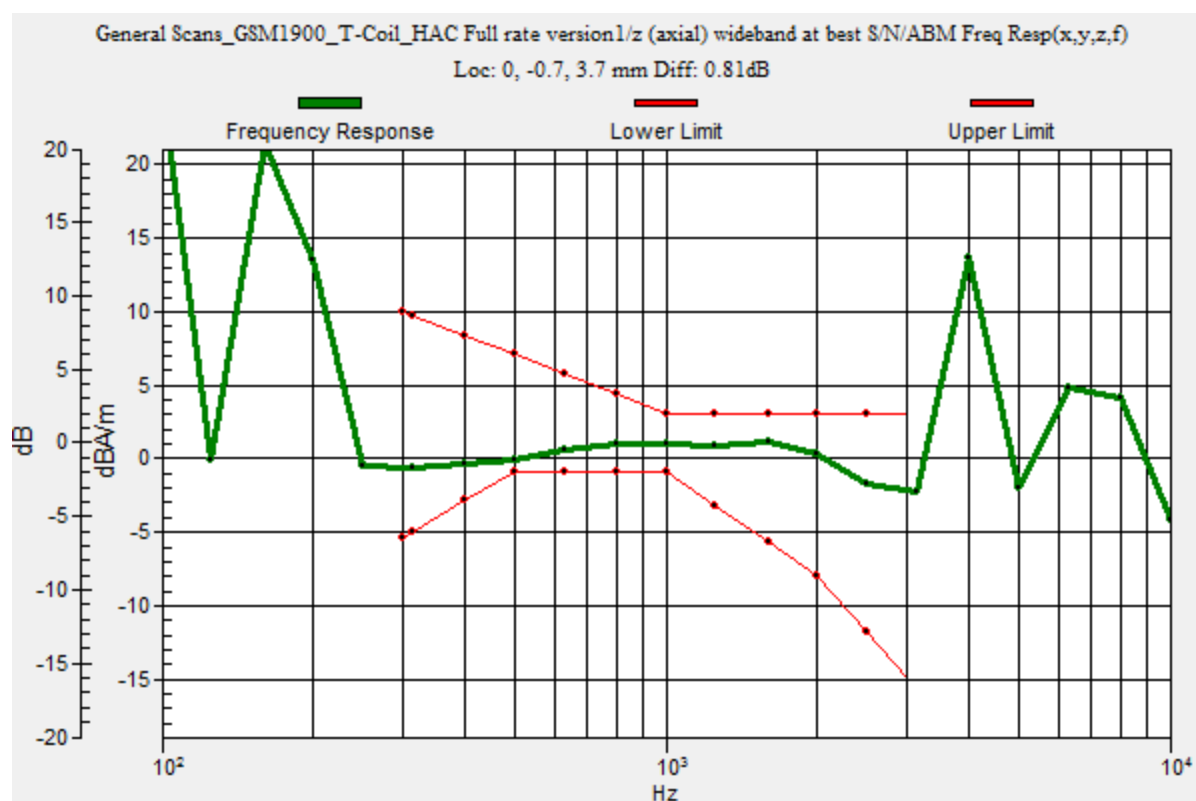
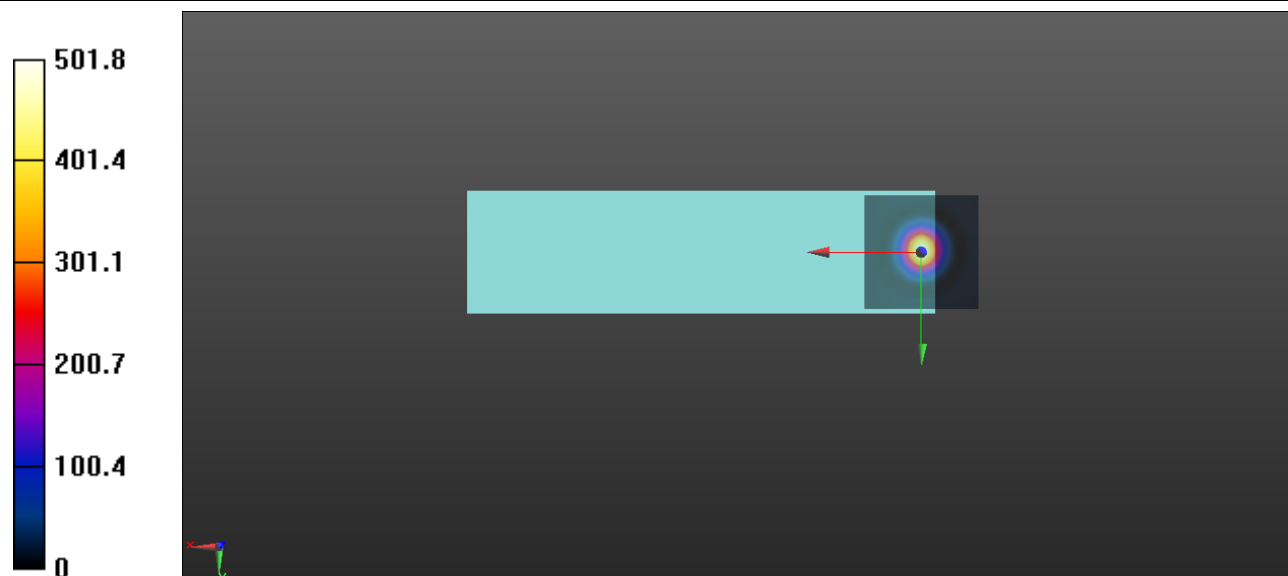


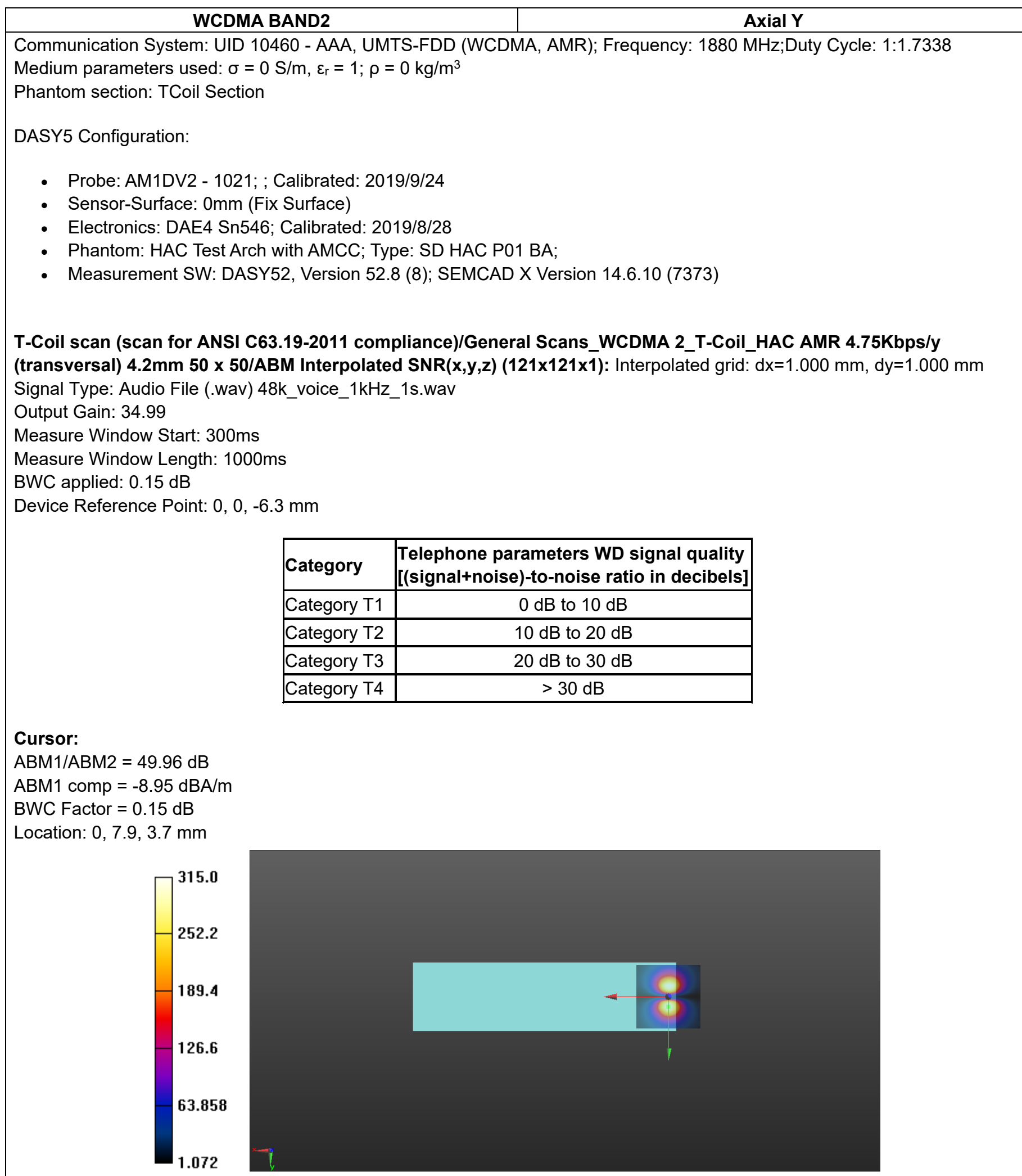
| GSM850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 836.4 MHz;Duty Cycle: 1:8.6896<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_GSM835_T-Coil_HAC Full rate version1/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.14 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>ABM1/ABM2 = 51.67 dB<br>ABM1 comp = -0.60 dBA/m<br>BWC Factor = 0.14 dB<br>Location: 0, -0.8, 3.7 mm<br><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_GSM835_T-Coil_HAC Full rate version1/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 68.52<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.78 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>Diff = 0.86 dB<br>BWC Factor = 10.78 dB<br>Location: 0, -0.7, 3.7 mm |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |



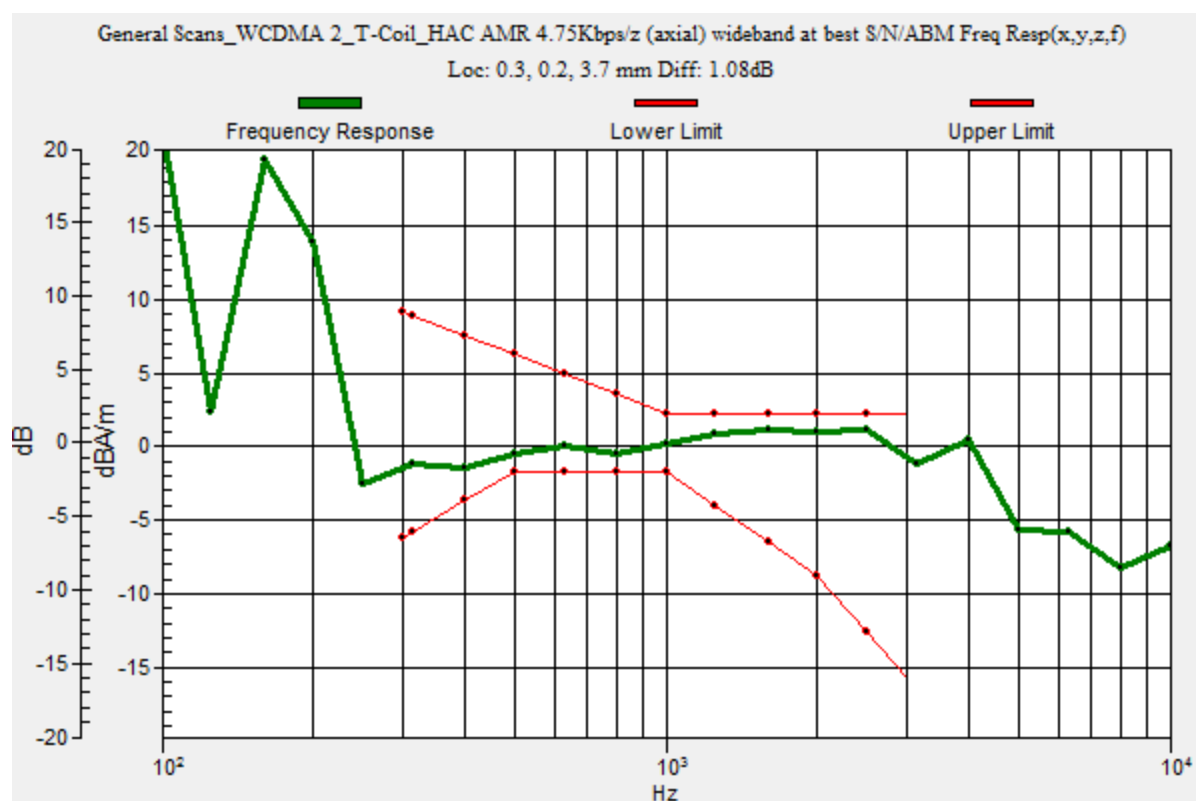
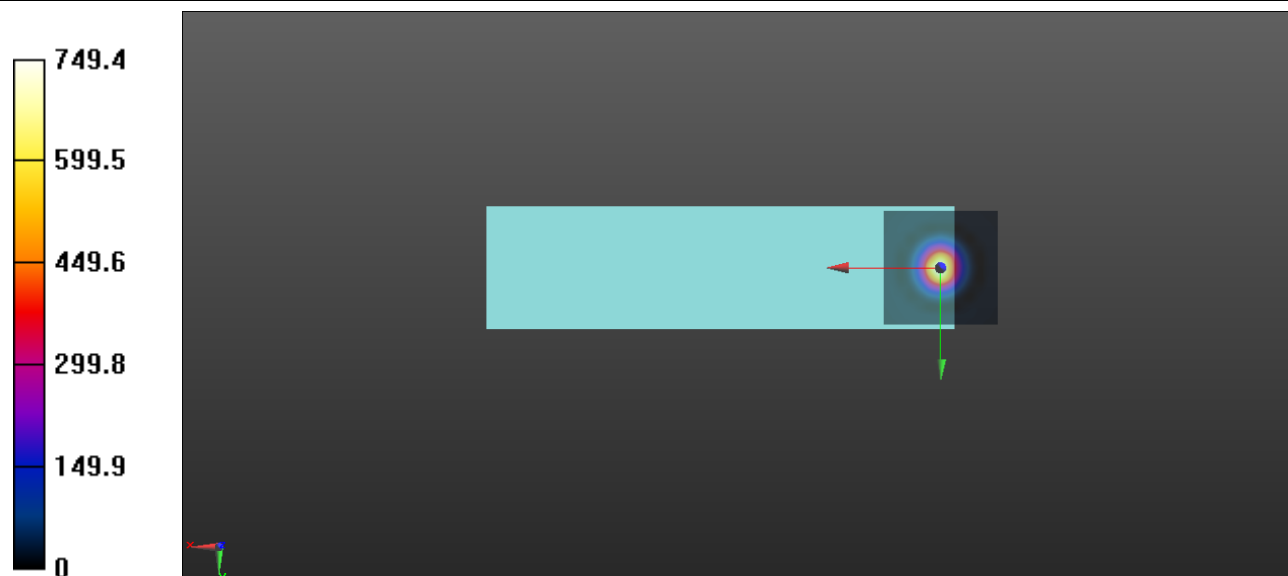


| GSM1900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz;Duty Cycle: 1:8.6896<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_GSM1900_T-Coil_HAC Full rate version1/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.14 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>ABM1/ABM2 = 54.01 dB<br>ABM1 comp = -0.54 dBA/m<br>BWC Factor = 0.14 dB<br>Location: 0, -0.8, 3.7 mm<br><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_GSM1900_T-Coil_HAC Full rate version1/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 68.52<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.78 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>Diff = 0.81 dB<br>BWC Factor = 10.78 dB<br>Location: 0, -0.7, 3.7 mm |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |



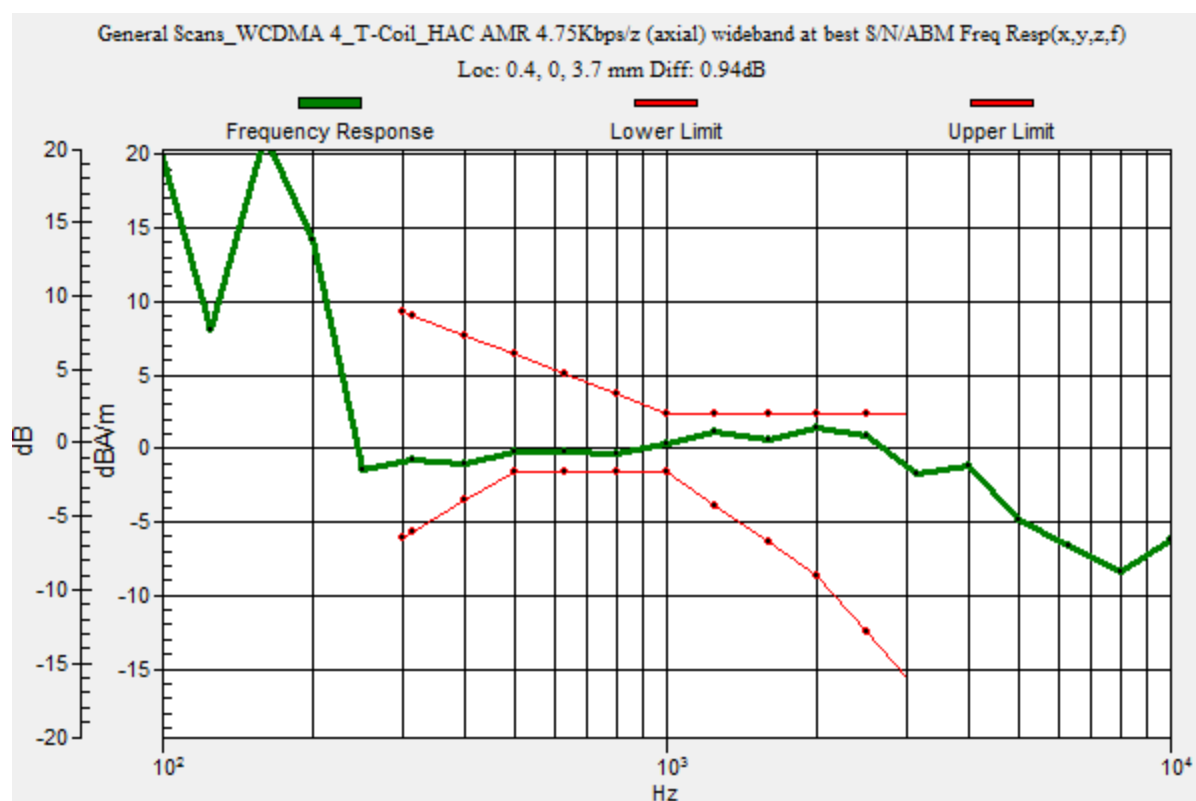
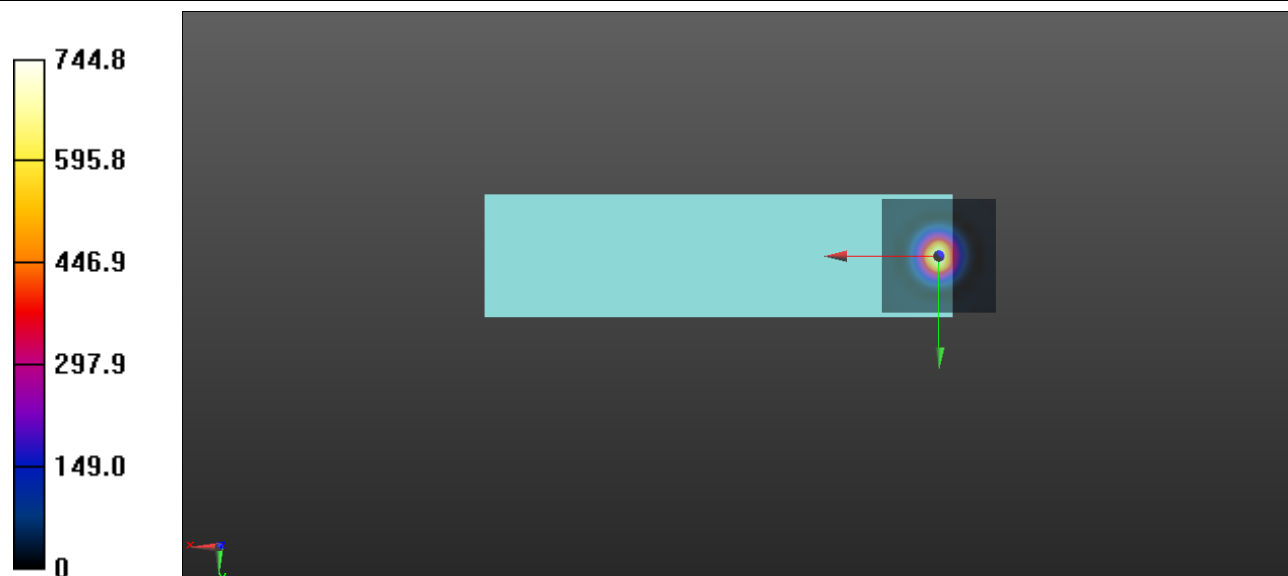


| WCDMA BAND2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10460 - AAA, UMTS-FDD (WCDMA, AMR); Frequency: 1880 MHz;Duty Cycle: 1:1.7338<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 2_T-Coil_HAC AMR 4.75Kbps/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>ABM1/ABM2 = 57.49 dB<br>ABM1 comp = -0.45 dBA/m<br>BWC Factor = 0.15 dB<br>Location: 0.4, 0, 3.7 mm<br><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 2_T-Coil_HAC AMR 4.75Kbps/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 68.52<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.79 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>Diff = 1.08 dB<br>BWC Factor = 10.79 dB<br>Location: 0.3, 0.2, 3.7 mm |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |



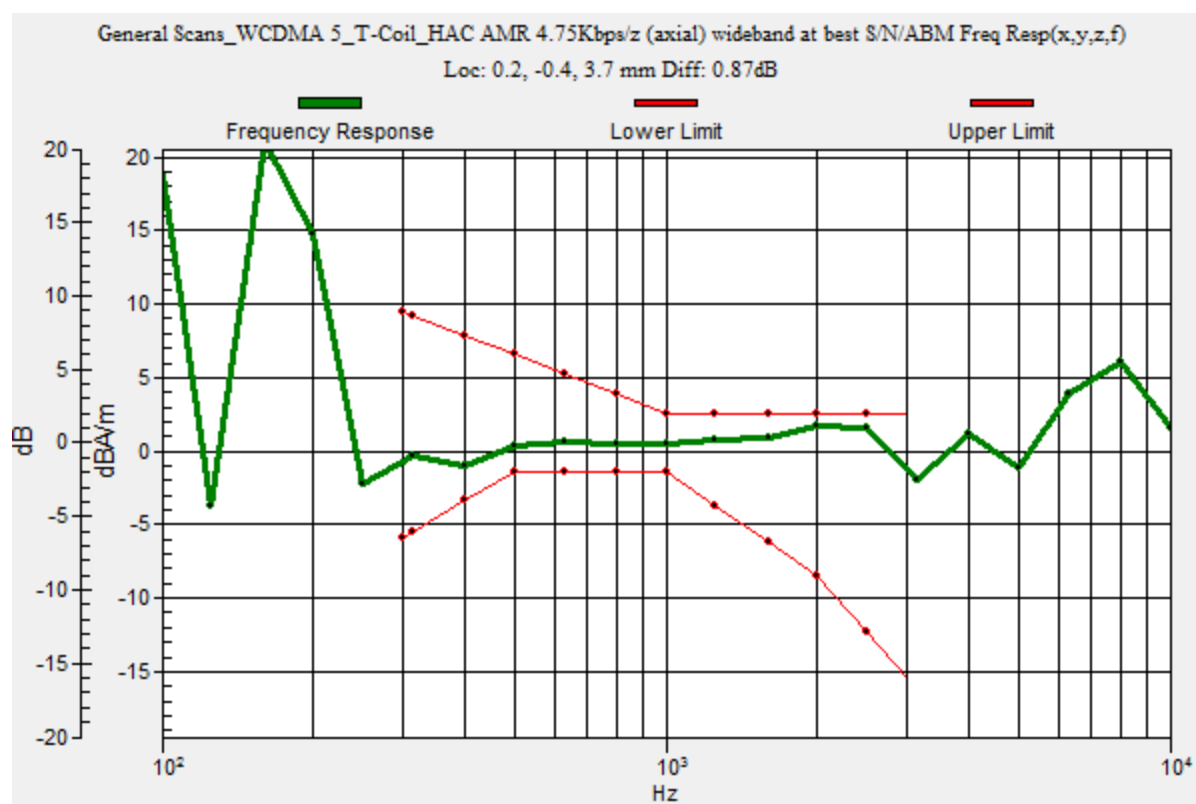
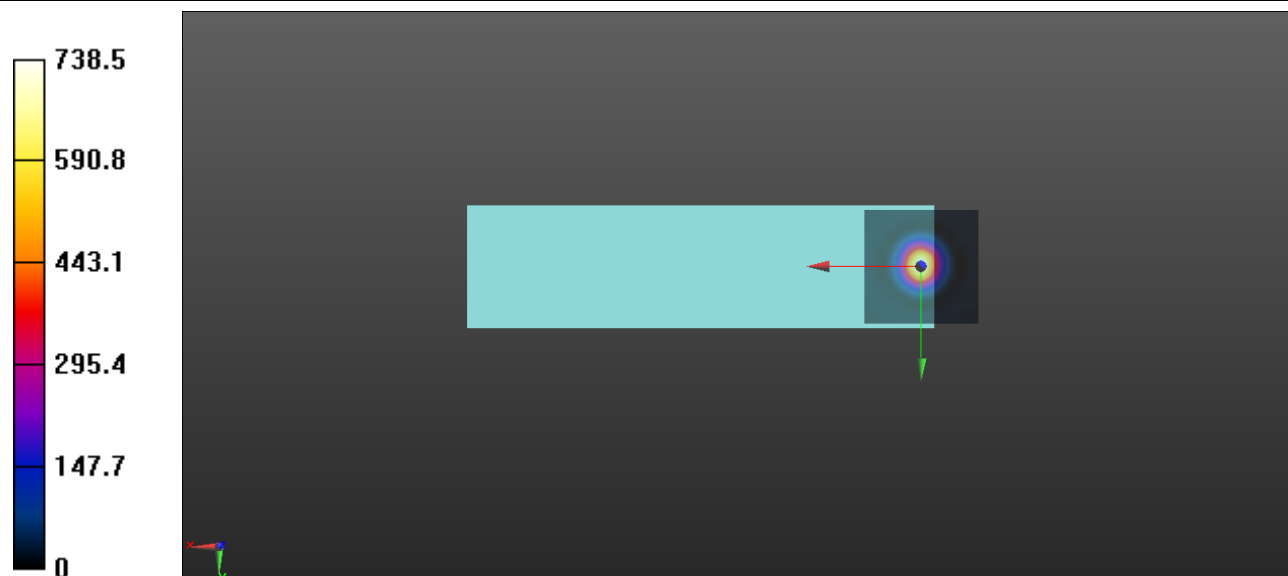
| WCDMA BAND4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10460 - AAA, UMTS-FDD (WCDMA, AMR); Frequency: 1732.4 MHz;Duty Cycle: 1:1.7338<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 4_T-Coil_HAC AMR 4.75Kbps/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <p><b>Cursor:</b><br/>ABM1/ABM2 = 50.34 dB<br/>ABM1 comp = -8.89 dBA/m<br/>BWC Factor = 0.15 dB<br/>Location: -0.4, -8.3, 3.7 mm</p> <div><div><div>329.0</div><div>263.4</div><div>197.8</div><div>132.2</div><div>66.642</div><div>1.052</div></div><div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

| WCDMA BAND4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10460 - AAA, UMTS-FDD (WCDMA, AMR); Frequency: 1732.4 MHz;Duty Cycle: 1:1.7338<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 4_T-Coil_HAC AMR 4.75Kbps/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>ABM1/ABM2 = 57.44 dB<br>ABM1 comp = -0.29 dBA/m<br>BWC Factor = 0.15 dB<br>Location: 0.4, 0, 3.7 mm<br><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 4_T-Coil_HAC AMR 4.75Kbps/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 68.52<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.79 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>Diff = 0.94 dB<br>BWC Factor = 10.79 dB<br>Location: 0.4, 0, 3.7 mm |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |



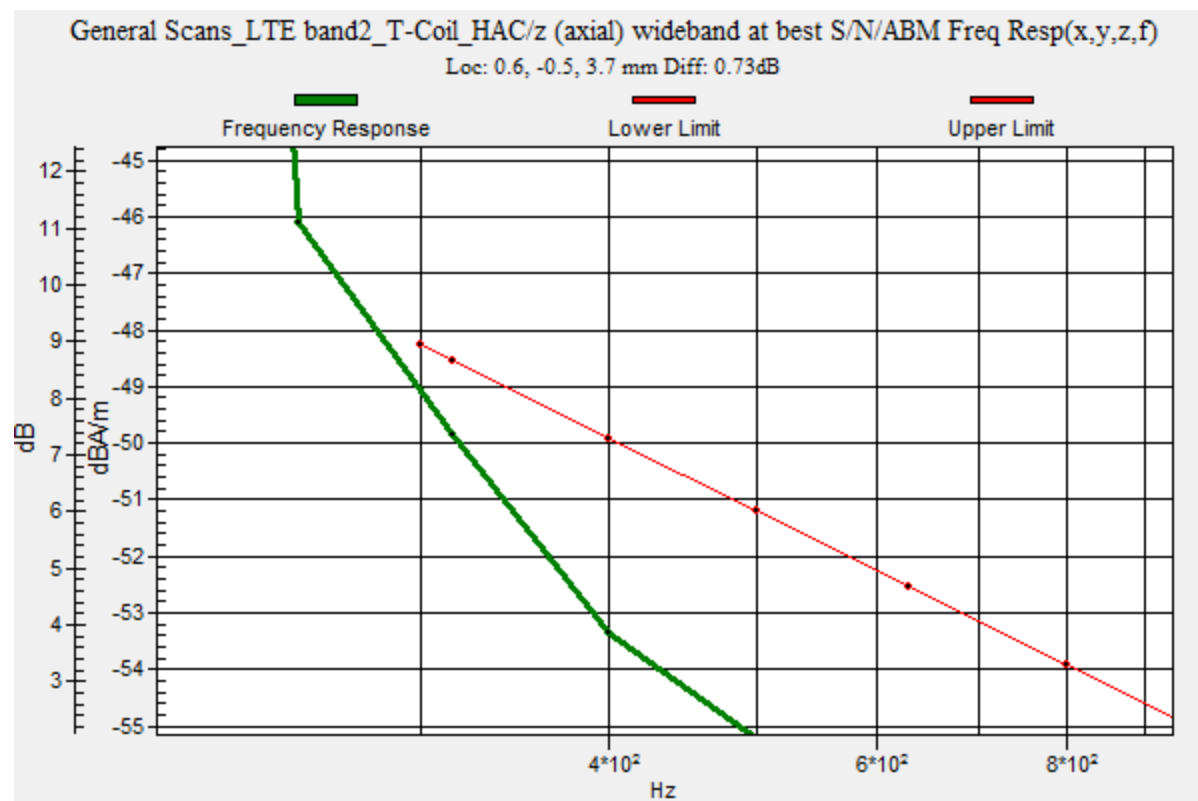
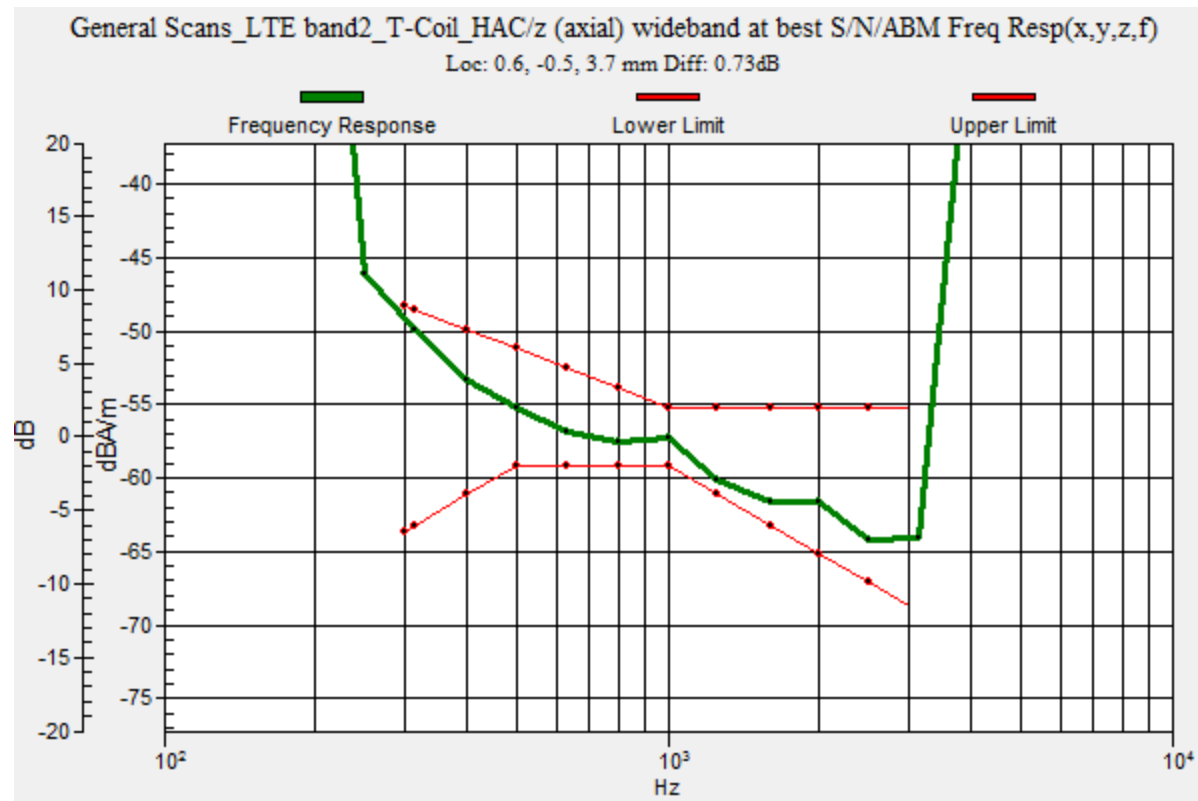
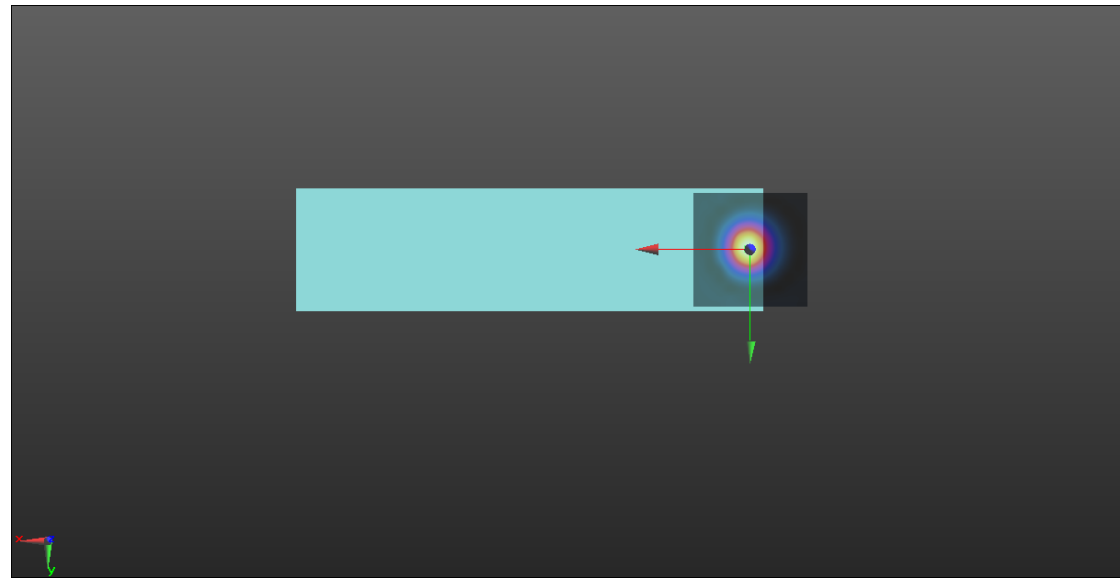
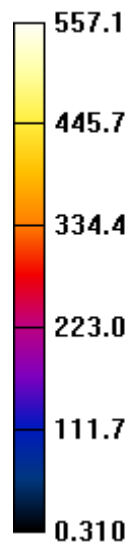
| WCDMA BAND5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10460 - AAA, UMTS-FDD (WCDMA, AMR); Frequency: 836.6 MHz;Duty Cycle: 1:1.7338<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 5_T-Coil_HAC AMR 4.75Kbps/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.14 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <p><b>Cursor:</b><br/>ABM1/ABM2 = 50.07 dB<br/>ABM1 comp = -8.72 dBA/m<br/>BWC Factor = 0.14 dB<br/>Location: -0.8, -8.8, 3.7 mm</p> <div><div><div>318.7</div><div>255.3</div><div>192.0</div><div>128.6</div><div>65.278</div><div>1.923</div></div><div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

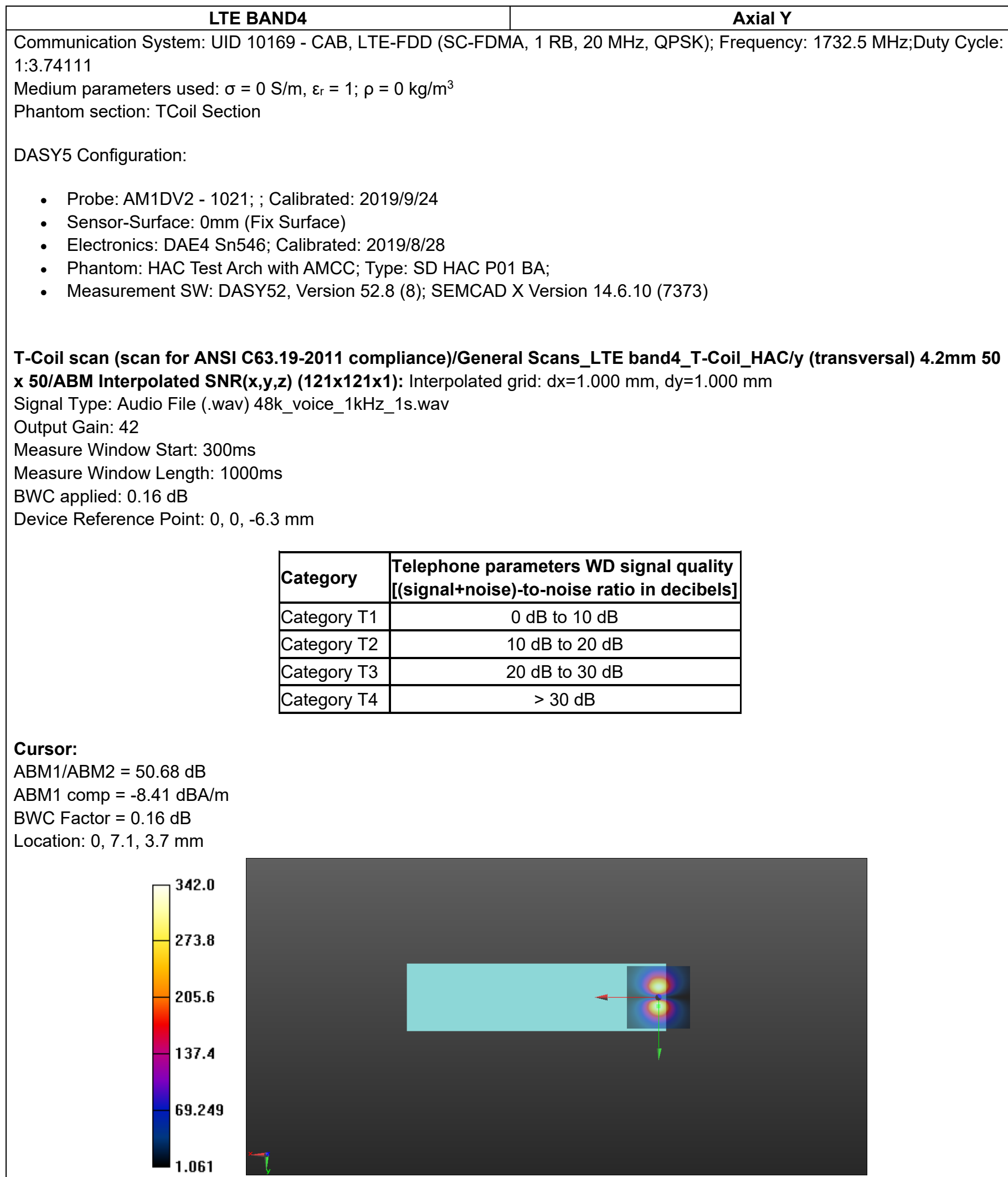
| WCDMA BAND5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 10460 - AAA, UMTS-FDD (WCDMA, AMR); Frequency: 836.6 MHz;Duty Cycle: 1:1.7338<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 5_T-Coil_HAC AMR 4.75Kbps/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 34.99<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.14 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>ABM1/ABM2 = 57.37 dB<br>ABM1 comp = -0.37 dBA/m<br>BWC Factor = 0.14 dB<br>Location: 0.4, -0.4, 3.7 mm<br><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WCDMA 5_T-Coil_HAC AMR 4.75Kbps/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 68.52<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.79 dB<br>Device Reference Point: 0, 0, -6.3 mm <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table><br><b>Cursor:</b><br>Diff = 0.87 dB<br>BWC Factor = 10.79 dB<br>Location: 0.2, -0.4, 3.7 mm |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |          |                                                                                    |             |               |             |                |             |                |             |         |



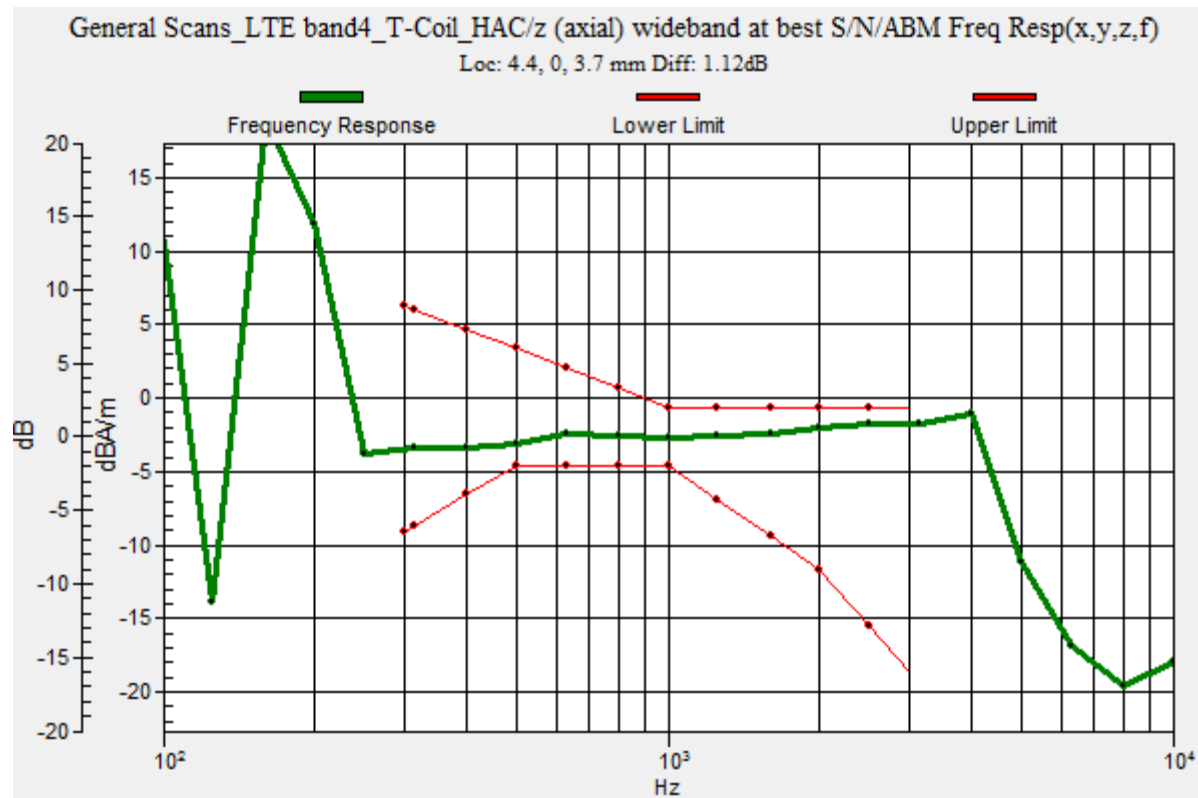
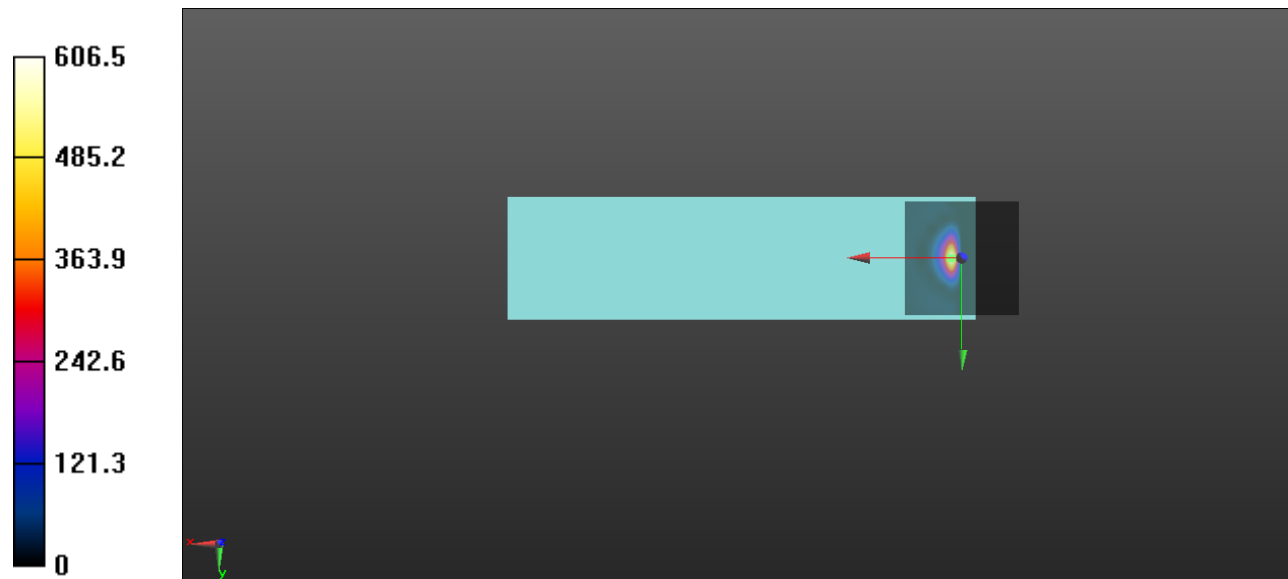
| LTE BAND2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1880 MHz;Duty Cycle: 1:3.74111<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band2_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 42<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.22 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <p><b>Cursor:</b><br/>ABM1/ABM2 = 47.46 dB<br/>ABM1 comp = -11.76 dBA/m<br/>BWC Factor = 0.22 dB<br/>Location: 1.7, 8.3, 3.7 mm</p> <div><div><div>236.0</div><div>189.2</div><div>142.4</div><div>95.533</div><div>48.711</div><div>1.889</div></div><div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

| LTE BAND2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1880 MHz;Duty Cycle: 1:3.74111</p> <p>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup></p> <p>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band2_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav</p> <p>Output Gain: 42</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 1000ms</p> <p>BWC applied: 0.22 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>ABM1/ABM2 = 54.92 dB</p> <p>ABM1 comp = -4.57 dBA/m</p> <p>BWC Factor = 0.22 dB</p> <p>Location: 0.8, -0.4, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band2_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav</p> <p>Output Gain: 82.26</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 2000ms</p> <p>BWC applied: 10.86 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>Diff = 0.73 dB</p> <p>BWC Factor = 10.86 dB</p> <p>Location: 0.6, -0.5, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



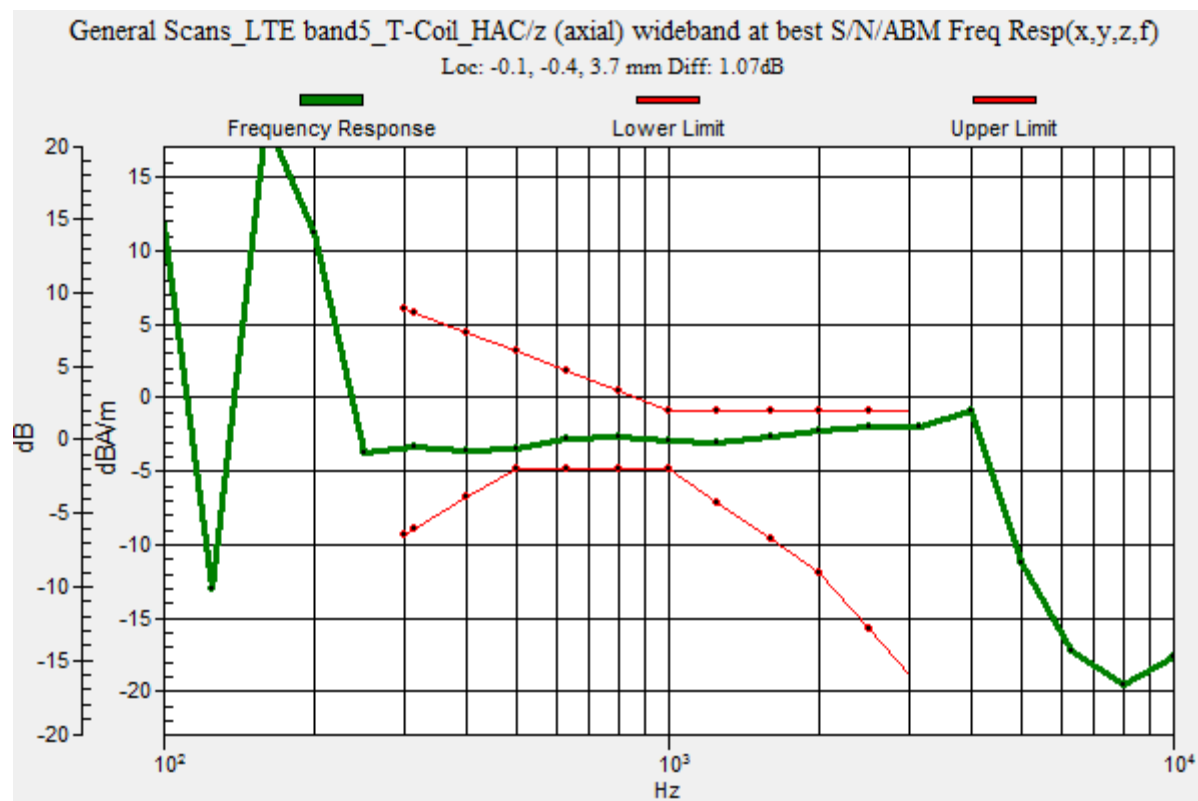
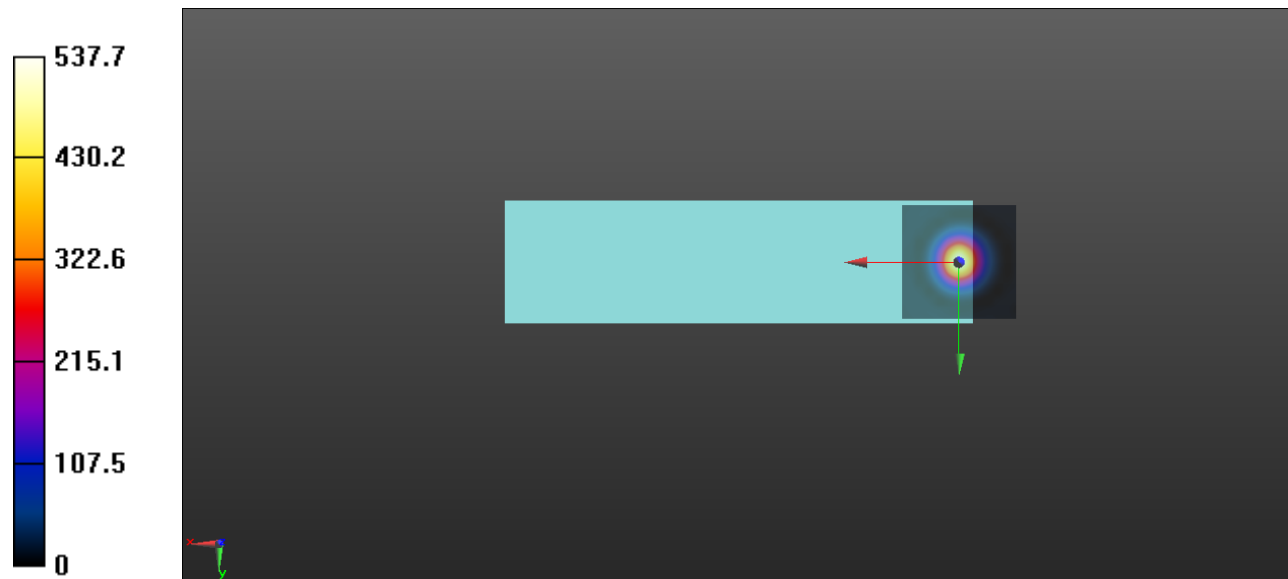


| LTE BAND4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1732.5 MHz;Duty Cycle: 1:3.74111</p> <p>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup></p> <p>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band4_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav</p> <p>Output Gain: 42</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 1000ms</p> <p>BWC applied: 0.16 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>ABM1/ABM2 = 55.66 dB</p> <p>ABM1 comp = -2.77 dBA/m</p> <p>BWC Factor = 0.16 dB</p> <p>Location: 4.6, 0, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band4_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav</p> <p>Output Gain: 82.26</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 2000ms</p> <p>BWC applied: 10.80 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>Diff = 1.12 dB</p> <p>BWC Factor = 10.80 dB</p> <p>Location: 4.4, 0, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



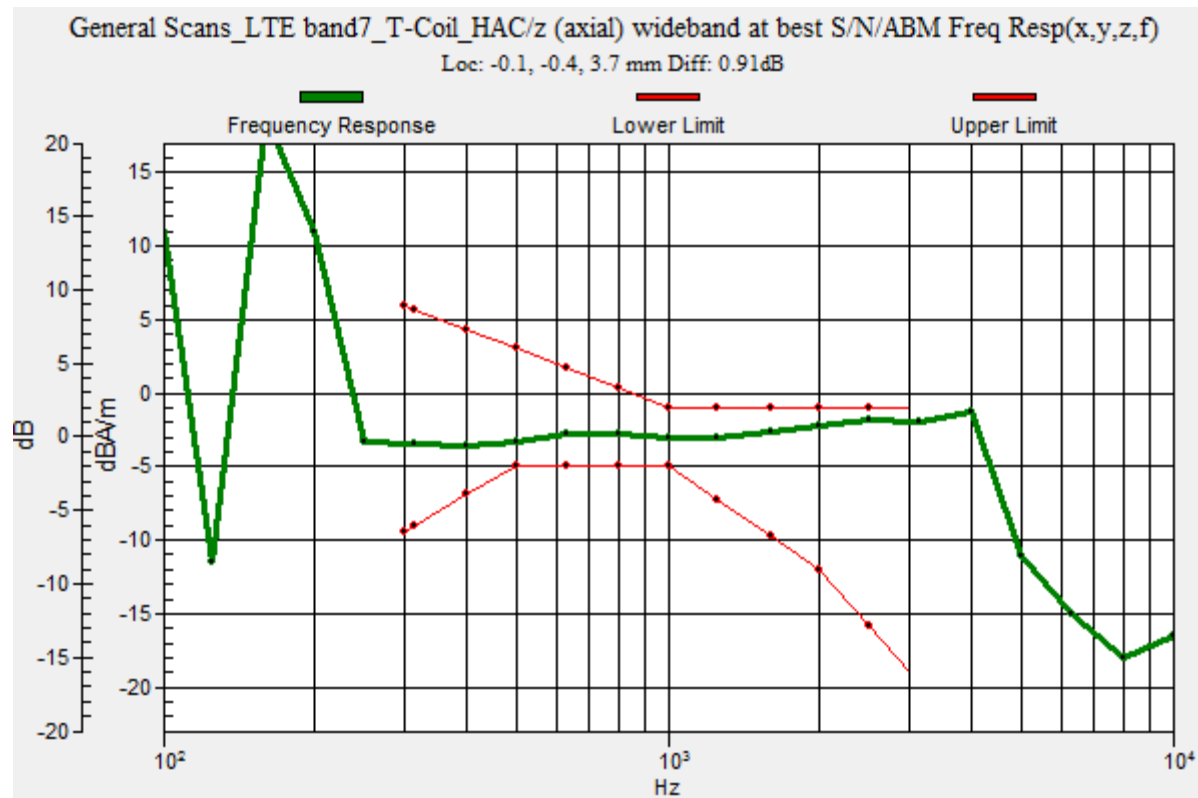
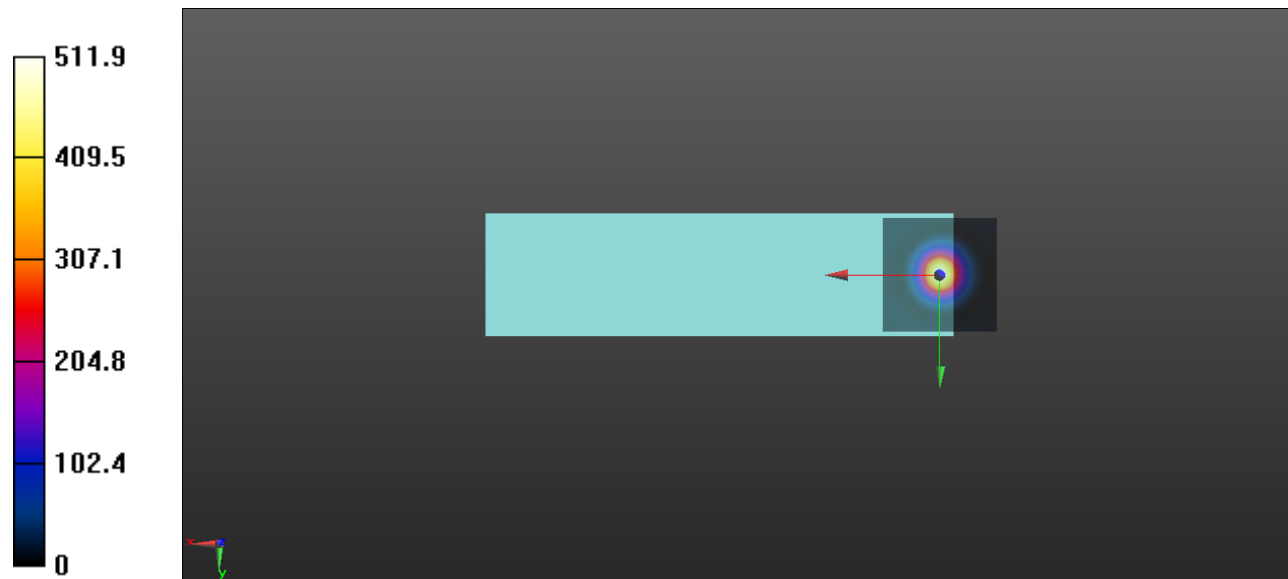
| LTE BAND5                                                                                                                                                                                                                                                                                                                                       | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10175 - CAC, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz;Duty Cycle: 1:3.7325                                                                                                                                                                                                                         |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup>                                                                                                                                                                                                                                                       |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Phantom section: TCoil Section                                                                                                                                                                                                                                                                                                                  |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| DASY5 Configuration:                                                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul> |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band5_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm                                                                                                                                 |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Output Gain: 42                                                                                                                                                                                                                                                                                                                                 |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Measure Window Start: 300ms                                                                                                                                                                                                                                                                                                                     |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Measure Window Length: 1000ms                                                                                                                                                                                                                                                                                                                   |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| BWC applied: 0.15 dB                                                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Device Reference Point: 0, 0, -6.3 mm                                                                                                                                                                                                                                                                                                           |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table> |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                        | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                     | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                     | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                     | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                     | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 47.25 dB<br>ABM1 comp = -12.03 dBA/m<br>BWC Factor = 0.15 dB<br>Location: -0.4, 7.9, 3.7 mm                                                                                                                                                                                                                       |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
|                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

| LTE BAND5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10175 - CAC, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz;Duty Cycle: 1:3.7325<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band5_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 42<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 54.61 dB<br>ABM1 comp = -3.60 dBA/m<br>BWC Factor = 0.15 dB<br>Location: 0, -0.4, 3.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band5_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 82.26<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.79 dB<br>Device Reference Point: 0, 0, -6.3 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>Diff = 1.07 dB<br>BWC Factor = 10.79 dB<br>Location: -0.1, -0.4, 3.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |



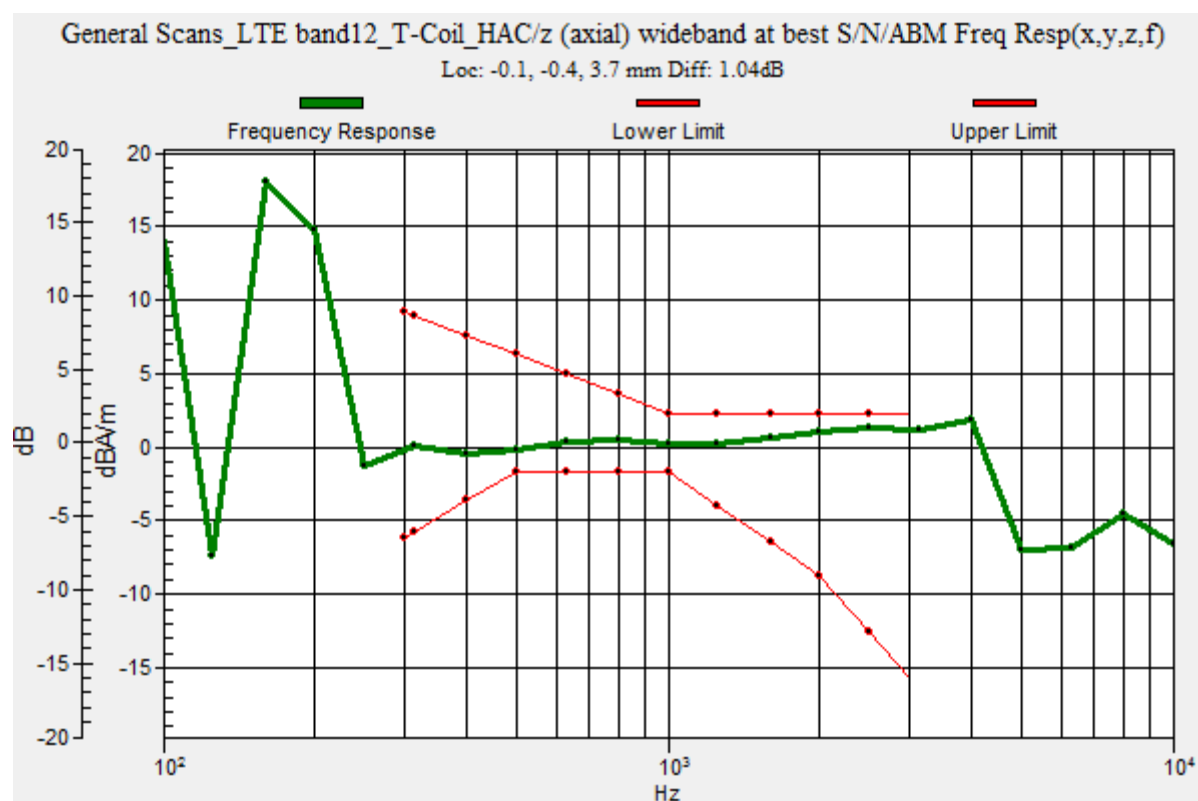
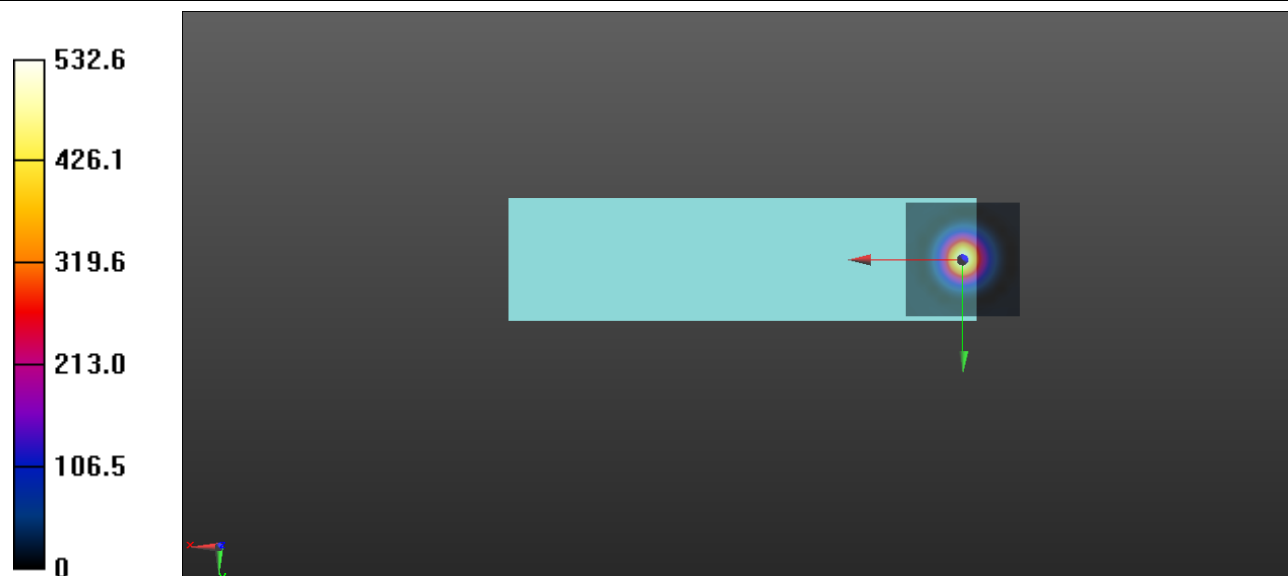
| LTE BAND7                                                                                                                                                                                                                                                                                                                                           | Axial Y                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.74111                                                                                                                                                                                                                             |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup>                                                                                                                                                                                                                                                           |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Phantom section: TCoil Section                                                                                                                                                                                                                                                                                                                      |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| DASY5 Configuration:                                                                                                                                                                                                                                                                                                                                |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul>     |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band7_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm                                                                                                                                     |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav                                                                                                                                                                                                                                                                                                |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Output Gain: 42                                                                                                                                                                                                                                                                                                                                     |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Measure Window Start: 300ms                                                                                                                                                                                                                                                                                                                         |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Measure Window Length: 1000ms                                                                                                                                                                                                                                                                                                                       |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| BWC applied: 0.15 dB                                                                                                                                                                                                                                                                                                                                |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| Device Reference Point: 0, 0, -6.3 mm                                                                                                                                                                                                                                                                                                               |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                            | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                         | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                         | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                         | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                         | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 47.37 dB<br>ABM1 comp = -11.96 dBA/m<br>BWC Factor = 0.15 dB<br>Location: -0.4, -9.2, 3.7 mm                                                                                                                                                                                                                          |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <div><div><div>233.6</div><div>187.1</div><div>140.7</div><div>94.207</div><div>47.742</div><div>1.278</div></div><div></div></div>                                                                                                                                                                                                                 |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |

| LTE BAND7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.74111</p> <p>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup></p> <p>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band7_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav</p> <p>Output Gain: 42</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 1000ms</p> <p>BWC applied: 0.15 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>ABM1/ABM2 = 54.18 dB</p> <p>ABM1 comp = -3.49 dBA/m</p> <p>BWC Factor = 0.15 dB</p> <p>Location: 0, -0.4, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band7_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav</p> <p>Output Gain: 82.26</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 2000ms</p> <p>BWC applied: 10.79 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>Diff = 0.91 dB</p> <p>BWC Factor = 10.79 dB</p> <p>Location: -0.1, -0.4, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



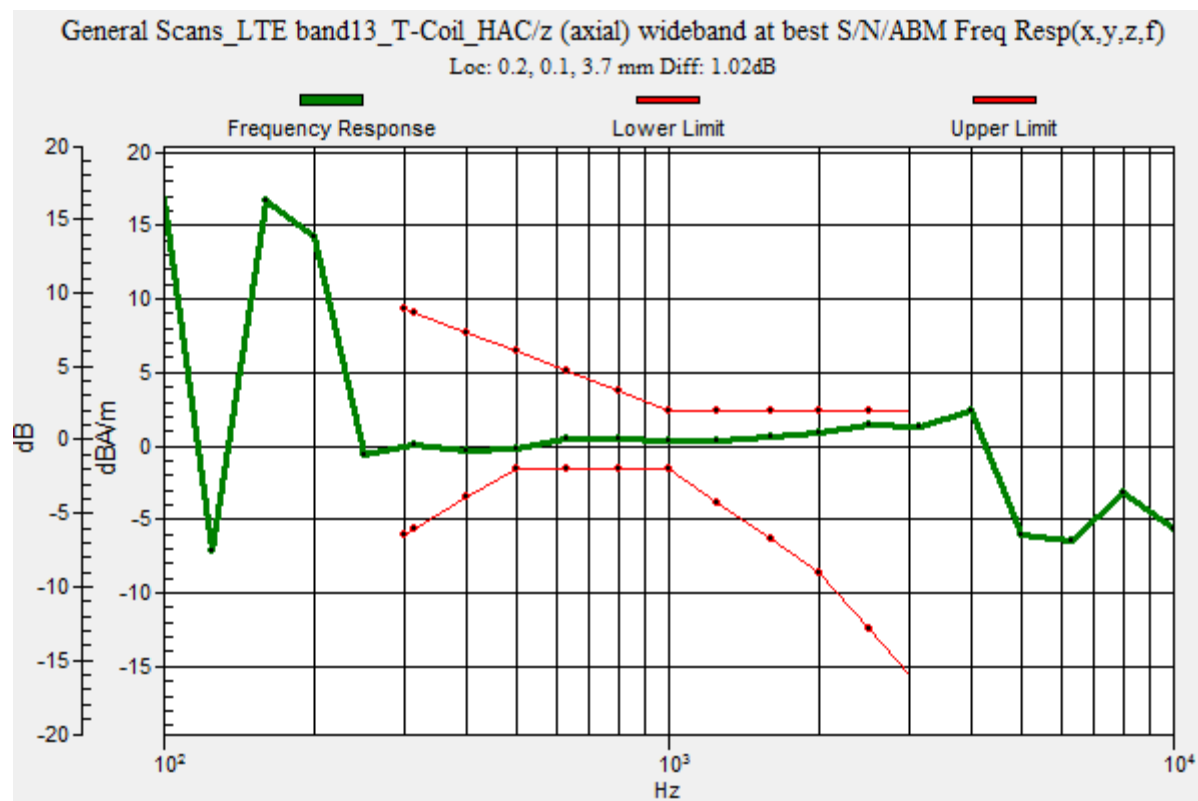
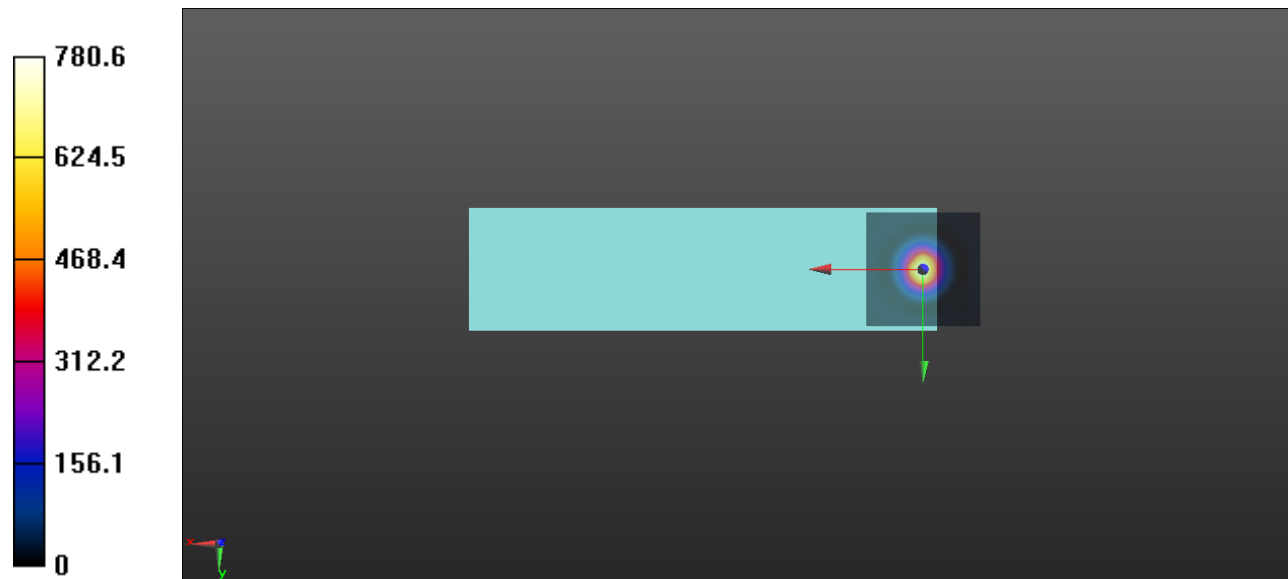
| LTE BAND12                                                                                                                                                                                                                                                                                                                                      | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10175 - CAC, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz;Duty Cycle: 1:3.7325                                                                                                                                                                                                                         |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup>                                                                                                                                                                                                                                                       |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Phantom section: TCoil Section                                                                                                                                                                                                                                                                                                                  |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| DASY5 Configuration:                                                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul> |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band12_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm                                                                                                                                |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Output Gain: 42                                                                                                                                                                                                                                                                                                                                 |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Measure Window Start: 300ms                                                                                                                                                                                                                                                                                                                     |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Measure Window Length: 1000ms                                                                                                                                                                                                                                                                                                                   |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| BWC applied: 0.15 dB                                                                                                                                                                                                                                                                                                                            |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| Device Reference Point: 0, 0, -6.3 mm                                                                                                                                                                                                                                                                                                           |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table> |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                        | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                     | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                     | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                     | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                     | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 50.41 dB<br>ABM1 comp = -8.82 dBA/m<br>BWC Factor = 0.15 dB<br>Location: 0, -8.3, 3.7 mm                                                                                                                                                                                                                          |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <div><div><div>331.4</div><div>265.2</div><div>199.0</div><div>132.8</div><div>66.592</div><div>0.391</div></div><div></div></div>                                                                                                                                                                                                              |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

| LTE BAND12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10175 - CAC, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz;Duty Cycle: 1:3.7325</p> <p>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup></p> <p>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band12_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav</p> <p>Output Gain: 42</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 1000ms</p> <p>BWC applied: 0.15 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>ABM1/ABM2 = 54.53 dB</p> <p>ABM1 comp = -3.59 dBA/m</p> <p>BWC Factor = 0.15 dB</p> <p>Location: 0, -0.4, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band12_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav</p> <p>Output Gain: 82.26</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 2000ms</p> <p>BWC applied: 10.79 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>Diff = 1.04 dB</p> <p>BWC Factor = 10.79 dB</p> <p>Location: -0.1, -0.4, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



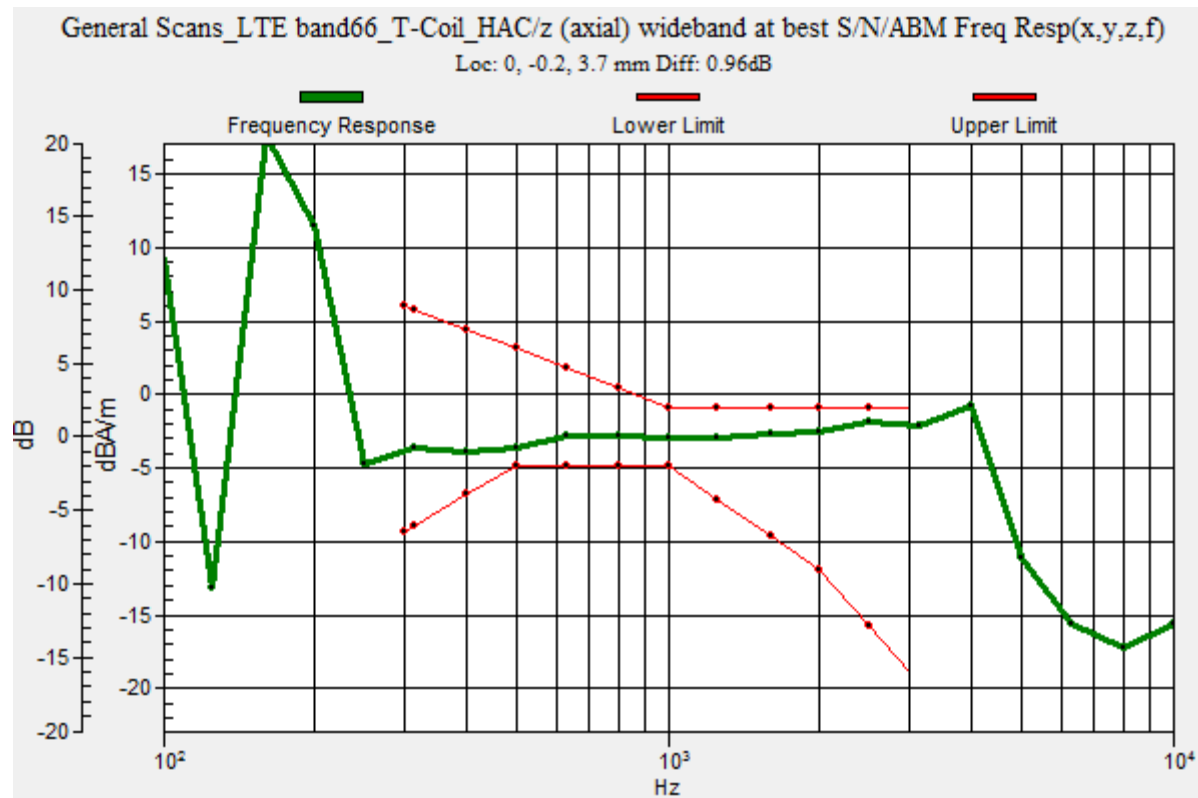
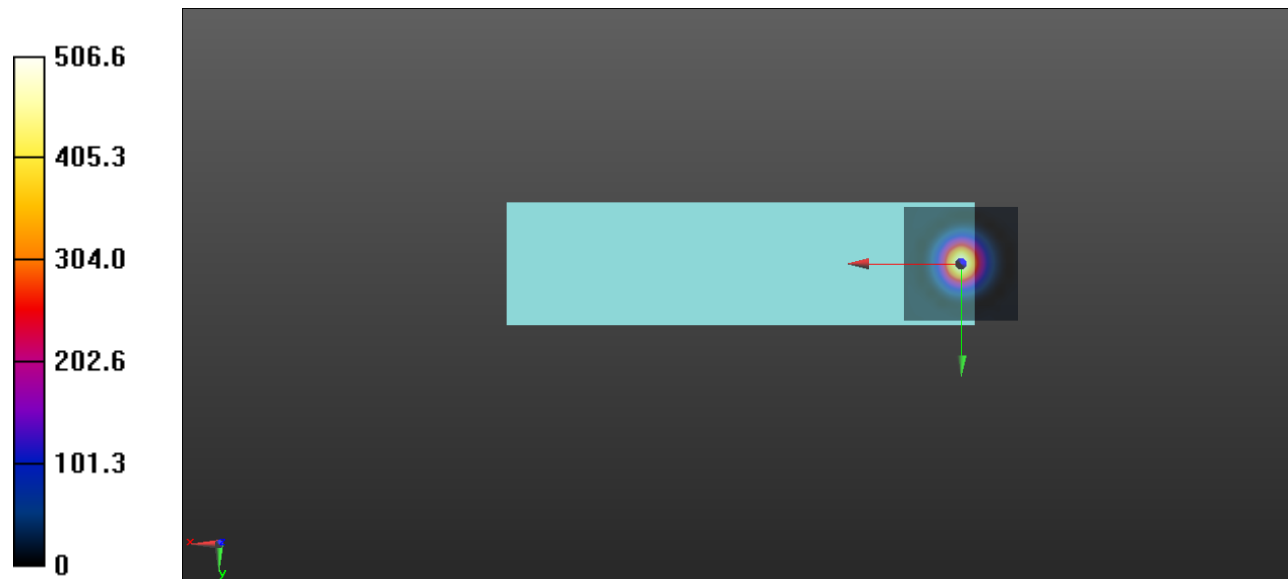
| LTE BAND13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Axial Y                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;Duty Cycle: 1:3.7325<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band13_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 42<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
| <p><b>Cursor:</b><br/>ABM1/ABM2 = 50.60 dB<br/>ABM1 comp = -8.71 dBA/m<br/>BWC Factor = 0.15 dB<br/>Location: -0.4, -8.3, 3.7 mm</p> <div><div><div>338.9</div><div>271.3</div><div>203.8</div><div>136.2</div><div>68.639</div><div>1.074</div></div><div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |

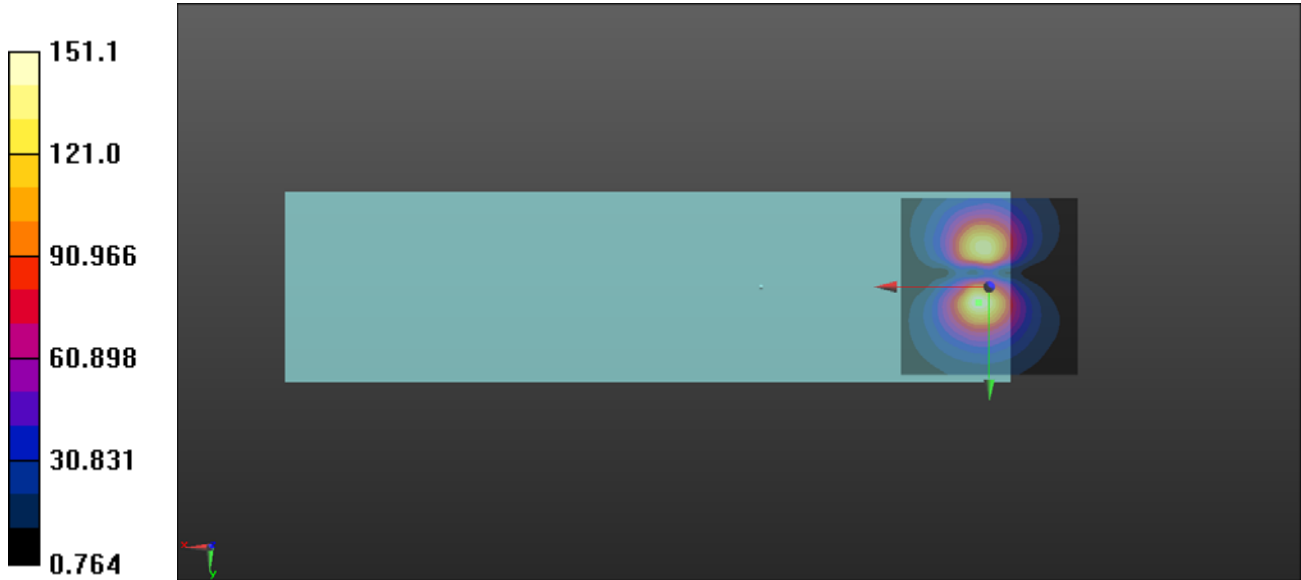
| LTE BAND13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;Duty Cycle: 1:3.7325</p> <p>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup></p> <p>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band13_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav</p> <p>Output Gain: 42</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 1000ms</p> <p>BWC applied: 0.15 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>ABM1/ABM2 = 57.85 dB</p> <p>ABM1 comp = -0.20 dBA/m</p> <p>BWC Factor = 0.15 dB</p> <p>Location: 0.4, 0, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band13_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm</p> <p>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav</p> <p>Output Gain: 82.26</p> <p>Measure Window Start: 300ms</p> <p>Measure Window Length: 2000ms</p> <p>BWC applied: 10.79 dB</p> <p>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b></p> <p>Diff = 1.02 dB</p> <p>BWC Factor = 10.79 dB</p> <p>Location: 0.2, 0.1, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



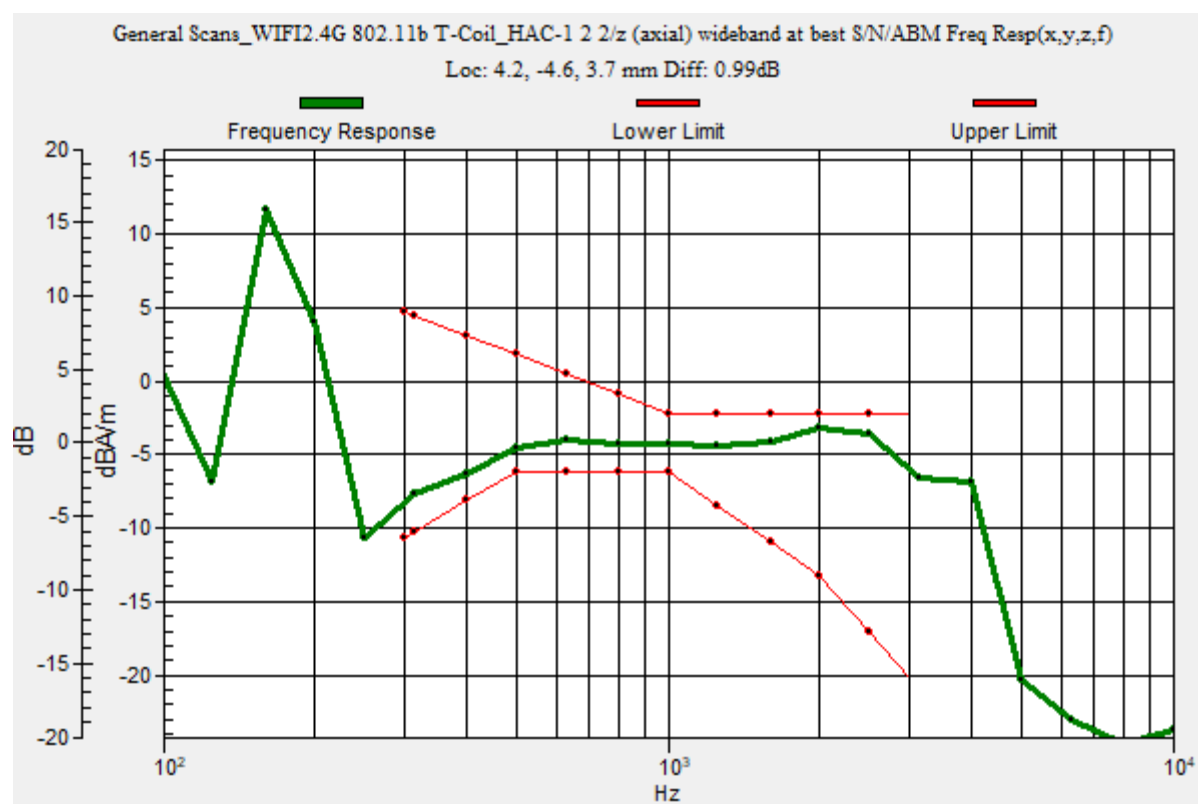
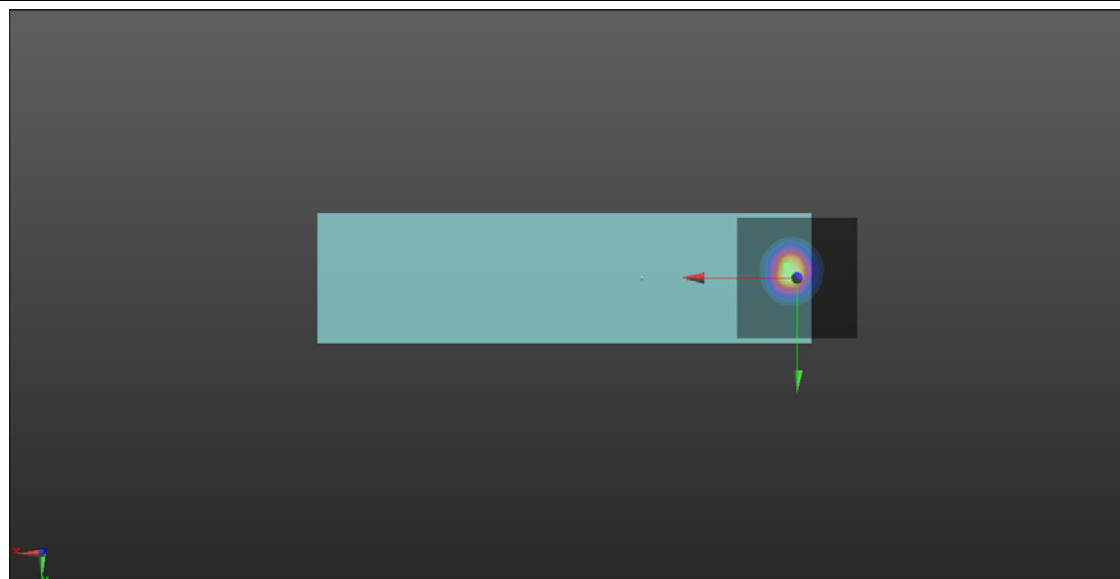
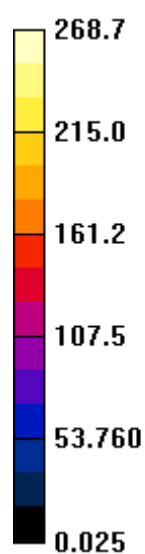
| LTE BAND66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Axial Y                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
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| Communication System: UID 0, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) (0); Frequency: 1745 MHz;Duty Cycle: 1:1<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band66_T-Coil_HAC/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 42<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |
| <p><b>Cursor:</b><br/>ABM1/ABM2 = 47.52 dB<br/>ABM1 comp = -12.15 dBA/m<br/>BWC Factor = 0.15 dB<br/>Location: -1.7, 8.3, 3.7 mm</p> <div><div><div>237.8</div><div>190.5</div><div>143.2</div><div>95.857</div><div>48.542</div><div>1.228</div></div><div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                       |          |                                                                                       |             |               |             |                |             |                |             |         |

| LTE BAND66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Axial Z & Frequency Resp.                                                          |          |                                                                                    |             |               |             |                |             |                |             |         |
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| Communication System: UID 0, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) (0); Frequency: 1745 MHz;Duty Cycle: 1:1<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 2019/9/24</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn546; Calibrated: 2019/8/28</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band66_T-Coil_HAC/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 42<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.15 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 54.09 dB<br>ABM1 comp = -3.53 dBA/m<br>BWC Factor = 0.15 dB<br>Location: 0, -0.4, 3.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_LTE band66_T-Coil_HAC/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br>Output Gain: 82.26<br>Measure Window Start: 300ms<br>Measure Window Length: 2000ms<br>BWC applied: 10.79 dB<br>Device Reference Point: 0, 0, -6.3 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>Diff = 0.96 dB<br>BWC Factor = 10.79 dB<br>Location: 0, -0.2, 3.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |



| WIFI 2.4G 802.11b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Axial Y                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| Communication System: UID 10571 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle); Frequency: 2437 MHz;Duty Cycle: 1:1.58125<br>Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$ ; $\rho = 0$ kg/m <sup>3</sup><br>Phantom section: TCoil Section<br><br>DASY5 Configuration: <ul style="list-style-type: none"><li>Probe: AM1DV2 - 1021; ; Calibrated: 10/22/2020</li><li>Sensor-Surface: 0mm (Fix Surface)</li><li>Electronics: DAE4 Sn720; Calibrated: 9/30/2020</li><li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li><li>Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)</li></ul><br><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WIFI2.4G 802.11b T-Coil_HAC-1 2 2/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br>Output Gain: 26.5<br>Measure Window Start: 300ms<br>Measure Window Length: 1000ms<br>BWC applied: 0.17 dB<br>Device Reference Point: 0, 0, -6.3 mm |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
| <table><tr><th>Category</th><th>Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]</th></tr><tr><td>Category T1</td><td>0 dB to 10 dB</td></tr><tr><td>Category T2</td><td>10 dB to 20 dB</td></tr><tr><td>Category T3</td><td>20 dB to 30 dB</td></tr><tr><td>Category T4</td><td>&gt; 30 dB</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                    | Category | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels] |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 dB to 10 dB                                                                      |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 dB to 20 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 dB to 30 dB                                                                     |          |                                                                                    |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | > 30 dB                                                                            |          |                                                                                    |             |               |             |                |             |                |             |         |
| <b>Cursor:</b><br>ABM1/ABM2 = 43.59 dB<br>ABM1 comp = -10.26 dBA/m<br>BWC Factor = 0.17 dB<br>Location: 2.9, 4.6, 3.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                    |          |                                                                                    |             |               |             |                |             |                |             |         |

| WIFI 2.4G 802.11b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Axial Z & Frequency Resp.                                                             |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|----------|---------------------------------------------------------------------------------------|-------------|---------------|-------------|----------------|-------------|----------------|-------------|---------|
| <p>Communication System: UID 10571 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle); Frequency: 2437 MHz;Duty Cycle: 1:1.58125<br/>Medium parameters used: <math>\sigma = 0</math> S/m, <math>\epsilon_r = 1</math>; <math>\rho = 0</math> kg/m<sup>3</sup><br/>Phantom section: TCoil Section</p> <p>DASY5 Configuration:</p> <ul style="list-style-type: none"> <li>Probe: AM1DV2 - 1021; ; Calibrated: 10/22/2020</li> <li>Sensor-Surface: 0mm (Fix Surface)</li> <li>Electronics: DAE4 Sn720; Calibrated: 9/30/2020</li> <li>Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;</li> <li>Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)</li> </ul> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WIFI2.4G 802.11b T-Coil_HAC-1 2 2/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):</b> Interpolated grid: dx=1.000 mm, dy=1.000 mm<br/>Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav<br/>Output Gain: 26.5<br/>Measure Window Start: 300ms<br/>Measure Window Length: 1000ms<br/>BWC applied: 0.17 dB<br/>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b><br/>ABM1/ABM2 = 48.59 dB<br/>ABM1 comp = -3.52 dBA/m<br/>BWC Factor = 0.17 dB<br/>Location: 2.9, -1.3, 3.7 mm</p> <p><b>T-Coil scan (scan for ANSI C63.19-2011 compliance)/General Scans_WIFI2.4G 802.11b T-Coil_HAC-1 2 2/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):</b> Measurement grid: dx=10mm, dy=10mm<br/>Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav<br/>Output Gain: 51.9<br/>Measure Window Start: 300ms<br/>Measure Window Length: 2000ms<br/>BWC applied: 10.79 dB<br/>Device Reference Point: 0, 0, -6.3 mm</p> <table> <tr> <th>Category</th><th>Telephone parameters WD signal quality<br/>[(signal+noise)-to-noise ratio in decibels]</th></tr> <tr> <td>Category T1</td><td>0 dB to 10 dB</td></tr> <tr> <td>Category T2</td><td>10 dB to 20 dB</td></tr> <tr> <td>Category T3</td><td>20 dB to 30 dB</td></tr> <tr> <td>Category T4</td><td>&gt; 30 dB</td></tr> </table> <p><b>Cursor:</b><br/>Diff = 0.99 dB<br/>BWC Factor = 10.79 dB<br/>Location: 4.2, -4.6, 3.7 mm</p> |                                                                                       | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB | Category | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] | Category T1 | 0 dB to 10 dB | Category T2 | 10 dB to 20 dB | Category T3 | 20 dB to 30 dB | Category T4 | > 30 dB |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Telephone parameters WD signal quality<br>[(signal+noise)-to-noise ratio in decibels] |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0 dB to 10 dB                                                                         |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 dB to 20 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20 dB to 30 dB                                                                        |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |
| Category T4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | > 30 dB                                                                               |          |                                                                                       |             |               |             |                |             |                |             |         |          |                                                                                       |             |               |             |                |             |                |             |         |



---End of the test report---