FCC SAR TEST REPORT

For

Shanghai TUGE Data Technologies Co., Ltd.

Master Roam T6

Model No.: T6

FCC ID: 2AU4T-T6

Prepared For	:	**Shanghai TUGE Data Technologies Co., Ltd.**
Address	:	Building C, No.888, Huanhu West 2nd Road, Nanhui New Town, Pudong New District, Shanghai, China
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Report Number	:	SZAWW191017010-01
Date of Test	:	Oct.25, 2019 ~ Oct.29, 2019
Date of Report	:	Nov.09,2019

Contents

TEST REPORT

Applicant	:	Shanghai TUGE Data Technologies Co., Ltd.
Manufacturer	:	Hui Zhou fortuneship technology Company Limited
Product Name	:	Master Roam T6
Model No.	:	T6
Trade Mark	:	Master Roam
Rating(s)	:	DC 3.8V from battery

Test Standard(s) : **IEEE 1528-2013; IEC 62209-2:2010; ANSI/IEEE C95.1:2005; FCC 47 CFR Part 2 (2.1093:2013);**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the IEEE 1528-2013, IEC 62209-2:2010, FCC 47 CFR Part 2 (2.1093:2013), ANSI/IEEE C95.1:2005 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test: Oct.25, 2019 ~ Oct.29,2019

Anbotek (SZ) Compliance Laboratory Limited
Anbotek Product Safety
* Approved *

Prepared By: Bobby Wang
(Engineer / Bobby Wang)

Reviewer: Calvin Liu
(Supervisor / Calvin Liu)

Approved & Authorized Signer: Tom Chen
(Manager / Tom Chen)

Version

Version No.	Date	Description
01	Nov.08,2019	Original

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing are as follows.

<Highest SAR Summary>

Frequency Band	Highest Reported 1g-SAR(W/Kg)	SAR Test Limit (W/Kg)
	Body&Hotspot	
GSM 850	0.258	1.6
PCS 1900	0.208	
WCDMA Band 2	0.310	
WCDMA Band 5	0.328	
LTE Band 2	0.162	
LTE Band 4	0.212	
LTE Band 5	0.367	
LTE Band 7	0.231	
LTE Band 12	0.283	
LTE Band 17	0.369	
LTE Band 38	0.404	
LTE Band 41	0.534	
WIFI 2.4G	0.515	
Simultaneous SAR	1.049	
Test Result	PASS	

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2005, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.

Per KDB 941225 D06, a hotspot mode enabled device can provide wireless internet access to nearby Wi-Fi devices by routing the traffic through an available WWAN connection. For head SAR test, the EUT was set at voice call mode and at data transmitting mode (WWAN) for body SAR test. So the maximum Hotspot SAR are just the same with Body SAR.

2. General Information

2.1 Client Information

Applicant:	**Shanghai TUGE Data Technologies Co., Ltd.**
Address of Applicant:	Building C, No.888, Huanhu West 2nd Road, Nanhui New Town, Pudong New District, Shanghai, China
Manufacture:	**Hui Zhou fortuneship technology Company Limited**
Address of Manufacture:	NO.86, Hechang 7th West Road, Zhong Kai Hi-tech Development District, Huizhou City, Guangdong Province, P.R.China (Phase II plant)

2.2 Testing Laboratory Information

Test Site:	Shenzhen Anbotek Compliance Laboratory Limited
Address:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

2.3 Description of Equipment Under Test (EUT)

Product Name:	Master Roam T6
Model/Type reference:	T6
Power supply:	DC 3.8V from battery
Hardware version:	ET612-MB-V0.2
Software version:	Android 7.0
GSM	
Operation Band:	GSM850, PCS1900
Supported Type:	GSM/GPRS/EGPRS
Power Class:	GSM850:Power Class 4 PCS1900:Power Class 1
Modulation Type:	GMSK for GSM/GPRS/EGPRS, 8PSK for EGPRS downlink only
GSM Release Version	R99
GPRS Multislot Class	12

EGPRS Multislot Class	12
Antenna type:	FPC antenna
WCDMA	
Operation Band:	FDD Band II & Band V
Power Class:	Power Class 3
Modilation Type:	QPSK for WCDMA/HSUPA/HSDPA
WCDMA Release Version:	R99
HSDPA Category:	Release 7, CAT14
HSUPA Category:	Release 6, CAT6
Antenna type:	Not Supported
LTE	
Operation Band:	E-UTRA Band 2, Band 4, band5, band7, band12, band17, band38, band41
Support Bandwidth:	Band 2: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz,☑15MHz,☑20MHz Band 4: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz,☑15MHz,☑20MHz Band 5: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz, Band 7: ☑5MHz,☑10MHz,☑15MHz,☑20MHz Band 12: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz, Band 17: ☑5MHz, ☑10MHz Band 38: ☑5MHz,☑10MHz,☑15MHz Band 41: ☑5MHz,☑10MHz,☑15MHz
TX/RXFrequency Range:	Band 2: 1850MHz-1910MHz/1930MHz-1990MHz Band 4: 1710MHz-1755MHz/2110MHz-2155MHz Band 5: 824MHz-849MHz/869MHz-894MHz Band 7: 2500MHz-2570MHz/2620MHz-2690MHz Band 12: 699MHz-716MHz/729MHz-746MHz Band 17: 704MHz-716 MHz/734MHz-746MHz Band 38: 2570MHz- 2620MHz/2570MHz- 2620MHz Band 41: 2496MHz-2690MHz/2496MHz-2690MHz
Modulation Type:	QPSK, 16QAM
Release Version:	Release 9
Category:	Cat 4
Antenna Type:	FPC antenna

WIFI 2.4G	
Supported type:	802.11b/802.11g/802.11n(H20)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20): OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11
Channel separation:	5MHz
Antenna type:	FPC antenna
Antenna gain:	3dBi

2.4 Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. according to IEEE Std C95.1, 1999:((IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz).
It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices bei ng used within 20 cm of the user in the uncontrolled environment.

2.5 Applied Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- IEEE 1528-2013
- FCC 47 CFR Part 2 (2.1093:2013)
- ANSI/IEEE C95.1:2005
- IEC 62209-2:2010
- IEC 62209-2:2010
- KDB 248227 D01
- KDB 447498 D01
- KDB 616217 D04
- KDB 648474 D04
- KDB 865664 D01
- KDB 941225 D01
- KDB 941225 D06
- KDB 941225 D07

2.6 Environment of Test Site

Items	Required	Actual
Temperature (℃)	18-25	22~23
Humidity (%RH)	30-70	55~65

2.7 Test Configuration

The device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during all tests. For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal.

3. Specific Absorption Rate (SAR)

3.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

3.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ).The equation description is as below:

$$SAR = \frac{d}{dt}\left(\frac{dW}{dm}\right) = \frac{d}{dt}\left(\frac{dW}{\rho dv}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\left(\frac{\delta T}{\delta t}\right)$$

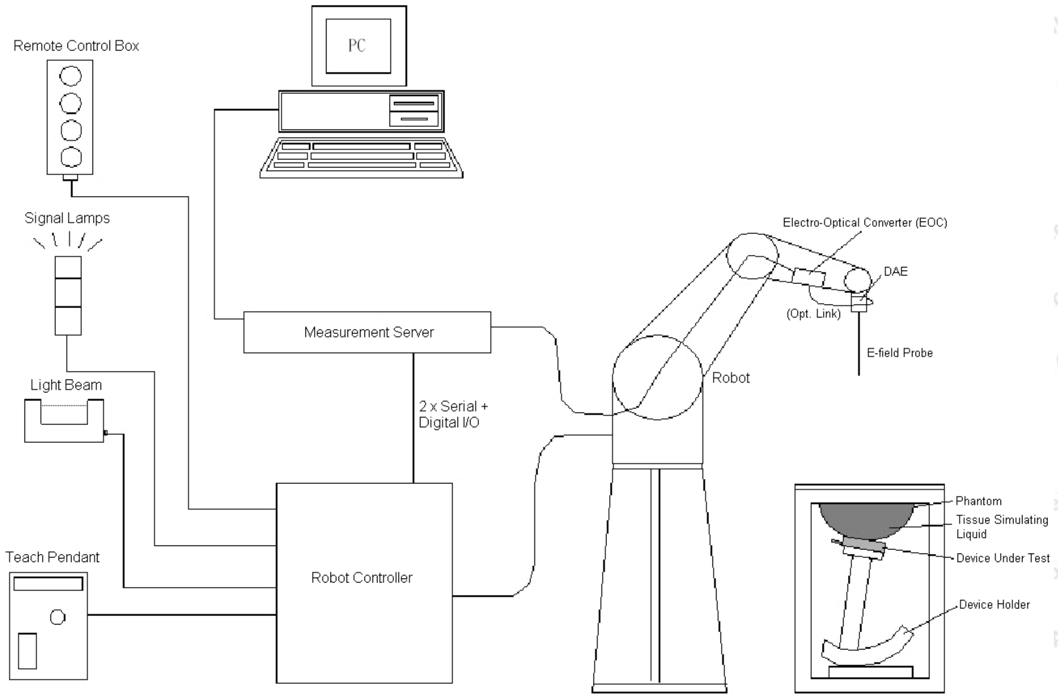
Where: C is the specific head capacity, δT is the temperature rise and δtisthe exposure duration, or related to the electrical field in the tissue by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where:σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4. SAR Measurement System



DASY System Configurations

The DASYsystem for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY software
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

components are described in details in the following sub-sections.

4.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

➢ E-Field Probe Specification

<EX3DV4 Probe>

<table>
<tr><td>Construction</td><td>Symmetrical design with triangular core
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)</td><td rowspan="5">
Photo of EX3DV4</td></tr>
<tr><td>Frequency</td><td>10 MHz to 6 GHz; Linearity: ± 0.2 dB</td></tr>
<tr><td>Directivity</td><td>± 0.3 dB in HSL (rotation around probe axis)
± 0.5 dB in tissue material (rotation normal to probe axis)</td></tr>
<tr><td>Dynamic Range</td><td>10 µW/g to 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)</td></tr>
<tr><td>Dimensions</td><td>Overall length: 330 mm (Tip: 20 mm)
Tip diameter: 2.5 mm (Body: 12 mm)
Typical distance from probe tip to dipole centers: 1 mm</td></tr>
</table>

➢ E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

4.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

Photo of DAE

4.3 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX60XL) type from Stäubli SA (France). For the 6-axis controllersystem, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäublirobot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

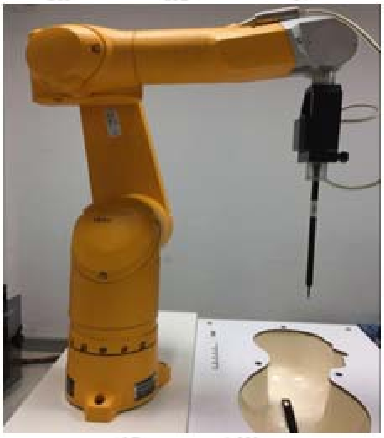


Photo of DASY5

4.4 Measurement Server

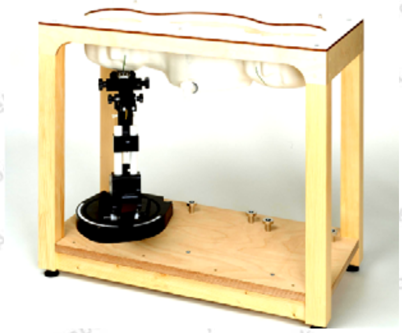
The measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chipdisk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Photo of Server for DASY5

4.5 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	**Photo of SAM Phantom**

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI4 Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis:400 mm	**Photo of ELI4 Phantom**

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

4.6 Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ± 20%. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP).Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Device Holder

4.7 Data Storage and Evaluation

- Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [mW/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

- Data Evaluation

The DASY post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software：

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as：

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with V_i= compensated signal of channel i, (i = x, y, z)
U_i = input signal of channel i, (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

From the compensated input signals, the primary field data for each channel can be evaluated:

E-field Probes: $E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$

H-field Probes: $H_i = \sqrt{V_i} \cdot \frac{a_{i0}+a_{i1}f+a_{i2}f^2}{f}$

with V_i = compensated signal of channel i,(i = x, y, z)
$Norm_i$= sensor sensitivity of channel i, (i = x, y, z), μV/(V/m)^2 for E-field Probes
ConvF= sensitivity enhancement in solution
a_{ij}= sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i= electric field strength of channel i in V/m
H_i= magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in mW/g
E_{tot}= total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

5. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d154	Jun. 16,2018	Jun. 15,2021
SPEAG	1750MHz System Validation Kit	D1750V2	1021	Jul. 03,2019	Jul. 02,2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d175	Jun. 15,2019	Jun. 14, 2022
SPEAG	2450MHz System Validation Kit	D2450V2	910	Jun. 15,2018	Jun. 14,2021
SPEAG	2600MHz System Validation Kit	D2600V2	1058	Jun. 19,2018	Jun. 18,2021
SPEAG	750MHz System Validation Kit	D750V3	1163	Sep. 03,2019	Sep.02,2022
SPEAG	5000MHz System Validation Kit	D5GHzV2	1003	Mar. 13,2018	Mar. 12,2021
SPEAG	Data Acquisition Electronics	DAE4	1549	Mar.19.2019	Mar.18.2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	7396	May.06,2019	May.05,2020
Agilent	ENA Series Network Analyzer	E5071C	MY46317418	Jun.11,2019	Jun.10, 2020
SPEAG	DAK	DAK-3.5	1226	NCR	NCR
SPEAG	ELI Phantom	QDOVA004AA	2058	NCR	NCR
AR	Amplifier	ZHL-42W	QA1118004	NCR	NCR
Agilent	Power Meter	N1914A	MY50001102	Dec. 06, 2018	Nov. 06, 2019
Agilent	Power Sensor	N8481H	MY51240001	Dec. 06, 2018	Nov. 06, 2019
R&S	Spectrum Analyzer	N9020A	MY51170037	Dec. 06, 2018	Nov. 06, 2019
Agilent	Signal Generation	N5182A	MY48180656	Dec. 06, 2018	Nov. 06, 2019
Worken	Directional Coupler	0110A05601O-10	COM5BNW1A2	Dec. 06, 2018	Nov. 06, 2019

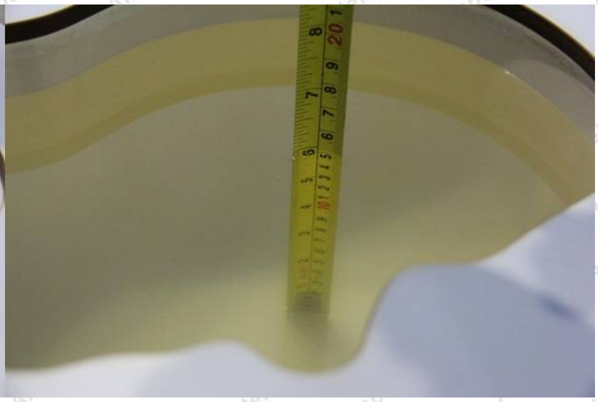
Note:

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. The dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
4. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.
5. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have precise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of 1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically required for correct measurement; the power meter is critical and we do have calibration for it

6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown as followed:

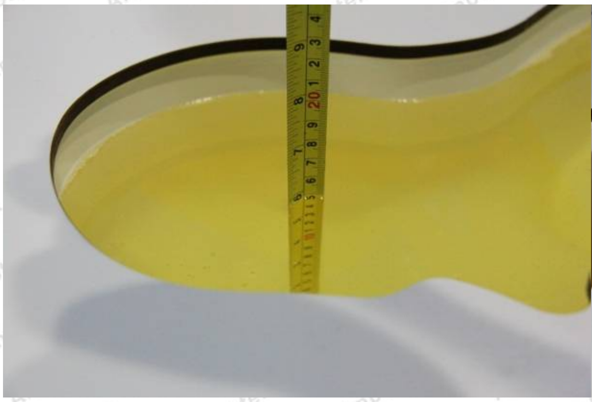
Liquid depth in the Head Phantom (750MHz)



Liquid depth in the Head Phantom (835MHz)

Liquid depth in the Head Phantom (1750MHz)

Liquid depth in the Head Phantom (1900MHz)



Liquid depth in the Head Phantom (2450MHz)

Liquid depth in the Head Phantom (2600MHz)

The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1750	55.2	0	0	0.3	0	44.5	1.37	40.1
1800,1900,2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
For Body								
900	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1750	70.2	0	0	0.4	0	29.4	1.49	53.4
1800,1900,2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7

The following table shows the measuring results for simulating liquid.

Dielectric Performance of Tissue Simulating Liquid

Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue				Liquid Temp.	Test Data
		ε_r	σ	ε_r	Dev. (±5%)	σ	Dev. (±5%)		
750B	750	0.96	55.5	0.94	-2.08%	55.18	-0.58%	22.4	10/25/2019
835B	900	0.97	55.2	0.95	-2.06%	54.78	-0.76%	22.6	10/26/2019
1750B	1750	1.49	53.4	1.46	-2.01%	54.19	1.48%	22.4	10/29/2019
1900B	1900	1.52	53.3	1.55	1.97%	53.32	0.04%	22.6	10/27/2019
2450B	2450	1.95	52.7	1.95	0.00%	50.69	-3.81%	22.7	10/29/2019
2600B	2600	2.16	52.5	2.20	1.85%	51.41	-2.08%	22.5	10/28/2019

7. System Verification Procedures

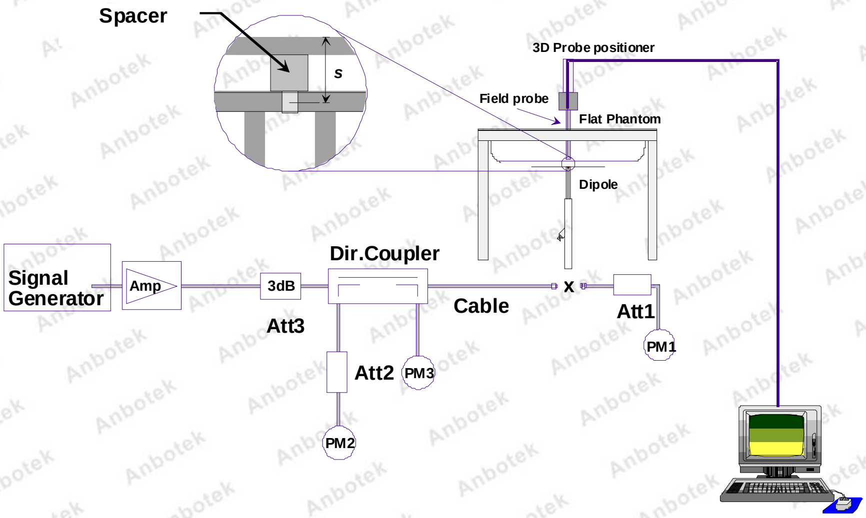
Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

➢ Purpose of System Performance check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

➢ System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



System Setup for System Evaluation

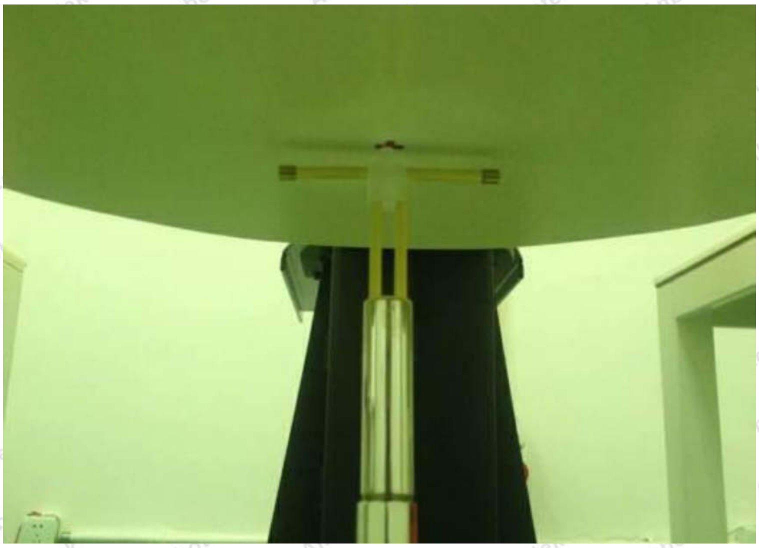


Photo of Dipole Setup

➢ **Validation Results**

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. The table below shows the target SAR and measured SAR after normalized to 1W input power. It indicates that the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Frequency (MHz)	Liquid Type	Power fed onto reference dipole (mW)	Targeted SAR (W/kg)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)	Date
750B	Body	250	8.78	2.22	8.88	1.14%	10/25/2019
835B	Body	250	9.57	2.41	9.64	0.73%	10/26/2019
1750B	Body	250	36.7	9.16	36.64	-0.16%	10/29/2019
1900B	Body	250	40.1	10.04	40.16	0.15%	10/27/2019
2450B	Body	250	51.8	12.93	51.72	-0.15%	10/29/2019
2600B	Body	250	56.8	14.22	56.88	0.14%	10/28/2019

Note:

1. The graph results see system check.
2. Target Values used derive from the calibration certificate.

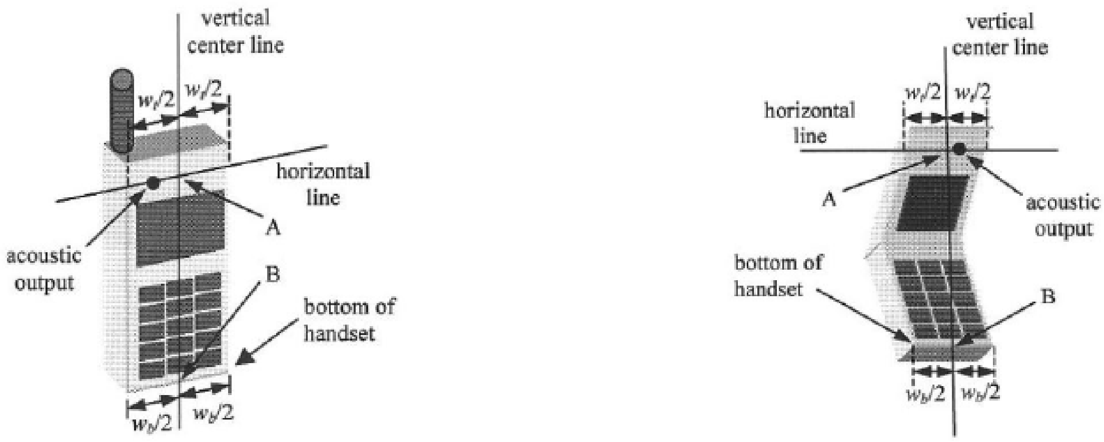
8. EUT Testing Position

8.1. Define two imaginary lines on the handset

(a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

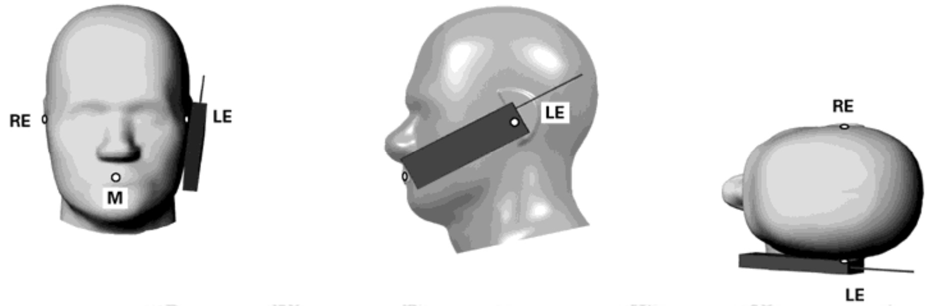


Handset Vertical and Horizontal Reference Lines

8.2. Position for Cheek/Touch

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

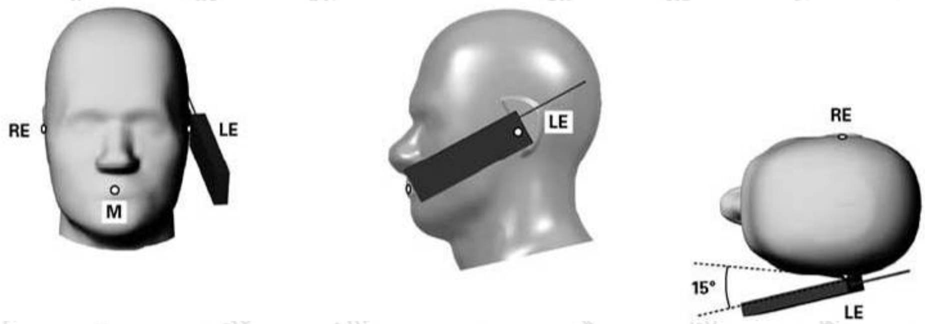


Cheek Position

8.3. Position for Ear / 15° Tilt

(a) To position the device in the “cheek” position described above.

(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig. 8.3).

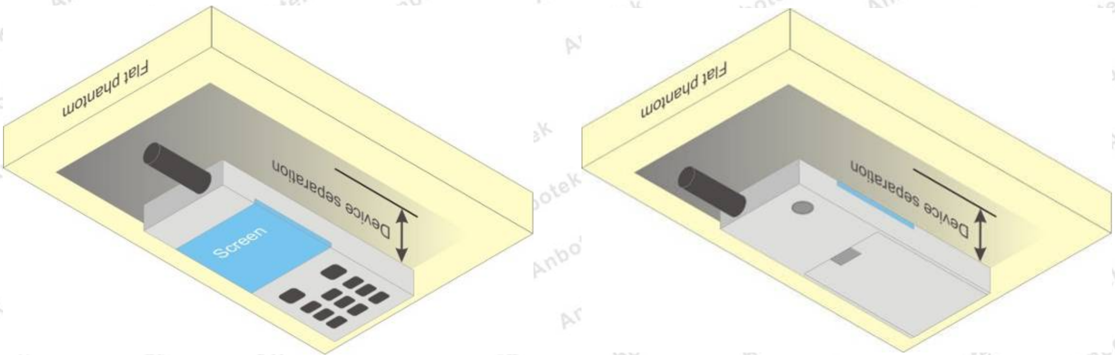


Tilt Position

8.4. Body Worn Position

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per KDB 648474 D04, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is < 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.



Body Worn Position

9. Measurement Procedures

The measurement procedures are as follows:

(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the middle channel.

(b) Keep EUT to radiate maximum output power or 100% duty factor (if applicable)

(c) Measure output power through RF cable and power meter.

(d) Place the EUT in the positions as setup photos demonstrates.

(e) Set scan area, grid size and other setting on the DASY software.

(f) Measure SAR transmitting at the middle channel for all applicable exposure positions.

(g) Identify the exposure position and device configuration resulting the highest SAR

(h) Measure SAR at the lowest and highest channels at the worst exposure position and device configuration if applicable.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement

(b) Area scan

(c) Zoom scan

(d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan

(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)

(c) Generation of a high-resolution mesh within the measured volume

(d) Interpolation of all measured values form the measurement grid to the high-resolution grid

(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface

(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area & Zoom Scan Procedures

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the numberof zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4 Zoom Scan Procedures

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\le 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the reported SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

9.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6 Power Drift Monitoring

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the same settings. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

10. Conducted Power

<GSM Conducted power>

Conducted power measurement results (GSM850/1900)

Mode	Txslot	Burst Average Power (dBm)			Tune-up Limit (dBm)	Calculation (dB)	Frame-Averaged Power (dBm)		
		128	190	251			128	190	251
GSM		32.65	32.58	32.34	33	-9.03	23.62	23.55	23.31
GPRS 850 (GMSK)	1Txslot	32.21	32.84	32.53	33	-9.03	23.18	23.81	23.50
	2Txslot	29.71	29.79	29.72	30	-6.02	23.69	23.77	23.70
	3 Txslot	27.50	27.51	27.54	28	-4.26	23.24	23.25	23.28
	4 Txslot	26.32	26.24	26.28	27	-3.01	23.31	23.23	23.27
EGPRS 850 (GMSK)	1 Txslot	32.14	32.35	32.42	33	-9.03	23.11	23.32	23.39
	2Txslot	29.61	29.72	29.65	30	-6.02	23.59	23.70	23.63
	3 Txslot	27.41	27.48	27.35	28	-4.26	23.15	23.22	23.09
	4 Txslot	26.28	26.20	26.18	27	-3.01	23.27	23.19	23.17
Mode	Txslot	Burst Average Power (dBm)			Tune-up Limit (dBm)	Calculation (dB)	Frame-Averaged Power (dBm)		
		512	661	810			128	190	251
GSM		30.45	30.61	30.47	30	-9.03	21.42	21.58	21.44
GPRS 1900 (GMSK)	1 Txslot	30.74	30.56	30.43	30	-9.03	21.71	21.53	21.40
	2 Txslot	27.87	27.92	27.83	28	-6.02	21.85	21.90	21.81
	3 Txslot	25.20	25.57	25.30	26	-4.26	20.94	21.31	21.04
	4 Txslot	24.19	24.36	24.38	25	-3.01	21.18	21.35	21.37
EGPRS 1900 (GMSK)	1 Txslot	32.23	32.75	32.26	30	-9.03	23.20	23.72	23.23
	2 Txslot	29.41	29.79	29.74	28	-6.02	23.39	23.77	23.72
	3 Txslot	27.21	27.25	27.23	26	-4.26	22.95	22.99	22.97
	4 Txslot	26.18	26.21	26.47	25	-3.01	23.17	23.20	23.46

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

2) According to the conducted power as above, the GPRS/EGPRS measurements are performed with 2Txslots for GPRS/EGPRS 850 and GPRS/EGPRS 1900.

<WCDMA Conducted power>

Conducted power measurement results (WCDMA Band II/V)

Item	Band	FDD Band II result (dBm)			Tune-up Limit (dBm)
		Test Channel			
	ARFCN	9262	9400	9538	
AMR	12.2kbps AMR	23.22	23.34	23.29	24
RMC	12.2kbps RMC	23.32	23.69	23.46	24
HSDPA	Sub - Test 1	22.24	22.31	22.27	23
	Sub - Test 2	21.41	21.32	21.31	22
	Sub - Test 3	21.22	21.33	21.25	22
	Sub - Test 4	20.43	20.55	20.53	21
HSUPA	Sub - Test 1	22.51	22.47	22.33	23
	Sub - Test 2	21.22	21.30	21.41	22
	Sub - Test 3	21.50	21.48	21.55	22
	Sub - Test 4	20.43	20.40	20.34	21
	Sub - Test 5	20.34	20.42	20.40	21

Item	Band	FDD Band V result (dBm)			Tune-up Limit (dBm)
		Test Channel			
	ARFCN	4132	4183	4233	
AMR	12.2kbps AMR	23.11	23.14	23.04	24
RMC	12.2kbps RMC	23.24	23.83	23.35	24
HSDPA	Sub - Test 1	22.11	22.27	22.34	23
	Sub - Test 2	21.35	21.32	21.12	22
	Sub - Test 3	21.12	21.21	21.13	22
	Sub - Test 4	20.15	20.17	20.15	21
HSUPA	Sub - Test 1	22.75	22.63	22.74	23
	Sub - Test 2	21.71	21.74	21.72	22
	Sub - Test 3	21.14	21.12	21.14	22
	Sub - Test 4	20.33	20.45	20.13	21
	Sub - Test 5	20.34	20.51	20.54	21

Per KDB 941225 D01 v02, RMC 12.2kbps setting is used to evaluate SAR. If AMR 12.2kbps power is < 0.25dB higher than RMC 12.2kbps, SAR tests with AMR 12.2kbps can be excluded.

<LTE Conducted Power>

Conducted Power Measurement Results (LTE FDD Band 2)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
1.4 MHz	1 RB low	1850.7	23.26	23.5
		1880.0	22.59	23.5
		1909.3	23.34	23.5
	1 RB mid	1850.7	22.20	23.5
		1880.0	22.37	23.5
		1909.3	21.30	23.5
	1 RB high	1850.7	21.87	23.5
		1880.0	22.47	23.5
		1909.3	21.63	23.5
	50% RB low	1850.7	23.00	23.5
		1880.0	21.77	23.5
		1909.3	22.22	23.5
	50% RB mid	1850.7	22.83	23.5
		1880.0	22.48	23.5
		1909.3	22.54	23.5
	50% RB High	1850.7	22.18	23.5
		1880.0	22.64	23.5
		1909.3	23.25	23.5
	100% RB	1850.7	22.83	23.5
		1880.0	22.18	23.5
		1909.3	22.72	23.5
3 MHz	1 RB low	1851.5	23.37	23.5
		1851.5	21.77	23.5
		1908.5	21.76	23.5
	1 RB mid	1851.5	22.06	23.5
		1851.5	22.47	23.5
		1908.5	22.70	23.5
	1 RB high	1851.5	21.62	23.5
		1851.5	22.39	23.5
		1908.5	22.20	23.5
	50% RB low	1851.5	23.27	23.5
		1851.5	23.16	23.5
		1908.5	22.24	23.5
	50% RB mid	1851.5	22.33	23.5
		1851.5	22.62	23.5

		1908.5	22.90	23.5
	50% RB High	1851.5	22.59	23.5
		1851.5	22.53	23.5
		1908.5	22.85	23.5
	100% RB	1851.5	21.44	23.5
		1851.5	23.01	23.5
		1908.5	23.04	23.5
5 MHz	1 RB low	1852.5	22.98	23.5
		1880.0	21.67	23.5
		1907.5	21.81	23.5
	1 RB mid	1852.5	23.40	23.5
		1880.0	22.84	23.5
		1907.5	21.93	23.5
	1 RB high	1852.5	22.18	23.5
		1880.0	22.60	23.5
		1907.5	22.14	23.5
	50% RB low	1852.5	23.36	23.5
		1880.0	22.74	23.5
		1907.5	21.63	23.5
	50% RB mid	1852.5	21.77	23.5
		1880.0	22.05	23.5
		1907.5	22.89	23.5
	50% RB High	1852.5	22.49	23.5
		1880.0	22.06	23.5
		1907.5	22.37	23.5
	100% RB	1852.5	22.82	23.5
		1880.0	22.55	23.5
		1907.5	23.50	23.5
10 MHz	1 RB low	1855.0	23.32	23.5
		1880.0	21.45	23.5
		1905.0	22.13	23.5
	1 RB mid	1855.0	23.00	23.5
		1880.0	22.67	23.5
		1905.0	22.32	23.5
	1 RB high	1855.0	23.44	23.5
		1880.0	22.73	23.5
		1905.0	22.12	23.5
	50% RB low	1855.0	21.95	23.5
		1880.0	21.56	23.5
		1905.0	22.15	23.5

	50% RB mid	1855.0	21.68	23.5
		1880.0	22.92	23.5
		1905.0	22.26	23.5
	50% RB High	1855.0	22.58	23.5
		1880.0	22.53	23.5
		1905.0	23.15	23.5
	100% RB	1855.0	22.83	23.5
		1880.0	22.65	23.5
		1905.0	23.38	23.5
15 MHz	1 RB low	1857.5	23.20	23.5
		1880.0	22.34	23.5
		1902.5	21.53	23.5
	1 RB mid	1857.5	23.01	23.5
		1880.0	22.64	23.5
		1902.5	22.29	23.5
	1 RB high	1857.5	22.22	23.5
		1880.0	21.94	23.5
		1902.5	22.41	23.5
	50% RB low	1857.5	23.47	23.5
		1880.0	22.92	23.5
		1902.5	22.52	23.5
	50% RB mid	1857.5	21.86	23.5
		1880.0	22.65	23.5
		1902.5	23.01	23.5
	50% RB High	1857.5	22.51	23.5
		1880.0	22.87	23.5
		1902.5	22.62	23.5
	100% RB	1857.5	22.26	23.5
		1880.0	22.62	23.5
		1902.5	23.01	23.5
20 MHz	1 RB low	1860.0	23.10	23.5
		1880.0	21.98	23.5
		1900.0	22.39	23.5
	1 RB mid	1860.0	21.51	23.5
		1880.0	21.75	23.5
		1900.0	22.84	23.5
	1 RB high	1860.0	22.13	23.5
		1880.0	22.63	23.5
		1900.0	22.57	23.5
	50% RB low	1860.0	22.03	23.5

		1880.0	23.44	23.5
		1900.0	22.40	23.5
	50% RB mid	1860.0	22.35	23.5
		1880.0	22.74	23.5
		1900.0	23.28	23.5
	50% RB High	1860.0	22.27	23.5
		1880.0	22.75	23.5
		1900.0	21.63	23.5
	100% RB	1860.0	22.47	23.5
		1880.0	22.36	23.5
		1900.0	22.53	23.5

Conducted Power Measurement Results (LTE FDD Band 4)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
1.4 MHz	1 RB low	1710.7	22.30	23.5
		1732.5	22.24	23.5
		1754.3	23.12	23.5
	1 RB mid	1710.7	22.44	23.5
		1732.5	22.09	23.5
		1754.3	22.47	23.5
	1 RB high	1710.7	22.52	23.5
		1732.5	23.16	23.5
		1754.3	21.36	23.5
	50% RB low	1710.7	21.94	23.5
		1732.5	23.47	23.5
		1754.3	21.42	23.5
	50% RB mid	1710.7	22.73	23.5
		1732.5	21.64	23.5
		1754.3	21.90	23.5
	50% RB High	1710.7	21.54	23.5
		1732.5	22.86	23.5
		1754.3	22.79	23.5
	100% RB	1710.7	21.52	23.5
		1732.5	22.49	23.5
		1754.3	21.94	23.5
3 MHz	1 RB low	1711.5	23.27	23.5
		1732.5	22.35	23.5
		1753.5	22.07	23.5
	1 RB mid	1711.5	21.82	23.5

		1732.5	22.10	23.5
		1753.5	22.82	23.5
	1 RB high	1711.5	22.81	23.5
		1732.5	23.18	23.5
		1753.5	22.60	23.5
	50% RB low	1711.5	21.63	23.5
		1732.5	22.77	23.5
		1753.5	22.67	23.5
	50% RB mid	1711.5	22.52	23.5
		1732.5	23.07	23.5
		1753.5	23.21	23.5
	50% RB High	1711.5	21.87	23.5
		1732.5	21.54	23.5
		1753.5	22.56	23.5
	100% RB	1711.5	21.78	23.5
		1732.5	22.02	23.5
		1753.5	22.47	23.5
5 MHz	1 RB low	1712.5	22.52	23.5
		1732.5	22.63	23.5
		1752.5	21.66	23.5
	1 RB mid	1712.5	23.28	23.5
		1732.5	22.30	23.5
		1752.5	21.92	23.5
	1 RB high	1712.5	22.86	23.5
		1732.5	22.42	23.5
		1752.5	22.41	23.5
	50% RB low	1712.5	23.32	23.5
		1732.5	22.16	23.5
		1752.5	21.81	23.5
	50% RB mid	1712.5	22.40	23.5
		1732.5	22.48	23.5
		1752.5	21.81	23.5
	50% RB High	1712.5	22.48	23.5
		1732.5	21.57	23.5
		1752.5	21.66	23.5
	100% RB	1712.5	21.86	23.5
		1732.5	21.13	23.5
		1752.5	22.15	23.5
10 MHz	1 RB low	1715.0	23.26	23.5
		1732.5	22.36	23.5

		1750.0	22.17	23.5
	1 RB mid	1715.0	23.07	23.5
		1732.5	22.47	23.5
		1750.0	21.59	23.5
	1 RB high	1715.0	23.15	23.5
		1732.5	22.44	23.5
		1750.0	22.74	23.5
	50% RB low	1715.0	23.08	23.5
		1732.5	22.00	23.5
		1750.0	22.49	23.5
	50% RB mid	1715.0	21.16	23.5
		1732.5	21.78	23.5
		1750.0	23.14	23.5
	50% RB High	1715.0	23.15	23.5
		1732.5	23.12	23.5
		1750.0	21.74	23.5
	100% RB	1715.0	22.05	23.5
		1732.5	22.39	23.5
		1750.0	22.75	23.5
15 MHz	1 RB low	1717.5	22.87	23.5
		1732.5	22.29	23.5
		1747.5	22.38	23.5
	1 RB mid	1717.5	22.70	23.5
		1732.5	22.16	23.5
		1747.5	21.84	23.5
	1 RB high	1717.5	22.76	23.5
		1732.5	22.28	23.5
		1747.5	22.50	23.5
	50% RB low	1717.5	23.32	23.5
		1732.5	21.69	23.5
		1747.5	22.63	23.5
	50% RB mid	1717.5	21.34	23.5
		1732.5	22.52	23.5
		1747.5	21.79	23.5
	50% RB High	1717.5	22.41	23.5
		1732.5	21.92	23.5
		1747.5	22.02	23.5
	100% RB	1717.5	22.12	23.5
		1732.5	22.17	23.5
		1747.5	22.57	23.5

20 MHz	1 RB low	1720.0	22.57	23.5
		1732.5	22.36	23.5
		1745.0	22.39	23.5
	1 RB mid	1720.0	22.04	23.5
		1732.5	21.91	23.5
		1745.0	21.20	23.5
	1 RB high	1720.0	22.37	23.5
		1732.5	21.82	23.5
		1745.0	22.05	23.5
	50% RB low	1720.0	21.51	23.5
		1732.5	22.04	23.5
		1745.0	21.75	23.5
	50% RB mid	1720.0	21.55	23.5
		1732.5	22.62	23.5
		1745.0	21.52	23.5
	50% RB High	1720.0	21.87	23.5
		1732.5	22.13	23.5
		1745.0	21.88	23.5
	100% RB	1720.0	22.05	23.5
		1732.5	22.37	23.5
		1745.0	22.52	23.5

Conducted Power Measurement Results (LTE FDD Band 5)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
1.4 MHz	1 RB low	824.7	21.54	23.5
		836.5	21.87	23.5
		848.3	22.74	23.5
	1 RB mid	824.7	21.67	23.5
		836.5	22.17	23.5
		848.3	21.10	23.5
	1 RB high	824.7	22.60	23.5
		836.5	21.56	23.5
		848.3	22.36	23.5
	50% RB low	824.7	22.34	23.5
		836.5	21.84	23.5
		848.3	22.14	23.5
	50% RB mid	824.7	21.17	23.5
		836.5	22.57	23.5
		848.3	21.63	23.5

	50% RB High	824.7	22.51	23.5
		836.5	23.07	23.5
		848.3	21.66	23.5
	100% RB	824.7	22.58	23.5
		836.5	21.13	23.5
		848.3	22.16	23.5
3 MHz	1 RB low	825.5	22.54	23.5
		836.5	21.89	23.5
		847.5	22.20	23.5
	1 RB mid	825.5	23.25	23.5
		836.5	21.84	23.5
		847.5	22.79	23.5
	1 RB high	825.5	22.19	23.5
		836.5	23.11	23.5
		847.5	22.57	23.5
	50% RB low	825.5	23.37	23.5
		836.5	22.80	23.5
		847.5	22.96	23.5
	50% RB mid	825.5	22.36	23.5
		836.5	22.68	23.5
		847.5	22.18	23.5
	50% RB High	825.5	22.31	23.5
		836.5	22.46	23.5
		847.5	22.15	23.5
	100% RB	825.5	21.96	23.5
		836.5	21.79	23.5
		847.5	23.14	23.5
5 MHz	1 RB low	826.5	22.76	23.5
		836.5	22.41	23.5
		846.5	21.87	23.5
	1 RB mid	826.5	22.48	23.5
		836.5	21.39	23.5
		846.5	21.88	23.5
	1 RB high	826.5	22.57	23.5
		836.5	23.08	23.5
		846.5	22.66	23.5
	50% RB low	826.5	21.77	23.5
		836.5	23.24	23.5
		846.5	21.40	23.5
	50% RB mid	826.5	22.59	23.5

		836.5	22.43	23.5
		846.5	22.28	23.5
	50% RB High	826.5	21.87	23.5
		836.5	22.67	23.5
		846.5	22.12	23.5
	100% RB	826.5	21.98	23.5
		836.5	21.73	23.5
		846.5	21.82	23.5
10 MHz	1 RB low	829.0	21.88	23.5
		836.5	22.10	23.5
		844.0	22.15	23.5
	1 RB mid	829.0	22.77	23.5
		836.5	21.69	23.5
		844.0	22.30	23.5
	1 RB high	829.0	22.12	23.5
		836.5	22.64	23.5
		844.0	22.05	23.5
	50% RB low	829.0	21.77	23.5
		836.5	23.10	23.5
		844.0	21.02	23.5
	50% RB mid	829.0	22.43	23.5
		836.5	23.06	23.5
		844.0	21.91	23.5
	50% RB High	829.0	22.35	23.5
		836.5	22.85	23.5
		844.0	21.85	23.5
	100% RB	829.0	22.33	23.5
		836.5	21.35	23.5
		844.0	21.87	23.5

Conducted Power Measurement Results (LTE FDD Band 7)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
5 MHz	1 RB low	2502.5	22.59	23.5
		2535	22.64	23.5
		2567.5	23.46	23.5
	1 RB mid	2502.5	22.85	23.5
		2535	22.81	23.5
		2567.5	22.44	23.5
	1 RB high	2502.5	23.18	23.5

		2535	22.36	23.5
		2567.5	22.74	23.5
	50% RB low	2502.5	22.23	23.5
		2535	21.70	23.5
		2567.5	22.49	23.5
	50% RB mid	2502.5	21.73	23.5
		2535	22.77	23.5
		2567.5	21.64	23.5
	50% RB High	2502.5	21.89	23.5
		2535	23.27	23.5
		2567.5	22.39	23.5
	100% RB	2502.5	21.58	23.5
		2535	21.11	23.5
		2567.5	21.82	23.5
10 MHz	1 RB low	2505	22.95	23.5
		2535	22.45	23.5
		2565	22.03	23.5
	1 RB mid	2505	23.25	23.5
		2535	22.15	23.5
		2565	21.18	23.5
	1 RB high	2505	22.39	23.5
		2535	22.15	23.5
		2565	22.50	23.5
	50% RB low	2505	22.17	23.5
		2535	23.03	23.5
		2565	21.35	23.5
	50% RB mid	2505	22.48	23.5
		2535	22.69	23.5
		2565	23.03	23.5
	50% RB High	2505	23.50	23.5
		2535	22.24	23.5
		2565	21.56	23.5
	100% RB	2505	21.59	23.5
		2535	22.30	23.5
		2565	22.71	23.5
15 MHz	1 RB low	2507.5	22.13	23.5
		2535	22.47	23.5
		2562.5	22.82	23.5
	1 RB mid	2507.5	22.56	23.5
		2535	22.10	23.5

		2562.5	21.55	23.5
	1 RB high	2507.5	23.25	23.5
		2535	23.25	23.5
		2562.5	22.63	23.5
	50% RB low	2507.5	21.92	23.5
		2535	23.39	23.5
		2562.5	22.80	23.5
	50% RB mid	2507.5	22.72	23.5
		2535	23.46	23.5
		2562.5	21.51	23.5
	50% RB High	2507.5	21.87	23.5
		2535	23.13	23.5
		2562.5	21.96	23.5
	100% RB	2507.5	21.33	23.5
		2535	22.56	23.5
		2562.5	21.81	23.5
20 MHz	1 RB low	2510	21.60	23.5
		2535	21.89	23.5
		2560	22.62	23.5
	1 RB mid	2510	23.24	23.5
		2535	22.23	23.5
		2560	22.86	23.5
	1 RB high	2510	22.39	23.5
		2535	21.98	23.5
		2560	22.24	23.5
	50% RB low	2510	21.64	23.5
		2535	22.14	23.5
		2560	21.86	23.5
	50% RB mid	2510	21.31	23.5
		2535	22.25	23.5
		2560	22.88	23.5
	50% RB High	2510	22.79	23.5
		2535	23.43	23.5
		2560	22.73	23.5
	100% RB	2510	21.45	23.5
		2535	22.33	23.5
		2560	23.34	23.5

Conducted Power Measurement Results (LTE FDD Band 12)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
1.4 MHz	1 RB low	699.7	22.43	23.5
		707.5	22.51	23.5
		715.3	22.23	23.5
	1 RB mid	699.7	22.11	23.5
		707.5	22.81	23.5
		715.3	21.29	23.5
	1 RB high	699.7	23.31	23.5
		707.5	22.10	23.5
		715.3	22.39	23.5
	50% RB low	699.7	22.09	23.5
		707.5	21.58	23.5
		715.3	21.40	23.5
	50% RB mid	699.7	21.33	23.5
		707.5	22.17	23.5
		715.3	21.93	23.5
	50% RB High	699.7	22.54	23.5
		707.5	22.71	23.5
		715.3	21.72	23.5
	100% RB	699.7	22.36	23.5
		707.5	21.20	23.5
		715.3	22.66	23.5
3 MHz	1 RB low	700.5	22.59	23.5
		707.5	22.65	23.5
		714.5	22.76	23.5
	1 RB mid	700.5	22.62	23.5
		707.5	22.05	23.5
		714.5	22.20	23.5
	1 RB high	700.5	23.33	23.5
		707.5	22.60	23.5
		714.5	22.74	23.5
	50% RB low	700.5	22.95	23.5
		707.5	22.90	23.5
		714.5	22.33	23.5
	50% RB mid	700.5	22.33	23.5
		707.5	22.06	23.5
		714.5	23.12	23.5

	50% RB High	700.5	22.48	23.5
		707.5	21.66	23.5
		714.5	21.79	23.5
	100% RB	700.5	21.02	23.5
		707.5	21.17	23.5
		714.5	22.02	23.5
5 MHz	1 RB low	701.5	21.79	23.5
		707.5	22.57	23.5
		713.5	22.58	23.5
	1 RB mid	701.5	22.73	23.5
		707.5	21.74	23.5
		713.5	22.29	23.5
	1 RB high	701.5	22.40	23.5
		707.5	23.07	23.5
		713.5	22.63	23.5
	50% RB low	701.5	21.67	23.5
		707.5	22.74	23.5
		713.5	21.65	23.5
	50% RB mid	701.5	22.41	23.5
		707.5	21.61	23.5
		713.5	22.72	23.5
	50% RB High	701.5	22.41	23.5
		707.5	22.49	23.5
		713.5	21.94	23.5
	100% RB	701.5	21.08	23.5
		707.5	22.22	23.5
		713.5	21.77	23.5
10 MHz	1 RB low	704.0	21.60	23.5
		707.5	22.68	23.5
		711.0	22.03	23.5
	1 RB mid	704.0	21.77	23.5
		707.5	21.83	23.5
		711.0	21.26	23.5
	1 RB high	704.0	23.05	23.5
		707.5	22.11	23.5
		711.0	22.45	23.5
	50% RB low	704.0	22.15	23.5
		707.5	22.60	23.5
		711.0	22.23	23.5
	50% RB mid	704.0	21.72	23.5

		707.5	22.22	23.5
		711.0	22.05	23.5
	50% RB High	704.0	22.50	23.5
		707.5	21.89	23.5
		711.0	23.02	23.5
	100% RB	704.0	21.49	23.5
		707.5	21.32	23.5
		711.0	22.46	23.5

Conducted Power Measurement Results (LTE FDD Band 17)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
5 MHz	1 RB low	706.5	22.39	23.5
		710	22.48	23.5
		713.5	23.11	23.5
	1 RB mid	706.5	22.60	23.5
		710	22.27	23.5
		713.5	21.90	23.5
	1 RB high	706.5	22.94	23.5
		710	22.76	23.5
		713.5	22.36	23.5
	50% RB low	706.5	23.42	23.5
		710	23.01	23.5
		713.5	22.51	23.5
	50% RB mid	706.5	22.14	23.5
		710	22.25	23.5
		713.5	23.19	23.5
	50% RB High	706.5	22.17	23.5
		710	22.21	23.5
		713.5	23.30	23.5
	100% RB	706.5	21.71	23.5
		710	22.48	23.5
		713.5	23.22	23.5
10 MHz	1 RB low	709	23.45	23.5
		710	22.87	23.5
		711	22.28	23.5
	1 RB mid	709	21.84	23.5
		710	21.70	23.5
		711	22.72	23.5
	1 RB high	709	22.15	23.5

		710	21.89	23.5
		711	22.65	23.5
	50% RB low	709	21.70	23.5
		710	22.10	23.5
		711	21.84	23.5
	50% RB mid	709	21.14	23.5
		710	21.65	23.5
		711	22.16	23.5
	50% RB High	709	22.48	23.5
		710	23.21	23.5
		711	22.84	23.5
	100% RB	709	22.57	23.5
		710	22.26	23.5
		711	22.40	23.5

Conducted Power Measurement Results (LTE FDD Band 38)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
5 MHz	1 RB low	2572.5	22.32	23.5
		2595.0	21.69	23.5
		2617.5	21.87	23.5
	1 RB mid	2572.5	21.96	23.5
		2595.0	22.69	23.5
		2617.5	22.56	23.5
	1 RB high	2572.5	23.05	23.5
		2595.0	22.03	23.5
		2617.5	22.47	23.5
	50% RB low	2572.5	22.26	23.5
		2595.0	22.14	23.5
		2617.5	22.20	23.5
	50% RB mid	2572.5	22.02	23.5
		2595.0	21.52	23.5
		2617.5	22.06	23.5
	50% RB High	2572.5	22.63	23.5
		2595.0	21.52	23.5
		2617.5	23.32	23.5
	100% RB	2572.5	23.45	23.5
		2595.0	22.49	23.5
		2617.5	22.11	23.5

10 MHz	1 RB low	2575.0	21.72	23.5
		2595.0	22.85	23.5
		2615.0	22.79	23.5
	1 RB mid	2575.0	23.30	23.5
		2595.0	22.40	23.5
		2615.0	22.35	23.5
	1 RB high	2575.0	23.48	23.5
		2595.0	21.84	23.5
		2615.0	21.98	23.5
	50% RB low	2575.0	23.28	23.5
		2595.0	21.70	23.5
		2615.0	22.19	23.5
	50% RB mid	2575.0	23.05	23.5
		2595.0	23.20	23.5
		2615.0	22.92	23.5
	50% RB High	2575.0	22.57	23.5
		2595.0	22.56	23.5
		2615.0	21.90	23.5
	100% RB	2575.0	22.05	23.5
		2595.0	21.74	23.5
		2615.0	22.38	23.5
15 MHz	1 RB low	2577.5	22.76	23.5
		2595.0	22.54	23.5
		2612.5	22.52	23.5
	1 RB mid	2577.5	21.63	23.5
		2595.0	22.41	23.5
		2612.5	21.76	23.5
	1 RB high	2577.5	22.23	23.5
		2595.0	22.84	23.5
		2612.5	22.68	23.5
	50% RB low	2577.5	23.30	23.5
		2595.0	22.96	23.5
		2612.5	22.15	23.5
	50% RB mid	2577.5	21.95	23.5
		2595.0	22.11	23.5
		2612.5	23.45	23.5
	50% RB High	2577.5	22.68	23.5
		2595.0	21.57	23.5
		2612.5	23.44	23.5
	100% RB	2577.5	22.39	23.5

		2595.0	22.38	23.5
		2612.5	22.08	23.5
20 MHz	1 RB low	2580.0	22.80	23.5
		2595.0	22.75	23.5
		2610.0	23.25	23.5
	1 RB mid	2580.0	22.33	23.5
		2595.0	22.91	23.5
		2610.0	23.46	23.5
	1 RB high	2580.0	23.38	23.5
		2595.0	23.48	23.5
		2610.0	22.34	23.5
	50% RB low	2580.0	23.35	23.5
		2595.0	21.71	23.5
		2610.0	23.40	23.5
	50% RB mid	2580.0	21.65	23.5
		2595.0	22.28	23.5
		2610.0	23.49	23.5
	50% RB High	2580.0	22.34	23.5
		2595.0	22.91	23.5
		2610.0	22.03	23.5
	100% RB	2580.0	21.69	23.5
		2595.0	22.36	23.5
		2610.0	23.27	23.5

Conducted Power Measurement Results (LTE FDD Band 41)

TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	Average Power [dBm]	Tune-up Limit (dBm)
5 MHz	1 RB low	2498.5	21.56	23.5
		2545.5	22.28	23.5
		2593.0	22.31	23.5
		2640.5	22.30	23.5
		2687.5	23.40	23.5
	1 RB mid	2498.5	22.24	23.5
		2545.5	22.31	23.5
		2593.0	22.92	23.5
		2640.5	22.36	23.5
		2687.5	21.88	23.5
	1 RB high	2498.5	22.35	23.5
		2545.5	22.24	23.5

		2593.0	22.13	23.5
		2640.5	22.34	23.5
		2687.5	22.15	23.5
		2498.5	22.45	23.5
	50% RB low	2498.5	23.42	23.5
		2545.5	22.57	23.5
		2593.0	22.20	23.5
		2640.5	22.41	23.5
		2687.5	22.63	23.5
	50% RB mid	2498.5	21.73	23.5
		2545.5	22.36	23.5
		2593.0	22.29	23.5
		2640.5	22.45	23.5
		2687.5	23.25	23.5
	50% RB High	2498.5	22.30	23.5
		2545.5	22.36	23.5
		2593.0	22.71	23.5
		2640.5	22.21	23.5
		2687.5	23.23	23.5
	100% RB	2498.5	22.16	23.5
		2545.5	22.36	23.5
		2593.0	22.71	23.5
		2640.5	22.50	23.5
		2687.5	23.07	23.5
10 MHz	1 RB low	2501.0	22.46	23.5
		2548.0	22.12	23.5
		2593.0	22.74	23.5
		2638.0	22.35	23.5
		2685.0	22.47	23.5
	1 RB mid	2501.0	22.07	23.5
		2548.0	21.89	23.5
		2593.0	22.06	23.5
		2638.0	21.94	23.5
		2685.0	21.39	23.5
	1 RB high	2501.0	21.89	23.5
		2548.0	22.14	23.5
		2593.0	22.79	23.5
		2638.0	22.36	23.5
		2685.0	22.53	23.5
	50% RB low	2501.0	22.01	23.5

		2548.0	22.21	23.5
		2593.0	22.34	23.5
		2638.0	22.36	23.5
		2685.0	21.50	23.5
	50% RB mid	2501.0	21.96	23.5
		2548.0	22.21	23.5
		2593.0	21.99	23.5
		2638.0	22.36	23.5
		2685.0	22.40	23.5
	50% RB High	2501.0	22.34	23.5
		2548.0	22.35	23.5
		2593.0	22.10	23.5
		2638.0	22.25	23.5
		2685.0	22.42	23.5
	100% RB	2501.0	21.52	23.5
		2548.0	21.47	23.5
		2593.0	21.72	23.5
		2638.0	21.63	23.5
		2685.0	21.57	23.5
15 MHz	1 RB low	2503.5	21.60	23.5
		2550.5	22.15	23.5
		2593.0	22.57	23.5
		2635.5	22.36	23.5
		2682.5	21.58	23.5
	1 RB mid	2503.5	23.29	23.5
		2550.5	22.87	23.5
		2593.0	21.94	23.5
		2635.5	22.60	23.5
		2682.5	22.41	23.5
	1 RB high	2503.5	22.78	23.5
		2550.5	22.33	23.5
		2593.0	22.88	23.5
		2635.5	22.58	23.5
		2682.5	22.65	23.5
	50% RB low	2503.5	21.83	23.5
		2550.5	22.40	23.5
		2593.0	23.42	23.5
		2635.5	22.36	23.5
		2682.5	23.11	23.5
	50% RB mid	2503.5	22.15	23.5

		2550.5	22.54	23.5
		2593.0	21.63	23.5
		2635.5	22.63	23.5
		2682.5	23.33	23.5
	50% RB High	2503.5	22.69	23.5
		2550.5	22.85	23.5
		2593.0	23.21	23.5
		2635.5	22.78	23.5
		2682.5	23.25	23.5
	100% RB	2503.5	21.05	23.5
		2550.5	22.31	23.5
		2593.0	22.57	23.5
		2635.5	22.45	23.5
		2682.5	23.46	23.5
20 MHz	1 RB low	2506.0	22.86	23.5
		2553.0	22.65	23.5
		2593.0	22.74	23.5
		2633.0	22.58	23.5
		2680.0	23.43	23.5
	1 RB mid	2506.0	22.10	23.5
		2553.0	22.36	23.5
		2593.0	22.83	23.5
		2633.0	22.51	23.5
		2680.0	22.28	23.5
	1 RB high	2506.0	22.32	23.5
		2553.0	22.25	23.5
		2593.0	23.12	23.5
		2633.0	22.18	23.5
		2680.0	23.15	23.5
	50% RB low	2506.0	21.84	23.5
		2553.0	22.36	23.5
		2593.0	22.62	23.5
		2633.0	22.48	23.5
		2680.0	21.01	23.5
	50% RB mid	2506.0	22.04	23.5
		2553.0	22.10	23.5
		2593.0	22.95	23.5
		2633.0	22.87	23.5
		2680.0	22.25	23.5
	50% RB High	2506.0	22.68	23.5

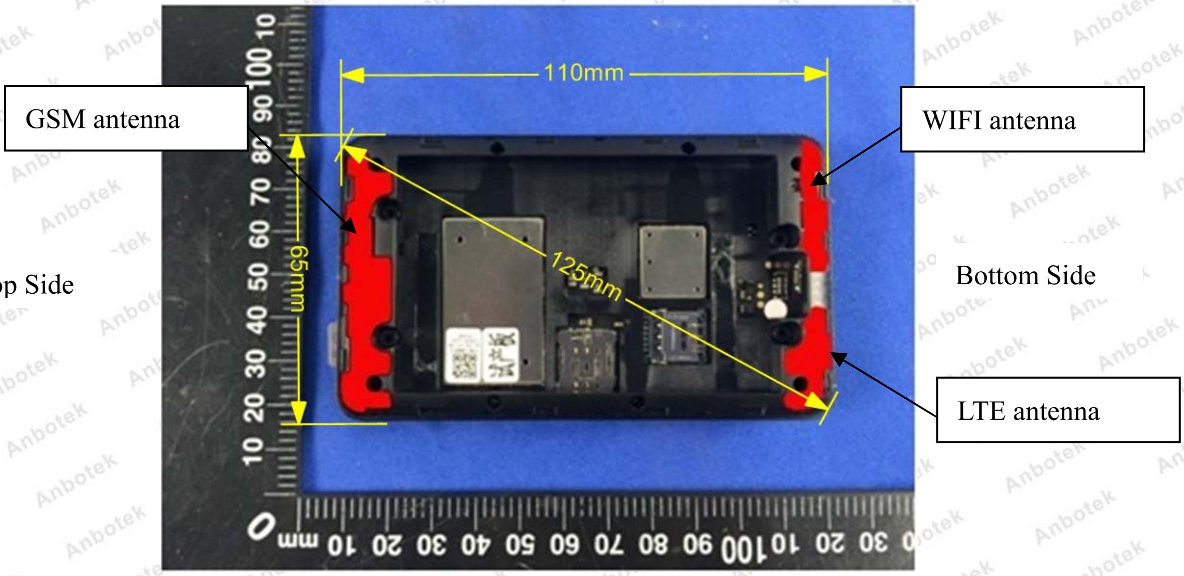
		2553.0	22.54	23.5
		2593.0	22.33	23.5
		2633.0	22.24	23.5
		2680.0	22.48	23.5
	100% RB	2506.0	22.35	23.5
		2553.0	22.38	23.5
		2593.0	21.67	23.5
		2633.0	22.74	23.5
		2680.0	23.08	23.5

<WIFI 2.4GHz Conducted Power>

Mode	Channel	Frequency (MHz)	Power(dBm)	Test Rate Data
802.11b	1	2412	17.75	1 Mbps
	6	2437	16.91	1 Mbps
	11	2462	15.68	1 Mbps
802.11g	1	2412	15.33	6 Mbps
	6	2437	16.57	6 Mbps
	11	2462	15.75	6 Mbps
802.11n(20MHz)	1	2412	14.73	MCS0
	6	2437	16.24	MCS0
	11	2462	14.85	MCS0

11..Transmit Antennas

Left Side



Right Side

Distance of The Antenna to the EUT surface and edge						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
LTE	<25mm	<25mm	>25mm	<25mm	>25mm	<25mm
GSM	<25mm	<25mm	<25mm	>25mm	<25mm	<25mm
WLAN	<25mm	<25mm	>25mm	<25mm	<25mm	>25mm

Positions for SAR tests; Hotspot mode						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
LTE	Yes	Yes	No	Yes	No	Yes
GSM	Yes	Yes	Yes	No	Yes	Yes
WLAN	Yes	Yes	No	Yes	Yes	No

General Note: Referring to KDB 941225 D06 v02, SAR must be measured for all sides and surfaces with a transmitting antenna located with 25mm from that surface or edge.

12.SAR Test Results Summary

General Note:

1. Per KDB 447498 D01v05r01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   Reported SAR(W/kg)= Measured SAR(W/kg) Scaling Factor*
2. Per KDB 447498 D01v05r01, for each exposure position, if the highest output channel reported SAR≤0.8W/kg, other channels SAR testing are not necessary
3. Per KDB 941225 D05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

1. Per KDB865664 D01, for each frequency band, **repeated SAR measurement is required** only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%,and the measured SAR <1.45W/Kg, only one repeated measurement is required.

SAR Values GSM 850

Test Position	Channel/ Frequency(MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	190/836.6	2Txslots	1:4.15	30.00	29.79	-0.04	0.246	1.05	0.258	Figure 1
Front Side	190/836.6	2Txslots	1:4.15	30.00	29.79	-0.02	0.154	1.05	0.162	N/A
Left Edge	190/836.6	2Txslots	1:4.15	30.00	29.79	0.05	0.187	1.05	0.196	N/A
Right Edge	190/836.6	2Txslots	1:4.15	30.00	29.79	0.10	0.195	1.05	0.205	N/A
Top Edge	190/836.6	2Txslots	1:4.15	30.00	29.79	-0.07	0.218	1.05	0.229	N/A
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with EGPRS(Distance 10mm)										
Rear Side	190/836.6	2Txslots	1:4.15	30.00	29.72	-0.07	0.239	1.07	0.255	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values GSM 1900

Test Position	Channel/ Frequency(MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	661/1880	2Txslots	1:4.15	28.00	27.92	-0.11	0.204	1.02	0.208	Figure 2
Front Side	661/1880	2Txslots	1:4.15	28.00	27.92	-0.10	0.134	1.02	0.136	N/A
Left Edge	661/1880	2Txslots	1:4.15	28.00	27.92	-0.05	0.189	1.02	0.193	N/A
Right Edge	661/1880	2Txslots	1:4.15	28.00	27.92	0.03	0.195	1.02	0.199	N/A
Top Edge	661/1880	2Txslots	1:4.15	28.00	27.92	-0.01	0.201	1.02	0.205	N/A
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A
Worst Case Position of Body with EGPRS(Distance 10mm)										
Rear Side	661/1880	2Txslots	1:4.15	28.00	27.92	-0.03	0.199	1.02	0.203	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [WCDMA Band V]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	4183/836.6	RMC 12.2K	1:1	24.00	23.83	0.05	0.315	1.04	0.328	Figure 3
Front Side	4183/836.6	RMC 12.2K	1:1	24.00	23.83	0.04	0.274	1.04	0.285	N/A
Left Edge	4183/836.6	RMC 12.2K	1:1	24.00	23.83	-0.07	0.298	1.04	0.310	N/A
Right Edge	4183/836.6	RMC 12.2K	1:1	24.00	23.83	0.05	0.305	1.04	0.317	N/A
Top Edge	4183/836.6	RMC 12.2K	1:1	24.00	23.83	-0.03	0.312	1.04	0.324	N/A
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [WCDMA Band II]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	9400/1880	RMC 12.2K	1:1	24.00	23.69	0.15	0.289	1.07	0.310	Figure 4
Front Side	9400/1880	RMC 12.2K	1:1	24.00	23.69	0.03	0.201	1.07	0.216	N/A
Left Edge	9400/1880	RMC 12.2K	1:1	24.00	23.69	0.05	0.268	1.07	0.288	N/A
Right Edge	9400/1880	RMC 12.2K	1:1	24.00	23.69	-0.01	0.279	1.07	0.300	N/A
Top Edge	9400/1880	RMC 12.2K	1:1	24.00	23.69	0.04	0.284	1.07	0.305	N/A
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 2]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	1860.0	1RB	1:1	23.50	23.10	-0.10	0.148	1.10	0.162	N/A
Front Side	1860.0	1RB	1:1	23.50	23.10	-0.09	0.097	1.10	0.106	
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	1860.0	1RB	1:1	23.50	23.10	0.05	0.129	1.10	0.141	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1860.0	1RB	1:1	23.50	23.10	-0.04	0.137	1.10	0.150	N/A
Rear Side	1880.0	50%RB	1:1	23.50	23.44	-0.13	0.156	1.01	0.158	Figure 5
Front Side	1880.0	50%RB	1:1	23.50	23.44	-0.02	0.105	1.01	0.106	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	1880.0	50%RB	1:1	23.50	23.44	0.07	0.134	1.01	0.136	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1880.0	50%RB	1:1	23.50	23.44	-0.02	0.147	1.01	0.149	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 4]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR$_{1g}$ 1.6 W/kg			
						Drift (dB)	Measured SAR$_{1g}$ (W/kg)	Scaling Factor	Reported SAR$_{1g}$ (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	1720.0	1RB	1:1	23.50	22.57	-0.05	0.168	1.24	0.208	N/A
Front Side	1720.0	1RB	1:1	23.50	22.57	0.07	0.124	1.24	0.154	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	1720.0	1RB	1:1	23.50	22.57	0.04	0.141	1.24	0.175	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1720.0	1RB	1:1	23.50	22.57	-0.05	0.153	1.24	0.190	N/A
Rear Side	1732.5	50%RB	1:1	23.50	22.62	-0.10	0.173	1.22	0.212	Figure 6
Front Side	1732.5	50%RB	1:1	23.50	22.62	0.04	0.134	1.22	0.164	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	1732.5	50%RB	1:1	23.50	22.62	0.03	0.157	1.22	0.192	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1732.5	50%RB	1:1	23.50	22.62	-0.01	0.169	1.22	0.207	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 5]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	829.0	1RB	1:1	23.50	22.77	0.08	0.310	1.18	0.367	N/A
Front Side	829.0	1RB	1:1	23.50	22.77	0.11	0.201	1.18	0.238	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	829.0	1RB	1:1	23.50	22.77	0.11	0.274	1.18	0.324	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	829.0	1RB	1:1	23.50	22.77	-0.08	0.293	1.18	0.347	N/A
Rear Side	836.5	50%RB	1:1	23.50	23.10	-0.11	0.317	1.10	0.348	Figure 7
Front Side	836.5	50%RB	1:1	23.50	23.10	-0.05	0.205	1.10	0.225	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	836.5	50%RB	1:1	23.50	23.10	0.08	0.281	1.10	0.308	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	836.5	50%RB	1:1	23.50	23.10	-0.04	0.305	1.10	0.334	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 7]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR1g 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	2510	1RB	1:1	23.50	23.24	0.08	0.218	1.06	0.231	N/A
Front Side	2510	1RB	1:1	23.50	23.24	-0.02	0.171	1.06	0.182	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	2510	1RB	1:1	23.50	23.24	0.10	0.196	1.06	0.208	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	2510	1RB	1:1	23.50	23.24	-0.08	0.207	1.06	0.220	N/A
Rear Side	2535	50%RB	1:1	23.50	23.43	-0.07	0.224	1.02	0.228	Figure 8
Front Side	2535	50%RB	1:1	23.50	23.43	-0.05	0.182	1.02	0.185	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	2535	50%RB	1:1	23.50	23.43	0.08	0.205	1.02	0.208	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	2535	50%RB	1:1	23.50	23.43	-0.04	0.219	1.02	0.223	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 12]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	704.0	1RB	1:1	23.50	23.05	0.02	0.255	1.11	0.283	Figure 9
Front Side	704.0	1RB	1:1	23.50	23.05	0.04	0.179	1.11	0.199	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	704.0	1RB	1:1	23.50	23.05	-0.03	0.211	1.11	0.234	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	704.0	1RB	1:1	23.50	23.05	-0.05	0.236	1.11	0.262	N/A
Rear Side	711.0	50%RB	1:1	23.50	23.02	-0.02	0.251	1.12	0.280	N/A
Front Side	711.0	50%RB	1:1	23.50	23.02	-0.04	0.171	1.12	0.191	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	711.0	50%RB	1:1	23.50	23.02	0.05	0.205	1.12	0.229	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	711.0	50%RB	1:1	23.50	23.02	-0.02	0.229	1.12	0.256	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 17]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	709	1RB	1:1	23.50	23.45	0.01	0.355	1.01	0.359	Figure 10
Front Side	709	1RB	1:1	23.50	23.45	0.03	0.284	1.01	0.287	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	709	1RB	1:1	23.50	23.45	0.05	0.311	1.01	0.315	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	709	1RB	1:1	23.50	23.45	-0.03	0.336	1.01	0.340	N/A
Rear Side	710	50%RB	1:1	23.50	23.21	-0.04	0.345	1.07	0.369	N/A
Front Side	710	50%RB	1:1	23.50	23.21	0.02	0.281	1.07	0.300	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	710	50%RB	1:1	23.50	23.21	0.05	0.307	1.07	0.328	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	710	50%RB	1:1	23.50	23.21	-0.07	0.331	1.07	0.354	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR Values [LTE Band 38]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg				
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Duty Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)											
Rear Side	2595.0	1RB	1:1.58	23.50	23.48	-0.05	0.251	1.005	1.58	0.398	N/A
Front Side	2595.0	1RB	1:1.58	23.50	23.48	0.01	0.194	1.005	1.58	0.308	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	2595.0	1RB	1:1.58	23.50	23.48	0.02	0.220	1.005	1.58	0.349	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	2595.0	1RB	1:1.58	23.50	23.48	-0.03	0.235	1.005	1.58	0.373	N/A
Rear Side	2610.0	50%RB	1:1.58	23.50	23.49	0.06	0.255	1.002	1.58	0.404	Figure 11
Front Side	2610.0	50%RB	1:1.58	23.50	23.49	-0.07	0.201	1.002	1.58	0.318	N/A
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	2610.0	50%RB	1:1.58	23.50	23.49	0.10	0.224	1.002	1.58	0.355	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	2610.0	50%RB	1:1.58	23.50	23.49	-0.05	0.239	1.002	1.58	0.378	N/A

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode
6.TDD LTE was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
7. Duty Factor= 1/X where X is the duty cycle.

SAR Values [LTE Band 41]

Test Position	Channel/ Frequency (MHz)	Test Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR$_{1g}$ 1.6 W/kg					
						Drift (dB)	Measured SAR$_{1g}$ (W/kg)	Scaling Factor	Duty Factor	Reported SAR$_{1g}$ (W/kg)	Graph Results	
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)												
Rear Side	2680.0	1RB	1:1.58	23.50	23.43	0.02	0.305	1.016	1.58	0.490	Figure 12	
Front Side	2680.0	1RB	1:1.58	23.50	23.43	-0.03	0.201	1.016	1.58	0.323	N/A	
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Right Edge	2680.0	1RB	1:1.58	23.50	23.43	0.01	0.289	1.016	1.58	0.464	N/A	
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Bottom Edge	2680.0	1RB	1:1.58	23.50	23.43	-0.05	0.302	1.016	1.58	0.485	N/A	
Rear Side	2593.0	50%RB	1:1.58	23.50	22.95	0.07	0.298	1.135	1.58	0.534	N/A	
Front Side	2593.0	50%RB	1:1.58	23.50	22.95	-0.03	0.197	1.135	1.58	0.353	N/A	
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Right Edge	2593.0	50%RB	1:1.58	23.50	22.95	0.09	0.264	1.135	1.58	0.473	N/A	
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Bottom Edge	2593.0	50%RB	1:1.58	23.50	22.95	-0.10	0.281	1.135	1.58	0.504	N/A	

Note: 1.The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
4. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode
6.TDD LTE was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
7. Duty Factor= 1/X where X is the duty cycle.

SAR Values [WIFI2.4G]

Test Position	Channel/ Frequency (MHz)	Service	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test position of Body-worn accessory & Hotspot Mode (Distance 10mm)										
Rear Side	1/2412	DSSS	1:1	18.00	17.75	-0.05	0.486	1.06	0.515	Figure13
Front Side	1/2412	DSSS	1:1	18.00	17.75	-0.03	0.302	1.06	0.320	N/A
Left Edge	1/2412	DSSS	1:1	18.00	17.75	0.04	0.411	1.06	0.435	N/A
Right Edge	1/2412	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Edge	1/2412	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1/2412	DSSS	1:1	18.00	17.75	0.02	0.442	1.06	0.468	N/A

Note: 1. The value with green color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3.Per KDB 248227-SAR is measured using the highest measured maximum output power channel for the initial test configuration.
4. Per KDB 248227- Channels with measured maximum output power within ¼ dB of each other are considered to have the same maximum output, When there are multiple test channels with the same measured maximum output power, the channel closest to mid-band frequency is selected for SAR measurement. And when there are multiple test channels with the same measured maximum output power and equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.
5. Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg the ODFM SAR test is not required.

Remark: The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was 0.545 W/Kg(0.515*(18/17)=0.545) So ODFM SAR test is not required.

13.SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. The following procedures are applied to determine if repeated measurements are required.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

SAR Measurement Variability

Frequency (MHz)	Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14.Simultaneous Transmission Analysis

Application Simultaneous Transmission information:

Mode	Air-Interface	Can Transmission Simultaneously
1	GSM+WLAN	YES
2	WCDMA +WLAN	YES
3	LTE+WLAN	YES
4	GSM+ LTE	No
5	WCDMA+ LTE	No

Simultaneous transmission SAR for WIFI 2.4G and GSM/WCDMA/ LTE

	GSM 850	GSM 1900	WCDMA Band V	WCDMA Band II	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 7	LTE Band 12	LTE Band 17	LTE Band 38	LTE Band 41	WIFI 2.4G	MAX. ΣSAR_{1g}	Peak location separation ratio
Rear Side	0.258	0.208	0.328	0.310	0.162	0.212	0.367	0.231	0.283	0.369	0.404	0.534	0.515	1.049	N/A
Front Side	0.162	0.136	0.285	0.216	0.106	0.164	0.238	0.185	0.199	0.300	0.318	0.353	0.320	0.673	N/A
Left Edge	0.196	0.193	0.310	0.288	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.435	0.745	N/A
Right Edge	0.205	0.199	0.317	0.300	0.141	0.192	0.324	0.208	0.234	0.328	0.355	0.473	N/A	0.473	N/A
Top Edge	0.229	0.205	0.324	0.305	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.324	N/A
Bottom Edge	N/A	N/A	N/A	N/A	0.150	0.207	0.347	0.223	0.262	0.354	0.378	0.504	0.468	0.972	N/A

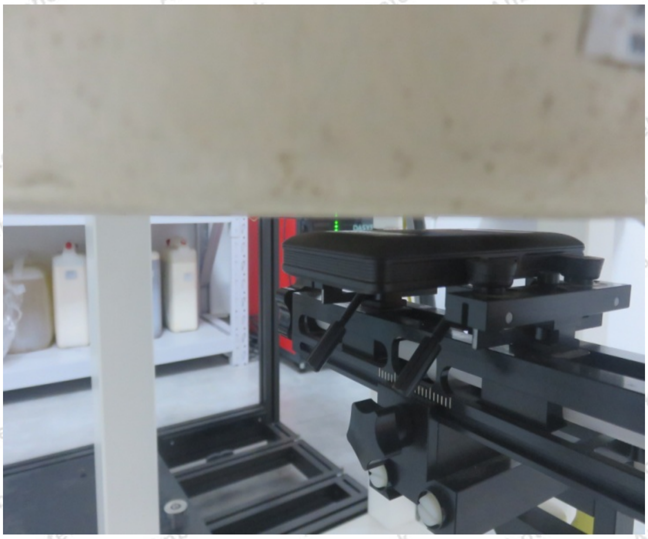
MAX. ΣSAR_{1g} =1.049 W/kg<1.6 W/kg, so the Simultaneous transmission SAR with volume scan are not required for WIFI 2.4G and GSM/WCDMA/LTE.

15. Measurement Uncertainty

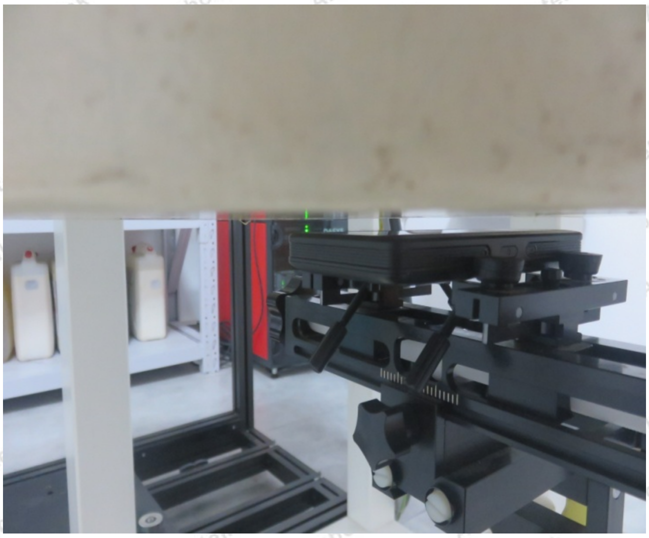
NO	Source	Uncert. ai（%）	Prob. Dist.	Div. k	ci (1g)	ci (10g)	Stand.Uncert. ui (1g)	Stand.Uncert. ui (10g)	*Veff*
1	Repeat	0. 4	N	1	1	1	0. 4	0. 4	9
Instrument									
2	Probe calibration	7	N	2	1	1	3.5	3.5	∞
3	Axial isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
4	Hemispherical isotropy	9.4	R	$\sqrt{3}$	0.7	0.7	3.9	3.9	∞
5	Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
7	Detection limits	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
8	Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
9	Response time	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
10	Integration time	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
11	Ambient noise	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
12	Ambient reflections	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Probe positioner mech. restrictions	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
14	Probe positioning with respect to phantom shell	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
15	Max.SAR evaluation	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞

Test sample related									
16	Device positioning	3.8	N	1	1	1	3.8	3.8	99
17	Device holder	5.1	N	1	1	1	5.1	5.1	5
18	Drift of output power	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up									
19	Phantom uncertainty	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
20	Liquid conductivity (target)	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
21	Liquid conductivity (meas)	2.5	N	1	0.64	0.43	1.6	1.2	∞
22	Liquid Permittivity (target)	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.5	∞
23	Liquid Permittivity (meas)	2.5	N	1	0.6	0.49	1.5	1.2	∞
Combined standard			RSS	$U_c = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			11.4%	11.3%	236
Expanded uncertainty(P=95%)		$U = k U_C$,k=2					**22.8%**	**22.6%**	

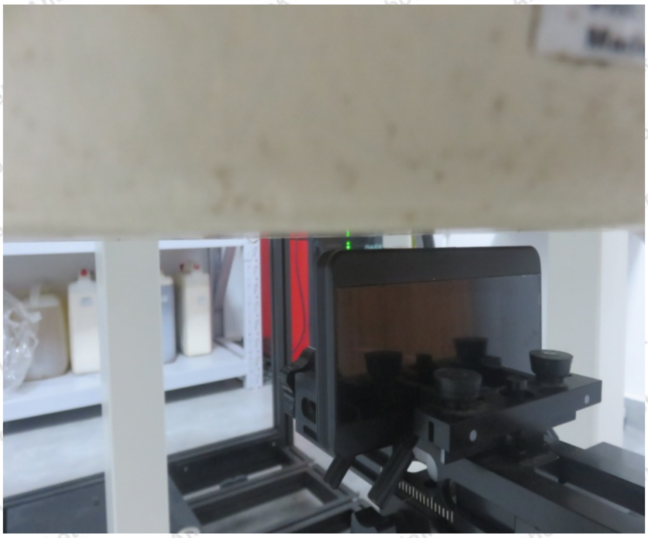
Appendix A. EUT Photos and Test Setup Photos



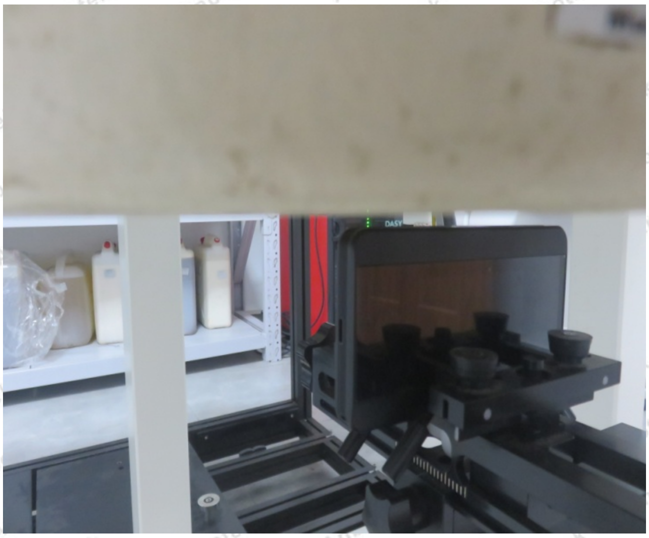
Rear side 10mm



Front side 10mm



Right side 10mm



Left side 10mm

Top side 10mm

Bottom side 10mm

Appendix B. Plots of SAR System Check

System Performance Check at 750 MHz Body

Date: 10/25/2019

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1163

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: f =750MHz; σ = 0.94 mho/m; εr = 55.18; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(10.09, 10.09, 10.09); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x131x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 2.31 mW/g

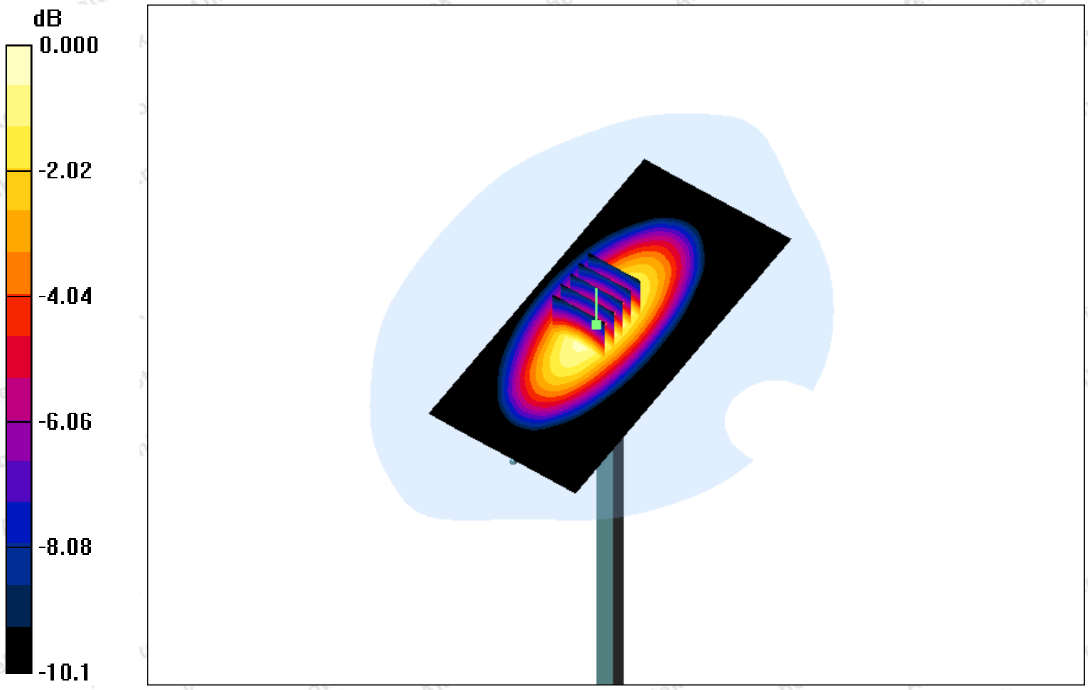
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 49.1 V/m; Power Drift = -0.141 dB

Peak SAR (extrapolated) = 3.20 W/kg

SAR(1 g) = 2.22 mW/g; SAR(10 g) = 1.43 mW/g

Maximum value of SAR (measured) = 2.40 mW/g



System Performance Check 750MHz Body 250mW

System Performance Check at 835 MHz Body

Date: 10/26/2019

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d154

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: f =835MHz; σ = 0.95 mho/m; εr = 54.78; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(9.88, 9.88, 9.88); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x61x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 2.72 mW/g

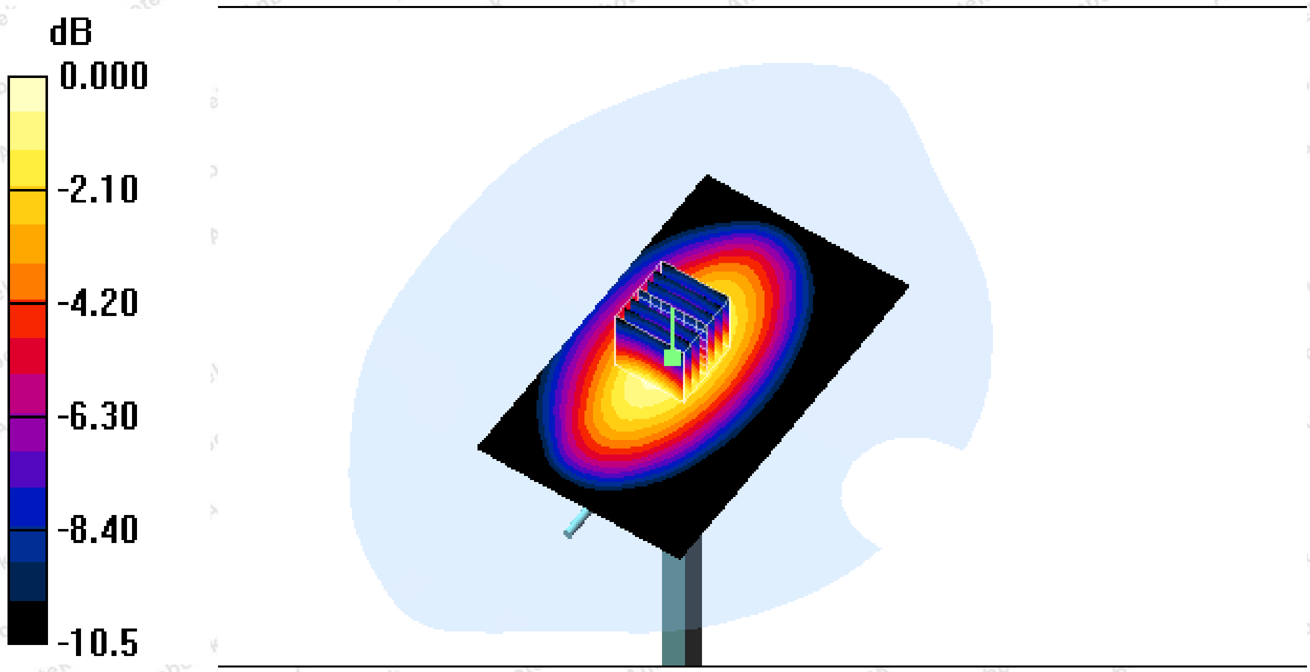
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.523 V/m; Power Drift = -0.01dB

Peak SAR (extrapolated) = 4.068 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.55 mW/g

Maximum value of SAR (measured) = 2.81 mW/g



System Performance Check 835MHz Body 250mW

System Performance Check at 1750 MHz Body

Date: 10/29/2019

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1021

Communication System: CW; Frequency: 1750MHz; Duty Cycle: 1:1

Medium parameters used: f =1750MHz; σ = 1.46mho/m; εr = 54.19; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(8.24, 8.24, 8.24); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x61x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 12.60 mW/g

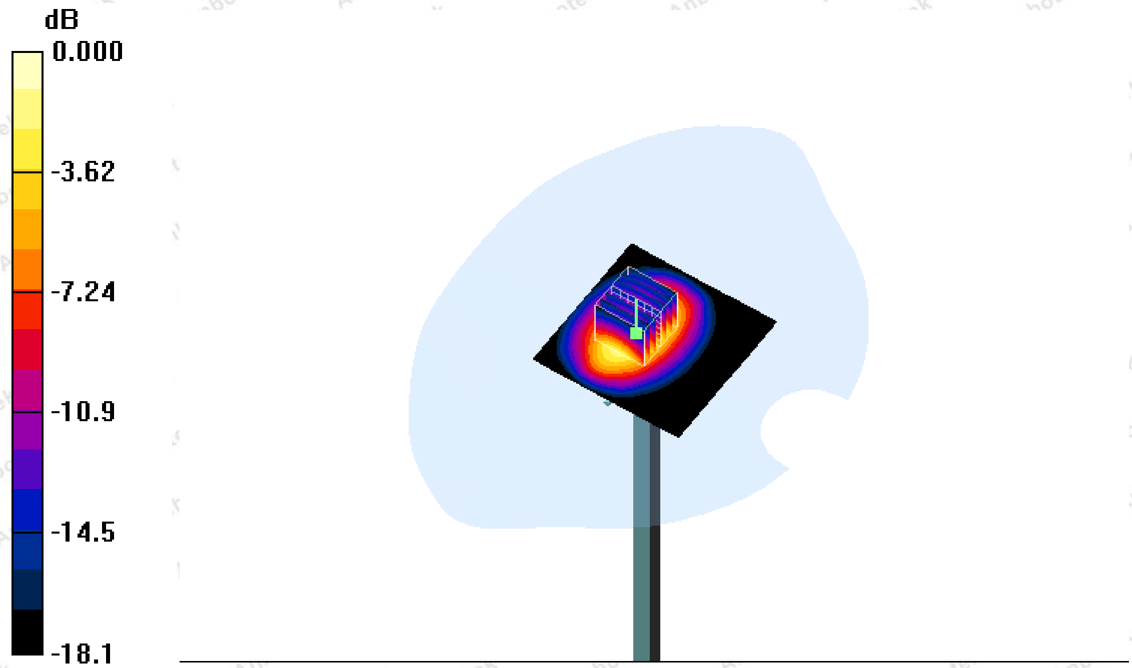
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 81.17 V/m; Power Drift = 0.03dB

Peak SAR (extrapolated) = 15.81 W/kg

SAR(1 g) =9.16 mW/g; SAR(10 g) = 4.74 mW/g

Maximum value of SAR (measured) = 12.71 mW/g



0 dB = 12.71mW/g

System Performance Check 1750MHz Body 250mW

System Performance Check at 1900 MHz Body

Date: 10/27/2019

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d175

Communication System: CW; Frequency: 1900MHz; Duty Cycle: 1:1

Medium parameters used: f =1900MHz; σ = 1.55 mho/m; εr = 53.32; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(7.97, 7.97, 7.97); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x61x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 12.8 mW/g

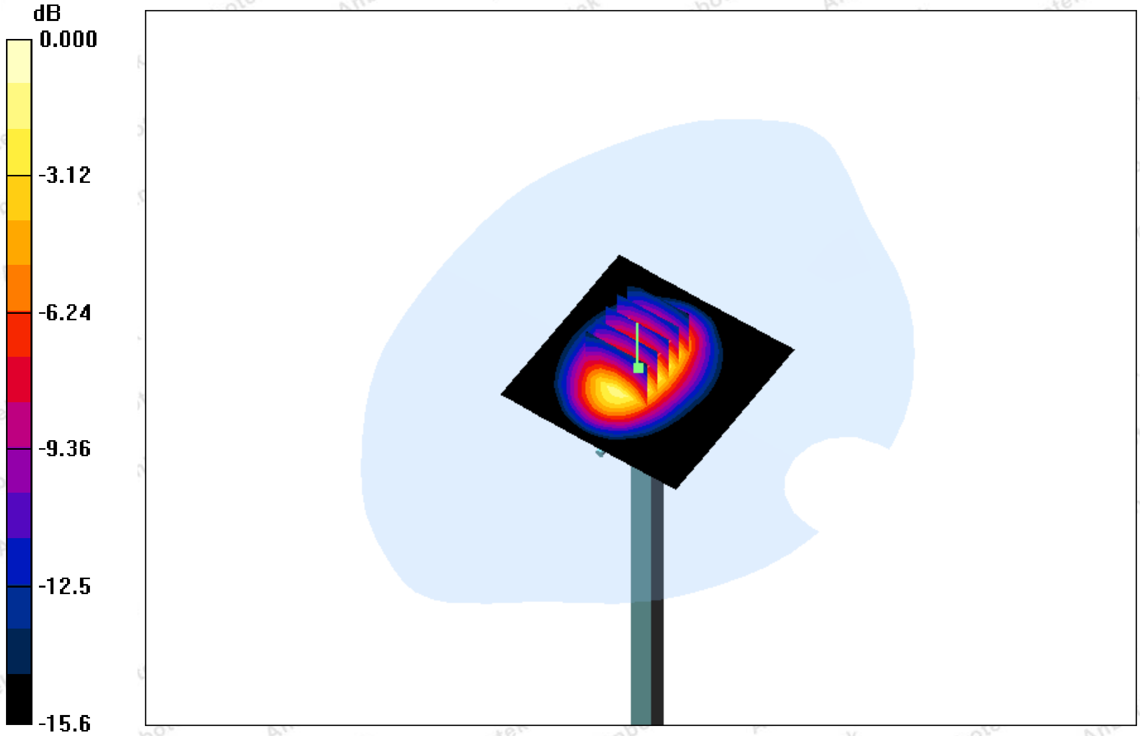
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.9 V/m; Power Drift = 0.109 dB

Peak SAR (extrapolated) = 19.7 W/kg

SAR(1 g) = 10.04 mW/g; SAR(10 g) = 5.39 mW/g

Maximum value of SAR (measured) = 12.47 mW/g



0 dB = 12.47mW/g

System Performance Check 1900MHz Body 250mW

System Performance Check at 2450MHz Body

Date: 10/29/2019

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 910

Communication System: CW; Frequency: 2450MHz; Duty Cycle: 1:1

Medium parameters used: f =2450MHz; σ = 1.95 mho/m; εr = 50.69; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(7.53, 7.53, 7.53); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x61x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 16.2 mW/g

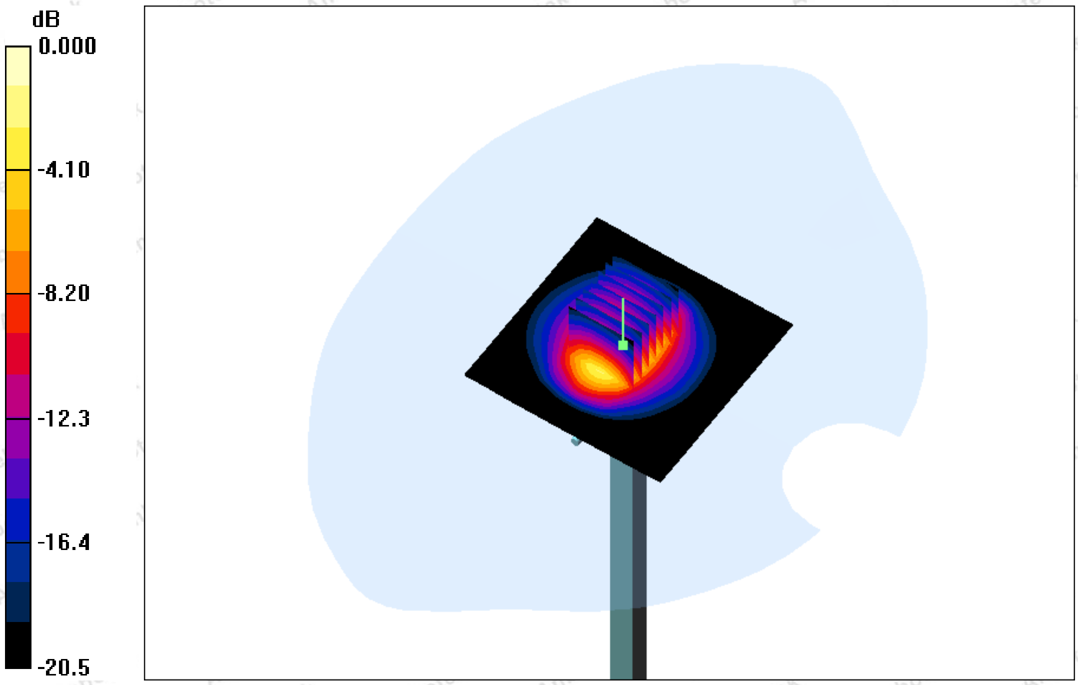
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 89.5 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 27.0 W/kg

SAR(1 g) = 12.93 mW/g; SAR(10 g) = 6.47 mW/g

Maximum value of SAR (measured) = 15.59 mW/g



0 dB = 15.59mW/g

System Performance Check 2450MHz Body 250mW

System Performance Check at 2600MHz Body

Date: 10/28/2019

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1058

Communication System: CW; Frequency: 2600MHz; Duty Cycle: 1:1

Medium parameters used: f =2600MHz; σ =2.20 mho/m; εr = 51.41; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 –7396; ConvF(7.38, 7.38, 7.38); Calibrated: 5/6/2019;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 1549; Calibrated: 3/19/2019
- Phantom: ELI 4.0; Type: QDOVA001BA;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Area Scan (61x61x1): Measurement grid: dx=15.00 mm, dy=15.00 mm

Maximum value of SAR (interpolated) = 25.1 mW/g

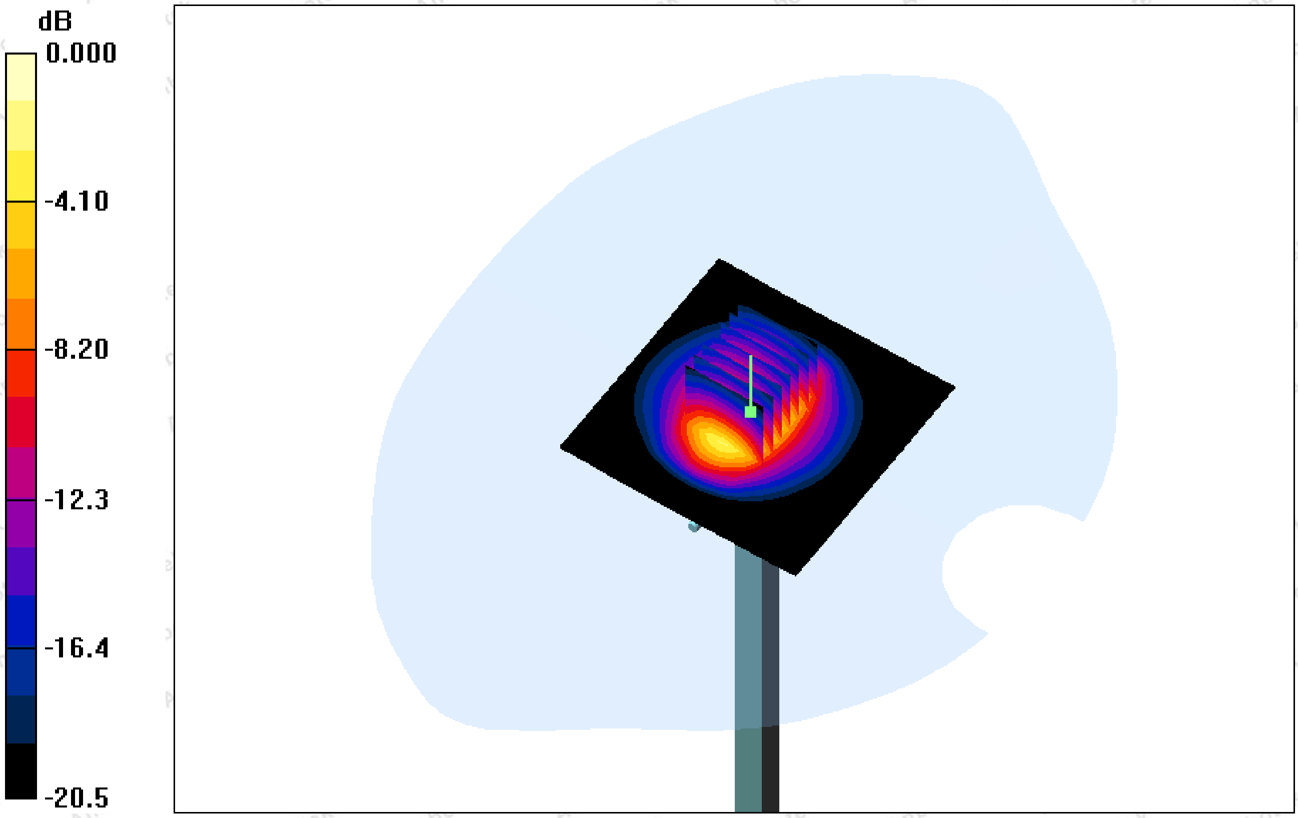
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 89.4 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 34.1 W/kg

SAR(1 g) = 14.22 mW/g; SAR(10 g) = 6.39 mW/g

Maximum value of SAR (measured) = 22.98 mW/g



0 dB = 22.98mW/g