

FCC SAR Test Report

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Applicant : HP Inc.
Address : 3390 East Harmony Road, Fort Collins, Colorado 80528, United States
Product : Notebook Computer
FCC ID : B94HNQ20PD
Brand : HP
Model No. : HSN-Q20C
Standards : FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013
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CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

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FCC Accredited No.: TW0003

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Release Control Record

Report No.	Reason for Change	Date Issued
SA190516C01	Initial release	Jun. 24, 2019

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1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Body (W/kg)	
		Tablet Mode	Laptop Mode
PCB	WCDMA II	0.85	0.10
	WCDMA IV	0.61	0.09
	WCDMA V	0.35	0.04
	LTE 2	0.79	0.08
	LTE 4 & 66	0.68	0.08
	LTE 5	0.35	0.03
	LTE 7	0.36	0.16
	LTE 12 & 17	0.40	0.03
	LTE 13	0.40	0.06
	LTE 26	0.31	0.03
	LTE 30	0.94	0.18
	LTE 38 & 41	0.34	0.08
DTS	2.4G WLAN	0.99	0.26
NII	5.2G WLAN	1.10	N/A
	5.3G WLAN	N/A	0.40
	5.6G WLAN	0.97	0.96
	5.8G WLAN	1.12	1.04
DSS	Bluetooth	0.18	0.02
DXX	NFC	N/A	N/A

Highest Simultaneous Transmission SAR	Highest SAR-1g Body (W/kg)	
	Tablet Mode	Laptop Mode
	1.59	1.22

Note:

1. The SAR criteria (**Head & Body: SAR-1g 1.6 W/kg, and Extremity: SAR-10g 4.0 W/kg**) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
2. This device supports both LTE band 12 and band 17. The frequency span of LTE band 12 can completely cover LTE band 17, and they has the same tune-up power. SAR was tested for LTE band 12 only.
3. This device supports both LTE band 66 and band 4. The frequency span of LTE band 66 can completely cover LTE band 4, and they has the same tune-up power. SAR was tested for LTE band 66 only.
4. This device supports both LTE band 41 and band 38. The frequency span of LTE band 41 can completely cover LTE band 38, and they has the same tune-up power. SAR was tested for LTE band 41 only.

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2. Description of Equipment Under Test

EUT Type	Notebook Computer
FCC ID	B94HNQ20PD
Brand Name	HP
Model Name	HSN-Q20C
Tx Frequency Bands (Unit: MHz)	WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 17 : 706.5 ~ 713.5 (BW: 5M, 10M) LTE Band 26 : 814.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M, 15M) LTE Band 30 : 2307.5 ~ 2312.5 (BW: 5M, 10M) LTE Band 38 : 2572.5 ~ 2617.5 (BW: 5M, 10M, 15M, 20M) LTE Band 41 : 2498.5 ~ 2687.5 (BW: 5M, 10M, 15M, 20M) LTE Band 66 : 1710.7 ~ 1779.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) WLAN : 2412 ~ 2472, 5180 ~ 5240, 5250 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 Bluetooth : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	WCDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n/ac/ax : OFDM Bluetooth : GFSK, $\pi/4$ -DQPSK, 8-DPSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	PIFA Antenna
EUT Stage	Engineering Sample

Note:

- The information of module contains in this EUT is listed as below

Item	Brand Name	Model Name	Specification	FCC ID
WLAN/BT module	Intel® Wi-Fi 6 AX200	AX200D2WL	2T2R 802.11 a/b/g/n/ac/ax WLAN+ Bluetooth	B94-AX200D2LZ.

- The antenna information is listed as below.

Antenna Type	Manufacturer	Parts Number	WLAN Antenna Gain			
			WLAN 2.4 GHz	WLAN 5.15~5.35 GHz	WLAN 5.47~5.725 GHz	WLAN 5.725~5.85 GHz
Laptop Mode						
PIFA	INPAQ	Tx1 Ant.: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002)	Tx1: 0.93 Tx2: 1.66	Tx1: 0.54 Tx2: 0.41	Tx1: -1.55 Tx2: 0.56	Tx1: -1.07 Tx2: -0.21
		Tx2 Ant.: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002)				
Tablet Mode						
PIFA	INPAQ	Tx1 Ant.: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002)	Tx1: -0.36 Tx2: -1.79	Tx1: 2.64 Tx2: 2.58	Tx1: 2.21 Tx2: 1.64	Tx1: 2.61 Tx2: 1.29
		Tx2 Ant.: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002)				

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3. The antenna information is listed as below.

Antenna Type	Manufacturer	Parts Number	WWAN Antenna Gain (dBi)											
			WCDMA II LTE 2	WCDMA IV LTE 4	WCDMA V LTE 5	LTE 7	LTE 12	LTE 13	LTE 17	LTE 26	LTE 30	LTE 38	LTE 41	LTE 66
Couple	INPAQ	Main Antenna: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002) Aux. Antenna: DQ6LBLB0205 (WA-P-LTE15LTE15LBLB-02-002)	Main: -6.19	Main: -5.43	Main: -5.86	Main: -4.90	Main: -5.21	Main: -4.32	Main: -5.21	Main: -5.86	Main: -3.68	Main: -6.78	Main: -4.90	Main: -5.43

4. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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.

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 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.

3.2 SPEAG DASY52 System

DASY52 system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY52 software defined. The DASY52 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.

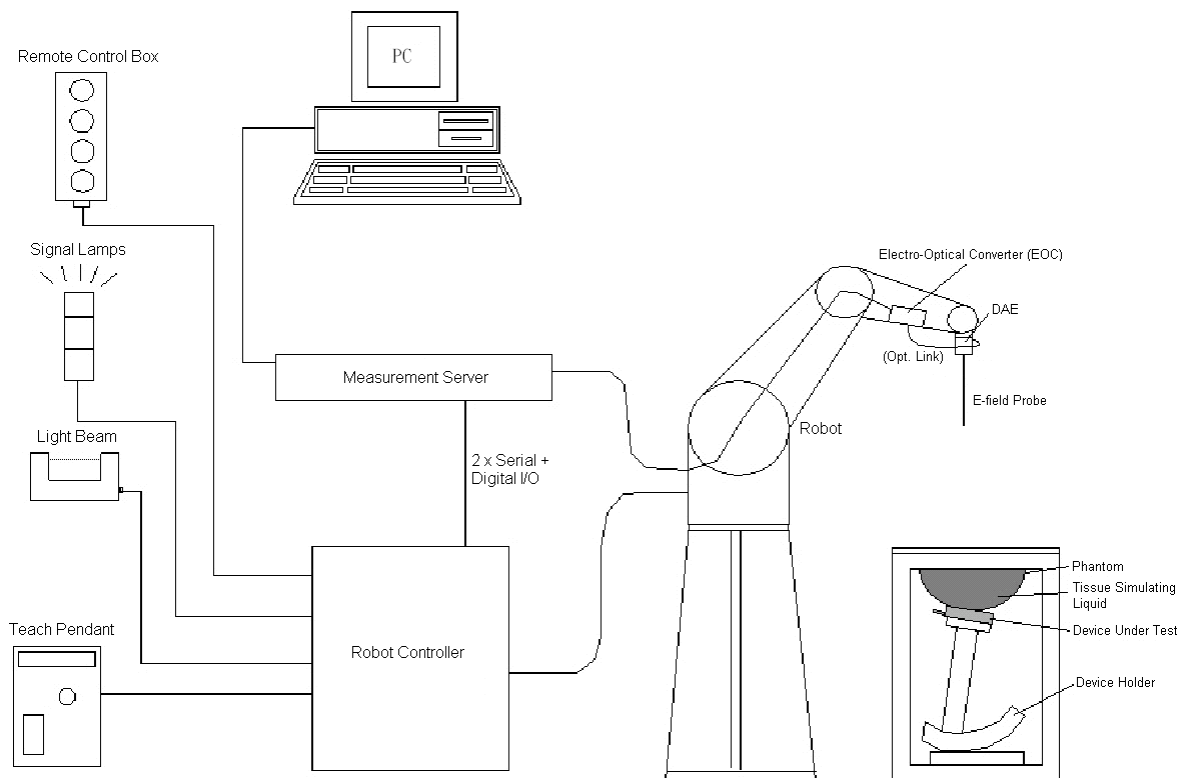


Fig-3.1 SPEAG DASY52 System Setup

3.2.1 Robot

The DASY52 systems use the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version of CS8c from Stäubli is used. The Stäubli robot 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)



Fig-3.2 SPEAG DASY52 System

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3.2.2 Probes

The SAR measurement is conducted with the dosimetric probe. 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.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 μ W/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

Model	ES3DV3	
Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	5 μ W/g to 100 mW/g Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm	

Model	ET3DV6	
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 2.3 GHz; Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.4 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 μ W/g to 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 16 mm) Tip diameter: 6.8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.7 mm	

3.2.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	$< 5\mu$ V (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

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3.2.4 Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

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3.2.5 Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

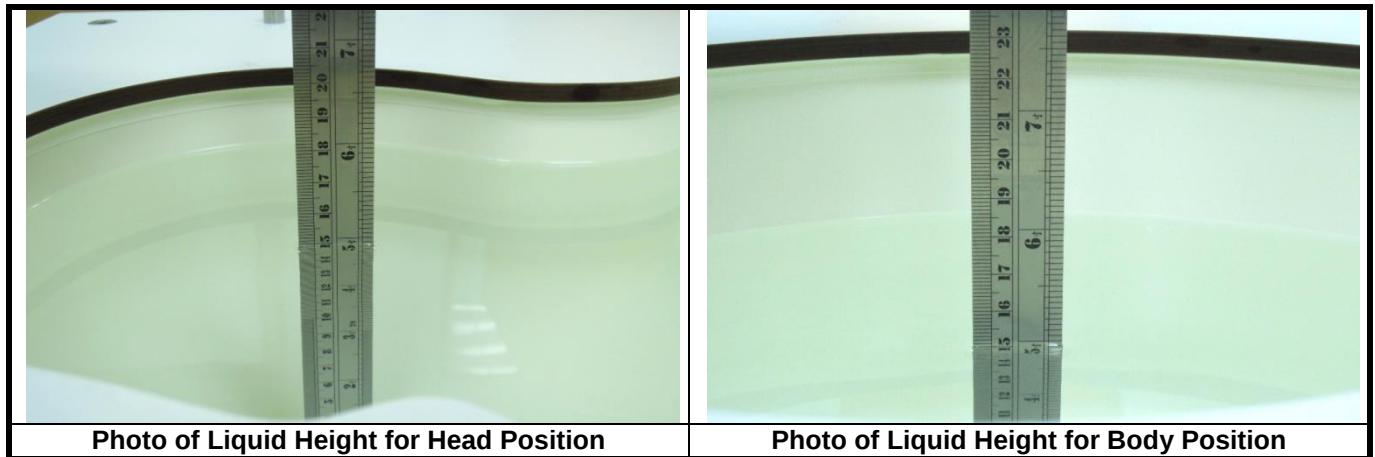
3.2.6 System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

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3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. 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. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.



The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

Table-3.1 Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of $\pm 5\%$	Target Conductivity	Range of $\pm 5\%$
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53

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The following table gives the recipes for tissue simulating liquids.

Table-3.2 Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.3 SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

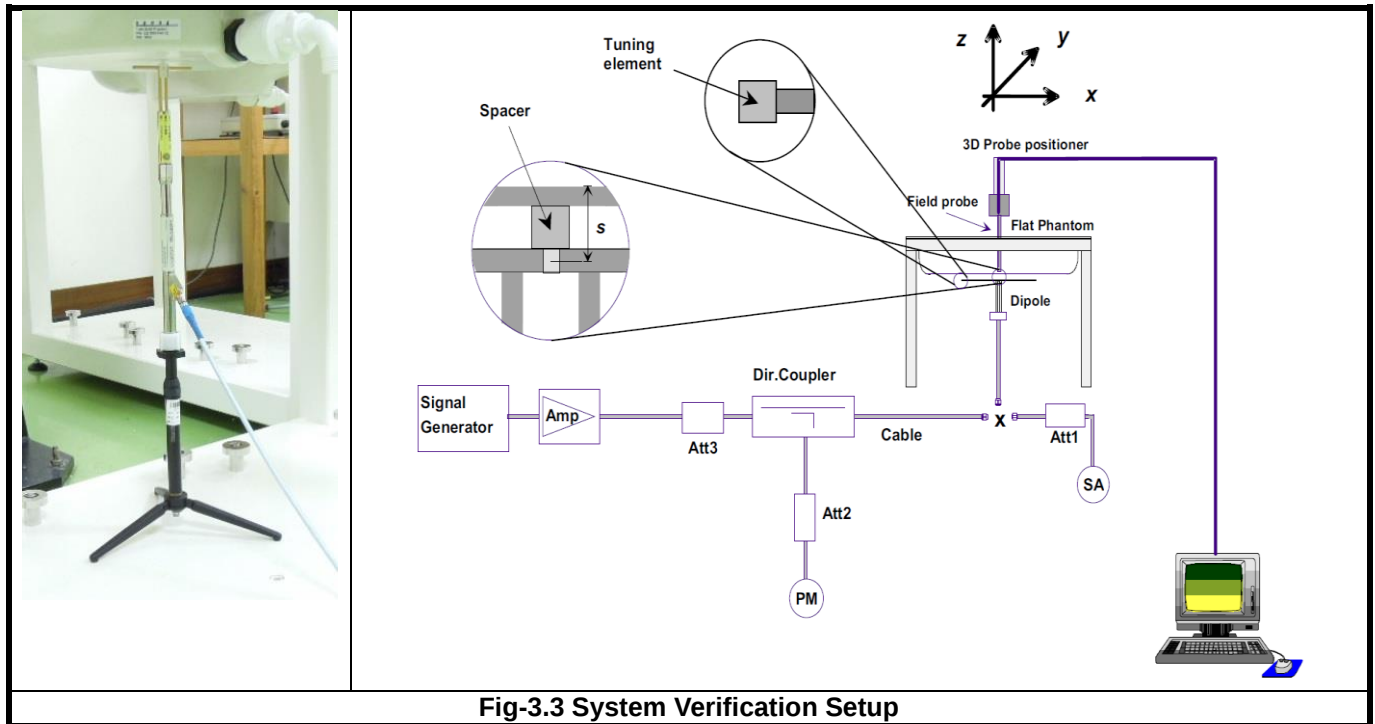


Fig-3.3 System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

3.4 SAR Measurement Procedure

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

- Power reference measurement
- Area scan
- Zoom scan
- Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

- Make EUT to transmit maximum output power
- Measure conducted output power through RF cable
- Place the EUT in the specific position of phantom
- Perform SAR testing steps on the DASY system
- Record the SAR value

3.4.1 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664 D01, the resolution for Area and Zoom scan is specified in the table below.

Items	<= 2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan ($\Delta x, \Delta y$)	<= 15 mm	<= 12 mm	<= 12 mm	<= 10 mm	<= 10 mm
Zoom Scan ($\Delta x, \Delta y$)	<= 8 mm	<= 5 mm	<= 5 mm	<= 4 mm	<= 4 mm
Zoom Scan (Δz)	<= 5 mm	<= 5 mm	<= 4 mm	<= 3 mm	<= 2 mm
Zoom Scan Volume	>= 30 mm	>= 30 mm	>= 28 mm	>= 25 mm	>= 22 mm

Note:

When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of $\Delta x / \Delta y$ (2-3GHz: <= 8 mm, 3-4GHz: <= 7 mm, 4-6GHz: <= 5 mm) may be applied.

3.4.2 Volume Scan Procedure

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.

3.4.3 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

3.4.4 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 from 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

3.4.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

4. SAR Measurement Evaluation

4.1 EUT Configuration and Setting

<Connections between EUT and System Simulator>

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating 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 SAR testing.

<Considerations Related to WCDMA for Setup and Testing>

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH / HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) are set according to values indicated in below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{HS}^{(1)(2)}$	CM ⁽³⁾ (dB)	MPR ⁽³⁾ (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	12/15 ⁽⁴⁾	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

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Release 6 HSPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	$\beta_{HS}^{(1)}$	β_{ec}	$\beta_{ed}^{(4)(5)}$	β_{ed} (SF)	β_{ed} (Codes)	CM ⁽²⁾ (dB)	MPR ⁽²⁾⁽⁶⁾ (dB)	AG ⁽⁵⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{HS} = 5/15 * \beta_c$.
Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.
Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

HSPA+ SAR Guidance

The 3G SAR test reduction procedure is applied to HSPA+ (uplink) with 12.2 kbps RMC as the primary mode. Otherwise, when SAR is required for Rel. 6 HSPA, SAR is required for Rel. 7 HSPA+. Power is measured for HSPA+ that supports uplink 16QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

Sub-test	$\beta_c^{(3)}$	β_d	$\beta_{HS}^{(1)}$	β_{ec}	$\beta_{ed}^{(4)}$ (2xSF2)	$\beta_{ed}^{(4)}$ (2xSF4)	CM ⁽²⁾ (dB)	MPR ⁽²⁾ (dB)	AG ⁽⁴⁾ Index	E-TFCI ⁽⁵⁾	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

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DC-HSDPA SAR Guidance

The 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Otherwise, when SAR is required for Rel. 5 HSDPA, SAR is required for Rel. 8 DC-HSDPA. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

<Considerations Related to LTE for Setup and Testing>

This device contains LTE transmitter which follows 3GPP standards, is category 3, supports both QPSK and QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for both QPSK and QAM modulation. The results please refer to section 4.6 of this report.

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz
2	V	V	V	V	V	V
4	V	V	V	V	V	V
5	V	V	V	V		
7			V	V	V	V
12	V	V	V	V		
13			V	V		
17			V	V		
26	V	V	V	V	V	
30			V	V		
38			V	V	V	V
41			V	V	V	V
66	V	V	V	V	V	V

The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

Modulation	Channel Bandwidth / RB Configurations						LTE MPR Setting (dB)
	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2

Note: MPR is according to the standard and implemented in the circuit (mandatory).

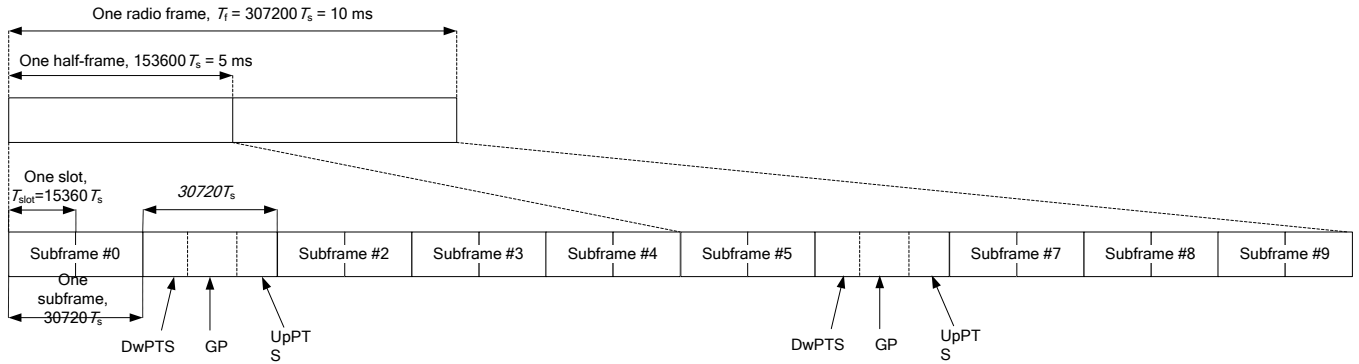
In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

During LTE SAR testing, the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB was set in base station simulator. When the EUT has registered and communicated to base station simulator, the simulator set to make EUT transmitting the maximum radiated power.

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TDD-LTE Setup Configurations

According to KDB 941225 D05, SAR testing for TDD-LTE device must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.



3GPP TS 36.211 Figure 4.2-1: Frame Structure Type 2

Special Subframe Configuration	Normal Cyclic Prefix in Downlink			Extended Cyclic Prefix in Downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal Cyclic Prefix in Uplink	Extended Cyclic Prefix in Uplink		Normal Cyclic Prefix in Uplink	Extended Cyclic Prefix in Uplink
0	6592 • Ts	2192 • Ts	2560 • Ts	7680 • Ts	2192 • Ts	2560 • Ts
1	19760 • Ts			20480 • Ts		
2	21952 • Ts			23040 • Ts		
3	24144 • Ts			25600 • Ts		
4	26336 • Ts			7680 • Ts		
5	6592 • Ts	4384 • Ts	5120 • Ts	20480 • Ts	4384 • Ts	5120 • Ts
6	19760 • Ts			23040 • Ts		
7	21952 • Ts			12800 • Ts		
8	24144 • Ts			-	-	-
9	13168 • Ts			-	-	-

3GPP TS 36.211 Table 4.2-1: Configuration of Special Subframe

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-Point Periodicity	Subframe Number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

3GPP TS 36.211 Table 4.2-2: Uplink-Downlink Configurations

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The variety of different TD-LTE uplink-downlink configurations allows a network operator to allocate the network's capacity between uplink and downlink traffic to meet the needs of the network. The uplink duty cycle of these seven configurations can readily be computed and shown in below.

UL-DL Configuration	0	1	2	3	4	5	6
Highest Duty-Cycle	63.33%	43.33%	23.33%	31.67%	21.67%	11.67%	53.33%

Considering the highest transmission duty cycle, TDD-LTE was tested using Uplink-Downlink Configuration 0 with 6 uplink subframe and 2 special subframe. The special subframe was set to special subframe configuration 7 using extended cyclic prefix uplink. Therefore, SAR testing for TDD-LTE was performed at the maximum output power with highest transmission duty cycle of 63.33%.

<Considerations Related to WLAN for Setup and Testing>

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

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Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n). After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.

- 1) The channel closest to mid-band frequency is selected for SAR measurement.
- 2) For channels with 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.

Test Reduction for U-NII-1 (5.2 GHz) and U-NII-2A (5.3 GHz) Bands

For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following.

- 1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition).
- 2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

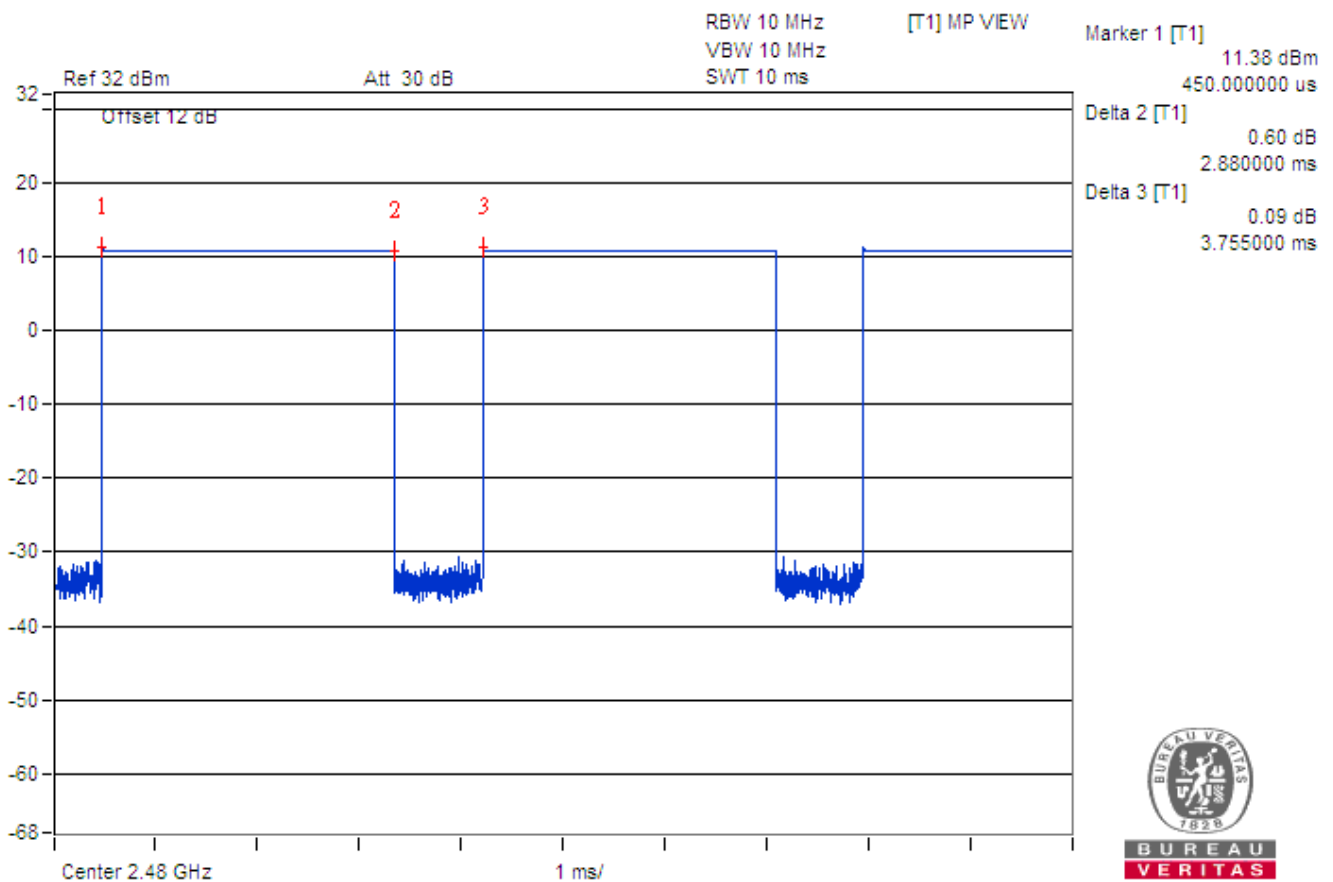


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<Considerations Related to Bluetooth for Setup and Testing>

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

The Bluetooth call box has been used during SAR measurement and the EUT was set to DH5 mode at the maximum output power. Its duty factor was calculated as below and the measured SAR for Bluetooth would be scaled to the 100% transmission duty factor to determine compliance.



Time-domain plot for Bluetooth transmission signal

The duty factor of Bluetooth signal has been calculated as following.

$$\text{Duty Factor} = \text{Pulse Width} / \text{Total Period} = 2.88 / 3.755 = 76.70 \%$$

4.2 EUT Testing Position

4.2.1 Body Exposure Conditions

For laptop PC, according to KDB 616217 D04, SAR evaluation is required for the bottom surface of the keyboard. This EUT was tested in the base of EUT directly against the flat phantom. The required minimum test separation distance for incorporating transmitters and antennas into laptop computer display is determined with the display screen opened at an angle of 90° to the keyboard compartment.

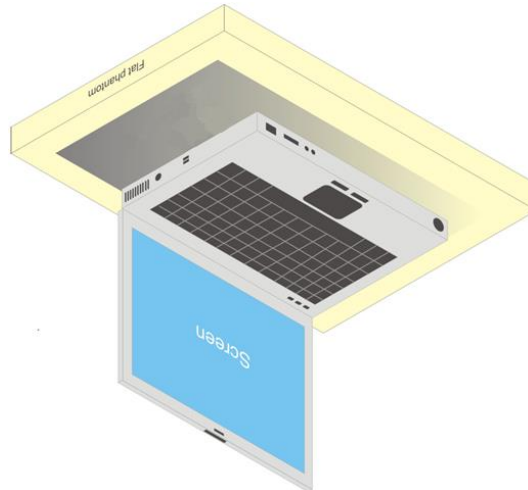


Fig-4.1 Illustration for Laptop Setup

For laptop PC with antennas built-in on display screen, according to RSS-102 Supplementary procedures (SPR-001), IC requires SAR measurements to be performed with the side/edge of the display screen containing the built-in antenna pointing towards the flat phantom, unless the side/edge of the laptop computer containing the built-in antenna was already tested against the flat phantom to account for the user requirements (e.g. antenna in the laptop base). The separation distance shall not exceed 25 mm between the device and the flat phantom to show compliance for bystanders. Additional configurations regarding SAR testing for laptop computer are not required if the separation distance of 25 mm for bystanders represents the worst-case configuration.

The bystander SAR measurement procedure is as following.

1. If the integrated antenna is located in the back side of the display screen, the back side shall be facing towards the flat phantom at a distance not exceeding 25 mm.
2. If the integrated antenna is installed along the edge of the display screen, the edge shall be facing towards the flat phantom at a distance not exceeding 25 mm.
3. If the integrated antenna is installed at the corner of the display, both edges, as well as back side shall be tested to ensure that the worst-case configuration is captured.

For full-size tablet, according to KDB 616217 D04, SAR evaluation is required for back surface and edges of the devices. The back surface and edges of the tablet are tested with the tablet touching the phantom. Exposures from antennas through the front surface of the display section of a tablet are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary. When voice mode is supported on a tablet and it is limited to speaker mode or headset operations only, additional SAR testing for this type of voice use is not required.

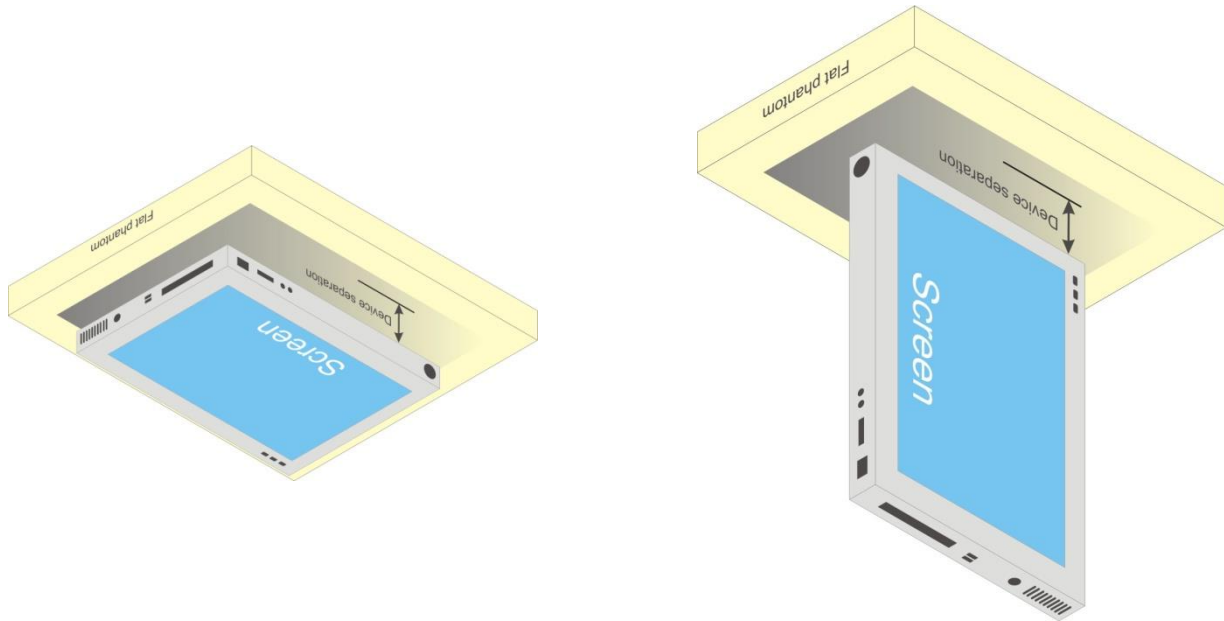


Fig-4.2 Illustration for Tablet Setup

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4.2.2 SAR Test Exclusion Evaluations

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

- For the test separation distance ≤ 50 mm

$$\frac{\text{Max. Tune up Power}_{(mW)}}{\text{Min. Test Separation Distance}_{(mm)}} \times \sqrt{f_{(GHz)}} \leq 3.0 \text{ for SAR-1g, } \leq 7.5 \text{ for SAR-10g}$$

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

- For the test separation distance > 50 mm, and the frequency at 100 MHz to 1500 MHz

$$\left[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times \left(\frac{f_{(MHz)}}{150} \right) \right]_{(mW)}$$

- For the test separation distance > 50 mm, and the frequency at > 1500 MHz to 6 GHz

$$[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times 10]_{(mW)}$$

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
			Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
WCDMA II	16	40	5	11.05	Yes	10	5.52	Yes	243.8	2047 mW	No	4	11.05	Yes	204.5	1654 mW	No
WCDMA IV	17	50	5	13.24	Yes	10	6.62	Yes	243.8	2051 mW	No	4	13.24	Yes	204.5	1658 mW	No
WCDMA V	19.5	89	5	16.38	Yes	10	8.19	Yes	243.8	1257 mW	No	4	16.38	Yes	204.5	1035 mW	No
LTE 2	16	40	5	11.06	Yes	10	5.53	Yes	243.8	2047 mW	No	4	11.06	Yes	204.5	1654 mW	No
LTE 4	17	50	5	13.25	Yes	10	6.62	Yes	243.8	2051 mW	No	4	13.25	Yes	204.5	1658 mW	No
LTE 5	19.5	89	5	16.4	Yes	10	8.2	Yes	243.8	1260 mW	No	4	16.4	Yes	204.5	1037 mW	No
LTE 7	16	40	5	12.82	Yes	10	6.41	Yes	243.8	2032 mW	No	4	12.82	Yes	204.5	1639 mW	No
LTE 12	18	63	5	10.66	Yes	10	5.33	Yes	243.8	1102 mW	No	4	10.66	Yes	204.5	915 mW	No
LTE 13	19	79	5	14.02	Yes	10	7.01	Yes	243.8	1186 mW	No	4	14.02	Yes	204.5	980 mW	No
LTE 17	18	63	5	10.66	Yes	10	5.33	Yes	243.8	1102 mW	No	4	10.66	Yes	204.5	915 mW	No
LTE 26	19.5	89	5	16.4	Yes	10	8.2	Yes	243.8	1260 mW	No	4	16.4	Yes	204.5	1037 mW	No
LTE 30	16	40	5	12.17	Yes	10	6.09	Yes	243.8	2037 mW	No	4	12.17	Yes	204.5	1644 mW	No
LTE 38	17.5	56	5	18.13	Yes	10	9.06	Yes	243.8	2031 mW	No	4	18.13	Yes	204.5	1638 mW	No
LTE 41	17.5	56	5	18.37	Yes	10	9.18	Yes	243.8	2029 mW	No	4	18.37	Yes	204.5	1636 mW	No
LTE 66	17	50	5	13.34	Yes	10	6.67	Yes	243.8	2050 mW	No	4	13.34	Yes	204.5	1657 mW	No

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<For WLAN Tx1>

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
			Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
WLAN 2.4G	18.5	71	5	22.28	Yes	211.6	1712 mW	No	55	146 mW	No	4	22.28	Yes	204.5	1641 mW	No
WLAN 5.2G	17	50	5	22.89	Yes	211.6	1682 mW	No	55	116 mW	No	4	22.89	Yes	204.5	1611 mW	No
WLAN 5.3G	15.5	35	5	16.15	Yes	211.6	1681 mW	No	55	115 mW	No	4	16.15	Yes	204.5	1610 mW	No
WLAN 5.6G	15.5	35	5	16.74	Yes	211.6	1679 mW	No	55	113 mW	No	4	16.74	Yes	204.5	1608 mW	No
WLAN 5.8G	15.5	35	5	16.89	Yes	211.6	1678 mW	No	55	112 mW	No	4	16.89	Yes	204.5	1607 mW	No

<For BT/WLAN Tx2>

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
			Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
WLAN 2.4G	18.5	71	5	22.28	Yes	65	246 mW	No	205.6	1652 mW	No	4	22.28	Yes	204.5	1641 mW	No
WLAN 5.2G	17	50	5	22.89	Yes	65	216 mW	No	205.6	1622 mW	No	4	22.89	Yes	204.5	1611 mW	No
WLAN 5.3G	15.5	35	5	16.15	Yes	65	215 mW	No	205.6	1621 mW	No	4	16.15	Yes	204.5	1610 mW	No
WLAN 5.6G	15.5	35	5	16.74	Yes	65	213 mW	No	205.6	1619 mW	No	4	16.74	Yes	204.5	1608 mW	No
WLAN 5.8G	15.5	35	5	16.89	Yes	65	212 mW	No	205.6	1618 mW	No	4	16.89	Yes	204.5	1607 mW	No
BT	11	13	5	4.09	Yes	65	245 mW	No	205.6	1651 mW	No	4	4.09	Yes	204.5	1640 mW	No

<For WLAN Tx1 + Tx2>

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
			Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
WLAN 2.4G	17.5	56	5	17.57	Yes	65	246 mW	No	55	146 mW	No	4	17.57	Yes	204.5	1641 mW	No
WLAN 5.2G	17	50	5	22.89	Yes	65	216 mW	No	55	116 mW	No	4	22.89	Yes	204.5	1611 mW	No
WLAN 5.3G	15.5	35	5	16.15	Yes	65	215 mW	No	55	115 mW	No	4	16.15	Yes	204.5	1610 mW	No
WLAN 5.6G	15.5	35	5	16.74	Yes	65	213 mW	No	55	113 mW	No	4	16.74	Yes	204.5	1608 mW	No
WLAN 5.8G	15.5	35	5	16.89	Yes	65	212 mW	No	55	112 mW	No	4	16.89	Yes	204.5	1607 mW	No

Note:

1. When separation distance ≤ 50 mm and the calculated result shown in above table is ≤ 3.0 for SAR-1g exposure condition, or ≤ 7.5 for SAR-10g exposure condition, the SAR testing exclusion is applied.
2. When separation distance > 50 mm and the device output power is less than the calculated result (power threshold, mW) shown in above table, the SAR testing exclusion is applied.

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4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Frequency (MHz)	Liquid Temp. (°C)	Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Target Conductivity (σ)	Target Permittivity (ϵ_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Jun. 01, 2019	750	23.3	0.885	42.448	0.89	41.9	-0.56	1.31
Jun. 05, 2019	750	23.3	0.884	42.849	0.89	41.9	-0.67	2.26
Jun. 01, 2019	835	23.3	0.907	41.945	0.9	41.5	0.78	1.07
Jun. 05, 2019	835	23.3	0.915	42.964	0.9	41.5	1.67	3.53
Jun. 01, 2019	1750	23.3	1.321	40.261	1.37	40.1	-3.58	0.40
Jun. 03, 2019	1750	23.4	1.331	38.689	1.37	40.1	-2.85	-3.52
Jun. 01, 2019	1900	23.3	1.455	39.708	1.4	40	3.93	-0.73
Jun. 03, 2019	1900	23.4	1.461	38.118	1.4	40	4.36	-4.70
Jun. 03, 2019	2300	23.4	1.704	38.984	1.67	39.5	2.04	-1.31
Jun. 05, 2019	2450	23.4	1.878	38.843	1.8	39.2	4.33	-0.91
Jun. 08, 2019	2450	23.2	1.854	38.646	1.8	39.2	3.00	-1.41
Jun. 03, 2019	2600	23.4	2.008	39.939	1.96	39	2.45	2.41
Jun. 05, 2019	5250	23.3	4.636	37.541	4.71	35.9	-1.57	4.57
Jun. 08, 2019	5250	23.2	4.562	34.837	4.71	35.9	-3.14	-2.96
Jun. 05, 2019	5600	23.2	4.999	37.063	5.07	35.5	-1.40	4.40
Jun. 09, 2019	5600	23.2	4.877	34.403	5.07	35.5	-3.81	-3.09
Jun. 06, 2019	5750	23.2	5.154	36.85	5.22	35.4	-1.26	4.10
Jun. 09, 2019	5750	23.2	5.02	34.174	5.22	35.4	-3.83	-3.46

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within $\pm 5\%$ of the target values. Liquid temperature during the SAR testing must be within $\pm 2^\circ\text{C}$.

4.4 System Validation

The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.

Test Date	Probe S/N	Calibration Point	Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Validation for CW			Validation for Modulation		
					Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR
Jun. 01, 2019	3971	750	0.885	42.448	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 05, 2019	7375	750	0.884	42.849	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 01, 2019	3971	835	0.907	41.945	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 05, 2019	7375	835	0.915	42.964	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 01, 2019	3971	1750	1.321	40.261	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 03, 2019	7472	1750	1.331	38.689	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 01, 2019	3971	1900	1.455	39.708	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 03, 2019	7472	1900	1.461	38.118	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 03, 2019	7472	2300	1.704	38.984	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 05, 2019	3971	2450	1.878	38.843	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 08, 2019	7375	2450	1.854	38.646	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 03, 2019	7472	2600	2.008	39.939	Pass	Pass	Pass	N/A	N/A	N/A
Jun. 05, 2019	3971	5250	4.636	37.541	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 08, 2019	7375	5250	4.562	34.837	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 05, 2019	3971	5600	4.999	37.063	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 09, 2019	7375	5600	4.877	34.403	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 06, 2019	3971	5750	5.154	36.85	Pass	Pass	Pass	OFDM	N/A	Pass
Jun. 09, 2019	7375	5750	5.02	34.174	Pass	Pass	Pass	OFDM	N/A	Pass

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4.5 System Verification

The measuring result for system verification is tabulated as below.

Test Date	Mode	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Jun. 01, 2019	Body	750	8.15	1.94	7.76	-4.79	1013	3971	1431
Jun. 05, 2019	Body	750	8.15	2.03	8.12	-0.37	1013	7375	915
Jun. 01, 2019	Body	835	9.44	2.38	9.52	0.85	4d121	3971	1431
Jun. 05, 2019	Body	835	9.44	2.5	10.00	5.93	4d121	7375	915
Jun. 01, 2019	Body	1750	36.90	9.08	36.32	-1.57	1055	3971	1431
Jun. 03, 2019	Body	1750	36.90	9.03	36.12	-2.11	1055	7472	1277
Jun. 01, 2019	Body	1900	40.20	10.1	40.40	0.50	5d036	3971	1431
Jun. 03, 2019	Body	1900	40.20	10.3	41.20	2.49	5d036	7472	1277
Jun. 03, 2019	Body	2300	49.10	12.1	48.40	-1.43	1004	7472	1277
Jun. 05, 2019	Body	2450	51.50	13	52.00	0.97	737	3971	1431
Jun. 08, 2019	Body	2450	51.50	13.6	54.40	5.63	737	7375	916
Jun. 03, 2019	Body	2600	55.70	14	56.00	0.54	1020	7472	1277
Jun. 05, 2019	Body	5250	80.70	8.02	80.20	-0.62	1019	3971	1431
Jun. 08, 2019	Body	5250	80.70	7.88	78.80	-2.35	1019	7375	916
Jun. 05, 2019	Body	5600	85.80	8.28	82.80	-3.50	1019	3971	1431
Jun. 09, 2019	Body	5600	85.80	9.24	92.40	7.69	1019	7375	916
Jun. 06, 2019	Body	5750	81.50	7.85	78.50	-3.68	1019	3971	1431
Jun. 09, 2019	Body	5750	81.50	8.14	81.40	-0.12	1019	7375	916

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

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4.6 Maximum Output Power

4.6.1 Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

Tablet Mode

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	16.0	17.0	19.5
HSDPA / HSUPA / DC-HSDPA	16.0	17.0	19.5

Mode	LTE 2	LTE 4	LTE 5	LTE 7
Maximum Target Power	16.0	17.0	19.5	16.0

Mode	LTE 12	LTE 13	LTE 17	LTE 26
Maximum Target Power	18.0	19.0	18.0	19.5

Mode	LTE 30	LTE 38	LTE 41	LTE 66
Maximum Target Power	16.0	17.5	17.5	17.0

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<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11b	1	2412	18.50	18.50	-
	6	2437	18.50	18.50	-
	11	2462	18.25	18.25	-
	12	2467	17.50	16.50	-
	13	2472	15.25	15.25	-
802.11g	1	2412	18.00	17.00	-
	6	2437	18.50	18.50	-
	11	2462	15.50	15.50	-
	12	2467	13.50	13.50	-
	13	2472	10.75	10.75	-
802.11n (HT20)	1	2412	18.00	17.00	16.25
	6	2437	18.50	18.50	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11n (HT40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50
802.11ac (VHT20)	1	2412	18.00	17.00	16.25
	6	2437	18.50	18.50	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11ac (VHT40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50
802.11ax (HE20)	1	2412	18.00	17.00	16.25
	6	2437	18.50	18.50	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11ax (HE40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50

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<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	36	5180	17.00	17.00	-
	40	5200	17.00	17.00	-
	44	5220	17.00	17.00	-
	48	5240	17.00	17.00	-
802.11n (HT20)	36	5180	17.00	17.00	17.00
	40	5200	17.00	17.00	17.00
	44	5220	17.00	17.00	17.00
	48	5240	17.00	17.00	17.00
802.11n (HT40)	38	5190	17.00	17.00	16.50
	46	5230	17.00	17.00	17.00
802.11ac (VHT20)	36	5180	17.00	17.00	17.00
	40	5200	17.00	17.00	17.00
	44	5220	17.00	17.00	17.00
	48	5240	17.00	17.00	17.00
802.11ac (VHT40)	38	5190	17.00	17.00	16.50
	46	5230	17.00	17.00	17.00
802.11ac (VHT80)	42	5210	17.00	17.00	16.50
802.11ax (HE20)	36	5180	17.00	17.00	17.00
	40	5200	17.00	17.00	17.00
	44	5220	17.00	17.00	17.00
	48	5240	17.00	17.00	17.00
802.11ax (HE40)	38	5190	17.00	17.00	16.50
	46	5230	17.00	17.00	17.00
802.11ax (HE80)	42	5210	17.00	17.00	16.50

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<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	52	5260	15.50	15.50	-
	56	5280	15.50	15.50	-
	60	5300	15.50	15.50	-
	64	5320	15.50	15.50	-
802.11n (HT20)	52	5260	15.50	15.50	15.50
	56	5280	15.50	15.50	15.50
	60	5300	15.50	15.50	15.50
	64	5320	15.50	15.50	15.50
802.11n (HT40)	54	5270	15.50	15.50	15.50
	62	5310	15.50	15.50	15.50
802.11ac (VHT20)	52	5260	15.50	15.50	15.50
	56	5280	15.50	15.50	15.50
	60	5300	15.50	15.50	15.50
	64	5320	15.50	15.50	15.50
802.11ac (VHT40)	54	5270	15.50	15.50	15.50
	62	5310	15.50	15.50	15.50
802.11ac (VHT80)	58	5290	15.50	15.50	15.50
802.11ac (VHT160)	50	5250	14.50	14.75	14.50
802.11ax (HE20)	52	5260	15.50	15.50	15.50
	56	5280	15.50	15.50	15.50
	60	5300	15.50	15.50	15.50
	64	5320	15.50	15.50	15.50
802.11ax (HE40)	54	5270	15.50	15.50	15.50
	62	5310	15.50	15.50	15.50
802.11ax (HE80)	58	5290	15.50	15.50	15.50
802.11ax (HE160)	50	5250	14.50	14.75	14.50

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<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	100	5500	15.50	15.50	-
	116	5580	15.50	15.50	-
	120	5600	15.50	15.50	
	124	5620	15.50	15.50	
	132	5660	15.50	15.50	-
	140	5700	15.50	15.50	-
	144	5720	15.50	15.50	-
802.11n (HT20)	100	5500	15.50	15.50	15.50
	116	5580	15.50	15.50	15.50
	120	5600	15.50	15.50	15.50
	124	5620	15.50	15.50	15.50
	132	5660	15.50	15.50	15.50
	140	5700	15.50	15.50	15.50
	144	5720	15.50	15.50	15.50
802.11n (HT40)	102	5510	15.50	15.50	15.50
	110	5550	15.50	15.50	15.50
	118	5590	15.50	15.50	15.50
	126	5630	15.50	15.50	15.50
	134	5670	15.50	15.50	15.50
	142	5710	15.50	15.50	15.50
802.11ac (VHT20)	100	5500	15.50	15.50	15.50
	116	5580	15.50	15.50	15.50
	120	5600	15.50	15.50	15.50
	124	5620	15.50	15.50	15.50
	132	5660	15.50	15.50	15.50
	140	5700	15.50	15.50	15.50
	144	5720	15.50	15.50	15.50
802.11ac (VHT40)	102	5510	15.50	15.50	15.50
	110	5550	15.50	15.50	15.50
	118	5590	15.50	15.50	15.50
	126	5630	15.50	15.50	15.50
	134	5670	15.50	15.50	15.50
	142	5710	15.50	15.50	15.50
802.11ac (VHT80)	106	5530	15.50	15.50	15.50
	122	5610	15.50	15.50	15.50
	138	5690	15.50	15.50	15.50
802.11ac (VHT160)	114	5570	14.50	15.50	14.50
802.11ax (HE20)	100	5500	15.50	15.50	15.50
	116	5580	15.50	15.50	15.50
	120	5600	15.50	15.50	15.50
	124	5620	15.50	15.50	15.50
	132	5660	15.50	15.50	15.50
	140	5700	15.50	15.50	15.50
	144	5720	15.50	15.50	15.50
802.11ax (HE40)	102	5510	15.50	15.50	15.50
	110	5550	15.50	15.50	15.50
	118	5590	15.50	15.50	15.50
	126	5630	15.50	15.50	15.50
	134	5670	15.50	15.50	15.50
	142	5710	15.50	15.50	15.50
802.11ax (HE80)	106	5530	15.50	15.50	15.50
	122	5610	15.50	15.50	15.50
	138	5690	15.50	15.50	15.50
802.11ax (HE160)	114	5570	14.50	15.50	14.50

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<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	149	5745	15.50	15.50	-
	153	5765	15.50	15.50	-
	157	5785	15.50	15.50	-
	161	5805	15.50	15.50	-
	165	5825	15.50	15.50	-
802.11n (HT20)	149	5745	15.50	15.50	15.50
	153	5765	15.50	15.50	15.50
	157	5785	15.50	15.50	15.50
	161	5805	15.50	15.50	15.50
	165	5825	15.50	15.50	15.50
802.11n (HT40)	151	5755	15.50	15.50	15.50
	159	5795	15.50	15.50	15.50
802.11ac (VHT20)	149	5745	15.50	15.50	15.50
	153	5765	15.50	15.50	15.50
	157	5785	15.50	15.50	15.50
	161	5805	15.50	15.50	15.50
	165	5825	15.50	15.50	15.50
802.11ac (VHT40)	151	5755	15.50	15.50	15.50
	159	5795	15.50	15.50	15.50
802.11ac (VHT80)	155	5775	15.50	15.50	15.50
802.11ax (HE20)	149	5745	15.50	15.50	15.50
	153	5765	15.50	15.50	15.50
	157	5785	15.50	15.50	15.50
	161	5805	15.50	15.50	15.50
	165	5825	15.50	15.50	15.50
802.11ax (HE40)	151	5755	15.50	15.50	15.50
	159	5795	15.50	15.50	15.50
802.11ax (HE80)	155	5775	15.50	15.50	15.50

<Bluetooth>

Mode	Channel	Frequency (MHz)	Tune up Power
Bluetooth EDR	0	2402	11.00
	39	2441	11.00
	78	2480	11.00
Bluetooth LE	0	2402	7.00
	19	2440	7.00
	39	2480	7.00

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Laptop Mode

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	24.0	24.0	24.0
HSDPA / HSUPA / DC-HSDPA	24.0	24.0	24.0

Mode	LTE 2	LTE 4	LTE 5	LTE 7
Maximum Target Power	23.0	23.5	23.0	23.5

Mode	LTE 12	LTE 13	LTE 17	LTE 26
Maximum Target Power	23.0	23.5	23.0	23.0

Mode	LTE 30	LTE 38	LTE 41	LTE 66
Maximum Target Power	23.5	23.0	23.0	23.5

FCC SAR Test Report

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11b	1	2412	19.50	19.50	-
	6	2437	20.50	20.50	-
	11	2462	18.25	18.25	-
	12	2467	17.50	16.50	-
	13	2472	15.25	15.25	-
802.11g	1	2412	18.00	17.00	-
	6	2437	20.00	20.00	-
	11	2462	15.50	15.50	-
	12	2467	13.50	13.50	-
	13	2472	10.75	10.75	-
802.11n (HT20)	1	2412	18.00	17.00	16.25
	6	2437	20.00	20.00	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11n (HT40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50
802.11ac (VHT20)	1	2412	18.00	17.00	16.25
	6	2437	20.00	20.00	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11ac (VHT40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50
802.11ax (HE20)	1	2412	18.00	17.00	16.25
	6	2437	20.00	20.00	17.50
	11	2462	15.50	15.50	14.50
	12	2467	13.50	13.50	13.00
	13	2472	10.75	10.75	7.75
802.11ax (HE40)	3	2422	17.00	17.00	16.25
	6	2437	17.50	17.50	16.50
	9	2452	14.00	13.75	13.25
	10	2457	11.50	11.50	10.50
	11	2462	11.50	11.50	8.50

FCC SAR Test Report

<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	36	5180	19.00	19.00	-
	40	5200	20.50	20.50	-
	44	5220	20.50	20.50	-
	48	5240	20.50	20.50	-
802.11n (HT20)	36	5180	19.00	19.00	18.00
	40	5200	20.50	20.50	19.50
	44	5220	20.50	20.50	19.50
	48	5240	20.50	20.50	19.50
802.11n (HT40)	38	5190	18.50	18.50	16.50
	46	5230	20.50	20.50	19.25
802.11ac (VHT20)	36	5180	19.00	19.00	18.00
	40	5200	20.50	20.50	19.50
	44	5220	20.50	20.50	19.50
	48	5240	20.50	20.50	19.50
802.11ac (VHT40)	38	5190	18.50	18.50	16.50
	46	5230	20.50	20.50	19.25
802.11ac (VHT80)	42	5210	18.50	18.50	16.50
802.11ax (HE20)	36	5180	19.00	19.00	18.00
	40	5200	20.50	20.50	19.50
	44	5220	20.50	20.50	19.50
	48	5240	20.50	20.50	19.50
802.11ax (HE40)	38	5190	18.50	18.50	16.50
	46	5230	20.50	20.50	19.25
802.11ax (HE80)	42	5210	18.50	18.50	16.50

FCC SAR Test Report

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	52	5260	20.50	20.50	-
	56	5280	20.50	20.50	-
	60	5300	20.50	20.50	-
	64	5320	18.75	18.75	-
802.11n (HT20)	52	5260	20.50	20.50	19.50
	56	5280	20.50	20.50	19.50
	60	5300	20.50	20.50	19.50
	64	5320	18.75	18.75	17.50
802.11n (HT40)	54	5270	20.50	20.50	19.25
	62	5310	17.50	17.50	16.00
802.11ac (VHT20)	52	5260	20.50	20.50	19.50
	56	5280	20.50	20.50	19.50
	60	5300	20.50	20.50	19.50
	64	5320	18.75	18.75	17.50
802.11ac (VHT40)	54	5270	20.50	20.50	19.25
	62	5310	17.50	17.50	16.00
802.11ac (VHT80)	58	5290	17.50	17.50	15.75
802.11ac (VHT160)	50	5250	14.50	14.75	17.50
802.11ax (HE20)	52	5260	20.50	20.50	19.50
	56	5280	20.50	20.50	19.50
	60	5300	20.50	20.50	19.50
	64	5320	18.75	18.75	17.50
802.11ax (HE40)	54	5270	20.50	20.50	19.25
	62	5310	17.50	17.50	16.00
802.11ax (HE80)	58	5290	17.50	17.50	15.75
802.11ax (HE160)	50	5250	14.50	14.75	17.50

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<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	100	5500	19.50	19.50	-
	116	5580	20.50	20.50	-
	120	5600	20.50	20.50	
	124	5620	20.50	20.50	
	132	5660	20.50	20.50	-
	140	5700	19.25	19.00	-
	144	5720	20.50	20.50	-
802.11n (HT20)	100	5500	19.50	19.50	18.50
	116	5580	20.50	20.50	19.50
	120	5600	20.50	20.50	19.50
	124	5620	20.50	20.50	19.50
	132	5660	20.50	20.50	19.50
	140	5700	19.25	19.00	17.25
	144	5720	20.50	20.50	19.50
802.11n (HT40)	102	5510	19.00	19.00	18.00
	110	5550	20.50	20.50	19.50
	118	5590	20.50	20.50	19.50
	126	5630	20.50	20.50	19.50
	134	5670	18.50	19.50	18.50
	142	5710	20.50	20.50	19.50
802.11ac (VHT20)	100	5500	19.50	19.50	18.50
	116	5580	20.50	20.50	19.50
	120	5600	20.50	20.50	19.50
	124	5620	20.50	20.50	19.50
	132	5660	20.50	20.50	19.50
	140	5700	19.25	19.00	17.25
	144	5720	20.50	20.50	19.50
802.11ac (VHT40)	102	5510	19.00	19.00	18.00
	110	5550	20.50	20.50	19.50
	118	5590	20.50	20.50	19.50
	126	5630	20.50	20.50	19.50
	134	5670	18.50	19.50	18.50
	142	5710	20.50	20.50	19.50
802.11ac (VHT80)	106	5530	18.50	18.50	17.50
	122	5610	19.50	19.50	18.50
	138	5690	20.50	20.50	19.50
802.11ac (VHT160)	114	5570	14.50	15.50	17.50
802.11ax (HE20)	100	5500	19.50	19.50	18.50
	116	5580	20.50	20.50	19.50
	120	5600	20.50	20.50	19.50
	124	5620	20.50	20.50	19.50
	132	5660	20.50	20.50	19.50
	140	5700	19.25	19.00	17.25
	144	5720	20.50	20.50	19.50
802.11ax (HE40)	102	5510	19.00	19.00	18.00
	110	5550	20.50	20.50	19.50
	118	5590	20.50	20.50	19.50
	126	5630	20.50	20.50	19.50
	134	5670	18.50	19.50	18.50
	142	5710	20.50	20.50	19.50
802.11ax (HE80)	106	5530	18.50	18.50	17.50
	122	5610	19.50	19.50	18.50
	138	5690	20.50	20.50	19.50
802.11ax (HE160)	114	5570	14.50	15.50	17.50

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<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Tune up Power (Tx1)	Tune up Power (Tx2)	Tune up Power (Tx1 + Tx2)
802.11a	149	5745	20.50	20.50	-
	153	5765	20.50	20.50	-
	157	5785	20.50	20.50	-
	161	5805	20.50	20.50	-
	165	5825	20.50	20.50	-
802.11n (HT20)	149	5745	20.50	20.50	19.50
	153	5765	20.50	20.50	19.50
	157	5785	20.50	20.50	19.50
	161	5805	20.50	20.50	19.50
	165	5825	20.50	20.50	19.50
802.11n (HT40)	151	5755	20.50	20.50	19.50
	159	5795	20.50	20.50	19.50
802.11ac (VHT20)	149	5745	20.50	20.50	19.50
	153	5765	20.50	20.50	19.50
	157	5785	20.50	20.50	19.50
	161	5805	20.50	20.50	19.50
	165	5825	20.50	20.50	19.50
802.11ac (VHT40)	151	5755	20.50	20.50	19.50
	159	5795	20.50	20.50	19.50
802.11ac (VHT80)	155	5775	19.00	19.25	18.25
802.11ax (HE20)	149	5745	20.50	20.50	19.50
	153	5765	20.50	20.50	19.50
	157	5785	20.50	20.50	19.50
	161	5805	20.50	20.50	19.50
	165	5825	20.50	20.50	19.50
802.11ax (HE40)	151	5755	20.50	20.50	19.50
	159	5795	20.50	20.50	19.50
802.11ax (HE80)	155	5775	19.00	19.25	18.25

<Bluetooth>

Mode	Channel	Frequency (MHz)	Tune up Power
Bluetooth EDR	0	2402	11.00
	39	2441	11.00
	78	2480	11.00
Bluetooth LE	0	2402	7.00
	19	2440	7.00
	39	2480	7.00

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4.6.2 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) is shown as below.

Tablet Mode

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	15.99	15.93	15.96	16.89	16.95	16.98	19.47	19.49	19.44	-
HSDPA Subtest-1	15.91	15.90	15.88	16.86	16.92	16.95	19.46	19.48	19.43	0
HSDPA Subtest-2	15.90	15.89	15.87	16.88	16.94	16.97	19.39	19.41	19.36	0
HSDPA Subtest-3	15.92	15.91	15.89	16.83	16.89	16.92	19.41	19.43	19.38	0.5
HSDPA Subtest-4	15.94	15.93	15.91	16.86	16.92	16.95	19.40	19.42	19.37	0.5
DC-HSDPA Subtest-1	15.81	15.80	15.78	16.78	16.84	16.87	19.39	19.41	19.36	0
DC-HSDPA Subtest-2	15.80	15.79	15.77	16.80	16.86	16.89	19.32	19.34	19.29	0
DC-HSDPA Subtest-3	15.82	15.81	15.79	16.75	16.81	16.84	19.34	19.36	19.31	0.5
DC-HSDPA Subtest-4	15.84	15.83	15.81	16.78	16.84	16.87	19.33	19.35	19.30	0.5
HSUPA Subtest-1	15.97	15.96	15.94	16.83	16.89	16.92	19.03	19.05	19.00	0
HSUPA Subtest-2	15.92	15.91	15.89	16.89	16.95	16.96	19.40	19.42	19.37	2
HSUPA Subtest-3	15.93	15.92	15.90	16.91	16.97	16.95	19.32	19.34	19.29	1
HSUPA Subtest-4	15.98	15.97	15.95	16.86	16.92	16.95	19.43	19.45	19.40	2
HSUPA Subtest-5	15.92	15.91	15.89	16.84	16.90	16.93	19.38	19.40	19.35	0

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LTE Band 2															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	15.97	15.94	15.96	0	15M	QPSK	1	0	15.87	15.87	15.91	0
		1	50	15.99	15.96	15.98	0			1	37	15.91	15.96	15.94	0
		1	99	15.96	15.93	15.95	0			1	74	15.89	15.85	15.95	0
		50	0	15.95	15.92	15.94	0			36	0	15.85	15.86	15.94	0
		50	25	15.96	15.93	15.95	0			36	19	15.94	15.87	15.95	0
		50	50	15.95	15.92	15.94	0			36	39	15.86	15.86	15.90	0
		100	0	15.90	15.87	15.89	0			75	0	15.87	15.78	15.86	0
	16QAM	1	0	15.96	15.93	15.95	0		16QAM	1	0	15.93	15.87	15.86	0
		1	50	15.98	15.95	15.97	0			1	37	15.96	15.85	15.90	0
		1	99	15.95	15.92	15.94	0			1	74	15.93	15.89	15.86	0
		50	0	15.90	15.87	15.89	0			36	0	15.89	15.79	15.81	0
		50	25	15.93	15.90	15.92	0			36	19	15.88	15.80	15.92	0
		50	50	15.90	15.87	15.89	0			36	39	15.87	15.83	15.85	0
		100	0	15.94	15.91	15.93	0			75	0	15.89	15.85	15.83	0
10M	QPSK	1	0	15.87	15.79	15.80	0	5M	QPSK	1	0	15.83	15.84	15.72	0
		1	24	15.78	15.84	15.82	0			1	12	15.77	15.84	15.87	0
		1	49	15.72	15.79	15.86	0			1	24	15.84	15.80	15.77	0
		25	0	15.79	15.82	15.79	0			12	0	15.75	15.73	15.78	0
		25	12	15.78	15.83	15.79	0			12	6	15.72	15.73	15.76	0
		25	25	15.76	15.77	15.77	0			12	13	15.76	15.85	15.68	0
		50	0	15.77	15.76	15.76	0			25	0	15.80	15.75	15.57	0
	16QAM	1	0	15.81	15.80	15.77	0		16QAM	1	0	15.80	15.83	15.82	0
		1	24	15.76	15.91	15.92	0			1	12	15.84	15.82	15.85	0
		1	49	15.78	15.78	15.84	0			1	24	15.76	15.84	15.88	0
		25	0	15.73	15.82	15.82	0			12	0	15.74	15.81	15.70	0
		25	12	15.88	15.74	15.80	0			12	6	15.82	15.82	15.79	0
		25	25	15.74	15.76	15.78	0			12	13	15.71	15.76	15.68	0
		50	0	15.83	15.86	15.81	0			25	0	15.74	15.73	15.83	0
3M	QPSK	1	0	15.75	15.78	15.88	0	1.4M	QPSK	1	0	15.90	15.81	15.77	0
		1	7	15.91	15.89	15.87	0			1	2	15.90	15.91	15.84	0
		1	14	15.81	15.73	15.91	0			1	5	15.77	15.86	15.76	0
		8	0	15.87	15.80	15.87	0			3	0	15.87	15.74	15.85	0
		8	3	15.84	15.69	15.91	0			3	1	15.87	15.77	15.83	0
		8	7	15.84	15.77	15.91	0			3	3	15.80	15.75	15.69	0
		15	0	15.65	15.83	15.71	0			6	0	15.81	15.77	15.85	0
	16QAM	1	0	15.82	15.79	15.75	0		16QAM	1	0	15.78	15.90	15.80	0
		1	7	15.84	15.85	15.77	0			1	2	15.94	15.88	15.81	0
		1	14	15.84	15.74	15.75	0			1	5	15.86	15.76	15.76	0
		8	0	15.81	15.76	15.77	0			3	0	15.82	15.73	15.75	0
		8	3	15.87	15.83	15.81	0			3	1	15.91	15.83	15.71	0
		8	7	15.76	15.65	15.80	0			3	3	15.81	15.76	15.84	0
		15	0	15.83	15.72	15.77	0			6	0	15.83	15.85	15.69	0

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LTE Band 4															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	16.78	16.86	16.73	0	15M	QPSK	1	0	16.71	16.81	16.73	0
		1	50	16.64	16.72	16.59	0			1	37	16.58	16.70	16.58	0
		1	99	16.76	16.84	16.71	0			1	74	16.76	16.79	16.68	0
		50	0	16.69	16.77	16.64	0			36	0	16.66	16.69	16.54	0
		50	25	16.68	16.76	16.63	0			36	19	16.63	16.74	16.60	0
		50	50	16.66	16.74	16.61	0			36	39	16.60	16.74	16.60	0
		100	0	16.74	16.82	16.69	0			75	0	16.69	16.74	16.59	0
	16QAM	1	0	16.70	16.78	16.65	0		16QAM	1	0	16.61	16.73	16.59	0
		1	50	16.58	16.66	16.53	0			1	37	16.56	16.61	16.50	0
		1	99	16.66	16.74	16.61	0			1	74	16.58	16.65	16.55	0
		50	0	16.51	16.59	16.46	0			36	0	16.50	16.59	16.39	0
		50	25	16.50	16.58	16.45	0			36	19	16.43	16.53	16.43	0
		50	50	16.53	16.61	16.48	0			36	39	16.44	16.58	16.44	0
		100	0	16.60	16.68	16.55	0			75	0	16.51	16.62	16.48	0
10M	QPSK	1	0	16.61	16.77	16.56	0	5M	QPSK	1	0	16.61	16.66	16.49	0
		1	24	16.63	16.62	16.54	0			1	12	16.53	16.66	16.37	0
		1	49	16.66	16.75	16.59	0			1	24	16.62	16.66	16.38	0
		25	0	16.55	16.61	16.57	0			12	0	16.56	16.67	16.33	0
		25	12	16.57	16.58	16.50	0			12	6	16.59	16.68	16.37	0
		25	25	16.44	16.60	16.46	0			12	13	16.54	16.58	16.24	0
		50	0	16.73	16.71	16.57	0			25	0	16.68	16.68	16.56	0
	16QAM	1	0	16.60	16.65	16.55	0		16QAM	1	0	16.56	16.57	16.55	0
		1	24	16.39	16.51	16.43	0			1	12	16.40	16.54	16.38	0
		1	49	16.55	16.50	16.45	0			1	24	16.52	16.65	16.44	0
		25	0	16.33	16.49	16.33	0			12	0	16.37	16.37	16.26	0
		25	12	16.38	16.46	16.39	0			12	6	16.42	16.48	16.38	0
		25	25	16.47	16.49	16.44	0			12	13	16.34	16.42	16.31	0
		50	0	16.50	16.57	16.36	0			25	0	16.42	16.55	16.49	0
3M	QPSK	1	0	16.73	16.80	16.60	0	1.4M	QPSK	1	0	16.70	16.73	16.61	0
		1	7	16.49	16.69	16.40	0			1	2	16.41	16.57	16.44	0
		1	14	16.74	16.78	16.54	0			1	5	16.67	16.79	16.69	0
		8	0	16.46	16.65	16.50	0			3	0	16.57	16.65	16.49	0
		8	3	16.57	16.57	16.54	0			3	1	16.50	16.68	16.38	0
		8	7	16.58	16.60	16.46	0			3	3	16.59	16.65	16.43	0
		15	0	16.63	16.72	16.59	0			6	0	16.50	16.65	16.47	0
	16QAM	1	0	16.60	16.75	16.64	0		16QAM	1	0	16.59	16.68	16.47	0
		1	7	16.49	16.56	16.45	0			1	2	16.44	16.60	16.45	0
		1	14	16.54	16.63	16.59	0			1	5	16.55	16.60	16.59	0
		8	0	16.42	16.57	16.38	0			3	0	16.40	16.41	16.33	0
		8	3	16.27	16.33	16.29	0			3	1	16.39	16.35	16.33	0
		8	7	16.44	16.47	16.41	0			3	3	16.34	16.59	16.33	0
		15	0	16.52	16.54	16.43	0			6	0	16.54	16.49	16.35	0

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LTE Band 5															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	19.35	19.49	19.37	0	5M	QPSK	1	0	19.32	19.44	19.32	0
		1	24	19.28	19.42	19.30	0			1	12	19.28	19.41	19.20	0
		1	49	19.22	19.36	19.24	0			1	24	19.16	19.36	19.18	0
		25	0	19.25	19.39	19.27	0			12	0	19.19	19.34	19.18	0
		25	12	19.22	19.36	19.24	0			12	6	19.15	19.36	19.23	0
		25	25	19.17	19.31	19.19	0			12	13	19.07	19.30	19.16	0
	16QAM	50	0	19.24	19.38	19.26	0			25	0	19.14	19.28	19.18	0
		1	0	19.27	19.41	19.29	0		16QAM	1	0	19.26	19.35	19.28	0
		1	24	19.26	19.40	19.28	0			1	12	19.22	19.32	19.27	0
		1	49	19.24	19.38	19.26	0			1	24	19.14	19.33	19.18	0
		25	0	19.32	19.46	19.34	0			12	0	19.30	19.36	19.33	0
		25	12	19.30	19.44	19.32	0			12	6	19.25	19.38	19.31	0
3M	QPSK	25	25	19.24	19.38	19.26	0			12	13	19.15	19.29	19.26	0
		50	0	19.28	19.42	19.30	0			25	0	19.18	19.37	19.26	0
	16QAM	1	0	19.19	19.25	19.15	0		QPSK	1	0	19.21	19.38	19.06	0
		1	7	19.08	19.32	19.10	0			1	2	19.04	19.32	19.18	0
		1	14	19.13	19.22	19.08	0			1	5	18.98	19.23	19.11	0
		8	0	19.16	19.45	19.12	0			3	0	19.07	19.29	19.01	0
		8	3	19.18	19.31	19.23	0			3	1	19.19	19.24	19.05	0
		8	7	19.10	19.25	19.16	0			3	3	18.94	19.11	19.12	0
	16QAM	15	0	19.05	19.26	19.21	0			6	0	19.11	19.21	18.99	0
		1	0	19.19	19.25	19.15	0		16QAM	1	0	19.23	19.31	19.20	0
		1	7	19.08	19.32	19.10	0			1	2	19.15	19.37	19.17	0
		1	14	19.13	19.22	19.08	0			1	5	19.16	19.33	19.09	0
		8	0	19.16	19.45	19.12	0			3	0	19.18	19.40	19.25	0
		8	3	19.18	19.31	19.23	0			3	1	19.19	19.32	19.09	0

LTE Band 7															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	15.71	15.58	15.54	0	15M	QPSK	1	0	15.65	15.52	15.54	0
		1	50	15.69	15.56	15.52	0			1	37	15.69	15.46	15.52	0
		1	99	15.76	15.63	15.59	0			1	74	15.75	15.61	15.54	0
		50	0	15.65	15.52	15.48	0			36	0	15.55	15.43	15.45	0
		50	25	15.70	15.57	15.53	0			36	19	15.67	15.55	15.47	0
		50	50	15.72	15.59	15.55	0			36	39	15.65	15.58	15.55	0
	16QAM	100	0	15.67	15.54	15.50	0			75	0	15.59	15.47	15.40	0
		1	0	15.72	15.59	15.55	0		16QAM	1	0	15.65	15.52	15.51	0
		1	50	15.64	15.51	15.47	0			1	37	15.63	15.42	15.44	0
		1	99	15.71	15.58	15.54	0			1	74	15.67	15.48	15.50	0
		50	0	15.69	15.56	15.52	0			36	0	15.62	15.47	15.47	0
		50	25	15.63	15.50	15.46	0			36	19	15.61	15.42	15.43	0
10M	QPSK	50	50	15.66	15.53	15.49	0			36	39	15.57	15.52	15.44	0
		100	0	15.67	15.54	15.50	0			75	0	15.62	15.52	15.47	0
	16QAM	1	0	15.63	15.46	15.38	0		QPSK	1	0	15.64	15.41	15.32	0
		1	24	15.59	15.36	15.33	0			1	12	15.63	15.41	15.36	0
		1	49	15.72	15.55	15.43	0			1	24	15.66	15.57	15.28	0
		25	0	15.45	15.44	15.39	0			12	0	15.54	15.40	15.26	0
		25	12	15.54	15.40	15.38	0			12	6	15.60	15.41	15.39	0
		25	25	15.50	15.58	15.45	0			12	13	15.56	15.43	15.43	0
	16QAM	50	0	15.51	15.47	15.32	0			25	0	15.55	15.42	15.40	0
		1	0	15.68	15.47	15.42	0		16QAM	1	0	15.59	15.41	15.40	0
		1	24	15.49	15.27	15.36	0			1	12	15.48	15.31	15.38	0
		1	49	15.57	15.55	15.51	0			1	24	15.66	15.42	15.53	0
		25	0	15.49	15.42	15.32	0			12	0	15.55	15.53	15.37	0
		25	12	15.49	15.35	15.41	0			12	6	15.50	15.39	15.31	0

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LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	17.96	17.99	17.97	0	5M	QPSK	1	0	17.92	17.95	17.87	0
		1	24	17.93	17.96	17.94	0			1	12	17.93	17.95	17.87	0
		1	49	17.92	17.95	17.93	0			1	24	17.90	17.88	17.88	0
		25	0	17.94	17.97	17.95	0			12	0	17.92	17.95	17.87	0
		25	12	17.91	17.94	17.92	0			12	6	17.86	17.87	17.88	0
		25	25	17.89	17.92	17.90	0			12	13	17.85	17.89	17.82	0
		50	0	17.92	17.95	17.93	0			25	0	17.88	17.86	17.92	0
	16QAM	1	0	17.96	17.91	17.89	0		16QAM	1	0	17.88	17.87	17.84	0
		1	24	17.90	17.92	17.92	0			1	12	17.86	17.85	17.83	0
		1	49	17.84	17.87	17.86	0			1	24	17.78	17.95	17.79	0
		25	0	17.92	17.90	17.88	0			12	0	17.82	17.91	17.86	0
		25	12	17.89	17.93	17.86	0			12	6	17.80	17.84	17.85	0
		25	25	17.87	17.90	17.83	0			12	13	17.74	17.78	17.83	0
		50	0	17.91	17.95	17.92	0			25	0	17.80	17.85	17.85	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23025	23095	23165				Channel		23017	23095	23173	
		Frequency (MHz)		700.5	707.5	714.5				Frequency (MHz)		699.7	707.5	715.3	
3M	QPSK	1	0	17.86	17.87	17.79	0	1.4M	QPSK	1	0	17.89	17.81	17.66	0
		1	7	17.76	17.77	17.75	0			1	2	17.79	17.83	17.74	0
		1	14	17.83	17.91	17.76	0			1	5	17.76	17.82	17.61	0
		8	0	17.77	17.78	17.80	0			3	0	17.82	17.78	17.80	0
		8	3	17.79	17.78	17.89	0			3	1	17.78	17.84	17.67	0
		8	7	17.76	17.79	17.81	0			3	3	17.76	17.75	17.62	0
		15	0	17.81	17.82	17.83	0			6	0	17.86	17.78	17.81	0
	16QAM	1	0	17.77	17.82	17.72	0		16QAM	1	0	17.73	17.77	17.80	0
		1	7	17.76	17.78	17.80	0			1	2	17.65	17.72	17.81	0
		1	14	17.70	17.80	17.77	0			1	5	17.75	17.77	17.72	0
		8	0	17.81	17.90	17.83	0			3	0	17.72	17.73	17.87	0
		8	3	17.79	17.80	17.84	0			3	1	17.75	17.66	17.71	0
		8	7	17.55	17.75	17.69	0			3	3	17.59	17.73	17.76	0
		15	0	17.72	17.74	17.79	0			6	0	17.76	17.83	17.78	0

LTE Band 13															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		18.97		0	5M	QPSK	1	0	18.88	18.92	18.88	0
		1	24		18.98		0			1	12	18.94	18.97	18.86	0
		1	49		18.89		0			1	24	18.80	18.89	18.83	0
		25	0		18.93		0			12	0	18.90	18.89	18.81	0
		25	12		18.94		0			12	6	18.84	18.91	18.82	0
		25	25		18.92		0			12	13	18.88	18.91	18.82	0
		50	0		18.93		0			25	0	18.82	18.88	18.87	0
	16QAM	1	0		18.87		0		16QAM	1	0	18.83	18.88	18.75	0
		1	24		18.92		0			1	12	18.86	18.89	18.80	0
		1	49		18.83		0			1	24	18.80	18.78	18.74	0
		25	0		18.89		0			12	0	18.79	18.86	18.77	0
		25	12		18.93		0			12	6	18.81	18.83	18.77	0
		25	25		18.84		0			12	13	18.78	18.84	18.77	0
		50	0		18.91		0			25	0	18.83	18.78	18.77	0

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LTE Band 17															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800				Channel		23755	23790	23825	
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5	
10M	QPSK	1	0	17.96	17.95	17.92	0	5M	QPSK	1	0	17.92	17.90	17.83	0
		1	24	17.99	17.98	17.95	0			1	12	17.92	17.89	17.90	0
		1	49	17.98	17.97	17.94	0			1	24	17.96	17.88	17.86	0
		25	0	17.92	17.91	17.88	0			12	0	17.89	17.82	17.79	0
		25	12	17.97	17.96	17.93	0			12	6	17.95	17.95	17.93	0
		25	25	17.91	17.90	17.87	0			12	13	17.87	17.86	17.84	0
		50	0	17.96	17.95	17.92	0			25	0	17.96	17.95	17.83	0
	16QAM	1	0	17.88	17.85	17.87	0		16QAM	1	0	17.80	17.81	17.79	0
		1	24	17.92	17.91	17.93	0			1	12	17.93	17.84	17.84	0
		1	49	17.97	17.97	17.90	0			1	24	17.82	17.81	17.80	0
		25	0	17.83	17.88	17.80	0			12	0	17.85	17.78	17.77	0
		25	12	17.88	17.94	17.83	0			12	6	17.80	17.83	17.81	0
		25	25	17.87	17.89	17.78	0			12	13	17.81	17.85	17.72	0
		50	0	17.93	17.92	17.86	0			25	0	17.86	17.84	17.89	0

LTE Band 26															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26765	26865	26965				Channel		26740	26865	26990	
		Frequency (MHz)		821.5	831.5	841.5				Frequency (MHz)		819.0	831.5	844.0	
15M	QPSK	1	0	19.32	19.36	19.35	0	10M	QPSK	1	0	19.30	19.27	19.28	0
		1	37	19.40	19.44	19.43	0			1	24	19.39	19.35	19.33	0
		1	74	19.27	19.31	19.30	0			1	49	19.26	19.29	19.21	0
		36	0	19.29	19.33	19.32	0			25	0	19.22	19.31	19.31	0
		36	19	19.34	19.38	19.37	0			25	12	19.31	19.31	19.32	0
		36	39	19.28	19.32	19.31	0			25	25	19.21	19.28	19.25	0
		75	0	19.31	19.35	19.34	0			50	0	19.30	19.34	19.34	0
	16QAM	1	0	19.22	19.28	19.33	0		16QAM	1	0	19.20	19.24	19.22	0
		1	37	19.34	19.40	19.38	0			1	24	19.30	19.33	19.32	0
		1	74	19.27	19.23	19.26	0			1	49	19.12	19.12	19.23	0
		36	0	19.27	19.31	19.28	0			25	0	19.18	19.27	19.15	0
		36	19	19.25	19.29	19.37	0			25	12	19.20	19.27	19.21	0
		36	39	19.23	19.28	19.31	0			25	25	19.15	19.22	19.25	0
		75	0	19.29	19.28	19.28	0			50	0	19.22	19.28	19.28	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26715	26865	27015				Channel		26705	26865	27025	
		Frequency (MHz)		816.5	831.5	846.5				Frequency (MHz)		815.5	831.5	847.5	
5M	QPSK	1	0	19.23	19.25	19.17	0	3M	QPSK	1	0	19.20	19.32	19.15	0
		1	12	19.31	19.29	19.28	0			1	7	19.28	19.33	19.08	0
		1	24	19.13	19.15	19.19	0			1	14	19.19	19.12	19.12	0
		12	0	19.13	19.20	19.22	0			8	0	19.27	19.26	19.03	0
		12	6	19.26	19.30	19.29	0			8	3	19.27	19.27	19.22	0
		12	13	19.19	19.18	19.19	0			8	7	19.19	19.26	19.14	0
		25	0	19.27	19.31	19.16	0			15	0	19.17	19.23	19.12	0
	16QAM	1	0	19.11	19.15	19.16	0		16QAM	1	0	19.18	19.06	19.15	0
		1	12	19.16	19.14	19.33	0			1	7	19.29	19.24	19.19	0
		1	24	19.05	19.06	19.06	0			1	14	19.10	19.14	19.08	0
		12	0	19.14	19.12	19.13	0			8	0	19.04	19.19	19.18	0
		12	6	19.07	19.23	19.22	0			8	3	19.22	19.21	19.10	0
		12	13	19.18	19.15	19.10	0			8	7	19.11	19.13	19.10	0
		25	0	19.09	19.19	19.15	0			15	0	19.00	19.12	19.19	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)								
		Channel		26697	26865	27033									
		Frequency (MHz)		814.7	831.5	848.3									
1.4M	QPSK	1	0	19.14	19.28	19.24	0								
		1	2	19.22	19.36	19.42	0								
		1	5	19.18	19.21	19.26	0								
		3	0	19.18	19.21	19.20	0								
		3	1	19.26	19.23	19.25	0								
		3	3	19.13	19.22	19.07	0								
		6	0	19.24	19.31	19.17	0								
	16QAM	1	0	19.19	19.15	19.25	0								
		1	2	19.15	19.23	19.17	0								
		1	5	19.04	19.27	19.20	0								
		3	0	19.19	19.09	19.21	0								
		3	1	19.24	19.15	19.05	0								
		3	3	19.17	19.03	19.09	0								
		6	0	19.22	19.29	19.12	0								

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LTE Band 30															
BW	MCS Index	RB Size	RB Offset		Mid		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			27710					Channel		27685	27710	27735	
		Frequency (MHz)			2310.0					Frequency (MHz)		2307.5	2310.0	2312.5	
10M	QPSK	1	0		15.63		0	5M	QPSK	1	0	15.50	15.55	15.48	0
		1	24		15.47		0			1	12	15.33	15.41	15.37	0
		1	49		15.57		0			1	24	15.47	15.49	15.49	0
		25	0		15.62		0			12	0	15.56	15.57	15.53	0
		25	12		15.56		0			12	6	15.43	15.51	15.45	0
		25	25		15.55		0			12	13	15.40	15.49	15.43	0
		50	0		15.60		0			25	0	15.46	15.57	15.49	0
	16QAM	1	0		15.57		0		16QAM	1	0	15.44	15.62	15.52	0
		1	24		15.47		0			1	12	15.23	15.41	15.29	0
		1	49		15.55		0			1	24	15.36	15.43	15.38	0
		25	0		15.53		0			12	0	15.43	15.55	15.38	0
		25	12		15.51		0			12	6	15.47	15.38	15.41	0
		25	25		15.54		0			12	13	15.43	15.37	15.40	0
		50	0		15.50		0			25	0	15.52	15.51	15.51	0

LTE Band 38															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37850	38000	38150				Channel		37825	38000	38175	
		Frequency (MHz)		2580	2595	2610				Frequency (MHz)		2577.5	2595	2612.5	
20M	QPSK	1	0	16.59	16.43	16.48	0	15M	QPSK	1	0	16.57	16.41	16.46	0
		1	50	16.43	16.27	16.32	0			1	37	16.41	16.25	16.30	0
		1	99	16.28	16.12	16.17	0			1	74	16.26	16.10	16.15	0
		50	0	16.43	16.27	16.32	0			36	0	16.39	16.23	16.28	0
		50	25	16.41	16.25	16.30	0			36	19	16.41	16.25	16.30	0
		50	50	16.39	16.23	16.28	0			36	39	16.37	16.21	16.26	0
	16QAM	100	0	16.38	16.22	16.27	0		75	0	16.36	16.20	16.25	0	
		1	0	16.44	16.28	16.33	0		16QAM	1	0	16.42	16.26	16.31	0
		1	50	16.43	16.27	16.32	0			1	37	16.41	16.25	16.30	0
		1	99	16.38	16.22	16.27	0			1	74	16.36	16.20	16.25	0
		50	0	16.44	16.28	16.33	0			36	0	16.42	16.26	16.31	0
		50	25	16.39	16.23	16.28	0			36	19	16.37	16.21	16.26	0
50	50	16.37	16.21	16.26	0	36	39	16.35		16.19	16.24	0			
100	0	16.44	16.28	16.33	0	75	0	16.42	16.26	16.31	0				
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37800	38000	38200				Channel		37775	38000	38225	
		Frequency (MHz)		2575	2595	2615				Frequency (MHz)		2572.5	2595	2617.5	
10M	QPSK	1	0	16.55	16.39	16.44	0	5M	QPSK	1	0	16.54	16.38	16.43	0
		1	24	16.39	16.23	16.28	0			1	12	16.38	16.22	16.27	0
		1	49	16.24	16.08	16.13	0			1	24	16.23	16.07	16.12	0
		25	0	16.37	16.21	16.26	0			12	0	16.36	16.20	16.25	0
		25	12	16.39	16.23	16.28	0			12	6	16.38	16.22	16.27	0
		25	25	16.35	16.19	16.24	0			12	13	16.34	16.18	16.23	0
	16QAM	50	0	16.34	16.18	16.23	0		25	0	16.33	16.17	16.22	0	
		1	0	16.40	16.24	16.29	0		16QAM	1	0	16.39	16.23	16.28	0
		1	24	16.39	16.23	16.28	0			1	12	16.38	16.22	16.27	0
		1	49	16.34	16.18	16.23	0			1	24	16.33	16.17	16.22	0
		25	0	16.40	16.24	16.29	0			12	0	16.39	16.23	16.28	0
		25	12	16.35	16.19	16.24	0			12	6	16.34	16.18	16.23	0
25	25	16.33	16.17	16.22	0	12	13	16.32		16.16	16.21	0			
50	0	16.40	16.24	16.29	0	25	0	16.39	16.23	16.28	0				

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LTE Band 41																			
BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39750	40185	40620	41055	41490				Channel		39725	40173	40620	41068	41515	
		Frequency (MHz)		2506.0	2549.5	2593.0	2636.5	2680.0				Frequency (MHz)		2503.5	2548.3	2593.0	2637.8	2682.5	
20M	QPSK	1	0	17.23	17.42	16.71	16.65	16.59	0	15M	QPSK	1	0	17.20	17.33	16.66	16.55	16.58	0
		1	50	17.10	17.29	16.58	16.52	16.46	0			1	37	17.03	17.20	16.58	16.46	16.46	0
		1	99	16.94	17.13	16.42	16.36	16.30	0			1	74	16.84	17.09	16.34	16.35	16.21	0
		50	0	17.00	17.19	16.48	16.42	16.36	0			36	0	16.92	17.13	16.47	16.37	16.34	0
		50	25	16.92	17.11	16.40	16.34	16.28	0			36	19	16.82	17.02	16.33	16.34	16.24	0
		50	50	16.85	17.04	16.33	16.27	16.21	0			36	39	16.75	16.98	16.33	16.23	16.15	0
		100	0	16.92	17.11	16.40	16.34	16.28	0			75	0	16.87	17.02	16.39	16.24	16.26	0
	16QAM	1	0	17.23	17.36	16.67	16.62	16.53	0		16QAM	1	0	17.13	17.34	16.62	16.57	16.54	0
		1	50	17.06	17.28	16.51	16.44	16.39	0			1	37	17.06	17.27	16.57	16.49	16.44	0
		1	99	16.87	17.07	16.40	16.30	16.23	0			1	74	16.91	17.04	16.42	16.36	16.22	0
		50	0	16.95	17.09	16.48	16.32	16.34	0			36	0	16.90	17.17	16.48	16.37	16.32	0
		50	25	16.88	17.10	16.37	16.29	16.18	0			36	19	16.82	17.05	16.33	16.33	16.24	0
		50	50	16.85	17.03	16.23	16.17	16.21	0			36	39	16.85	16.95	16.24	16.26	16.20	0
		100	0	16.88	17.05	16.35	16.33	16.24	0			75	0	16.82	17.11	16.31	16.27	16.25	0
10M	QPSK	1	0	17.05	17.25	16.61	16.61	16.55	0	5M	QPSK	1	0	17.21	17.32	16.54	16.60	16.55	0
		1	24	16.99	17.19	16.51	16.37	16.41	0			1	12	17.07	17.20	16.46	16.37	16.34	0
		1	49	16.85	17.07	16.36	16.23	16.19	0			1	24	16.86	17.08	16.25	16.32	16.15	0
		25	0	16.90	17.07	16.35	16.25	16.21	0			12	0	16.89	17.05	16.39	16.37	16.29	0
		25	12	16.85	17.01	16.29	16.17	16.23	0			12	6	16.83	17.01	16.34	16.30	16.19	0
		25	25	16.73	16.89	16.26	16.22	16.12	0			12	13	16.75	16.98	16.29	16.19	16.13	0
		50	0	16.76	17.03	16.36	16.25	16.19	0			25	0	16.89	17.00	16.23	16.21	16.12	0
	16QAM	1	0	17.11	17.27	16.61	16.62	16.52	0		16QAM	1	0	17.20	17.27	16.55	16.56	16.58	0
		1	24	17.05	17.20	16.49	16.38	16.33	0			1	12	17.02	17.17	16.47	16.37	16.39	0
		1	49	16.89	17.01	16.41	16.24	16.20	0			1	24	16.85	17.00	16.24	16.29	16.14	0
		25	0	16.87	17.17	16.36	16.25	16.23	0			12	0	16.85	17.09	16.37	16.34	16.25	0
		25	12	16.87	17.03	16.36	16.21	16.26	0			12	6	16.79	16.96	16.35	16.27	16.14	0
		25	25	16.75	16.91	16.27	16.16	16.05	0			12	13	16.73	16.92	16.33	16.17	16.08	0
		50	0	16.77	17.07	16.39	16.27	16.18	0			25	0	16.88	17.07	16.22	16.21	16.21	0

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LTE Band 66															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572				Channel		132047	132322	132597	
		Frequency (MHz)		1720.0	1745.0	1770.0				Frequency (MHz)		1717.5	1745.0	1772.5	
20M	QPSK	1	0	16.48	16.66	16.79	0	15M	QPSK	1	0	16.46	16.62	16.73	0
		1	50	16.43	16.61	16.74	0			1	37	16.33	16.53	16.67	0
		1	99	16.55	16.73	16.86	0			1	74	16.54	16.64	16.76	0
		50	0	16.44	16.62	16.75	0			36	0	16.41	16.55	16.73	0
		50	25	16.45	16.63	16.76	0			36	19	16.39	16.58	16.72	0
		50	50	16.50	16.68	16.81	0			36	39	16.42	16.68	16.73	0
		100	0	16.51	16.64	16.77	0			75	0	16.50	16.59	16.68	0
	16QAM	1	0	16.45	16.62	16.79	0		16QAM	1	0	16.37	16.55	16.70	0
		1	50	16.34	16.51	16.64	0			1	37	16.33	16.46	16.58	0
		1	99	16.52	16.70	16.82	0			1	74	16.47	16.60	16.74	0
		50	0	16.39	16.59	16.75	0			36	0	16.44	16.52	16.72	0
		50	25	16.42	16.54	16.71	0			36	19	16.37	16.52	16.73	0
		50	50	16.42	16.65	16.78	0			36	39	16.40	16.62	16.69	0
		100	0	16.45	16.62	16.69	0			75	0	16.42	16.60	16.70	0
10M	QPSK	1	0	16.40	16.54	16.59	0	5M	QPSK	1	0	16.39	16.51	16.68	0
		1	24	16.40	16.44	16.66	0			1	12	16.26	16.55	16.62	0
		1	49	16.36	16.67	16.83	0			1	24	16.33	16.62	16.65	0
		25	0	16.23	16.54	16.58	0			12	0	16.26	16.55	16.45	0
		25	12	16.39	16.43	16.55	0			12	6	16.30	16.39	16.68	0
		25	25	16.28	16.55	16.60	0			12	13	16.39	16.55	16.64	0
		50	0	16.34	16.50	16.58	0			25	0	16.37	16.49	16.62	0
	16QAM	1	0	16.40	16.53	16.53	0		16QAM	1	0	16.18	16.55	16.61	0
		1	24	16.23	16.45	16.66	0			1	12	16.19	16.59	16.65	0
		1	49	16.29	16.48	16.76	0			1	24	16.42	16.55	16.66	0
		25	0	16.29	16.47	16.65	0			12	0	16.19	16.39	16.56	0
		25	12	16.20	16.31	16.57	0			12	6	16.33	16.31	16.56	0
		25	25	16.33	16.51	16.64	0			12	13	16.20	16.58	16.57	0
		50	0	16.41	16.42	16.63	0			25	0	16.29	16.36	16.57	0
3M	QPSK	1	0	16.38	16.55	16.72	0	1.4M	QPSK	1	0	16.42	16.54	16.77	0
		1	7	16.35	16.37	16.51	0			1	2	16.37	16.54	16.65	0
		1	14	16.41	16.65	16.74	0			1	5	16.49	16.64	16.77	0
		8	0	16.26	16.47	16.71	0			3	0	16.36	16.53	16.68	0
		8	3	16.42	16.44	16.57	0			3	1	16.22	16.44	16.56	0
		8	7	16.36	16.51	16.67	0			3	3	16.36	16.61	16.62	0
		15	0	16.38	16.49	16.63	0			6	0	16.49	16.43	16.60	0
	16QAM	1	0	16.33	16.45	16.64	0		16QAM	1	0	16.33	16.49	16.58	0
		1	7	16.17	16.33	16.57	0			1	2	16.26	16.39	16.67	0
		1	14	16.36	16.63	16.80	0			1	5	16.45	16.57	16.75	0
		8	0	16.37	16.42	16.51	0			3	0	16.21	16.42	16.56	0
		8	3	16.24	16.40	16.66	0			3	1	16.23	16.44	16.68	0
		8	7	16.42	16.63	16.65	0			3	3	16.33	16.56	16.53	0
		15	0	16.31	16.55	16.64	0			6	0	16.39	16.58	16.70	0

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11b	1	2412	18.06	18.25	-
	6	2437	18.15	18.33	-
	11	2462	17.90	18.04	-
	12	2467	17.11	16.20	-
	13	2472	14.89	15.06	-
802.11n (HT20)	1	2412	-	-	15.97
	6	2437	-	-	17.29
	11	2462	-	-	14.39
	12	2467	-	-	12.80
	13	2472	-	-	7.54

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<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11n (HT40)	38	5190	-	-	16.38
	46	5230	-	-	16.87
802.11ac (VHT80)	42	5210	16.67	16.72	-

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11ac (VHT80)	106	5530	15.36	15.41	15.27
	122	5610	15.19	15.29	15.25
	138	5690	15.22	15.27	15.37

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11ac (VHT80)	155	5775	15.20	15.27	15.30

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth BDR	0	2402	10.71
	39	2441	10.74
	78	2480	10.90
Bluetooth LE	0	2402	6.97
	19	2440	6.90
	39	2480	6.98

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Laptop Mode

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	23.43	23.42	23.26	23.20	23.24	23.36	23.69	23.71	23.64	-
HSDPA Subtest-1	23.42	23.40	23.22	23.18	23.23	23.34	23.66	23.69	23.62	0
HSDPA Subtest-2	22.54	22.53	22.39	22.15	22.21	22.31	23.22	23.35	23.16	0
HSDPA Subtest-3	22.09	22.05	21.85	21.63	21.73	21.82	22.73	22.78	22.65	0.5
HSDPA Subtest-4	21.83	21.79	21.56	21.53	21.55	21.57	22.50	22.56	22.41	0.5
DC-HSDPA Subtest-1	23.41	23.35	23.22	23.02	23.16	23.25	23.56	23.59	23.49	0
DC-HSDPA Subtest-2	22.50	22.47	22.36	22.16	22.19	22.26	23.19	23.21	23.06	0
DC-HSDPA Subtest-3	21.99	21.95	21.71	21.53	21.68	21.73	22.65	22.70	22.55	0.5
DC-HSDPA Subtest-4	21.72	21.67	21.62	21.51	21.52	21.54	22.42	22.52	22.31	0.5
HSUPA Subtest-1	22.56	22.45	22.20	22.18	22.24	22.32	23.19	23.26	23.02	0
HSUPA Subtest-2	20.41	20.27	20.06	20.05	20.07	20.11	21.04	21.08	20.83	2
HSUPA Subtest-3	21.11	21.07	21.06	21.03	21.05	21.08	21.79	21.83	21.72	1
HSUPA Subtest-4	20.54	20.53	20.27	20.15	20.26	20.42	21.33	21.36	21.18	2
HSUPA Subtest-5	22.62	22.50	22.25	22.14	22.30	22.51	23.20	23.22	23.09	0

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LTE Band 2															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	22.96	22.91	22.89	0	15M	QPSK	1	0	22.94	22.83	22.83	0
		1	50	22.97	22.94	22.91	0			1	37	22.87	22.84	22.87	0
		1	99	22.95	22.90	22.85	0			1	74	22.91	22.88	22.82	0
		50	0	21.92	21.87	21.86	1			36	0	21.92	21.82	21.82	1
		50	25	21.97	21.95	21.91	1			36	19	21.94	21.87	21.83	1
		50	50	21.94	21.92	21.89	1			36	39	21.91	21.82	21.85	1
		100	0	21.94	21.92	21.90	1			75	0	21.90	21.86	21.81	1
	16QAM	1	0	21.86	21.85	21.81	1		16QAM	1	0	21.92	21.74	21.78	1
		1	50	21.96	21.84	21.84	1			1	37	21.87	21.84	21.81	1
		1	99	21.87	21.84	21.82	1			1	74	21.77	21.83	21.80	1
		50	0	20.92	20.87	20.85	2			36	0	20.87	20.76	20.72	2
		50	25	20.91	20.92	20.91	2			36	19	20.85	20.90	20.87	2
		50	50	20.94	20.89	20.83	2			36	39	20.88	20.77	20.77	2
		100	0	20.84	20.87	20.81	2			75	0	20.82	20.77	20.77	2
10M	QPSK	1	0	22.90	22.84	22.72	0	5M	QPSK	1	0	22.94	22.70	22.65	0
		1	24	22.81	22.83	22.87	0			1	12	22.84	22.72	22.66	0
		1	49	22.75	22.77	22.67	0			1	24	22.87	22.80	22.71	0
		25	0	21.71	21.66	21.70	1			12	0	21.75	21.79	21.76	1
		25	12	21.84	21.77	21.89	1			12	6	21.72	21.86	21.74	1
		25	25	21.92	21.79	21.84	1			12	13	21.87	21.69	21.75	1
		50	0	21.75	21.92	21.78	1			25	0	21.77	21.78	21.64	1
	16QAM	1	0	21.92	21.76	21.66	1		16QAM	1	0	21.74	21.71	21.78	1
		1	24	21.80	21.65	21.64	1			1	12	21.89	21.83	21.67	1
		1	49	21.81	21.67	21.67	1			1	24	21.75	21.68	21.53	1
		25	0	20.73	20.64	20.77	2			12	0	20.67	20.59	20.57	2
		25	12	20.87	20.90	20.66	2			12	6	20.84	20.85	20.75	2
		25	25	20.83	20.78	20.81	2			12	13	20.81	20.87	20.72	2
		50	0	20.74	20.62	20.66	2			25	0	20.83	20.70	20.74	2
3M	QPSK	1	0	22.86	22.79	22.75	0	1.4M	QPSK	1	0	22.87	22.72	22.69	0
		1	7	22.91	22.87	22.74	0			1	2	22.76	22.84	22.71	0
		1	14	22.86	22.65	22.69	0			1	5	22.91	22.84	22.67	0
		8	0	21.82	21.83	21.72	1			3	0	22.85	22.70	22.73	0
		8	3	21.84	21.79	21.79	1			3	1	22.81	22.74	22.72	0
		8	7	21.82	21.79	21.80	1			3	3	22.83	22.77	22.78	0
		15	0	21.78	21.79	21.71	1			6	0	21.92	21.75	21.77	1
	16QAM	1	0	21.68	21.84	21.69	1		16QAM	1	0	21.76	21.86	21.75	1
		1	7	21.78	21.83	21.84	1			1	2	21.70	21.86	21.79	1
		1	14	21.72	21.71	21.71	1			1	5	21.83	21.70	21.65	1
		8	0	20.85	20.71	20.67	2			3	0	21.82	21.59	21.62	1
		8	3	20.72	20.76	20.71	2			3	1	21.85	21.87	21.79	1
		8	7	20.81	20.73	20.77	2			3	3	21.71	21.73	21.69	1
		15	0	20.72	20.81	20.69	2			6	0	20.79	20.67	20.79	2

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LTE Band 4															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	22.77	22.86	22.72	0	15M	QPSK	1	0	22.72	22.84	22.63	0
		1	50	22.67	22.71	22.60	0			1	37	22.61	22.63	22.60	0
		1	99	22.72	22.80	22.62	0			1	74	22.68	22.72	22.57	0
		50	0	21.65	21.71	21.64	1			36	0	21.55	21.67	21.56	1
		50	25	21.64	21.66	21.52	1			36	19	21.57	21.61	21.45	1
		50	50	21.63	21.68	21.60	1			36	39	21.58	21.61	21.57	1
		100	0	21.72	21.77	21.70	1			75	0	21.65	21.69	21.62	1
	16QAM	1	0	21.68	21.77	21.69	1		16QAM	1	0	21.65	21.69	21.58	1
		1	50	21.64	21.66	21.53	1			1	37	21.56	21.62	21.49	1
		1	99	21.65	21.70	21.55	1			1	74	21.57	21.71	21.49	1
		50	0	20.57	20.62	20.57	2			36	0	20.53	20.63	20.54	2
		50	25	20.55	20.57	20.42	2			36	19	20.61	20.48	20.39	2
		50	50	20.56	20.66	20.51	2			36	39	20.51	20.66	20.56	2
		100	0	20.63	20.74	20.66	2			75	0	20.59	20.71	20.60	2
10M	QPSK	1	0	22.70	22.70	22.66	0	5M	QPSK	1	0	22.74	22.69	22.56	0
		1	24	22.45	22.59	22.51	0			1	12	22.49	22.67	22.47	0
		1	49	22.61	22.75	22.60	0			1	24	22.60	22.64	22.54	0
		25	0	21.62	21.62	21.55	1			12	0	21.56	21.48	21.40	1
		25	12	21.49	21.52	21.46	1			12	6	21.43	21.44	21.31	1
		25	25	21.49	21.64	21.45	1			12	13	21.44	21.57	21.34	1
		50	0	21.59	21.65	21.59	1			25	0	21.51	21.54	21.44	1
	16QAM	1	0	21.59	21.67	21.49	1		16QAM	1	0	21.64	21.66	21.54	1
		1	24	21.52	21.57	21.51	1			1	12	21.36	21.50	21.47	1
		1	49	21.66	21.73	21.40	1			1	24	21.59	21.67	21.33	1
		25	0	20.52	20.53	20.41	2			12	0	20.34	20.53	20.41	2
		25	12	20.54	20.57	20.35	2			12	6	20.43	20.59	20.30	2
		25	25	20.31	20.57	20.31	2			12	13	20.33	20.42	20.38	2
		50	0	20.50	20.52	20.55	2			25	0	20.51	20.56	20.52	2
3M	QPSK	1	0	22.60	22.75	22.61	0	1.4M	QPSK	1	0	22.64	22.80	22.58	0
		1	7	22.64	22.54	22.40	0			1	2	22.51	22.60	22.50	0
		1	14	22.65	22.69	22.54	0			1	5	22.57	22.68	22.44	0
		8	0	21.62	21.58	21.53	1			3	0	22.50	22.50	22.62	0
		8	3	21.53	21.56	21.41	1			3	1	22.51	22.60	22.42	0
		8	7	21.60	21.56	21.47	1			3	3	22.48	22.53	22.39	0
		15	0	21.67	21.66	21.53	1			6	0	21.56	21.54	21.51	1
	16QAM	1	0	21.53	21.67	21.52	1		16QAM	1	0	21.67	21.77	21.58	1
		1	7	21.57	21.51	21.55	1			1	2	21.52	21.51	21.35	1
		1	14	21.55	21.72	21.42	1			1	5	21.52	21.52	21.48	1
		8	0	20.48	20.62	20.38	2			3	0	21.42	21.66	21.51	1
		8	3	20.46	20.56	20.48	2			3	1	21.31	21.36	21.25	1
		8	7	20.45	20.50	20.56	2			3	3	21.39	21.53	21.50	1
		15	0	20.60	20.65	20.47	2			6	0	20.58	20.62	20.53	2

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LTE Band 5															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	22.76	22.86	22.68	0	5M	QPSK	1	0	22.67	22.82	22.47	0
		1	24	22.65	22.73	22.55	0			1	12	22.57	22.64	22.30	0
		1	49	22.62	22.72	22.60	0			1	24	22.50	22.54	22.39	0
		25	0	21.73	21.81	21.63	1			12	0	21.63	21.70	21.44	1
		25	12	21.65	21.76	21.61	1			12	6	21.57	21.59	21.27	1
		25	25	21.60	21.69	21.58	1			12	13	21.51	21.55	21.35	1
	16QAM	50	0	21.70	21.78	21.65	1		16QAM	25	0	21.57	21.60	21.40	1
		1	0	21.67	21.77	21.59	1			1	0	21.55	21.71	21.43	1
		1	24	21.60	21.64	21.51	1			1	12	21.54	21.58	21.39	1
		1	49	21.54	21.64	21.60	1			1	24	21.44	21.63	21.32	1
		25	0	20.67	20.80	20.56	2			12	0	20.55	20.69	20.42	2
		25	12	20.55	20.69	20.61	2			12	6	20.45	20.68	20.41	2
3M	QPSK	25	25	20.50	20.68	20.51	2	1.4M	QPSK	12	13	20.32	20.57	20.30	2
		50	0	20.66	20.70	20.62	2			25	0	20.55	20.51	20.46	2
	16QAM	1	0	22.74	22.82	22.53	0		16QAM	1	0	22.68	22.70	22.60	0
		1	7	22.56	22.50	22.37	0			1	2	22.61	22.57	22.52	0
		1	14	22.50	22.56	22.46	0			1	5	22.43	22.62	22.55	0
		8	0	21.70	21.61	21.46	1			3	0	22.59	22.65	22.46	0
		8	3	21.53	21.67	21.51	1			3	1	22.56	22.67	22.55	0
		8	7	21.52	21.54	21.47	1			3	3	22.51	22.58	22.37	0
3M	QPSK	15	0	21.63	21.61	21.64	1		16QAM	6	0	21.53	21.73	21.47	1
		1	0	21.73	21.77	21.47	1			1	0	21.69	21.69	21.42	1
		1	7	21.46	21.53	21.53	1			1	2	21.51	21.52	21.35	1
		1	14	21.56	21.61	21.37	1			1	5	21.45	21.56	21.50	1
		8	0	20.50	20.66	20.52	2			3	0	21.45	21.64	21.39	1
		8	3	20.38	20.54	20.51	2			3	1	21.54	21.56	21.47	1
3M	16QAM	8	7	20.36	20.58	20.44	2		16QAM	3	3	21.46	21.48	21.35	1
		15	0	20.50	20.65	20.43	2			6	0	20.54	20.71	20.56	2
	QPSK	1	0	22.74	22.82	22.53	0		QPSK	1	0	22.68	22.70	22.60	0
		1	7	22.56	22.50	22.37	0			1	2	22.61	22.57	22.52	0
		1	14	22.50	22.56	22.46	0			1	5	22.43	22.62	22.55	0
		8	0	21.70	21.61	21.46	1			3	0	22.59	22.65	22.46	0
		8	3	21.53	21.67	21.51	1			3	1	22.56	22.67	22.55	0
		8	7	21.52	21.54	21.47	1			3	3	22.51	22.58	22.37	0

LTE Band 7															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	22.54	22.43	22.41	0	15M	QPSK	1	0	22.45	22.38	22.31	0
		1	50	22.53	22.40	22.36	0			1	37	22.50	22.38	22.34	0
		1	99	22.63	22.52	22.50	0			1	74	22.53	22.42	22.40	0
		50	0	21.60	21.39	21.38	1			36	0	21.55	21.34	21.29	1
		50	25	21.58	21.48	21.44	1			36	19	21.51	21.45	21.43	1
		50	50	21.64	21.53	21.50	1			36	39	21.57	21.52	21.42	1
	16QAM	100	0	21.73	21.62	21.59	1		16QAM	75	0	21.71	21.59	21.51	1
		1	0	21.44	21.41	21.37	1			1	0	21.42	21.39	21.36	1
		1	50	21.52	21.33	21.26	1			1	37	21.50	21.34	21.20	1
		1	99	21.63	21.46	21.43	1			1	74	21.53	21.39	21.30	1
		50	0	20.58	20.33	20.31	2			36	0	20.45	20.27	20.27	2
		50	25	20.54	20.40	20.37	2			36	19	20.57	20.41	20.37	2
10M	QPSK	50	50	20.62	20.50	20.50	2	5M	QPSK	36	39	20.56	20.39	20.40	2
		100	0	20.67	20.54	20.52	2			75	0	20.65	20.42	20.47	2
	16QAM	1	0	22.45	22.19	22.17	0		16QAM	1	0	22.45	22.32	22.11	0
		1	24	22.39	22.34	22.16	0			1	12	22.31	22.15	22.15	0
		1	49	22.62	22.49	22.37	0			1	24	22.54	22.27	22.24	0
		25	0	21.37	21.20	21.27	1			12	0	21.50	21.31	21.09	1
		25	12	21.54	21.29	21.32	1			12	6	21.46	21.34	21.22	1
		25	25	21.44	21.35	21.38	1			12	13	21.49	21.42	21.23	1
10M	QPSK	50	0	21.62	21.50	21.53	1		16QAM	25	0	21.70	21.48	21.38	1
		1	0	21.32	21.24	21.20	1			1	0	21.35	21.21	21.31	1
		1	24	21.34	21.31	21.11	1			1	12	21.42	21.14	21.20	1
		1	49	21.45	21.39	21.31	1			1	24	21.50	21.46	21.31	1
		25	0	20.38	20.24	20.21	2			12	0	20.36	20.20	20.30	2
		25	12	20.44	20.33	20.28	2			12	6	20.45	20.27	20.35	2
10M	16QAM	25	25	20.45	20.27	20.24	2		16QAM	12	13	20.39	20.34	20.32	2
		50	0	20.61	20.46	20.49	2			25	0	20.64	20.33	20.35	2
	QPSK	1	0	22.45	22.19	22.17	0		16QAM	1	0	22.45	22.32	22.11	0
		1	24	22.39	22.34	22.16	0			1	12	22.31	22.15	22.15	0
		1	49	22.62	22.49	22.37	0			1	24	22.54	22.27	22.24	0
		25	0	21.37	21.20	21.27	1			12	0	21.50	21.31	21.09	1
		25	12	21.54	21.29	21.32	1			12	6	21.46	21.34	21.22	1
		25	25	21.44	21.35	21.38	1			12	13	21.49	21.42	21.23	1

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LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	22.80	22.98	22.79	0	5M	QPSK	1	0	22.68	22.87	22.62	0
		1	24	22.71	22.82	22.70	0			1	12	22.65	22.72	22.58	0
		1	49	22.72	22.78	22.68	0			1	24	22.65	22.71	22.41	0
		25	0	21.71	21.84	21.69	1			12	0	21.50	21.69	21.40	1
		25	12	21.66	21.83	21.64	1			12	6	21.61	21.69	21.48	1
		25	25	21.68	21.79	21.66	1			12	13	21.56	21.74	21.47	1
		50	0	21.73	21.87	21.70	1			25	0	21.62	21.63	21.49	1
	16QAM	1	0	21.73	21.89	21.77	1		16QAM	1	0	21.66	21.75	21.68	1
		1	24	21.62	21.78	21.69	1			1	12	21.44	21.70	21.52	1
		1	49	21.67	21.68	21.65	1			1	24	21.50	21.72	21.35	1
		25	0	20.59	20.70	20.56	2			12	0	20.57	20.55	20.50	2
		25	12	20.58	20.76	20.56	2			12	6	20.40	20.67	20.42	2
		25	25	20.66	20.83	20.62	2			12	13	20.57	20.66	20.53	2
		50	0	20.64	20.85	20.70	2			25	0	20.61	20.73	20.50	2
3M	QPSK	1	0	22.66	22.78	22.73	0	1.4M	QPSK	1	0	22.65	22.90	22.66	0
		1	7	22.55	22.77	22.55	0			1	2	22.69	22.75	22.47	0
		1	14	22.65	22.74	22.64	0			1	5	22.64	22.57	22.58	0
		8	0	21.51	21.69	21.52	1			3	0	22.56	22.60	22.42	0
		8	3	21.49	21.77	21.51	1			3	1	22.47	22.71	22.55	0
		8	7	21.58	21.68	21.65	1			3	3	22.59	22.71	22.62	0
		15	0	21.66	21.77	21.59	1			6	0	21.68	21.76	21.61	1
	16QAM	1	0	21.68	21.83	21.69	1		16QAM	1	0	21.64	21.76	21.62	1
		1	7	21.63	21.63	21.66	1			1	2	21.53	21.61	21.48	1
		1	14	21.48	21.53	21.46	1			1	5	21.59	21.62	21.59	1
		8	0	20.56	20.57	20.40	2			3	0	21.54	21.56	21.48	1
		8	3	20.53	20.52	20.43	2			3	1	21.50	21.60	21.44	1
		8	7	20.58	20.66	20.55	2			3	3	21.49	21.68	21.58	1
		15	0	20.59	20.77	20.54	2			6	0	20.62	20.68	20.44	2

LTE Band 13															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		22.95		0	5M	QPSK	1	0	22.82	22.91	22.93	0
		1	24		22.98		0			1	12	22.84	22.92	22.95	0
		1	49		22.96		0			1	24	22.82	22.88	22.93	0
		25	0		22.01		1			12	0	21.80	21.88	21.96	1
		25	12		22.04		1			12	6	21.81	21.86	21.90	1
		25	25		21.95		1			12	13	21.85	21.92	21.95	1
		50	0		22.16		1			25	0	21.84	21.90	21.94	1
	16QAM	1	0		21.91		1		16QAM	1	0	21.72	21.90	21.86	1
		1	24		21.94		1			1	12	21.79	21.88	21.94	1
		1	49		21.91		1			1	24	21.78	21.79	21.89	1
		25	0		20.99		2			12	0	20.76	20.87	20.88	2
		25	12		20.95		2			12	6	20.81	20.77	20.85	2
		25	25		20.91		2			12	13	20.76	20.83	20.94	2
		50	0		21.09		2			25	0	20.78	20.88	20.88	2

LTE Band 17															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800				Channel		23755	23790	23825	
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5	
10M	QPSK	1	0	22.73	22.66	22.69	0	5M	QPSK	1	0	22.57	22.51	22.51	0
		1	24	22.76	22.72	22.73	0			1	12	22.66	22.71	22.45	0
		1	49	22.75	22.67	22.68	0			1	24	22.69	22.48	22.48	0
		25	0	21.83	21.78	21.81	1			12	0	21.67	21.68	21.71	1
		25	12	21.86	21.80	21.82	1			12	6	21.73	21.69	21.67	1
		25	25	21.83	21.76	21.78	1			12	13	21.60	21.57	21.71	1
		50	0	21.92	21.88	21.89	1			25	0	21.79	21.72	21.62	1
	16QAM	1	0	21.66	21.58	21.61	1		16QAM	1	0	21.63	21.55	21.56	1
		1	24	21.69	21.69	21.68	1			1	12	21.63	21.60	21.51	1
		1	49	21.71	21.59	21.59	1			1	24	21.52	21.56	21.65	1
		25	0	20.74	20.69	20.81	2			12	0	20.58	20.63	20.76	2
		25	12	20.82	20.72	20.80	2			12	6	20.72	20.66	20.51	2
		25	25	20.76	20.74	20.74	2			12	13	20.72	20.63	20.74	2
		50	0	20.86	20.84	20.84	2			25	0	20.70	20.65	20.65	2

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LTE Band 26																							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)								
		Channel		26765	26865	26965				Channel		26740	26865	26990									
		Frequency (MHz)		821.5	831.5	841.5				Frequency (MHz)		819.0	831.5	844.0									
15M	QPSK	1	0	22.72	22.74	22.70	0	10M	QPSK	1	0	22.56	22.66	22.65	0								
		1	37	22.75	22.78	22.73	0			1	24	22.70	22.74	22.60	0								
		1	74	22.56	22.60	22.56	0			1	49	22.52	22.49	22.45	0								
		36	0	21.78	21.81	21.75	1			25	0	21.71	21.62	21.62	1								
		36	19	21.82	21.86	21.80	1			25	12	21.67	21.80	21.69	1								
		36	39	21.68	21.71	21.65	1			25	25	21.58	21.58	21.50	1								
		75	0	21.92	21.96	21.91	1			50	0	21.84	21.94	21.77	1								
	16QAM	1	0	21.66	21.73	21.70	1		16QAM	1	0	21.45	21.53	21.47	1								
		1	37	21.66	21.70	21.69	1			1	24	21.65	21.56	21.54	1								
		1	74	21.56	21.54	21.53	1			1	49	21.46	21.36	21.40	1								
		36	0	20.75	20.72	20.70	2			25	0	20.59	20.61	20.67	2								
		36	19	20.74	20.82	20.76	2			25	12	20.72	20.58	20.75	2								
		36	39	20.62	20.67	20.55	2			25	25	20.50	20.47	20.44	2								
		75	0	20.90	20.86	20.83	2			50	0	20.79	20.84	20.58	2								
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)								
		Channel		26715	26865	27015				Channel		26705	26865	27025									
		Frequency (MHz)		816.5	831.5	846.5				Frequency (MHz)		815.5	831.5	847.5									
5M	QPSK	1	0	22.57	22.56	22.57	0	3M	QPSK	1	0	22.50	22.66	22.61	0								
		1	12	22.65	22.66	22.61	0			1	7	22.61	22.63	22.54	0								
		1	24	22.40	22.40	22.40	0			1	14	22.42	22.46	22.46	0								
		12	0	21.68	21.64	21.55	1			8	0	21.65	21.75	21.58	1								
		12	6	21.77	21.82	21.62	1			8	3	21.68	21.73	21.63	1								
		12	13	21.59	21.64	21.39	1			8	7	21.60	21.57	21.62	1								
		25	0	21.88	21.91	21.68	1			15	0	21.76	21.81	21.76	1								
	16QAM	1	0	21.49	21.54	21.54	1		16QAM	1	0	21.53	21.71	21.64	1								
		1	12	21.61	21.56	21.57	1			1	7	21.68	21.68	21.65	1								
		1	24	21.30	21.40	21.38	1			1	14	21.44	21.58	21.31	1								
		12	0	20.57	20.63	20.56	2			8	0	20.53	20.63	20.66	2								
		12	6	20.62	20.54	20.58	2			8	3	20.66	20.68	20.57	2								
		12	13	20.51	20.62	20.50	2			8	7	20.39	20.46	20.40	2								
		25	0	20.82	20.67	20.74	2			15	0	20.66	20.76	20.71	2								
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)																
		Channel		26697	26865	27033																	
		Frequency (MHz)		814.7	831.5	848.3																	
1.4M	QPSK	1	0	22.69	22.67	22.50	0																
		1	2	22.56	22.63	22.61	0																
		1	5	22.41	22.45	22.39	0																
		3	0	22.60	22.62	22.62	0																
		3	1	22.72	22.73	22.65	0																
		3	3	22.47	22.59	22.55	0																
		6	0	21.82	21.73	21.78	1																
	16QAM	1	0	21.52	21.49	21.61	1																
		1	2	21.63	21.56	21.57	1																
		1	5	21.45	21.49	21.33	1																
		3	0	21.56	21.48	21.51	1																
		3	1	21.64	21.59	21.56	1																
		3	3	21.41	21.50	21.55	1																
		6	0	20.77	20.80	20.79	2																

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LTE Band 30														
BW	MCS Index	RB Size	RB Offset	Mid	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	
		Channel						27710	Channel		27685	27710		27735
		Frequency (MHz)						2310.0	Frequency (MHz)		2307.5	2310.0		2312.5
10M	QPSK	1	0	22.17	0	5M	QPSK	1	0	22.05	21.98	22.01	0	
		1	24	22.01	0			1	12	22.02	21.95	21.98	0	
		1	49	22.02	0			1	24	22.04	21.97	22.00	0	
		25	0	21.03	1			12	0	20.96	20.89	20.92	1	
		25	12	20.98	1			12	6	20.93	20.86	20.89	1	
		25	25	21.02	1			12	13	21.08	21.01	21.04	1	
		50	0	21.09	1			25	0	21.06	20.99	21.02	1	
	16QAM	1	0	21.11	1		16QAM	1	0	21.66	20.94	21.70	1	
		1	24	20.98	1			1	12	21.01	20.95	20.90	1	
		1	49	20.99	1			1	24	21.00	20.88	20.97	1	
		25	0	19.99	2			12	0	19.96	19.79	19.89	2	
		25	12	19.97	2			12	6	19.90	19.83	19.80	2	
		25	25	20.01	2			12	13	20.06	19.93	20.03	2	
		50	0	20.05	2			25	0	20.02	19.97	19.99	2	

LTE Band 38															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37850	38000	38150				Channel		37825	38000	38175	
		Frequency (MHz)		2580	2595	2610				Frequency (MHz)		2577.5	2595	2612.5	
20M	QPSK	1	0	21.92	21.86	21.85	0	15M	QPSK	1	0	21.90	21.84	21.83	0
		1	50	21.87	21.81	21.80	0			1	37	21.85	21.79	21.78	0
		1	99	21.86	21.80	21.79	0			1	74	21.84	21.78	21.77	0
		50	0	20.90	20.83	20.82	1			36	0	20.87	20.81	20.80	1
		50	25	20.88	20.82	20.81	1			36	19	20.86	20.80	20.79	1
		50	50	20.89	20.84	20.83	1			36	39	20.88	20.82	20.81	1
	16QAM	100	0	20.86	20.80	20.79	1		75	0	20.84	20.78	20.77	1	
		16QAM	1	0	21.18	21.12	21.11		1	1	0	21.16	21.10	21.09	1
			1	50	21.17	21.11	21.10		1	1	37	21.15	21.09	21.08	1
			1	99	21.23	21.17	21.16		1	1	74	21.21	21.15	21.14	1
			50	0	19.85	19.79	19.78		2	36	0	19.83	19.77	19.76	2
			50	25	19.92	19.86	19.85		2	36	19	19.90	19.84	19.83	2
50	50		19.90	19.84	19.83	2	36	39	19.88	19.82	19.81	2			
100	0	19.99	19.93	19.92	2	75	0	19.97	19.91	19.90	2				
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37800	38000	38200				Channel		37775	38000	38225	
		Frequency (MHz)		2575	2595	2615				Frequency (MHz)		2572.5	2595	2617.5	
10M	QPSK	1	0	21.89	21.83	21.82	0	5M	QPSK	1	0	21.87	21.81	21.80	0
		1	24	21.84	21.78	21.77	0			1	12	21.82	21.76	21.75	0
		1	49	21.83	21.77	21.76	0			1	24	21.81	21.75	21.74	0
		25	0	20.86	20.80	20.79	1			12	0	20.84	20.78	20.77	1
		25	12	20.85	20.79	20.78	1			12	6	20.83	20.77	20.76	1
		25	25	20.87	20.81	20.80	1			12	13	20.85	20.79	20.78	1
	16QAM	50	0	20.83	20.77	20.76	1		25	0	20.81	20.75	20.74	1	
		16QAM	1	0	21.15	21.09	21.08		1	1	0	21.13	21.07	21.06	1
			1	24	21.14	21.08	21.07		1	1	12	21.12	21.06	21.05	1
			1	49	21.20	21.14	21.13		1	1	24	21.18	21.12	21.11	1
			25	0	19.82	19.76	19.75		2	12	0	19.80	19.74	19.73	2
			25	12	19.89	19.83	19.82		2	12	6	19.87	19.81	19.80	2
25	25		19.87	19.81	19.80	2	12	13	19.85	19.79	19.78	2			
50	0	19.96	19.90	19.89	2	25	0	19.94	19.88	19.87	2				

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LTE Band 41																			
BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39750	40185	40620	41055	41490				Channel		39725	40173	40620	41068	41515	
		Frequency (MHz)		2506.0	2549.5	2593.0	2636.5	2680.0				Frequency (MHz)		2503.5	2548.3	2593.0	2637.8	2682.5	
20M	QPSK	1	0	22.10	22.33	21.83	21.82	21.76	0	15M	QPSK	1	0	22.06	22.23	21.82	21.75	21.74	0
		1	50	21.88	22.11	21.65	21.60	21.59	0			1	37	21.86	22.03	21.63	21.59	21.53	0
		1	99	21.75	21.97	21.53	21.51	21.50	0			1	74	21.65	21.91	21.49	21.45	21.49	0
		50	0	21.08	21.22	20.85	20.83	20.73	1			36	0	20.99	21.17	20.79	20.75	20.68	1
		50	25	20.92	21.12	20.76	20.61	20.60	1			36	19	20.85	21.05	20.76	20.59	20.52	1
		50	50	20.85	21.05	20.65	20.62	20.58	1			36	39	20.81	21.03	20.55	20.60	20.51	1
		100	0	20.89	21.11	20.72	20.65	20.64	1			75	0	20.81	21.07	20.71	20.65	20.60	1
	16QAM	1	0	21.08	21.32	20.83	20.81	20.68	1		16QAM	1	0	21.01	21.26	20.79	20.81	20.66	1
		1	50	20.85	21.11	20.63	20.56	20.57	1			1	37	20.82	21.10	20.57	20.59	20.49	1
		1	99	20.71	20.97	20.50	20.43	20.48	1			1	74	20.72	20.96	20.44	20.48	20.48	1
		50	0	20.04	20.16	19.78	19.73	19.64	2			36	0	20.02	20.17	19.80	19.79	19.68	2
		50	25	19.84	20.08	19.69	19.54	19.52	2			36	19	19.88	20.08	19.72	19.59	19.52	2
		50	50	19.76	20.01	19.64	19.56	19.55	2			36	39	19.81	20.05	19.62	19.52	19.51	2
		100	0	19.85	20.02	19.63	19.65	19.56	2			75	0	19.88	20.02	19.66	19.63	19.54	2
10M	QPSK	1	0	21.98	22.19	21.71	21.74	21.68	0	5M	QPSK	1	0	22.06	22.26	21.72	21.79	21.63	0
		1	24	21.83	21.94	21.58	21.41	21.41	0			1	12	21.82	21.91	21.49	21.43	21.48	0
		1	49	21.66	21.91	21.49	21.37	21.44	0			1	24	21.58	21.94	21.49	21.44	21.32	0
		25	0	20.97	21.14	20.83	20.72	20.60	1			12	0	21.01	21.13	20.80	20.82	20.65	1
		25	12	20.82	20.99	20.74	20.57	20.50	1			12	6	20.75	21.05	20.63	20.41	20.46	1
		25	25	20.69	20.88	20.55	20.51	20.56	1			12	13	20.75	20.96	20.62	20.47	20.49	1
		50	0	20.81	21.01	20.64	20.58	20.54	1			25	0	20.81	20.98	20.63	20.50	20.59	1
	16QAM	1	0	20.94	21.19	20.77	20.74	20.71	1		16QAM	1	0	21.01	21.21	20.70	20.73	20.59	1
		1	24	20.78	20.99	20.64	20.44	20.42	1			1	12	20.77	20.93	20.50	20.44	20.44	1
		1	49	20.56	20.84	20.51	20.33	20.47	1			1	24	20.64	20.94	20.41	20.46	20.32	1
		25	0	19.97	20.14	19.83	19.76	19.60	2			12	0	20.01	20.17	19.78	19.76	19.71	2
		25	12	19.83	20.03	19.71	19.50	19.52	2			12	6	19.80	20.03	19.66	19.43	19.42	2
		25	25	19.72	19.87	19.58	19.53	19.52	2			12	13	19.77	19.95	19.63	19.47	19.43	2
		50	0	19.72	19.94	19.65	19.52	19.48	2			25	0	19.79	20.01	19.63	19.57	19.58	2

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LTE Band 66															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572				Channel		132047	132322	132597	
		Frequency (MHz)		1720.0	1745.0	1770.0				Frequency (MHz)		1717.5	1745.0	1772.5	
20M	QPSK	1	0	22.54	22.63	22.81	0	15M	QPSK	1	0	22.50	22.53	22.76	0
		1	50	22.60	22.62	22.93	0			1	37	22.60	22.56	22.87	0
		1	99	22.86	22.92	23.10	0			1	74	22.76	22.84	23.09	0
		50	0	21.63	21.66	21.85	1			36	0	21.57	21.56	21.79	1
		50	25	21.65	21.69	21.89	1			36	19	21.59	21.65	21.79	1
		50	50	21.76	21.80	21.93	1			36	39	21.68	21.73	21.84	1
		100	0	21.85	21.91	22.09	1			75	0	21.85	21.87	22.03	1
	16QAM	1	0	21.66	21.56	21.70	1		16QAM	1	0	21.59	21.44	21.60	1
		1	50	21.57	21.54	21.93	1			1	37	21.40	21.44	21.91	1
		1	99	21.76	21.92	22.02	1			1	74	21.72	21.75	21.92	1
		50	0	20.53	20.58	20.78	2			36	0	20.55	20.62	20.77	2
		50	25	20.56	20.65	20.79	2			36	19	20.59	20.62	20.79	2
		50	50	20.69	20.80	20.86	2			36	39	20.72	20.67	20.87	2
		100	0	20.85	20.91	21.04	2			75	0	20.74	20.81	20.95	2
10M	QPSK	1	0	22.44	22.56	22.74	0	5M	QPSK	1	0	22.31	22.52	22.72	0
		1	24	22.50	22.43	22.91	0			1	12	22.49	22.50	22.82	0
		1	49	22.79	22.71	22.99	0			1	24	22.63	22.83	22.86	0
		25	0	21.56	21.56	21.71	1			12	0	21.47	21.63	21.69	1
		25	12	21.49	21.53	21.76	1			12	6	21.52	21.59	21.61	1
		25	25	21.64	21.76	21.75	1			12	13	21.66	21.58	21.84	1
		50	0	21.75	21.82	22.05	1			25	0	21.69	21.69	21.79	1
	16QAM	1	0	21.44	21.40	21.60	1		16QAM	1	0	21.52	21.37	21.64	1
		1	24	21.35	21.38	21.74	1			1	12	21.46	21.52	21.72	1
		1	49	21.67	21.64	21.82	1			1	24	21.57	21.69	21.94	1
		25	0	20.53	20.50	20.73	2			12	0	20.43	20.51	20.64	2
		25	12	20.55	20.46	20.88	2			12	6	20.50	20.48	20.63	2
		25	25	20.57	20.52	20.78	2			12	13	20.48	20.62	20.73	2
		50	0	20.61	20.62	20.91	2			25	0	20.74	20.72	21.00	2
3M	QPSK	1	0	22.37	22.41	22.68	0	1.4M	QPSK	1	0	22.40	22.46	22.58	0
		1	7	22.36	22.56	22.91	0			1	2	22.47	22.54	22.75	0
		1	14	22.78	22.87	22.91	0			1	5	22.85	22.74	22.97	0
		8	0	21.46	21.57	21.74	1			3	0	22.46	22.51	22.73	0
		8	3	21.42	21.55	21.70	1			3	1	22.59	22.55	22.85	0
		8	7	21.62	21.63	21.90	1			3	3	22.63	22.70	22.70	0
		15	0	21.68	21.83	21.96	1			6	0	21.75	21.81	21.96	1
	16QAM	1	0	21.53	21.49	21.53	1		16QAM	1	0	21.53	21.52	21.55	1
		1	7	21.38	21.36	21.80	1			1	2	21.56	21.38	21.80	1
		1	14	21.72	21.79	21.99	1			1	5	21.73	21.75	21.96	1
		8	0	20.48	20.45	20.74	2			3	0	21.42	21.47	21.64	1
		8	3	20.49	20.55	20.68	2			3	1	21.48	21.56	21.62	1
		8	7	20.51	20.57	20.79	2			3	3	21.61	21.55	21.71	1
		15	0	20.67	20.68	20.91	2			6	0	20.72	20.72	20.85	2

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11b	1	2412	19.21	19.34	-
	6	2437	20.10	20.29	-
	11	2462	17.84	17.96	-
	12	2467	16.26	16.43	-
	13	2472	15.09	15.15	-
802.11n (HT20)	1	2412	-	-	16.18
	6	2437	-	-	17.35
	11	2462	-	-	14.37
	12	2467	-	-	12.85
	13	2472	-	-	7.64

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<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11n (HT20)	52	5260	-	-	19.44
	56	5280	-	-	19.40
	60	5300	-	-	19.36
	64	5320	-	-	17.39
802.11n (HT40)	54	5270	20.31	20.40	-
	62	5310	17.04	17.21	-

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11ac (VHT80)	106	5530	18.38	18.43	17.34
	122	5610	19.11	19.21	18.38
	138	5690	20.23	20.38	19.34

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (Tx1)	Average Power (Tx2)	Average Power (Tx1 + Tx2)
802.11n (HT40))	151	5755	20.20	20.32	19.40
	159	5795	20.30	20.37	19.40

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth BDR	0	2402	10.71
	39	2441	10.74
	78	2480	10.90
Bluetooth LE	0	2402	6.97
	19	2440	6.90
	39	2480	6.98

4.7 SAR Testing Results

4.7.1 SAR Test Reduction Considerations

<KDB 447498 D01, General RF Exposure Guidance>

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

- (1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- (2) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- (3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

When SAR is not measured at the maximum power level allowed for production units, the measured SAR will be scaled to the maximum tune-up tolerance limit to determine compliance. The scaling factor for the tune-up power is defined as maximum tune-up limit (mW) / measured conducted power (mW). The reported SAR would be calculated by measured SAR x tune-up power scaling factor.

The SAR has been measured with highest transmission duty factor supported by the test mode tools for WLAN and/or Bluetooth. When the transmission duty factor could not achieve 100%, the reported SAR will be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up power. The scaling factor for the duty factor is defined as 100% / transmission duty cycle (%). The reported SAR would be calculated by measured SAR x tune-up power scaling factor x duty cycle scaling factor.

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ 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.

<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>

- (1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

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(2) 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.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> 1/2$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is $> 1/2$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

- (1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is ≤ 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
- (2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is ≤ 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is ≤ 1.2 W/kg.
- (3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is ≤ 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is ≤ 1.2 W/kg.
- (4) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

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4.7.2 SAR Results for Body Exposure Condition

Tablet Mode

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
01	WCDMA II	RMC12.2K	Rear Face	0	9262	16.0	15.99	1.00	-0.17	0.051	0.05
	WCDMA II	RMC12.2K	Left Side	0	9262	16.0	15.99	1.00	-0.02	0.853	0.85
	WCDMA II	RMC12.2K	Top Side	0	9262	16.0	15.99	1.00	0.07	0.313	0.31
	WCDMA II	RMC12.2K	Left Side	0	9400	16.0	15.93	1.02	0.12	0.815	0.83
	WCDMA II	RMC12.2K	Left Side	0	9538	16.0	15.96	1.01	0.03	0.742	0.75
02	WCDMA II	RMC12.2K	Left Side	0	9262	16.0	15.99	1.00	-0.11	0.841	0.84
	WCDMA IV	RMC12.2K	Rear Face	0	1513	17.0	16.98	1.00	-0.19	0.031	0.03
	WCDMA IV	RMC12.2K	Left Side	0	1513	17.0	16.98	1.00	-0.09	0.575	0.58
	WCDMA IV	RMC12.2K	Top Side	0	1513	17.0	16.98	1.00	0.09	0.103	0.10
	WCDMA IV	RMC12.2K	Left Side	0	1312	17.0	16.89	1.03	-0.11	0.589	0.61
03	WCDMA IV	RMC12.2K	Left Side	0	1413	17.0	16.95	1.01	0.12	0.572	0.58
	WCDMA V	RMC12.2K	Rear Face	0	4182	19.5	19.49	1.00	-0.09	0.047	0.05
	WCDMA V	RMC12.2K	Left Side	0	4182	19.5	19.49	1.00	0.10	0.331	0.33
	WCDMA V	RMC12.2K	Top Side	0	4182	19.5	19.49	1.00	-0.10	0.098	0.10
	WCDMA V	RMC12.2K	Left Side	0	4132	19.5	19.47	1.01	-0.08	0.344	0.35
	WCDMA V	RMC12.2K	Left Side	0	4233	19.5	19.44	1.01	-0.11	0.33	0.33

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
04	LTE 2	QPSK20M	Rear Face	0	18700	1	50	16.0	15.99	1.00	-0.04	0.047	0.05
	LTE 2	QPSK20M	Left Side	0	18700	1	50	16.0	15.99	1.00	-0.07	0.790	0.79
	LTE 2	QPSK20M	Top Side	0	18700	1	50	16.0	15.99	1.00	0.01	0.308	0.31
	LTE 2	QPSK20M	Rear Face	0	18700	50	25	16.0	15.96	1.01	0.03	0.044	0.04
	LTE 2	QPSK20M	Left Side	0	18700	50	25	16.0	15.96	1.01	-0.01	0.762	0.77
05	LTE 2	QPSK20M	Top Side	0	18700	50	25	16.0	15.96	1.01	-0.02	0.287	0.29
	LTE 2	QPSK20M	Left Side	0	18900	1	50	16.0	15.96	1.01	-0.16	0.76	0.77
	LTE 2	QPSK20M	Left Side	0	19100	1	50	16.0	15.98	1.00	-0.18	0.699	0.70
	LTE 5	QPSK10M	Rear Face	0	20525	1	0	19.5	19.49	1.00	0.11	0.086	0.09
	LTE 5	QPSK10M	Left Side	0	20525	1	0	19.5	19.49	1.00	0.19	0.323	0.32
06	LTE 5	QPSK10M	Top Side	0	20525	1	0	19.5	19.49	1.00	-0.01	0.26	0.26
	LTE 5	QPSK10M	Rear Face	0	20525	25	0	19.5	19.39	1.03	0.17	0.082	0.08
	LTE 5	QPSK10M	Left Side	0	20525	25	0	19.5	19.39	1.03	-0.17	0.309	0.32
	LTE 5	QPSK10M	Top Side	0	20525	25	0	19.5	19.39	1.03	0.15	0.254	0.26
	LTE 5	QPSK10M	Left Side	0	20450	1	0	19.5	19.35	1.04	-0.03	0.333	0.35
07	LTE 5	QPSK10M	Left Side	0	20600	1	0	19.5	19.37	1.03	-0.05	0.309	0.32
	LTE 7	QPSK20M	Rear Face	0	20850	1	99	16.0	15.76	1.06	-0.09	0.093	0.10
	LTE 7	QPSK20M	Left Side	0	20850	1	99	16.0	15.76	1.06	-0.08	0.341	0.36
	LTE 7	QPSK20M	Top Side	0	20850	1	99	16.0	15.76	1.06	-0.19	0.26	0.28
	LTE 7	QPSK20M	Rear Face	0	20850	50	50	16.0	15.72	1.07	-0.16	0.086	0.09
08	LTE 7	QPSK20M	Left Side	0	20850	50	50	16.0	15.72	1.07	-0.02	0.296	0.32
	LTE 7	QPSK20M	Top Side	0	20850	50	50	16.0	15.72	1.07	-0.05	0.251	0.27
	LTE 7	QPSK20M	Left Side	0	21100	1	99	16.0	15.63	1.09	0.15	0.258	0.28
	LTE 7	QPSK20M	Left Side	0	21350	1	99	16.0	15.59	1.10	0.05	0.226	0.25
	LTE 12	QPSK10M	Rear Face	0	23095	1	0	18.0	17.99	1.00	-0.14	0.047	0.05
09	LTE 12	QPSK10M	Left Side	0	23095	1	0	18.0	17.99	1.00	0.02	0.392	0.39
	LTE 12	QPSK10M	Top Side	0	23095	1	0	18.0	17.99	1.00	-0.15	0.226	0.23
	LTE 12	QPSK10M	Rear Face	0	23095	25	0	18.0	17.97	1.01	-0.14	0.046	0.05
	LTE 12	QPSK10M	Left Side	0	23095	25	0	18.0	17.97	1.01	0.08	0.389	0.39
	LTE 12	QPSK10M	Top Side	0	23095	25	0	18.0	17.97	1.01	0.15	0.223	0.23
10	LTE 12	QPSK10M	Left Side	0	23060	1	0	18.0	17.96	1.01	0.19	0.37	0.37
	LTE 12	QPSK10M	Left Side	0	23130	1	0	18.0	17.97	1.01	-0.08	0.399	0.40
	LTE 13	QPSK10M	Rear Face	0	23230	1	24	19.0	18.98	1.00	-0.01	0.101	0.10
	LTE 13	QPSK10M	Left Side	0	23230	1	24	19.0	18.98	1.00	-0.10	0.399	0.40
	LTE 13	QPSK10M	Top Side	0	23230	1	24	19.0	18.98	1.00	-0.05	0.313	0.31
11	LTE 13	QPSK10M	Rear Face	0	23230	25	12	19.0	18.94	1.01	-0.08	0.099	0.10
	LTE 13	QPSK10M	Left Side	0	23230	25	12	19.0	18.94	1.01	-0.10	0.382	0.39
	LTE 13	QPSK10M	Top Side	0	23230	25	12	19.0	18.94	1.01	0.08	0.311	0.31

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Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
09	LTE 26	QPSK15M	Rear Face	0	26865	1	37	19.5	19.44	1.01	0.06	0.071	0.07
	LTE 26	QPSK15M	Left Side	0	26865	1	37	19.5	19.44	1.01	-0.11	0.306	0.31
	LTE 26	QPSK15M	Top Side	0	26865	1	37	19.5	19.44	1.01	0.06	0.292	0.29
	LTE 26	QPSK15M	Rear Face	0	26865	36	19	19.5	19.38	1.03	-0.08	0.069	0.07
	LTE 26	QPSK15M	Left Side	0	26865	36	19	19.5	19.38	1.03	0.09	0.291	0.30
	LTE 26	QPSK15M	Top Side	0	26865	36	19	19.5	19.38	1.03	0.06	0.276	0.28
10	LTE 26	QPSK15M	Left Side	0	26765	1	37	19.5	19.40	1.02	0.12	0.288	0.29
	LTE 26	QPSK15M	Left Side	0	26965	1	37	19.5	19.43	1.02	0.02	0.284	0.29
	LTE 30	QPSK10M	Rear Face	0	27710	1	0	16.0	15.63	1.09	-0.18	0.12	0.13
	LTE 30	QPSK10M	Left Side	0	27710	1	0	16.0	15.63	1.09	-0.11	0.858	0.94
	LTE 30	QPSK10M	Top Side	0	27710	1	0	16.0	15.63	1.09	-0.17	0.274	0.30
	LTE 30	QPSK10M	Rear Face	0	27710	25	0	16.0	15.62	1.09	-0.08	0.115	0.13
11	LTE 30	QPSK10M	Left Side	0	27710	25	0	16.0	15.62	1.09	-0.06	0.819	0.89
	LTE 30	QPSK10M	Top Side	0	27710	25	0	16.0	15.62	1.09	0.05	0.246	0.27
	LTE 30	QPSK10M	Left Side	0	27710	50	0	16.0	15.60	1.10	0.14	0.811	0.89
	LTE 30	QPSK10M	Left Side	0	27710	1	0	16.0	15.63	1.09	0.03	0.843	0.92
	LTE 41	QPSK20M	Rear Face	0	40185	1	0	17.5	17.42	1.02	-0.03	0.064	0.07
	LTE 41	QPSK20M	Left Side	0	40185	1	0	17.5	17.42	1.02	-0.16	0.333	0.34
12	LTE 41	QPSK20M	Top Side	0	40185	1	0	17.5	17.42	1.02	0.19	0.258	0.26
	LTE 41	QPSK20M	Rear Face	0	40185	50	0	17.5	17.19	1.07	0.08	0.062	0.07
	LTE 41	QPSK20M	Left Side	0	40185	50	0	17.5	17.19	1.07	-0.07	0.267	0.29
	LTE 41	QPSK20M	Top Side	0	40185	50	0	17.5	17.19	1.07	-0.08	0.248	0.27
	LTE 41	QPSK20M	Left Side	0	39750	1	0	17.5	17.23	1.06	0.12	0.306	0.32
	LTE 41	QPSK20M	Left Side	0	40620	1	0	17.5	16.71	1.20	0.04	0.152	0.18
13	LTE 41	QPSK20M	Left Side	0	41055	1	0	17.5	16.65	1.22	-0.12	0.167	0.20
	LTE 41	QPSK20M	Left Side	0	41490	1	0	17.5	16.59	1.23	-0.13	0.161	0.20
	LTE 66	QPSK20M	Rear Face	0	132572	1	99	17.0	16.86	1.03	-0.07	0.028	0.03
	LTE 66	QPSK20M	Left Side	0	132572	1	99	17.0	16.86	1.03	0.16	0.61	0.63
	LTE 66	QPSK20M	Top Side	0	132572	1	99	17.0	16.86	1.03	-0.14	0.223	0.23
	LTE 66	QPSK20M	Rear Face	0	132572	50	50	17.0	16.81	1.04	-0.01	0.025	0.03
14	LTE 66	QPSK20M	Left Side	0	132572	50	50	17.0	16.81	1.04	-0.02	0.599	0.62
	LTE 66	QPSK20M	Top Side	0	132572	50	50	17.0	16.81	1.04	-0.10	0.219	0.23
	LTE 66	QPSK20M	Left Side	0	132072	1	99	17.0	16.55	1.11	-0.02	0.608	0.67
	LTE 66	QPSK20M	Left Side	0	132322	1	99	17.0	16.73	1.06	-0.07	0.639	0.68

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
13	WLAN2.4G	802.11b	Rear Face	0	6	Tx1	97.99	1.02	18.5	18.15	1.08	0.12	0.323	0.36
	WLAN2.4G	802.11b	Top Side	0	6	Tx1	97.99	1.02	18.5	18.15	1.08	-0.17	0.89	0.98
	WLAN2.4G	802.11b	Rear Face	0	6	Tx2	97.99	1.02	18.5	18.33	1.04	-0.11	0.329	0.35
	WLAN2.4G	802.11b	Top Side	0	6	Tx2	97.99	1.02	18.5	18.33	1.04	-0.17	0.930	0.99
	WLAN2.4G	802.11n HT20	Rear Face	0	6	Tx1+2	94.45	1.06	17.5	17.29	1.05	-0.19	0.143	0.16
	WLAN2.4G	802.11n HT20	Top Side	0	6	Tx1+2	94.45	1.06	17.5	17.29	1.05	-0.14	0.484	0.54
14	WLAN2.4G	802.11b	Top Side	0	1	Tx1	97.99	1.02	18.5	18.06	1.11	-0.07	0.846	0.96
	WLAN2.4G	802.11b	Top Side	0	11	Tx1	97.99	1.02	18.25	17.90	1.08	0.06	0.796	0.88
	WLAN2.4G	802.11b	Top Side	0	12	Tx1	97.99	1.02	17.5	17.11	1.09	-0.11	0.831	0.92
	WLAN2.4G	802.11b	Top Side	0	13	Tx1	97.99	1.02	15.25	14.89	1.09	0.13	0.742	0.82
	WLAN2.4G	802.11b	Top Side	0	1	Tx2	97.99	1.02	18.5	18.25	1.06	-0.07	0.893	0.97
	WLAN2.4G	802.11b	Top Side	0	11	Tx2	97.99	1.02	18.25	18.04	1.05	0.06	0.871	0.93
15	WLAN2.4G	802.11b	Top Side	0	12	Tx2	97.99	1.02	16.5	16.20	1.07	-0.11	0.715	0.78
	WLAN2.4G	802.11b	Top Side	0	13	Tx2	97.99	1.02	15.25	15.06	1.04	0.13	0.502	0.53
	WLAN2.4G	802.11b	Top Side	0	6	Tx2	97.99	1.02	18.5	18.33	1.04	-0.17	0.921	0.98

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Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN5.2G	802.11ac VHT80	Rear Face	0	42	Tx1	97.80	1.02	17.0	16.67	1.08	-0.11	0.343	0.38
14	WLAN5.2G	802.11ac VHT80	Top Side	0	42	Tx1	97.80	1.02	17.0	16.67	1.08	-0.02	0.999	1.10
	WLAN5.2G	802.11ac VHT80	Rear Face	0	42	Tx2	99.30	1.01	17.0	16.72	1.07	-0.07	0.437	0.47
	WLAN5.2G	802.11ac VHT80	Top Side	0	42	Tx2	99.30	1.01	17.0	16.72	1.07	-0.03	0.91	0.98
	WLAN5.2G	802.11n HT40	Rear Face	0	46	Tx1+2	97.50	1.03	17.0	16.87	1.03	-0.05	0.224	0.24
	WLAN5.2G	802.11n HT40	Top Side	0	46	Tx1+2	97.50	1.03	17.0	16.87	1.03	0.12	0.642	0.68
	WLAN5.2G	802.11ac VHT80	Top Side	0	42	Tx1	97.80	1.02	17.0	16.67	1.08	-0.02	0.989	1.09
	WLAN5.6G	802.11ac VHT80	Rear Face	0	106	Tx1	97.80	1.02	15.5	15.36	1.03	0.06	0.167	0.18
	WLAN5.6G	802.11ac VHT80	Top Side	0	106	Tx1	97.80	1.02	15.5	15.36	1.03	0.11	0.792	0.83
	WLAN5.6G	802.11ac VHT80	Rear Face	0	106	Tx2	99.30	1.01	15.5	15.41	1.02	0.05	0.184	0.19
15	WLAN5.6G	802.11ac VHT80	Top Side	0	106	Tx2	99.30	1.01	15.5	15.41	1.02	0.01	0.937	0.97
	WLAN5.6G	802.11ac VHT80	Rear Face	0	138	Tx1+2	97.70	1.02	15.5	15.37	1.03	0.02	0.133	0.14
	WLAN5.6G	802.11ac VHT80	Top Side	0	138	Tx1+2	97.70	1.02	15.5	15.37	1.03	0.15	0.52	0.55
	WLAN5.6G	802.11ac VHT80	Top Side	0	138	Tx1	97.80	1.02	15.5	15.22	1.07	-0.09	0.551	0.60
	WLAN5.6G	802.11ac VHT80	Top Side	0	122	Tx1	97.80	1.02	15.5	15.19	1.07	0.07	0.741	0.81
	WLAN5.6G	802.11ac VHT80	Top Side	0	138	Tx2	99.30	1.01	15.5	15.27	1.05	0.01	0.638	0.68
	WLAN5.6G	802.11ac VHT80	Top Side	0	122	Tx2	99.30	1.01	15.5	15.29	1.05	-0.05	0.752	0.80
	WLAN5.6G	802.11ac VHT80	Top Side	0	106	Tx2	99.30	1.01	15.5	15.41	1.02	0.11	0.931	0.96
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Tx1	97.80	1.02	15.5	15.20	1.07	0.02	0.152	0.17
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Tx1	97.80	1.02	15.5	15.20	1.07	0.18	0.707	0.77
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Tx2	99.30	1.01	15.5	15.27	1.05	-0.03	0.275	0.29
16	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Tx2	99.30	1.01	15.5	15.27	1.05	0.05	1.06	1.12
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Tx1+2	97.70	1.02	15.5	15.30	1.05	-0.06	0.103	0.11
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Tx1+2	97.70	1.02	15.5	15.30	1.05	0.14	0.458	0.49
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Tx2	99.30	1.01	15.5	15.27	1.05	0.03	1.01	1.07
	BT	BDR	Rear Face	0	78	Tx2	76.70	1.30	11.0	10.90	1.02	-0.05	0.039	0.05
	BT	BDR	Left Side	0	78	Tx2	76.70	1.30	11.0	10.90	1.02	0.00	<0.001	0.00
	BT	BDR	Top Side	0	78	Tx2	76.70	1.30	11.0	10.90	1.02	0.06	0.101	0.13
	BT	BDR	Top Side	0	0	Tx2	76.70	1.30	11.0	10.71	1.07	0.18	0.097	0.13
17	BT	BDR	Top Side	0	39	Tx2	76.70	1.30	11.0	10.74	1.06	-0.11	0.130	0.18

Note: The "< 0.001" means there is no SAR value or the SAR is too low to be measured.

FCC SAR Test Report

Laptop Mode

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
18	WCDMA II	RMC12.2K	Top of Panel	25	9262	24.0	23.43	1.14	-0.16	0.024	0.03
	WCDMA II	RMC12.2K	Left of Panel	25	9262	24.0	23.43	1.14	0.11	0.081	0.09
	WCDMA II	RMC12.2K	Back of Panel	25	9262	24.0	23.43	1.14	0.01	0.090	0.10
	WCDMA II	RMC12.2K	Back of Panel	25	9400	24.0	23.42	1.14	0.16	0.092	0.10
	WCDMA II	RMC12.2K	Back of Panel	25	9538	24.0	23.26	1.19	-0.12	0.084	0.10
19	WCDMA IV	RMC12.2K	Top of Panel	25	1513	24.0	23.36	1.16	0.06	0.019	0.02
	WCDMA IV	RMC12.2K	Left of Panel	25	1513	24.0	23.36	1.16	0.01	0.064	0.07
	WCDMA IV	RMC12.2K	Back of Panel	25	1513	24.0	23.36	1.16	-0.01	0.078	0.09
	WCDMA IV	RMC12.2K	Back of Panel	25	1312	24.0	23.20	1.20	0.14	0.072	0.09
	WCDMA IV	RMC12.2K	Back of Panel	25	1413	24.0	23.24	1.19	0.12	0.074	0.09
20	WCDMA V	RMC12.2K	Top of Panel	25	4182	24.0	23.71	1.07	-0.03	0.014	0.01
	WCDMA V	RMC12.2K	Left of Panel	25	4182	24.0	23.71	1.07	-0.11	0.038	0.04
	WCDMA V	RMC12.2K	Back of Panel	25	4182	24.0	23.71	1.07	0.10	0.018	0.02
	WCDMA V	RMC12.2K	Left of Panel	25	4132	24.0	23.69	1.07	-0.08	0.039	0.04
	WCDMA V	RMC12.2K	Left of Panel	25	4233	24.0	23.64	1.09	0.02	0.038	0.04

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
21	LTE 2	QPSK20M	Top of Panel	25	18700	1	50	23.0	22.97	1.01	-0.02	0.023	0.02
	LTE 2	QPSK20M	Left of Panel	25	18700	1	50	23.0	22.97	1.01	-0.01	0.075	0.08
	LTE 2	QPSK20M	Back of Panel	25	18700	1	50	23.0	22.97	1.01	0.05	0.081	0.08
	LTE 2	QPSK20M	Top of Panel	25	18700	50	25	22.0	21.97	1.01	-0.18	0.019	0.02
	LTE 2	QPSK20M	Left of Panel	25	18700	50	25	22.0	21.97	1.01	-0.02	0.059	0.06
22	LTE 2	QPSK20M	Back of Panel	25	18700	50	25	22.0	21.97	1.01	-0.16	0.064	0.06
	LTE 2	QPSK20M	Back of Panel	25	18900	1	50	23.0	22.94	1.01	0.02	0.08	0.08
	LTE 2	QPSK20M	Back of Panel	25	19100	1	50	23.0	22.91	1.02	0.19	0.074	0.08
	LTE 5	QPSK10M	Top of Panel	25	20525	1	0	23.0	22.86	1.03	0.14	0.015	0.02
	LTE 5	QPSK10M	Left of Panel	25	20525	1	0	23.0	22.86	1.03	-0.15	0.032	0.03
23	LTE 5	QPSK10M	Back of Panel	25	20525	1	0	23.0	22.86	1.03	-0.07	0.020	0.02
	LTE 5	QPSK10M	Top of Panel	25	20525	25	0	22.0	21.81	1.04	-0.08	0.025	0.03
	LTE 5	QPSK10M	Left of Panel	25	20525	25	0	22.0	21.81	1.04	-0.02	0.025	0.03
	LTE 5	QPSK10M	Back of Panel	25	20525	25	0	22.0	21.81	1.04	0.15	0.016	0.02
	LTE 5	QPSK10M	Left of Panel	25	20450	1	0	23.0	22.76	1.06	0.08	0.031	0.03
24	LTE 5	QPSK10M	Left of Panel	25	20600	1	0	23.0	22.68	1.08	0.00	0.03	0.03
	LTE 7	QPSK20M	Top of Panel	25	20850	1	99	23.5	22.63	1.22	-0.14	0.045	0.05
	LTE 7	QPSK20M	Left of Panel	25	20850	1	99	23.5	22.63	1.22	0.01	0.019	0.02
	LTE 7	QPSK20M	Back of Panel	25	20850	1	99	23.5	22.63	1.22	0.08	0.135	0.16
	LTE 7	QPSK20M	Top of Panel	25	20850	50	50	22.5	21.64	1.22	-0.16	0.032	0.04
25	LTE 7	QPSK20M	Left of Panel	25	20850	50	50	22.5	21.64	1.22	0.14	0.017	0.02
	LTE 7	QPSK20M	Back of Panel	25	20850	50	50	22.5	21.64	1.22	-0.11	0.102	0.12
	LTE 7	QPSK20M	Back of Panel	25	21100	1	99	23.5	22.52	1.25	0.08	0.131	0.16
	LTE 7	QPSK20M	Back of Panel	25	21350	1	99	23.5	22.50	1.26	-0.03	0.13	0.16
	LTE 12	QPSK10M	Top of Panel	25	23095	1	0	23.0	22.98	1.00	0.18	0.013	0.01
26	LTE 12	QPSK10M	Left of Panel	25	23095	1	0	23.0	22.98	1.00	-0.04	0.03	0.03
	LTE 12	QPSK10M	Back of Panel	25	23095	1	0	23.0	22.98	1.00	-0.11	0.018	0.02
	LTE 12	QPSK10M	Top of Panel	25	23095	25	0	22.0	21.84	1.04	-0.06	0.012	0.01
	LTE 12	QPSK10M	Left of Panel	25	23095	25	0	22.0	21.84	1.04	0.06	0.023	0.02
	LTE 12	QPSK10M	Back of Panel	25	23095	25	0	22.0	21.84	1.04	0.09	0.017	0.02
27	LTE 12	QPSK10M	Left of Panel	25	23060	1	0	23.0	22.80	1.05	-0.18	0.03	0.03
	LTE 12	QPSK10M	Left of Panel	25	23130	1	0	23.0	22.79	1.05	-0.11	0.031	0.03
	LTE 13	QPSK10M	Top of Panel	25	23230	1	24	23.5	22.98	1.13	-0.16	0.026	0.03
	LTE 13	QPSK10M	Left of Panel	25	23230	1	24	23.5	22.98	1.13	0.01	0.055	0.06
	LTE 13	QPSK10M	Back of Panel	25	23230	1	24	23.5	22.98	1.13	0.05	0.037	0.04
28	LTE 13	QPSK10M	Top of Panel	25	23230	25	12	22.5	22.04	1.11	0.16	0.025	0.03
	LTE 13	QPSK10M	Left of Panel	25	23230	25	12	22.5	22.04	1.11	-0.14	0.043	0.05
	LTE 13	QPSK10M	Back of Panel	25	23230	25	12	22.5	22.04	1.11	0.16	0.029	0.03

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Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 26	QPSK15M	Top of Panel	25	26865	1	37	23.0	22.78	1.05	0.06	0.015	0.02
	LTE 26	QPSK15M	Left of Panel	25	26865	1	37	23.0	22.78	1.05	0.16	0.03	0.03
	LTE 26	QPSK15M	Back of Panel	25	26865	1	37	23.0	22.78	1.05	-0.08	0.02	0.02
	LTE 26	QPSK15M	Top of Panel	25	26865	36	19	22.0	21.86	1.03	-0.09	0.013	0.01
	LTE 26	QPSK15M	Left of Panel	25	26865	36	19	22.0	21.86	1.03	0.12	0.024	0.02
	LTE 26	QPSK15M	Back of Panel	25	26865	36	19	22.0	21.86	1.03	0.11	0.016	0.02
26	LTE 26	QPSK15M	Left of Panel	25	26765	1	37	23.0	22.75	1.06	-0.15	0.032	0.03
	LTE 26	QPSK15M	Left of Panel	25	26965	1	37	23.0	22.73	1.06	-0.15	0.027	0.03
	LTE 30	QPSK10M	Top of Panel	25	27710	1	0	23.5	22.17	1.36	-0.19	0.038	0.05
	LTE 30	QPSK10M	Left of Panel	25	27710	1	0	23.5	22.17	1.36	-0.05	0.095	0.13
27	LTE 30	QPSK10M	Back of Panel	25	27710	1	0	23.5	22.17	1.36	-0.01	0.132	0.18
	LTE 30	QPSK10M	Top of Panel	25	27710	25	0	22.5	21.03	1.40	-0.06	0.029	0.04
	LTE 30	QPSK10M	Left of Panel	25	27710	25	0	22.5	21.03	1.40	0.05	0.069	0.10
	LTE 30	QPSK10M	Back of Panel	25	27710	25	0	22.5	21.03	1.40	0.17	0.101	0.14
	LTE 41	QPSK20M	Top of Panel	25	40185	1	0	23.0	22.33	1.17	-0.13	0.017	0.02
	LTE 41	QPSK20M	Left of Panel	25	40185	1	0	23.0	22.33	1.17	-0.07	0.031	0.04
28	LTE 41	QPSK20M	Back of Panel	25	40185	1	0	23.0	22.33	1.17	0.18	0.067	0.08
	LTE 41	QPSK20M	Top of Panel	25	40185	50	0	22.0	21.22	1.20	0.15	0.014	0.02
	LTE 41	QPSK20M	Left of Panel	25	40185	50	0	22.0	21.22	1.20	0.17	0.025	0.03
	LTE 41	QPSK20M	Back of Panel	25	40185	50	0	22.0	21.22	1.20	0.15	0.049	0.06
	LTE 41	QPSK20M	Back of Panel	25	39750	1	0	23.0	22.10	1.23	0.18	0.061	0.08
	LTE 41	QPSK20M	Back of Panel	25	40620	1	0	23.0	21.83	1.31	0.07	0.052	0.07
	LTE 41	QPSK20M	Back of Panel	25	41055	1	0	23.0	21.82	1.31	0.18	0.058	0.08
	LTE 41	QPSK20M	Back of Panel	25	41490	1	0	23.0	21.76	1.33	-0.18	0.059	0.08
	LTE 66	QPSK20M	Top of Panel	25	132572	1	99	23.5	23.10	1.10	0.02	0.014	0.02
	LTE 66	QPSK20M	Left of Panel	25	132572	1	99	23.5	23.10	1.10	0.13	0.069	0.08
	LTE 66	QPSK20M	Back of Panel	25	132572	1	99	23.5	23.10	1.10	-0.04	0.048	0.05
	LTE 66	QPSK20M	Top of Panel	25	132572	50	50	22.5	21.93	1.14	-0.17	0.011	0.01
	LTE 66	QPSK20M	Left of Panel	25	132572	50	50	22.5	21.93	1.14	-0.10	0.057	0.06
	LTE 66	QPSK20M	Back of Panel	25	132572	50	50	22.5	21.93	1.14	0.18	0.040	0.05
29	LTE 66	QPSK20M	Left of Panel	25	132072	1	99	23.5	22.86	1.16	0.03	0.070	0.08
	LTE 66	QPSK20M	Left of Panel	25	132322	1	99	23.5	22.92	1.14	-0.13	0.068	0.08

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN2.4G	802.11b	Top of Panel	25	6	Tx1	97.99	1.02	20.5	20.10	1.10	-0.12	0.043	0.05
	WLAN2.4G	802.11b	Back of Panel	25	6	Tx1	97.99	1.02	20.5	20.10	1.10	0.02	0.192	0.22
	WLAN2.4G	802.11b	Top of Panel	25	6	Tx2	97.99	1.02	20.5	20.29	1.05	-0.12	0.040	0.04
30	WLAN2.4G	802.11b	Back of Panel	25	6	Tx2	97.99	1.02	20.5	20.29	1.05	-0.12	0.246	0.26
	WLAN2.4G	802.11n HT20	Top of Panel	25	6	Tx1+2	94.45	1.06	17.5	17.35	1.04	-0.01	0.019	0.02
	WLAN2.4G	802.11n HT20	Back of Panel	25	6	Tx1+2	94.45	1.06	17.5	17.35	1.04	-0.12	0.112	0.12
	WLAN2.4G	802.11b	Back of Panel	25	1	Tx2	97.99	1.02	19.5	19.34	1.04	0.08	0.222	0.24
	WLAN2.4G	802.11b	Back of Panel	25	11	Tx2	97.99	1.02	18.25	17.96	1.07	0.07	0.216	0.24
	WLAN2.4G	802.11b	Back of Panel	25	12	Tx2	97.99	1.02	16.5	16.43	1.02	0.15	0.166	0.17
	WLAN2.4G	802.11b	Back of Panel	25	13	Tx2	97.99	1.02	15.25	15.15	1.02	0.09	0.12	0.12
	WLAN5.3G	802.11n HT40	Top of Panel	25	54	Tx1	97.70	1.02	20.5	20.31	1.04	-0.08	0.049	0.05
	WLAN5.3G	802.11n HT40	Back of Panel	25	54	Tx1	97.70	1.02	20.5	20.31	1.04	0.03	0.234	0.25
	WLAN5.3G	802.11n HT40	Top of Panel	25	54	Tx2	97.30	1.03	20.5	20.40	1.02	-0.11	0.050	0.05
31	WLAN5.3G	802.11n HT40	Back of Panel	25	54	Tx2	97.30	1.03	20.5	20.40	1.02	-0.07	0.381	0.40
	WLAN5.3G	802.11n HT20	Top of Panel	25	52	Tx1+2	100.00	1.00	19.5	19.44	1.01	-0.14	0.023	0.02
	WLAN5.3G	802.11n HT20	Back of Panel	25	52	Tx1+2	100.00	1.00	19.5	19.44	1.01	0	0.217	0.22
	WLAN5.3G	802.11n HT40	Back of Panel	25	62	Tx2	97.30	1.03	17.5	17.21	1.07	-0.15	0.228	0.25

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Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN5.6G	802.11ac VHT80	Top of Panel	25	138	Tx1	97.80	1.02	20.5	20.23	1.06	0.18	0.117	0.13
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Tx1	97.80	1.02	20.5	20.23	1.06	0.1	0.724	0.78
	WLAN5.6G	802.11ac VHT80	Top of Panel	25	138	Tx2	99.30	1.01	20.5	20.38	1.03	0.12	0.147	0.15
32	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Tx2	99.30	1.01	20.5	20.38	1.03	-0.01	0.925	0.96
	WLAN5.6G	802.11ac VHT80	Top of Panel	25	138	Tx1+2	97.70	1.02	19.5	19.34	1.04	-0.17	0.049	0.05
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Tx1+2	97.70	1.02	19.5	19.34	1.04	-0.04	0.332	0.35
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	106	Tx2	99.30	1.01	18.5	18.43	1.02	-0.09	0.543	0.56
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	122	Tx2	99.30	1.01	19.5	19.21	1.07	-0.10	0.694	0.75
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Tx2	99.30	1.01	20.5	20.38	1.03	-0.01	0.913	0.95
	WLAN5.8G	802.11n HT40	Top of Panel	25	159	Tx1	97.70	1.02	20.5	20.30	1.05	0.19	0.176	0.19
	WLAN5.8G	802.11n HT40	Back of Panel	25	159	Tx1	97.70	1.02	20.5	20.30	1.05	0.11	0.736	0.79
	WLAN5.8G	802.11n HT40	Top of Panel	25	159	Tx2	97.30	1.03	20.5	20.37	1.03	-0.19	0.210	0.22
33	WLAN5.8G	802.11n HT40	Back of Panel	25	159	Tx2	97.30	1.03	20.5	20.37	1.03	-0.07	0.977	1.04
	WLAN5.8G	802.11n HT40	Top of Panel	25	159	Tx1+2	97.50	1.03	19.5	19.40	1.02	-0.1	0.060	0.06
	WLAN5.8G	802.11n HT40	Back of Panel	25	159	Tx1+2	97.50	1.03	19.5	19.40	1.02	0.05	0.375	0.39
	WLAN5.8G	802.11n HT40	Back of Panel	25	151	Tx2	97.30	1.03	20.5	20.32	1.04	0.04	0.959	1.03
	WLAN5.8G	802.11n HT40	Back of Panel	25	159	Tx2	97.30	1.03	20.5	20.37	1.03	-0.01	0.952	1.01
	BT	BDR	Top of Panel	25	78	Tx2	76.70	1.30	11.0	10.90	1.02	0.05	0.00247	0.00
	BT	BDR	Back of Panel	25	78	Tx2	76.70	1.30	11.0	10.90	1.02	-0.16	0.011	0.01
	BT	BDR	Back of Panel	25	0	Tx2	76.70	1.30	11.0	10.71	1.07	-0.07	0.014	0.02
34	BT	BDR	Back of Panel	25	39	Tx2	76.70	1.30	11.0	10.74	1.06	-0.10	0.017	0.02

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4.7.3 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was 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. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10 , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 , or when the original or repeated measurement is ≥ 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 , and the original, first or second repeated measurement is ≥ 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
WCDMA II	RMC12.2K	Left Side	9262	0.853	0.841	1.01	N/A	N/A	N/A	N/A
LTE 30	QPSK10M	Left Side	27710	0.858	0.843	1.02	N/A	N/A	N/A	N/A
WLAN2.4G	802.11b	Top Side	6	0.930	0.921	1.01	N/A	N/A	N/A	N/A
WLAN5.2G	802.11ac VHT80	Top Side	42	0.999	0.989	1.01	N/A	N/A	N/A	N/A
WLAN5.6G	802.11ac VHT80	Top Side	138	0.937	0.931	1.01	N/A	N/A	N/A	N/A
WLAN5.8G	802.11ac VHT80	Top Side	155	1.06	1.01	1.05	N/A	N/A	N/A	N/A
WLAN5.6G	802.11ac VHT80	Back of Panel	138	0.925	0.913	1.01	N/A	N/A	N/A	N/A
WLAN5.8G	802.11n HT40	Back of Panel	159	0.977	0.952	1.03	N/A	N/A	N/A	N/A

FCC SAR Test Report

4.7.4 Simultaneous Multi-band Transmission Evaluation

<Possibilities of Simultaneous Transmission>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition
1	WWAN + WLAN2.4G Tx1	Yes
2	WWAN + WLAN2.4G Tx2	Yes
3	WWAN + WLAN5G Tx1	Yes
4	WWAN + WLAN5G Tx2	Yes
5	WWAN + BT	Yes
6	WWAN + WLAN2.4G Ant MIMO	Yes
7	WWAN + WLAN2.4G Tx1+BT	Yes
8	WWAN + WLAN5G Tx1+BT	Yes
9	WWAN + WLAN5G Ant MIMO	Yes
10	WWAN + WLAN5G Ant MIMO+BT	Yes

Note:

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. Plot1 is covered by plot7
3. Plot3 is covered by plot8
4. Plot5 is covered by plot10
5. Plot9 is covered by plot10

FCC SAR Test Report

<Estimated SAR Calculation>

According to KDB 447498 D01, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR was estimated according to following formula to result in substantially conservative SAR values of ≤ 0.4 W/kg to determine simultaneous transmission SAR test exclusion.

$$\text{Estimated SAR} = \frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \frac{\sqrt{f_{(\text{GHz})}}}{7.5}$$

If the minimum test separation distance is < 5 mm, a distance of 5 mm is used for estimated SAR calculation. When the test separation distance is > 50 mm, the 0.4 W/kg is used for SAR-1g.

Tablet Mode

Mode / Band	Frequency (GHz)	Max. Tune-up Power (dBm)	Test Position	Separation Distance (mm)	Estimated SAR (W/kg)
WCDMA II	1.9076	16.0	Body	0	0.40
WCDMA IV	1.7526	17.0	Body	0	0.40
WCDMA V	0.8466	19.5	Body	0	0.40
LTE 2	1.91	16.0	Body	0	0.40
LTE 4	1.755	17.0	Body	0	0.40
LTE 5	0.849	19.5	Body	0	0.40
LTE 7	2.57	16.0	Body	0	0.40
LTE 12	0.716	18.0	Body	0	0.40
LTE 13	0.787	19.0	Body	0	0.40
LTE17	0.716	18.0	Body	0	0.40
LTE 26	0.849	19.5	Body	0	0.40
LTE 30	2.315	16.0	Body	0	0.40
LTE 38	2.62	17.5	Body	0	0.40
LTE 41	2.69	17.5	Body	0	0.40
LTE 66	1.78	17.0	Body	0	0.40
WLAN (DTS)	2.462	18.5	Body	0	0.40
WLAN (NII)	5.24	17.0	Body	0	0.40
WLAN (NII)	5.32	15.5	Body	0	0.40
WLAN (NII)	5.72	15.5	Body	0	0.40
WLAN (NII)	5.825	15.5	Body	0	0.40
BT (DSS)	2.48	11.0	Body	0	0.40

FCC SAR Test Report

Laptop Mode

Mode / Band	Frequency (GHz)	Max. Tune-up Power (dBm)	Test Position	Separation Distance (mm)	Estimated SAR (W/kg)
WCDMA II	1.9076	24.0	Body	25	0.40
WCDMA IV	1.7526	24.0	Body	25	0.40
WCDMA V	0.8466	24.0	Body	25	0.40
LTE 2	1.91	23.0	Body	25	0.40
LTE 4	1.755	23.5	Body	25	0.40
LTE 5	0.849	23.0	Body	25	0.40
LTE 7	2.57	23.5	Body	25	0.40
LTE 12	0.716	23.0	Body	25	0.40
LTE 13	0.787	23.5	Body	25	0.40
LTE17	0.716	23.0	Body	25	0.40
LTE 26	0.849	23.0	Body	25	0.40
LTE 30	2.315	23.5	Body	25	0.40
LTE 38	2.62	23.0	Body	25	0.40
LTE 41	2.69	23.0	Body	25	0.40
LTE 66	1.78	23.5	Body	25	0.40
WLAN (DTS)	2.462	20.5	Body	25	0.40
WLAN (NII)	5.24	20.5	Body	25	0.40
WLAN (NII)	5.32	20.5	Body	25	0.40
WLAN (NII)	5.72	20.5	Body	25	0.40
WLAN (NII)	5.825	20.5	Body	25	0.40
BT (DSS)	2.48	11.0	Body	25	0.11

Note:

1. The separation distance is determined from the outer housing of the EUT to the user.
2. When standalone SAR testing is not required, an estimated SAR can be applied to determine simultaneous transmission SAR test exclusion.

FCC SAR Test Report

<SAR Summation Analysis>

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

Tablet Mode

Band	Position	1	2	3	4	5	6	7	8	1+3	1+6	1+4	1+2+8	1+5+8	1+7+8
		WWAN	WLAN 2.4GHz Tx1	WLAN 2.4GHz Tx2	WLAN 2.4GHz Tx1+2	WLAN 5GHz Tx1	WLAN 5GHz Tx2	WLAN 5GHz Tx1+2	BT Tx2	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg
WCDMA II	Rear Face	0.05	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.40	0.52	0.21	0.46	0.48	0.34
	Left Side	0.85	0.40	0.40	0.40	0.40	0.40	0.40	0.00	1.25	1.25	1.25	1.25	1.25	1.25
	Right Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
	Top Side	0.31	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.30	1.43	0.85	1.47	1.59	1.17
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
WCDMA IV	Rear Face	0.03	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.38	0.50	0.19	0.44	0.46	0.32
	Left Side	0.61	0.40	0.46	0.24	0.40	0.35	0.24	0.00	1.07	0.96	0.85	1.01	1.01	0.85
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.10	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.09	1.22	0.64	1.26	1.38	0.96
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
WCDMA V	Rear Face	0.05	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.40	0.52	0.21	0.46	0.48	0.34
	Left Side	0.35	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.81	0.70	0.59	0.75	0.75	0.59
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.10	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.09	1.22	0.64	1.26	1.38	0.96
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 2	Rear Face	0.05	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.40	0.52	0.21	0.46	0.48	0.34
	Left Side	0.79	0.40	0.46	0.24	0.40	0.35	0.24	0.00	1.25	1.14	1.03	1.19	1.19	1.03
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.31	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.30	1.43	0.85	1.47	1.59	1.17
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20

FCC SAR Test Report

Band	Position	1	2	3	4	5	6	7	8	1+3	1+6	1+4	1+2+8	1+5+8	1+7+8
		WWAN	WLAN 2.4GHz Tx1	WLAN 2.4GHz Tx2	WLAN 2.4GHz Tx1+2	WLAN 5GHz Tx1	WLAN 5GHz Tx2	WLAN 5GHz Tx1+2	BT Tx2	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg						
LTE 5	Rear Face	0.09	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.55	0.44	0.33	0.49	0.49	0.33
	Left Side	0.35	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.75	0.75	0.52	1.08	1.07	0.94
	Right Side	0.00	0.98	0.99	0.54	1.10	1.12	0.68	0.18	0.99	1.12	0.54	1.16	1.28	0.86
	Top Side	0.26	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.66	0.66	0.66	1.06	1.06	1.06
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 7	Rear Face	0.10	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.45	0.57	0.26	0.51	0.53	0.39
	Left Side	0.36	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.82	0.71	0.60	0.76	0.76	0.60
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.28	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.27	1.40	0.82	1.44	1.56	1.14
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 12	Rear Face	0.05	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.40	0.52	0.21	0.46	0.48	0.34
	Left Side	0.40	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.86	0.75	0.64	0.80	0.80	0.64
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.23	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.22	1.35	0.77	1.39	1.51	1.09
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 13	Rear Face	0.10	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.45	0.57	0.26	0.51	0.53	0.39
	Left Side	0.40	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.86	0.75	0.64	0.80	0.80	0.64
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.31	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.30	1.43	0.85	1.47	1.59	1.17
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20

FCC SAR Test Report

Band	Position	1	2	3	4	5	6	7	8	1+3	1+6	1+4	1+2+8	1+5+8	1+7+8
		WWAN	WLAN 2.4GHz Tx1	WLAN 2.4GHz Tx2	WLAN 2.4GHz Tx1+2	WLAN 5GHz Tx1	WLAN 5GHz Tx2	WLAN 5GHz Tx1+2	BT Tx2	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg						
LTE 26	Rear Face	0.07	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.42	0.54	0.23	0.48	0.50	0.36
	Left Side	0.31	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.77	0.66	0.55	0.71	0.71	0.55
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.29	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.28	1.41	0.83	1.45	1.57	1.15
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 30	Rear Face	0.13	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.48	0.60	0.29	0.54	0.56	0.42
	Left Side	0.94	0.40	0.46	0.24	0.40	0.35	0.24	0.00	1.40	1.29	1.18	1.34	1.34	1.18
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.30	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.29	1.42	0.84	1.46	1.58	1.16
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 41	Rear Face	0.07	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.42	0.54	0.23	0.48	0.50	0.36
	Left Side	0.34	0.40	0.46	0.24	0.40	0.35	0.24	0.00	0.80	0.69	0.58	0.74	0.74	0.58
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.27	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.26	1.39	0.81	1.43	1.55	1.13
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20
LTE 66	Rear Face	0.03	0.36	0.35	0.16	0.38	0.47	0.24	0.05	0.38	0.50	0.19	0.44	0.46	0.32
	Left Side	0.68	0.40	0.46	0.24	0.40	0.35	0.24	0.00	1.14	1.03	0.92	1.08	1.08	0.92
	Right Side	0.40	0.33	0.40	0.17	0.32	0.40	0.19	0.40	0.80	0.80	0.57	1.13	1.12	0.99
	Top Side	0.23	0.98	0.99	0.54	1.10	1.12	0.68	0.18	1.22	1.35	0.77	1.39	1.51	1.09
	Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	0.80	1.20	1.20	1.20

FCC SAR Test Report

Laptop Mode

Band	Position	1	2	3	4	5	6	7	8	1+3	1+6	1+4	1+2+8	1+5+8	1+7+8
		WWAN	WLAN 2.4GHz Tx1	WLAN 2.4GHz Tx2	WLAN 2.4GHz Tx1+2	WLAN 5GHz Tx1	WLAN 5Hz Tx2	WLAN 5GHz Tx1+2	BT Tx2	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg
WCDMA II	Back of Panel	0.10	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.36	1.14	0.22	0.34	0.91	0.51
	Top of Panel	0.03	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.07	0.25	0.05	0.08	0.22	0.09
	Left of Panel	0.09	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.49	0.49	0.49	0.60	0.60	0.60
WCDMA IV	Back of Panel	0.09	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.35	1.13	0.21	0.33	0.9	0.5
	Top of Panel	0.02	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.06	0.24	0.04	0.07	0.21	0.08
	Left of Panel	0.07	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.47	0.47	0.47	0.58	0.58	0.58
WCDMA V	Back of Panel	0.02	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.28	1.06	0.14	0.26	0.83	0.43
	Top of Panel	0.01	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.05	0.23	0.03	0.06	0.2	0.07
	Left of Panel	0.04	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.44	0.44	0.44	0.55	0.55	0.55
LTE 2	Back of Panel	0.08	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.34	1.12	0.2	0.32	0.89	0.49
	Top of Panel	0.02	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.06	0.24	0.04	0.07	0.21	0.08
	Left of Panel	0.08	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.48	0.48	0.48	0.59	0.59	0.59
LTE 5	Back of Panel	0.02	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.28	1.06	0.14	0.26	0.83	0.43
	Top of Panel	0.03	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.07	0.25	0.05	0.08	0.22	0.09
	Left of Panel	0.03	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.43	0.43	0.43	0.54	0.54	0.54
LTE 7	Back of Panel	0.16	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.42	1.2	0.28	0.4	0.97	0.57
	Top of Panel	0.05	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.09	0.27	0.07	0.1	0.24	0.11
	Left of Panel	0.02	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.42	0.42	0.42	0.53	0.53.	0.53
LTE 12	Back of Panel	0.02	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.28	1.06	0.14	0.26	0.83	0.43
	Top of Panel	0.01	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.05	0.23	0.03	0.06	0.2	0.07
	Left of Panel	0.03	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.43	0.43	0.43	0.54	0.54	0.54
LTE 13	Back of Panel	0.04	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.3	1.08	0.16	0.28	0.85	0.45
	Top of Panel	0.03	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.07	0.25	0.05	0.08	0.22	0.09
	Left of Panel	0.06	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.46	0.46	0.46	0.57	0.57	0.57

FCC SAR Test Report

Band	Position	1	2	3	4	5	6	7	8	1+3	1+6	1+4	1+2+8	1+5+8	1+7+8
		WWAN	WLAN 2.4GHz Tx1	WLAN 2.4GHz Tx2	WLAN 2.4GHz Tx1+2	WLAN 5GHz Tx1	WLAN 5Hz Tx2	WLAN 5GHz Tx1+2	BT Tx2	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg	Summim g result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg						
LTE 26	Back of Panel	0.02	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.28	1.06	0.14	0.26	0.83	0.43
	Top of Panel	0.02	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.06	0.24	0.04	0.07	0.21	0.08
	Left of Panel	0.03	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.43	0.43	0.43	0.54	0.54	0.54
LTE 30	Back of Panel	0.18	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.44	1.22	0.3	0.42	0.99	0.59
	Top of Panel	0.05	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.09	0.27	0.07	0.1	0.24	0.11
	Left of Panel	0.13	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.53	0.53	0.53	0.64	0.64	0.64
LTE 41	Back of Panel	0.08	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.34	1.12	0.2	0.32	0.89	0.49
	Top of Panel	0.02	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.06	0.24	0.04	0.07	0.21	0.08
	Left of Panel	0.04	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.44	0.44	0.44	0.55	0.55	0.55
LTE 66	Back of Panel	0.05	0.22	0.26	0.12	0.79	1.04	0.39	0.02	0.31	1.09	0.17	0.29	0.86	0.46
	Top of Panel	0.02	0.05	0.04	0.02	0.19	0.22	0.06	0.00	0.06	0.24	0.04	0.07	0.21	0.08
	Left of Panel	0.08	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.48	0.48	0.48	0.59	0.59	0.59

Test Engineer : Isaac Liao, and James Chu

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1013	Aug. 23, 2018	1 Year
System Validation Dipole	SPEAG	D835V2	4d121	Aug. 23, 2018	1 Year
System Validation Dipole	SPEAG	D1750V2	1055	Aug. 27, 2018	1 Year
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 25, 2019	1 Year
System Validation Dipole	SPEAG	D2300V2	1004	Jan. 28, 2019	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 24, 2018	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 24, 2018	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1019	Mar. 21, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3971	Mar. 29, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7375	Dec. 13, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7472	Aug. 29, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	915	Jun. 20, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	916	Dec. 12, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 25, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1277	Jan. 24, 2019	1 Year
Radio Communication Analyzer	Anritsu	MT8820C	6201381727	May. 06, 2019	1 Year
Universal Radio Communication Tester	Anritsu	MT8821C	6201502978	Jul. 20, 2018	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 26, 2019	1 Year
MXG Analog Signal Generator	Agilent	N5181A	MY50143868	Jul. 03, 2018	1 Year
Power Meter	Anritsu	ML2495A	1218009	Jul. 03, 2018	1 Year
Power Sensor	Anritsu	MA2411B	1207252	Jul. 03, 2018	1 Year
Thermometer	YFE	YF-160A	130504591	Mar. 22, 2019	1 Year

6. Measurement Uncertainty

According to KDB 865664 D01, SAR measurement uncertainty analysis is required in SAR reports only when the highest measured SAR in a frequency band is ≥ 1.5 W/kg for 1-g SAR, and ≥ 3.75 W/kg for 10-g SAR. The procedures described in IEEE Std 1528-2013 should be applied. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. When the highest measured SAR within a frequency band is < 1.5 W/kg for 1-g and < 3.75 W/kg for 10-g, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. Hence, the measurement uncertainty analysis is not required in this SAR report because the test result met the condition.

7. Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The road map of all our labs can be found in our web site also.

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Appendix A. SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

System Check_H750_190601

DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

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

Medium: H06T09N1_0601 Medium parameters used: $f = 750$ MHz; $\sigma = 0.885$ S/m; $\epsilon_r = 42.448$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.75, 10.75, 10.75); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.60 W/kg

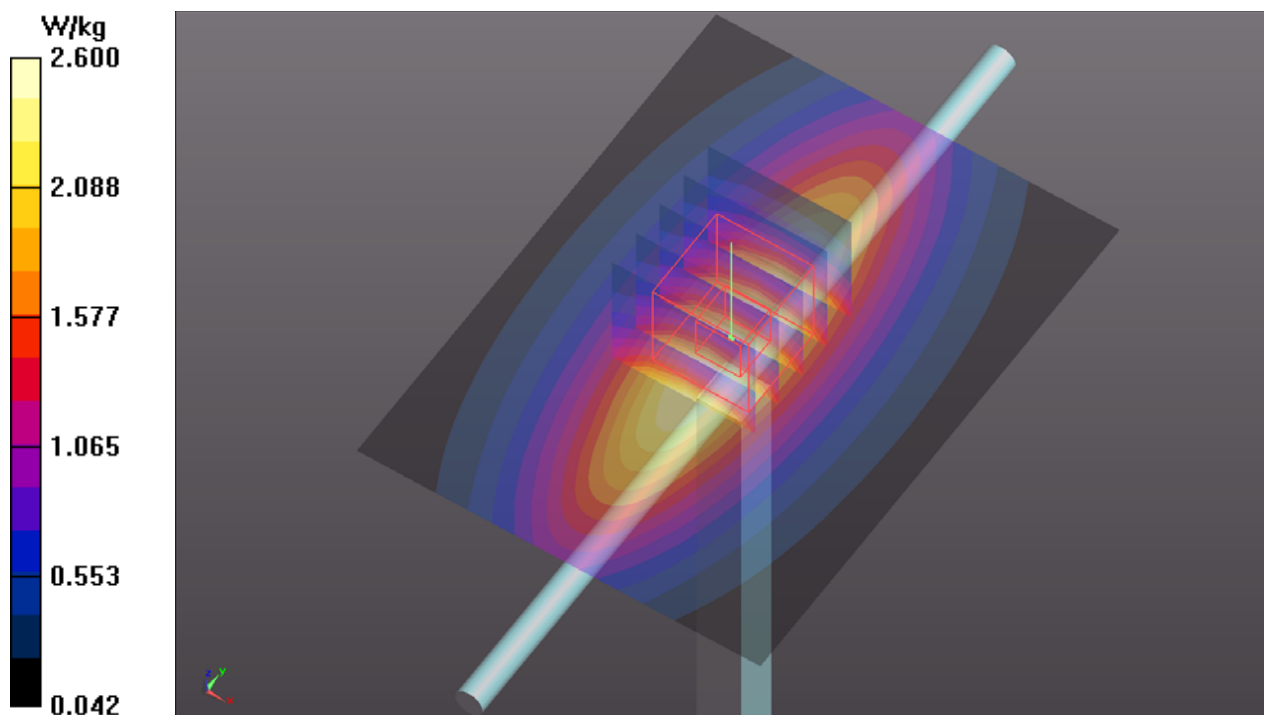
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.93 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 2.97 W/kg

SAR(1 g) = 1.94 W/kg; SAR(10 g) = 1.27 W/kg

Maximum value of SAR (measured) = 2.62 W/kg



System Check_H835_190605

DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

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

Medium: H07T10N1_0605 Medium parameters used: $f = 835$ MHz; $\sigma = 0.915$ S/m; $\epsilon_r = 42.964$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.13, 10.13, 10.13); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.32 W/kg

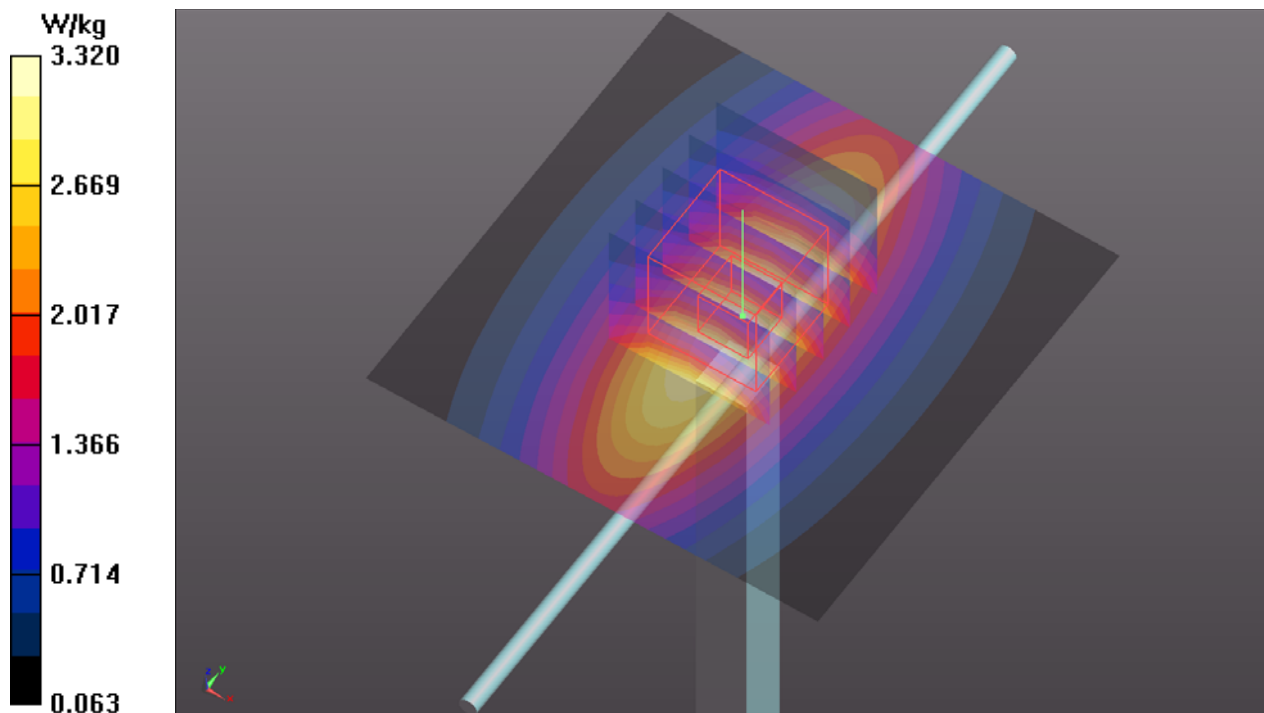
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.75 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.68 W/kg

SAR(1 g) = 2.5 W/kg; SAR(10 g) = 1.61 W/kg

Maximum value of SAR (measured) = 3.30 W/kg



System Check_H1750_190603

DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

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

Medium: H16T20N1_0603 Medium parameters used: $f = 1750$ MHz; $\sigma = 1.331$ S/m; $\epsilon_r = 38.689$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.79, 8.79, 8.79); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 13.9 W/kg

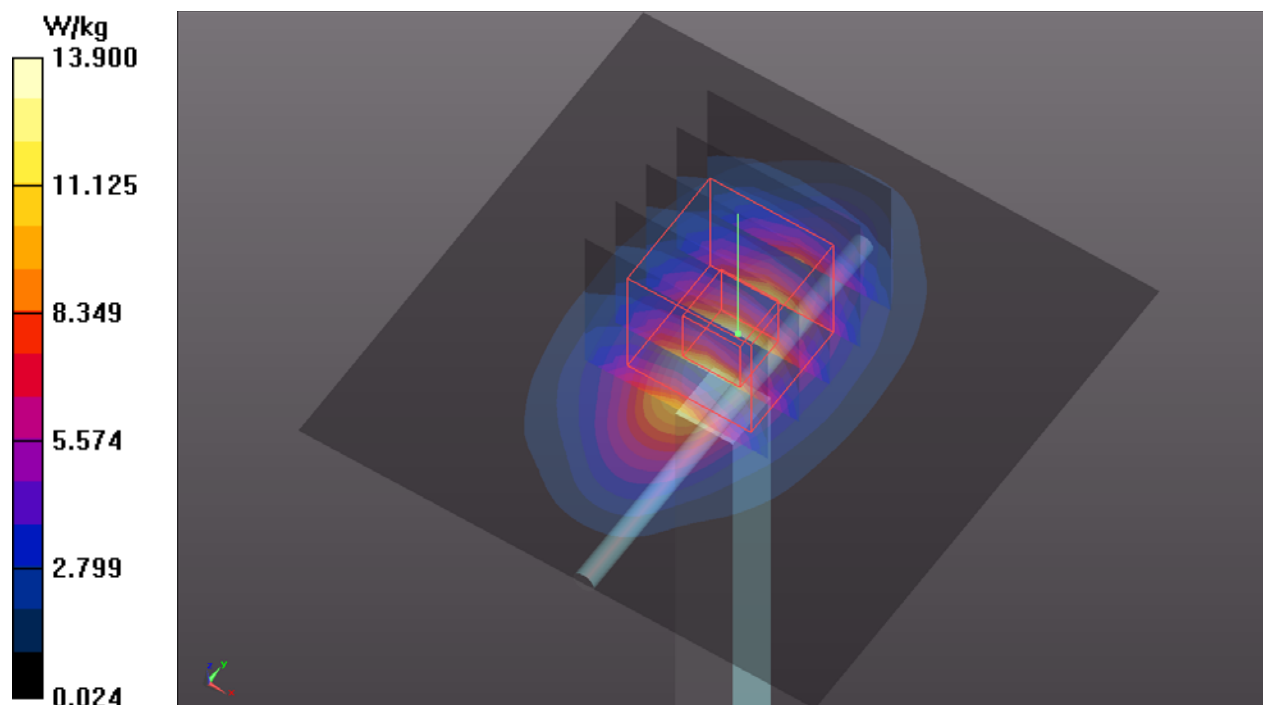
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 103.9 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 9.03 W/kg; SAR(10 g) = 4.8 W/kg

Maximum value of SAR (measured) = 13.9 W/kg



System Check_H1900_190603

DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

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

Medium: H16T20N1_0603 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.461$ S/m; $\epsilon_r = 38.118$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.44, 8.44, 8.44); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 16.3 W/kg

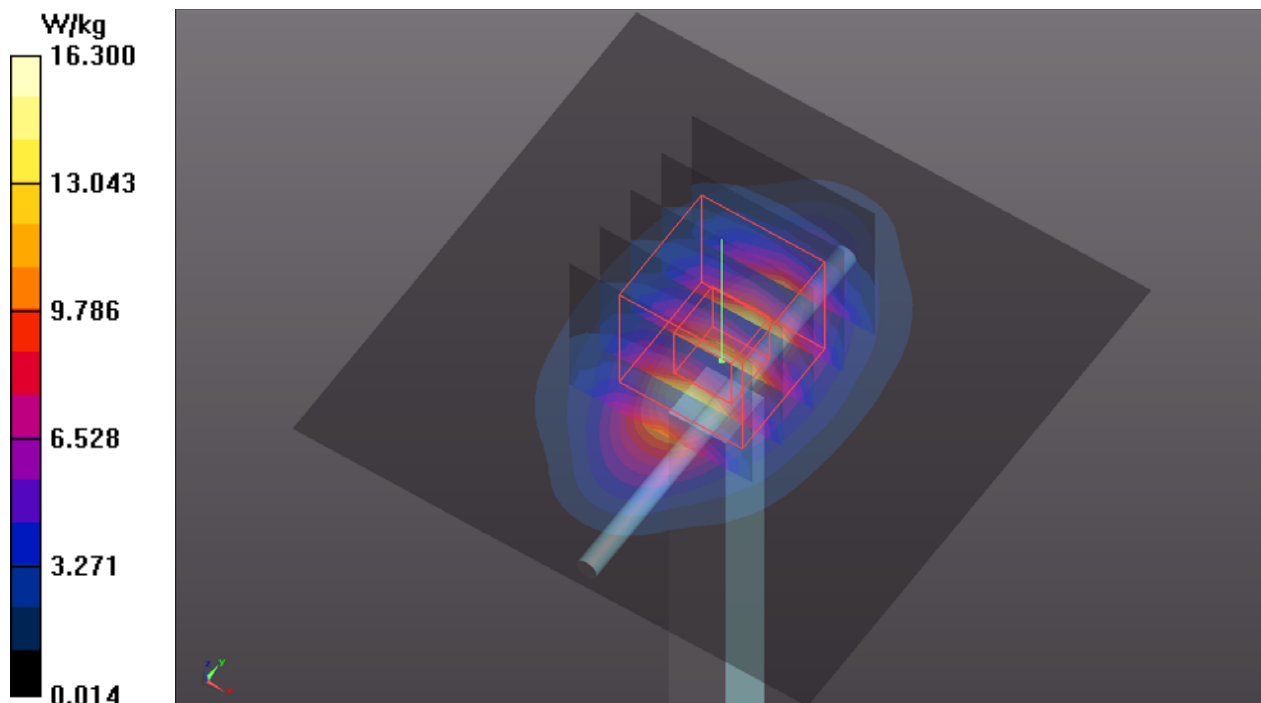
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 109.0 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.37 W/kg

Maximum value of SAR (measured) = 16.2 W/kg



System Check_H2300_190603

DUT: Dipole 2300 MHz; Type: D2300V2; SN:1004

Communication System: CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0603 Medium parameters used: $f = 2300$ MHz; $\sigma = 1.704$ S/m; $\epsilon_r = 38.984$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.13, 8.13, 8.13); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.8 W/kg

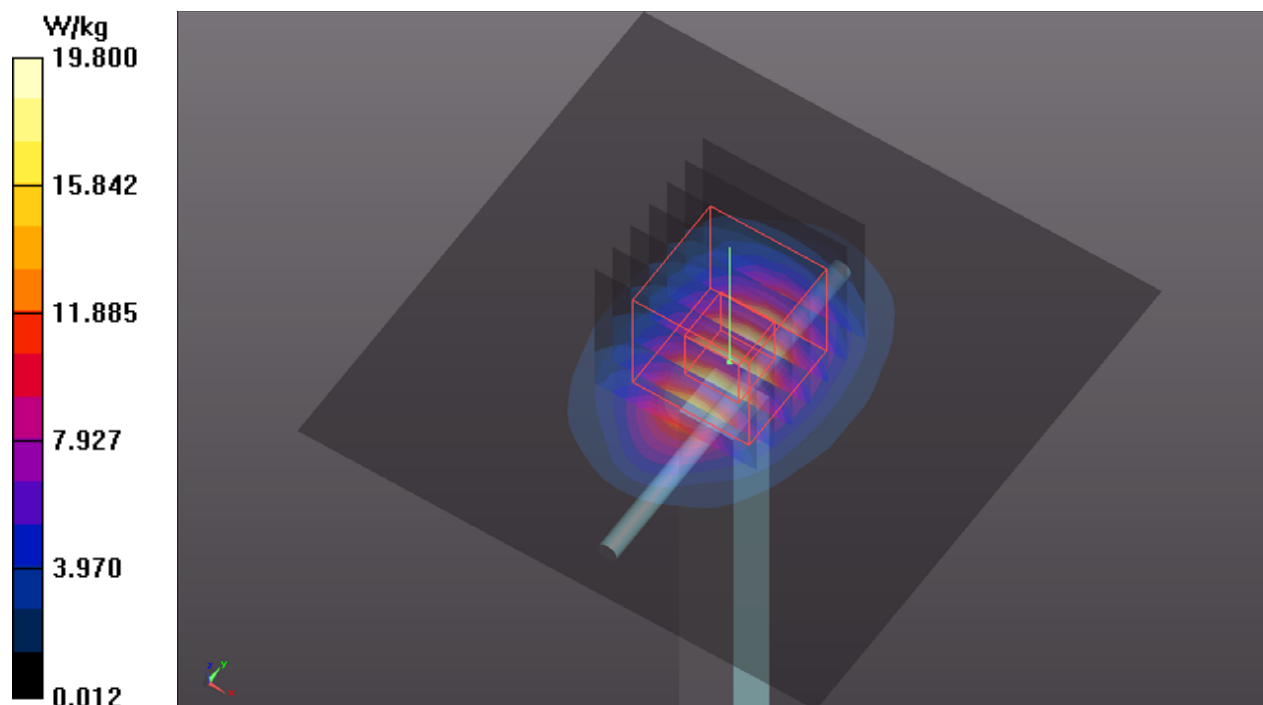
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 111.6 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 24.3 W/kg

SAR(1 g) = 12.1 W/kg; SAR(10 g) = 5.84 W/kg

Maximum value of SAR (measured) = 19.9 W/kg



System Check_H2450_190608

DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

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

Medium: H19T27N1_0608 Medium parameters used: $f = 2450$ MHz; $\sigma = 1.854$ S/m; $\epsilon_r = 38.646$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(7.64, 7.64, 7.64); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 23.7 W/kg

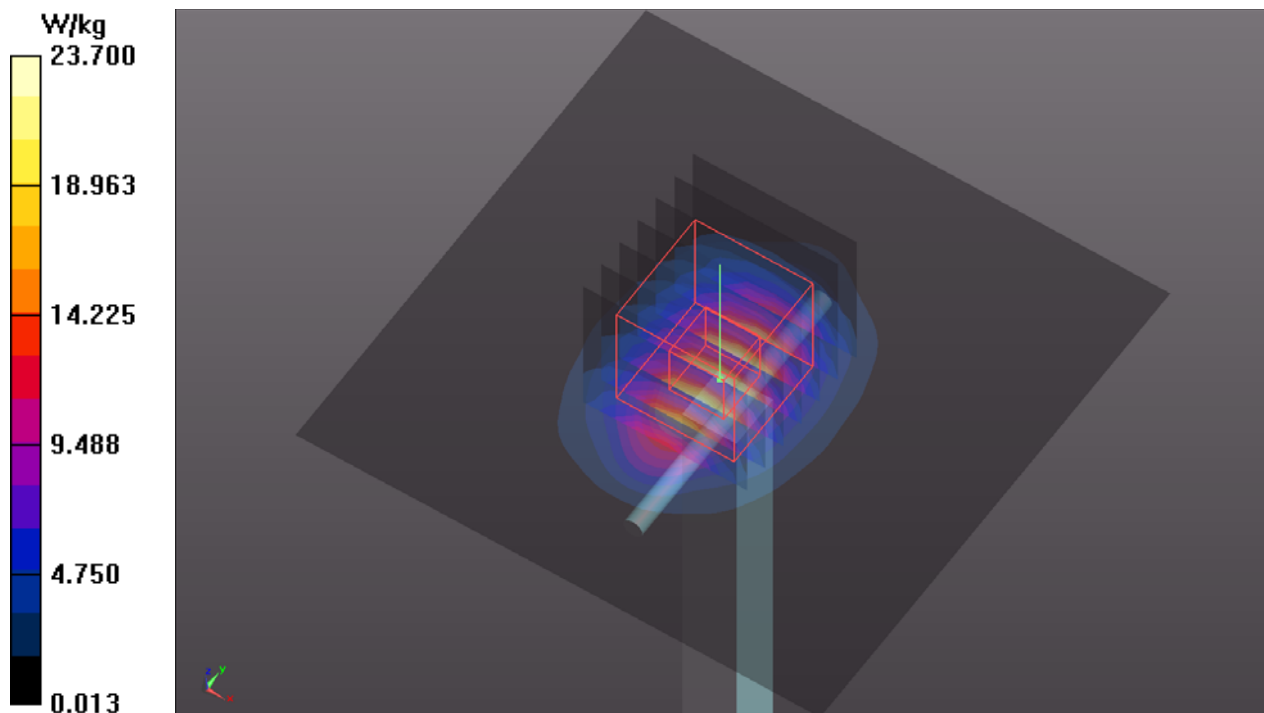
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 114.7 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 29.1 W/kg

SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.51 W/kg

Maximum value of SAR (measured) = 23.6 W/kg



System Check_H2600_190603

DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020

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

Medium: H19T27N1_0603 Medium parameters used: $f = 2600$ MHz; $\sigma = 2.008$ S/m; $\epsilon_r = 37.939$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(7.53, 7.53, 7.53); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 23.8 W/kg

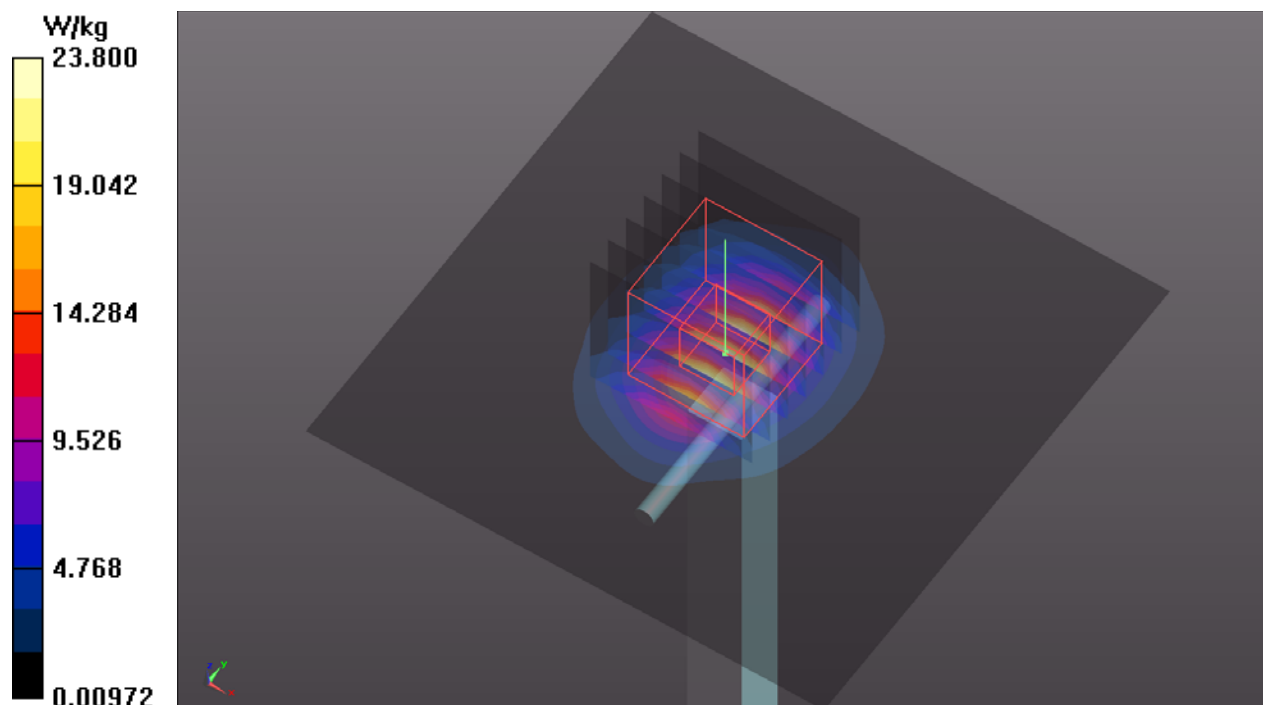
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.1 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 30.0 W/kg

SAR(1 g) = 14 W/kg; SAR(10 g) = 6.26 W/kg

Maximum value of SAR (measured) = 24.0 W/kg



System Check_H5250_190608

DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0608 Medium parameters used: $f = 5250$ MHz; $\sigma = 4.562$ S/m; $\epsilon_r = 34.837$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(5.29, 5.29, 5.29); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 16.4 W/kg

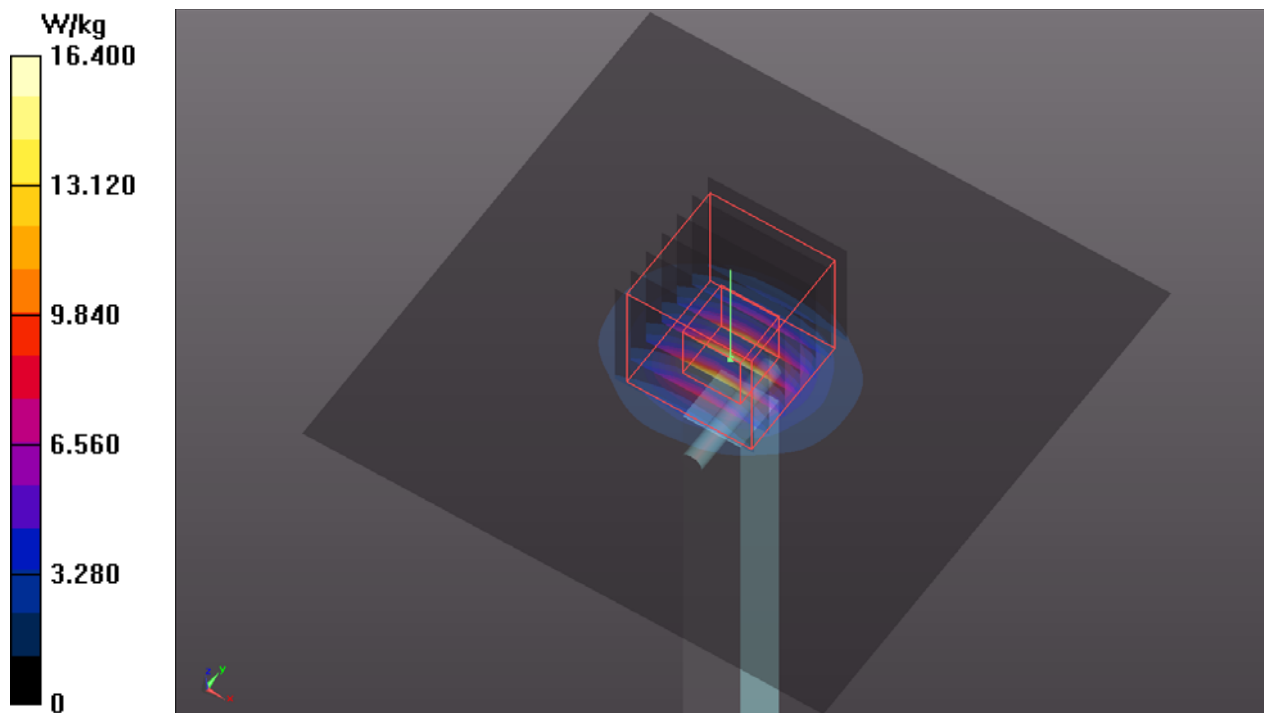
Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 67.88 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 28.7 W/kg

SAR(1 g) = 7.88 W/kg; SAR(10 g) = 2.27 W/kg

Maximum value of SAR (measured) = 17.8 W/kg



System Check_H5600_190609

DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0609 Medium parameters used: $f = 5600$ MHz; $\sigma = 4.877$ S/m; $\epsilon_r = 34.403$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(4.69, 4.69, 4.69); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 22.4 W/kg

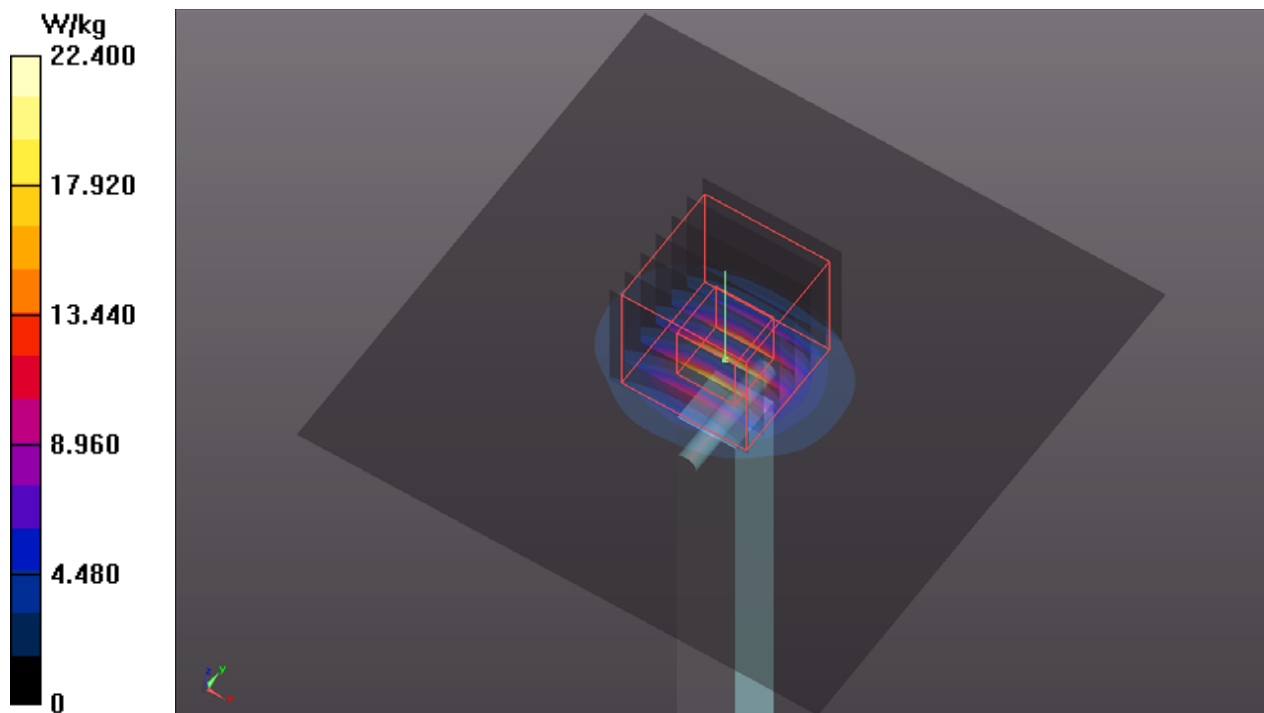
Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 67.60 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 40.3 W/kg

SAR(1 g) = 9.24 W/kg; SAR(10 g) = 2.63 W/kg

Maximum value of SAR (measured) = 24.1 W/kg



System Check_H5750_190606

DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0606 Medium parameters used: $f = 5750$ MHz; $\sigma = 5.154$ S/m; $\epsilon_r = 36.85$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(4.92, 4.92, 4.92); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7463)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 19.1 W/kg

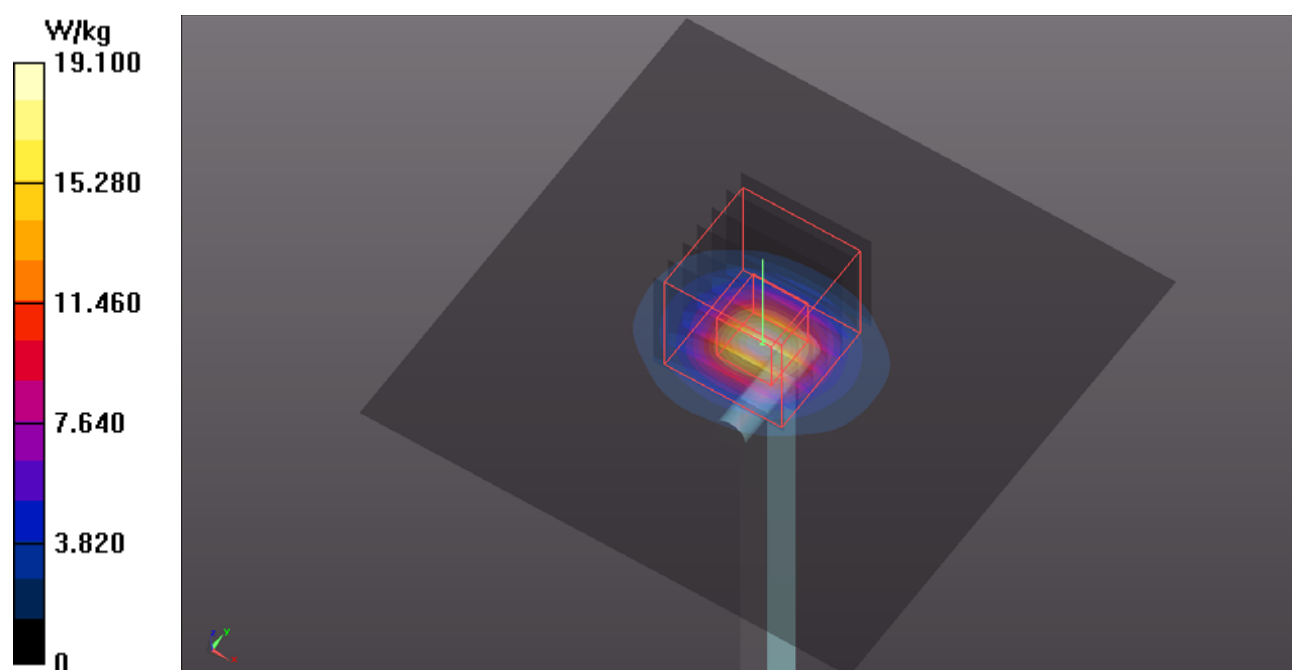
Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 70.16 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 34.9 W/kg

SAR(1 g) = 7.85 W/kg; SAR(10 g) = 2.25 W/kg

Maximum value of SAR (measured) = 20.6 W/kg



Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

P01 WCDMA II_RMC12.2K_Left Side_0mm_Ch9262**DUT: 190516C01**

Communication System: WCDMA; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0601 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.414$ S/m; $\epsilon_r = 39.862$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.47, 8.47, 8.47); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.15 W/kg

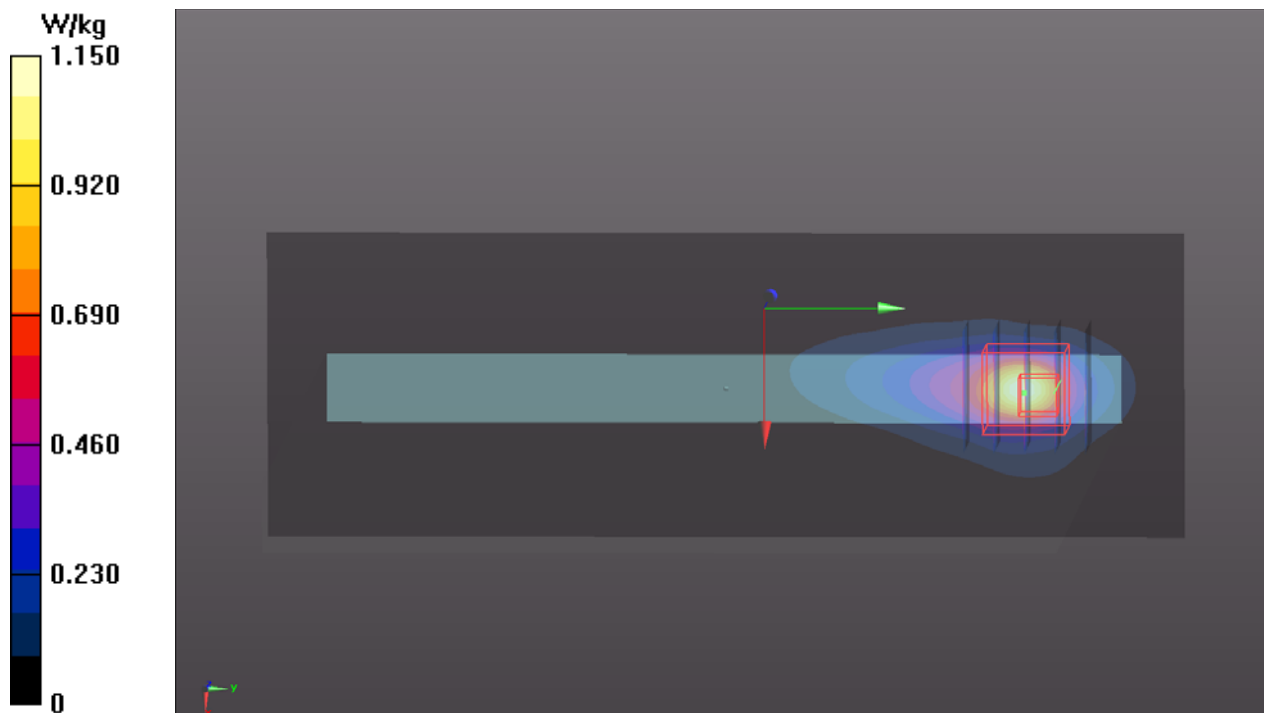
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 28.96 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.99 W/kg

SAR(1 g) = 0.853 W/kg; SAR(10 g) = 0.390 W/kg

Maximum value of SAR (measured) = 1.45 W/kg



P02 WCDMA IV_RMC12.2K_Left Side_0mm_Ch1312**DUT: 190516C01**

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0601 Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.285$ S/m; $\epsilon_r = 40.402$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.8, 8.8, 8.8); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.845 W/kg

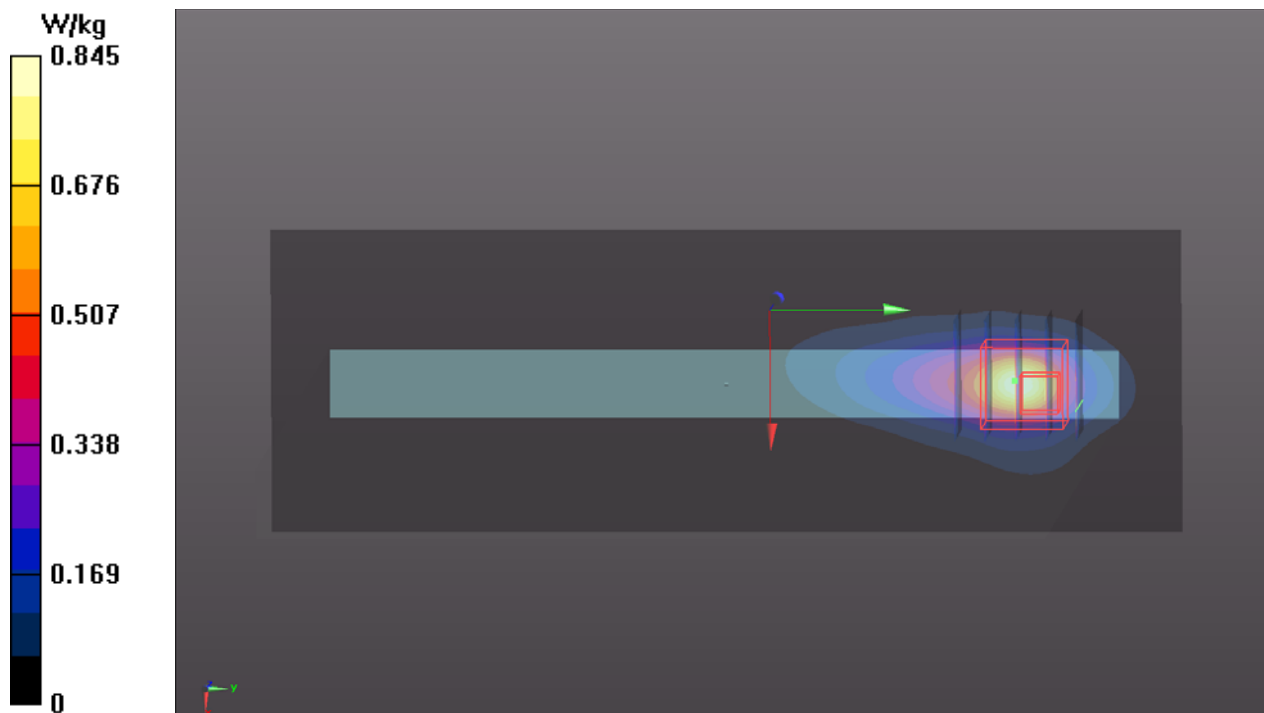
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 25.79 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.57 W/kg

SAR(1 g) = 0.589 W/kg; SAR(10 g) = 0.282 W/kg

Maximum value of SAR (measured) = 0.943 W/kg



P03 WCDMA V_RMC12.2K_Left Side_0mm_Ch4132**DUT: 190516C01**

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: H07T10N2_0601 Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.899$ S/m; $\epsilon_r = 42.048$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.18, 10.18, 10.18); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (61x161x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.299 W/kg

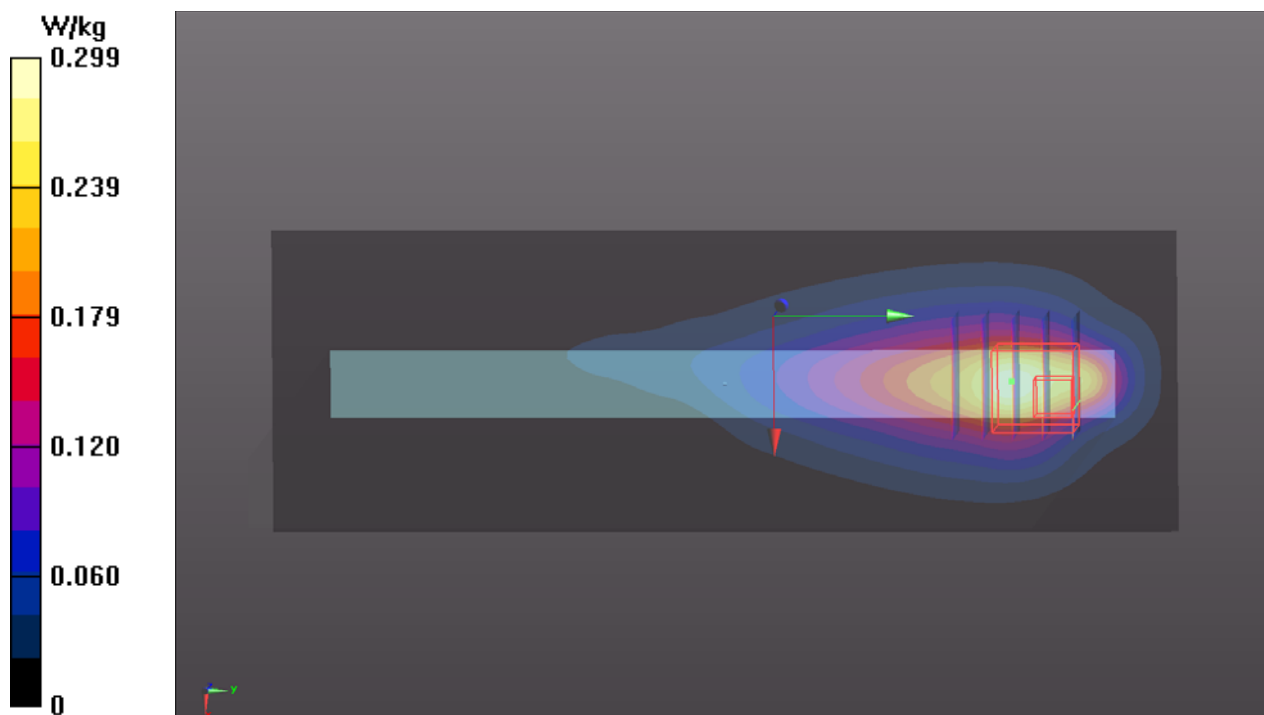
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.14 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 2.76 W/kg

SAR(1 g) = 0.344 W/kg; SAR(10 g) = 0.150 W/kg

Maximum value of SAR (measured) = 1.33 W/kg



P04 LTE 2_QPSK20M_Left Side_0mm_Ch18700_1RB_OS50**DUT: 190516C01**

Communication System: LTE; Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0601 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.421$ S/m; $\epsilon_r = 39.839$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.47, 8.47, 8.47); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (61x161x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.06 W/kg

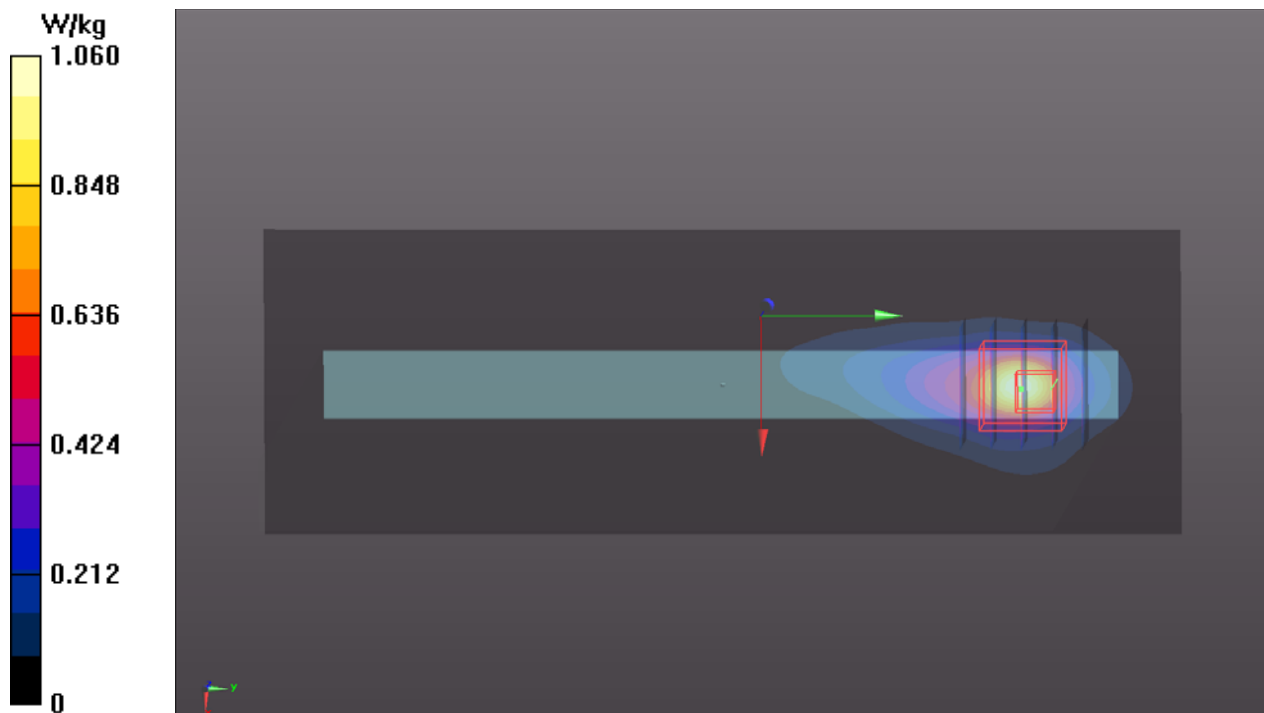
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 27.95 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 0.790 W/kg; SAR(10 g) = 0.362 W/kg

Maximum value of SAR (measured) = 1.33 W/kg



P05 LTE 5_QPSK10M_Left Side_0mm_Ch20450_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 829 MHz; Duty Cycle: 1:1

Medium: H07T10N2_0601 Medium parameters used: $f = 829$ MHz; $\sigma = 0.901$ S/m; $\epsilon_r = 42.016$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.18, 10.18, 10.18); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.281 W/kg

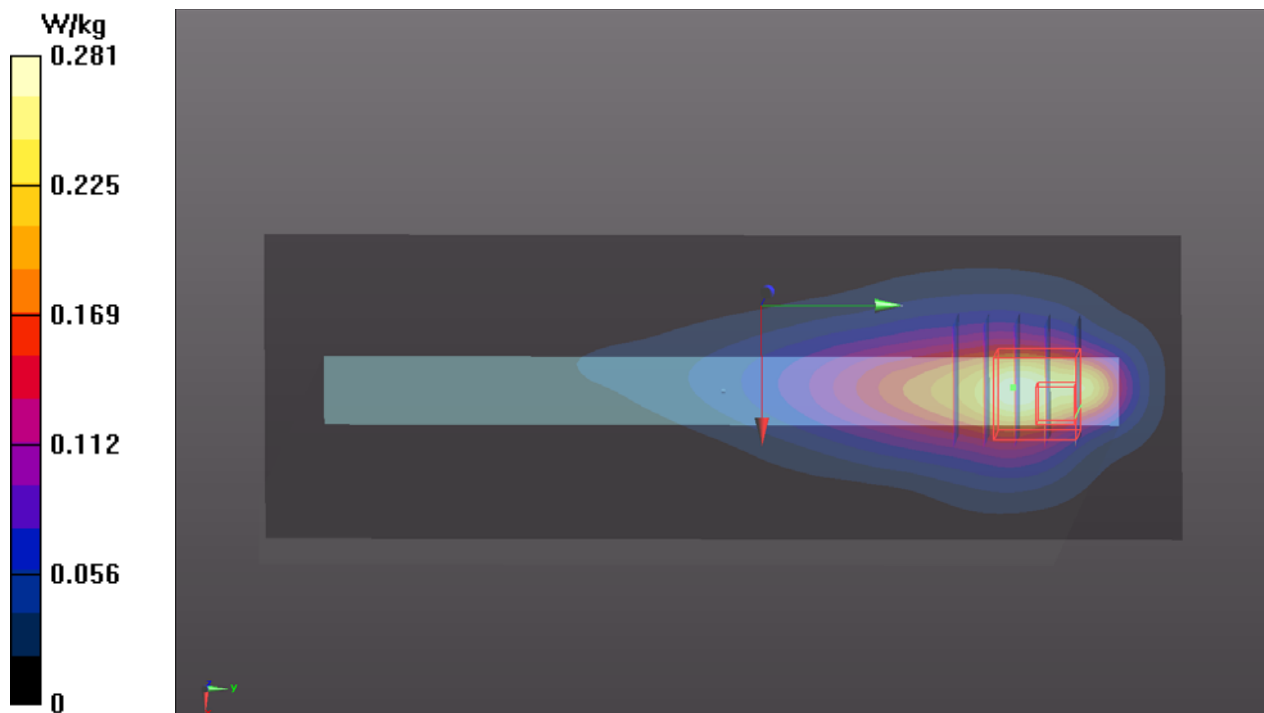
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 18.30 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.72 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.143 W/kg

Maximum value of SAR (measured) = 1.31 W/kg



P06 LTE 7_QPSK20M_Left Side_0mm_Ch20850_1RB_OS99**DUT: 190516C01**

Communication System: LTE; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0603 Medium parameters used: $f = 2510$ MHz; $\sigma = 1.915$ S/m; $\epsilon_r = 38.265$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(7.53, 7.53, 7.53); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (71x201x1):** Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.500 W/kg

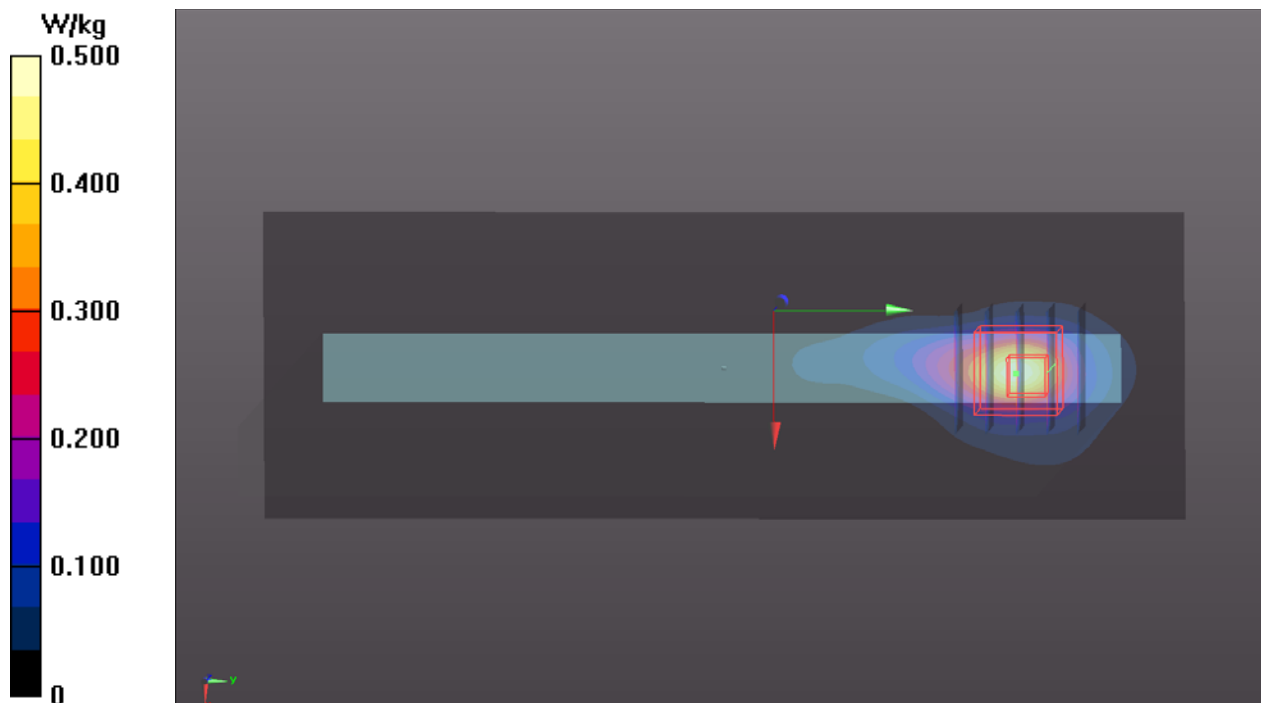
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 16.03 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.679 W/kg

SAR(1 g) = 0.341 W/kg; SAR(10 g) = 0.159 W/kg

Maximum value of SAR (measured) = 0.508 W/kg



P07 LTE 12_QPSK10M_Left Side_0mm_Ch23130_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: H06T09N1_0601 Medium parameters used: $f = 711$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 42.947$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.75, 10.75, 10.75); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (61x161x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.254 W/kg

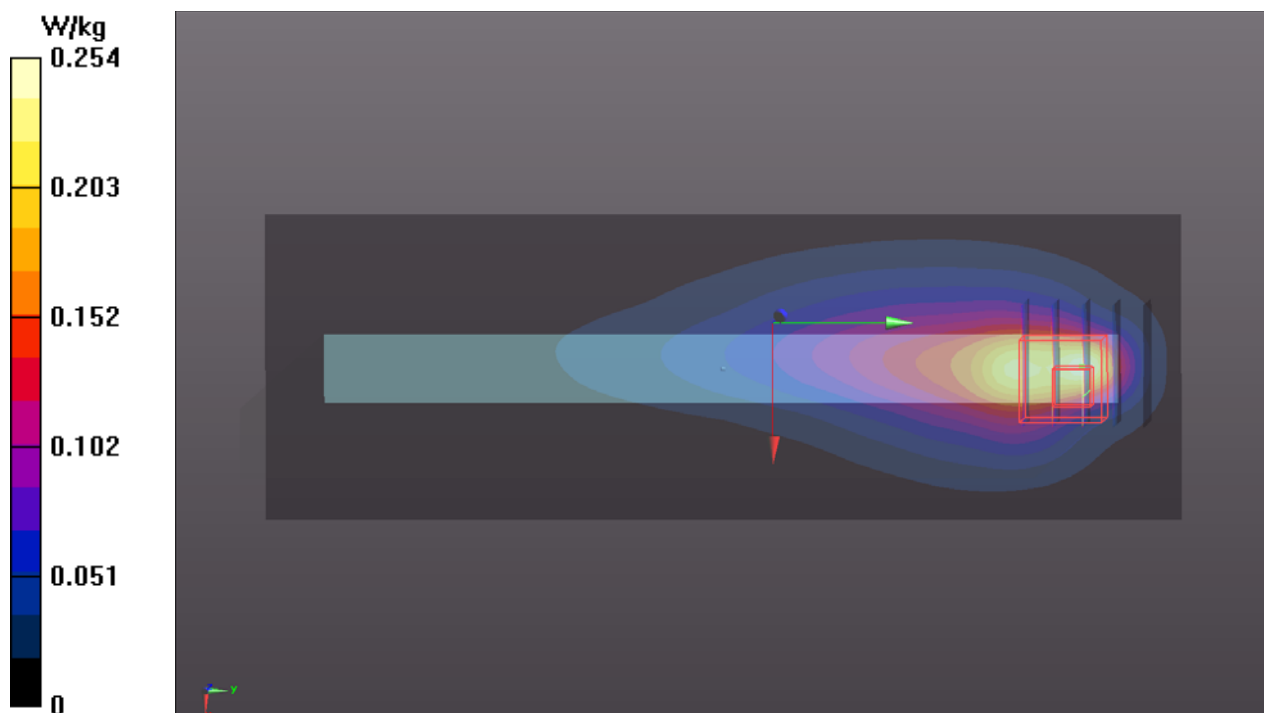
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 17.06 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 2.29 W/kg

SAR(1 g) = 0.399 W/kg; SAR(10 g) = 0.135 W/kg

Maximum value of SAR (measured) = 1.32 W/kg



P08 LTE 13_QPSK10M_Left Side_0mm_Ch23230_1RB_OS24**DUT: 190516C01**

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: H06T09N1_0601 Medium parameters used: $f = 782$ MHz; $\sigma = 0.913$ S/m; $\epsilon_r = 42.017$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.75, 10.75, 10.75); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.410 W/kg

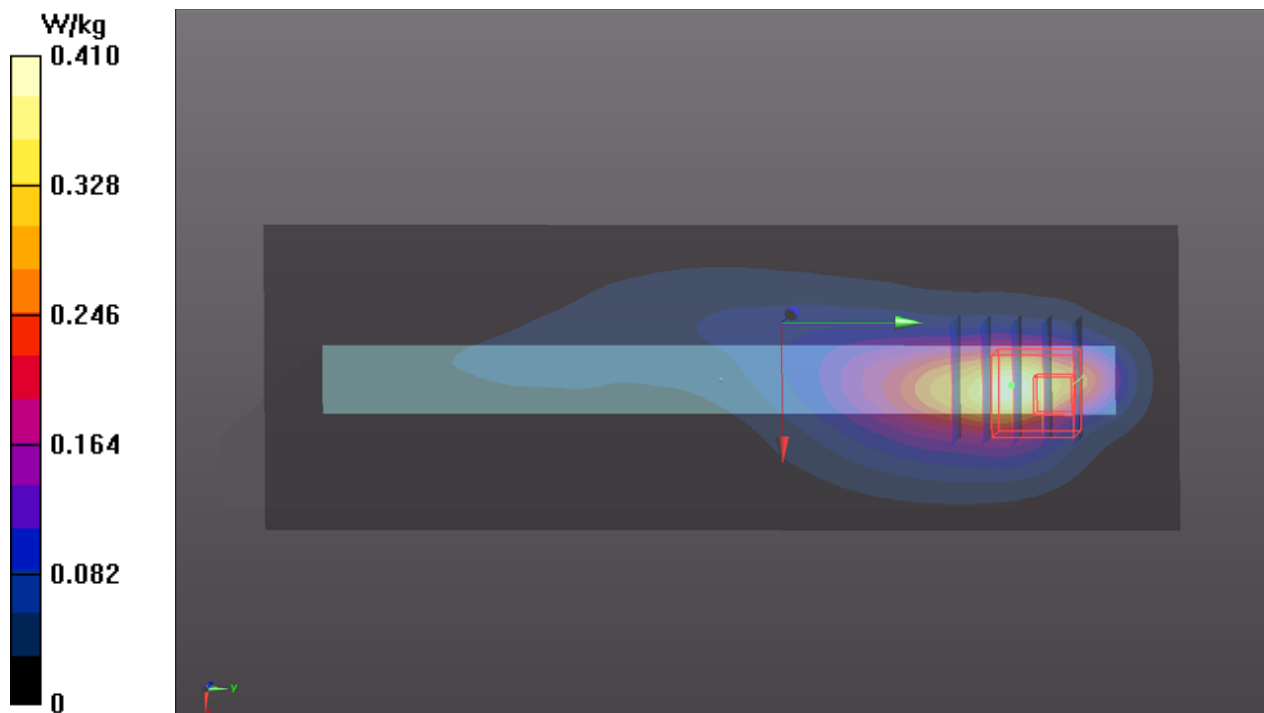
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 21.07 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 2.42 W/kg

SAR(1 g) = 0.399 W/kg; SAR(10 g) = 0.170 W/kg

Maximum value of SAR (measured) = 1.25 W/kg



P09 LTE 26_QPSK15M_Left Side_0mm_Ch26865_1RB_OS37**DUT: 190516C01**

Communication System: LTE; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: H07T10N2_0601 Medium parameters used: $f = 831.5$ MHz; $\sigma = 0.903$ S/m; $\epsilon_r = 41.989$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(10.18, 10.18, 10.18); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.265 W/kg

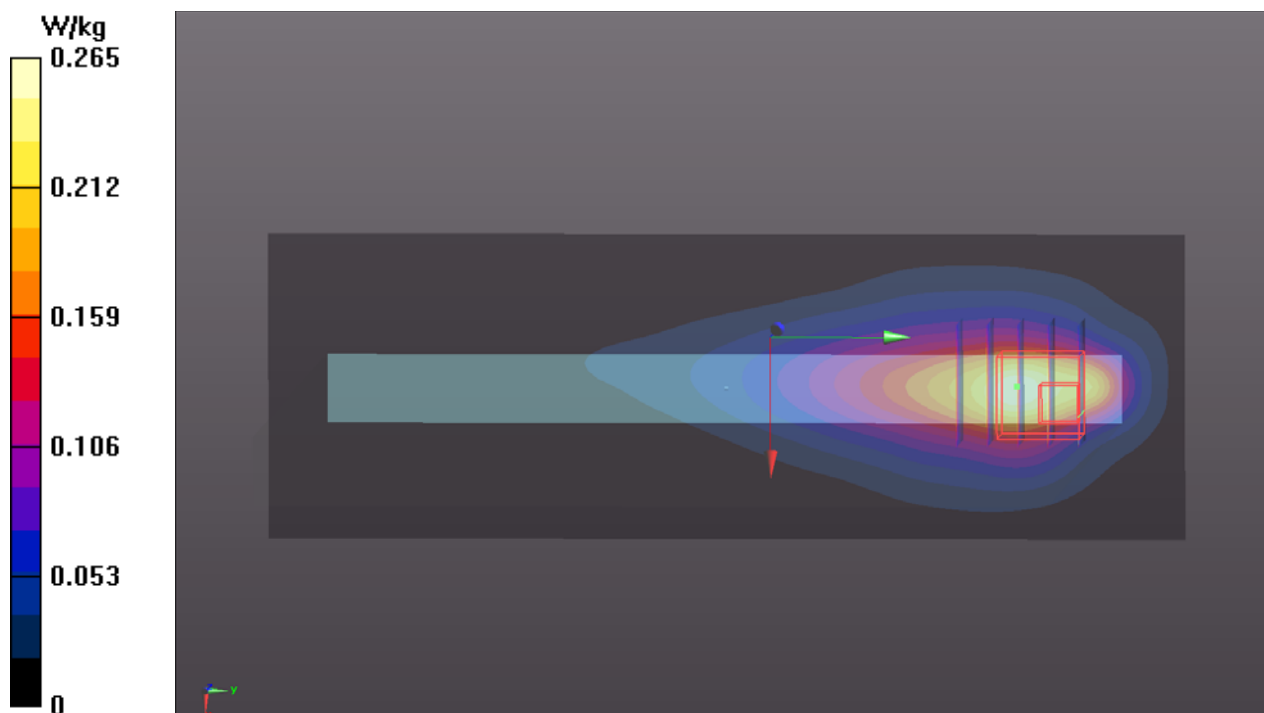
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 17.87 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 2.42 W/kg

SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.134 W/kg

Maximum value of SAR (measured) = 1.18 W/kg



P10 LTE 30_QPSK10M_Left Side_0mm_Ch27710_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0603 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.714$ S/m; $\epsilon_r = 38.954$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.13, 8.13, 8.13); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (71x201x1):** Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 1.09 W/kg

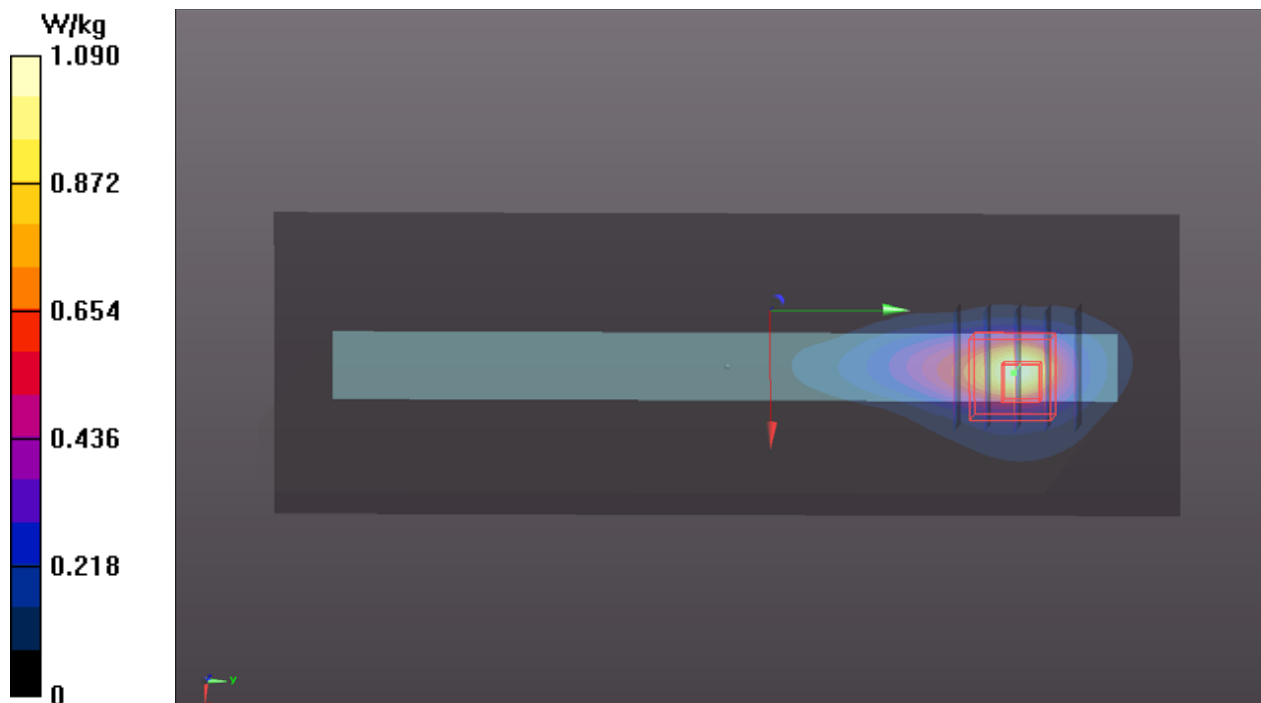
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 25.36 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.75 W/kg

SAR(1 g) = 0.858 W/kg; SAR(10 g) = 0.390 W/kg

Maximum value of SAR (measured) = 1.26 W/kg



P11 LTE 41_QPSK20M_Left Side_0mm_Ch40185_1RB_OS0**DUT: 190516C01**

Communication System: LTE TDD CF0; Frequency: 2549.5 MHz; Duty Cycle: 1:1.58

Medium: H19T27N1_0603 Medium parameters used: $f = 2550$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 38.12$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(7.53, 7.53, 7.53); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (71x201x1):** Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.465 W/kg

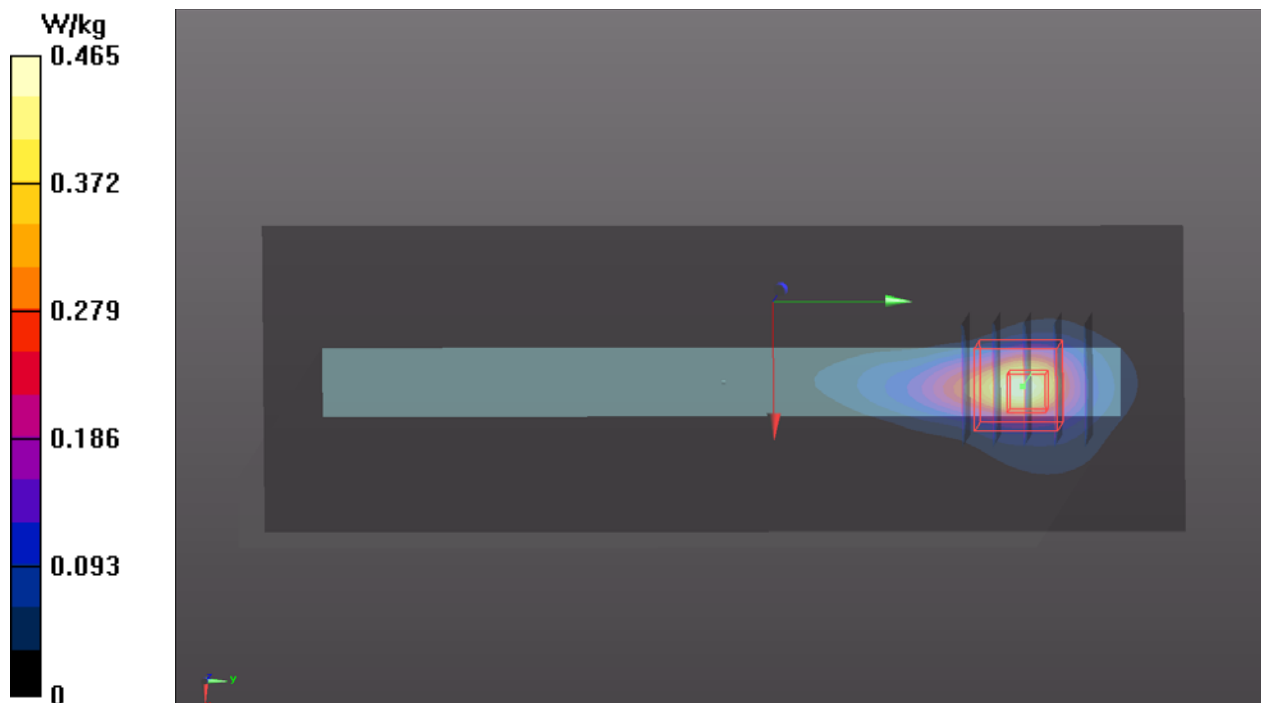
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 15.34 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.698 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 0.505 W/kg



P12 LTE 66_QPSK20M_Left Side_0mm_Ch132322_1RB_OS99**DUT: 190516C01**

Communication System: LTE; Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0601 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.316$ S/m; $\epsilon_r = 40.28$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.8, 8.8, 8.8); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (61x161x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.856 W/kg

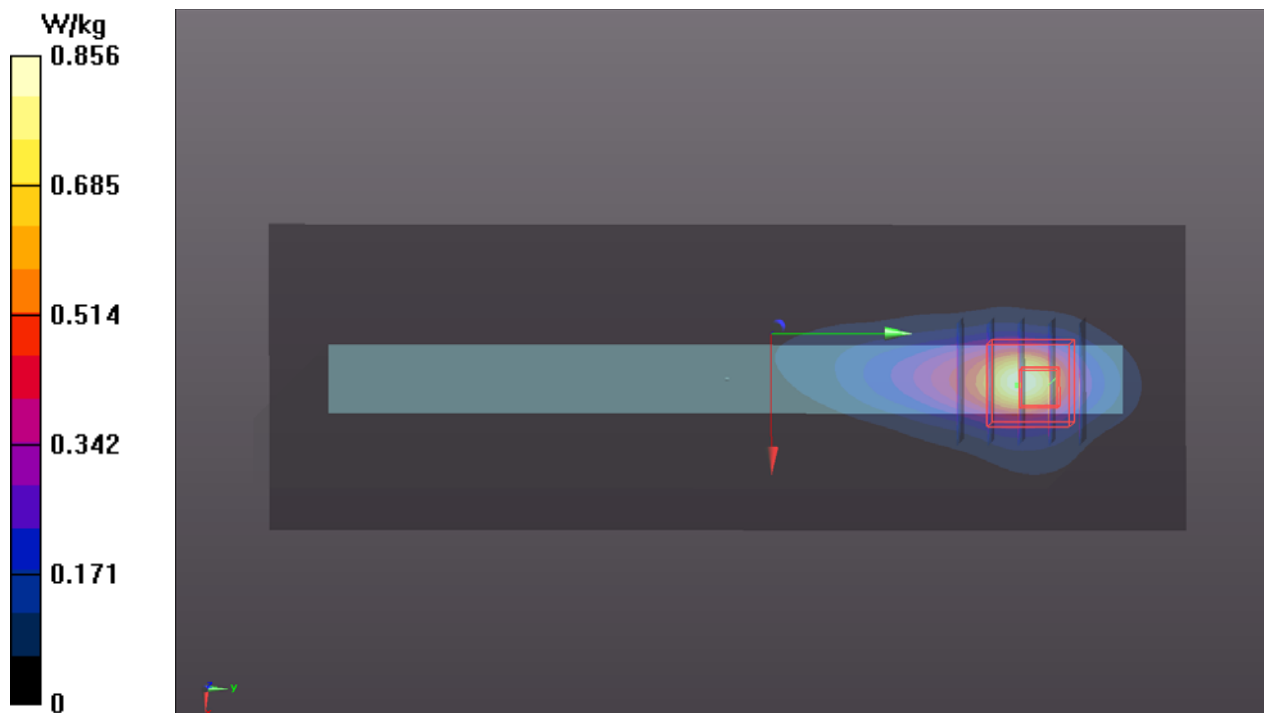
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 26.04 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 0.639 W/kg; SAR(10 g) = 0.303 W/kg

Maximum value of SAR (measured) = 1.06 W/kg



P13 WLAN2.4G_802.11b_Top Side_0mm_Ch6_Tx2**DUT: 190516C01**

Communication System: WLAN_2.4G; Frequency: 2437 MHz; Duty Cycle: 1:02

Medium: H19T27N1_0605 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.863$ S/m; $\epsilon_r = 38.885$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(7.65, 7.65, 7.65); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7463)

- **Area Scan (71x291x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.54 W/kg

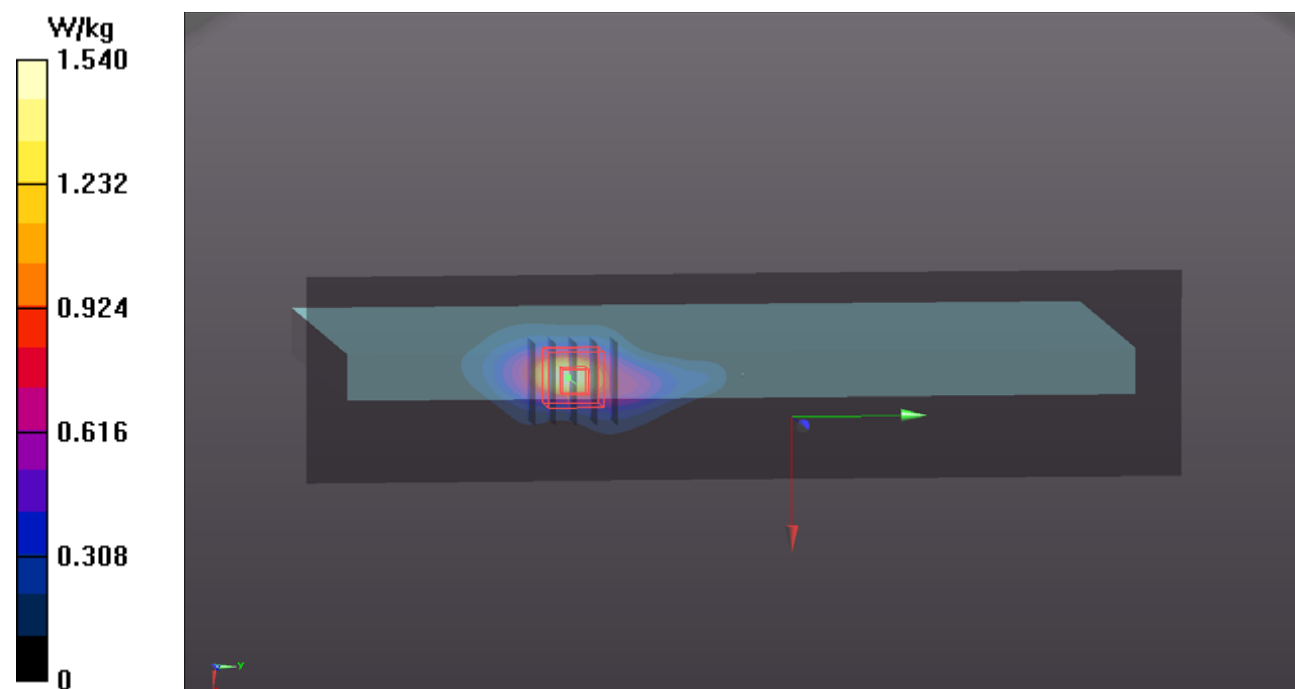
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.72 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 2.75 W/kg

SAR(1 g) = 0.930 W/kg; SAR(10 g) = 0.401 W/kg

Maximum value of SAR (measured) = 1.55 W/kg



P14 WLAN5.2G_802.11ac VHT80_Top Side_0mm_Ch42_Tx1**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5210 MHz; Duty Cycle: 1:1.02

Medium: H34T60N1_0605 Medium parameters used: $f = 5210$ MHz; $\sigma = 4.596$ S/m; $\epsilon_r = 37.632$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(5.12, 5.12, 5.12); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7463)

- Area Scan (81x341x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 2.40 W/kg

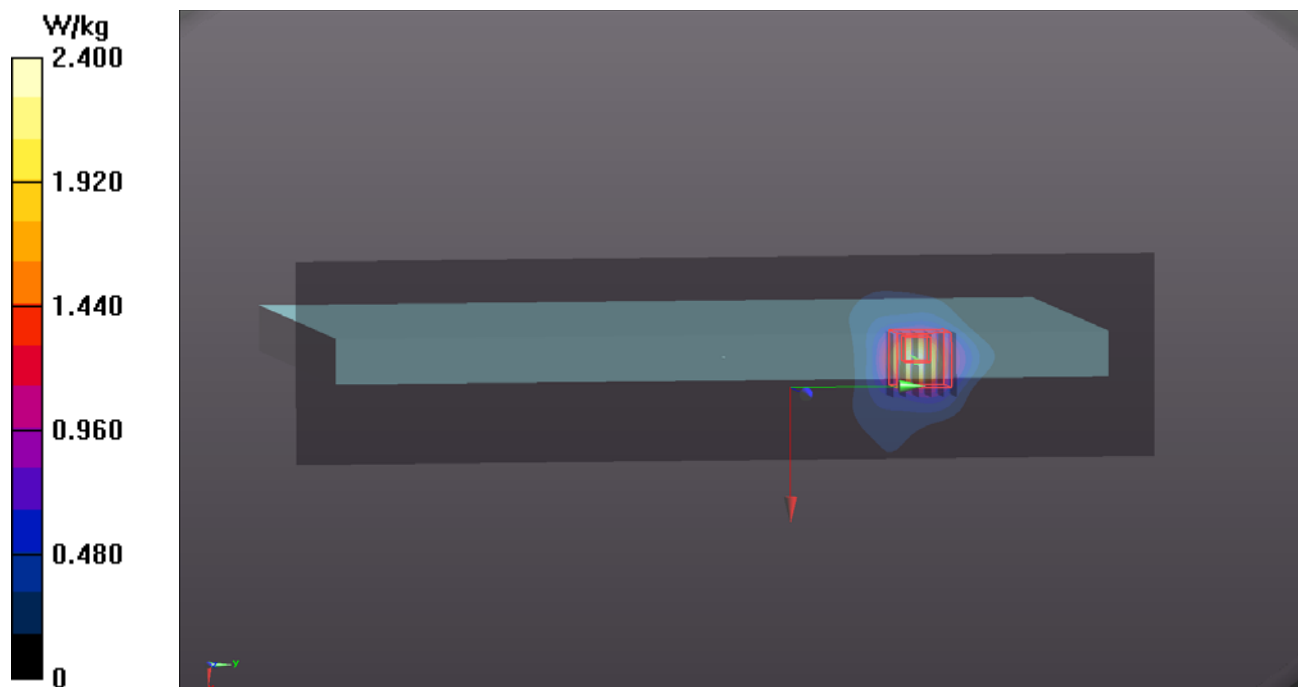
- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 23.19 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.97 W/kg

SAR(1 g) = 0.999 W/kg; SAR(10 g) = 0.324 W/kg

Maximum value of SAR (measured) = 2.19 W/kg



P15 WLAN5.6G_802.11ac VHT80_Top Side_0mm_Ch106_Tx2**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5530 MHz; Duty Cycle: 1:1.01

Medium: H34T60N1_0605 Medium parameters used: $f = 5530$ MHz; $\sigma = 4.92$ S/m; $\epsilon_r = 37.163$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(4.78, 4.78, 4.78); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (81x341x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 2.18 W/kg

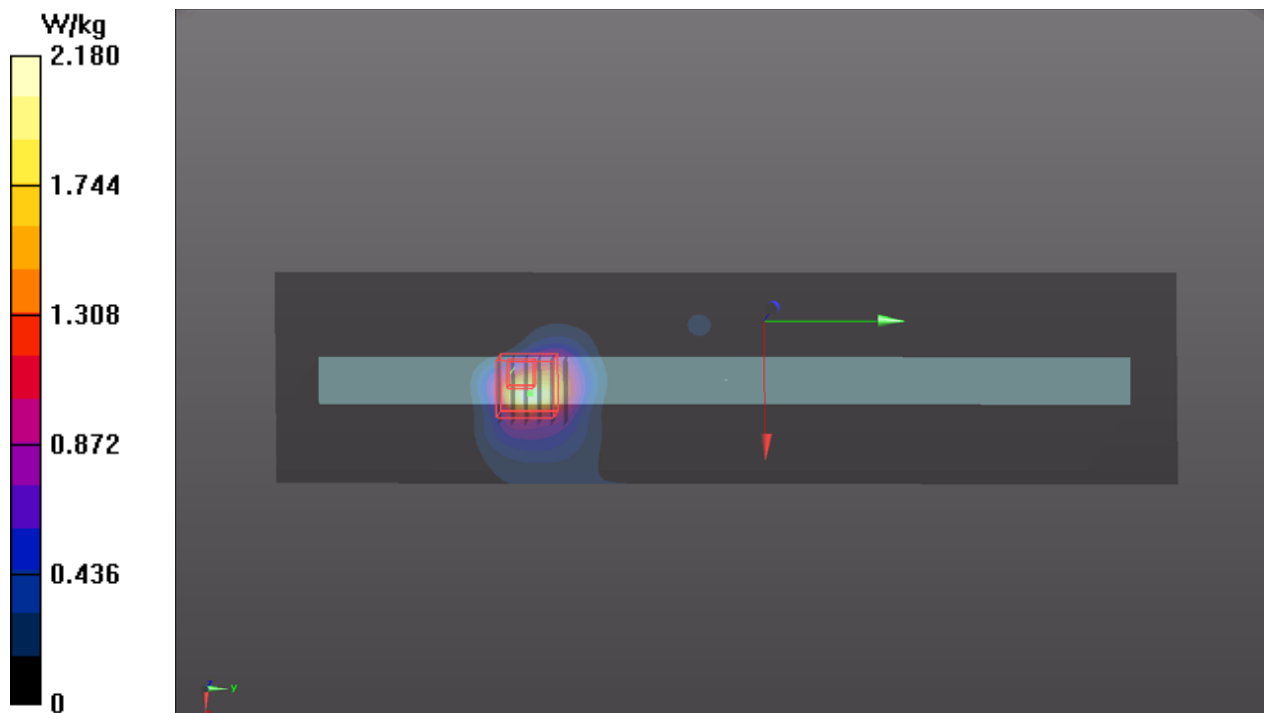
- Zoom Scan (6x6x12)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=2$ mm

Reference Value = 19.66 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.97 W/kg

SAR(1 g) = 0.937 W/kg; SAR(10 g) = 0.270 W/kg

Maximum value of SAR (measured) = 2.33 W/kg



P16 WLAN5.8G_802.11ac VHT80_Top Side_0mm_Ch155_Tx2**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5775 MHz; Duty Cycle: 1:1.01

Medium: H34T60N1_0606 Medium parameters used: $f = 5775$ MHz; $\sigma = 5.182$ S/m; $\epsilon_r = 36.797$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(4.92, 4.92, 4.92); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7463)

- **Area Scan (81x341x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 2.03 W/kg

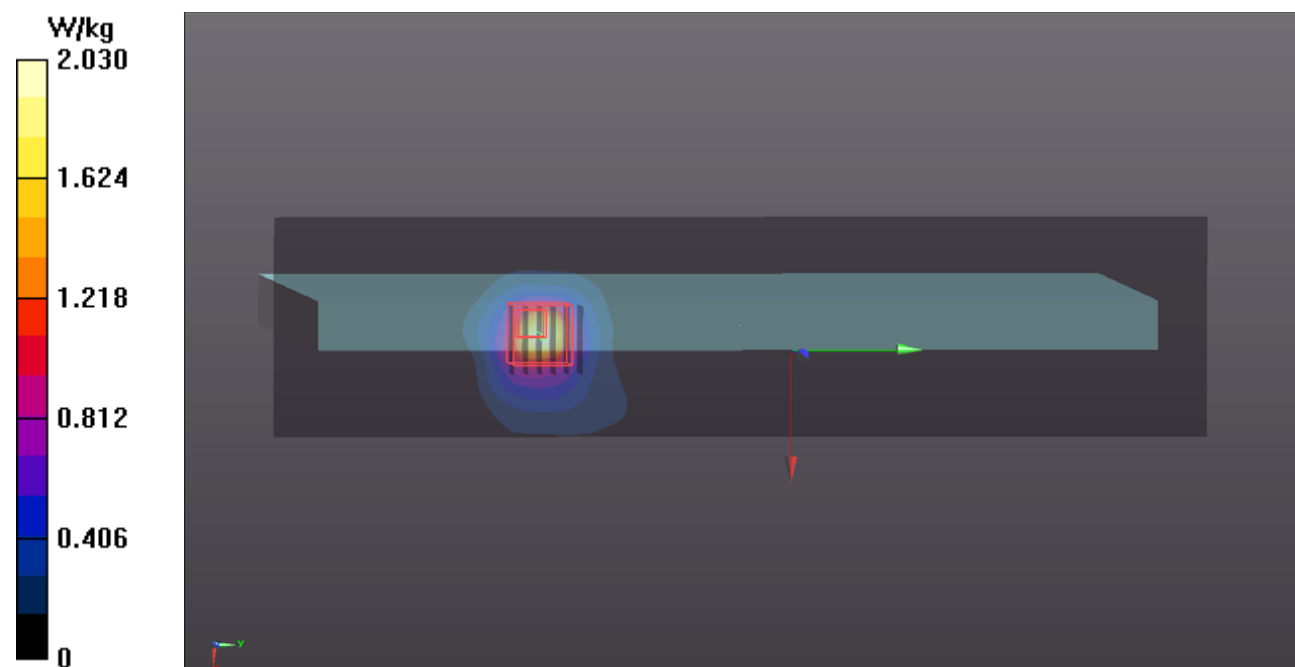
- **Zoom Scan (6x6x12)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 21.22 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 4.90 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.289 W/kg

Maximum value of SAR (measured) = 2.55 W/kg



P17 BT_BDR_Top Side_0mm_Ch39_Tx2**DUT: 190516C01**

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.3

Medium: H19T27N1_0605 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.867$ S/m; $\epsilon_r = 38.87$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(7.65, 7.65, 7.65); Calibrated: 2019/03/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7463)

- Area Scan (71x291x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.248 W/kg

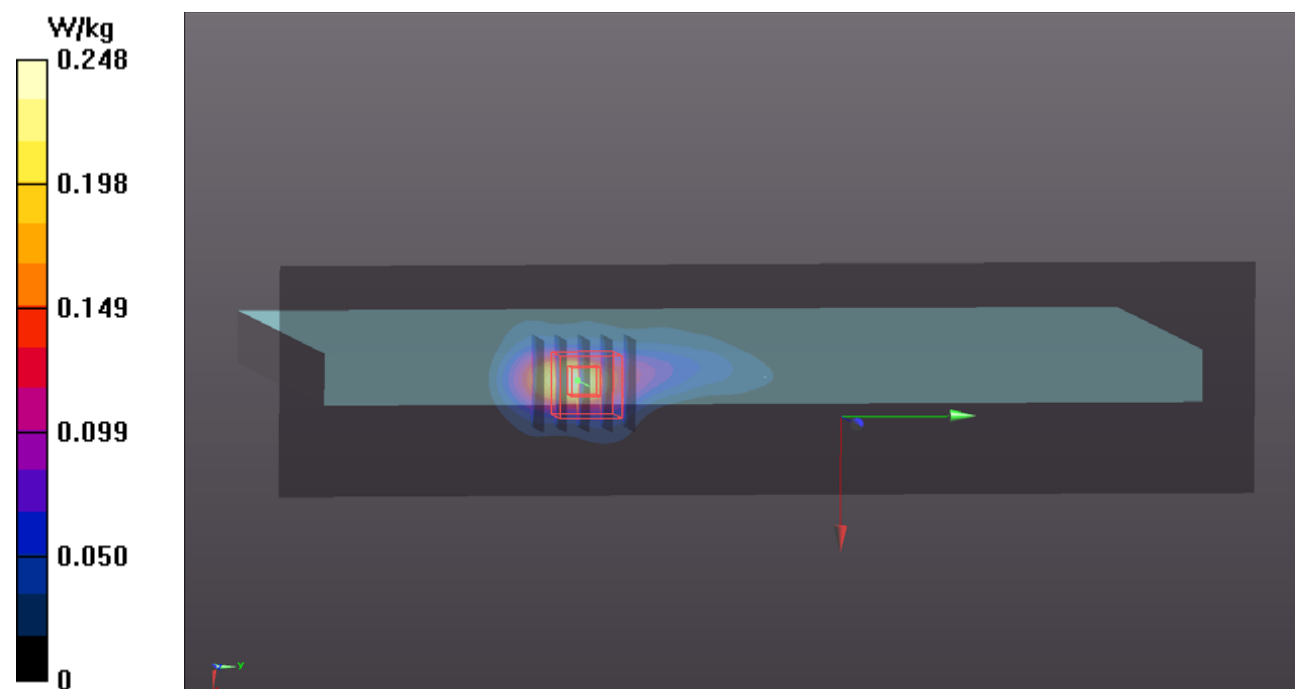
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.80 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.407 W/kg

SAR(1 g) = 0.130 W/kg; SAR(10 g) = 0.042 W/kg

Maximum value of SAR (measured) = 0.249 W/kg



P18 WCDMA II_RMC12.2K_Back of Panel_25mm_Ch9400**DUT: 190516C01**

Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0603 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.445$ S/m; $\epsilon_r = 38.18$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.44, 8.44, 8.44); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (101x231x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.131 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.230 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.142 W/kg

SAR(1 g) = 0.092 W/kg; SAR(10 g) = 0.061 W/kg

Maximum value of SAR (measured) = 0.124 W/kg

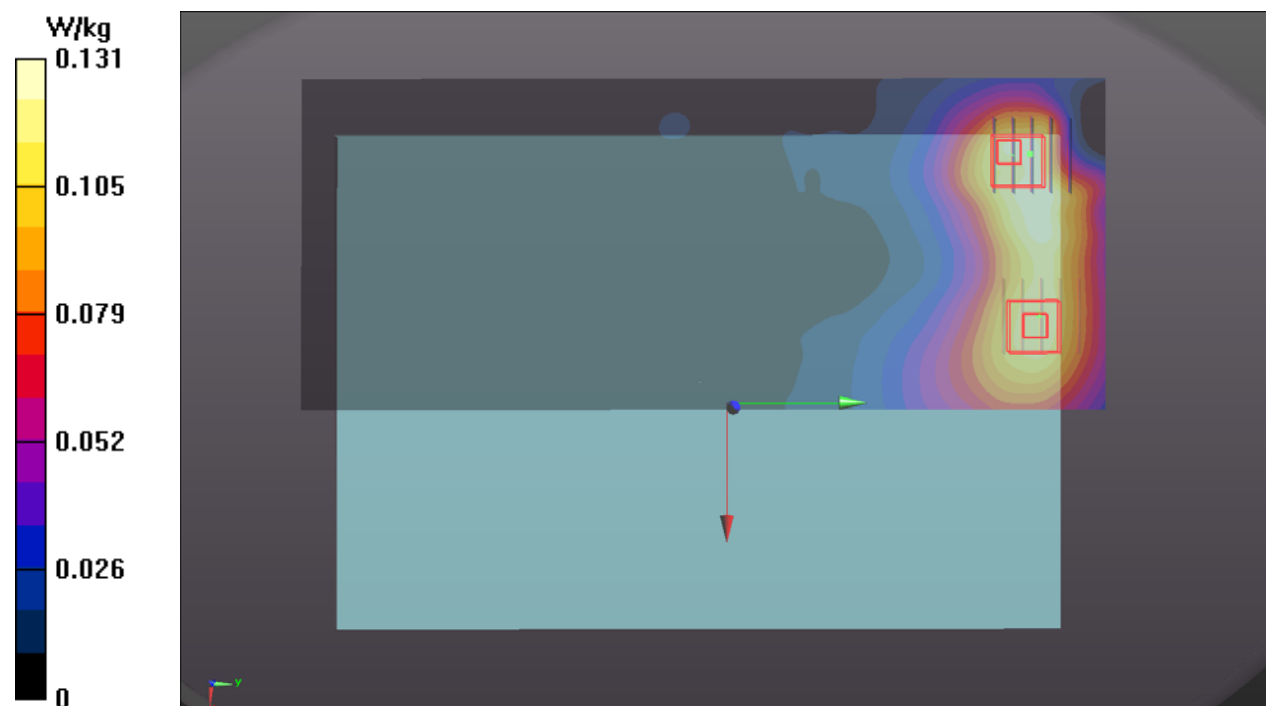
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.230 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.147 W/kg

SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.056 W/kg

Maximum value of SAR (measured) = 0.127 W/kg



P19 WCDMA IV_RMC12.2K_Back of Panel_25mm_Ch1513**DUT: 190516C01**

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0603 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.333$ S/m; $\epsilon_r = 38.678$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.79, 8.79, 8.79); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (101x231x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.115 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.656 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.123 W/kg

SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.110 W/kg

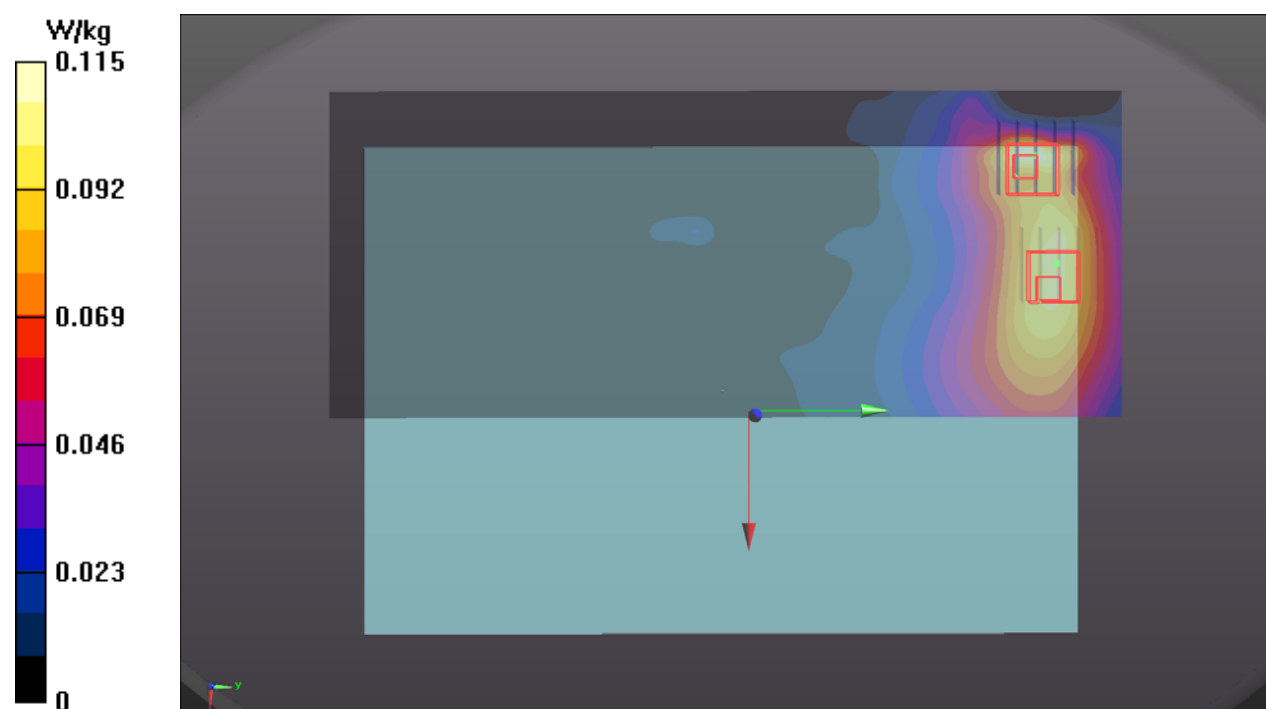
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.656 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.100 W/kg

SAR(1 g) = 0.063 W/kg; SAR(10 g) = 0.040 W/kg

Maximum value of SAR (measured) = 0.0859 W/kg



P20 WCDMA V_RMC12.2K_Left of Panel_25mm_Ch4132**DUT: 190516C01**

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: H07T10N1_0605 Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.907$ S/m; $\epsilon_r = 43.075$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.13, 10.13, 10.13); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0492 W/kg

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

Reference Value = 7.648 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.0540 W/kg

SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.029 W/kg

Maximum value of SAR (measured) = 0.0484 W/kg

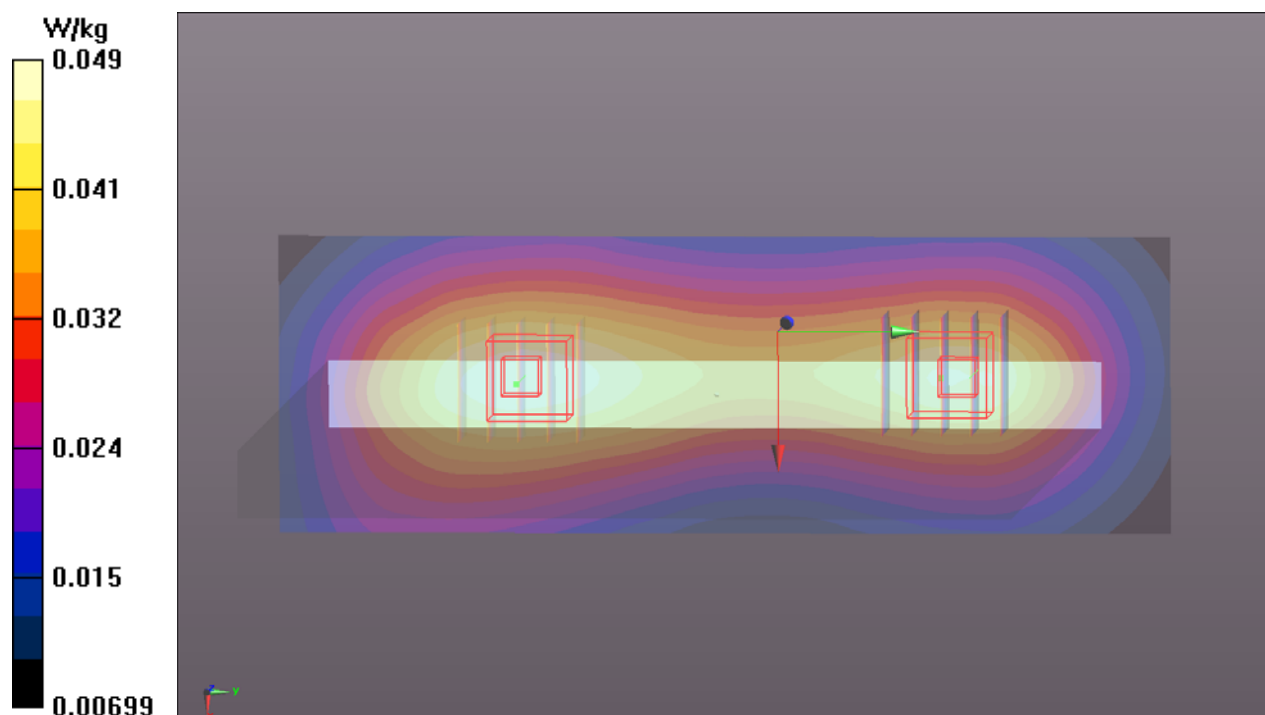
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 7.648 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.0530 W/kg

SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.028 W/kg

Maximum value of SAR (measured) = 0.0473 W/kg



P21 LTE 2_QPSK20M_Back of Panel_25mm_Ch18700_1RB_OS50**DUT: 190516C01**

Communication System: LTE; Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0603 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.429$ S/m; $\epsilon_r = 38.239$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.44, 8.44, 8.44); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (101x231x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.107 W/kg

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

Reference Value = 8.563 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.124 W/kg

SAR(1 g) = 0.081 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.108 W/kg

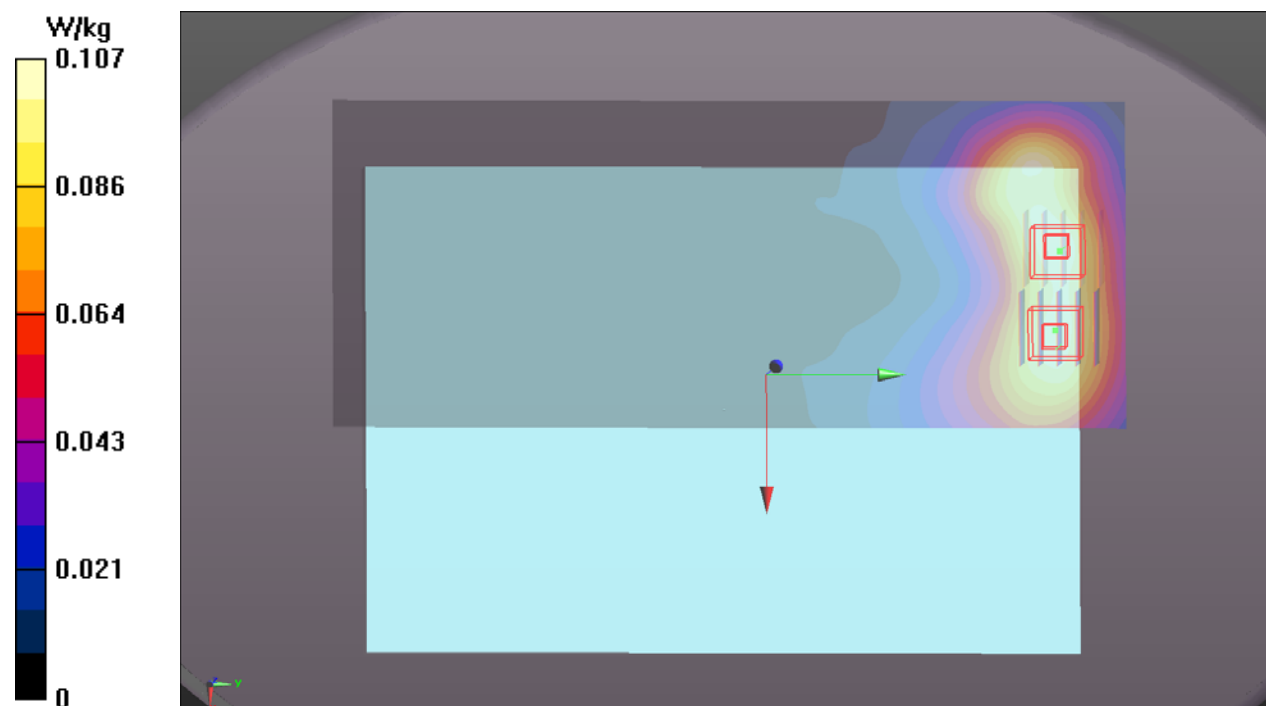
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 8.563 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.121 W/kg

SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.106 W/kg



P22 LTE 5_QPSK10M_Left of Panel_25mm_Ch20525_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: H07T10N1_0605 Medium parameters used: $f = 836.5$ MHz; $\sigma = 0.917$ S/m; $\epsilon_r = 42.947$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.13, 10.13, 10.13); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0408 W/kg

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

Reference Value = 6.916 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.0450 W/kg

SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.024 W/kg

Maximum value of SAR (measured) = 0.0401 W/kg

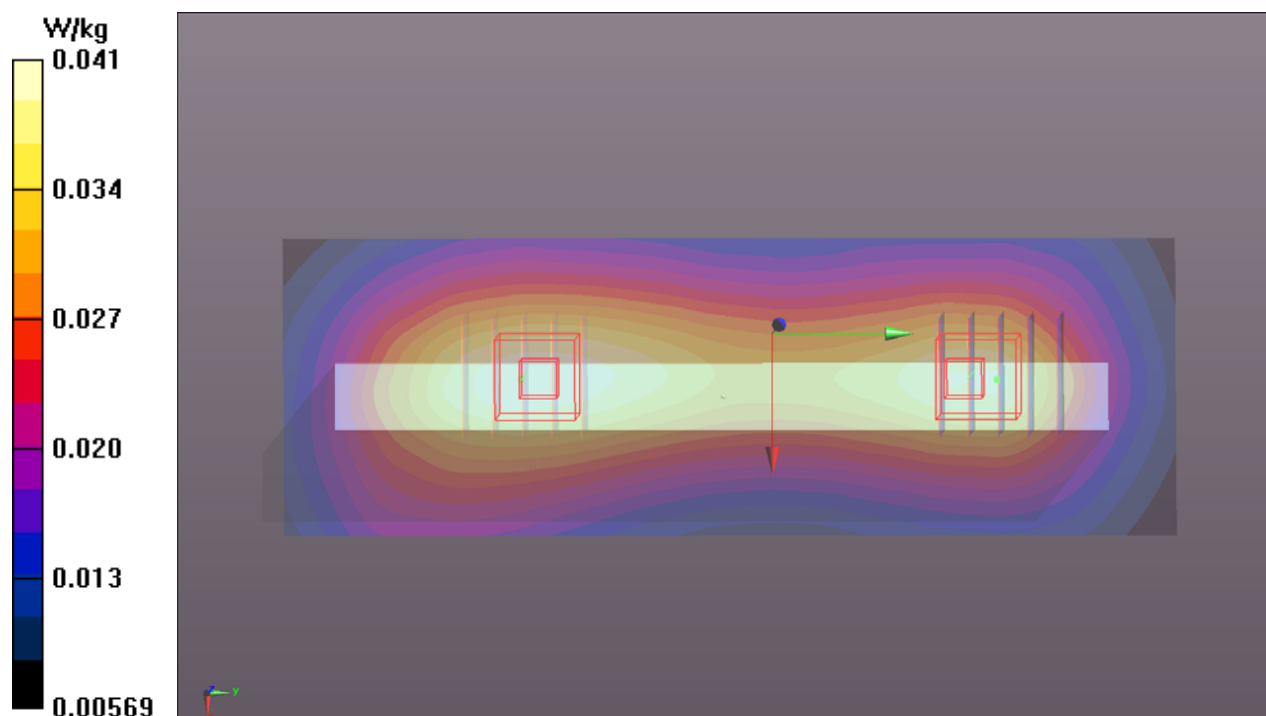
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.916 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.0430 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.022 W/kg

Maximum value of SAR (measured) = 0.0382 W/kg



P23 LTE 7_QPSK20M_Back of Panel_25mm_Ch20850_1RB_OS99**DUT: 190516C01**

Communication System: LTE; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0603 Medium parameters used: $f = 2510$ MHz; $\sigma = 1.915$ S/m; $\epsilon_r = 38.265$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(7.53, 7.53, 7.53); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (91x291x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.280 W/kg

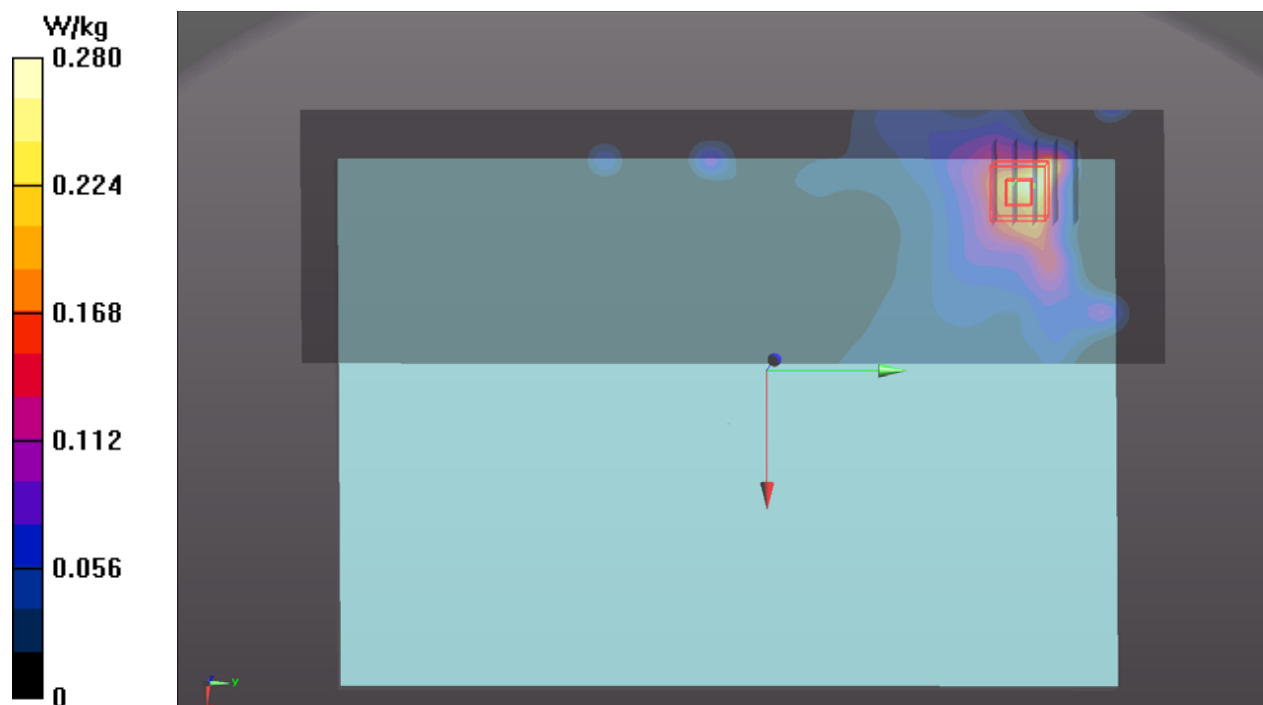
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.10 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.238 W/kg

SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.076 W/kg

Maximum value of SAR (measured) = 0.196 W/kg



P24 LTE 12_QPSK10M_Left of Panel_25mm_Ch23130_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: H06T09N1_0605 Medium parameters used: $f = 711$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 43.384$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.35, 10.35, 10.35); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (61x161x1):** Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0398 W/kg

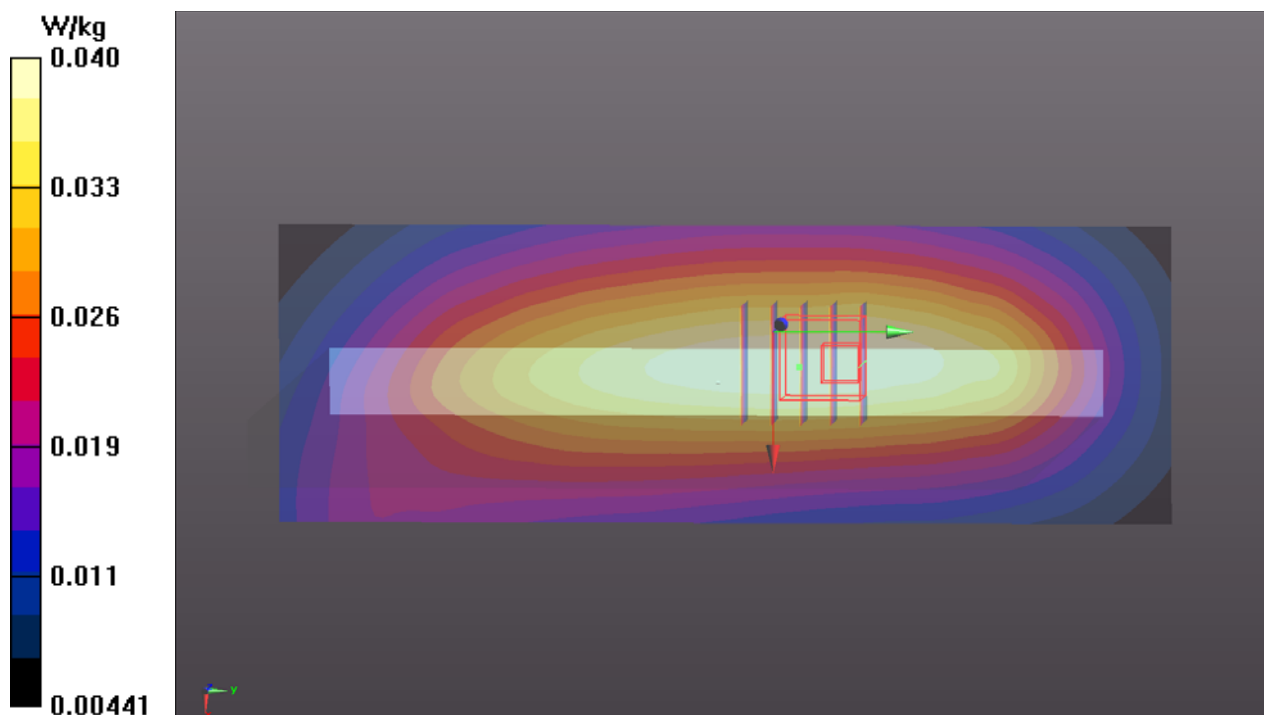
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 7.082 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0430 W/kg

SAR(1 g) = 0.031 W/kg; SAR(10 g) = 0.024 W/kg

Maximum value of SAR (measured) = 0.0390 W/kg



P25 LTE 13_QPSK10M_Left of Panel_25mm_Ch23230_1RB_OS24**DUT: 190516C01**

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: H06T09N1_0605 Medium parameters used: $f = 782$ MHz; $\sigma = 0.912$ S/m; $\epsilon_r = 42.371$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.35, 10.35, 10.35); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0682 W/kg

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

Reference Value = 9.014 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0750 W/kg

SAR(1 g) = 0.055 W/kg; SAR(10 g) = 0.041 W/kg

Maximum value of SAR (measured) = 0.0677 W/kg

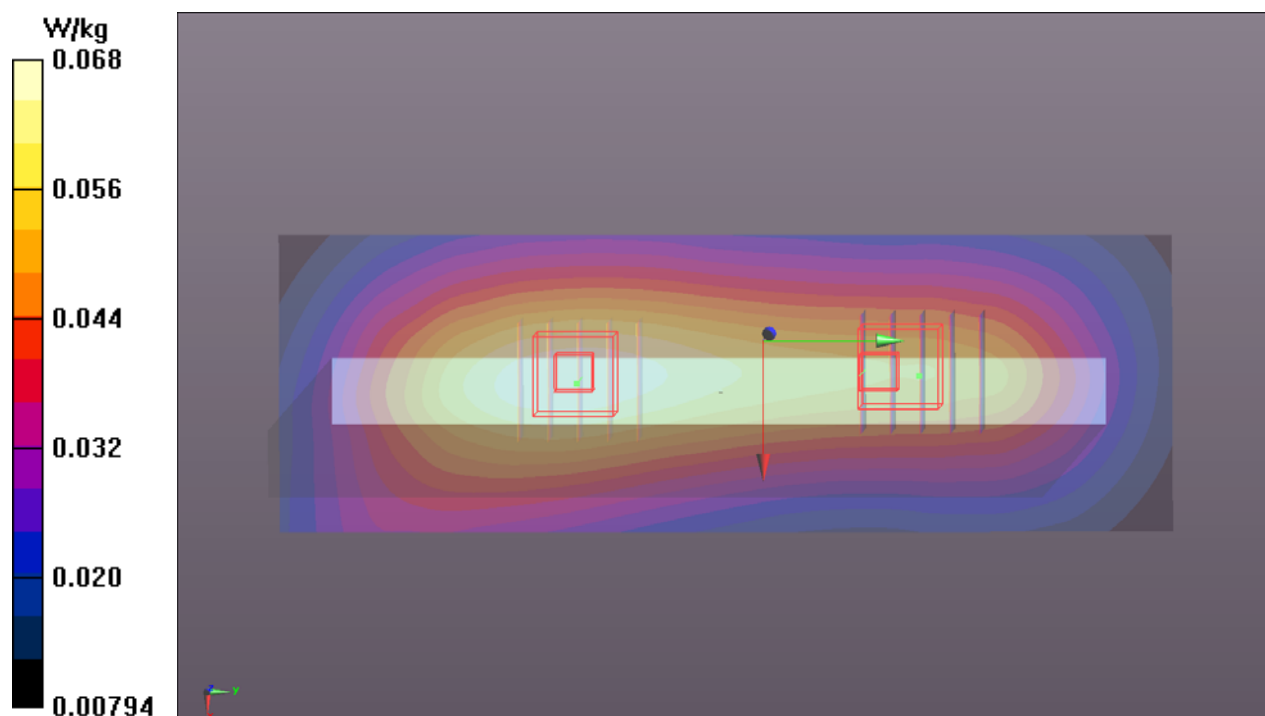
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.014 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0620 W/kg

SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.034 W/kg

Maximum value of SAR (measured) = 0.0560 W/kg



P26 LTE 26_QPSK15M_Left of Panel_25mm_Ch26765_1RB_OS37**DUT: 190516C01**

Communication System: LTE; Frequency: 821.5 MHz; Duty Cycle: 1:1

Medium: H07T10N1_0605 Medium parameters used: $f = 821.5$ MHz; $\sigma = 0.903$ S/m; $\epsilon_r = 43.135$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(10.13, 10.13, 10.13); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn915; Calibrated: 2018/06/20
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0418 W/kg

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

Reference Value = 7.017 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.0450 W/kg

SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.024 W/kg

Maximum value of SAR (measured) = 0.0401 W/kg

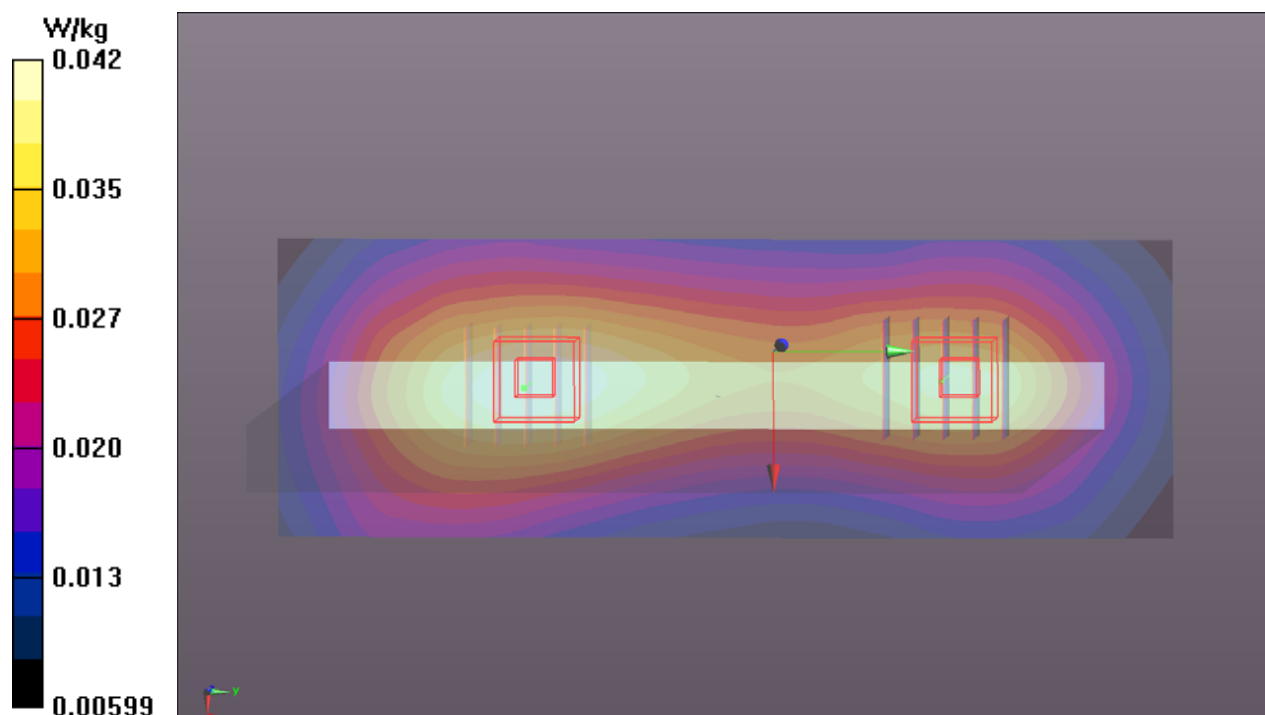
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 7.017 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.0420 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.022 W/kg

Maximum value of SAR (measured) = 0.0380 W/kg



P27 LTE 30_QPSK10M_Back of Panel_25mm_Ch27710_1RB_OS0**DUT: 190516C01**

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0603 Medium parameters used: $f = 2310$ MHz; $\sigma = 1.714$ S/m; $\epsilon_r = 38.954$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.13, 8.13, 8.13); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (91x291x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.177 W/kg

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

Reference Value = 10.40 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.132 W/kg; SAR(10 g) = 0.078 W/kg

Maximum value of SAR (measured) = 0.184 W/kg

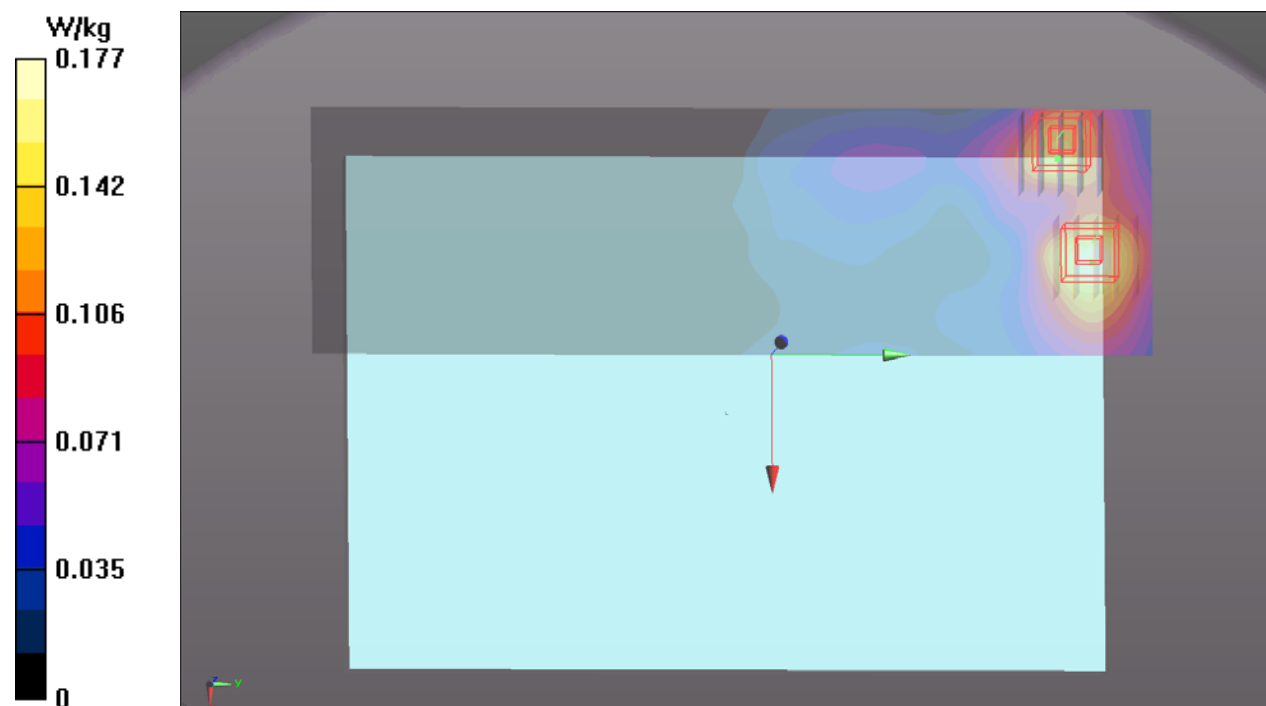
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.40 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.207 W/kg

SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.065 W/kg

Maximum value of SAR (measured) = 0.173 W/kg



P28 LTE 41_QPSK20M_Back of Panel_25mm_Ch40185_1RB_OS0**DUT: 190516C01**

Communication System: LTE TDD CF0; Frequency: 2549.5 MHz; Duty Cycle: 1:1.58

Medium: H19T27N1_0603 Medium parameters used: $f = 2550$ MHz; $\sigma = 1.956$ S/m; $\epsilon_r = 38.12$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(7.53, 7.53, 7.53); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (101x291x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.127 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.996 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.118 W/kg

SAR(1 g) = 0.067 W/kg; SAR(10 g) = 0.036 W/kg

Maximum value of SAR (measured) = 0.0937 W/kg

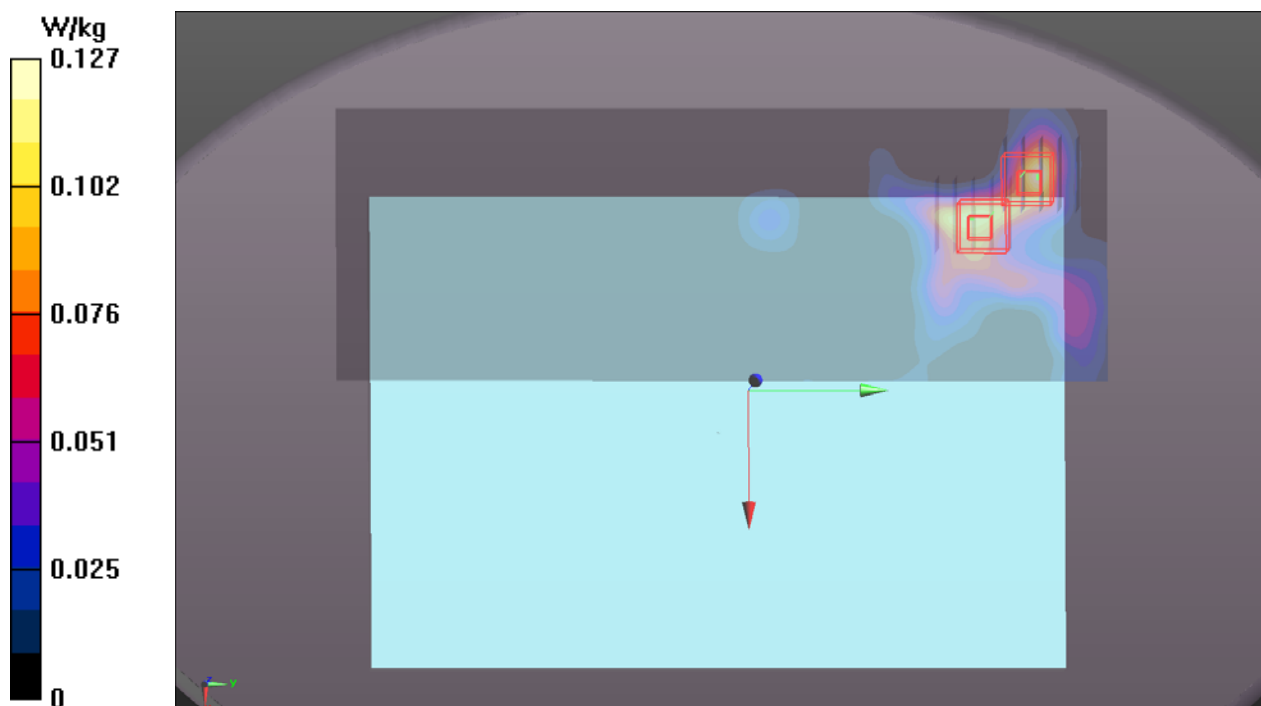
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.996 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.115 W/kg

SAR(1 g) = 0.064 W/kg; SAR(10 g) = 0.033 W/kg

Maximum value of SAR (measured) = 0.0906 W/kg



P29 LTE 66_QPSK20M_Left of Panel_25mm_Ch132072_1RB_OS99**DUT: 190516C01**

Communication System: LTE; Frequency: 1720 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0603 Medium parameters used: $f = 1720$ MHz; $\sigma = 1.302$ S/m; $\epsilon_r = 38.815$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7472; ConvF(8.79, 8.79, 8.79); Calibrated: 2018/08/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2019/01/24
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0948 W/kg

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

Reference Value = 8.567 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.106 W/kg

SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.0929 W/kg

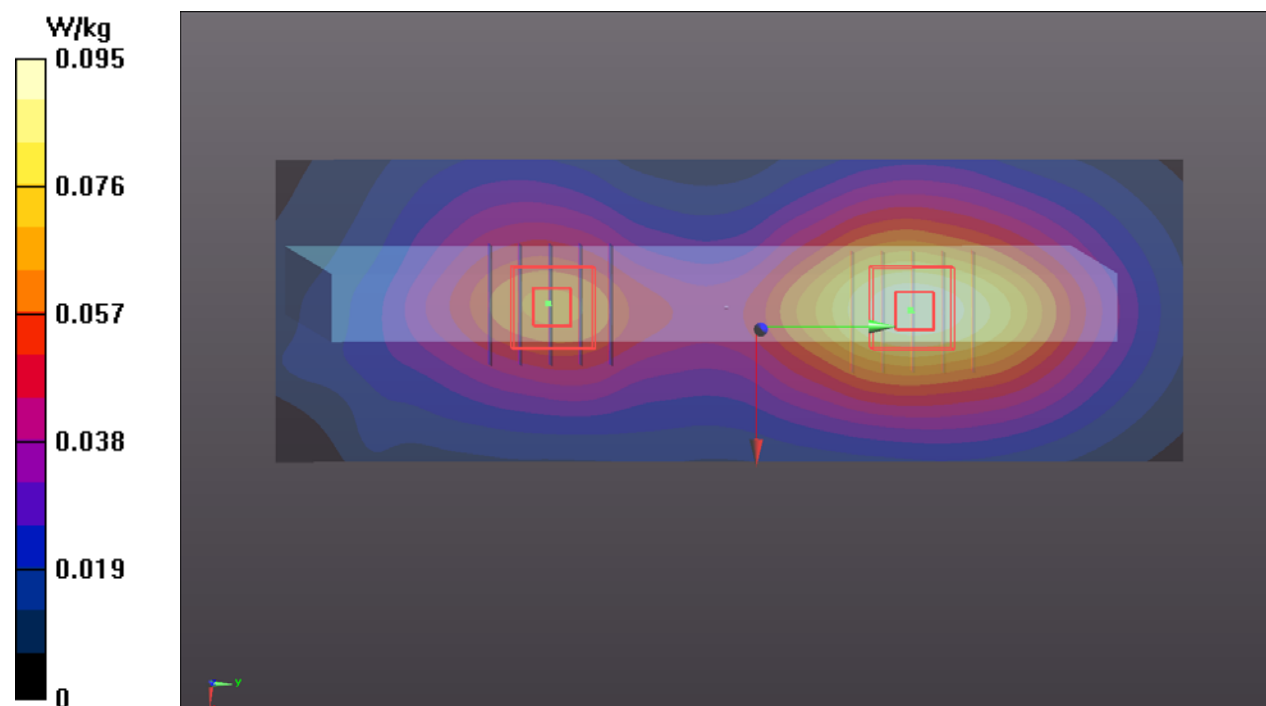
- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.567 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.0740 W/kg

SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.031 W/kg

Maximum value of SAR (measured) = 0.0644 W/kg



P30 WLAN2.4G_802.11b_Back of Panel_25mm_Ch6_Tx2**DUT: 190516C01**

Communication System: WLAN_2.4G; Frequency: 2437 MHz; Duty Cycle: 1:1.02

Medium: H19T27N1_0608 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.839$ S/m; $\epsilon_r = 38.693$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(7.64, 7.64, 7.64); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (121x291x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.340 W/kg

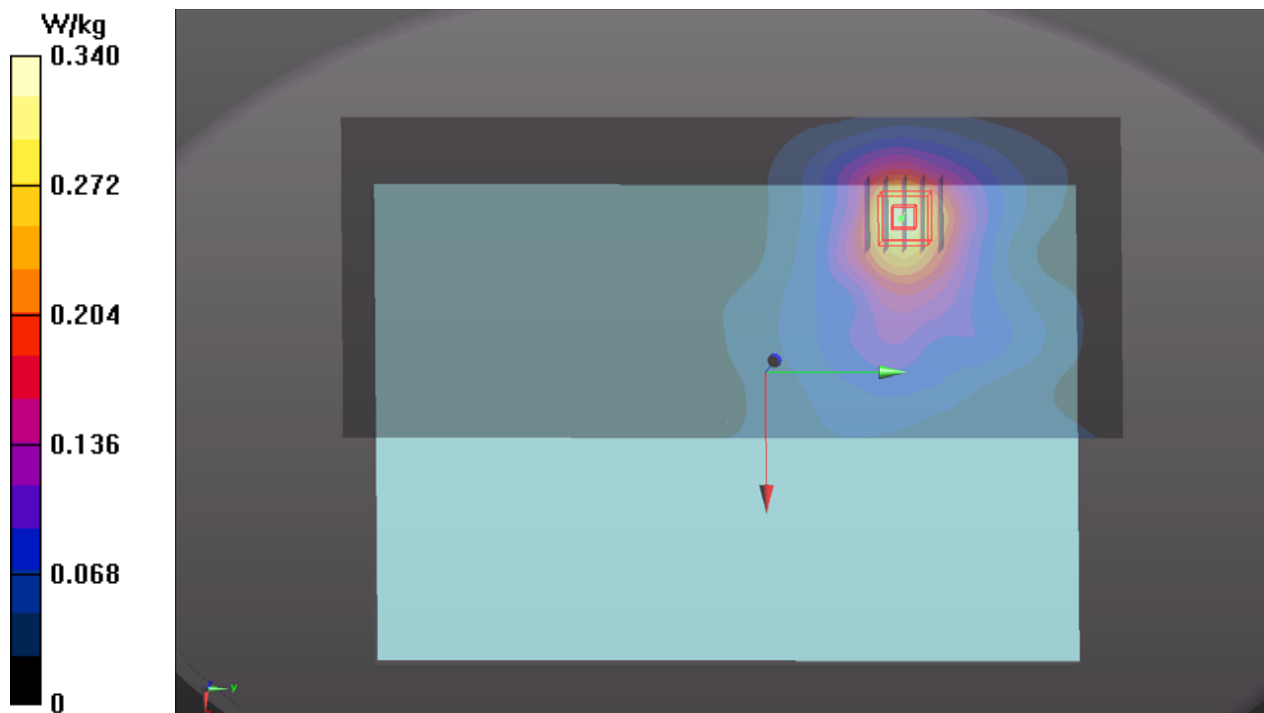
- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.68 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.400 W/kg

SAR(1 g) = 0.246 W/kg; SAR(10 g) = 0.146 W/kg

Maximum value of SAR (measured) = 0.344 W/kg



P31 WLAN5.3G_802.11n HT40_Back of Panel_25mm_Ch54_Tx2**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5270 MHz; Duty Cycle: 1:1.03

Medium: H34T60N1_0608 Medium parameters used: $f = 5270$ MHz; $\sigma = 4.579$ S/m; $\epsilon_r = 34.806$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(5.29, 5.29, 5.29); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (141x341x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.760 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 14.17 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.381 W/kg; SAR(10 g) = 0.162 W/kg

Maximum value of SAR (measured) = 0.739 W/kg

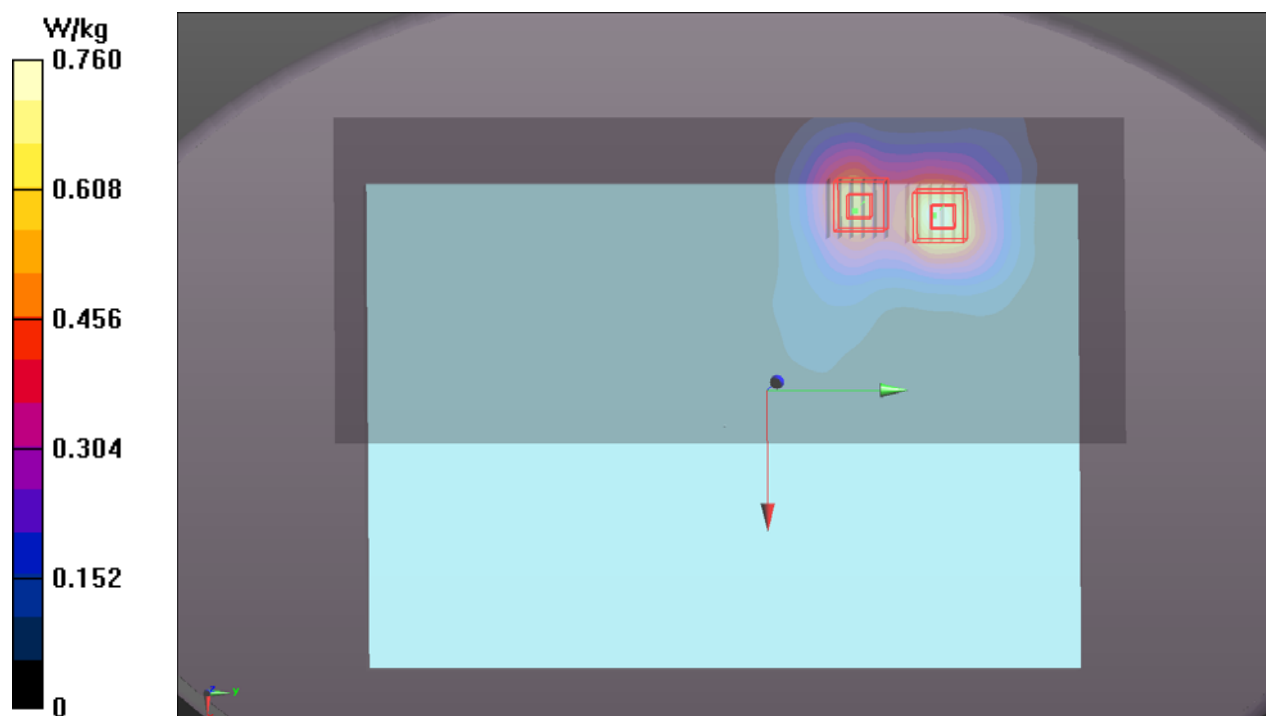
- Zoom Scan (6x6x12)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 14.17 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.905 W/kg

SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.146 W/kg

Maximum value of SAR (measured) = 0.658 W/kg



P32 WLAN5.6G_802.11ac VHT80_Back of Panel_25mm_Ch138_Tx2**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5690 MHz; Duty Cycle: 1:1.01

Medium: H34T60N1_0609 Medium parameters used: $f = 5690$ MHz; $\sigma = 4.968$ S/m; $\epsilon_r = 34.291$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(4.85, 4.85, 4.85); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (141x341x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.90 W/kg

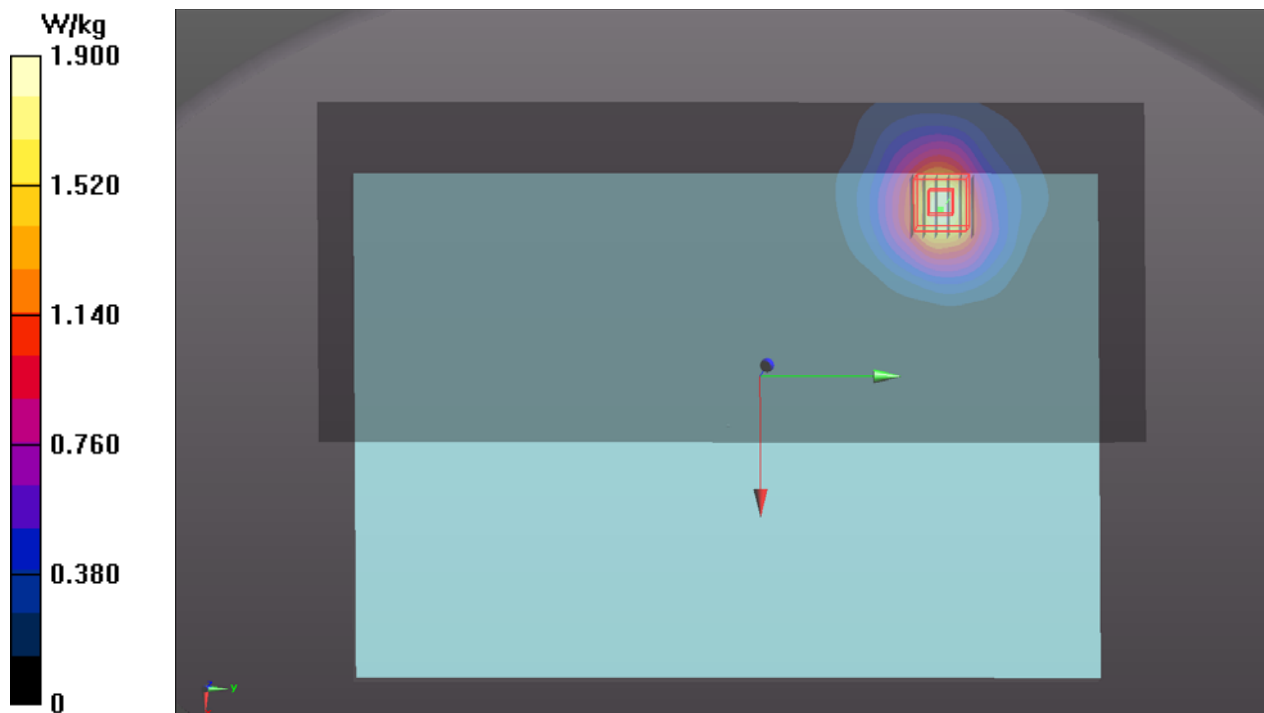
- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 21.13 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 2.86 W/kg

SAR(1 g) = 0.925 W/kg; SAR(10 g) = 0.399 W/kg

Maximum value of SAR (measured) = 1.88 W/kg



P33 WLAN5.8G_802.11n HT40_Back of Panel_25mm_Ch159_Tx2**DUT: 190516C01**

Communication System: WLAN_5G; Frequency: 5795 MHz; Duty Cycle: 1:1.03

Medium: H34T60N1_0609 Medium parameters used: $f = 5795$ MHz; $\sigma = 5.068$ S/m; $\epsilon_r = 34.164$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(4.85, 4.85, 4.85); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- **Area Scan (141x341x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 2.50 W/kg

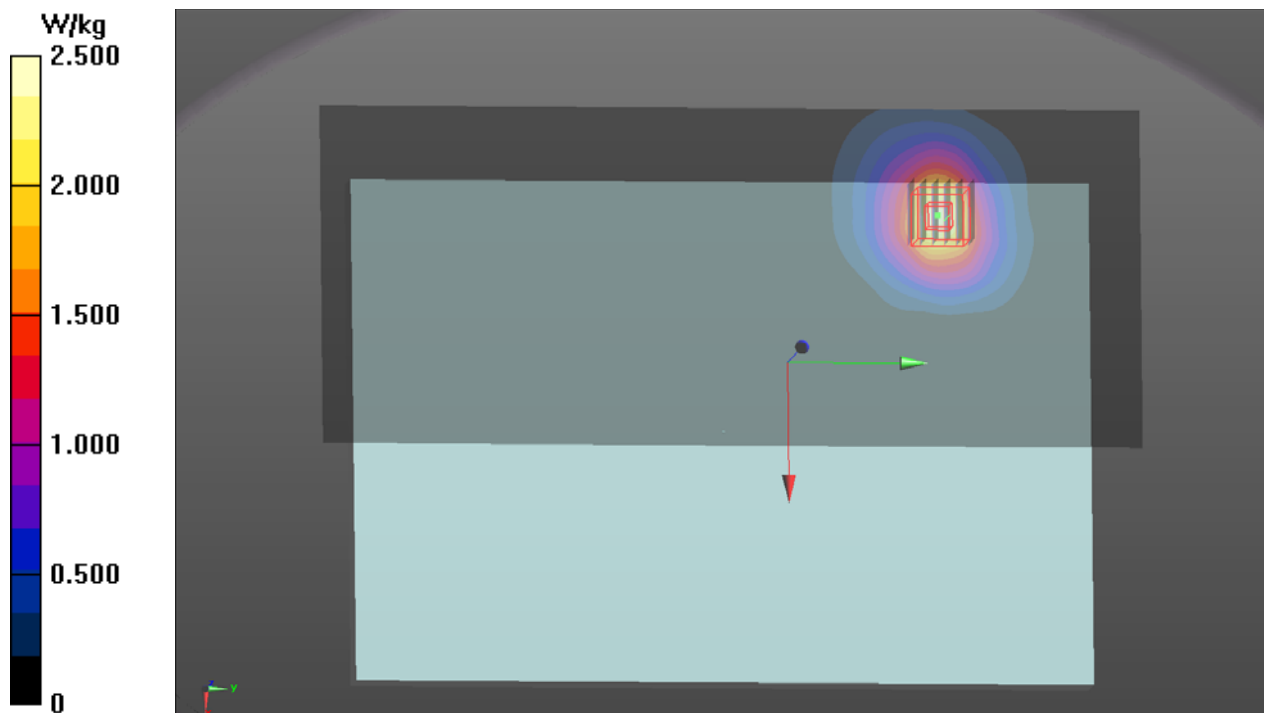
- **Zoom Scan (6x6x12)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=2mm

Reference Value = 24.01 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 3.77 W/kg

SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.439 W/kg

Maximum value of SAR (measured) = 1.98 W/kg



P34 BT_BDR_Back of Panel_25mm_Ch39_Tx2**DUT: 190516C01**

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.3

Medium: H19T27N1_0608 Medium parameters used: $f = 2441$ MHz; $\sigma = 1.843$ S/m; $\epsilon_r = 38.675$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7375; ConvF(7.64, 7.64, 7.64); Calibrated: 2018/12/13
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2018/12/12
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

- Area Scan (121x291x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0260 W/kg

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

Reference Value = 3.752 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.0300 W/kg

SAR(1 g) = 0.017 W/kg; SAR(10 g) = 0.00976 W/kg

Maximum value of SAR (measured) = 0.0252 W/kg

