FCC SAR Test Report

Report No.	:	**SA171110C22**
Applicant	:	**Microsoft Corporation**
Address	:	**One Microsoft Way, Redmond, WA 98052-6399 USA**
Product	:	**Portable Computing Device**
FCC ID	:	**C3K1825**
Brand	:	**Microsoft**
Model No.	:	**1825**
Standards	:	**FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013 KDB 865664 D01 v01r04, KDB 865664 D02 v01r02 KDB 248227 D01 v02r02, KDB 447498 D01 v06 KDB 616217 D04 v01r02, KDB 941225 D01 v03r01 KDB 941225 D05 v02r05, KDB 941225 D05A v01r02**
Sample Received Date	:	**Nov. 13, 2017**
Date of Testing	:	**Jul. 24, 2018 ~ Aug. 15, 2018**
Lab Address	:	**No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.**
Test Location	:	**No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C)**

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.

Prepared By : Evonne Liu / Specialist

Approved By : Eli Hsu / Senior Engineer

Testing Laboratory 2021

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Release Control Record

Report No.	Reason for Change	Date Issued
SA171110C22	Initial release	Aug. 27, 2018

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest Scaled SAR-1g Body (W/kg)
PCB	WCDMA II	0.89
	WCDMA V	0.75
	LTE 5	0.72
	LTE 7	0.91
	LTE 12	0.80
	LTE 13	0.74
	LTE 2 & LTE 25	0.89
	LTE 26	0.75
	LTE 30	0.76
	LTE 38 & LTE 41	0.60
	LTE 4 & LTE 66	1.03
DTS	2.4G WLAN	1.39
NII	5.3G WLAN	0.65
	5.6G WLAN	0.91
	5.8G WLAN	0.83
DSS	Bluetooth	0.01

Equipment Class	Mode	Highest Scaled SAR-1g Body (W/kg)
Highest Simultaneous Transmission SAR		1.58

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 ISED RSS-102 Issue 5:2015.
2. 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.
3. This device supports both LTE band 25 and band 2. The frequency span of LTE band 25 can completely cover LTE band 2, and they has the same tune-up power. SAR was tested for LTE band 25 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.

2. Description of Equipment Under Test

EUT Type	Portable Computing Device
FCC ID	C3K1825
Brand Name	Microsoft
Model Name	1825
Tx Frequency Bands (Unit: MHz)	WCDMA Band II : 1852.4 ~ 1907.6 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 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) 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, 5260 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 Bluetooth : 2402 ~ 2480
Uplink Modulations	WCDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n20/n40/ac80 : OFDM Bluetooth : GFSK, π/4-DQPSK, 8-DPSK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	PIFA Antenna (Peak Antenna Gain : 2.29 dBi for 2.4GHz, 2.46 dBi for 5GHz)
EUT Stage	Identical Prototype

Note:

1. For more details, please refer to the manufacturer's specification or User Manual.
2. The WWAN antenna with power reduction information as below.

Operation	WWAN Ant	Function Notes
Body (Data mode)	EUT without Power Reduction	P-Sensor NOT Triggered
	EUT with Power Reduction	P-Sensor Triggered

3. The WLAN antenna with power reduction information as below.

	SAR sensor status	LTE/WCDMA Power	WLAN Power
WLAN only	**ON**	**N/A**	**Full power**
	OFF	**N/A**	**Full power**
LTE only or WCDMA only	**ON**	**Reduced power***	**N/A**
	OFF	**Full power**	**N/A**
WiFi hotspot or WiFi direct (WLAN + LTE/WCDMA)	**ON**	**Reduced power***	**Reduced power**
	OFF	**Full power**	**Reduced power**

*Final reduced power = reduced power - MPR

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:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be related to the electrical field in the tissue by

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

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 form the optical into digital electric signal of the DAE and transfers data to the PC.

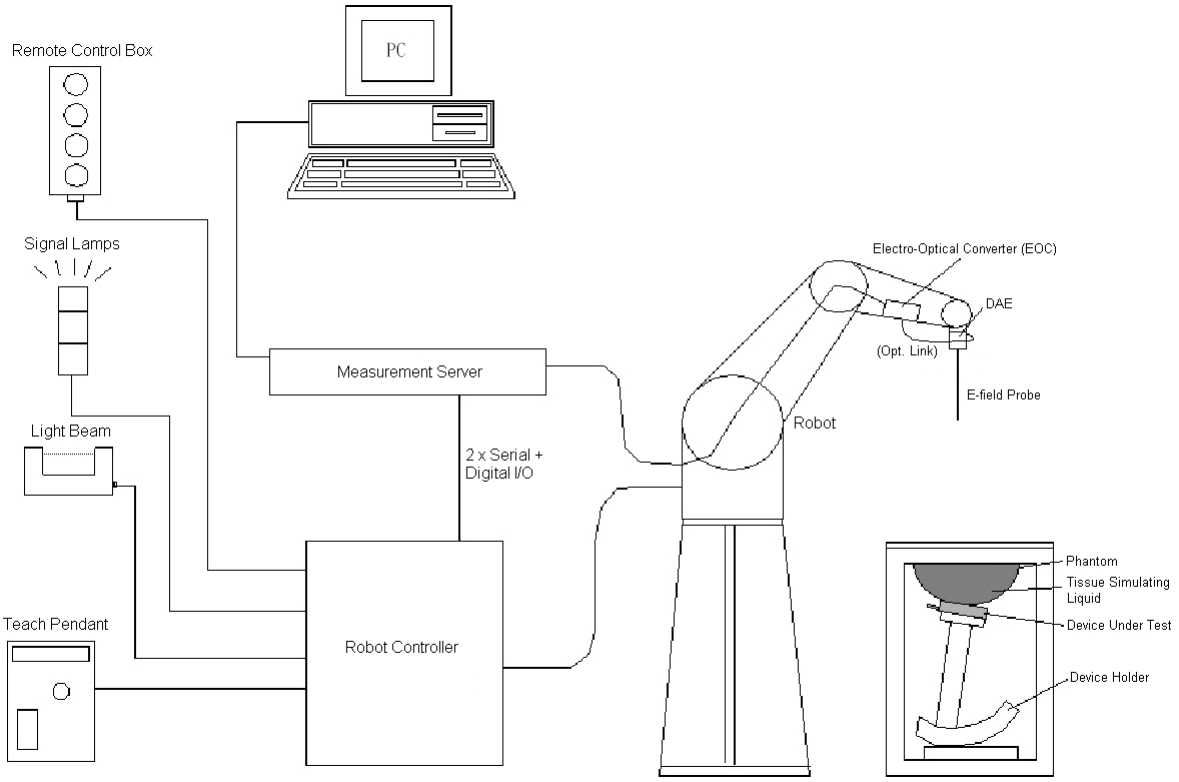


Fig-3.1 SPEAG DASY52 System Setup

3.2.1 Robot

The DASY52 system uses 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

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 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/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 µW/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 µW/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	< 5µV (with auto zero)
Input Bias Current	< 50 fA
Dimensions	60 x 60 x 68 mm

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

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 l/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)	

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.

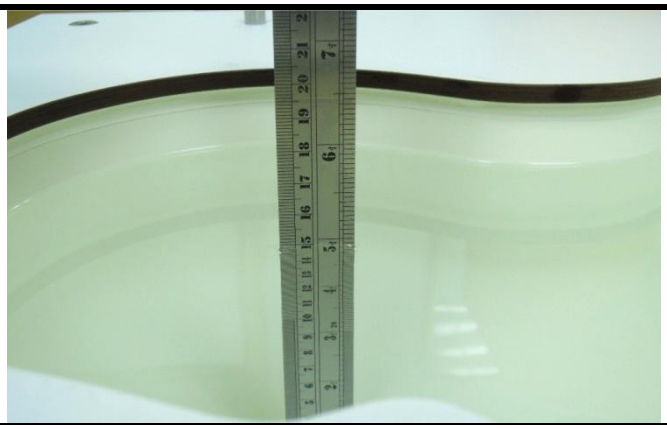
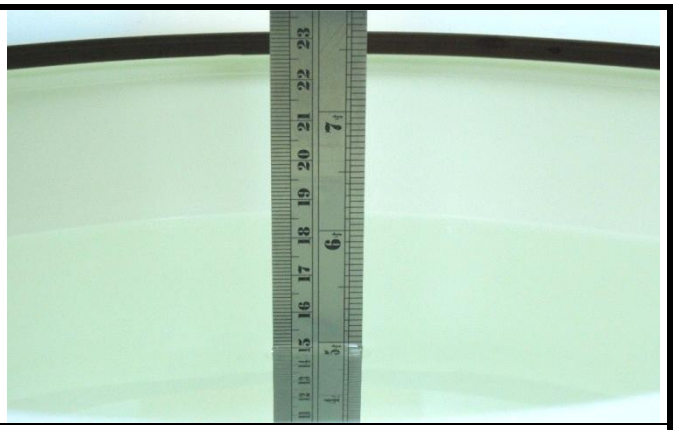
	

Photo of Liquid Height for Head Position	**Photo of Liquid Height for Body Position**

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528 and IEC 62209-1. For the body tissue simulating liquids, the dielectric properties are defined in RSS-102 Annex D and IEC 62209-2. 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 ±5%	Target Conductivity	Range of ±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
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

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.

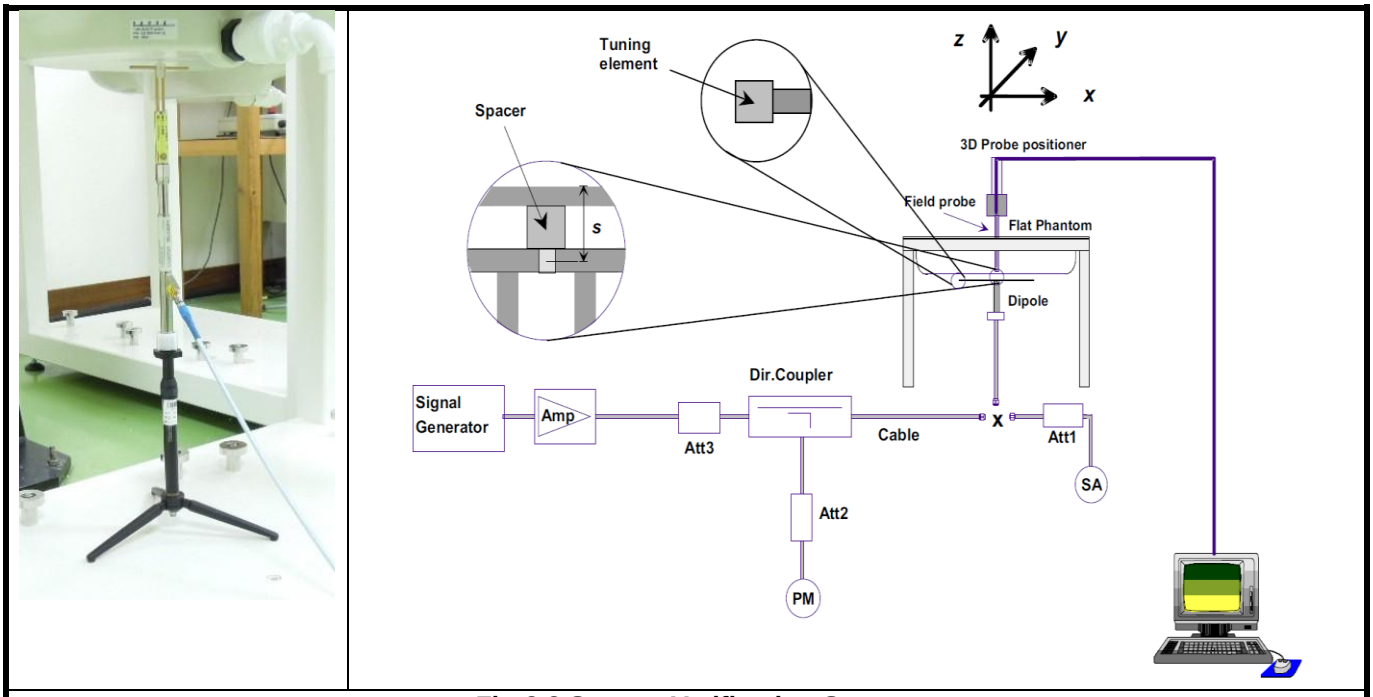


Fig-3.3 System Verification Setup

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:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

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

(a) Make EUT to transmit maximum output power
(b) Measure conducted output power through RF cable
(c) Place the EUT in the specific position of phantom
(d) Perform SAR testing steps on the DASY system
(e) 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 (Δx, Δy)	<= 15 mm	<= 12 mm	<= 12 mm	<= 10 mm	<= 10 mm
Zoom Scan (Δx, Δy)	<= 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 Δx / Δy (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 to access 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 form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

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

<Considerations Related to Proximity Sensor>

The device supports WWAN, WLAN, and Bluetooth capabilities. It is designed with a proximity sensor which can trigger/not trigger power reduction for WCDMA and LTE on Rear Face and Top Side of EUT for SAR compliance. Others RF capability (WLAN and Bluetooth) have no power reduction. The power levels for all wireless technologies and the power reduction please refer to section 4.6 of this report.

Proximity Sensor Triggering Distances (KDB 616217 D04 §6.2)

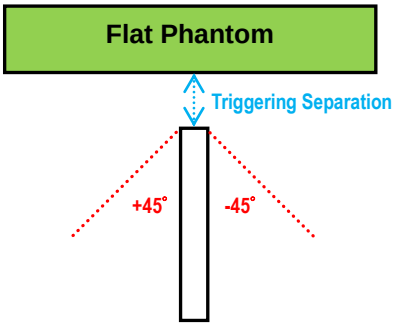
The proximity sensor triggering distance was determined per KDB 616217 for rear face and applicable edge. Summary for power verification per distance was tabulated in the below table.

Output Power Verification in dBm for EUT Top Edge											
Distance (mm)	14	15	16	17	18	19	20	21	22	23	24
WCDMA II	13.6	13.6	13.3	13.6	13.7	13.6	22.6	23.0	22.6	22.6	22.9
WCDMA V	17.8	17.6	17.7	17.8	17.3	17.8	24.7	24.7	24.6	24.6	24.9
LTE 2	13.8	13.4	13.7	13.5	13.6	13.7	22.7	22.5	22.8	22.7	23.0
LTE 4	13.7	13.3	13.5	13.6	13.4	13.5	25.0	24.6	24.5	24.6	24.5
LTE 5	17.6	17.6	17.3	17.7	17.3	17.3	24.7	24.6	24.4	24.2	24.4
LTE 7	13.9	13.4	13.7	13.7	13.7	13.8	24.6	25.0	24.8	24.9	24.5
LTE 12	17.3	17.2	17.6	17.3	17.5	17.5	25.0	24.5	24.8	25.0	24.9
LTE 13	17.4	17.5	17.4	17.6	17.7	17.7	24.5	24.7	25.0	24.9	24.6
LTE 25	13.5	13.4	13.7	13.5	13.8	13.7	22.5	22.6	23.0	22.9	22.8
LTE 26	17.9	18.0	17.5	17.7	17.9	17.7	24.5	24.7	24.9	24.9	24.4
LTE 30	13.4	13.8	13.8	13.5	13.6	13.6	24.3	24.2	24.3	24.0	23.9
LTE 66	13.7	13.4	13.4	13.4	13.4	13.9	24.3	24.5	24.8	24.3	24.3
LTE 38	13.6	13.7	14.0	13.7	14.0	13.6	23.8	24.3	23.9	23.8	24.0
LTE 41	13.6	13.6	13.7	14.0	13.9	13.5	23.8	24.2	24.0	24.2	24.2

Output Power Verification in dBm for EUT Rear Face											
Distance (mm)	12	13	14	15	16	17	18	19	20	21	22
WCDMA II	13.5	13.4	13.5	13.4	13.6	13.6	22.7	22.7	22.6	22.7	22.5
WCDMA V	17.7	17.5	17.4	17.7	17.4	17.7	24.6	24.8	24.6	24.6	24.8
LTE 2	13.4	13.9	13.9	13.9	13.7	13.8	22.8	22.7	22.7	22.7	22.7
LTE 4	13.7	13.7	13.3	13.6	13.3	13.3	24.8	24.6	24.9	24.6	24.6
LTE 5	17.5	17.3	17.4	17.5	17.3	17.8	24.2	24.5	24.5	24.5	24.7
LTE 7	13.7	13.8	13.7	13.9	13.6	13.9	24.5	24.6	25.0	25.0	24.5
LTE 12	17.4	17.5	17.2	17.4	17.6	17.6	25.0	25.0	24.6	24.5	24.5
LTE 13	17.5	17.2	17.3	17.6	17.6	17.6	24.6	24.9	24.7	24.8	24.5
LTE 25	13.6	13.6	13.4	13.6	13.9	13.8	22.9	23.0	22.5	22.8	22.5
LTE 26	17.7	17.6	17.9	17.6	17.5	17.9	24.7	24.8	24.5	24.5	24.7
LTE 30	13.8	13.4	13.5	13.9	13.4	13.4	24.2	24.1	24.0	24.3	24.0
LTE 66	13.7	13.6	13.5	13.6	13.4	13.8	24.6	24.6	24.7	24.6	24.7
LTE 38	13.7	13.5	13.5	13.7	13.5	13.5	24.3	24.1	24.1	23.9	24.3
LTE 41	13.7	13.8	14.0	13.6	13.6	13.5	24.3	24.3	24.2	24.0	24.1

Proximity Sensor Tilt Angle Influences (KDB 616217 D04 §6.4)

The proximity sensor tilt angle influence was determined per KDB 616217 for applicable edge. Summary for proximity sensor tilt angle influence is shown in below.



Orientation	Separation Distance (mm)	Tilt Angle										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
Top Edge	19	On	On	On	On	On	On	On	On	On	On	On

Summary for Proximity Sensor Triggering Test

According to the procedures noticed in KDB 616217 D04, the proximity sensor triggering distance is 17 mm for EUT Rear Face, and 19 mm for Top Side. The separation distance of 19 mm determined by the smallest triggering distance on Top Side is used to access the tilt angle influence and the sensor does not release during ±45 degree. Therefore, the smallest separation distance for tilt angle influence is 19 mm for the Top Side. The conservation triggering distances based on the separation distance for the sensor trigger / not triggered as EUT with power reduction at 0 mm, and EUT without power reduction at 16 mm for EUT Rear Face, and 18 mm for Top Side were used to test SAR.

The power reduction depends on the proximity sensor input. For a steady SAR test, the power reduction was enabled or disabled manually by engineering software during SAR testing.

<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	β_{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 Δ_{CQI} = 30/15 with β_{HS} = 30/15 * β_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 Δ_{NACK} = 30/15 with β_{HS} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{HS} = 24/15 * β_c.
Note 3: CM = 1 for β_c/β_d = 12/15, β_{HS}/β_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 β_c = 11/15 and β_d = 15/15.

Release 6 HSUPA 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	β_{HS} (1)	β_{ec}	β_{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_{ed}1: 47/15 β_{ed}2: 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 Δ_{CQI} = 30/15 with β_{HS} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{HS} = 5/15 * β_c.
Note 2: CM = 1 for β_c/β_d = 12/15, β_{HS}/β_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 β_c = 10/15 and β_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	β_c (3)	β_d	β_{HS} (1)	β_{ec}	β_{ed} (4) (2xSF2)	β_{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_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{HS} = 30/15 * β_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 β_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.

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 16QAM 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 16QAM 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**		
25	**V**	**V**	**V**	**V**	**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**

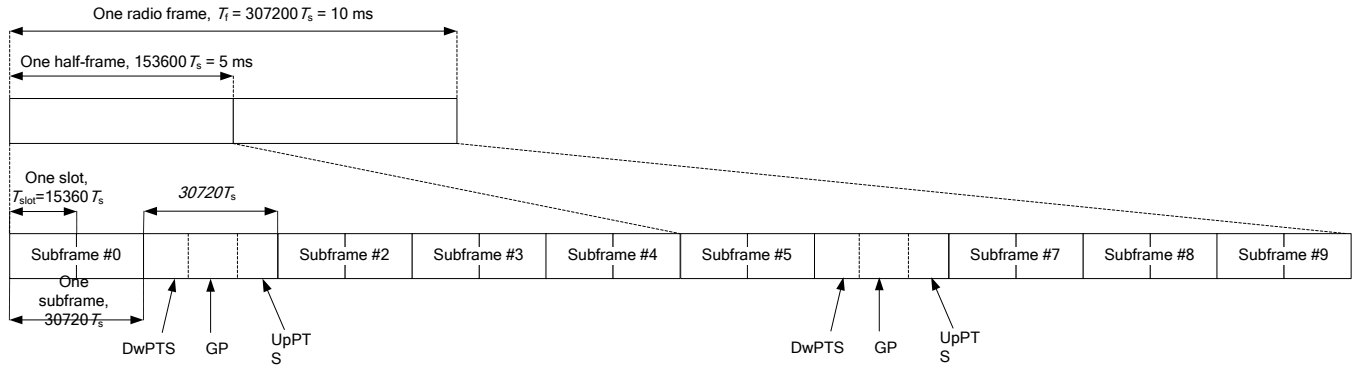
Note: MPR is according to the standard and implemented in the circuit (mandatory).

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.

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	4384 • Ts	5120 • Ts
5	6592 • Ts	4384 • Ts	5120 • Ts	20480 • 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

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%.

LTE Downlink Carrier Aggregation (CA) Setup Configurations

LTE Carrier Aggregation (CA) was defined in 3GPP release 10 and higher. The LTE device in CA mode has one Primary Component Carrier (PCC) and one or more Secondary Component Carriers (SCC). PCC acts as the anchor carrier and can optionally cross-schedule data transmission on SCC. The RRC connection is only handled by one cell, the PCC for downlink and uplink communications. After making a data connection to the PCC, the LTE device adds the SCC on the downlink only. For network enhancement features, it does not support Wi-Fi Offloading, Enhanced SC-FDMA, Uplink MIMO, CoMP, HetNet, Relay, SON, Cross-Carrier Scheduling, eICIC, Enhanced Downlink MIMO, MBMS, M2M/D2D. All uplink communications and acknowledgements remain identical to release 8 specifications on the PCC. The combinations of downlink carrier aggregation supported by this device are listed in below.

LTE CA Configurations and Bandwidth Combination Sets defined for Intra-Band Contiguous CA

Downlink CA Configuration	Component carriers in order of increasing carrier frequency			Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
	Channel bandwidths for carrier-1 (MHz)	Channel bandwidths for carrier-2 (MHz)	Channel bandwidths for carrier-3 (MHz)		
CA_7C	15	15		40	0
	20	20			
	10	20		40	1
	15	15, 20			
	20	10, 15, 20			
	15	10, 15		40	2
	20	15, 20			
	15	15			
	20	10, 15, 20			
CA_41C	10	20		40	0
	15	15, 20			
	20	10, 15, 20			
	5, 10	20		40	1
	15	15, 20			
	20	5, 10, 15, 20			
	10	15, 20		40	2
	15	10, 15, 20			
	20	10, 15, 20			
	10	20		40	3
	20	20			

LTE CA Configurations and Bandwidth Combination Sets defined for Intra-Band Non-Contiguous CA

Downlink CA Configuration	Component Carriers in order of Increasing Carrier Frequency			Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
	Channel Bandwidths for Carrier-1 (MHz)	Channel Bandwidths for Carrier-2 (MHz)	Channel Bandwidths for Carrier-3 (MHz)		
CA_2A-2A	5, 10, 15, 20	5, 10, 15, 20		40	0
CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20		40	0
	5, 10	5, 10		20	1
CA_25A-25A	5, 10	5, 10		20	0
	5, 10, 15, 20	5, 10, 15, 20		40	1
CA_66A-66A	5, 10, 15, 20	5, 10, 15, 20		40	0
CA_66A-66C	5, 10, 15, 20	Refer to CA_66C (BCS0)		60	0
	Refer to CA_66C (BCS0)				

LTE CA Configurations and Bandwidth Combination Sets defined for Inter-Band CA (Two Bands)

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-4A	2	1.4, 3, 5, 10, 15, 20	40	0
	4	5, 10, 15, 20		
	2	5, 10	20	1
	4	5, 10		
	2	5, 10, 15, 20	40	2
	4	5, 10, 15, 20		
CA_2A-5A	2	5, 10, 15, 20	30	0
	5	5, 10		
	2	5, 10	20	1
	5	5, 10		
CA_2A-12A	2	5, 10, 15, 20	30	0
	12	5, 10		
	2	5, 10, 15, 20	30	1
	12	3, 5, 10		
	2	5, 10	20	2
	12	5, 10		
CA_2A-2A-12A	2	Refer to CA_2A-2A (BCS0)	50	0
	12	5, 10		
CA_2A-13A	2	5, 10, 15, 20	30	0
	13	10		
	2	5, 10	20	1
	13	10		
CA_2A-2A-13A	2	Refer to CA_2A-2A (BCS0)	50	0
	13	10		
CA_2A-29A	2	5, 10	20	0
	29	3, 5, 10		
	2	5, 10	20	1
	29	5, 10		
	2	5, 10, 15, 20	30	2
	29	5, 10		
CA_2A-30A	2	5, 10, 15, 20	30	0
	30	5, 10		
CA_2A-2A-30A	2	Refer to CA_2A-2A (BCS0)	50	0
	30	5, 10		
CA_2A-66A	2	1.4, 3, 5, 10, 15, 20	40	0
	66	5, 10, 15, 20		
	2	5, 10	20	1
	66	5, 10		
	2	5, 10, 15, 20	40	2
	66	5, 10, 15, 20		

CA_2A-66A-66A	2	5, 10, 15, 20	60	0
	66	Refer to CA_66A-66A (BCS0)		
CA_4A-5A	4	5, 10	20	0
	5	5, 10		
	4	5, 10, 15, 20	30	1
	5	5, 10		
CA_4A-12A	4	1.4, 3, 5, 10	20	0
	12	5, 10		
	4	1.4, 3, 5, 10, 15, 20	30	1
	12	5, 10		
	4	5, 10, 15, 20	30	2
	12	3, 5, 10		
	4	5, 10	20	3
	12	5, 10		
	4	5, 10, 15, 20	30	4
	12	5, 10		
	4	5, 10, 15	20	5
	12	5		
CA_4A-4A-12A	4	Refer to CA_4A-4A (BCS0)	50	0
	12	5, 10		
CA_4A-13A	4	5, 10, 15, 20	30	0
	13	10		
	4	5, 10	20	1
	13	10		
CA_4A-4A-13A	4	Refer to CA_4A-4A (BCS0)	50	0
	13	10		
CA_4A-29A	4	5, 10	20	0
	29	3, 5, 10		
	4	5, 10	20	1
	29	5, 10		
	4	5, 10, 15, 20	30	2
	29	5, 10		
CA_4A-30A	4	5, 10, 15, 20	30	0
	30	5, 10		
CA_5A-30A	5	5, 10	20	0
	30	5, 10		
CA_5A-66A	5	5, 10	30	0
	66	5, 10, 15, 20		
CA_5A-66A-66A	5	5, 10	50	0
	66	Refer to CA_66A-66A (BCS0)		
CA_12A-30A	12	5, 10	20	0
	30	5, 10		

CA_12A-66A	12	5, 10	20	0
	66	1.4, 3, 5,10		
	12	5, 10	30	1
	66	1.4, 3, 5, 10, 15, 20		
	12	3, 5, 10	30	2
	66	5, 10, 15, 20		
	12	5, 10	20	3
	66	5, 10		
	12	5, 10	30	4
	66	5, 10, 15, 20		
	12	5	20	5
	66	5, 10, 15		
CA_12A-66A-66A	12	5, 10	50	0
	66	Refer to CA_66A-66A (BCS0)		
CA_13A-66A	13	5, 10	30	0
	66	5, 10, 15, 20		
CA_13A-66A-66A	13	5, 10	50	0
	66	Refer to CA_66A-66A (BCS0)		
CA_25A-26A	25	3, 5, 10, 15, 20	35	0
	26	1.4, 3, 5, 10, 15		
	25	3, 5, 10	20	1
	26	3, 5, 10		
	25	5, 10	20	2
	26	5, 10		
CA_25A-41A	25	5, 10, 15, 20	40	0
	41	5, 10, 15, 20		
CA_29A-30A	29	5, 10	20	0
	30	5, 10		
CA_29A-66A	29	5, 10	30	0
	66	5, 10, 15, 20		
CA_30A-66A	30	5, 10	30	0
	66	5, 10, 15, 20		

LTE CA Configurations and Bandwidth Combination Sets defined for Inter-Band CA (Three Bands)

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-4A-5A	2	5, 10, 15,20	50	0
	4	5, 10, 15,20		
	5	5, 10		
CA_2A-4A-12A	2	5, 10, 15, 20	50	0
	4	5, 10, 15, 20		
	12	5, 10		
CA_2A-4A-13A	2	5, 10, 15, 20	50	0
	4	5, 10, 15, 20		
	13	10		
CA_2A-5A-30A	2	Refer to CA_2C (BCS0)	60	0
	5	5, 10		
	30	5, 10		
CA_2A-12A-30A	2	5, 10, 15, 20	40	0
	12	5, 10		
	30	5, 10		
CA_2A-12A-66A	2	5, 10, 15, 20	50	0
	12	5, 10		
	66	5, 10, 15, 20		
	2	5, 10	40	1
	12	5, 10		
	66	5, 10, 15, 20		
CA_2A-13A-66A	2	5, 10, 15, 20	50	0
	13	5, 10		
	66	5, 10, 15, 20		
CA_2A-29A-30A	2	5, 10, 15, 20	40	0
	29	5, 10		
	30	5, 10		
CA_4A-5A-30A	4	5, 10, 15, 20	40	0
	5	5, 10		
	30	5, 10		
CA_4A-12A-30A	4	5, 10, 15, 20	40	0
	12	5, 10		
	30	5, 10		
CA_4A-29A-30A	4	5, 10, 15, 20	40	0
	29	5, 10		
	30	5, 10		

<SAR Test Exclusion Evaluations for LTE Downlink CA>

According to Nov 2017 TCB Workshop, SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number of component carriers (CCs) supported by the product implementation. The downlink Carrier Aggregation configurations are tabulated in separate columns. DL CA would be listed in the columns corresponding to Intra Band contiguous, Intra Band Non-contiguous, 2bands/2CCs, 2bands/3CCs and 3bands/3CCs. The CA/CC combinations in each columns are sorted so that frequency bands listed in subsequent columns on each row are ascending subsets, as illustrated below; i.e., columns to the right correspond to increasing number of frequency bands and CCs.

Configure	Intra Band			Inter Band		
	Contiguous	2CC Non-Contiguous	3CC Non-Contiguous	2 Bands / 2CC	2 Bands / 3CC	3 Bands / 3CC
				CA_2A-5A		CA_2A-4A-5A
				CA_4A-5A		
		CA_2A-2A		CA_2A-4A	CA_2A-2A-12A	CA_2A-4A-12A
				CA_2A-12A		
				CA_2A-13A	CA_2A-2A-13A	CA_2A-4A-13A
				CA_4A-13A	CA_4A-4A-13A	
				CA_2A-30A	CA_2A-2A-30A	CA_2A-5A-30A
						CA_2A-12A-30A
				CA_2A-66A	CA_2A-66A-66A	CA_2A-12A-66A
				CA_12A-66A	CA_12A-66A-66A	
				CA_13A-66A	CA_13A-66A-66A	CA_2A-13A-66A
				CA_2A-29A		CA_2A-29A-30A
				CA_30A-29A		
				CA_4A-30A		CA_4A-5A-30A
				CA_5A-30A		
		CA_4A-4A		CA_4A-12A	CA_4A-4A-12A	CA_4A-12A-30A
				CA_12A-30A		
				CA_4A-29A		CA_4A-29A-30A
				CA_5A-66A	CA_5A-66A-66A	
				CA_25A-26A		
				CA_25A-41A		
				CA_30A-66A		
				CA_66A-29A		
		CA_66A-66A	CA_66A-66C			
		CA_25A-25A				
	CA_7C					
	CA_41C					

• Only yellow highlighted cells need power measurement.

<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.

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.

<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.
Duty Factor = Pulse Width / Total Period = 2.944ms /3.751ms = 78.5 %

4.2 EUT Testing Position

4.2.1 Body Exposure Conditions

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.

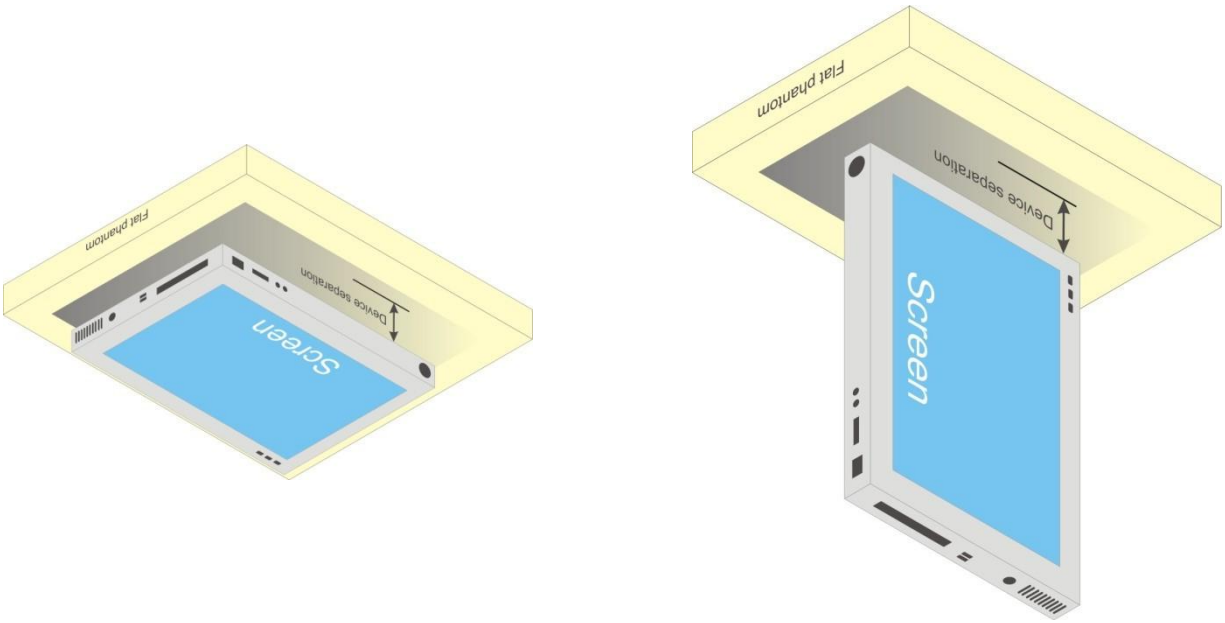


Fig-4.1 Illustration for Tablet Setup

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.

1. For the test separation distance <= 50 mm

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

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

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

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

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

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

<For WWAN Main>

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)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?
A		B	C1	D1	E1	C2	D2	E2	C3	D3	E3	C4	D4	E4	C5	D5	E5
WCDMA II	23	199.53	0	55.12	Yes	0	55.12	Yes	165	1259 mW	No	0	55.12	Yes	162	1229 mW	No
WCDMA V	25	316.23	0	58.19	Yes	0	58.19	Yes	165	812 mW	No	0	58.19	Yes	162	795 mW	No
LTE 2	23	199.53	0	55.14	Yes	0	55.14	Yes	165	1259 mW	No	0	55.14	Yes	162	1229 mW	No
LTE 4	25	316.23	0	83.77	Yes	0	83.77	Yes	165	1263 mW	No	0	83.77	Yes	162	1233 mW	No
LTE 5	25	316.23	0	58.25	Yes	0	58.25	Yes	165	813 mW	No	0	58.25	Yes	162	796 mW	No
LTE 7	25	316.23	0	101.34	Yes	0	101.34	Yes	165	1244 mW	No	0	101.34	Yes	162	1214 mW	No
LTE 12	25	316.23	0	53.49	Yes	0	53.49	Yes	165	726 mW	No	0	53.49	Yes	162	711 mW	No
LTE 13	25	316.23	0	56.02	Yes	0	56.02	Yes	165	771 mW	No	0	56.02	Yes	162	755 mW	No
LTE 25	23	199.53	0	55.21	Yes	0	55.21	Yes	165	1258 mW	No	0	55.21	Yes	162	1228 mW	No
LTE 26	25	316.23	0	58.25	Yes	0	58.25	Yes	165	813 mW	No	0	58.25	Yes	162	796 mW	No
LTE 30	24.5	281.84	0	85.72	Yes	0	85.72	Yes	165	1249 mW	No	0	85.72	Yes	162	1219 mW	No
LTE 38	24.5	281.84	0	91.20	Yes	0	91.20	Yes	165	1243 mW	No	0	91.20	Yes	162	1213 mW	No
LTE 41	24.5	282	0	92.41	Yes	0	92.41	Yes	165	1242 mW	No	0	92.41	Yes	162	1212 mW	No
LTE 66	25	316.23	0	84.36	Yes	0	84.36	Yes	165	1262 mW	No	0	84.36	Yes	162	1232 mW	No

<For WLAN MIMO>

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)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?
A		B	C1	D1	E1	C2	D2	E2	C3	D3	E3	C4	D4	E4	C5	D5	E5
WLAN 2.4G	17.5	56.23	0	17.65	**Yes**	78	376 mW	No	76	356 mW	No	0	17.65	**Yes**	162	1216 mW	No
WLAN 5.2G	16	39.81	0	18.23	**Yes**	78	346 mW	No	76	326 mW	No	0	18.23	**Yes**	162	1186 mW	No
WLAN 5.3G	16	39.81	0	18.36	**Yes**	78	345 mW	No	76	325 mW	No	0	18.25	**Yes**	162	1185 mW	No
WLAN 5.6G	16	39.81	0	19.01	**Yes**	78	343 mW	No	76	323 mW	No	0	19.01	**Yes**	162	1183 mW	No
WLAN 5.8G	16	39.81	0	19.22	**Yes**	78	342 mW	No	76	322 mW	No	0	19.22	**Yes**	162	1182 mW	No

<For Bluetooth>

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)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?	Ant. to Surface (mm)	Power Threshold (mW)	Require SAR Testing?
A		B	C1	D1	E1	C2	D2	E2	C3	D3	E3	C4	D4	E4	C5	D5	E5
BT	4.5	2.82	0	0.89	No	153	1125 mW	No	76	356 mW	No	0	0.89	No	162	1216 mW	No

4.3 Tissue Verification

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

Test Date	Tissue Type	Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Aug. 01, 2018	Body	750	23.2	0.973	56.003	0.96	55.5	1.35	0.91
Aug. 09, 2018	Body	750	23.5	0.969	54.182	0.96	55.5	0.94	-2.37
Jul. 31, 2018	Body	835	23.1	0.979	56.29	0.97	55.2	0.93	1.97
Aug. 01, 2018	Body	835	23.2	1.008	55.734	0.97	55.2	3.92	0.97
Aug. 09, 2018	Body	835	23.5	1.014	57.021	0.97	55.2	4.54	3.30
Jul. 28, 2018	Body	1750	23.3	1.437	52.045	1.49	53.4	-3.56	-2.54
Aug. 01, 2018	Body	1750	23.2	1.448	53.773	1.49	53.4	-2.82	0.70
Aug. 08, 2018	Body	1750	23.2	1.448	51.655	1.49	53.4	-2.82	-3.27
Jul. 31, 2018	Body	1900	23.3	1.57	51.27	1.52	53.3	3.29	-3.81
Aug. 08, 2018	Body	1900	23.2	1.563	51.359	1.52	53.3	2.83	-3.64
Aug. 01, 2018	Body	2300	23.2	1.865	52.411	1.81	52.9	3.04	-0.92
Aug. 08, 2018	Body	2300	23.2	1.858	51.768	1.81	52.9	2.65	-2.14
Jul. 24, 2018	Body	2450	23.1	2.008	50.638	1.95	52.7	2.97	-3.91
Aug. 09, 2018	Body	2450	23.3	1.969	51.42	1.95	52.7	0.97	-2.43
Aug. 14, 2018	Body	2450	23.5	2.024	50.609	1.95	52.7	3.79	-3.97
Aug. 15, 2018	Body	2450	23.3	2.042	51.361	1.95	52.7	4.72	-2.54
Jul. 28, 2018	Body	2600	23.3	2.168	50.887	2.16	52.5	0.37	-3.07
Aug. 08, 2018	Body	2600	23.2	2.216	50.933	2.16	52.5	2.59	-2.98
Jul. 24, 2018	Body	5250	23.1	5.29	50.923	5.36	48.9	-1.31	4.14
Aug. 09, 2018	Body	5250	23.3	5.468	47.637	5.36	48.9	2.01	-2.58
Jul. 24, 2018	Body	5600	23.1	5.884	50.283	5.77	48.5	1.98	3.68
Aug. 09, 2018	Body	5600	23.3	5.958	46.934	5.77	48.5	3.26	-3.23
Jul. 24, 2018	Body	5800	23.1	6.185	49.782	6	48.2	3.08	3.28
Aug. 09, 2018	Body	5800	23.3	6.235	46.547	6	48.2	3.92	-3.43

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 ℃.

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
Aug. 01, 2018	3971	Body	750	0.973	56.003	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 09, 2018	3898	Body	750	0.969	54.182	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 31, 2018	3971	Body	835	0.979	56.29	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 01, 2018	3971	Body	835	1.008	55.734	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 09, 2018	3898	Body	835	1.014	57.021	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 28, 2018	7346	Body	1750	1.437	52.045	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 01, 2018	3971	Body	1750	1.448	53.773	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 08, 2018	3898	Body	1750	1.448	51.655	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 31, 2018	3971	Body	1900	1.57	51.27	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 08, 2018	3898	Body	1900	1.563	51.359	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 01, 2018	3971	Body	2300	1.865	52.411	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 08, 2018	3898	Body	2300	1.858	51.768	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 24, 2018	7346	Body	2450	2.008	50.638	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 09, 2018	3898	Body	2450	1.969	51.42	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 14, 2018	3971	Body	2450	2.024	50.609	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 15, 2018	7346	Body	2450	2.042	51.361	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 28, 2018	7346	Body	2600	2.168	50.887	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 08, 2018	3898	Body	2600	2.216	50.933	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 24, 2018	3971	Body	5250	5.29	50.923	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 09, 2018	3898	Body	5250	5.468	47.637	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 24, 2018	3971	Body	5600	5.884	50.283	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 09, 2018	3898	Body	5600	5.958	46.934	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 24, 2018	3971	Body	5800	6.185	49.782	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 09, 2018	3898	Body	5800	6.235	46.547	Pass	Pass	Pass	OFDM	N/A	Pass

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
Aug. 01, 2018	Body	750	8.72	2.15	8.60	-1.38	1013	3971	1431
Aug. 09, 2018	Body	750	8.72	2.33	9.32	6.88	1013	3898	1277
Jul. 31, 2018	Body	835	9.61	2.27	9.08	-5.52	4d121	3971	1431
Aug. 01, 2018	Body	835	9.61	2.33	9.32	-3.02	4d121	3971	1431
Aug. 09, 2018	Body	835	9.61	2.38	9.52	-0.94	4d121	3898	1277
Jul. 28, 2018	Body	1750	37.10	8.97	35.88	-3.29	1055	7346	679
Aug. 01, 2018	Body	1750	37.10	9.08	36.32	-2.10	1055	3971	1431
Aug. 08, 2018	Body	1750	37.10	9.04	36.16	-2.53	1055	3898	1277
Jul. 31, 2018	Body	1900	40.20	10.4	41.60	3.48	5d036	3971	1431
Aug. 08, 2018	Body	1900	40.20	9.8	39.20	-2.49	5d036	3898	1277
Aug. 01, 2018	Body	2300	47.30	11.3	45.20	-4.44	1004	3971	1431
Aug. 08, 2018	Body	2300	47.30	11.4	45.60	-3.59	1004	3898	1277
Jul. 24, 2018	Body	2450	49.70	12.1	48.40	-2.62	737	7346	679
Aug. 09, 2018	Body	2450	49.70	11.9	47.60	-4.23	737	3898	1277
Aug. 14, 2018	Body	2450	49.70	12.8	51.20	3.02	737	3971	1431
Aug. 15, 2018	Body	2450	49.70	12.4	49.60	-0.20	737	7346	679
Jul. 28, 2018	Body	2600	54.30	13.5	54.00	-0.55	1020	7346	679
Aug. 08, 2018	Body	2600	54.30	13.6	54.40	0.18	1020	3898	1277
Jul. 24, 2018	Body	5250	74.90	7.76	77.60	3.60	1019	3971	1431
Aug. 09, 2018	Body	5250	74.90	7.94	79.40	6.01	1019	3898	1277
Jul. 24, 2018	Body	5600	79.30	8.4	84.00	5.93	1019	3971	1431
Aug. 09, 2018	Body	5600	79.30	8.47	84.70	6.81	1019	3898	1277
Jul. 24, 2018	Body	5800	75.20	7.63	76.30	1.46	1019	3971	1431
Aug. 09, 2018	Body	5800	75.20	7.69	76.90	2.26	1019	3898	1277

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.

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.

Mode	WCDMA Band II (without Power Reduction)	WCDMA Band II (with Power Reduction)	Power Reduction (dB)
RMC 12.2K	23.0	14.0	9.0
HSDPA / HSUPA / DC-HSDPA	22.0	13.0	9.0

Mode	WCDMA Band V (without Power Reduction)	WCDMA Band V (with Power Reduction)	Power Reduction (dB)
RMC 12.2K	25.0	18.0	7.0
HSDPA / HSUPA / DC-HSDPA	24.0	17.0	7.0

Mode	LTE 2 (without Power Reduction)	LTE 2 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	23.0	14.0	9.0

Mode	LTE 4 (without Power Reduction)	LTE 4 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	14.0	11.0

Mode	LTE 5 (without Power Reduction)	LTE 5 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	18.0	7.0

Mode	LTE 7 (without Power Reduction)	LTE 7 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	14.0	11.0

Mode	LTE 12 (without Power Reduction)	LTE 12 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	18.0	7.0

Mode	LTE 13 (without Power Reduction)	LTE 13 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	18.0	7.0

Mode	LTE 25 (without Power Reduction)	LTE 25 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	23.0	14.0	9.0

Mode	LTE 26 (without Power Reduction)	LTE 26 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	18.0	7.0

Mode	LTE 30 (without Power Reduction)	LTE 30 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	24.5	14.0	10.5

Mode	LTE 38 (without Power Reduction)	LTE 38 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	24.5	14.0	10.5

Mode	LTE 41 (without Power Reduction)	LTE 41 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	24.5	14.0	10.5

Mode	LTE 66 (without Power Reduction)	LTE 66 (with Power Reduction)	Power Reduction (dB)
Maximum Target Power	25.0	14.0	11.0

Mode	Tx Antenna	2.4G WLAN EUT without Power Reduction (Cell off)	2.4G WLAN EUT with Power Reduction (Cell on)	Power Reduction (dB)
802.11b	MIMO Main	Ch1~11:14.5 Ch12~13:14.0	Ch1~11:9.5 Ch12~13:9.5	Ch1~11:5.0 Ch12~13:4.5
	MIMO Aux	Ch1~11:14.5 Ch12~13:14.0	Ch1~11:9.5 Ch12~13:9.5	Ch1~11:5.0 Ch12~13:4.5
	MIMO Main+Aux	Ch1~11:17.5 Ch12~13:17.0	Ch1~11:12.5 Ch12~13:12.5	Ch1~11:5.0 Ch12~13:4.5
802.11g	MIMO Main	Ch1~11:14.5 Ch12:12.5 Ch13:4.0	Ch1~11:9.5 Ch12:9.5 Ch13:4.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
	MIMO Aux	Ch1~11:14.5 Ch12:12.5 Ch13:4.0	Ch1~11:9.5 Ch12:9.5 Ch13:4.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
	MIMO Main+Aux	Ch1~11:17.5 Ch12:15.5 Ch13:7.0	Ch1~11:12.5 Ch12:12.5 Ch13:7.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
802.11n HT20	MIMO Main	Ch1~11:14.5 Ch12:12.5 Ch13:4.0	Ch1~11:9.5 Ch12:9.5 Ch13:4.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
	MIMO Aux	Ch1~11:14.5 Ch12:12.5 Ch13:4.0	Ch1~11:9.5 Ch12:9.5 Ch13:4.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
	MIMO Main+Aux	Ch1~11:17.5 Ch12:15.5 Ch13:7.0	Ch1~11:12.5 Ch12:12.5 Ch13:7.0	Ch1~11:5.0 Ch12:3.0 Ch13:0.0
802.11n HT40	MIMO Main	Ch3:13.0 Ch6:14.5 Ch9:8.5 Ch10:11.5 Ch11:2.0	Ch3:9.5 Ch6:9.5 Ch9:8.5 Ch10:9.5 Ch11:2.0	Ch3:3.5 Ch6:5.0 Ch9:0.0 Ch10:2.0 Ch11:0.0
	MIMO Aux	Ch3:13.0 Ch6:14.5 Ch9:8.5 Ch10:11.5 Ch11:2.0	Ch3:9.5 Ch6:9.5 Ch9:8.5 Ch10:9.5 Ch11:2.0	Ch3:3.5 Ch6:5.0 Ch9:0.0 Ch10:2.0 Ch11:0.0
	MIMO Main+Aux	Ch3:16.0 Ch6:17.5 Ch9:11.5 Ch10:14.5 Ch11:5.0	Ch3:12.5 Ch6:12.5 Ch9:11.5 Ch10:12.5 Ch11:5.0	Ch3:3.5 Ch6:5.0 Ch9:0.0 Ch10:2.0 Ch11:0.0

Mode	Tx Antenna	5.2G WLAN EUT without Power Reduction (Cell off)	5.2G WLAN EUT with Power Reduction (Cell on)	Power Reduction (dB)
802.11a	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT80	MIMO Main	12.5	8.5	4.0
	MIMO Aux	12.5	8.5	4.0
	MIMO Main+Aux	15.5	11.5	4.0

Mode	Tx Antenna	5.3G WLAN EUT without Power Reduction (Cell off)	5.3G WLAN EUT with Power Reduction (Cell on)	Power Reduction (dB)
802.11a	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT80	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5

Mode	Tx Antenna	5.6G WLAN EUT without Power Reduction (Cell off)	5.6G WLAN EUT with Power Reduction (Cell on)	Power Reduction (dB)
802.11a	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT80	MIMO Main	Ch106:11.0 Ch122:13.0 Ch138:13.0	Ch106:8.5 Ch122:8.5 Ch138:8.5	Ch106:2.5 Ch122:4.5 Ch138:4.5
	MIMO Aux	Ch106:11.0 Ch122:13.0 Ch138:13.0	Ch106:8.5 Ch122:8.5 Ch138:8.5	Ch106:2.5 Ch122:4.5 Ch138:4.5
	MIMO Main+Aux	Ch106:14.0 Ch122:16.0 Ch138:16.0	Ch106:11.5 Ch122:11.5 Ch138:11.5	Ch106:2.5 Ch122:4.5 Ch138:4.5

Mode	Tx Antenna	5.8G WLAN EUT without Power Reduction (Cell off)	5.8G WLAN EUT with Power Reduction (Cell on)	Power Reduction (dB)
802.11a	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT20	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11n HT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT40	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5
802.11ac VHT80	MIMO Main	13.0	8.5	4.5
	MIMO Aux	13.0	8.5	4.5
	MIMO Main+Aux	16.0	11.5	4.5

Mode	2.4G Bluetooth
Bluetooth DH	4.5
Bluetooth 2DH	4.5
Bluetooth 3DH	4.5
Bluetooth LE	4.5

4.6.2 Measured Conducted Power Result

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

Band	WCDMA Band II			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	826.4	836.4	846.6	
EUT without Power Reduction (P-Sensor NOT Triggered)							
RMC 12.2K	22.88	22.96	**22.99**	24.97	24.81	**24.99**	-
HSDPA Subtest-1	21.88	21.96	21.99	23.90	23.74	23.92	0
HSDPA Subtest-2	21.87	21.95	21.98	23.88	23.72	23.90	0
HSDPA Subtest-3	21.40	21.48	21.48	23.47	23.31	23.49	0.5
HSDPA Subtest-4	21.39	21.47	21.47	23.46	23.30	23.48	0.5
DC-HSDPA Subtest-1	21.79	21.87	21.90	23.79	23.63	23.81	0
DC-HSDPA Subtest-2	21.78	21.86	21.89	23.77	23.61	23.79	0
DC-HSDPA Subtest-3	21.31	21.39	21.39	23.36	23.20	23.38	0.5
DC-HSDPA Subtest-4	21.30	21.38	21.38	23.35	23.19	23.37	0.5
HSUPA Subtest-1	21.88	21.96	21.99	23.97	23.91	23.99	0
HSUPA Subtest-2	19.80	19.88	19.91	21.94	21.88	21.96	2
HSUPA Subtest-3	20.84	20.92	20.95	22.91	22.85	22.93	1
HSUPA Subtest-4	19.75	19.83	19.86	21.84	21.78	21.86	2
HSUPA Subtest-5	21.91	21.96	21.98	23.86	23.80	23.88	0
EUT with Power Reduction (P-Sensor Triggered)							
RMC 12.2K	13.67	13.61	**13.75**	17.66	17.53	**17.82**	-
HSDPA Subtest-1	12.60	12.54	12.68	16.69	16.46	16.80	-
HSDPA Subtest-2	12.65	12.59	12.73	16.68	16.48	16.79	-
HSDPA Subtest-3	12.17	12.11	12.25	16.19	15.98	16.22	-
HSDPA Subtest-4	12.14	12.08	12.22	16.19	15.98	16.30	-
DC-HSDPA Subtest-1	12.47	12.41	12.55	16.56	16.33	16.67	-
DC-HSDPA Subtest-2	12.52	12.46	12.60	16.55	16.35	16.66	-
DC-HSDPA Subtest-3	12.04	11.98	12.12	16.06	15.85	16.09	-
DC-HSDPA Subtest-4	12.01	11.95	12.09	16.06	15.85	16.17	-
HSUPA Subtest-1	12.74	12.73	12.88	16.76	16.65	16.93	-
HSUPA Subtest-2	10.84	10.81	10.97	14.70	14.59	14.87	-
HSUPA Subtest-3	11.68	11.61	11.72	15.75	15.64	15.92	-
HSUPA Subtest-4	10.93	10.97	10.99	14.86	14.75	14.98	-
HSUPA Subtest-5	12.73	12.69	12.81	16.81	16.70	16.98	-

- The final reduced power = The reduced power(RMC 12.2K) –MPR, that is, MPR is applied after the power reduction**.**

LTE Band 2																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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	1880	1900				Frequency (MHz)		1857.5	1880	1902.5	
20M	QPSK	1	0	22.89	22.97	**22.99**	0	15M	QPSK	1	0	22.83	22.91	22.93	0
		1	50	22.64	22.72	22.74	0			1	37	22.58	22.66	22.68	0
		1	99	22.58	22.66	22.68	0			1	74	22.52	22.60	22.62	0
		50	0	21.84	21.92	21.94	1			36	0	21.78	21.86	21.88	1
		50	25	21.78	21.86	21.88	1			36	19	21.72	21.80	21.82	1
		50	50	21.68	21.76	21.78	1			36	39	21.62	21.70	21.72	1
		100	0	21.75	21.83	21.85	1			75	0	21.69	21.77	21.79	1
	16QAM	1	0	21.87	21.95	21.97	1		16QAM	1	0	21.81	21.89	21.91	1
		1	50	21.62	21.70	21.72	1			1	37	21.56	21.64	21.66	1
		1	99	21.56	21.64	21.66	1			1	74	21.50	21.58	21.60	1
		50	0	20.82	20.90	20.92	2			36	0	20.76	20.84	20.86	2
		50	25	20.76	20.84	20.86	2			36	19	20.70	20.78	20.80	2
		50	50	20.66	20.74	20.76	2			36	39	20.60	20.68	20.70	2
		100	0	20.73	20.81	20.83	2			75	0	20.67	20.75	20.77	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		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855	1880	1905				Frequency (MHz)		1852.5	1880	1907.5	
10M	QPSK	1	0	22.78	22.86	22.88	0	5M	QPSK	1	0	22.70	22.78	22.80	0
		1	24	22.53	22.61	22.63	0			1	12	22.45	22.53	22.55	0
		1	49	22.47	22.55	22.57	0			1	24	22.39	22.47	22.49	0
		25	0	21.73	21.81	21.83	1			12	0	21.65	21.73	21.75	1
		25	12	21.67	21.75	21.77	1			12	6	21.59	21.67	21.69	1
		25	25	21.57	21.65	21.67	1			12	13	21.49	21.57	21.59	1
		50	0	21.64	21.72	21.74	1			25	0	21.56	21.64	21.66	1
	16QAM	1	0	21.76	21.84	21.86	1		16QAM	1	0	21.68	21.76	21.78	1
		1	24	21.51	21.59	21.61	1			1	12	21.43	21.51	21.53	1
		1	49	21.45	21.53	21.55	1			1	24	21.37	21.45	21.47	1
		25	0	20.71	20.79	20.81	2			12	0	20.63	20.71	20.73	2
		25	12	20.65	20.73	20.75	2			12	6	20.57	20.65	20.67	2
		25	25	20.55	20.63	20.65	2			12	13	20.47	20.55	20.57	2
		50	0	20.62	20.70	20.72	2			25	0	20.54	20.62	20.64	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		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880	1908.5				Frequency (MHz)		1850.7	1880	1909.3	
3M	QPSK	1	0	22.67	22.75	22.77	0	1.4M	QPSK	1	0	22.62	22.70	22.72	0
		1	7	22.42	22.50	22.52	0			1	2	22.37	22.45	22.47	0
		1	14	22.36	22.44	22.46	0			1	5	22.31	22.39	22.41	0
		8	0	21.62	21.70	21.72	1			3	0	21.57	21.65	21.67	0
		8	3	21.56	21.64	21.66	1			3	1	21.51	21.59	21.61	0
		8	7	21.46	21.54	21.56	1			3	3	21.41	21.49	21.51	0
		15	0	21.53	21.61	21.63	1			6	0	21.48	21.56	21.58	1
	16QAM	1	0	21.65	21.73	21.75	1		16QAM	1	0	21.60	21.68	21.70	1
		1	7	21.40	21.48	21.50	1			1	2	21.35	21.43	21.45	1
		1	14	21.34	21.42	21.44	1			1	5	21.29	21.37	21.39	1
		8	0	20.60	20.68	20.70	2			3	0	20.55	20.63	20.65	1
		8	3	20.54	20.62	20.64	2			3	1	20.49	20.57	20.59	1
		8	7	20.44	20.52	20.54	2			3	3	20.39	20.47	20.49	1
		15	0	20.51	20.59	20.61	2			6	0	20.46	20.54	20.56	2

LTE Band 2																
EUT with Power Reduction (P-Sensor Triggered)																
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	1880	1900				Frequency (MHz)		1857.5	1880	1902.5	
20M	QPSK	1	0	13.86	13.81	**13.92**	0	15M	QPSK	1	0	13.83	13.89	13.78	0
		1	50	13.77	13.72	13.83	0			1	37	13.74	13.80	13.69	0
		1	99	13.68	13.63	13.74	0			1	74	13.65	13.71	13.60	0
		50	0	12.91	12.96	12.97	1			36	0	12.88	12.94	12.93	1
		50	25	12.89	12.84	12.95	1			36	19	12.86	12.92	12.81	1
		50	50	12.77	12.72	12.83	1			36	39	12.74	12.80	12.69	1
		100	0	12.93	12.88	12.99	1			75	0	12.90	12.96	12.85	1
	16QAM	1	0	12.89	12.96	12.92	1		16QAM	1	0	12.83	12.86	12.90	1
		1	50	12.84	12.83	12.85	1			1	37	12.78	12.79	12.77	1
		1	99	12.74	12.76	12.77	1			1	74	12.68	12.71	12.70	1
		50	0	11.92	11.89	11.95	2			36	0	11.86	11.89	11.83	2
		50	25	11.90	11.97	11.93	2			36	19	11.84	11.87	11.91	2
		50	50	11.87	11.94	11.90	2			36	39	11.81	11.84	11.88	2
		100	0	11.93	11.98	11.96	2			75	0	11.87	11.90	11.92	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		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855	1880	1905				Frequency (MHz)		1852.5	1880	1907.5	
10M	QPSK	1	0	13.78	13.84	13.73	0	5M	QPSK	1	0	13.73	13.79	13.68	0
		1	24	13.69	13.75	13.64	0			1	12	13.64	13.70	13.59	0
		1	49	13.60	13.66	13.55	0			1	24	13.55	13.61	13.50	0
		25	0	12.83	12.89	12.88	1			12	0	12.78	12.84	12.83	1
		25	12	12.81	12.87	12.76	1			12	6	12.76	12.82	12.71	1
		25	25	12.69	12.75	12.64	1			12	13	12.64	12.70	12.59	1
		50	0	12.85	12.91	12.80	1			25	0	12.80	12.86	12.75	1
	16QAM	1	0	12.80	12.83	12.87	1		16QAM	1	0	12.73	12.76	12.80	1
		1	24	12.75	12.76	12.74	1			1	12	12.68	12.69	12.67	1
		1	49	12.65	12.68	12.67	1			1	24	12.58	12.61	12.60	1
		25	0	11.83	11.86	11.80	2			12	0	11.76	11.79	11.73	2
		25	12	11.81	11.84	11.88	2			12	6	11.74	11.77	11.81	2
		25	25	11.78	11.81	11.85	2			12	13	11.71	11.74	11.78	2
		50	0	11.84	11.87	11.89	2			25	0	11.77	11.80	11.82	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		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880	1908.5				Frequency (MHz)		1850.7	1880	1909.3	
3M	QPSK	1	0	13.70	13.76	13.65	0	1.4M	QPSK	1	0	13.64	13.70	13.59	0
		1	7	13.61	13.67	13.56	0			1	2	13.55	13.61	13.50	0
		1	14	13.52	13.58	13.47	0			1	5	13.46	13.52	13.41	0
		8	0	12.75	12.81	12.80	1			3	0	13.69	13.75	13.74	0
		8	3	12.73	12.79	12.68	1			3	1	13.67	13.73	13.62	0
		8	7	12.61	12.67	12.56	1			3	3	13.55	13.61	13.50	0
		15	0	12.77	12.83	12.72	1			6	0	12.71	12.77	12.66	1
	16QAM	1	0	12.65	12.68	12.72	1		16QAM	1	0	12.58	12.61	12.65	1
		1	7	12.60	12.61	12.59	1			1	2	12.53	12.54	12.52	1
		1	14	12.50	12.53	12.52	1			1	5	12.43	12.46	12.45	1
		8	0	11.68	11.71	11.65	2			3	0	12.61	12.64	12.58	1
		8	3	11.66	11.69	11.73	2			3	1	12.59	12.62	12.66	1
		8	7	11.63	11.66	11.70	2			3	3	12.56	12.59	12.63	1
		15	0	11.69	11.72	11.74	2			6	0	11.62	11.65	11.67	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 4																	
EUT without Power Reduction (P-Sensor NOT Triggered)																	
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	1732.5	1745				Frequency (MHz)		1717.5	1732.5	1747.5		
20M	QPSK	1	0	24.37	24.96	**24.98**	0	15M	QPSK	1	0	24.32	24.91	24.93	0	
		1	50	24.12	24.71	24.73	0			1	37	24.07	24.66	24.68	0	
		1	99	24.03	24.62	24.64	0			1	74	23.98	24.57	24.59	0	
		50	0	23.28	23.87	23.89	1			36	0	23.23	23.82	23.84	1	
		50	25	23.19	23.78	23.80	1			36	19	23.14	23.73	23.75	1	
		50	50	23.12	23.71	23.73	1			36	39	23.07	23.66	23.68	1	
		100	0	23.19	23.78	23.80	1			75	0	23.14	23.73	23.75	1	
	16QAM	1	0	23.39	23.98	24.00	1		16QAM	1	0	23.34	23.93	23.95	1	
		1	50	23.14	23.73	23.75	1			1	37	23.09	23.68	23.70	1	
		1	99	23.05	23.64	23.66	1			1	74	23.00	23.59	23.61	1	
		50	0	22.30	22.89	22.91	2			36	0	22.25	22.84	22.86	2	
		50	25	22.21	22.80	22.82	2			36	19	22.16	22.75	22.77	2	
		50	50	22.14	22.73	22.75	2			36	39	22.09	22.68	22.70	2	
		100	0	22.21	22.80	22.82	2			75	0	22.16	22.75	22.77	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		20000	20175	20350				Channel		19975	20175	20375		
		Frequency (MHz)		1715	1732.5	1750				Frequency (MHz)		1712.5	1732.5	1752.5		
10M	QPSK	1	0	24.29	24.88	24.90	0	5M	QPSK	1	0	24.23	24.82	24.84	0	
		1	24	24.04	24.63	24.65	0			1	12	23.98	24.57	24.59	0	
		1	49	23.95	24.54	24.56	0			1	24	23.89	24.48	24.50	0	
		25	0	23.20	23.79	23.81	1			12	0	23.14	23.73	23.75	1	
		25	12	23.11	23.70	23.72	1			12	6	23.05	23.64	23.66	1	
		25	25	23.04	23.63	23.65	1			12	13	22.98	23.57	23.59	1	
		50	0	23.11	23.70	23.72	1			25	0	23.05	23.64	23.66	1	
	16QAM	1	0	23.31	23.90	23.92	1		16QAM	1	0	23.25	23.84	23.86	1	
		1	24	23.06	23.65	23.67	1			1	12	23.00	23.59	23.61	1	
		1	49	22.97	23.56	23.58	1			1	24	22.91	23.50	23.52	1	
		25	0	22.22	22.81	22.83	2			12	0	22.16	22.75	22.77	2	
		25	12	22.13	22.72	22.74	2			12	6	22.07	22.66	22.68	2	
		25	25	22.06	22.65	22.67	2			12	13	22.00	22.59	22.61	2	
		50	0	22.13	22.72	22.74	2			25	0	22.07	22.66	22.68	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		19965	20175	20385				Channel		19957	20175	20393		
		Frequency (MHz)		1711.5	1732.5	1753.5				Frequency (MHz)		1710.7	1732.5	1754.3		
3M	QPSK	1	0	24.18	24.77	24.79	0	1.4M	QPSK	1	0	24.13	24.72	24.74	0	
		1	7	23.93	24.52	24.54	0			1	2	23.88	24.47	24.49	0	
		1	14	23.84	24.43	24.45	0			1	5	23.79	24.38	24.40	0	
		8	0	23.09	23.68	23.70	1			3	0	23.17	23.76	23.78	0	
		8	3	23.00	23.59	23.61	1			3	1	23.08	23.67	23.69	0	
		8	7	22.93	23.52	23.54	1			3	3	23.01	23.60	23.62	0	
		15	0	23.00	23.59	23.61	1			6	0	22.95	23.54	23.56	1	
	16QAM	1	0	23.20	23.79	23.81	1		16QAM	1	0	23.15	23.74	23.76	1	
		1	7	22.95	23.54	23.56	1			1	2	22.90	23.49	23.51	1	
		1	14	22.86	23.45	23.47	1			1	5	22.81	23.40	23.42	1	
		8	0	22.11	22.70	22.72	2			3	0	22.32	22.91	22.93	1	
		8	3	22.02	22.61	22.63	2			3	1	22.23	22.82	22.84	1	
		8	7	21.95	22.54	22.56	2			3	3	22.16	22.75	22.77	1	
		15	0	22.02	22.61	22.63	2			6	0	22.10	22.69	22.71	2	

LTE Band 4																
EUT with Power Reduction (P-Sensor Triggered)																
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	1732.5	1745				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	13.56	13.54	**13.73**	0	15M	QPSK	1	0	13.53	13.51	13.70	0
		1	50	13.32	13.30	13.49	0			1	37	13.29	13.27	13.46	0
		1	99	13.25	13.23	13.42	0			1	74	13.22	13.20	13.39	0
		50	0	12.50	12.48	12.67	1			36	0	12.47	12.45	12.64	1
		50	25	12.40	12.38	12.57	1			36	19	12.37	12.35	12.54	1
		50	50	12.34	12.32	12.51	1			36	39	12.31	12.29	12.48	1
		100	0	12.45	12.43	12.62	1			75	0	12.42	12.40	12.59	1
	16QAM	1	0	12.89	12.87	12.96	1		16QAM	1	0	12.83	12.81	12.87	1
		1	50	12.68	12.66	12.85	1			1	37	12.62	12.60	12.79	1
		1	99	12.57	12.55	12.74	1			1	74	12.51	12.49	12.68	1
		50	0	11.50	11.48	11.67	2			36	0	11.44	11.42	11.61	2
		50	25	11.46	11.42	11.63	2			36	19	11.40	11.36	11.57	2
		50	50	11.34	11.32	11.51	2			36	39	11.28	11.26	11.45	2
		100	0	11.26	11.41	11.32	2			75	0	11.20	11.35	11.26	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		20000	20175	20350				Channel		19975	20175	20375	
		Frequency (MHz)		1715	1732.5	1750				Frequency (MHz)		1712.5	1732.5	1752.5	
10M	QPSK	1	0	13.48	13.46	13.65	0	5M	QPSK	1	0	13.43	13.41	13.60	0
		1	24	13.24	13.22	13.41	0			1	12	13.19	13.17	13.36	0
		1	49	13.17	13.15	13.34	0			1	24	13.12	13.10	13.29	0
		25	0	12.42	12.40	12.59	1			12	0	12.37	12.35	12.54	1
		25	12	12.32	12.30	12.49	1			12	6	12.27	12.25	12.44	1
		25	25	12.26	12.24	12.43	1			12	13	12.21	12.19	12.38	1
		50	0	12.37	12.35	12.54	1			25	0	12.32	12.30	12.49	1
	16QAM	1	0	12.80	12.78	12.97	1		16QAM	1	0	12.73	12.71	12.90	1
		1	24	12.59	12.57	12.76	1			1	12	12.52	12.50	12.69	1
		1	49	12.48	12.46	12.65	1			1	24	12.41	12.39	12.58	1
		25	0	11.41	11.39	11.58	2			12	0	11.34	11.32	11.51	2
		25	12	11.37	11.33	11.54	2			12	6	11.30	11.26	11.47	2
		25	25	11.25	11.23	11.42	2			12	13	11.18	11.16	11.35	2
		50	0	11.17	11.32	11.23	2			25	0	11.10	11.25	11.16	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		19965	20175	20385				Channel		19957	20175	20393	
		Frequency (MHz)		1711.5	1732.5	1753.5				Frequency (MHz)		1710.7	1732.5	1754.3	
3M	QPSK	1	0	13.40	13.38	13.57	0	1.4M	QPSK	1	0	13.34	13.32	13.51	0
		1	7	13.16	13.14	13.33	0			1	2	13.10	13.08	13.27	0
		1	14	13.09	13.07	13.26	0			1	5	13.03	13.01	13.20	0
		8	0	12.34	12.32	12.51	1			3	0	13.28	13.26	13.45	0
		8	3	12.24	12.22	12.41	1			3	1	13.18	13.16	13.35	0
		8	7	12.18	12.16	12.35	1			3	3	13.12	13.10	13.29	0
		15	0	12.29	12.27	12.46	1			6	0	12.23	12.21	12.40	1
	16QAM	1	0	12.65	12.63	12.82	1		16QAM	1	0	12.58	12.56	12.75	1
		1	7	12.44	12.42	12.61	1			1	2	12.37	12.35	12.54	1
		1	14	12.33	12.31	12.50	1			1	5	12.26	12.24	12.43	1
		8	0	11.26	11.24	11.43	2			3	0	12.19	12.17	12.36	1
		8	3	11.22	11.18	11.39	2			3	1	12.15	12.11	12.32	1
		8	7	11.10	11.08	11.27	2			3	3	12.03	12.01	12.20	1
		15	0	11.02	11.17	11.08	2			6	0	10.95	11.10	11.01	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 5																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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	**24.68**	24.63	24.67	0	5M	QPSK	1	0	24.61	24.56	24.60	0
		1	24	24.57	24.52	24.56	0			1	12	24.50	24.45	24.49	0
		1	49	24.42	24.37	24.41	0			1	24	24.35	24.30	24.34	0
		25	0	23.66	23.61	23.65	1			12	0	23.59	23.54	23.58	1
		25	12	23.63	23.58	23.62	1			12	6	23.56	23.51	23.55	1
		25	25	23.52	23.47	23.51	1			12	13	23.45	23.40	23.44	1
		50	0	23.60	23.55	23.59	1			25	0	23.53	23.48	23.52	1
	16QAM	1	0	23.65	23.60	23.64	1		16QAM	1	0	23.58	23.53	23.57	1
		1	24	23.54	23.49	23.53	1			1	12	23.47	23.42	23.46	1
		1	49	23.39	23.34	23.38	1			1	24	23.32	23.27	23.31	1
		25	0	22.63	22.58	22.62	2			12	0	22.56	22.51	22.55	2
		25	12	22.60	22.55	22.59	2			12	6	22.53	22.48	22.52	2
		25	25	22.49	22.44	22.48	2			12	13	22.42	22.37	22.41	2
		50	0	22.57	22.52	22.56	2			25	0	22.50	22.45	22.49	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		20415	20525	20635				Channel		20407	20525	20643	
		Frequency (MHz)		825.5	836.5	847.5				Frequency (MHz)		824.7	836.5	848.3	
3M	QPSK	1	0	24.53	24.48	24.52	0	1.4M	QPSK	1	0	24.47	24.42	24.46	0
		1	7	24.42	24.37	24.41	0			1	2	24.36	24.31	24.35	0
		1	14	24.27	24.22	24.26	0			1	5	24.21	24.16	24.20	0
		8	0	23.51	23.46	23.50	1			3	0	23.45	23.40	23.44	0
		8	3	23.48	23.43	23.47	1			3	1	23.42	23.37	23.41	0
		8	7	23.37	23.32	23.36	1			3	3	23.31	23.26	23.30	0
		15	0	23.45	23.40	23.44	1			6	0	23.39	23.34	23.38	1
	16QAM	1	0	23.50	23.45	23.49	1		16QAM	1	0	**23.44**	23.39	23.43	1
		1	7	23.39	23.34	23.38	1			1	2	23.33	23.28	23.32	1
		1	14	23.24	23.19	23.23	1			1	5	23.18	23.13	23.17	1
		8	0	22.48	22.43	22.47	2			3	0	22.42	22.37	22.41	1
		8	3	22.45	22.40	22.44	2			3	1	22.39	22.34	22.38	1
		8	7	22.34	22.29	22.33	2			3	3	22.28	22.23	22.27	1
		15	0	22.42	22.37	22.41	2			6	0	22.36	22.31	22.35	2

LTE Band 5																
EUT with Power Reduction (P-Sensor Triggered)																
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	**17.76**	17.62	17.68	0	5M	QPSK	1	0	17.64	17.58	17.72	0
		1	24	17.70	17.56	17.62	0			1	12	17.58	17.52	17.66	0
		1	49	17.57	17.43	17.49	0			1	24	17.45	17.39	17.53	0
		25	0	16.72	16.62	16.68	1			12	0	16.64	16.58	16.89	1
		25	12	16.71	16.58	16.64	1			12	6	16.60	16.54	16.68	1
		25	25	16.65	16.51	16.57	1			12	13	16.53	16.47	16.61	1
		50	0	16.74	16.60	16.66	1			25	0	16.62	16.56	16.70	1
	16QAM	1	0	16.91	16.87	16.93	1		16QAM	1	0	16.85	16.79	16.83	1
		1	24	16.94	16.80	16.86	1			1	12	16.78	16.72	16.86	1
		1	49	16.85	16.71	16.77	1			1	24	16.69	16.63	16.77	1
		25	0	15.74	15.60	15.66	2			12	0	15.58	15.52	15.66	2
		25	12	15.73	15.59	15.65	2			12	6	15.57	15.51	15.65	2
		25	25	15.64	15.50	15.56	2			12	13	15.48	15.42	15.56	2
		50	0	15.73	15.59	15.62	2			25	0	15.54	15.51	15.65	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		20415	20525	20635				Channel		20407	20525	20643	
		Frequency (MHz)		825.5	836.5	847.5				Frequency (MHz)		824.7	836.5	848.3	
3M	QPSK	1	0	17.62	17.56	17.70	0	1.4M	QPSK	1	0	17.60	17.54	17.68	0
		1	7	17.56	17.50	17.64	0			1	2	17.54	17.48	17.62	0
		1	14	17.43	17.37	17.51	0			1	5	17.41	17.35	17.49	0
		8	0	16.62	16.56	16.65	1			3	0	17.60	17.54	17.63	0
		8	3	16.58	16.52	16.66	1			3	1	17.56	17.50	17.64	0
		8	7	16.51	16.45	16.59	1			3	3	17.49	17.43	17.57	0
		15	0	16.60	16.54	16.68	1			6	0	16.58	16.52	16.66	1
	16QAM	1	0	16.78	16.72	16.76	1		16QAM	1	0	16.72	16.66	16.70	1
		1	7	16.71	16.65	16.79	1			1	2	16.65	16.59	16.73	1
		1	14	16.62	16.56	16.70	1			1	5	16.56	16.50	16.64	1
		8	0	15.51	15.45	15.59	2			3	0	16.45	16.39	16.53	1
		8	3	15.50	15.44	15.58	2			3	1	16.44	16.38	16.52	1
		8	7	15.41	15.35	15.49	2			3	3	16.35	16.29	16.43	1
		15	0	15.47	15.44	15.58	2			6	0	15.41	15.38	15.52	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 7																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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	24.82	24.67	**24.95**	0	15M	QPSK	1	0	24.75	24.60	24.88	0
		1	50	24.68	24.53	24.81	0			1	37	24.61	24.46	24.74	0
		1	99	24.71	24.56	24.84	0			1	74	24.64	24.49	24.77	0
		50	0	23.81	23.66	23.94	1			36	0	23.74	23.59	23.87	1
		50	25	23.76	23.61	23.89	1			36	19	23.69	23.54	23.82	1
		50	50	23.73	23.58	23.86	1			36	39	23.66	23.51	23.79	1
		100	0	23.83	23.65	23.93	1			75	0	23.76	23.58	23.86	1
	16QAM	1	0	23.79	23.64	23.92	1		16QAM	1	0	23.72	23.57	23.85	1
		1	50	23.65	23.50	23.78	1			1	37	23.58	23.43	23.71	1
		1	99	23.68	23.53	23.81	1			1	74	23.61	23.46	23.74	1
		50	0	22.78	22.63	22.91	2			36	0	22.71	22.56	22.84	2
		50	25	22.73	22.58	22.86	2			36	19	22.66	22.51	22.79	2
		50	50	22.70	22.55	22.83	2			36	39	22.63	22.48	22.76	2
		100	0	22.80	22.62	22.90	2			75	0	22.73	22.55	22.83	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		20800	21100	21400				Channel		20775	21100	21425	
		Frequency (MHz)		2505.0	2535.0	2565.0				Frequency (MHz)		2502.5	2535.0	2567.5	
10M	QPSK	1	0	24.67	24.52	24.80	0	5M	QPSK	1	0	24.60	24.45	24.73	0
		1	24	24.53	24.38	24.66	0			1	12	24.46	24.31	24.59	0
		1	49	24.56	24.41	24.69	0			1	24	24.49	24.34	24.62	0
		25	0	23.66	23.51	23.79	1			12	0	23.59	23.44	23.72	1
		25	12	23.61	23.46	23.74	1			12	6	23.54	23.39	23.67	1
		25	25	23.58	23.43	23.71	1			12	13	23.51	23.36	23.64	1
		50	0	23.68	23.50	23.78	1			25	0	23.61	23.43	23.71	1
	16QAM	1	0	23.64	23.49	23.77	1		16QAM	1	0	23.57	23.42	23.70	1
		1	24	23.50	23.35	23.63	1			1	12	23.43	23.28	23.56	1
		1	49	23.53	23.38	23.66	1			1	24	23.46	23.31	23.59	1
		25	0	22.63	22.48	22.76	2			12	0	22.56	22.41	22.69	2
		25	12	22.58	22.43	22.71	2			12	6	22.51	22.36	22.64	2
		25	25	22.55	22.40	22.68	2			12	13	22.48	22.33	22.61	2
		50	0	22.65	22.47	22.75	2			25	0	22.58	22.40	22.68	2

LTE Band 7																
EUT with Power Reduction (P-Sensor Triggered)																
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	13.79	13.71	**13.94**	0	15M	QPSK	1	0	13.87	13.64	13.72	0
		1	50	13.60	13.52	13.75	0			1	37	13.68	13.45	13.53	0
		1	99	13.47	13.39	13.62	0			1	74	13.55	13.32	13.40	0
		50	0	12.78	12.70	12.93	1			36	0	12.86	12.63	12.71	1
		50	25	12.74	12.66	12.89	1			36	19	12.82	12.59	12.67	1
		50	50	12.60	12.52	12.75	1			36	39	12.68	12.45	12.53	1
		100	0	12.69	12.61	12.84	1			75	0	12.77	12.54	12.62	1
	16QAM	1	0	12.93	12.95	12.98	1		16QAM	1	0	12.94	12.91	12.89	1
		1	50	12.82	12.74	12.97	1			1	37	12.93	12.70	12.78	1
		1	99	12.70	12.62	12.85	1			1	74	12.81	12.58	12.66	1
		50	0	11.80	11.72	11.95	2			36	0	11.91	11.68	11.76	2
		50	25	11.69	11.61	11.84	2			36	19	11.80	11.57	11.65	2
		50	50	11.61	11.53	11.76	2			36	39	11.72	11.49	11.57	2
		100	0	11.70	11.62	11.85	2			75	0	11.81	11.58	11.66	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		20800	21100	21400				Channel		20775	21100	21425	
		Frequency (MHz)		2505.0	2535.0	2565.0				Frequency (MHz)		2502.5	2535.0	2567.5	
10M	QPSK	1	0	13.80	13.57	13.65	0	5M	QPSK	1	0	13.73	13.50	13.58	0
		1	24	13.61	13.38	13.46	0			1	12	13.54	13.31	13.39	0
		1	49	13.48	13.25	13.33	0			1	24	13.41	13.18	13.26	0
		25	0	12.79	12.56	12.64	1			12	0	12.72	12.49	12.57	1
		25	12	12.75	12.52	12.60	1			12	6	12.68	12.45	12.53	1
		25	25	12.61	12.38	12.46	1			12	13	12.54	12.31	12.39	1
		50	0	12.70	12.47	12.55	1			25	0	12.63	12.40	12.48	1
	16QAM	1	0	12.92	12.89	12.87	1		16QAM	1	0	12.89	12.86	12.84	1
		1	24	12.91	12.68	12.76	1			1	12	12.88	12.65	12.73	1
		1	49	12.79	12.56	12.64	1			1	24	12.76	12.53	12.61	1
		25	0	11.89	11.66	11.74	2			12	0	11.86	11.63	11.71	2
		25	12	11.78	11.55	11.63	2			12	6	11.75	11.52	11.60	2
		25	25	11.70	11.47	11.55	2			12	13	11.67	11.44	11.52	2
		50	0	11.79	11.56	11.64	2			25	0	11.76	11.53	11.61	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 12																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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	24.95	**24.98**	24.91	0	5M	QPSK	1	0	24.87	24.90	24.83	0
		1	24	24.86	24.89	24.82	0			1	12	24.78	24.81	24.74	0
		1	49	24.84	24.87	24.80	0			1	24	24.76	24.79	24.72	0
		25	0	23.94	23.97	23.90	1			12	0	23.86	23.89	23.82	1
		25	12	23.92	23.95	23.88	1			12	6	23.84	23.87	23.80	1
		25	25	23.79	23.82	23.75	1			12	13	23.71	23.74	23.67	1
		50	0	23.93	23.96	23.89	1			25	0	23.85	23.88	23.81	1
	16QAM	1	0	23.90	23.93	23.86	1		16QAM	1	0	23.82	23.85	23.78	1
		1	24	23.81	23.84	23.77	1			1	12	23.73	23.76	23.69	1
		1	49	23.79	23.82	23.75	1			1	24	23.71	23.74	23.67	1
		25	0	22.89	22.92	22.85	2			12	0	22.81	22.84	22.77	2
		25	12	22.87	22.90	22.83	2			12	6	22.79	22.82	22.75	2
		25	25	22.74	22.77	22.70	2			12	13	22.66	22.69	22.62	2
		50	0	22.88	22.91	22.84	2			25	0	22.80	22.83	22.76	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		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	24.79	24.82	24.75	0	1.4M	QPSK	1	0	24.72	24.75	24.68	0
		1	7	24.70	24.73	24.66	0			1	2	24.63	24.66	24.59	0
		1	14	24.68	24.71	24.64	0			1	5	24.61	24.64	24.57	0
		8	0	23.78	23.81	23.74	1			3	0	23.71	23.74	23.67	0
		8	3	23.76	23.79	23.72	1			3	1	23.69	23.72	23.65	0
		8	7	23.63	23.66	23.59	1			3	3	23.56	23.59	23.52	0
		15	0	23.77	23.80	23.73	1			6	0	23.70	23.73	23.66	1
	16QAM	1	0	23.74	23.77	23.70	1		16QAM	1	0	23.67	23.70	23.63	1
		1	7	23.65	23.68	23.61	1			1	2	23.58	23.61	23.54	1
		1	14	23.63	23.66	23.59	1			1	5	23.56	23.59	23.52	1
		8	0	22.73	22.76	22.69	2			3	0	22.66	22.69	22.62	1
		8	3	22.71	22.74	22.67	2			3	1	22.64	22.67	22.60	1
		8	7	22.58	22.61	22.54	2			3	3	22.51	22.54	22.47	1
		15	0	22.72	22.75	22.68	2			6	0	22.65	22.68	22.61	2

LTE Band 12															
EUT with Power Reduction (P-Sensor Triggered)															
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	17.59	**17.61**	17.52	0	5M	QPSK	1	0	17.57	17.55	17.48	0
		1	24	17.55	17.57	17.48	0			1	12	17.53	17.51	17.44	0
		1	49	17.45	17.47	17.38	0			1	24	17.43	17.41	17.34	0
		25	0	16.58	16.63	16.51	1			12	0	16.59	16.54	16.47	1
		25	12	16.61	16.60	16.54	1			12	6	16.56	16.57	16.50	1
		25	25	16.54	16.56	16.47	1			12	13	16.52	16.50	16.43	1
		50	0	16.59	16.61	16.52	1			25	0	16.57	16.55	16.48	1
	16QAM	1	0	16.80	16.82	16.73	1		16QAM	1	0	16.74	16.72	16.65	1
		1	24	16.81	16.83	16.74	1			1	12	16.75	16.73	16.66	1
		1	49	16.71	16.73	16.64	1			1	24	16.65	16.63	16.56	1
		25	0	15.59	15.61	15.52	2			12	0	15.53	15.51	15.44	2
		25	12	15.62	15.64	15.55	2			12	6	15.56	15.54	15.47	2
		25	25	15.55	15.57	15.48	2			12	13	15.49	15.47	15.40	2
		50	0	15.60	15.62	15.53	2			25	0	15.54	15.52	15.45	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		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	17.55	17.53	17.46	0	1.4M	QPSK	1	0	17.53	17.51	17.44	0
		1	7	17.51	17.49	17.42	0			1	2	17.49	17.47	17.40	0
		1	14	17.41	17.39	17.32	0			1	5	17.39	17.37	17.30	0
		8	0	16.57	16.52	16.45	1			3	0	17.55	17.50	17.43	0
		8	3	16.54	16.55	16.48	1			3	1	17.52	17.53	17.46	0
		8	7	16.50	16.48	16.41	1			3	3	17.48	17.46	17.39	0
		15	0	16.55	16.53	16.46	1			6	0	16.53	16.51	16.44	1
	16QAM	1	0	16.67	16.65	16.58	1		16QAM	1	0	16.61	16.59	16.52	1
		1	7	16.68	16.66	16.59	1			1	2	16.62	16.60	16.53	1
		1	14	16.58	16.56	16.49	1			1	5	16.52	16.50	16.43	1
		8	0	15.46	15.44	15.37	2			3	0	16.40	16.38	16.31	1
		8	3	15.49	15.47	15.40	2			3	1	16.43	16.41	16.34	1
		8	7	15.42	15.40	15.33	2			3	3	16.36	16.34	16.27	1
		15	0	15.47	15.45	15.38	2			6	0	15.41	15.39	15.32	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 13																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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		24.35		0	5M	QPSK	1	0	24.27	24.31	24.30	0
		1	24		**24.99**		0			1	12	24.91	24.95	24.94	0
		1	49		24.95		0			1	24	24.87	24.91	24.90	0
		25	0		23.96		1			12	0	23.88	23.92	23.91	1
		25	12		23.95		1			12	6	23.87	23.91	23.90	1
		25	25		23.87		1			12	13	23.79	23.83	23.82	1
		50	0		23.81		1			25	0	23.73	23.77	23.76	1
	16QAM	1	0		23.28		1		16QAM	1	0	23.20	23.24	23.23	1
		1	24		23.92		1			1	12	23.84	23.88	23.87	1
		1	49		23.88		1			1	24	23.80	23.84	23.83	1
		25	0		22.89		2			12	0	22.81	22.85	22.84	2
		25	12		22.88		2			12	6	22.80	22.84	22.83	2
		25	25		22.80		2			12	13	22.72	22.76	22.75	2
		50	0		22.74		2			25	0	22.66	22.70	22.69	2

LTE Band 13																
EUT with Power Reduction (P-Sensor Triggered)																
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		**17.69**		0	5M	QPSK	1	0	17.67	17.62	17.65	0
		1	24		17.59		0			1	12	17.62	17.64	17.60	0
		1	49		17.49		0			1	24	17.58	17.60	17.56	0
		25	0		16.68		1			12	0	16.64	16.66	16.62	1
		25	12		16.67		1			12	6	16.60	16.62	16.58	1
		25	25		16.59		1			12	13	16.63	16.65	16.61	1
		50	0		16.61		1			25	0	16.57	16.59	16.55	1
	16QAM	1	0		16.91		1		16QAM	1	0	16.56	16.58	16.54	1
		1	24		16.85		1			1	12	16.40	16.42	16.38	1
		1	49		16.75		1			1	24	16.77	16.79	16.75	1
		25	0		15.68		2			12	0	15.64	15.66	15.62	2
		25	12		15.63		2			12	6	15.71	15.73	15.69	2
		25	25		15.60		2			12	13	15.61	15.63	15.59	2
		50	0		15.65		2			25	0	15.62	15.64	15.60	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 25

EUT without Power Reduction (P-Sensor NOT Triggered)

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		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	22.88	**22.97**	22.96	0	15M	QPSK	1	0	22.81	22.90	22.89	0
		1	50	22.64	22.73	22.72	0			1	37	22.57	22.66	22.65	0
		1	99	22.56	22.65	22.64	0			1	74	22.49	22.58	22.57	0
		50	0	21.78	21.87	21.86	1			36	0	21.71	21.80	21.79	1
		50	25	21.72	21.81	21.80	1			36	19	21.65	21.74	21.73	1
		50	50	21.63	21.72	21.71	1			36	39	21.56	21.65	21.64	1
		100	0	21.73	21.82	21.81	1			75	0	21.66	21.75	21.74	1
	16QAM	1	0	21.83	21.92	21.91	1		16QAM	1	0	21.76	21.85	21.84	1
		1	50	21.59	21.68	21.67	1			1	37	21.52	21.61	21.60	1
		1	99	21.51	21.60	21.59	1			1	74	21.44	21.53	21.52	1
		50	0	20.73	20.82	20.81	2			36	0	20.66	20.75	20.74	2
		50	25	20.67	20.76	20.75	2			36	19	20.60	20.69	20.68	2
		50	50	20.58	20.67	20.66	2			36	39	20.51	20.60	20.59	2
		100	0	20.68	20.77	20.76	2			75	0	20.61	20.70	20.69	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		26090	26365	26640				Channel		26065	26365	26665	
		Frequency (MHz)		1855.0	1882.5	1910.0				Frequency (MHz)		1852.5	1882.5	1912.5	
10M	QPSK	1	0	22.73	22.82	22.81	0	5M	QPSK	1	0	22.68	22.77	22.76	0
		1	24	22.49	22.58	22.57	0			1	12	22.44	22.53	22.52	0
		1	49	22.41	22.50	22.49	0			1	24	22.36	22.45	22.44	0
		25	0	21.63	21.72	21.71	1			12	0	21.58	21.67	21.66	1
		25	12	21.57	21.66	21.65	1			12	6	21.52	21.61	21.60	1
		25	25	21.48	21.57	21.56	1			12	13	21.43	21.52	21.51	1
		50	0	21.58	21.67	21.66	1			25	0	21.53	21.62	21.61	1
	16QAM	1	0	21.68	21.77	21.76	1		16QAM	1	0	21.63	21.72	21.71	1
		1	24	21.44	21.53	21.52	1			1	12	21.39	21.48	21.47	1
		1	49	21.36	21.45	21.44	1			1	24	21.31	21.40	21.39	1
		25	0	20.58	20.67	20.66	2			12	0	20.53	20.62	20.61	2
		25	12	20.52	20.61	20.60	2			12	6	20.47	20.56	20.55	2
		25	25	20.43	20.52	20.51	2			12	13	20.38	20.47	20.46	2
		50	0	20.53	20.62	20.61	2			25	0	20.48	20.57	20.56	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		26055	26365	26675				Channel		26047	26365	26683	
		Frequency (MHz)		1851.5	1882.5	1913.5				Frequency (MHz)		1850.7	1882.5	1914.3	
3M	QPSK	1	0	22.63	22.72	22.71	0	1.4M	QPSK	1	0	22.60	22.69	22.68	0
		1	7	22.39	22.48	22.47	0			1	2	22.36	22.45	22.44	0
		1	14	22.31	22.40	22.39	0			1	5	22.28	22.37	22.36	0
		8	0	21.53	21.62	21.61	1			3	0	21.50	21.59	21.58	0
		8	3	21.47	21.56	21.55	1			3	1	21.44	21.53	21.52	0
		8	7	21.38	21.47	21.46	1			3	3	21.35	21.44	21.43	0
		15	0	21.48	21.57	21.56	1			6	0	21.45	21.54	21.53	1
	16QAM	1	0	21.58	21.67	21.66	1		16QAM	1	0	21.55	21.64	21.63	1
		1	7	21.34	21.43	21.42	1			1	2	21.31	21.40	21.39	1
		1	14	21.26	21.35	21.34	1			1	5	21.23	21.32	21.31	1
		8	0	20.48	20.57	20.56	2			3	0	20.45	20.54	20.53	1
		8	3	20.42	20.51	20.50	2			3	1	20.39	20.48	20.47	1
		8	7	20.33	20.42	20.41	2			3	3	20.30	20.39	20.38	1
		15	0	20.43	20.52	20.51	2			6	0	20.40	20.49	20.48	2

LTE Band 25																
EUT with Power Reduction (P-Sensor Triggered)																
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		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	13.81	**13.92**	13.86	0	15M	QPSK	1	0	13.77	13.88	13.82	0
		1	50	13.75	13.86	13.80	0			1	37	13.71	13.82	13.76	0
		1	99	13.64	13.75	13.69	0			1	74	13.60	13.71	13.65	0
		50	0	12.92	12.98	12.97	1			36	0	12.88	12.99	12.93	1
		50	25	12.81	12.92	12.86	1			36	19	12.77	12.88	12.82	1
		50	50	12.73	12.84	12.78	1			36	39	12.69	12.80	12.74	1
		100	0	12.85	12.96	12.90	1			75	0	12.81	12.92	12.86	1
	16QAM	1	0	12.98	12.91	12.86	1		16QAM	1	0	12.90	12.83	12.78	1
		1	50	12.88	12.74	12.83	1			1	37	12.80	12.66	12.75	1
		1	99	12.95	12.78	12.80	1			1	74	12.87	12.70	12.72	1
		50	0	11.89	12.00	11.94	2			36	0	11.81	11.87	11.86	2
		50	25	11.83	11.94	11.88	2			36	19	11.75	11.86	11.80	2
		50	50	11.77	11.88	11.82	2			36	39	11.69	11.80	11.74	2
		100	0	11.82	11.93	11.87	2			75	0	11.74	11.85	11.79	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		26090	26365	26640				Channel		26065	26365	26665	
		Frequency (MHz)		1855.0	1882.5	1910.0				Frequency (MHz)		1852.5	1882.5	1912.5	
10M	QPSK	1	0	13.72	13.83	13.77	0	5M	QPSK	1	0	13.65	13.76	13.70	0
		1	24	13.66	13.77	13.71	0			1	12	13.59	13.70	13.64	0
		1	49	13.55	13.66	13.60	0			1	24	13.48	13.59	13.53	0
		25	0	12.83	12.94	12.88	1			12	0	12.76	12.87	12.81	1
		25	12	12.72	12.83	12.77	1			12	6	12.65	12.76	12.70	1
		25	25	12.64	12.75	12.69	1			12	13	12.57	12.68	12.62	1
		50	0	12.76	12.87	12.81	1			25	0	12.69	12.80	12.74	1
	16QAM	1	0	12.84	12.77	12.72	1		16QAM	1	0	12.81	12.74	12.69	1
		1	24	12.74	12.60	12.69	1			1	12	12.71	12.57	12.66	1
		1	49	12.81	12.64	12.66	1			1	24	12.78	12.61	12.63	1
		25	0	11.75	11.81	11.80	2			12	0	11.72	11.78	11.77	2
		25	12	11.69	11.80	11.74	2			12	6	11.66	11.77	11.71	2
		25	25	11.63	11.74	11.68	2			12	13	11.60	11.71	11.65	2
		50	0	11.68	11.79	11.73	2			25	0	11.65	11.76	11.70	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		26055	26365	26675				Channel		26047	26365	26683	
		Frequency (MHz)		1851.5	1882.5	1913.5				Frequency (MHz)		1850.7	1882.5	1914.3	
3M	QPSK	1	0	13.62	13.73	13.67	0	1.4M	QPSK	1	0	13.56	13.67	13.61	0
		1	7	13.56	13.67	13.61	0			1	2	13.50	13.61	13.55	0
		1	14	13.45	13.56	13.50	0			1	5	13.39	13.50	13.44	0
		8	0	12.73	12.84	12.78	1			3	0	13.67	13.78	13.72	0
		8	3	12.62	12.73	12.67	1			3	1	13.56	13.67	13.61	0
		8	7	12.54	12.65	12.59	1			3	3	13.48	13.59	13.53	0
		15	0	12.66	12.77	12.71	1			6	0	12.60	12.71	12.65	1
	16QAM	1	0	12.73	12.66	12.61	1		16QAM	1	0	12.66	12.59	12.54	1
		1	7	12.63	12.49	12.58	1			1	2	12.56	12.42	12.51	1
		1	14	12.70	12.53	12.55	1			1	5	12.63	12.46	12.48	1
		8	0	11.64	11.70	11.69	2			3	0	12.57	12.63	12.62	1
		8	3	11.58	11.69	11.63	2			3	1	12.51	12.62	12.56	1
		8	7	11.52	11.63	11.57	2			3	3	12.45	12.56	12.50	1
		15	0	11.57	11.68	11.62	2			6	0	11.50	11.61	11.55	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 26

EUT without Power Reduction (P-Sensor NOT Triggered)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26765	26865	26965	
		Frequency (MHz)		821.5	831.5	841.5	
15M	QPSK	1	0	**24.91**	24.86	24.79	0
		1	37	24.76	24.71	24.64	0
		1	74	24.58	24.53	24.46	0
		36	0	23.93	23.88	23.81	1
		36	19	23.88	23.83	23.76	1
		36	39	23.74	23.69	23.62	1
		75	0	23.81	23.76	23.69	1
	16QAM	1	0	23.90	23.85	23.78	1
		1	37	23.75	23.70	23.63	1
		1	74	23.57	23.52	23.45	1
		36	0	22.92	22.87	22.80	2
		36	19	22.87	22.82	22.75	2
		36	39	22.73	22.68	22.61	2
		75	0	22.80	22.75	22.68	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26740	26865	26990	
		Frequency (MHz)		819.0	831.5	844.0	
10M	QPSK	1	0	24.86	24.81	24.74	0
		1	24	24.71	24.66	24.59	0
		1	49	24.53	24.48	24.41	0
		25	0	23.88	23.83	23.76	1
		25	12	23.83	23.78	23.71	1
		25	25	23.69	23.64	23.57	1
		50	0	23.76	23.71	23.64	1
	16QAM	1	0	23.85	23.80	23.73	1
		1	24	23.70	23.65	23.58	1
		1	49	23.52	23.47	23.40	1
		25	0	22.87	22.82	22.75	2
		25	12	22.82	22.77	22.70	2
		25	25	22.68	22.63	22.56	2
		50	0	22.75	22.70	22.63	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26715	26865	27015	
		Frequency (MHz)		816.5	831.5	846.5	
5M	QPSK	1	0	24.79	24.74	24.67	0
		1	12	24.64	24.59	24.52	0
		1	24	24.46	24.41	24.34	0
		12	0	23.81	23.76	23.69	1
		12	6	23.76	23.71	23.64	1
		12	13	23.62	23.57	23.50	1
		25	0	23.69	23.64	23.57	1
	16QAM	1	0	23.78	23.73	23.66	1
		1	12	23.63	23.58	23.51	1
		1	24	23.45	23.40	23.33	1
		12	0	22.80	22.75	22.68	2
		12	6	22.75	22.70	22.63	2
		12	13	22.61	22.56	22.49	2
		25	0	22.68	22.63	22.56	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26705	26865	27025	
		Frequency (MHz)		815.5	831.5	847.5	
3M	QPSK	1	0	24.73	24.68	24.61	0
		1	7	24.58	24.53	24.46	0
		1	14	24.40	24.35	24.28	0
		8	0	23.75	23.70	23.63	1
		8	3	23.70	23.65	23.58	1
		8	7	23.56	23.51	23.44	1
		15	0	23.63	23.58	23.51	1
	16QAM	1	0	23.72	23.67	23.60	1
		1	7	23.57	23.52	23.45	1
		1	14	23.39	23.34	23.27	1
		8	0	22.74	22.69	22.62	2
		8	3	22.69	22.64	22.57	2
		8	7	22.55	22.50	22.43	2
		15	0	22.62	22.57	22.50	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	24.68	24.63	24.56	0
		1	2	24.53	24.48	24.41	0
		1	5	24.35	24.30	24.23	0
		3	0	23.70	23.65	23.58	0
		3	1	23.65	23.60	23.53	0
		3	3	23.51	23.46	23.39	0
		6	0	23.58	23.53	23.46	1
	16QAM	1	0	23.67	23.62	23.55	1
		1	2	23.52	23.47	23.40	1
		1	5	23.34	23.29	23.22	1
		3	0	22.69	22.64	22.57	1
		3	1	22.64	22.59	22.52	1
		3	3	22.50	22.45	22.38	1
		6	0	22.57	22.52	22.45	2

LTE Band 26																
EUT with Power Reduction (P-Sensor Triggered)																
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	**17.95**	17.87	17.84	0	10M	QPSK	1	0	17.88	17.80	17.77	0
		1	37	17.87	17.79	17.76	0			1	24	17.80	17.72	17.69	0
		1	74	17.70	17.62	17.59	0			1	49	17.63	17.55	17.52	0
		36	0	16.93	16.85	16.82	1			25	0	16.86	16.78	16.75	1
		36	19	16.91	16.85	16.82	1			25	12	16.78	16.78	16.75	1
		36	39	16.80	16.72	16.69	1			25	25	16.73	16.65	16.62	1
		75	0	16.86	16.78	16.75	1			50	0	16.79	16.71	16.68	1
	16QAM	1	0	16.92	16.83	16.81	1		16QAM	1	0	16.87	16.78	16.76	1
		1	37	16.87	16.99	16.96	1			1	24	16.82	16.94	16.91	1
		1	74	16.96	16.88	16.85	1			1	49	16.91	16.83	16.80	1
		36	0	15.93	15.85	15.82	2			25	0	15.88	15.80	15.77	2
		36	19	15.90	15.82	15.79	2			25	12	15.85	15.77	15.74	2
		36	39	15.81	15.73	15.70	2			25	25	15.76	15.68	15.65	2
		75	0	15.89	15.81	15.78	2			50	0	15.84	15.76	15.73	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	17.85	17.77	17.74	0	3M	QPSK	1	0	17.78	17.70	17.67	0
		1	12	17.77	17.69	17.66	0			1	7	17.70	17.62	17.59	0
		1	24	17.60	17.52	17.49	0			1	14	17.53	17.45	17.42	0
		12	0	16.83	16.75	16.72	1			8	0	16.76	16.68	16.65	1
		12	6	16.76	16.75	16.72	1			8	3	16.72	16.68	16.65	1
		12	13	16.70	16.62	16.59	1			8	7	16.63	16.55	16.52	1
		25	0	16.76	16.68	16.65	1			15	0	16.69	16.61	16.58	1
	16QAM	1	0	16.79	16.70	16.68	1		16QAM	1	0	16.76	16.67	16.65	1
		1	12	16.74	16.86	16.83	1			1	7	16.71	16.83	16.80	1
		1	24	16.83	16.75	16.72	1			1	14	16.80	16.72	16.69	1
		12	0	15.80	15.72	15.69	2			8	0	15.77	15.69	15.66	2
		12	6	15.77	15.69	15.66	2			8	3	15.74	15.66	15.63	2
		12	13	15.68	15.60	15.57	2			8	7	15.65	15.57	15.54	2
		25	0	15.76	15.68	15.65	2			15	0	15.73	15.65	15.62	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	17.72	17.64	17.61	0								
		1	2	17.64	17.56	17.53	0								
		1	5	17.47	17.39	17.36	0								
		3	0	17.70	17.62	17.59	0								
		3	1	17.68	17.62	17.59	0								
		3	3	17.57	17.49	17.46	0								
		6	0	16.63	16.55	16.52	1								
	16QAM	1	0	16.69	16.60	16.58	1								
		1	2	16.64	16.76	16.73	1								
		1	5	16.73	16.65	16.62	1								
		3	0	16.70	16.62	16.59	1								
		3	1	16.67	16.59	16.56	1								
		3	3	16.58	16.50	16.47	1								
		6	0	15.66	15.58	15.55	2								

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 30																	
EUT without Power Reduction (P-Sensor NOT Triggered)																	
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		**24.31**		0	5M	QPSK	1	0	23.52	23.65	23.58	0		
		1	24		24.16		0			1	12	23.44	23.57	23.50	0		
		1	49		24.11		0			1	24	23.40	23.53	23.46	0		
		25	0		23.29		1			12	0	22.49	22.62	22.55	1		
		25	12		23.28		1			12	6	22.48	22.61	22.54	1		
		25	25		23.18		1			12	13	22.42	22.55	22.48	1		
		50	0		23.25		1			25	0	22.48	22.61	22.54	1		
	16QAM	1	0		23.29		1		16QAM	1	0	22.50	22.63	22.56	1		
		1	24		23.14		1			1	12	22.42	22.55	22.48	1		
		1	49		23.09		1			1	24	22.38	22.51	22.44	1		
		25	0		22.27		2			12	0	21.47	21.60	21.53	2		
		25	12		22.26		2			12	6	21.46	21.59	21.52	2		
		25	25		22.16		2			12	13	21.40	21.53	21.46	2		
		50	0		22.23		2			25	0	21.46	21.59	21.52	2		

LTE Band 30																	
EUT with Power Reduction (P-Sensor Triggered)																	
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		***13.91***		0	5M	QPSK	1	0	13.69	13.81	13.74	0		
		1	24		13.76		0			1	12	13.64	13.76	13.69	0		
		1	49		13.68		0			1	24	13.59	13.71	13.64	0		
		25	0		12.93		1			12	0	12.75	12.87	12.80	1		
		25	12		12.87		1			12	6	12.79	12.91	12.84	1		
		25	25		12.79		1			12	13	12.67	12.79	12.72	1		
		50	0		12.86		1			25	0	12.72	12.84	12.77	1		
	16QAM	1	0		12.97		1		16QAM	1	0	12.60	12.72	12.65	1		
		1	24		12.86		1			1	12	12.58	12.70	12.63	1		
		1	49		12.95		1			1	24	12.53	12.65	12.58	1		
		25	0		11.91		2			12	0	11.78	11.90	11.83	2		
		25	12		11.88		2			12	6	11.74	11.86	11.79	2		
		25	25		11.81		2			12	13	11.81	11.93	11.86	2		
		50	0		11.88		2			25	0	11.73	11.85	11.78	2		

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 38																
EUT without Power Reduction (P-Sensor NOT Triggered)																
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	24.15	24.17	**24.24**	0	15M	QPSK	1	0	24.13	24.15	24.22	0
		1	50	24.03	24.05	24.11	0			1	37	23.99	24.01	24.08	0
		1	99	24.01	24.03	24.10	0			1	74	23.95	23.97	24.04	0
		50	0	23.15	23.17	23.24	1			36	0	23.09	23.11	23.18	1
		50	25	23.11	23.13	23.20	1			36	19	23.05	23.07	23.14	1
		50	50	23.05	23.07	23.14	1			36	39	22.99	23.01	23.08	1
		100	0	23.13	23.15	23.22	1			75	0	23.07	23.09	23.16	1
	16QAM	1	0	23.16	23.18	23.25	1		16QAM	1	0	23.10	23.12	23.19	1
		1	50	23.02	23.04	23.11	1			1	37	22.96	22.98	23.05	1
		1	99	22.98	23.00	23.07	1			1	74	22.92	22.94	23.01	1
		50	0	22.12	22.14	22.21	2			36	0	22.06	22.08	22.15	2
		50	25	22.08	22.10	22.17	2			36	19	22.02	22.04	22.11	2
		50	50	22.02	22.04	22.11	2			36	39	21.96	21.98	22.05	2
		100	0	22.10	22.12	22.19	2			75	0	22.04	22.06	22.13	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	24.06	24.08	24.15	0	5M	QPSK	1	0	24.01	24.03	24.10	0
		1	24	23.92	23.94	24.01	0			1	12	23.87	23.89	23.96	0
		1	49	23.88	23.90	23.97	0			1	24	23.83	23.85	23.92	0
		25	0	23.02	23.04	23.11	1			12	0	22.97	22.99	23.06	1
		25	12	22.98	23.00	23.07	1			12	6	22.93	22.95	23.02	1
		25	25	22.92	22.94	23.01	1			12	13	22.87	22.89	22.96	1
		50	0	23.00	23.02	23.09	1			25	0	22.95	22.97	23.04	1
	16QAM	1	0	23.03	23.05	23.12	1		16QAM	1	0	22.98	23.00	23.07	1
		1	24	22.89	22.91	22.98	1			1	12	22.84	22.86	22.93	1
		1	49	22.85	22.87	22.94	1			1	24	22.80	22.82	22.89	1
		25	0	21.99	22.01	22.08	2			12	0	21.94	21.96	22.03	2
		25	12	21.95	21.97	22.04	2			12	6	21.90	21.92	21.99	2
		25	25	21.89	21.91	21.98	2			12	13	21.84	21.86	21.93	2
		50	0	21.97	21.99	22.06	2			25	0	21.92	21.94	22.01	2

LTE Band 38																
EUT with Power Reduction (P-Sensor Triggered)																
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	13.96	13.95	13.98	0	15M	QPSK	1	0	13.97	13.89	13.97	0
		1	50	13.86	13.83	13.87	0			1	37	13.87	13.78	13.86	0
		1	99	13.82	13.79	13.83	0			1	74	13.82	13.74	13.78	0
		50	0	12.99	12.96	13.00	1			36	0	13.00	12.89	12.97	1
		50	25	12.94	12.91	12.95	1			36	19	12.90	12.91	12.92	1
		50	50	12.88	12.85	12.89	1			36	39	12.82	12.81	12.81	1
		100	0	12.95	12.92	12.96	1			75	0	12.86	12.83	12.85	1
	16QAM	1	0	12.97	12.85	12.91	1		16QAM	1	0	12.84	12.86	12.93	1
		1	50	12.81	12.79	12.77	1			1	37	12.70	12.79	12.79	1
		1	99	12.76	12.71	12.76	1			1	74	12.68	12.69	12.74	1
		50	0	11.96	11.86	11.92	2			36	0	11.92	11.88	11.88	2
		50	25	11.93	11.88	11.86	2			36	19	11.89	11.89	11.75	2
		50	50	11.82	11.79	11.79	2			36	39	11.74	11.66	11.79	2
		100	0	11.95	11.87	11.96	2			75	0	11.91	11.88	11.85	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	13.79	13.75	13.81	0	5M	QPSK	1	0	13.92	13.92	13.90	0
		1	24	13.82	13.67	13.66	0			1	12	13.74	13.78	13.62	0
		1	49	13.65	13.63	13.65	0			1	24	13.67	13.57	13.64	0
		25	0	12.80	12.77	12.83	1			12	0	12.89	12.85	12.71	1
		25	12	12.89	12.76	12.76	1			12	6	12.86	12.82	12.65	1
		25	25	12.78	12.66	12.74	1			12	13	12.80	12.84	12.68	1
		50	0	12.83	12.74	12.85	1			25	0	12.90	12.85	12.74	1
	16QAM	1	0	12.67	12.75	12.81	1		16QAM	1	0	12.85	12.68	12.78	1
		1	24	12.73	12.63	12.60	1			1	12	12.78	12.59	12.72	1
		1	49	12.65	12.60	12.67	1			1	24	12.71	12.64	12.79	1
		25	0	11.82	11.85	11.87	2			12	0	11.84	11.74	11.84	2
		25	12	11.75	11.65	11.80	2			12	6	11.78	11.71	11.73	2
		25	25	11.70	11.64	11.57	2			12	13	11.71	11.76	11.57	2
		50	0	11.62	11.84	11.90	2			25	0	11.71	11.66	11.72	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 41																			
EUT without Power Reduction (P-Sensor NOT Triggered)																			
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	2549.5	2593.0	2636.5	2680.0				Frequency (MHz)		2503.5	2548.3	2593.0	2637.8	2682.5	
20M	QPSK	1	0	23.72	23.98	**24.28**	24.08	24.03	0	15M	QPSK	1	0	23.64	23.90	24.20	24.00	23.95	0
		1	50	23.57	23.83	24.13	23.93	23.88	0			1	37	23.49	23.75	24.05	23.85	23.80	0
		1	99	23.52	23.78	24.08	23.88	23.83	0			1	74	23.44	23.70	24.00	23.80	23.75	0
		50	0	22.66	22.92	23.22	23.02	22.97	1			36	0	22.58	22.84	23.14	22.94	22.89	1
		50	25	22.62	22.88	23.18	22.98	22.93	1			36	19	22.54	22.80	23.10	22.90	22.85	1
		50	50	22.57	22.83	23.13	22.93	22.88	1			36	39	22.49	22.75	23.05	22.85	22.80	1
		100	0	22.61	22.87	23.17	22.97	22.92	1			75	0	22.53	22.79	23.09	22.89	22.84	1
	16QAM	1	0	22.64	22.90	23.20	23.00	22.95	1		16QAM	1	0	22.56	22.82	23.12	22.92	22.87	1
		1	50	22.49	22.75	23.05	22.85	22.80	1			1	37	22.41	22.67	22.97	22.77	22.72	1
		1	99	22.44	22.70	23.00	22.80	22.75	1			1	74	22.36	22.62	22.92	22.72	22.67	1
		50	0	21.58	21.84	22.14	21.94	21.89	2			36	0	21.50	21.76	22.06	21.86	21.81	2
		50	25	21.54	21.80	22.10	21.90	21.85	2			36	19	21.46	21.72	22.02	21.82	21.77	2
		50	50	21.49	21.75	22.05	21.85	21.80	2			36	39	21.41	21.67	21.97	21.77	21.72	2
		100	0	21.53	21.79	22.09	21.89	21.84	2			75	0	21.45	21.71	22.01	21.81	21.76	2
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		39700	40160	40620	41080	41540				Channel		39675	40148	40620	41093	41565	
		Frequency (MHz)		2501	2547.0	2593.0	2639.0	2685.0				Frequency (MHz)		2498.5	2545.8	2593.0	2640.3	2687.5	
10M	QPSK	1	0	23.59	23.85	24.15	23.95	23.90	0	5M	QPSK	1	0	23.52	23.78	24.08	23.88	23.83	0
		1	24	23.44	23.70	24.00	23.80	23.75	0			1	12	23.37	23.63	23.93	23.73	23.68	0
		1	49	23.39	23.65	23.95	23.75	23.70	0			1	24	23.32	23.58	23.88	23.68	23.63	0
		25	0	22.53	22.79	23.09	22.89	22.84	1			12	0	22.46	22.72	23.02	22.82	22.77	1
		25	12	22.49	22.75	23.05	22.85	22.80	1			12	6	22.42	22.68	22.98	22.78	22.73	1
		25	25	22.44	22.70	23.00	22.80	22.75	1			12	13	22.37	22.63	22.93	22.73	22.68	1
		50	0	22.48	22.74	23.04	22.84	22.79	1			25	0	22.41	22.67	22.97	22.77	22.72	1
	16QAM	1	0	22.51	22.77	23.07	22.87	22.82	1		16QAM	1	0	22.44	22.70	23.00	22.80	22.75	1
		1	24	22.36	22.62	22.92	22.72	22.67	1			1	12	22.29	22.55	22.85	22.65	22.60	1
		1	49	22.31	22.57	22.87	22.67	22.62	1			1	24	22.24	22.50	22.80	22.60	22.55	1
		25	0	21.45	21.71	22.01	21.81	21.76	2			12	0	21.38	21.64	21.94	21.74	21.69	2
		25	12	21.41	21.67	21.97	21.77	21.72	2			12	6	21.34	21.60	21.90	21.70	21.65	2
		25	25	21.36	21.62	21.92	21.72	21.67	2			12	13	21.29	21.55	21.85	21.65	21.60	2
		50	0	21.40	21.66	21.96	21.76	21.71	2			25	0	21.33	21.59	21.89	21.69	21.64	2

LTE Band 41																			
EUT with Power Reduction (P-Sensor Triggered)																			
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	2549.5	2593.0	2636.5	2680.0				Frequency (MHz)		2503.5	2548.3	2593.0	2637.8	2682.5	
20M	QPSK	1	0	13.75	13.96	**13.98**	13.87	13.81	0	15M	QPSK	1	0	13.68	13.92	13.86	13.83	13.72	0
		1	50	13.72	13.93	13.95	13.84	13.78	0			1	37	13.64	13.94	13.89	13.76	13.78	0
		1	99	13.66	13.87	13.89	13.78	13.72	0			1	74	13.61	13.87	13.77	13.75	13.68	0
		50	0	12.76	12.97	12.99	12.88	12.82	1			36	0	12.67	12.95	12.89	12.82	12.76	1
		50	25	12.74	12.95	12.97	12.86	12.80	1			36	19	12.71	12.89	12.89	12.83	12.77	1
		50	50	12.73	12.94	12.96	12.85	12.79	1			36	39	12.73	12.92	12.85	12.85	12.78	1
		100	0	12.77	12.98	13.00	12.89	12.83	1			75	0	12.69	12.99	12.88	12.80	12.73	1
	16QAM	1	0	12.68	12.90	12.92	12.78	12.71	1		16QAM	1	0	12.65	12.90	12.86	12.82	12.72	1
		1	50	12.63	12.84	12.94	12.79	12.72	1			1	37	12.72	12.88	12.92	12.79	12.72	1
		1	99	12.60	12.78	12.80	12.76	12.65	1			1	74	12.56	12.82	12.85	12.69	12.65	1
		50	0	11.75	11.91	11.90	11.80	11.80	2			36	0	11.70	11.99	11.95	11.85	11.81	2
		50	25	11.71	11.85	11.95	11.80	11.72	2			36	19	11.70	11.95	11.89	11.76	11.76	2
		50	50	11.65	11.94	11.93	11.76	11.76	2			36	39	11.66	11.89	11.90	11.79	11.69	2
		100	0	11.71	11.89	11.91	11.88	11.76	2			75	0	11.68	11.93	11.97	11.83	11.79	2
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		39700	40160	40620	41080	41540				Channel		39675	40148	40620	41093	41565	
		Frequency (MHz)		2501	2547.0	2593.0	2639.0	2685.0				Frequency (MHz)		2498.5	2545.8	2593.0	2640.3	2687.5	
10M	QPSK	1	0	13.64	13.89	13.81	13.70	13.75	0	5M	QPSK	1	0	13.62	13.85	13.84	13.81	13.71	0
		1	24	13.61	13.90	13.81	13.66	13.73	0			1	12	13.66	13.91	13.81	13.74	13.76	0
		1	49	13.64	13.83	13.84	13.61	13.55	0			1	24	13.58	13.71	13.77	13.67	13.63	0
		25	0	12.74	12.92	12.87	12.80	12.67	1			12	0	12.66	12.89	12.87	12.79	12.68	1
		25	12	12.63	12.91	12.77	12.71	12.69	1			12	6	12.61	12.96	12.83	12.70	12.71	1
		25	25	12.59	12.86	12.85	12.77	12.68	1			12	13	12.64	12.86	12.77	12.85	12.61	1
		50	0	12.63	12.97	12.90	12.72	12.78	1			25	0	12.68	12.88	12.85	12.79	12.71	1
	16QAM	1	0	12.63	12.80	12.78	12.78	12.77	1		16QAM	1	0	12.69	12.84	12.82	12.75	12.67	1
		1	24	12.53	12.82	12.83	12.74	12.65	1			1	12	12.58	12.86	12.80	12.77	12.74	1
		1	49	12.61	12.83	12.77	12.58	12.62	1			1	24	12.54	12.75	12.82	12.73	12.58	1
		25	0	11.69	11.84	11.81	11.77	11.65	2			12	0	11.62	11.83	11.85	11.76	11.69	2
		25	12	11.60	11.94	11.86	11.71	11.74	2			12	6	11.59	11.91	11.83	11.77	11.68	2
		25	25	11.65	11.82	11.82	11.80	11.67	2			12	13	11.60	11.85	11.84	11.78	11.61	2
		50	0	11.62	11.96	11.85	11.76	11.78	2			25	0	11.72	11.86	11.84	11.84	11.74	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

LTE Band 66

EUT without Power Reduction (P-Sensor NOT Triggered)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572	
		Frequency (MHz)		1720.0	1745.0	1770.0	
20M	QPSK	1	0	24.32	**24.76**	24.52	0
		1	50	24.00	24.43	24.20	0
		1	99	23.69	24.12	23.89	0
		50	0	23.20	23.63	23.40	1
		50	25	23.12	23.55	23.32	1
		50	50	22.93	23.36	23.13	1
		100	0	23.00	23.43	23.20	1
	16QAM	1	0	23.29	23.73	23.49	1
		1	50	22.97	23.40	23.17	1
		1	99	22.66	23.09	22.86	1
		50	0	22.17	22.60	22.37	2
		50	25	22.09	22.52	22.29	2
		50	50	21.90	22.33	22.10	2
		100	0	21.97	22.40	22.17	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132047	132322	132597	
		Frequency (MHz)		1717.5	1745.0	1772.5	
15M	QPSK	1	0	24.27	24.71	24.47	0
		1	37	23.95	24.38	24.15	0
		1	74	23.64	24.07	23.84	0
		36	0	23.15	23.58	23.35	1
		36	19	23.07	23.50	23.27	1
		36	39	22.88	23.31	23.08	1
		75	0	22.95	23.38	23.15	1
	16QAM	1	0	23.24	23.68	23.44	1
		1	37	22.92	23.35	23.12	1
		1	74	22.61	23.04	22.81	1
		36	0	22.12	22.55	22.32	2
		36	19	22.04	22.47	22.24	2
		36	39	21.85	22.28	22.05	2
		75	0	21.92	22.35	22.12	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132022	132322	132622	
		Frequency (MHz)		1715.0	1745.0	1775.0	
10M	QPSK	1	0	24.22	24.66	24.42	0
		1	24	23.90	24.33	24.10	0
		1	49	23.59	24.02	23.79	0
		25	0	23.10	23.53	23.30	1
		25	12	23.02	23.45	23.22	1
		25	25	22.83	23.26	23.03	1
		50	0	22.90	23.33	23.10	1
	16QAM	1	0	23.19	23.63	23.39	1
		1	24	22.87	23.30	23.07	1
		1	49	22.56	22.99	22.76	1
		25	0	22.07	22.50	22.27	2
		25	12	21.99	22.42	22.19	2
		25	25	21.80	22.23	22.00	2
		50	0	21.87	22.30	22.07	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131997	132322	132647	
		Frequency (MHz)		1712.5	1745.0	1777.5	
5M	QPSK	1	0	24.16	24.60	24.36	0
		1	12	23.84	24.27	24.04	0
		1	24	23.53	23.96	23.73	0
		12	0	23.04	23.47	23.24	1
		12	6	22.96	23.39	23.16	1
		12	13	22.77	23.20	22.97	1
		25	0	22.84	23.27	23.04	1
	16QAM	1	0	23.13	23.57	23.33	1
		1	12	22.81	23.24	23.01	1
		1	24	22.50	22.93	22.70	1
		12	0	22.01	22.44	22.21	2
		12	6	21.93	22.36	22.13	2
		12	13	21.74	22.17	21.94	2
		25	0	21.81	22.24	22.01	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131987	132322	132657	
		Frequency (MHz)		1711.5	1745.5	1778.5	
3M	QPSK	1	0	24.11	24.55	24.31	0
		1	7	23.79	24.22	23.99	0
		1	14	23.48	23.91	23.68	0
		8	0	22.99	23.42	23.19	1
		8	3	22.91	23.34	23.11	1
		8	7	22.72	23.15	22.92	1
		15	0	22.79	23.22	22.99	1
	16QAM	1	0	23.08	23.52	23.28	1
		1	7	22.76	23.19	22.96	1
		1	14	22.45	22.88	22.65	1
		8	0	21.96	22.39	22.16	2
		8	3	21.88	22.31	22.08	2
		8	7	21.69	22.12	21.89	2
		15	0	21.76	22.19	21.96	2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131979	132322	132665	
		Frequency (MHz)		1710.7	1745.0	1779.3	
1.4M	QPSK	1	0	24.08	24.52	24.28	0
		1	2	23.76	24.19	23.96	0
		1	5	23.45	23.88	23.65	0
		3	0	23.29	23.72	23.49	0
		3	1	23.21	23.64	23.41	0
		3	3	23.02	23.45	23.22	0
		6	0	23.09	23.52	23.29	1
	16QAM	1	0	23.05	23.49	23.25	1
		1	2	22.73	23.16	22.93	1
		1	5	22.42	22.85	22.62	1
		3	0	22.26	22.69	22.46	1
		3	1	22.18	22.61	22.38	1
		3	3	22.01	22.42	22.19	1
		6	0	22.06	22.49	22.26	2

LTE Band 66																
EUT with Power Reduction (P-Sensor Triggered)																
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	13.71	**13.89**	13.74	0	15M	QPSK	1	0	13.68	13.71	13.86	0
		1	50	13.40	13.58	13.43	0			1	37	13.37	13.40	13.55	0
		1	99	13.22	13.40	13.25	0			1	74	13.19	13.22	13.37	0
		50	0	12.64	12.82	12.67	1			36	0	12.61	12.64	12.79	1
		50	25	12.52	12.70	12.55	1			36	19	12.49	12.52	12.67	1
		50	50	12.40	12.58	12.43	1			36	39	12.37	12.40	12.55	1
		100	0	12.53	12.71	12.56	1			75	0	12.50	12.53	12.68	1
	16QAM	1	0	12.68	12.86	12.71	1		16QAM	1	0	12.60	12.63	12.78	1
		1	50	12.37	12.55	12.40	1			1	37	12.29	12.32	12.47	1
		1	99	12.19	12.37	12.22	1			1	74	12.11	12.14	12.29	1
		50	0	11.61	11.79	11.64	2			36	0	11.53	11.56	11.71	2
		50	25	11.49	11.67	11.52	2			36	19	11.41	11.44	11.59	2
		50	50	11.37	11.55	11.40	2			36	39	11.29	11.32	11.47	2
		100	0	11.50	11.68	11.53	2			75	0	11.42	11.45	11.60	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		132022	132322	132622				Channel		131997	132322	132647	
		Frequency (MHz)		1715.0	1745.0	1775.0				Frequency (MHz)		1712.5	1745.0	1777.5	
10M	QPSK	1	0	13.62	13.65	13.80	0	5M	QPSK	1	0	13.58	13.61	13.76	0
		1	24	13.31	13.34	13.49	0			1	12	13.27	13.30	13.45	0
		1	49	13.13	13.16	13.31	0			1	24	13.09	13.12	13.27	0
		25	0	12.55	12.58	12.73	1			12	0	12.51	12.54	12.69	1
		25	12	12.43	12.46	12.61	1			12	6	12.39	12.42	12.57	1
		25	25	12.31	12.34	12.49	1			12	13	12.27	12.30	12.45	1
		50	0	12.44	12.47	12.62	1			25	0	12.40	12.43	12.58	1
	16QAM	1	0	12.53	12.56	12.71	1		16QAM	1	0	12.46	12.49	12.64	1
		1	24	12.22	12.25	12.40	1			1	12	12.15	12.18	12.33	1
		1	49	12.04	12.07	12.22	1			1	24	11.97	12.00	12.15	1
		25	0	11.46	11.49	11.64	2			12	0	11.39	11.42	11.57	2
		25	12	11.34	11.37	11.52	2			12	6	11.27	11.30	11.45	2
		25	25	11.22	11.25	11.40	2			12	13	11.15	11.18	11.33	2
		50	0	11.35	11.38	11.53	2			25	0	11.28	11.31	11.46	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		131987	132322	132657				Channel		131979	132322	132665	
		Frequency (MHz)		1711.5	1745.5	1778.5				Frequency (MHz)		1710.7	1745.0	1779.3	
3M	QPSK	1	0	13.50	13.53	13.68	0	1.4M	QPSK	1	0	13.48	13.51	13.66	0
		1	7	13.19	13.22	13.37	0			1	2	13.17	13.20	13.35	0
		1	14	13.01	13.04	13.19	0			1	5	12.99	13.02	13.17	0
		8	0	12.43	12.46	12.61	1			3	0	13.41	13.44	13.59	0
		8	3	12.31	12.34	12.49	1			3	1	13.29	13.32	13.47	0
		8	7	12.19	12.22	12.37	1			3	3	13.17	13.20	13.35	0
		15	0	12.32	12.35	12.50	1			6	0	12.30	12.33	12.48	1
	16QAM	1	0	12.43	12.46	12.61	1		16QAM	1	0	12.37	12.40	12.55	1
		1	7	12.12	12.15	12.30	1			1	2	12.06	12.09	12.24	1
		1	14	11.94	11.97	12.12	1			1	5	11.88	11.91	12.06	1
		8	0	11.36	11.39	11.54	2			3	0	12.30	12.33	12.48	1
		8	3	11.24	11.27	11.42	2			3	1	12.18	12.21	12.36	1
		8	7	11.12	11.15	11.30	2			3	3	12.06	12.09	12.24	1
		15	0	11.25	11.28	11.43	2			6	0	11.19	11.22	11.37	2

- The final reduced power = The reduced power(QPSK_1RB) –MPR, that is, MPR is applied after the power reduction.

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (MIMO Main)	Average Power (MIMO Aux)	Average Power (MIMO Main+Aux)
EUT without Power Reduction (Cell off)					
802.11b	1	2412	14.29	14.32	17.32
	6	2437	14.45	14.48	17.48
	11	2462	14.41	14.47	17.45
	12	2467	13.92	13.95	16.95
	13	2472	13.89	13.94	16.93
802.11g	1	2412	14.35	14.48	17.43
	6	2437	14.45	14.49	17.48
	11	2462	14.27	14.47	17.38
	12	2467	12.23	12.49	15.37
	13	2472	3.07	3.54	6.56
802.11n (HT20)	1	2412	14.32	14.49	17.42
	6	2437	14.39	14.49	17.45
	11	2462	14.22	14.47	17.36
	12	2467	12.31	12.49	15.41
	13	2472	3.01	3.26	6.62
802.11n (HT40)	3	2422	12.89	12.97	15.94
	6	2437	14.44	14.49	17.48
	9	2452	8.26	8.49	11.39
	10	2457	11.34	11.46	14.41
	11	2462	1.88	1.94	4.92
EUT with Power Reduction (Cell on)					
802.11b	1	2412	9.36	9.32	12.35
	6	2437	9.38	9.42	12.41
	11	2462	9.26	9.34	12.31
	12	2467	9.21	9.25	12.24
	13	2472	9.19	9.23	12.22
802.11g	1	2412	9.39	9.45	12.43
	6	2437	9.44	9.48	12.47
	11	2462	9.33	9.42	12.39
	12	2467	9.38	9.37	12.39
	13	2472	3.07	3.54	6.56
802.11n (HT20)	1	2412	9.43	9.41	12.43
	6	2437	9.37	9.34	12.37
	11	2462	9.23	9.29	12.27
	12	2467	9.25	9.32	12.30
	13	2472	3.01	3.26	6.62
802.11n (HT40)	3	2422	9.37	9.35	12.37
	6	2437	9.45	9.41	12.44
	9	2452	8.26	8.49	11.39
	10	2457	9.29	9.34	12.33
	11	2462	1.88	1.94	4.92

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power (MIMO Main)	Average Power (MIMO Aux)	Average Power (MIMO Main+Aux)
EUT without Power Reduction (Cell off)					
802.11ac (VHT80)	58	5290	12.95	12.98	15.98
EUT with Power Reduction (Cell on)					
802.11ac (VHT80)	58	5290	8.42	8.47	11.46

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power (MIMO Main)	Average Power (MIMO Aux)	Average Power (MIMO Main+Aux)
EUT without Power Reduction (Cell off)					
802.11ac (VHT80)	106	5530	10.97	10.99	13.99
	122	5610	12.82	12.99	15.92
	138	5690	12.88	12.99	15.95
EUT with Power Reduction (Cell on)					
802.11ac (VHT80)	106	5530	8.45	8.47	11.47
	122	5610	8.41	8.43	11.43
	138	5690	8.46	8.47	11.48

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (MIMO Main)	Average Power (MIMO Aux)	Average Power (MIMO Main+Aux)
EUT without Power Reduction (Cell off)					
802.11ac (VHT80)	155	5775	12.96	12.99	15.99
EUT with Power Reduction (Cell on)					
802.11ac (VHT80)	155	5775	8.49	8.39	11.45

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth BDR/GFSK	0	2402	3.69
	39	2441	**4.48**
	78	2480	4.25
Bluetooth EDR/DPSK	0	2402	3.41
	39	2440	3.68
	78	2480	3.47
Bluetooth 2EDR/8DPSK	0	2402	3.22
	39	2440	3.65
	78	2480	3.46
Bluetooth LE	0	2402	4.05
	19	2440	**4.21**
	39	2480	3.98

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 ≤ 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.

(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.

<Power Confirmation for SAR Test Exclusion for LTE Downlink CA>

According to KDB 941225 D05A, the uplink maximum output power below was measured with downlink CA active on the channel with highest measured maximum output power when downlink CA is inactive. The downlink SCC channel was paired with the uplink channel as normal operation. For intra-band contiguous CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing per section 5.4.1A of 3GPP TS36.521. For intra-band non-contiguous CA, the downlink channel spacing between the component carriers was set to maximum separation from PCC and remain fully within the downlink transmission band. For Inter-band CA, the SCC downlink channel was set to near the middle of its transmission band.

Power Measurements for Intra-Band Contiguous Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_7C	7	20	21350	2560	1	0	3350	2680	7	20	3152	2660.2	24.81	24.95
CA_41C	41	20	40620	2593	1	0	40620	2593	41	20	40818	2612.8	24.21	24.28

Power Measurements for Intra-Band Non-Contiguous Downlink CA

CA Combination	PCC								SCC1				SCC2				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_25A-25A	25	20	26365	1882.5	1	0	8365	1962.5	25	20	8140	1940					22.55	22.97
CA_66A-66C	66	20	132322	1745	1	0	66786	2145	66	20	66536	2120	66	20	66734	2139.8	24.41	24.76

Power Measurements for Inter-Band Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_25A-26A	25	20	26365	1882.5	1	0	8365	1962.5	26	15	8865	876.5	22.65	22.97
CA_25A-41A	25	20	26365	1882.5	1	0	8365	1962.5	41	20	40620	2593	22.73	22.97
CA_30A-66A	30	10	27710	2310	1	0	9820	2355	66	20	66786	2145	24.17	24.31
CA_66A-29A	66	20	132322	1745	1	0	66786	2145	29	10	9715	722.5	24.58	24.76

CA Combination	PCC								SCC1				SCC2				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-4A-5A	2	20	19100	1900	1	0	1100	1980	4	20	2175	2132.5	5	10	2515	880.5	22.66	22.99
CA_2A-4A-12A	2	20	19100	1900	1	0	1100	1980	4	20	2175	2132.5	12	10	5095	737.5	22.72	22.99
CA_2A-4A-13A	2	20	19100	1900	1	0	1100	1980	4	20	2175	2132.5	13	10	5230	751	22.83	22.99
CA_2A-5A-30A	2	20	19100	1900	1	0	1100	1980	5	10	2525	881.5	30	10	9820	2355	22.93	22.99
CA_2A-12A-30A	2	20	19100	1900	1	0	1100	1980	12	10	5095	737.5	30	10	9820	2355	22.73	22.99
CA_2A-12A-66A	2	20	19100	1900	1	0	1100	1980	12	10	5095	737.5	66	20	67036	2170	22.81	22.99
CA_2A-29A-30A	2	20	19100	1900	1	0	1100	1980	29	10	9715	722.5	30	10	9820	2355	22.86	22.99
CA_2A-13A-66A	2	20	19100	1900	1	0	1100	1980	13	10	5230	751	66	20	66786	2145	22.96	22.99
CA_4A-5A-30A	4	20	20300	1745	1	0	2300	2145	5	10	2525	881.5	30	10	9820	2355	24.91	24.98
CA_4A-12A-30A	4	20	20300	1745	1	0	2300	2145	12	10	5095	737.5	30	10	9820	2355	24.71	24.98
CA_4A-29A-30A	4	20	20300	1745	1	0	2300	2145	29	10	9715	722.5	30	10	9820	2355	24.83	24.98
CA_5A-66A-66A	5	10	20450	829	1	0	2450	874	66	20	66536	2120	66	20	67036	2170	24.48	24.68

Summary for SAR Test Exclusion for LTE Downlink CA

Per power confirmation results in above, the uplink maximum output power with downlink CA active remains within the specified tune-up tolerance and not more than 0.25 dB higher than the maximum output power with downlink CA inactive. According to KDB 941225 D05A, the SAR test exclusion applies to LTE downlink CA operation.

<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.

4.7.2 SAR Results for Body Exposure Condition

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	P-Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WCDMA II	RMC12.2K	Rear Face	16	9538	w/o	23.0	22.99	1.00	-0.11	0.623	0.62
	WCDMA II	RMC12.2K	Left Side	0	9538	w/o	23.0	22.99	1.00	0.05	0.521	0.52
01	WCDMA II	RMC12.2K	Top Side	18	9538	w/o	23.0	22.99	1.00	0.18	0.885	**0.89**
	WCDMA II	RMC12.2K	Top Side	18	9262	w/o	23.0	22.88	1.03	0.09	0.803	0.83
	WCDMA II	RMC12.2K	Top Side	18	9400	w/o	23.0	22.96	1.01	-0.06	0.868	0.88
	WCDMA II	RMC12.2K	Rear Face	0	9538	w/	14.0	13.75	1.06	0.05	0.734	0.78
	WCDMA II	RMC12.2K	Top Side	0	9538	w/	14.0	13.75	1.06	-0.14	0.399	0.42
	WCDMA II	RMC12.2K	Top Side	18	9538	w/o	23.0	22.99	1.00	0.01	0.864	0.87
	WCDMA V	RMC12.2K	Rear Face	16	4233	w/o	25.0	24.99	1.00	-0.13	0.186	0.19
	WCDMA V	RMC12.2K	Left Side	0	4233	w/o	25.0	24.99	1.00	0.05	0.12	0.12
	WCDMA V	RMC12.2K	Top Side	18	4233	w/o	25.0	24.99	1.00	0.02	0.224	0.22
	WCDMA V	RMC12.2K	Rear Face	0	4233	w/	18.0	17.82	1.04	-0.12	0.429	0.45
	WCDMA V	RMC12.2K	Top Side	0	4233	w/	18.0	17.82	1.04	0.07	0.635	0.66
02	WCDMA V	RMC12.2K	Top Side	0	4132	w/	18.0	17.66	1.08	0.13	0.697	**0.75**
	WCDMA V	RMC12.2K	Top Side	0	4182	w/	18.0	17.53	1.11	0.03	0.599	0.67

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	P-Sensor	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 5	QPSK10M	Rear Face	16	20450	1	0	w/o	25.0	24.68	1.08	-0.03	0.168	0.18
	LTE 5	QPSK10M	Left Side	0	20450	1	0	w/o	25.0	24.68	1.08	0.09	0.212	0.23
	LTE 5	QPSK10M	Top Side	18	20450	1	0	w/o	25.0	24.68	1.08	0.12	0.175	0.19
	LTE 5	QPSK10M	Rear Face	16	20450	25	0	w/o	24.0	23.66	1.08	0.09	0.13	0.14
	LTE 5	QPSK10M	Left Side	0	20450	25	0	w/o	24.0	23.66	1.08	-0.06	0.185	0.20
	LTE 5	QPSK10M	Top Side	18	20450	25	0	w/o	24.0	23.66	1.08	0.01	0.17	0.18
	LTE 5	QPSK10M	Rear Face	0	20450	1	0	w/	18.0	17.76	1.06	0.09	0.343	0.36
03	LTE 5	QPSK10M	Top Side	0	20450	1	0	w/	18.0	17.76	1.06	-0.09	0.683	**0.72**
	LTE 5	QPSK10M	Rear Face	0	20450	25	0	w/	17.0	16.72	1.07	0.02	0.309	0.33
	LTE 5	QPSK10M	Top Side	0	20450	25	0	w/	17.0	16.72	1.07	-0.13	0.531	0.57
	LTE 5	QPSK10M	Top Side	0	20525	1	0	w/	18.0	17.62	1.09	0.05	0.646	0.71
	LTE 5	QPSK10M	Top Side	0	20600	1	0	w/	18.0	17.68	1.08	-0.01	0.659	0.71
	LTE 7	QPSK20M	Rear Face	16	21350	1	0	w/o	25.0	24.95	1.01	-0.07	0.791	0.80
	LTE 7	QPSK20M	Left Side	0	21350	1	0	w/o	25.0	24.95	1.01	0.02	0.712	0.72
	LTE 7	QPSK20M	Top Side	18	21350	1	0	w/o	25.0	24.95	1.01	0.06	0.309	0.31
	LTE 7	QPSK20M	Rear Face	16	21350	50	0	w/o	24.0	23.94	1.01	-0.02	0.554	0.56
	LTE 7	QPSK20M	Left Side	0	21350	50	0	w/o	24.0	23.94	1.01	0.01	0.638	0.65
	LTE 7	QPSK20M	Top Side	18	21350	50	0	w/o	24.0	23.94	1.01	0.03	0.242	0.25
	LTE 7	QPSK20M	Rear Face	16	20850	1	0	w/o	25.0	24.82	1.04	-0.11	0.826	0.86
	LTE 7	QPSK20M	Rear Face	16	21100	1	0	w/o	25.0	24.67	1.08	-0.09	0.704	0.76
	LTE 7	QPSK20M	Rear Face	16	21350	100	0	w/o	24.0	23.93	1.02	-0.07	0.655	0.67
04	LTE 7	QPSK20M	Rear Face	0	21350	1	0	w/	14.0	13.94	1.01	0.09	0.896	**0.91**
	LTE 7	QPSK20M	Top Side	0	21350	1	0	w/	14.0	13.94	1.01	0.16	0.139	0.14
	LTE 7	QPSK20M	Rear Face	0	21350	50	0	w/	13.0	12.93	1.02	-0.03	0.754	0.77
	LTE 7	QPSK20M	Top Side	0	21350	50	0	w/	13.0	12.93	1.02	0.05	0.136	0.14
	LTE 7	QPSK20M	Rear Face	0	20850	1	0	w/	14.0	13.79	1.05	0.05	0.858	0.90
	LTE 7	QPSK20M	Rear Face	0	21100	1	0	w/	14.0	13.71	1.07	-0.03	0.824	0.88
	LTE 7	QPSK20M	Rear Face	0	21350	100	0	w/	13.0	12.84	1.04	-0.15	0.760	0.79
	LTE 7	QPSK20M	Rear Face	0	21350	1	0	w/	14.0	13.94	1.01	0.06	0.883	0.90
	LTE 12	QPSK10M	Rear Face	16	23095	1	0	w/o	25.0	24.98	1.00	-0.01	0.419	0.42
	LTE 12	QPSK10M	Left Side	0	23095	1	0	w/o	25.0	24.98	1.00	-0.09	0.311	0.31
	LTE 12	QPSK10M	Top Side	18	23095	1	0	w/o	25.0	24.98	1.00	0.05	0.242	0.24
	LTE 12	QPSK10M	Rear Face	16	23095	25	0	w/o	24.0	23.97	1.01	0.01	0.309	0.31
	LTE 12	QPSK10M	Left Side	0	23095	25	0	w/o	24.0	23.97	1.01	0.07	0.254	0.26
	LTE 12	QPSK10M	Top Side	18	23095	25	0	w/o	24.0	23.97	1.01	0.05	0.189	0.19
05	LTE 12	QPSK10M	Rear Face	0	23095	1	0	w/	18.0	17.61	1.09	-0.09	0.733	**0.80**
	LTE 12	QPSK10M	Top Side	0	23095	1	0	w/	18.0	17.61	1.09	-0.03	0.504	0.55
	LTE 12	QPSK10M	Rear Face	0	23095	25	0	w/	17.0	16.63	1.09	0.11	0.564	0.61
	LTE 12	QPSK10M	Top Side	0	23095	25	0	w/	17.0	16.63	1.09	0.07	0.444	0.48
	LTE 12	QPSK10M	Rear Face	0	23060	1	0	w/	18.0	17.59	1.10	-0.02	0.696	0.76
	LTE 12	QPSK10M	Rear Face	0	23130	1	0	w/	18.0	17.52	1.12	0.15	0.692	0.77
	LTE 12	QPSK10M	Rear Face	0	23095	50	0	w/	17.0	16.61	1.09	0.09	0.549	0.60

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	P-Sensor	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 13	QPSK10M	Rear Face	16	23230	1	24	w/o	25.0	24.99	1.00	-0.12	0.264	0.26
	LTE 13	QPSK10M	Left Side	0	23230	1	24	w/o	25.0	24.99	1.00	-0.03	0.236	0.24
	LTE 13	QPSK10M	Top Side	18	23230	1	24	w/o	25.0	24.99	1.00	0.08	0.156	0.16
	LTE 13	QPSK10M	Rear Face	16	23230	25	0	w/o	24.0	23.96	1.01	0.05	0.209	0.21
	LTE 13	QPSK10M	Left Side	0	23230	25	0	w/o	24.0	23.96	1.01	-0.02	0.178	0.18
	LTE 13	QPSK10M	Top Side	18	23230	25	0	w/o	24.0	23.96	1.01	0.03	0.095	0.10
	LTE 13	QPSK10M	Rear Face	0	23230	1	0	w/	18.0	17.69	1.07	-0.09	0.547	0.59
06	LTE 13	QPSK10M	Top Side	0	23230	1	0	w/	18.0	17.69	1.07	0.07	0.690	**0.74**
	LTE 13	QPSK10M	Rear Face	0	23230	25	0	w/	17.0	16.68	1.08	0.11	0.440	0.47
	LTE 13	QPSK10M	Top Side	0	23230	25	0	w/	17.0	16.68	1.08	0.07	0.549	0.59
	LTE 25	QPSK20M	Rear Face	16	26365	1	0	w/o	23.0	22.97	1.01	-0.03	0.518	0.52
	LTE 25	QPSK20M	Left Side	0	26365	1	0	w/o	23.0	22.97	1.01	0.09	0.067	0.07
	LTE 25	QPSK20M	Top Side	18	26365	1	0	w/o	23.0	22.97	1.01	0.05	0.826	0.83
	LTE 25	QPSK20M	Rear Face	16	26365	50	0	w/o	22.0	21.87	1.03	0.01	0.385	0.40
	LTE 25	QPSK20M	Left Side	0	26365	50	0	w/o	22.0	21.87	1.03	0.05	0.037	0.04
	LTE 25	QPSK20M	Top Side	18	26365	50	0	w/o	22.0	21.87	1.03	0.06	0.687	0.71
	LTE 25	QPSK20M	Top Side	18	26140	1	0	w/o	23.0	22.88	1.03	0.09	0.685	0.70
07	LTE 25	QPSK20M	Top Side	18	26590	1	0	w/o	23.0	22.96	1.01	0.18	0.884	**0.89**
	LTE 25	QPSK20M	Top Side	18	26365	100	0	w/o	22.0	21.82	1.04	0.02	0.665	0.69
	LTE 25	QPSK20M	Rear Face	0	26365	1	0	w/	14.0	13.92	1.02	0.07	0.671	0.68
	LTE 25	QPSK20M	Top Side	0	26365	1	0	w/	14.0	13.92	1.02	-0.05	0.445	0.45
	LTE 25	QPSK20M	Rear Face	0	26365	50	0	w/	13.0	12.98	1.00	0.02	0.481	0.48
	LTE 25	QPSK20M	Top Side	0	26365	50	0	w/	13.0	12.98	1.00	-0.09	0.376	0.38
	LTE 25	QPSK20M	Top Side	18	26590	1	0	w/o	23.0	22.96	1.01	0.07	0.871	0.88
	LTE 26	QPSK15M	Rear Face	16	26765	1	0	w/o	25.0	24.91	1.02	-0.17	0.27	0.28
	LTE 26	QPSK15M	Left Side	0	26765	1	0	w/o	25.0	24.91	1.02	-0.09	0.266	0.27
	LTE 26	QPSK15M	Top Side	18	26765	1	0	w/o	25.0	24.91	1.02	-0.12	0.159	0.16
	LTE 26	QPSK15M	Rear Face	16	26765	36	0	w/o	24.0	23.93	1.02	0.06	0.216	0.22
	LTE 26	QPSK15M	Left Side	0	26765	36	0	w/o	24.0	23.93	1.02	0.07	0.181	0.18
	LTE 26	QPSK15M	Top Side	18	26765	36	0	w/o	24.0	23.93	1.02	0.01	0.042	0.04
	LTE 26	QPSK15M	Rear Face	0	26765	1	0	w/	18.0	17.95	1.01	-0.08	0.455	0.46
08	LTE 26	QPSK15M	Top Side	0	26765	1	0	w/	18.0	17.95	1.01	0.1	0.745	**0.75**
	LTE 26	QPSK15M	Rear Face	0	26765	36	0	w/	17.0	16.93	1.02	0.13	0.402	0.41
	LTE 26	QPSK15M	Top Side	0	26765	36	0	w/	17.0	16.93	1.02	0.07	0.563	0.57
	LTE 26	QPSK15M	Top Side	0	26865	1	0	w/	18.0	17.87	1.03	-0.02	0.723	0.74
	LTE 26	QPSK15M	Top Side	0	26965	1	0	w/	18.0	17.84	1.04	-0.05	0.712	0.74
09	LTE 30	QPSK10M	Rear Face	16	27710	1	0	w/o	24.5	24.31	1.04	0.05	0.723	**0.76**
	LTE 30	QPSK10M	Left Side	0	27710	1	0	w/o	24.5	24.31	1.04	-0.08	0.708	0.74
	LTE 30	QPSK10M	Top Side	18	27710	1	0	w/o	24.5	24.31	1.04	0.07	0.617	0.64
	LTE 30	QPSK10M	Rear Face	16	27710	25	0	w/o	23.5	23.29	1.05	-0.03	0.537	0.56
	LTE 30	QPSK10M	Left Side	0	27710	25	0	w/o	23.5	23.29	1.05	0.09	0.529	0.56
	LTE 30	QPSK10M	Top Side	18	27710	25	0	w/o	23.5	23.29	1.05	0.05	0.435	0.46
	LTE 30	QPSK10M	Rear Face	0	27710	1	0	w/	14.0	13.91	1.02	0.06	0.709	0.72
	LTE 30	QPSK10M	Top Side	0	27710	1	0	w/	14.0	13.91	1.02	0.03	0.236	0.24
	LTE 30	QPSK10M	Rear Face	0	27710	25	0	w/	13.0	12.93	1.02	0.15	0.579	0.59
	LTE 30	QPSK10M	Top Side	0	27710	25	0	w/	13.0	12.93	1.02	0.13	0.189	0.19

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB#	RB Offset	P-Sensor	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 41	QPSK20M	Rear Face	16	40620	1	0	w/o	24.5	24.28	1.05	0.10	0.496	0.52
	LTE 41	QPSK20M	Left Side	0	40620	1	0	w/o	24.5	24.28	1.05	-0.09	0.407	0.43
	LTE 41	QPSK20M	Top Side	18	40620	1	0	w/o	24.5	24.28	1.05	0.02	0.209	0.22
	LTE 41	QPSK20M	Rear Face	16	40620	50	0	w/o	23.5	23.22	1.07	0.05	0.448	0.48
	LTE 41	QPSK20M	Left Side	0	40620	50	0	w/o	23.5	23.22	1.07	0.00	0.365	0.39
	LTE 41	QPSK20M	Top Side	18	40620	50	0	w/o	23.5	23.22	1.07	0.03	0.159	0.17
11	LTE 41	QPSK20M	Rear Face	0	40620	1	0	w/	14.0	13.98	1.00	0.04	0.599	**0.60**
	LTE 41	QPSK20M	Top Side	0	40620	1	0	w/	14.0	13.98	1.00	-0.02	0.104	0.10
	LTE 41	QPSK20M	Rear Face	0	40620	50	0	w/	13.0	12.99	1.00	-0.04	0.492	0.49
	LTE 41	QPSK20M	Top Side	0	40620	50	0	w/	13.0	12.99	1.00	0.19	0.082	0.08
	LTE 41	QPSK20M	Rear Face	0	39750	1	0	w/	14.0	13.75	1.06	0.01	0.495	0.52
	LTE 41	QPSK20M	Rear Face	0	40185	1	0	w/	14.0	13.96	1.01	-0.10	0.541	0.55
	LTE 41	QPSK20M	Rear Face	0	41055	1	0	w/	14.0	13.87	1.03	0.16	0.548	0.56
	LTE 41	QPSK20M	Rear Face	0	41490	1	0	w/	14.0	13.81	1.04	-0.12	0.518	0.54
	LTE 66	QPSK20M	Rear Face	16	132322	1	0	w/o	25.0	24.76	1.06	-0.06	0.568	0.60
	LTE 66	QPSK20M	Left Side	0	132322	1	0	w/o	25.0	24.76	1.06	0.02	0.204	0.22
	LTE 66	QPSK20M	Top Side	18	132322	1	0	w/o	25.0	24.76	1.06	-0.06	0.758	0.80
	LTE 66	QPSK20M	Rear Face	16	132322	50	0	w/o	24.0	23.63	1.09	0.06	0.496	0.54
	LTE 66	QPSK20M	Left Side	0	132322	50	0	w/o	24.0	23.63	1.09	0.05	0.162	0.18
	LTE 66	QPSK20M	Top Side	18	132322	50	0	w/o	24.0	23.63	1.09	0.06	0.663	0.72
	LTE 66	QPSK20M	Top Side	18	132072	1	0	w/o	25.0	24.32	1.17	0.07	0.523	0.61
12	LTE 66	QPSK20M	Top Side	18	132572	1	0	w/o	25.0	24.52	1.12	-0.09	0.923	**1.03**
	LTE 66	QPSK20M	Top Side	18	132322	100	0	w/o	24.0	23.43	1.14	0.05	0.652	0.74
	LTE 66	QPSK20M	Rear Face	0	132322	1	0	w/	14.0	13.89	1.03	0.06	0.324	0.33
	LTE 66	QPSK20M	Top Side	0	132322	1	0	w/	14.0	13.89	1.03	0.02	0.369	0.38
	LTE 66	QPSK20M	Rear Face	0	132322	50	0	w/	13.0	12.82	1.04	0.01	0.234	0.24
	LTE 66	QPSK20M	Top Side	0	132322	50	0	w/	13.0	12.82	1.04	-0.06	0.313	0.33
	LTE 66	QPSK20M	Top Side	18	132572	1	0	w/o	25.0	24.52	1.12	0.07	0.902	1.01

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Power Reduction	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)
WWAN off															
	WLAN2.4G	802.11b	Rear Face	0	6	Main	w/o	100.00	1.00	14.5	14.45	1.01	0.05	1.05	1.06
						Aux			1.00	14.5	14.48	1.00		0.996	1.00
13	WLAN2.4G	802.11b	Top Side	0	6	Main	w/o	100.00	1.00	14.5	14.45	1.01	-0.07	1.37	**1.39**
						Aux			1.00	14.5	14.48	1.00		<0.001	0.00
	WLAN2.4G	802.11g	Top Side	0	6	Main	w/o	89.60	1.12	14.5	14.45	1.01	-0.07	1.23	1.39
						Aux			1.12	14.5	14.49	1.00		<0.001	0.00
	WLAN2.4G	802.11n HT20	Top Side	0	6	Main	w/o	95.80	1.04	14.5	14.39	1.03	0.06	1.14	1.22
						Aux			1.04	14.5	14.49	1.00		<0.001	0.00
	WLAN2.4G	802.11n HT40	Top Side	0	6	Main	w/o	89.70	1.11	14.5	14.44	1.01	0.01	1.19	1.35
						Aux			1.11	14.5	14.49	1.00		<0.001	0.00
	WLAN2.4G	802.11b	Rear Face	0	11	Main	w/o	100.00	1.00	14.5	14.41	1.02	0.05	0.949	0.97
						Aux			1.00	14.5	14.47	1.01		0.921	0.93
	WLAN2.4G	802.11b	Top Side	0	1	Main	w/o	100.00	1.00	14.5	14.29	1.05	-0.03	1.28	1.34
						Aux			1.00	14.5	14.32	1.04		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	11	Main	w/o	100.00	1.00	14.5	14.41	1.02	-0.09	1.24	1.27
						Aux			1.00	14.5	14.47	1.01		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	13	Main	w/o	100.00	1.00	14.0	13.89	1.03	-0.06	0.904	0.93
						Aux			1.00	14.0	13.94	1.01		<0.001	0.00
	WLAN2.4G	802.11g	Top Side	0	1	Main	w/o	89.60	1.12	14.5	14.35	1.04	0.06	1.18	1.36
						Aux			1.12	14.5	14.48	1.00		<0.001	0.00
	WLAN2.4G	802.11g	Top Side	0	11	Main	w/o	89.60	1.12	14.5	14.27	1.05	-0.01	1.16	1.36
						Aux			1.12	14.5	14.47	1.01		<0.001	0.00
	WLAN2.4G	802.11n HT20	Top Side	0	1	Main	w/o	95.80	1.04	14.5	14.32	1.04	0.03	1.25	1.36
						Aux			1.04	14.5	14.49	1.00		<0.001	0.00
	WLAN2.4G	802.11n HT20	Top Side	0	11	Main	w/o	95.80	1.04	14.5	14.22	1.07	0.07	1.13	1.26
						Aux			1.04	14.5	14.47	1.01		<0.001	0.00
	WLAN2.4G	802.11n HT40	Top Side	0	3	Main	w/o	89.70	1.11	13.0	12.89	1.03	0.06	0.78	0.89
						Aux			1.11	13.0	12.97	1.01		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	6	Main	w/o	100.00	1.00	14.5	14.45	1.01	0.12	1.32	1.34
						Aux			1.00	14.5	14.48	1.00		<0.001	0.00
WWAN on															
	WLAN2.4G	802.11b	Rear Face	0	6	Main	w/	100	1.00	9.5	9.31	1.04	0.07	0.326	0.34
						Aux			1.00	9.5	9.42	1.02		0.274	0.28
	WLAN2.4G	802.11b	Top Side	0	6	Main	w/	100	1.00	9.5	9.38	1.03	0.06	0.478	0.54
						Aux			1.00	9.5	9.42	1.02		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	1	Main	w/	100	1.00	9.5	9.36	1.03	0.04	0.454	0.47
						Aux			1.00	9.5	9.32	1.04		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	11	Main	w/	100	1.00	9.5	9.26	1.06	0.08	0.409	0.43
						Aux			1.00	9.5	9.34	1.04		<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	13	Main	w/	100	1.00	9.5	9.19	1.07	-0.04	0.391	0.42
						Aux			1.00	9.5	9.23	1.06		<0.001	0.00

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Tx Antenna	Power Reduction	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)
WWAN off															
	WLAN5G	802.11ac VHT80	Rear Face	0	58	Main	w/o	91.00	1.10	13.0	12.95	1.01	-0.05	0.244	0.27
						Aux			1.10	13.0	12.98	1.00		0.587	0.65
14	WLAN5G	802.11ac VHT80	Top Side	0	58	Main	w/o	91.00	1.10	13.0	12.95	1.01	-0.08	0.24	0.27
						Aux			1.10	13.0	12.98	1.00		0.590	**0.65**
WWAN on															
	WLAN5G	802.11ac VHT80	Rear Face	0	58	Main	w/	83.80	1.19	8.5	8.42	1.02	0.03	0.063	0.08
						Aux			1.19	8.5	8.47	1.01		0.111	0.13
	WLAN5G	802.11ac VHT80	Top Side	0	58	Main	w/	83.80	1.19	8.5	8.42	1.02	-0.09	<0.001	0.00
						Aux			1.19	8.5	8.47	1.01		0.16	0.19
WWAN off															
	WLAN5G	802.11ac VHT80	Rear Face	0	138	Main	w/o	83.50	1.20	13.0	12.88	1.03	0.07	0.223	0.27
						Aux			1.20	13.0	12.99	1.00		0.536	0.64
15	WLAN5G	802.11ac VHT80	Top Side	0	138	Main	w/o	83.50	1.20	13.0	12.88	1.03	0.02	0.303	0.37
						Aux			1.20	13.0	12.99	1.00		0.762	**0.91**
	WLAN5G	802.11ac VHT80	Top Side	0	106	Main	w/o	83.50	1.20	11.0	10.97	1.01	-0.06	0.181	0.22
						Aux			1.20	11.0	10.99	1.00		0.454	0.54
	WLAN5G	802.11ac VHT80	Top Side	0	122	Main	w/o	83.50	1.20	13.0	12.82	1.04	0.05	0.252	0.31
						Aux			1.20	13.0	12.99	1.00		0.633	0.76
WWAN on															
	WLAN5G	802.11ac VHT80	Rear Face	0	138	Main	w/	83.50	1.20	8.5	8.46	1.01	0.01	0.068	0.08
						Aux			1.20	8.5	8.47	1.01		0.163	0.20
	WLAN5G	802.11ac VHT80	Top Side	0	138	Main	w/	83.50	1.20	8.5	8.46	1.01	-0.01	0.073	0.09
						Aux			1.20	8.5	8.47	1.01		0.245	0.30
	WLAN5G	802.11ac VHT80	Top Side	0	106	Main	w/	83.50	1.20	8.5	8.45	1.01	0.06	0.065	0.08
						Aux			1.20	8.5	8.47	1.01		0.223	0.27
	WLAN5G	802.11ac VHT80	Top Side	0	122	Main	w/	83.50	1.20	8.5	8.41	1.02	0.11	0.057	0.07
						Aux			1.20	8.5	8.43	1.02		0.209	0.25
WWAN off															
	WLAN5G	802.11ac VHT80	Rear Face	0	155	Main	w/o	85.30	1.17	13.0	12.96	1.01	-0.09	0.292	0.35
						Aux			1.17	13.0	12.99	1.00		0.302	0.35
16	WLAN5G	802.11ac VHT80	Top Side	0	155	Main	w/o	85.30	1.17	13.0	12.96	1.01	-0.05	0.254	0.30
						Aux			1.17	13.0	12.99	1.00		0.704	**0.83**
WWAN on															
	WLAN5G	802.11ac VHT80	Rear Face	0	155	Main	w/	85.30	1.17	8.5	8.49	1.00	0.03	0.103	0.12
						Aux			1.17	8.5	8.39	1.03		0.106	0.13
	WLAN5G	802.11ac VHT80	Top Side	0	155	Main	w/	85.30	1.17	8.5	8.49	1.00	-0.01	0.05	0.06
						Aux			1.17	8.5	8.39	1.03		0.379	0.46

Plot No.	Band	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)
	BT	Rear Face	0	39	Main	78.50	1.27	4.5	4.48	1.00	0.08	0.00132	0.00
	BT	Left Side	0	39	Main	78.50	1.27	4.5	4.48	1.00	0	<0.001	0.00
	BT	Right Side	0	39	Main	78.50	1.27	4.5	4.48	1.00	-0.13	0.00108	0.00
	BT	Top Side	0	39	Main	78.50	1.27	4.5	4.48	1.00	0.09	0.00142	0.00
	BT	Bottom Side	0	39	Main	78.50	1.27	4.5	4.48	1.00	0	<0.001	0.00
	BT	Top Side	0	0	Main	78.50	1.27	4.5	3.69	1.21	0.02	0.00107	0.00
17	BT	Top Side	0	78	Main	78.50	1.27	4.5	4.25	1.06	-0.07	0.00185	**0.01**

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

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	Top Side	9538	0.885	0.864	1.02	N/A	N/A	N/A	N/A
LTE 7	QPSK20M	Rear Face	21350	0.896	0.883	1.01	N/A	N/A	N/A	N/A
LTE 25	QPSK20M	Top Side	26590	0.884	0.871	1.01	N/A	N/A	N/A	N/A
LTE 66	QPSK20M	Top Side	132572	0.923	0.902	1.02	N/A	N/A	N/A	N/A
WLAN2.4G	802.11b	Top Side	6	1.37	1.32	1.04	N/A	N/A	N/A	N/A

4.7.4 Simultaneous Multi-band Transmission Evaluation

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

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition
1	WWAN + BT	Yes
2	WWAN + WLAN (DTS) (EUT with Power Reduction (Cell on) MIMO)	Yes
3	WWAN + WLAN (NII) (EUT with Power Reduction (Cell on) MIMO)	Yes
4	WWAN + WLAN (DTS) (EUT with Power Reduction (Cell on) MIMO) + BT	No
5	WWAN + WLAN (NII) (EUT with Power Reduction (Cell on) MIMO) + BT	Yes
6	WLAN (DTS) (EUT without Power Reduction (Cell off) MIMO) + BT	No
7	WLAN (NII) (EUT without Power Reduction (Cell off) MIMO) + BT	Yes

Note: The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.

1 Simultaneous Tx of the WWAN antennas with the WLAN antennas transmitting

2 Simultaneous Tx of the WLAN Main with the WLAN Aux antennas transmitting

The Section 4.7.2 SAR result is measured with Main and Aux antenna transmitting simultaneously at the specified maximum output power of MIMO operation.

From the plots with both Wi-Fi transmit chains active at the same time; it is clear that the antennas are spatially separated to the extent that SAR distributions do not overlap. Thus Wi-Fi simultaneous transmission SAR compliance is determined separately for each individual antenna as allowed by KDB 248227 Section 6.1.

3 Simultaneous Tx of WWAN / WLAN with BT

(Case1) WWAN+BT

The simultaneous transmission SAR value is 1.04 W/kg, which is the sum of highest WWAN Top Side(1.03W/kg) + Bluetooth Top Side(0.01W/kg).

(Case2) WWAN + WLAN (DTS) (EUT with Power Reduction (Cell on) MIMO)

The simultaneous transmission SAR value is 1.57 W/kg, which is the sum of highest WWAN Top Side (1.03W/kg) + WLAN 2.4GHz Top Side (11b, 0.54W/kg).

(Case3) WWAN + WLAN (NII) (EUT with Power Reduction (Cell on) MIMO)

The simultaneous transmission SAR value is 1.49 W/kg, which is the sum of highest WWAN Top Side (1.03W/kg) + WLAN 5GHz Top Side (11ac, 0.46W/kg).

(Case5) WWAN + WLAN (NII) (EUT with Power Reduction (Cell on) MIMO) + BT

The simultaneous transmission SAR value is 1.50 W/kg, which is the sum of highest WWAN Top Side (1.03W/kg) + WLAN 5GHz Top Side (11ac, 0.46W/kg) + Bluetooth Top Side (0.01W/kg).

(Case7) WLAN (DTS) (EUT without Power Reduction (Cell off) MIMO) + BT

The simultaneous transmission SAR value is 0.38 W/kg, which is the sum of highest WLAN 5GHz Top Side (11ac, 0.37W/kg) + Bluetooth Top Side (0.01W/kg).

(Case4 & Case6)
BT + WLAN 2.4GHz MIMO(time sharing)
Based on the time-sharing scheme described below, BT and 2.4GHz WLAN do not transmit simultaneously. Therefore, it is not required to evaluate the simultaneous transmission SAR of BT and WLAN in this case.
[WLAN/BT co-existence with time sharing scheme]
Since BT and WLAN 2.4GHz share the same antenna based on time sharing scheme, WiFi/BT co-existence in 2.4GHz works in this way:
(1)Time slot_#1: BT transmits on Main Antenna, No WiFi transmit on Main Antenna & Aux Antenna
(2)Time slot_#2: WLAN 2.4GHz transmits on both Main Antenna and Aux Antenna, No BT transmit
(3)Repeat (1)Time slot_#1& (2)Time slot_#2 in turn…

<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.

WWAN Ant	Conditions (SAR1 + SAR2 + SAR3)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	Max. SAR3	SAR Summation	SPLSR Analysis
Cell On	WWAN + WLAN (DTS) MIMO	Body	Rear Face	0.91	0.34	-	1.25	Σ SAR < 1.6, Not required
			Top Side	1.03	0.54	-	1.57	Σ SAR < 1.6, Not required
	WWAN + WLAN (NII) MIMO	Body	Rear Face	0.91	0.20	-	1.11	Σ SAR < 1.6, Not required
			Top Side	1.03	0.46	-	1.49	Σ SAR < 1.6, Not required
	WWAN + WLAN (NII) MIMO + BT Main Ant	Body	Rear Face	0.91	0.20	0.00	1.11	Σ SAR < 1.6, Not required
			Top Side	1.03	0.46	0.01	1.50	Σ SAR < 1.6, Not required

WWAN Ant	Conditions (SAR1 + SAR2 + SAR3)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
Cell Off	WLAN (NII) MIMO + BT Main Ant	Body	Rear Face	0.65	0.00	0.65	Σ SAR < 1.6, Not required
			Top Side	0.91	0.01	0.92	Σ SAR < 1.6, Not required

Test Engineer： Sam Onn, and Willy Chang

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1013	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D835V2	4d121	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D1750V2	1055	Aug. 21, 2017	1 Year
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 18, 2018	1 Year
System Validation Dipole	SPEAG	D2300V2	1004	Jan. 17, 2018	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 17, 2017	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 17, 2017	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1019	Mar. 22, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3898	Jun. 26, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3971	Mar. 26, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7346	Feb. 28, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 16, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1277	Jan. 18, 2018	1 Year
Data Acquisition Electronics	SPEAG	DAE4	679	Mar. 05, 2018	1 Year
Wireless Communication Test Set	Agilent	E5515C	MY50266628	Dec. 06, 2017	1 Year
Radio Communication Analyzer	Anritsu	MT8820C	6201300638	Jun. 27, 2018	1 Year
Universal Radio Communication Tester	Anritsu	MT8821C	6261786083	Dec. 21, 2017	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 23, 2018	1 Year
ENA Series Network Analyzer	Agilent	E5071C	MY46214281	Jun. 08, 2018	1 Year
MXG Analong Signal Generator	Agilent	N5181A	MY50143868	Jul. 03, 2018	1 Year
Vector Signal Generator	Anritsu	MG3710A	6201599977	Mar. 16, 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. 23, 2018	1 Year

6. Measurement Uncertainty

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 11.8 %	± 11.3 %	
Expanded Uncertainty (K=2)						**± 23.6 %**	**± 22.6 %**	

Body SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 12.8 %	± 12.4 %	
Expanded Uncertainty (K=2)						**± 25.6 %**	**± 24.8 %**	

Body SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

7. Information on 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:

Taiwan HwaYa EMC/RF/Safety/Telecom Lab:
Add: No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil., Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-318-3232
Fax: 886-3-327-0892

Taiwan LinKo EMC/RF Lab:
Add: No. 47-2, 14th Ling, Chia Pau Vil., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
Tel: 886-2-2605-2180
Fax: 886-2-2605-1924

Taiwan HsinChu EMC/RF Lab:
Add: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 30078, Taiwan, R.O.C.
Tel: 886-3-593-5343
Fax: 886-3-593-5342

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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.

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/09

System Check_B750_180809

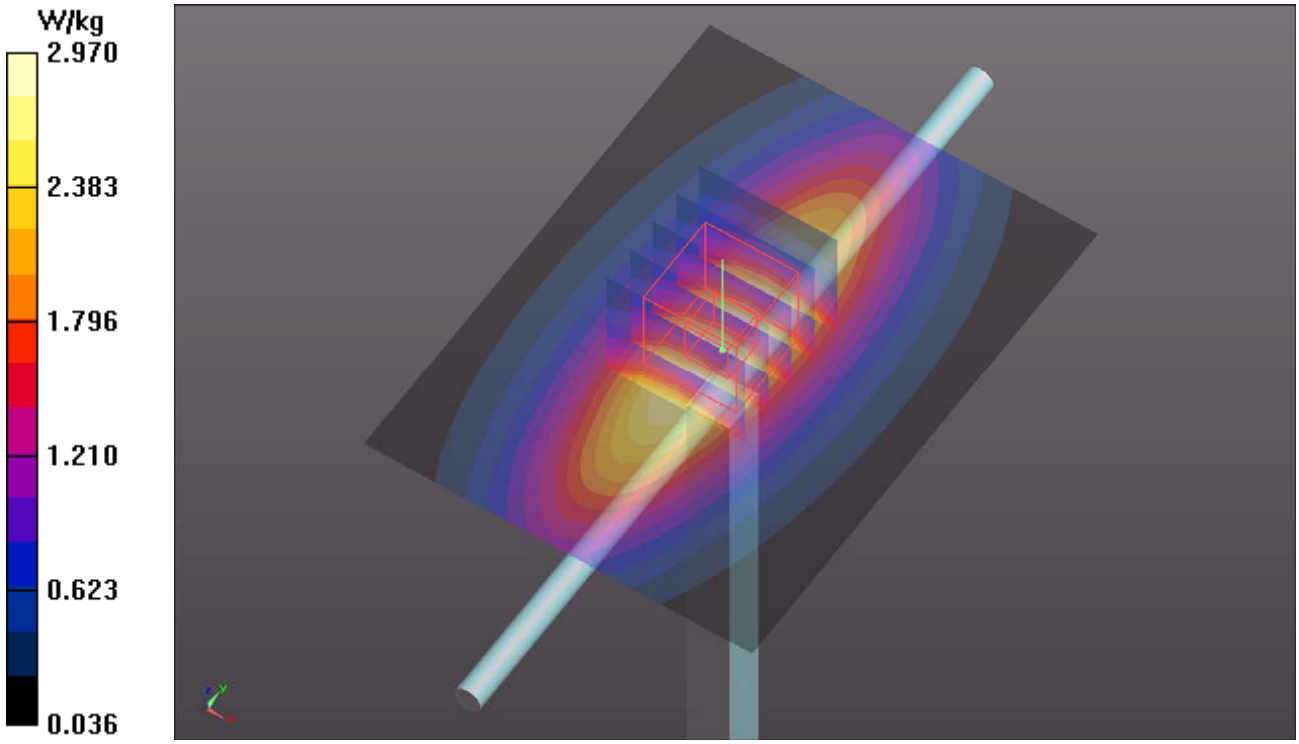
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0809 Medium parameters used: f = 750 MHz; σ = 0.969 S/m; ε_r = 54.182; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.28, 10.28, 10.28); Calibrated: 2018/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.97 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.66 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 2.33 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (measured) = 2.98 W/kg



System Check_B835_180731

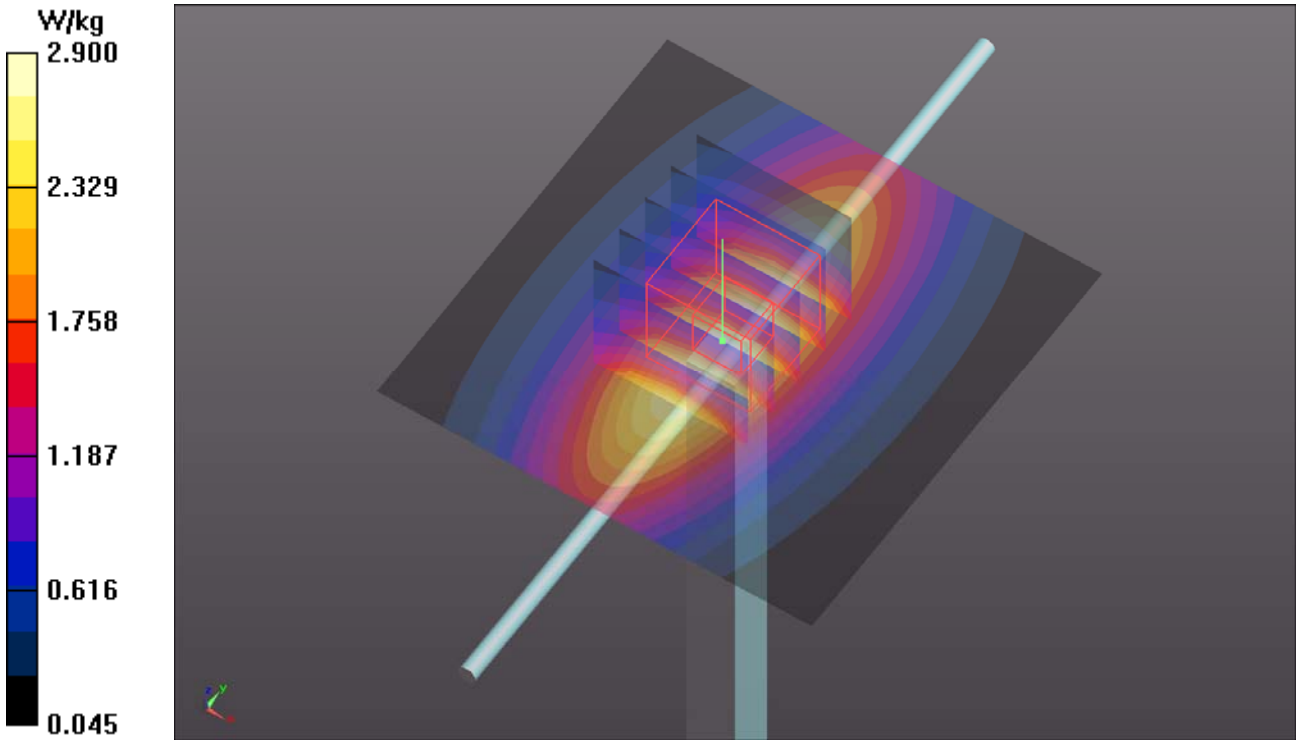
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0731 Medium parameters used: f = 835 MHz; σ = 0.979 S/m; ε_r = 56.29; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.15, 10.15, 10.15); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.90 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.54 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.47 W/kg
SAR(1 g) = 2.27 W/kg; SAR(10 g) = 1.45 W/kg
Maximum value of SAR (measured) = 2.91 W/kg



System Check_B1750_180828

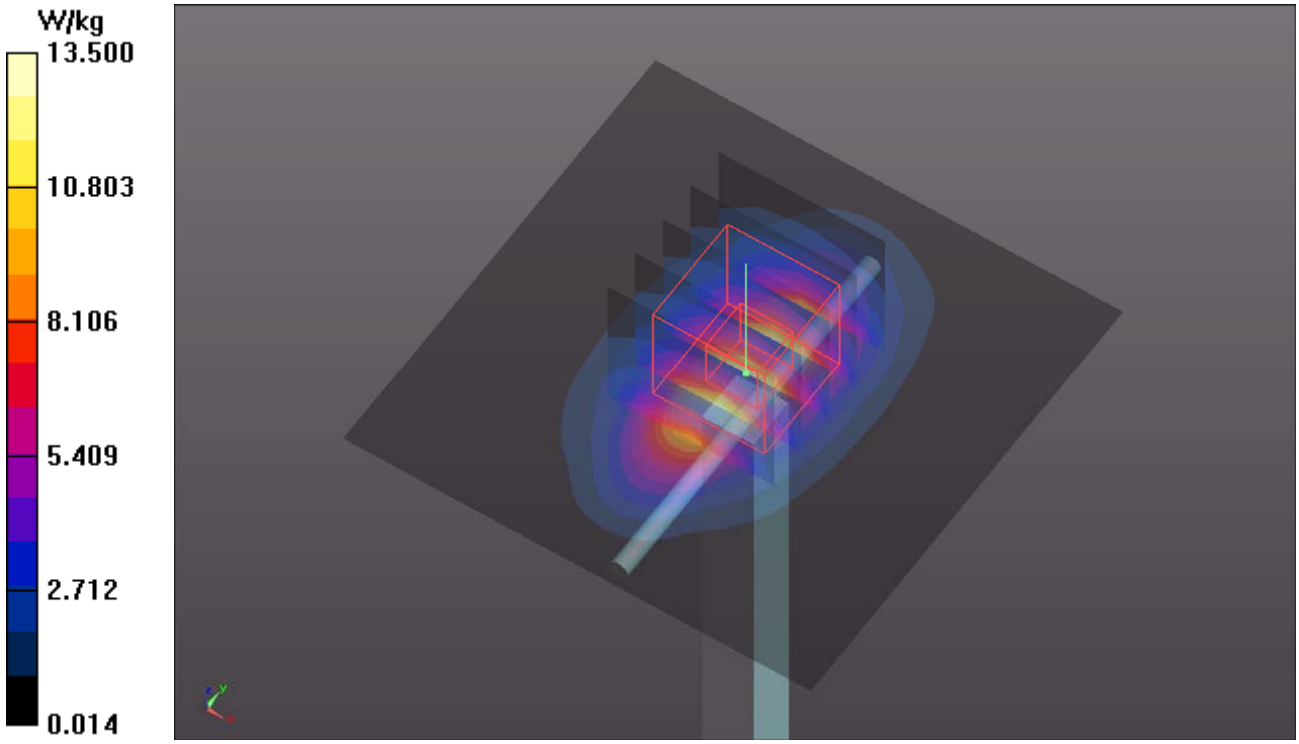
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: B16T20N2_0728 Medium parameters used: f = 1750 MHz; σ = 1.437 S/m; ε_r = 52.045; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(8.45, 8.45, 8.45); Calibrated: 2018/02/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2018/03/05
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.5 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 100.5 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(1 g) = 8.97 W/kg; SAR(10 g) = 4.82 W/kg
Maximum value of SAR (measured) = 13.5 W/kg



System Check_B1900_180731

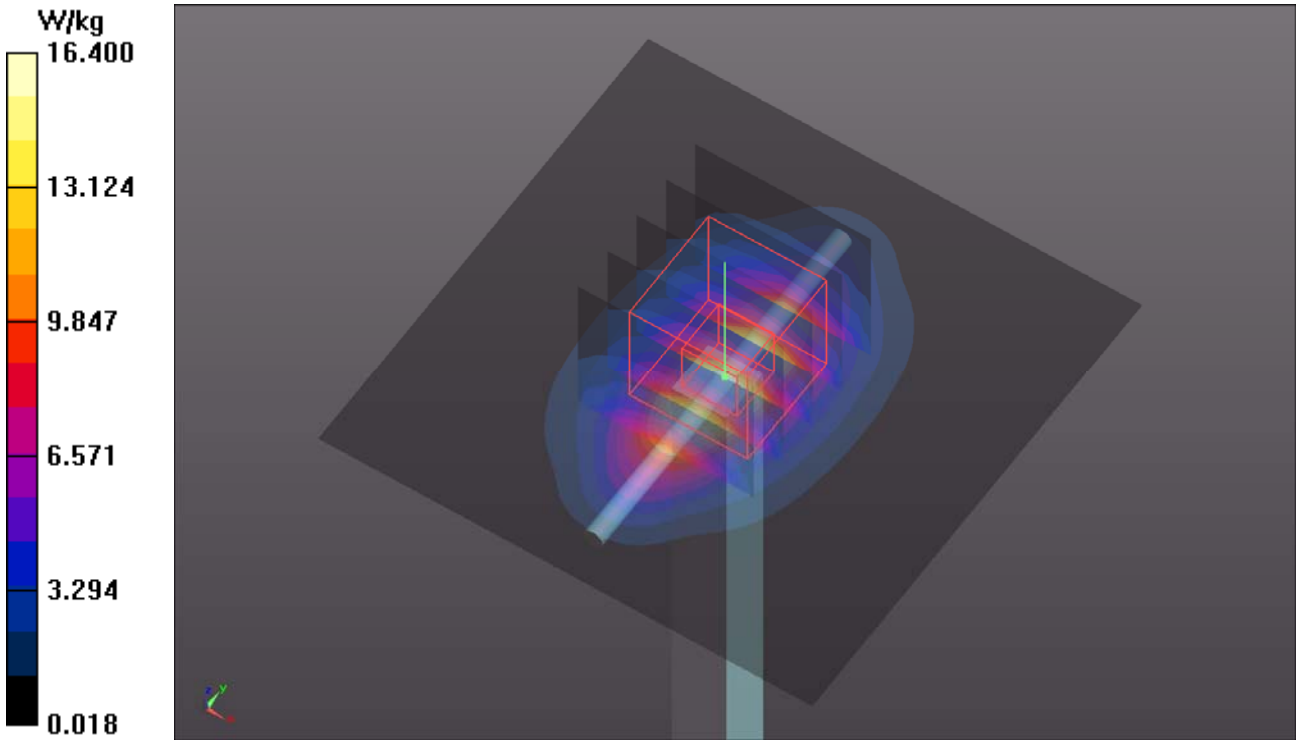
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0731 Medium parameters used: f = 1900 MHz; σ = 1.57 S/m; ε_r = 51.27; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.08, 8.08, 8.08); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 16.4 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 99.10 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 19.7 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.29 W/kg
Maximum value of SAR (measured) = 16.5 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/01

System Check_B2300_180801

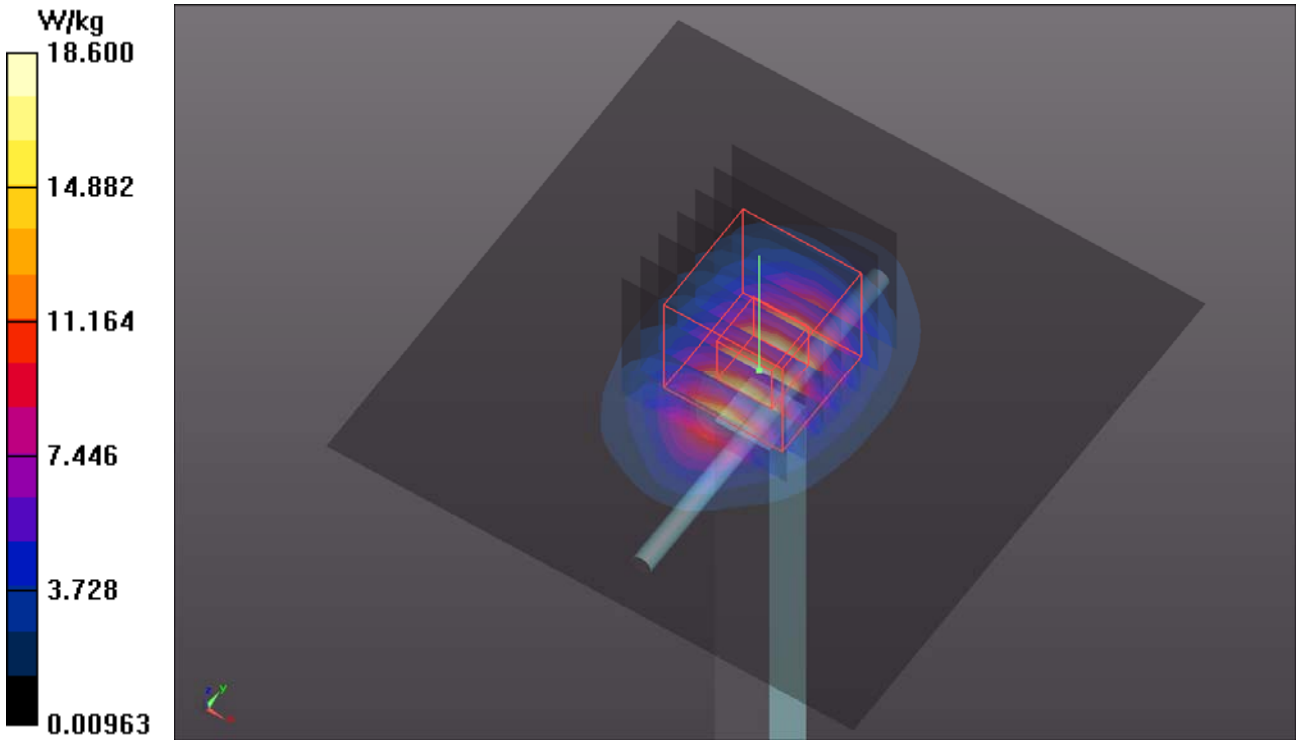
DUT: Dipole 2300 MHz; Type: D2300V2; SN: 1004

Communication System: CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0801 Medium parameters used: f = 2300 MHz; σ = 1.865 S/m; ε_r = 52.411; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.75, 7.75, 7.75); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 18.6 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 103.6 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 22.8 W/kg
SAR(1 g) = 11.3 W/kg; SAR(10 g) = 5.35 W/kg
Maximum value of SAR (measured) = 18.7 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/09

System Check_B2450_180809

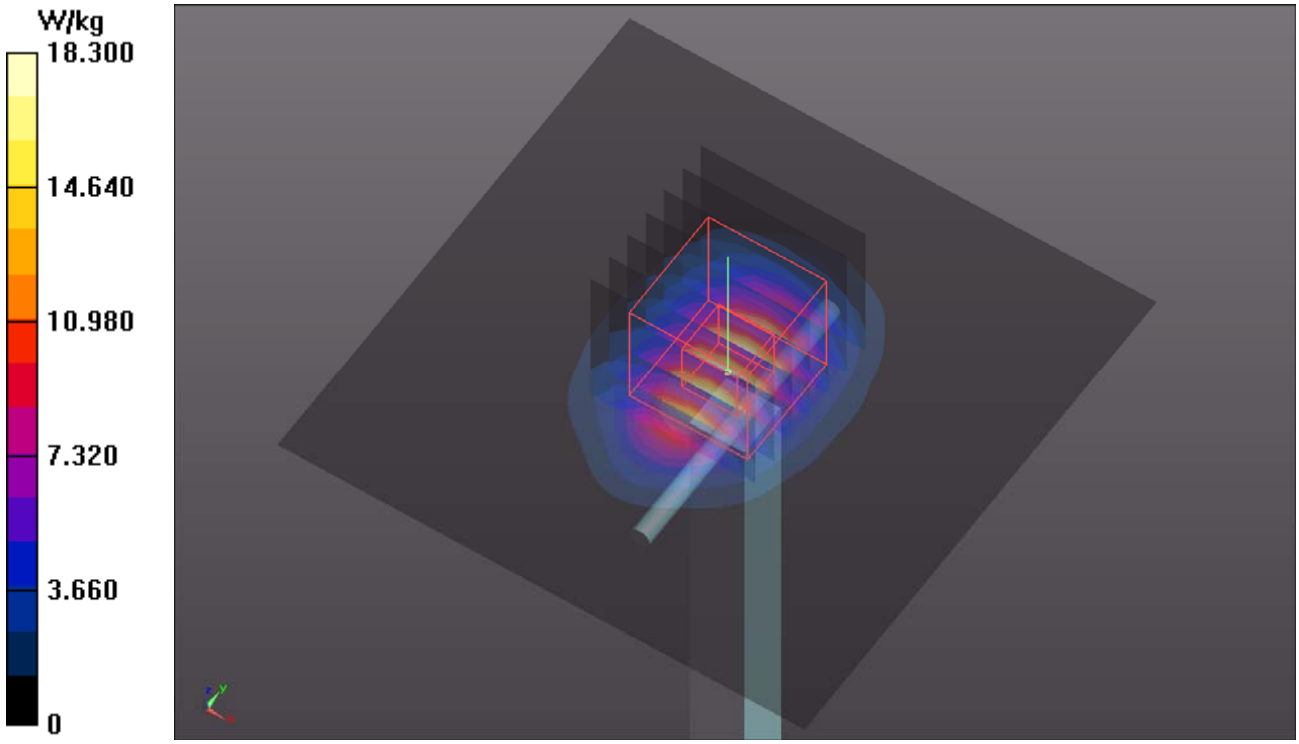
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0809 Medium parameters used: f = 2450 MHz; σ = 1.969 S/m; ε_r = 51.42; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.61, 7.61, 7.61); Calibrated: 2018/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 18.3 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.96 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 24.5 W/kg
SAR(1 g) = 11.9 W/kg; SAR(10 g) = 5.51 W/kg
Maximum value of SAR (measured) = 18.3 W/kg



System Check_B2600_180728

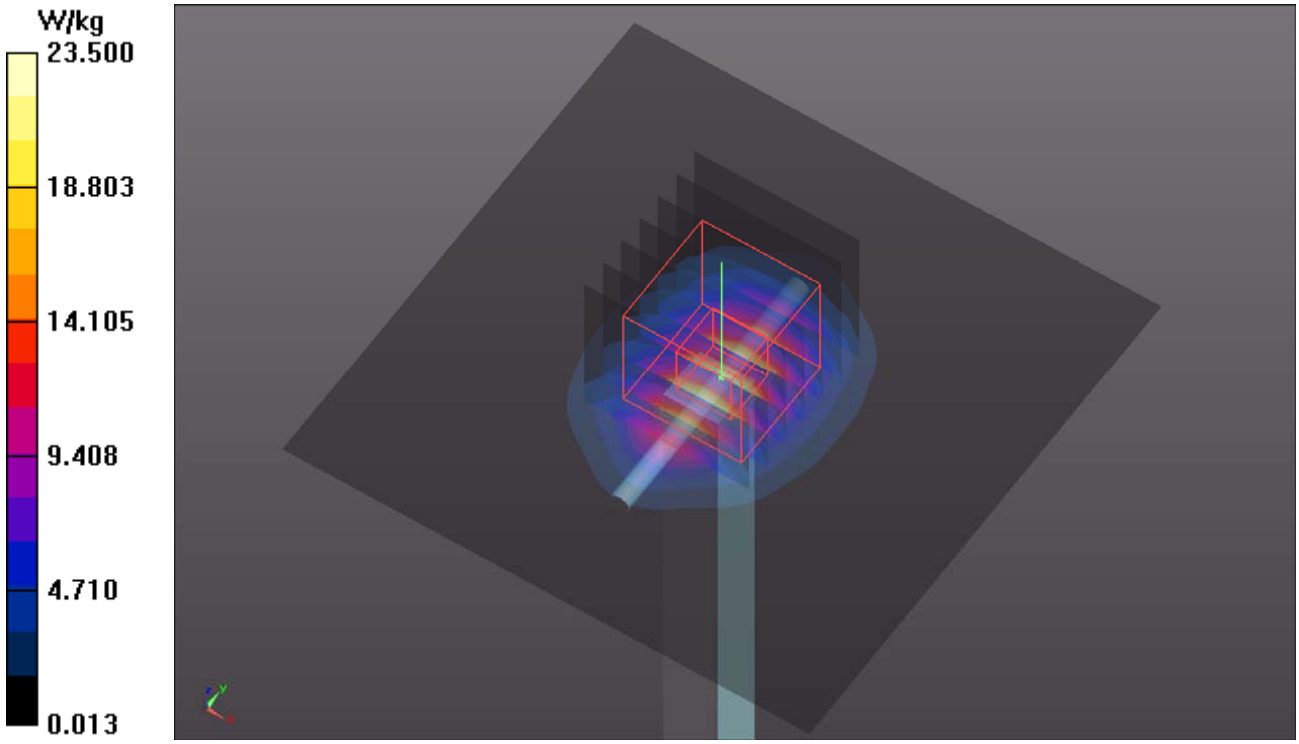
DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0728 Medium parameters used: f = 2600 MHz; σ = 2.168 S/m; ε_r = 50.887; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(7.44, 7.44, 7.44); Calibrated: 2018/02/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2018/03/05
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 23.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 107.7 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 29.3 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.01 W/kg
Maximum value of SAR (measured) = 23.3 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/09

System Check_B5250_180809

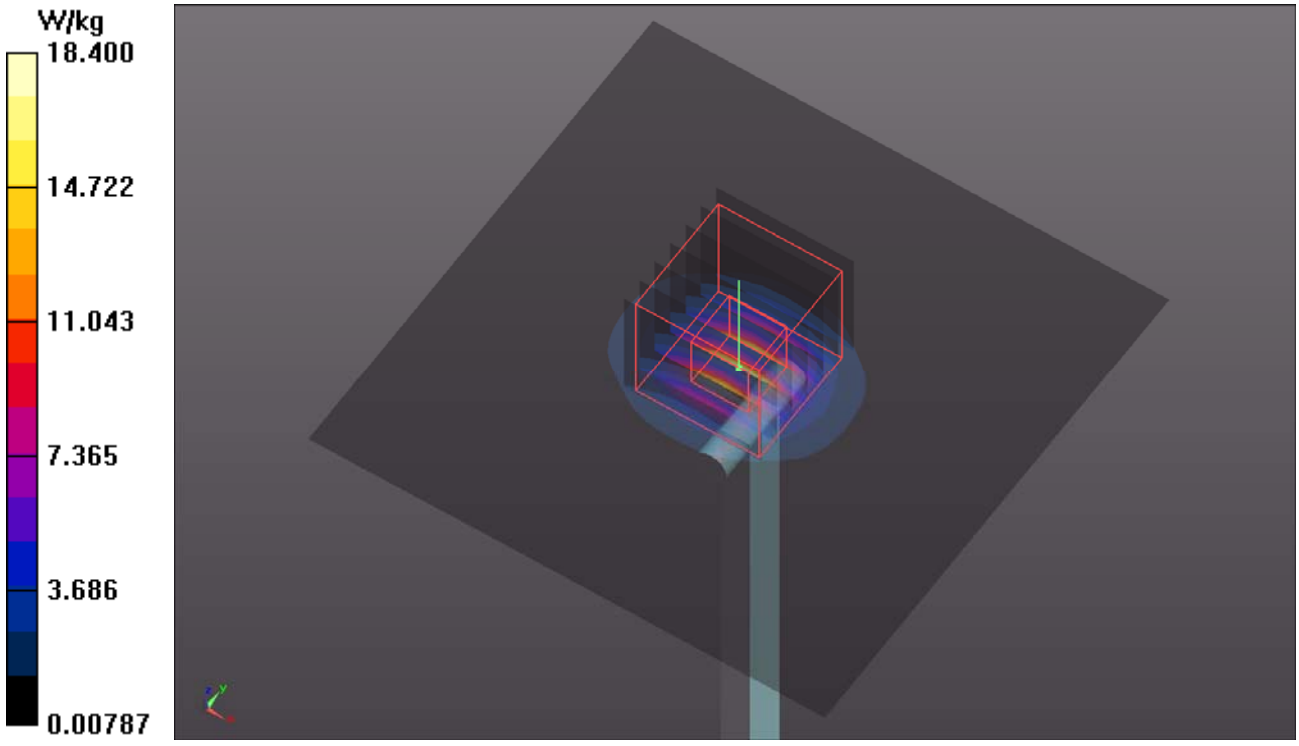
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0809 Medium parameters used: f = 5250 MHz; σ = 5.468 S/m; ε_r = 47.637; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.95, 4.95, 4.95); Calibrated: 2018/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.4 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 69.45 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 20.1 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/09

System Check_B5600_180809

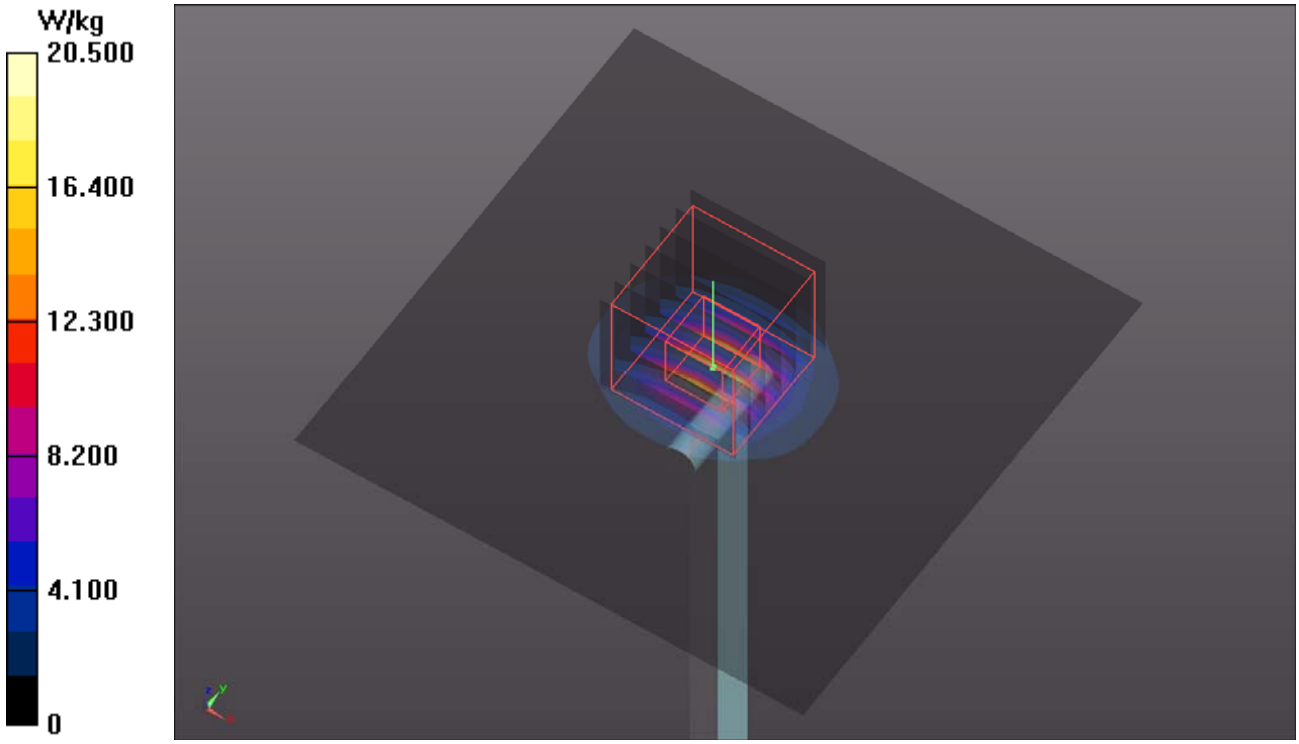
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0809 Medium parameters used: f = 5600 MHz; σ = 5.958 S/m; ε_r = 46.934; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.17, 4.17, 4.17); Calibrated: 2018/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.5 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 69.75 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 38.1 W/kg
SAR(1 g) = 8.47 W/kg; SAR(10 g) = 2.36 W/kg
Maximum value of SAR (measured) = 22.2 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2018/08/09

System Check_B5800_180809

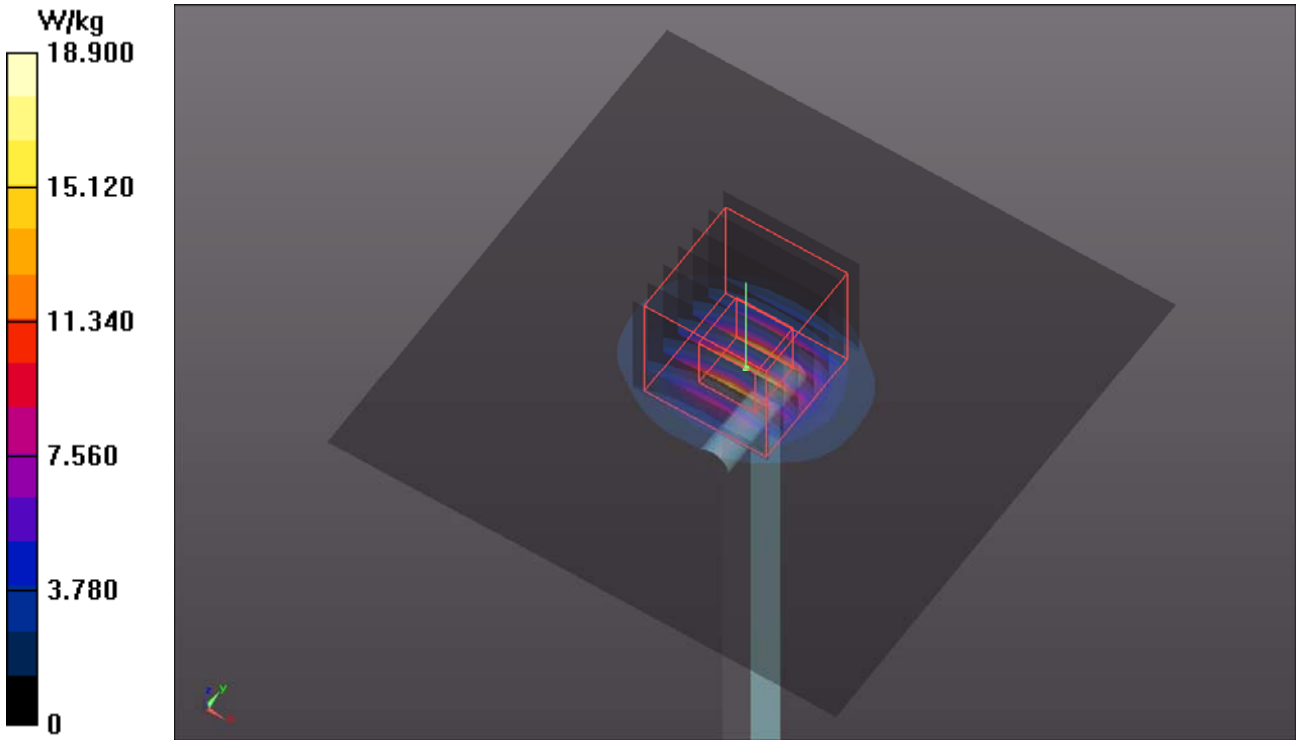
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: B34T60N1_0809 Medium parameters used: f = 5800 MHz; σ = 6.235 S/m; ε_r = 46.547; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.45, 4.45, 4.45); Calibrated: 2018/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.9 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 65.78 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 36.9 W/kg
SAR(1 g) = 7.69 W/kg; SAR(10 g) = 2.14 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_Top Side_18mm_Ch9538_Sensor_w_o

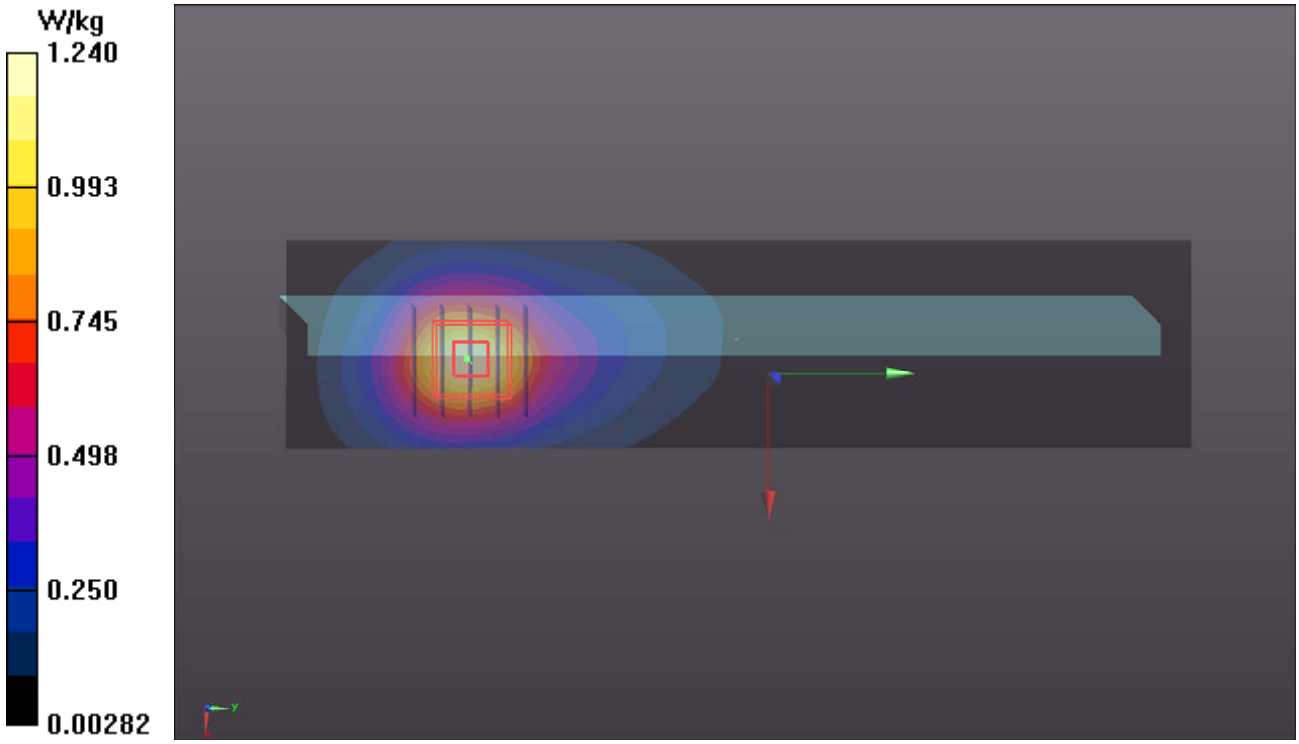
DUT: 171110C22

Communication System:WCDMA; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0731 Medium parameters used: f = 1908 MHz; σ = 1.578 S/m; ε_r = 51.252; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.08, 8.08, 8.08); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (41x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.24 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.99 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 0.885 W/kg; SAR(10 g) = 0.521 W/kg
Maximum value of SAR (measured) = 1.28 W/kg



P02 WCDMA V_RMC12.2K_Top Side_0mm_Ch4132_Sensor_w

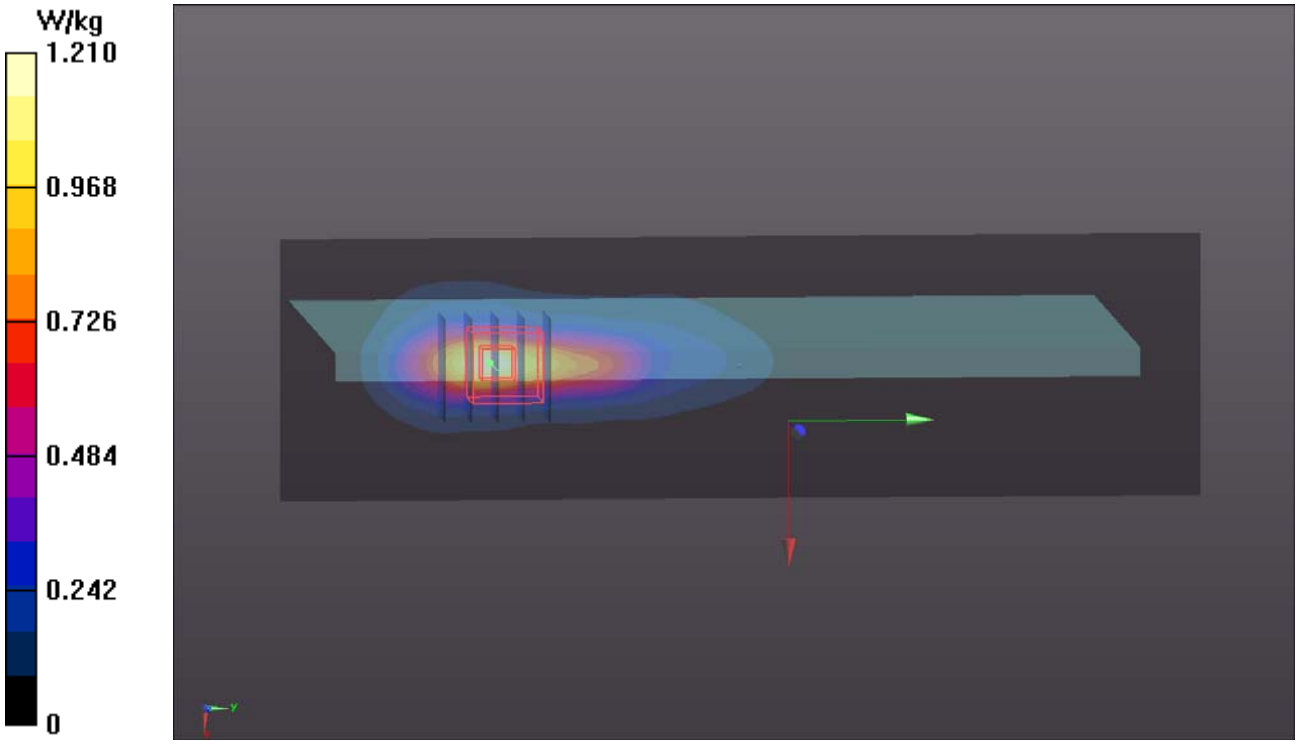
DUT: 171110C22

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0809 Medium parameters used: f = 826.4 MHz; σ = 1.007 S/m; ε_r = 57.093; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.25, 10.25, 10.25); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (61x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.21 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.50 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.697 W/kg; SAR(10 g) = 0.360 W/kg
Maximum value of SAR (measured) = 1.23 W/kg



P03 LTE 5_QPSK10M_Top Side_0mm_Ch20450_1RB_OS0_Sensor_w

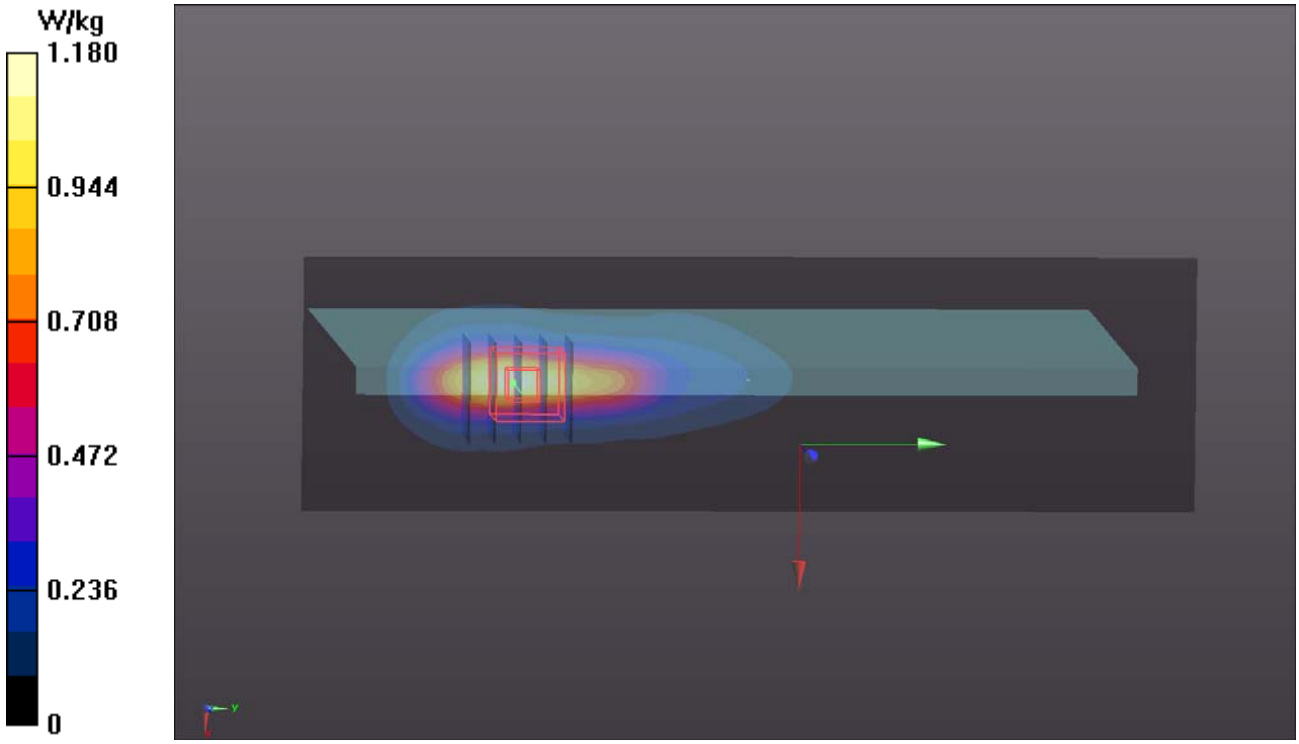
DUT: 171110C22

Communication System: LTE; Frequency: 829 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0809 Medium parameters used: f = 829 MHz; σ = 1.009 S/m; ε_r = 57.075; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.25, 10.25, 10.25); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (61x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.98 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.683 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 1.20 W/kg



P04 LTE 7_QPSK20M_Rear Face_0mm_Ch21350_1RB_OS0_Sensor_w

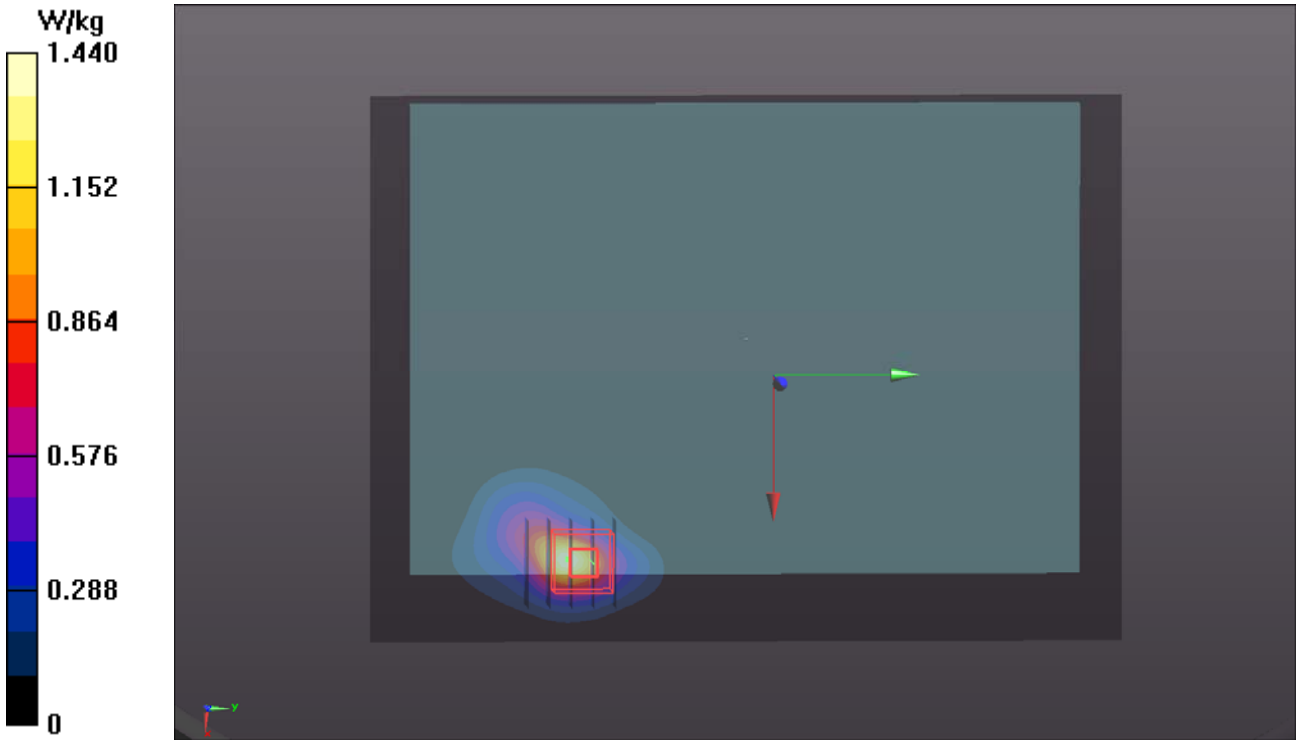
DUT: 171110C22

Communication System: LTE; Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0808 Medium parameters used: f = 2560 MHz; σ = 2.166 S/m; ε_r = 51.056; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.51, 7.51, 7.51); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (171x231x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.10 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.05 W/kg
SAR(1 g) = 0.896 W/kg; SAR(10 g) = 0.381 W/kg
Maximum value of SAR (measured) = 1.58 W/kg



P05 LTE 12_QPSK10M_Rear Face_0mm_Ch23095_1RB_OS0_Sensor_w

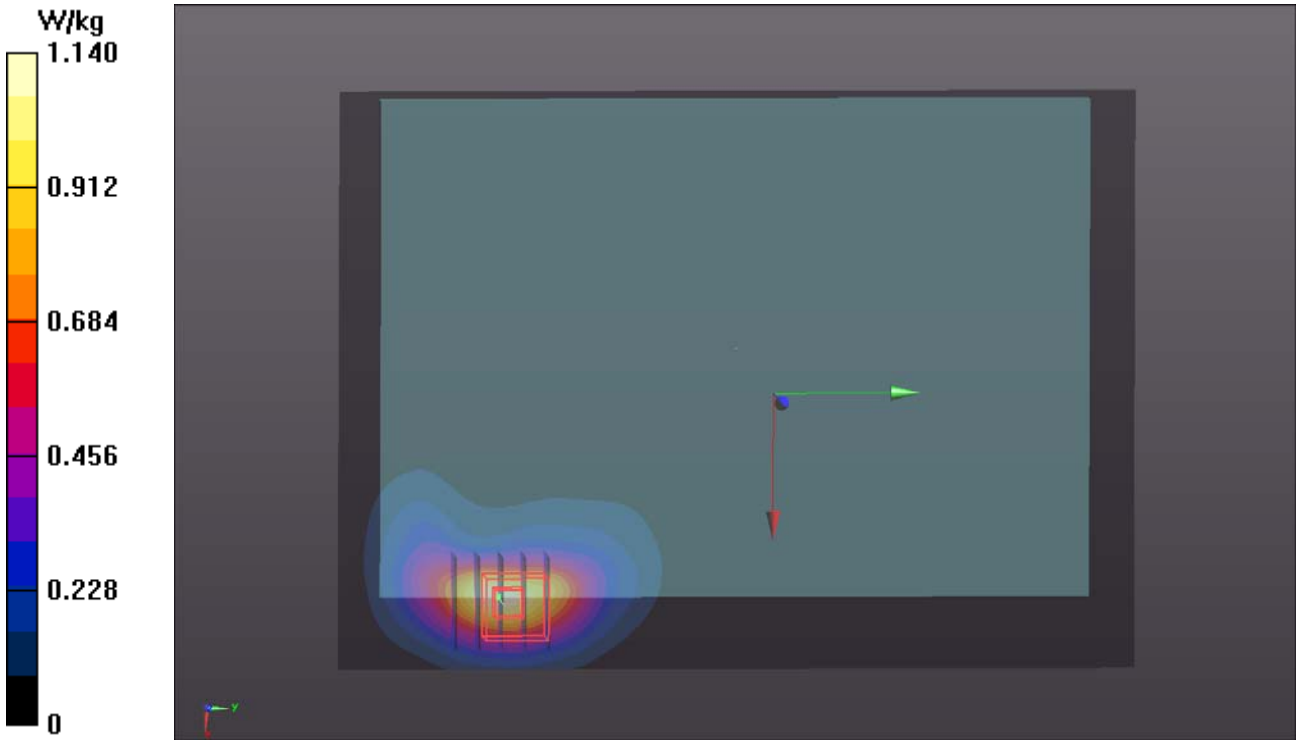
DUT: 171110C22

Communication System: LTE; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0809 Medium parameters used: f = 707.5 MHz; σ = 0.929 S/m; ε_r = 54.617; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.28, 10.28, 10.28); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (141x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.56 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.733 W/kg; SAR(10 g) = 0.397 W/kg
Maximum value of SAR (measured) = 1.15 W/kg



P06 LTE 13_QPSK10M_Top Side_0mm_Ch23230_1RB_OS0_Sensor_w

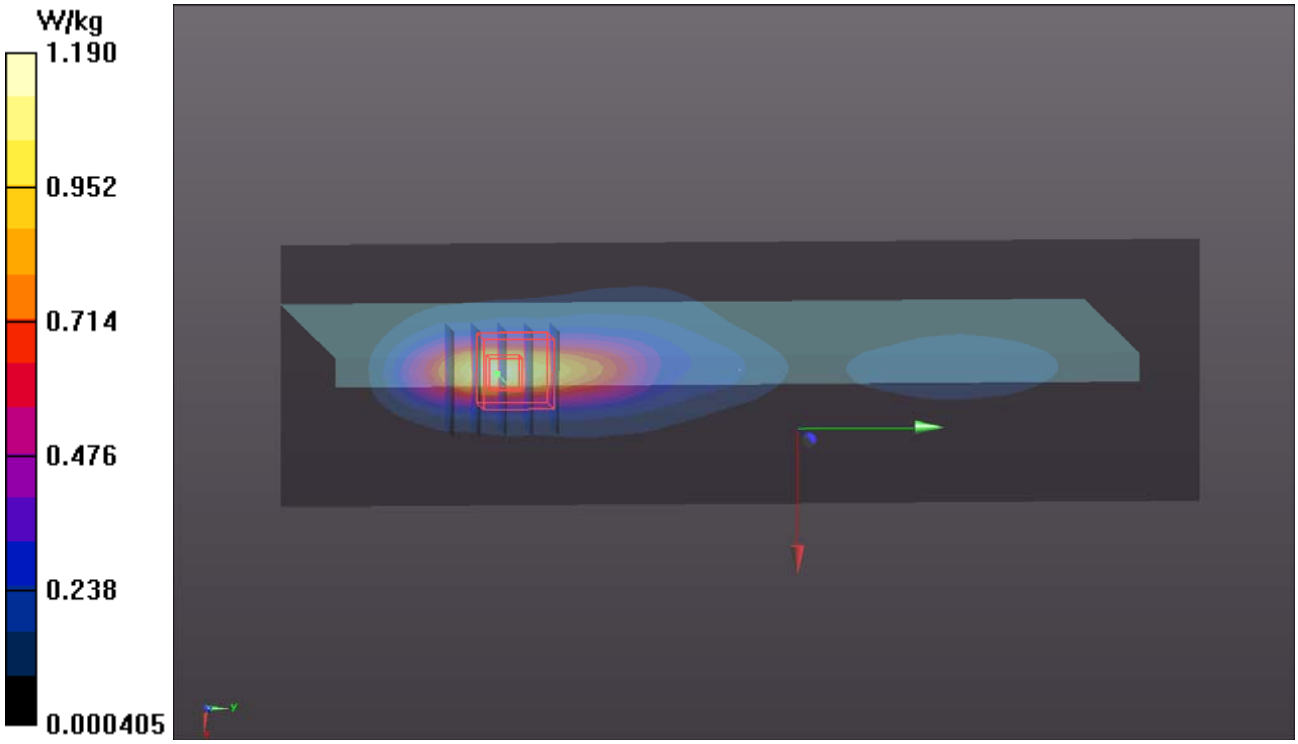
DUT: 171110C22

Communication System: LTE; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: B06T09N1_0809 Medium parameters used: f = 782 MHz; σ = 1 S/m; ε_r = 53.879; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.28, 10.28, 10.28); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (61x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.98 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.690 W/kg; SAR(10 g) = 0.366 W/kg
Maximum value of SAR (measured) = 1.14 W/kg



P07 LTE 25_QPSK20M_Top Side_18mm_Ch26590_1RB_OS0_Sensor_w_o

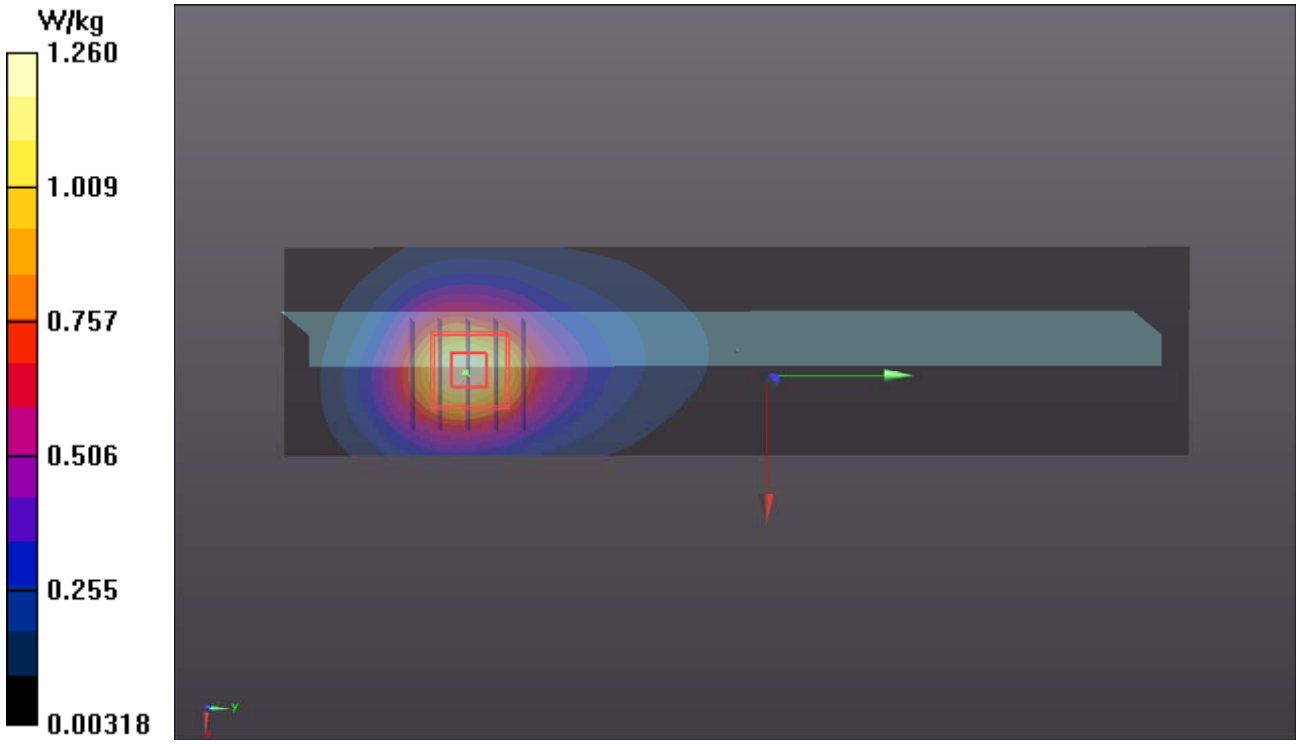
DUT: 171110C22

Communication System: LTE; Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: B16T20N1_0731 Medium parameters used: f = 1905 MHz; σ = 1.576 S/m; ε_r = 51.256; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.08, 8.08, 8.08); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (41x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.26 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.41 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.524 W/kg
Maximum value of SAR (measured) = 1.25 W/kg



P08 LTE 26_QPSK15M_Top Side_0mm_Ch26765_1RB_OS0_Sensor_w

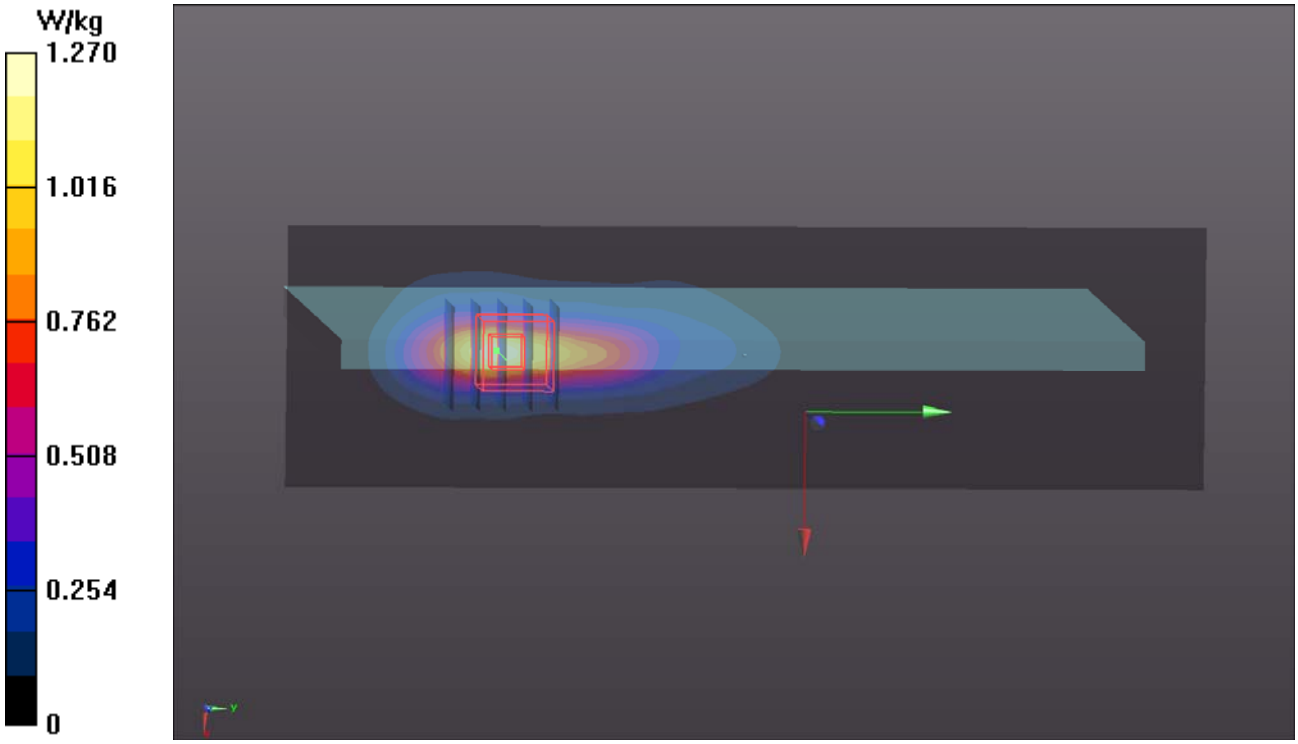
DUT: 171110C22

Communication System: LTE; Frequency: 821.5 MHz;Duty Cycle: 1:1
Medium: B07T10N1_0809 Medium parameters used: f = 821.5 MHz; σ = 1.002 S/m; ε_r = 57.141; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(10.25, 10.25, 10.25); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (61x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.48 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.745 W/kg; SAR(10 g) = 0.388 W/kg
Maximum value of SAR (measured) = 1.30 W/kg



P09 LTE 30_QPSK10M_Rear Face_16mm_Ch27710_1RB_OS0_Sensor_w_o

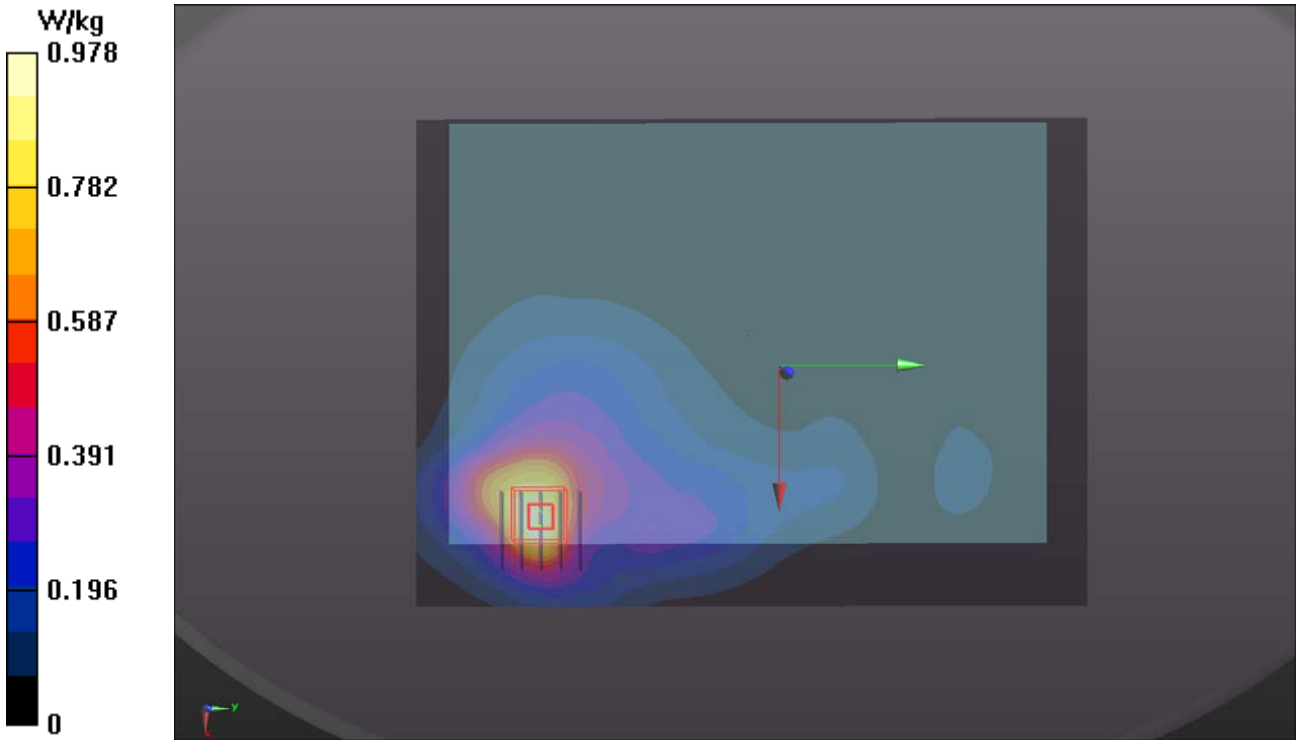
DUT: 171110C22

Communication System: LTE; Frequency: 2310 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0801 Medium parameters used: f = 2310 MHz; σ = 1.876 S/m; ε_r = 52.38; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.75, 7.75, 7.75); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (171x231x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.978 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.82 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.723 W/kg; SAR(10 g) = 0.420 W/kg
Maximum value of SAR (measured) = 1.03 W/kg



P11 LTE 41_QPSK20M_Rear Face_0mm_Ch40620_1RB_OS0_Sensor_w

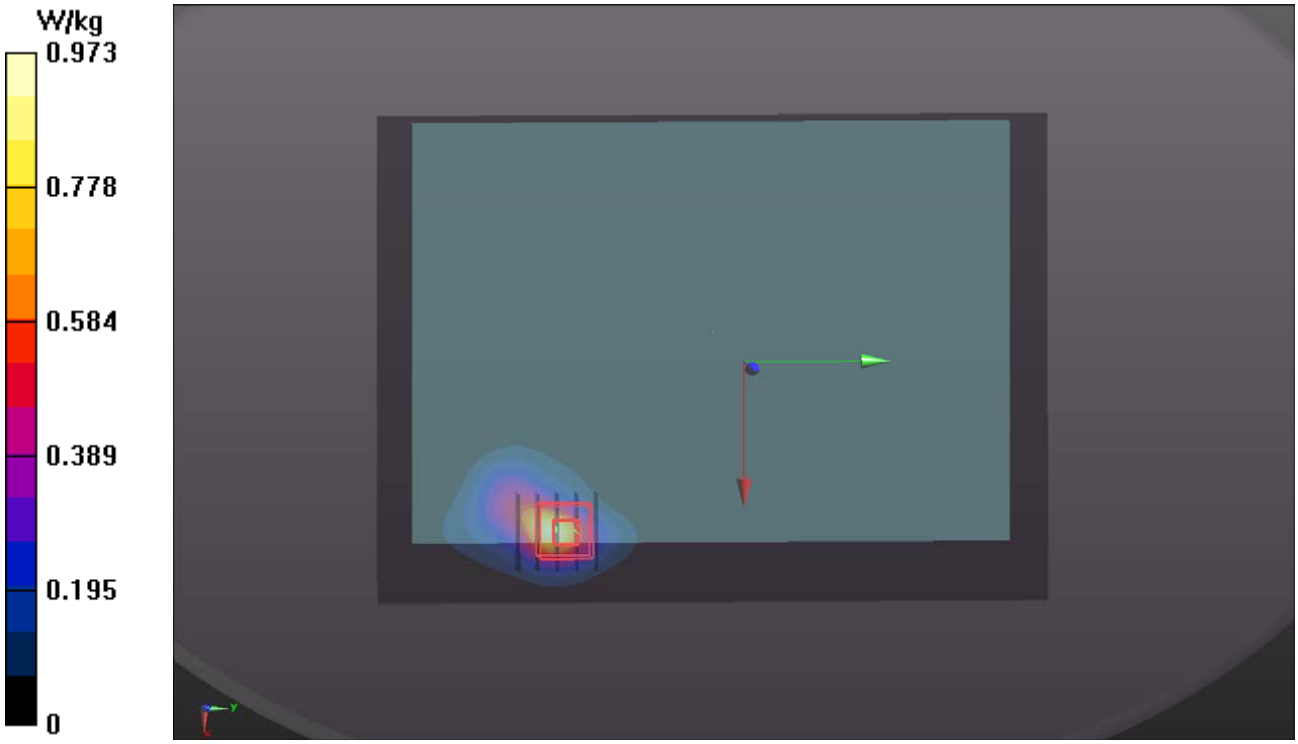
DUT: 171110C22

Communication System: LTE TDD CF0; Frequency: 2593 MHz;Duty Cycle: 1:1.58
Medium: B19T27N1_0808 Medium parameters used: f = 2593 MHz; σ = 2.207 S/m; ε_r = 50.955; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.51, 7.51, 7.51); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (171x231x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.973 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.97 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.599 W/kg; SAR(10 g) = 0.251 W/kg
Maximum value of SAR (measured) = 1.03 W/kg



P12 LTE 66_QPSK20M_Top Side_18mm_Ch132572_1RB_OS0_Sensor_w_o

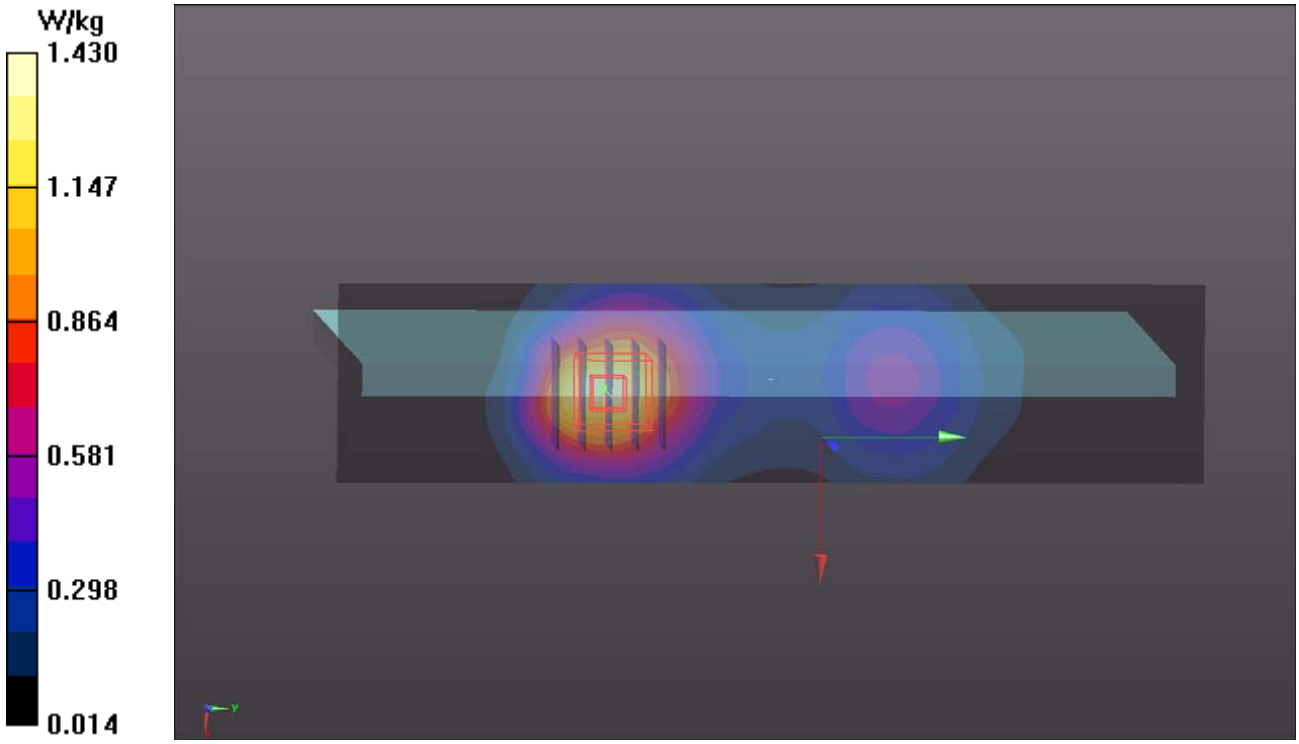
DUT: 171110C21

Communication System: LTE; Frequency: 1770 MHz;Duty Cycle: 1:1
Medium: B16T20N2_0728 Medium parameters used: f = 1770 MHz; σ = 1.456 S/m; ε_r = 52.007; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(8.45, 8.45, 8.45); Calibrated: 2018/02/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2018/03/05
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (41x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.91 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.923 W/kg; SAR(10 g) = 0.578 W/kg
Maximum value of SAR (measured) = 1.31 W/kg



P13 WLAN2.4G_802.11b_Top Side_0mm_Ch6_MIMO

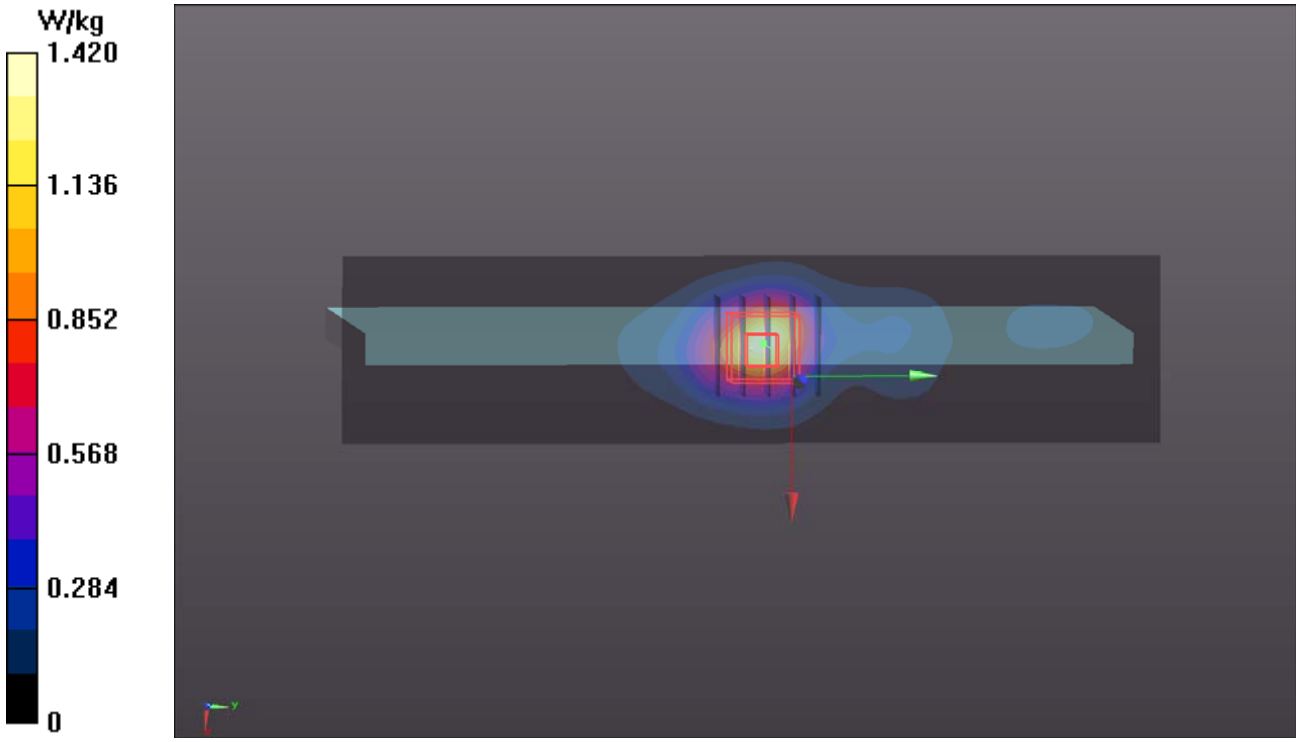
DUT: 171110C22

Communication System: WLAN_2.4G; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: B19T27N1_0815 Medium parameters used: f = 2437 MHz; σ = 2.027 S/m; ε_r = 51.392; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(7.78, 7.78, 7.78); Calibrated: 2018/02/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn679; Calibrated: 2018/03/05
- Phantom: ELI Phantom_1245; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (51x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.42 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.91 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 3.30 W/kg
SAR(1 g) = 1.37 W/kg; SAR(10 g) = 0.680 W/kg
Maximum value of SAR (measured) = 2.40 W/kg



P14 WLAN5G_802.11ac VHT80_Top Side_0mm_Ch58_MIMO

DUT: 171110C22

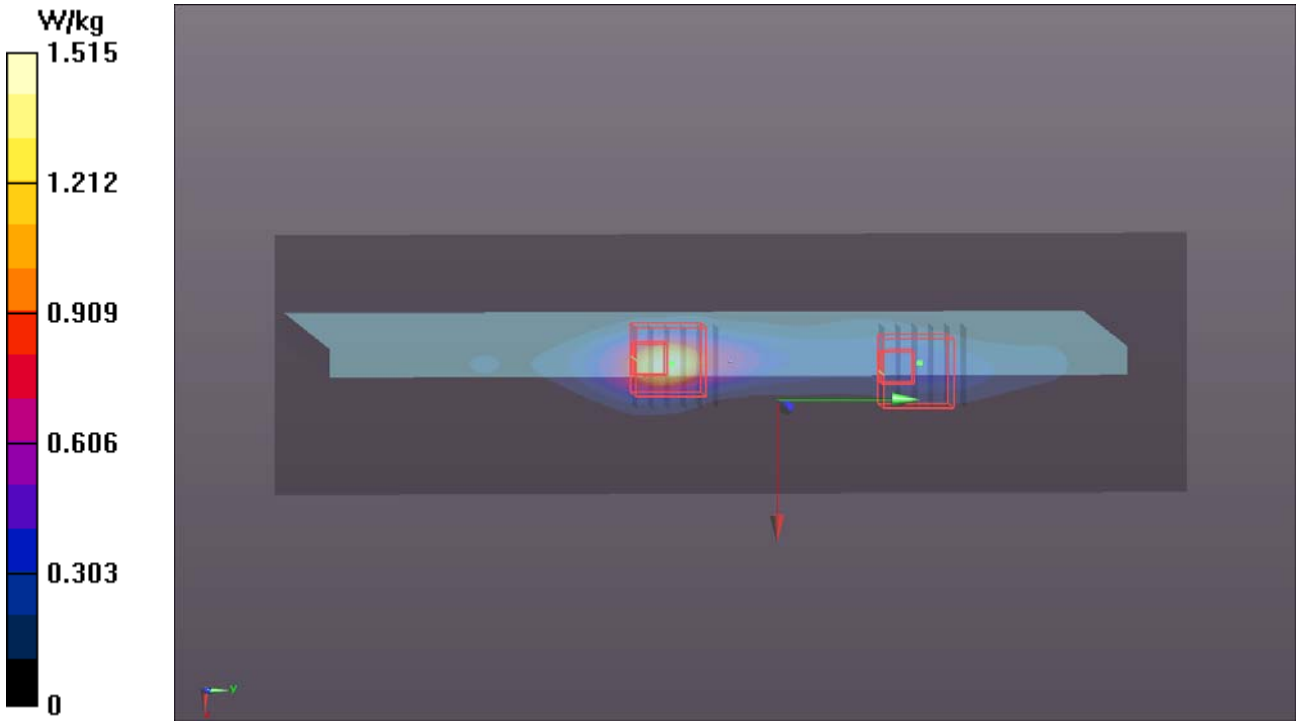
Communication System: WLAN_5G; Frequency: 5290 MHz;Duty Cycle: 1:1.1
Medium: B34T60N1_0809 Medium parameters used: f = 5290 MHz; σ = 5.524 S/m; ε_r = 47.556; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.95, 4.95, 4.95); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (81x281x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.52 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 16.63 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 3.18 W/kg
SAR(1 g) = 0.590 W/kg; SAR(10 g) = 0.170 W/kg
Maximum value of SAR (measured) = 2.06 W/kg

- Zoom Scan (6x6x12)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 16.63 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.064 W/kg
Maximum value of SAR (measured) = 0.806 W/kg



P15 WLAN5G_802.11ac VHT80_Top Side_0mm_Ch138_MIMO

DUT: 171110C22

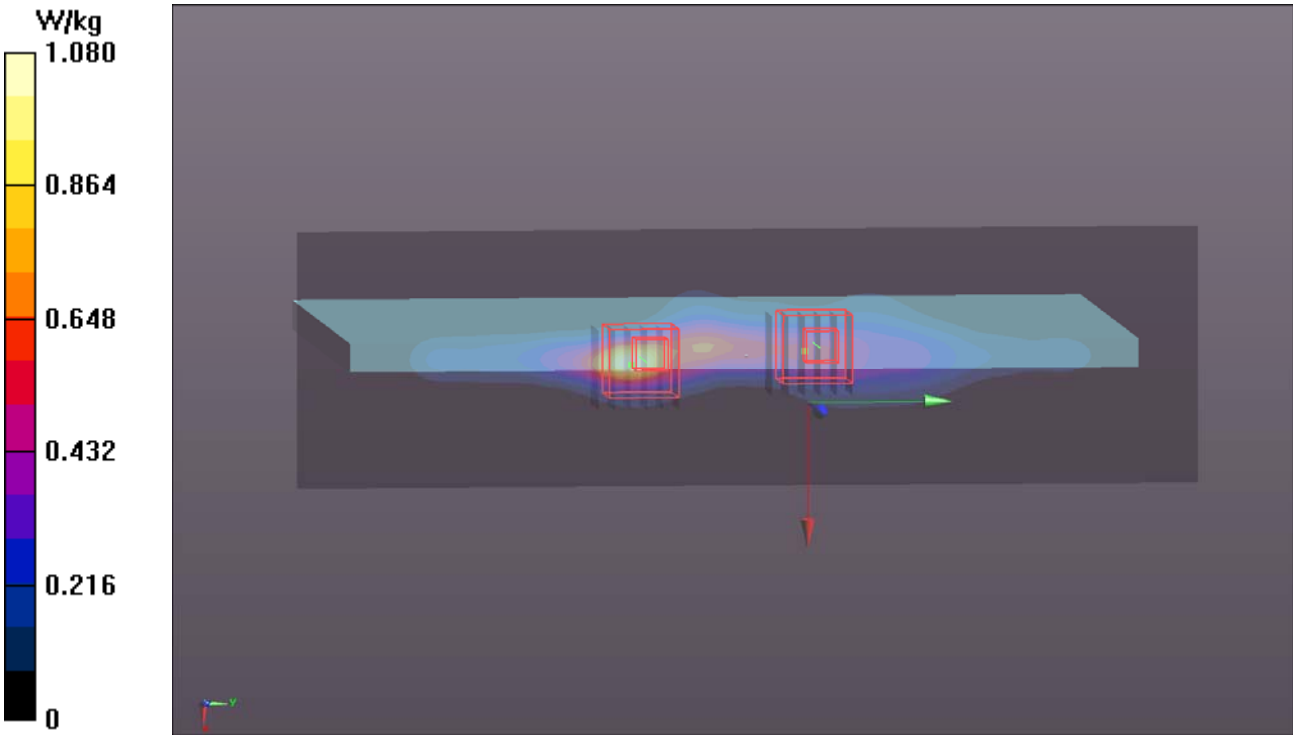
Communication System: WLAN_5G; Frequency: 5690 MHz;Duty Cycle: 1:1.2
Medium: B34T60N1_0809 Medium parameters used: f = 5690 MHz; σ = 6.079 S/m; ε_r = 46.758; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.45, 4.45, 4.45); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (81x281x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.08 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 12.64 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.56 W/kg
SAR(1 g) = 0.762 W/kg; SAR(10 g) = 0.193 W/kg
Maximum value of SAR (measured) = 1.92 W/kg

- Zoom Scan (6x6x12)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 12.64 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.087 W/kg
Maximum value of SAR (measured) = 0.767 W/kg



P16 WLAN5G_802.11ac VHT80_Top Side_0mm_Ch155_MIMO

DUT: 171110C22

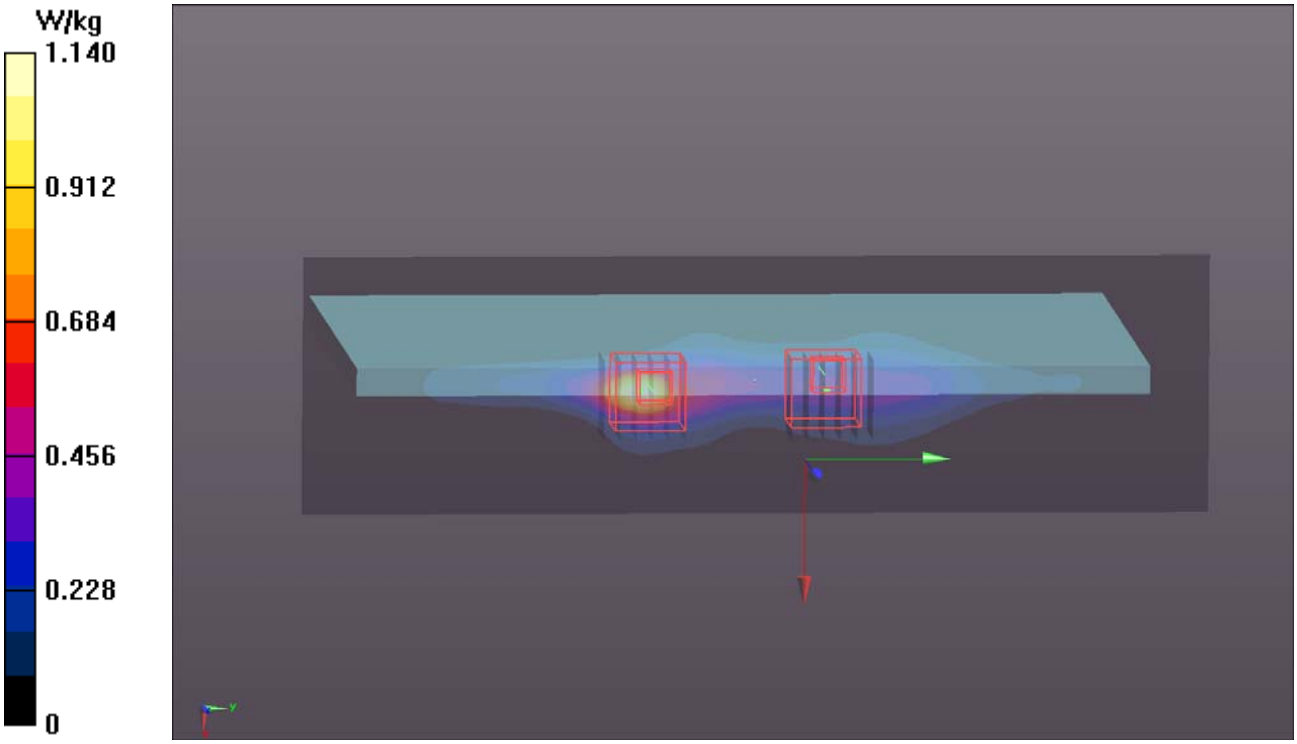
Communication System: WLAN_5G; Frequency: 5775 MHz;Duty Cycle: 1:1.17
Medium: B34T60N1_0809 Medium parameters used: f = 5775 MHz; σ = 6.2 S/m; ε_r = 46.605; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.45, 4.45, 4.45); Calibrated: 2018/06/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2018/01/18
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (81x281x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

- Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 12.60 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.15 W/kg
SAR(1 g) = 0.704 W/kg; SAR(10 g) = 0.182 W/kg
Maximum value of SAR (measured) = 1.73 W/kg

- Zoom Scan (6x6x12)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 12.60 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.064 W/kg
Maximum value of SAR (measured) = 0.779 W/kg



P17 BT_Top Side_0mm_Ch78_MAIN

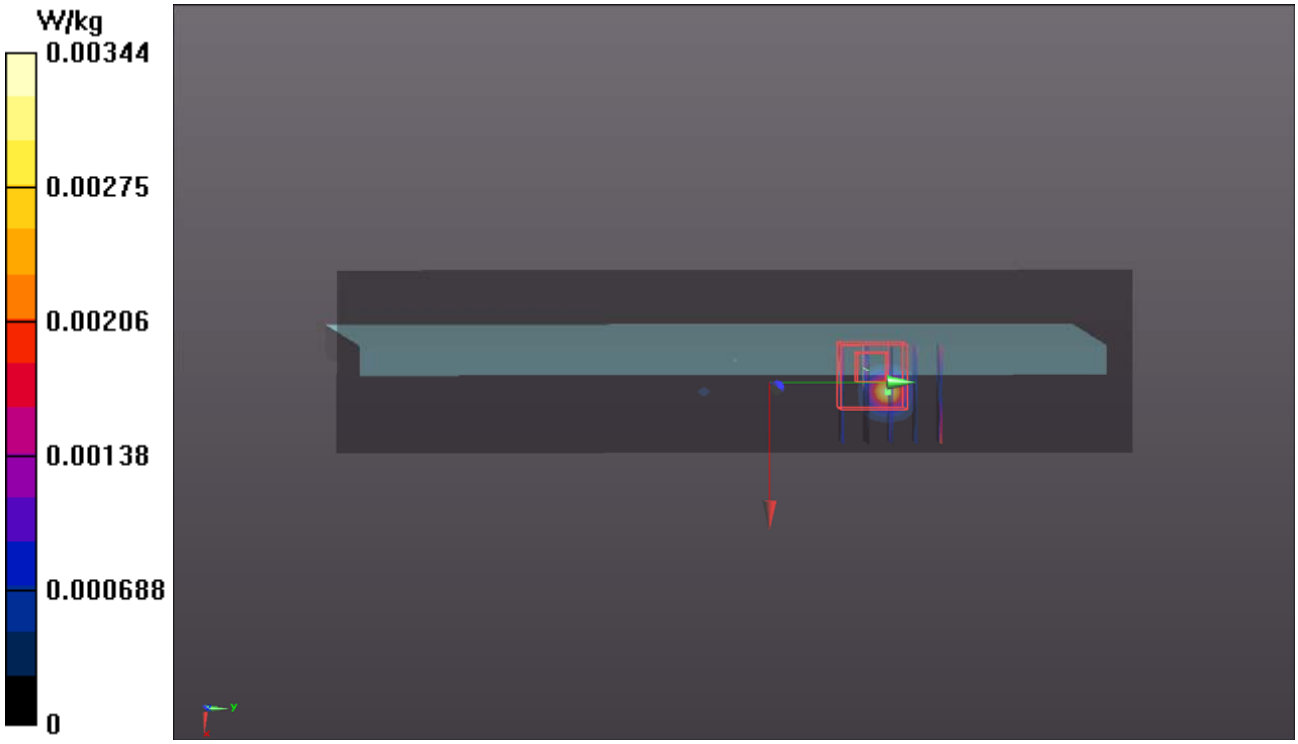
DUT: 171110C22

Communication System: Bluetooth; Frequency: 2480 MHz;Duty Cycle: 1:3.04
Medium: B19T27N1_0814 Medium parameters used: f = 2480 MHz; σ = 2.056 S/m; ε_r = 50.574; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.7, 7.7, 7.7); Calibrated: 2018/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: ELI Phantom_1206; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

- Area Scan (51x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.00344 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.398 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.0140 W/kg
SAR(1 g) = 0.00185 W/kg; SAR(10 g) = 0.000424 W/kg
Maximum value of SAR (measured) = 0.00946 W/kg



Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.

Appendix D. Photographs of EUT and Setup