SAR Test Report

Report No.	:	**SF191206C08**
Applicant	:	**HON HAI Precision Ind. Co., Ltd.**
Address	:	**5F-1, 5 Hsin-An Road Hsinchu, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C**
Product	:	**LTE M.2 Module**
FCC ID	:	**MCLT77W968-D5**
Brand	:	**FOXCONN**
Model No.	:	**T77W968**
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	:	**Dec. 06, 2019**
Date of Testing	:	**Feb. 07, 2020 ~ Feb. 24, 2020**
Lab Address	:	**No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan**
Test Location	:	**No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch–Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

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FCC Accredited No.: TW0003

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Release Control Record

Report No.	Reason for Change	Date Issued
SF191206C08	Initial release	Mar. 02, 2020

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Body Tested at 0 mm (W/kg)
PCB	WCDMA II	1.15
	WCDMA IV	1.25
	WCDMA V	0.98
	LTE 2	1.30
	LTE 4	1.21
	LTE 5	1.18
	LTE 7	0.80
	LTE 12	1.25
	LTE 13	1.21
	LTE 14	0.98
	LTE 17	1.08
	LTE 25	1.38
	LTE 26	0.87
	LTE 30	1.39
	LTE 38	1.07
	LTE 41	0.53
	LTE 66	1.08

Highest Simultaneous Transmission SAR	Highest SAR-1g Body Tested at 0 mm (W/kg)
	1.55

Note:

1. The SAR criteria **(Head & Body: SAR-1g1.6 W/kg, and Extremity: SAR-10g 4.0 W/kg)**for general population/uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
2. For SAR test result of WLAN / BT module AX201D2W, please refer to Intel Report No.: 191219-03.TR01 and 191219-03.TR02.

2. Description of Equipment Under Test

EUT Type	LTE M.2 Module
FCC ID	MCLT77W968-D5
Brand Name	FOXCONN
Model Name	T77W968
EUT Configurations	EUT 1: EUT + WWAN Antenna (Ethertronics) + WLAN Antenna (Ethertronics) EUT 2: EUT + WWAN Antenna (WNC) + WLAN Antenna (Ethertronics) EUT 3: EUT + WWAN Antenna (Ethertronics) + WLAN Antenna (Hong-BO) EUT 4: EUT + WWAN Antenna (WNC) + WLAN Antenna (Hong-BO)
Tx Frequency Bands (Unit: MHz)	WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 14 : 790.5 ~ 795.5 (BW: 5M, 10M) LTE Band 17 : 706.5 ~ 713.5 (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 29 : 717 ~ 728(Rx only) 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)
Uplink Modulations	WCDMA : QPSK LTE : QPSK, 16QAM, 64QAM
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	Refer to Note as below
EUT Stage	Engineering Sample

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model
Portable Computer	DELL	P94F

2. The WLAN module (Brand: Intel® Wi-Fi 6 AX201, Model: AX201D2W) was installed in the End-product. The specification is listed as below.

WLAN module	
Tx Frequency Bands (Unit: MHz)	WLAN : 2412 ~ 2462, 5180 ~ 5240, 5250 ~ 5320, 5500 ~ 5720, 5745 ~ 5825 Bluetooth : 2402 ~ 2480
Uplink Modulations	802.11b : DSSS 802.11a/g/n/ac : OFDM 802.11ax : OFDMA Bluetooth : GFSK, π/4-DQPSK, 8DPSK
Antenna Type	Refer to Note as below
FCC ID	PD9AX201D2

3. The antenna information of End-product is listed as below.

Antenna Type	Manufacturer	Parts Number	WLAN Antenna Gain			
			BT/WLAN 2.4 GHz	WLAN 5.15~5.35 GHz	WLAN 5.47~5.725 GHz	WLAN 5.725~5.85 GHz
PIFA	Ethertronics	Main Ant.: 5003710 (DC33002CL3L) Aux Ant.: 5003710 (DC33002CL3L)	Main: -1.51 Aux.: -2.34	Main: -0.68 Aux.: -1.16	Main: -0.73 Aux.: -1.35	Main: -0.58 Aux.: -1.35
	Hong-BO Co., Ltd.	Main Ant.: 260-24302 (DC33002CQ1L) Aux Ant.: 260-24302 (DC33002CQ1L)	Main: -1.28 Aux.: -2.76	Main: -2.02 Aux.: -1.06	Main: -1.23 Aux.: -1.24	Main: -0.14 Aux.: -1.06

Ant. Type	Manuf.	Parts Number	WWAN Antenna Gain (dBi)													
			WCDMA II / LTE 2	WCDMA IV / LTE 4	WCDMA V / LTE 5	LTE 7	LTE 12	LTE 13	LTE 14	LTE 17	LTE 25	LTE 26	LTE 30	LTE 38	LTE 41	LTE 66
PIFA	Ethertronics	Main Ant. (Tx/Rx): 5003671 (DC33002CL0L) Aux. Ant. (Rx): 5003690 (DC33002CL1L) 5003700 (DC33002CL2L)	2.97	2.97	-0.55	2.86	-0.37	-0.37	-0.37	-0.37	2.97	-0.37	2.86	2.86	2.86	2.97
	WNC	Main Ant. (Tx/Rx): 57ELAS15.061 (DC33002FS0L) Aux. Ant. (Rx): 57ELAS15.062 (DC33002FS1L) 57ELAS15.066 (DC33002FS2L)	2.91	2.91	-0.59	2.79	-0.37	-0.37	-0.37	-0.37	2.91	-0.37	2.79	2.79	2.79	2.91

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

List of Accessory of End-product:

Battery 1 (6 Cell)	**Brand Name**	Dell
	Model Name	TVKGH
	Power Rating	7334mAh, 88Wh, 11.4V
	Type	Li-ion
Battery 2 (4 Cell)	**Brand Name**	Dell
	Model Name	N7HT0
	Power Rating	6500mAh, 52Wh, 7.6V
	Type	Li-ion

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 DASY6 System

DASY6 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 DASY6 software defined. The DASY6 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.

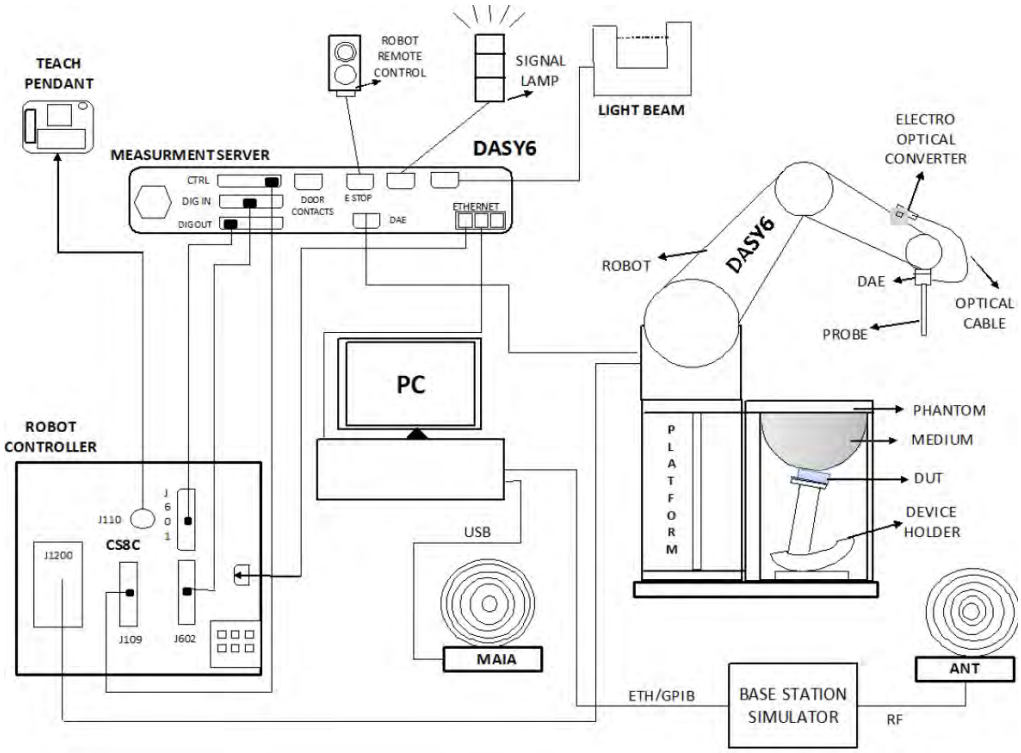


Fig-3.1 SPEAG DASY6 System Setup

3.2.1 Robot

The DASY6 systems use the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version of CS8c from Stäubli is used. The Stäubli robot series have many features that are important for our application:

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

Fig-3.2 SPEAG DASY6 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.

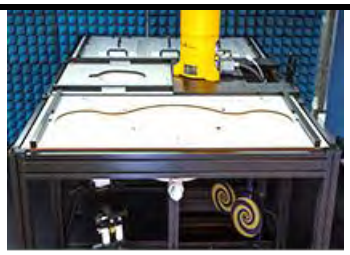
Model	EX3DV4
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
Frequency	4 MHz to 10 GHz Linearity: ± 0.2 dB
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation 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

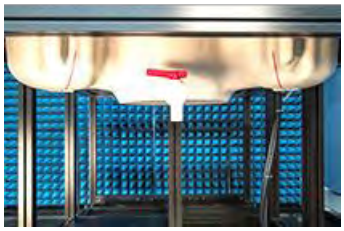
3.2.3 Data Acquisition Electronics (DAE)

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

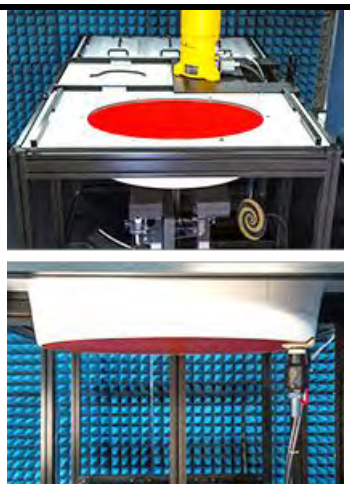
3.2.4 Phantoms

Model	SAM-Twin Phantom
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE Std 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, fiberglass 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	The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices. 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, fiberglass 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	MD4HHTV5 - Mounting Device for Hand-Held Transmitters
Construction	In combination with the Twin SAM or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).
Material	Polyoxymethylene (POM)

Model	MDA4WTV5 - Mounting Device Adaptor for Ultra Wide Transmitters
Construction	An upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.
Material	Polyoxymethylene (POM)

Model	MDA4SPV6 - Mounting Device Adaptor for Smart Phones
Construction	The solid low-density MDA4SPV6 adaptor assuring no impact on the DUT radiation performance and is conform with any DUT design and shape.
Material	ROHACELL

Model	MD4LAPV5 - Mounting Device for Laptops and other Body-Worn Transmitters	
Construction	In combination with the Twin SAM or ELI phantoms, the Mounting Device (Body-Worn) enables testing of transmitter devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at a flat phantom section.	
Material	Polyoxymethylene (POM), PET-G, 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 Power Source

Model	Powersource1	
Signal Type	Continuous Wave	
Operating Frequencies	600 MHz to 5850 MHz	
Output Power	-5.0 dBm to +17.0 dBm	
Power Supply	5V DC, via USB jack	
Power Consumption	<3 W	
Applications	System performance check and validation with a CW signal.	

3.2.8 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 10 % are listed in Table-3.1.

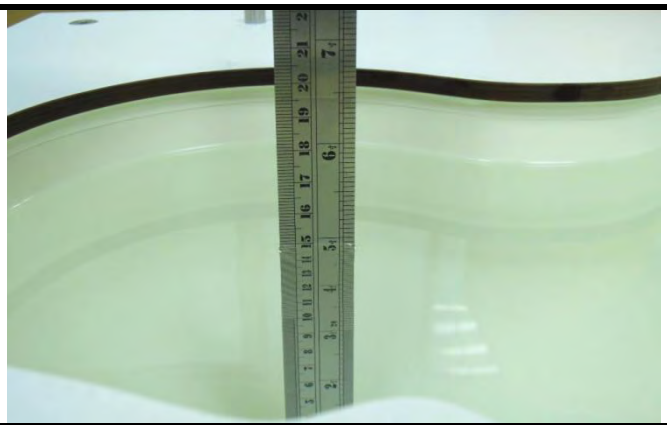


Photo of Liquid Height for Head Position

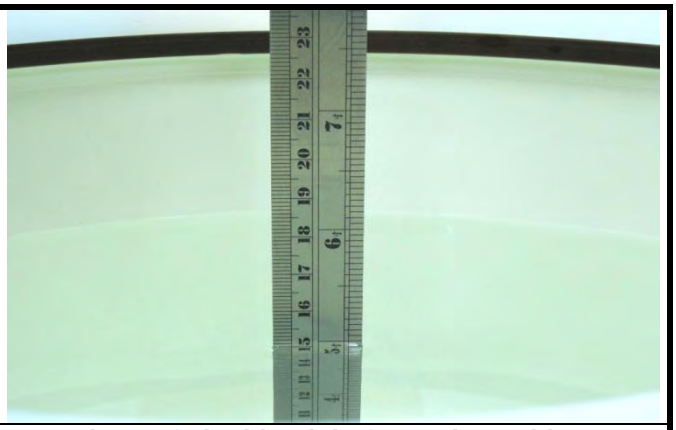


Photo of Liquid Height for Body Position

Table-3.1 Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of ±10 %	Target Conductivity	Range of ±10 %
450	43.5	39.2 ~ 47.9	0.87	0.78 ~ 0.96
750	41.9	37.7 ~ 46.1	0.89	0.80 ~ 0.98
835	41.5	37.4 ~ 45.7	0.90	0.81 ~ 0.99
900	41.5	37.4 ~ 45.7	0.97	0.87 ~ 1.07
1450	40.5	36.5 ~ 44.6	1.20	1.08 ~ 1.32
1500	40.4	36.4 ~ 44.4	1.23	1.11 ~ 1.35
1640	40.2	36.2 ~ 44.2	1.31	1.18 ~ 1.44
1750	40.1	36.1 ~ 44.1	1.37	1.23 ~ 1.51
1800	40.0	36.0 ~ 44.0	1.40	1.26 ~ 1.54
1900	40.0	36.0 ~ 44.0	1.40	1.26 ~ 1.54
2000	40.0	36.0 ~ 44.0	1.40	1.26 ~ 1.54
2100	39.8	35.8 ~ 43.8	1.49	1.34 ~ 1.64
2300	39.5	35.6 ~ 43.5	1.67	1.50 ~ 1.84
2450	39.2	35.3 ~ 43.1	1.80	1.62 ~ 1.98
2600	39.0	35.1 ~ 42.9	1.96	1.76 ~ 2.16
3000	38.5	34.7 ~ 42.4	2.40	2.16 ~ 2.64
3500	37.9	34.1 ~ 41.7	2.91	2.62 ~ 3.20
4000	37.4	33.7 ~ 41.1	3.43	3.09 ~ 3.77
4500	36.8	33.1 ~ 40.5	3.94	3.55 ~ 4.33
5000	36.2	32.6 ~ 39.8	4.45	4.01 ~ 4.90
5200	36.0	32.4 ~ 39.6	4.66	4.19 ~ 5.13
5400	35.8	32.2 ~ 39.4	4.86	4.37 ~ 5.35
5600	35.5	32.0 ~ 39.1	5.07	4.56 ~ 5.58
5800	35.3	31.8 ~ 38.8	5.27	4.74 ~ 5.80
6000	35.1	31.6 ~ 38.6	5.48	4.93 ~ 6.03

The dielectric properties of the tissue simulating liquids are defined in IEC 62209-1 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.

Since the range of ±10 % of the required target values is used to measure relative permittivity and conductivity, the SAR correction procedure is applied to correct measured SAR for the deviations in permittivity and conductivity. Only positive correction has been used to scale up the measured SAR, and SAR result would not be corrected if the correction △SAR has a negative sign.

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

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.

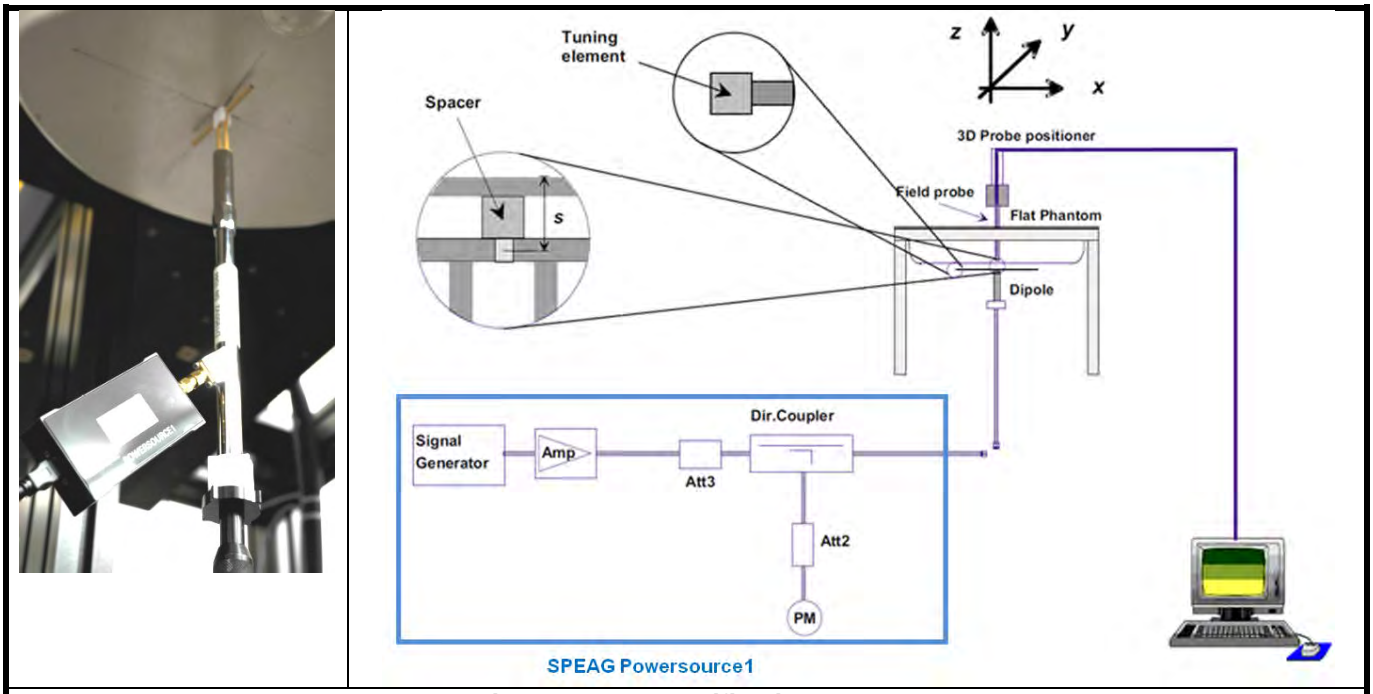


Fig-3.3 System Verification Setup

The SPEAG Powersource1 is a portable and very stable RF source providing a continuous wave (CW) signal. It is designed for conducting SAR system checks and SAR system validation of DASY and is compatible with IEC 62209-1, IEC 62209-2 and IEEE Std 1528 standards. The Powersource1 has been calibrated by SPEAG's ISO/IEC 17025-accredited calibration center. When using Powersource1, the setup can be simplified, as shown in Fig-3.3. The signal purity is warranted by design. Since the Powersource1 is calibrated, no additional equipment is needed and the Powersource1 can directly be connected to the SMA connector of the dipole without a cable as all separate components (signal generator, amplifier, coupler and power meter) are built into the unit.

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 Powersource1 is adjusted for the desired forward power of 17 dBm at the dipole connector and the RF output power would be turned on. 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 Scan and 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.

Measure the local SAR at a test point at 1.4 mm of the inner surface of the phantom recommended by SEPAG. The area scan (two-dimensional SAR distribution) is performed cover at least an area larger than the projection of the EUT or antenna. The measurement resolution and spatial resolution for interpolation shall be chosen to allow identification of the local peak locations to within one-half of the linear dimension of the corresponding side of the zoom scan volume. Following table provides the measurement parameters required for the area scan.

Parameter	$f \leqq 3$ GHz	3 GHz < $f \leqq$ 6 GHz
Maximum distance from closest measurement point to phantom surface	5 ± 1	$\delta \ln(2)/2$ ±0.5
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ±1°	20° ±1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≦2 GHz: ≦15 mm 2 – 3 GHz: ≦12 mm	3 – 4 GHz: ≦12 mm 4 – 6 GHz: ≦10 mm

From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks. Additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g. 1 W/kg for 1.6 W/kg, 1 g limit; or 1.26 W/kg for 2 W/kg, 10 g limit).

The zoom scan (three-dimensional SAR distribution) is performed at the local maxima locations identified in previous area scan procedure. The zoom scan volume must be larger than the required minimum dimensions. When graded grids are used, which only applies in the direction normal to the phantom surface, the initial grid separation closest to the phantom surface and subsequent graded grid increment ratios must satisfy the required protocols. The 1-g SAR averaging volume must be fully contained within the zoom scan measurement volume boundaries; otherwise, the measurement must be repeated by shifting or expanding the zoom scan volume. The similar requirements also apply to 10-g SAR measurements. Following table provides the measurement parameters required for the zoom scan.

Parameter		$f \leqq 3$ GHz	3 GHz < $f \leqq 6$ GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}		≦2 GHz: ≦8 mm 2 – 3 GHz: ≦5 mm	3 – 4 GHz: ≦5 mm 4 – 6 GHz: ≦4 mm
Maximum zoom scan spatial resolution, normal to phantom surface	*uniform grid:* $\Delta z_{Zoom}(n)$	≦5 mm	3 – 4 GHz: ≦4 mm 4 – 5 GHz: ≦3 mm 5 – 6 GHz: ≦2 mm
	graded grids: $\Delta z_{Zoom}(1)$	≦4 mm	3 – 4 GHz: ≦3.0 mm 4 – 5 GHz: ≦2.5 mm 5 – 6 GHz: ≦2.0 mm
	$\Delta z_{Zoom}(n>1)$	≦1.5·$\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume (x, y, z)		≥30 mm	3 – 4 GHz: ≥28 mm 4 – 5 GHz: ≥25 mm 5 – 6 GHz: ≥22 mm

Per IEC 62209-2 AMD1, the successively higher resolution zoom scan is required if the zoom scan measured as defined above complies with both of the following criteria, or if the peak spatial-average SAR is below 0.1 W/kg, no additional measurements are needed:

(1) The smallest horizontal distance from the local SAR peaks to all points 3 dB below the SAR peak shall be larger than the horizontal grid steps in both x and y directions (Δx, Δy). This shall be checked for the measured zoom scan plane conformal to the phantom at the distance zM1.

(2) The ratio of the SAR at the second measured point (M2) to the SAR at the closest measured point (M1) at the x-y location of the measured maximum SAR value shall be at least 30 %.

If one or both of the above criteria are not met, the zoom scan measurement shall be repeated using a finer resolution. New horizontal and vertical grid steps shall be determined from the measured SAR distribution so that the above criteria are met. Compliance with the above two criteria shall be demonstrated for the new measured zoom scan.

3.4.2 Volume Scan Procedure

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

3.4.3 Power Drift Monitoring

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

3.4.4 Spatial Peak SAR Evaluation

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

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

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

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values 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

<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.

DC-HSDPA SAR Guidance

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

<Considerations Related to LTE for Setup and Testing>

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

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz
2	V	V	V	V	V	V
4	V	V	V	V	V	V
5	V	V	V	V		
7			V	V	V	V
12	V	V	V	V		
13			V	V		
14			V	V		
17			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
64QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3

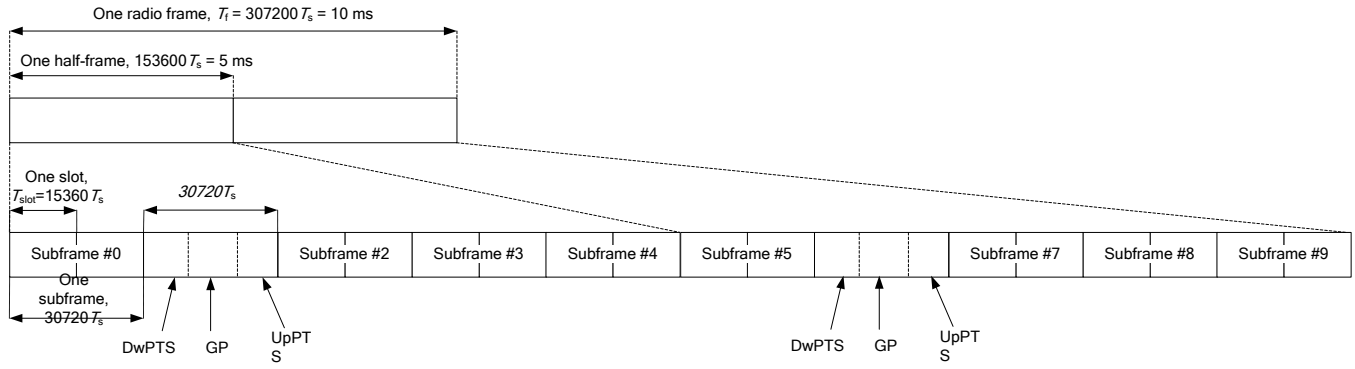
Note: MPR is according to the standard and implemented in the circuit (mandatory).

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%

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. 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_5B	5, 10	10		20	0
	10	5			
	3	5		8	1
	5	3			
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			
CA_66B	5	5, 10, 15		20	0
	10	5, 10			
	15	5			
CA_66C	5	20		40	0
	10	15, 20			
	15	10, 15, 20			
	20	5, 10, 15, 20			

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_66D	5	20		60	0
	20	5			
	20	20			
	10	20			
	15	20			
	10, 15, 20	15, 20			
	15, 20	10			
	15	15, 20			
	20	15, 20			
	20	10			

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-66B	5, 10, 15, 20	Refer to CA_66B (BCS0)		40	0
	Refer to CA_66B (BCS0)		5, 10, 15, 20		
CA_66A-66C	5, 10, 15, 20	Refer to CA_66C (BCS0)		60	0
	Refer to CA_66C (BCS0)		5, 10, 15, 20		

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-2A-4A	2	Refer to CA_2A-2A (BCS0)	60	0
	4	5, 10, 15, 20		
CA_2A-4A-4A	2	5, 10, 15, 20	60	0
	4	Refer to CA_4A-4A (BCS0)		
CA_2A-5A	2	5, 10, 15, 20	30	0
	5	5, 10		
	2	5, 10	20	1
	5	5, 10		
CA_2A-2A-5A	2	Refer to CA_2A-2A (BCS0)	50	0
	5	5, 10		
CA_2A-5B	2	5, 10, 15, 20	40	0
	5	Refer to CA_5B (BCS0)		

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
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-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-14A	2	5, 10, 15, 20	30	0
	14	5, 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-46A	2	5, 10, 15, 20	40	0
	46	20		
CA_2A-46D	2	5, 10, 15, 20	80	0
	46	Refer to CA_46D (BCS0)		
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-66B	2	5, 10, 15, 20	40	0
	66	Refer to CA_66B (BCS0)		
CA_2A-66C	2	5, 10, 15, 20	60	0
	66	Refer to CA_66C (BCS0)		
CA_2A-2A-66A	2	Refer to CA_2A-2A (BCS0)	60	0
	66	5, 10, 15, 20		
CA_2A-2A-66A-66A	2	Refer to CA_2A-2A (BCS0)	80	0
	66	Refer to CA_66A-66A (BCS0)		
CA_2A-66A-66A	2	5, 10, 15, 20	60	0
	66	Refer to CA_66A-66A (BCS0)		
CA_2A-2A-66B	2	Refer to CA_2A-2A (BCS0)	60	0
	66	Refer to CA_66B (BCS0)		
CA_2A-2A-66C	2	Refer to CA_2A-2A (BCS0)	80	0
	66	Refer to CA_66C (BCS0)		

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_4A-5A	4	5, 10	20	0
	5	5, 10		
	4	5, 10, 15, 20	30	1
	5	5, 10		
CA_4A-4A-5A	4	Refer to CA_4A-4A (BCS0)	50	0
	5	5, 10		
CA_4A-13A	4	5, 10, 15, 20	30	0
	13	10		
	4	5, 10	20	1
	13	10		
CA_4A-46A	4	5, 10, 15, 20	40	0
	46	20		
CA_5A-30A	5	5, 10	20	0
	30	5, 10		
CA_5B-30A	5	Refer to CA_5B (BCS0)	30	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_5A-66B	5	5, 10	30	0
	66	Refer to CA_66B (BCS0)		
CA_5A-66C	5	5, 10	50	0
	66	Refer to CA_66C (BCS0)		
CA_5B-66A	5	Refer to CA_5B (BCS0)	40	0
	66	5, 10, 15, 20		
CA_5B-66A-66A	5	Refer to CA_5B (BCS0)	60	0
	66	Refer to CA_66A-66A (BCS0)		
CA_5B-66C	5	Refer to CA_5B (BCS0)	60	0
	66	Refer to CA_66C (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)		

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_13A-46A	13	5, 10	30	0
	46	20		
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_13A-66B	13	5, 10	30	0
	66	Refer to CA_66B (BCS0)		
CA_13A-66C	13	5, 10	50	0
	66	Refer to CA_66C (BCS0)		
CA_14A-66A	14	5, 10	30	0
	66	5,10,15,20		
CA_14A-66A-66A	14	5, 10	50	0
	66	Refer to CA_66A-66A (BCS0)		
CA_14A-30A	14	5, 10	20	0
	30	5,10		
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_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		
CA_30A-66A-66A	30	5, 10	50	0
	66	Refer to CA_66A-66A (BCS0)		
CA_46A-66A	46	20	40	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-13A	2	5, 10, 15, 20	50	0
	4	5, 10, 15, 20		
	13	10		
CA_2A-2A-5A-66A	2	Refer to CA_2A-2A (BCS0)	70	0
	5	5, 10		
	66	5, 10, 15, 20		
CA_2A-2A-5A-66B	2	Refer to CA_2A-2A (BCS0)	70	0
	5	5, 10		
	66	Refer to CA_66B (BCS0)		
CA_2A-2A-5A-66C	2	Refer to CA_2A-2A (BCS0)	90	0
	5	5, 10		
	66	Refer to CA_66C (BCS0)		
CA_2A-2A-13A-66A	2	Refer to CA_2A-2A (BCS0)	70	0
	13	5, 10		
	66	5, 10, 15, 20		
CA_2A-5A-30A	2	5, 10, 15, 20	40	0
	5	5, 10		
	30	5, 10		
CA_2A-2A-5A-30A	2	Refer to CA_2A-2A (BCS0)	60	0
	5	5, 10		
	30	5, 10		
CA_2A-5B-30A	2	5, 10, 15, 20	50	0
	5	Refer to CA_5B (BCS0)		
	30	5, 10		
CA_2A-5A-66A	2	5, 10, 15, 20	50	0
	5	5, 10		
	66	5, 10, 15, 20		

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-5A-66A-66A	2	5, 10, 15, 20	70	0
	5	5, 10		
	66	Refer to CA_66A-66A (BCS0)		
CA_2A-5B-66A-66A	2	5, 10, 15, 20	80	0
	5	Refer to CA_5B (BCS0)		
	66	Refer to CA_66A-66A (BCS0)		
CA_2A-5A-66B	2	5, 10, 15, 20	50	0
	5	5, 10		
	66	Refer to CA_66B (BCS0)		
CA_2A-5A-66C	2	5, 10, 15, 20	70	0
	5	5, 10		
	66	Refer to CA_66C (BCS0)		
CA_2A-5B-66A	2	5, 10, 15, 20	60	0
	5	Refer to CA_5B (BCS0)		
	66	5, 10, 15, 20		
CA_2A-5B-66C	2	5, 10, 15, 20	80	0
	5	Refer to CA_5B (BCS0)		
	66	Refer to CA_66C (BCS0)		
CA_2A-12A-30A	2	5, 10, 15, 20	40	0
	12	5, 10		
	30	5, 10		
CA_2A-2A-12A-30A	2	Refer to CA_2A-2A (BCS0)	60	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-2A-12A-66A	2	5, 10,15, 20	70	0
	12	5, 10		
	66	Refer to 66A-66A (BCS0)		
CA_2A-12A-66A-66A	2	5, 10,15, 20	70	0
	12	5, 10		
	66	Refer to 66A-66A (BCS0)		
CA_2A-13A-46D	2	5, 10, 15, 20	90	0
	13	5, 10		
	46	Refer to 46D (BCS0)		
CA_2A-13A-66A	2	5, 10, 15, 20	50	0
	13	5, 10		
	66	5, 10, 15, 20		
CA_2A-13A-66A-66A	2	5, 10, 15, 20	70	0
	13	5, 10		
	66	Refer to CA_66A-66A		
CA_2A-13A-66B	2	5, 10, 15, 20	50	0
	13	5, 10		
	66	Refer to CA_66B (BCS0)		
CA_2A-13A-66C	2	5, 10, 15, 20	70	0
	13	5, 10		
	66	Refer to CA_66C (BCS0)		
CA_2A-14A-30A	2	5, 10, 15, 20	40	0
	14	5, 10		
	30	5, 10		

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-2A-30A-66A	2	Refer to CA_2A-2A (BCS0)	70	0
	30	5, 10		
	66	5, 10, 15, 20		
CA_2A-30A-66A-66A	2	5, 10, 15, 20	70	0
	30	5, 10		
	66	Refer to CA_66A-6A (BCS0)		
CA_2A-30A-66A	2	5, 10, 15, 20	50	0
	30	5, 10		
	66	5, 10, 15, 20		
CA_2A-46D-66A	2	5, 10, 15, 20	100	0
	46	Refer to CA_46D (BCS0)		
	66	5, 10, 15, 20		
CA_5A-30A-66A	5	5, 10	40	0
	30	5, 10		
	66	5, 10, 15, 20		
CA_5A-30A-66A-66A	5	5, 10	60	0
	30	5, 10		
	66	Refer to CA_66A-66A (BCS0)		
CA_5B-30A-66A	5	Refer to CA_5B (BCS0)	50	0
	30	5, 10		
	66	5, 10, 15, 20		
CA_5B-30A-66A-66A	5	Refer to CA_5B (BCS0)	70	0
	30	5, 10		
	66	Refer to CA_66A-66A (BCS0)		
CA_12A-30A-66A	12	5, 10	40	0
	30	5, 10		
	66	5, 10, 15, 20		
CA_12A-30A-66A-66A	12	5, 10	60	0
	30	5, 10		
	66	Refer to CA_66A-66A (BCS0)		
CA_13A-46D-66A	13	5, 10	90	0
	46	Refer to CA_46D (BCS0)		
	66	5, 10, 15, 20		

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

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-5A-30A-66A	2	5, 10, 15, 20	60	0
	5	5, 10		
	30	5, 10		
	66	5, 10, 15, 20		
CA_2A-5B-30A-66A	2	5, 10, 15, 20	70	0
	5	Refer to CA_5B (BCS0)		
	30	5, 10		
	66	5, 10, 15, 20		
CA_2A-12A-30A-66A	2	5, 10, 15, 20	60	0
	12	5, 10		
	30	5, 10		
	66	5, 10, 15, 20		

<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, 2bands/4CCs, 3bands/3CCs, 3bands/4CCs, 3bands/5CC, 4bands/4CCs and 4bands/5CC. The CA/CC combinations in each columns are sorted so that frequency bands listed in subsequent columns on each row are ascending subsets, as following LTE Downlink CA table and LTE Downlink CA (4*4 MIMO) table ; i.e., columns to the right correspond to increasing number of frequency bands and CCs.

	Intra Band		Inter Band							
	Contiguous	Non-Contiguous	2 Bands / 2CC	2 Bands / 3CC	2 Bands / 4CC	3 Bands / 3CC	3 Bands / 4CC	3 Bands / 5CC	4 Bands / 4CC	4 Bands / 5CC
LTE Downlink CA-Configure	CA_5B	CA_2A-2A	CA_2A-5A	CA_2A-2A-5A		CA_2A-5A-30A	CA_2A-2A-5A-30A		CA_2A-5A-30A-66A	CA_2A-5B-30A-66A
				CA_2A-2A-5B		CA_2A-5A-66A	CA_2A-2A-5A-66A			
			CA_2A-30A	CA_2A-2A-30A			CA_2A-2A-30A-66A			
			CA_2A-66A	CA_2A-2A-66A	CA_2A-2A-66A-66A		CA_2A-5A-66A-66A	CA_2A-5B-66A-66A		
				CA_2A-66B	CA_2A-2A-66B		CA_2A-5A-66B	CA_2A-2A-5A-66B		
				CA_2A-66C	CA_2A-2A-66C		CA_2A-5A-66C	CA_2A-2A-5A-66C		
				CA_2A-5B			CA_2A-5B-30A			
				CA_2A-66A-66A			CA_2A-5B-66A	CA_2A-5B-66C		
	CA_66B	CA_66A-66A		CA_30A-66A-66A		CA_2A-30A-66A	CA_2A-30A-66A-66			
	CA_66C	CA_66A-66B		CA_5A-66A-66A	CA_5B-66A-66A		CA_5A-30A-66A-66			
	CA_66D	CA_66A-66C		CA_5A-66B	CA_5B-66C	CA_5A-30A-66A	CA_5B-30A-66A	CA_5B-30A-66A-66A		
			CA_5A-30A	CA_5A-66C						
			CA_5A-66A	CA_5B-30A						
			CA_30A-66A	CA_5B-66A						
			CA_2A-12A	CA_12A-66A-66A		CA_2A-12A-30A	CA_2A-2A-12A-30A			
			CA_12A-30A			CA_2A-12A-66A	CA_2A-2A-12A-66A		CA_2A-12A-30A-66A	
			CA_12A-66A			CA_12A-30A-66A	CA_2A-12A-66A-66			
							CA_12A-30A-66A-6			
			CA_2A-13A	CA_2A-2A-13A	CA_2A-46D			CA_2A-13A-46D		
			CA_13A-46A							
			CA_46A-66A					CA_2A-46D-66A		
			CA_13A-66A	CA_13A-66A-66A						
				CA_13A-66B				CA_13A-46D-66A		
				CA_13A-66C						
						CA_2A-13A-66A	CA_2A-2A-13A-66A			
							CA_2A-13A-66A-66			
							CA_2A-13A-66B			
							CA_2A-13A-66C			
		CA_4A-4A	CA_2A-4A	CA_2A-2A-4A		CA_2A-4A-5A				
				CA_2A-4A-4A						
				CA_4A-4A-5A						
						CA_2A-4A-13A				
			CA_2A-14A			CA_2A-14A-30A				
			CA_14A-30A							
			CA_14A-66A	CA_14A-66A-66A						
			CA_2A-29A							
			CA_2A-46A							
			CA_4A-5A							
			CA_4A-13A							
			CA_4A-46A							
		CA_25A-25A	CA_25A-26A							
			CA_29A-30A							
			CA_29A-66A							
	CA_41C									

• Only yellow highlighted cells need power measurement.

4.2 EUT Testing Position

4.2.1 Body Exposure Conditions

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

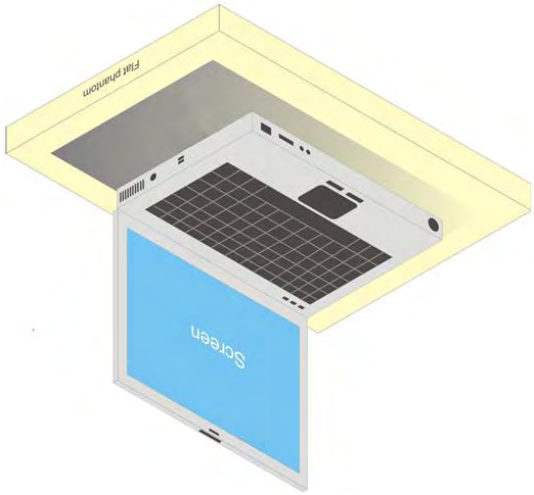
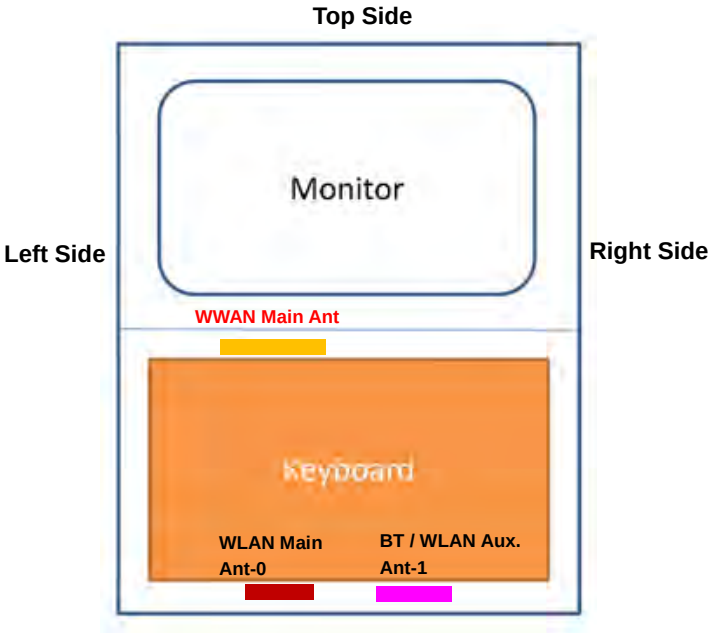
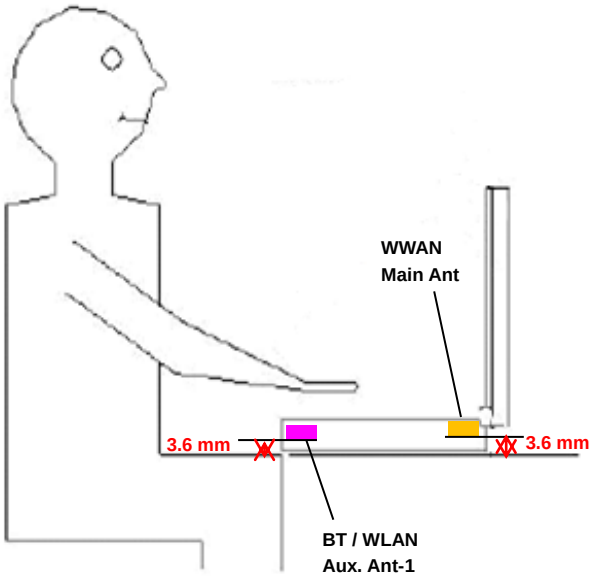


Fig-4.1 Illustration for Laptop Setup

<Antenna Location>



<EUT Front View>



<Right Side View>

The separation distance for antenna to edge:

Antenna	To Top Side (mm)	To Bottom Side (mm)	To Left Side (mm)	To Right Side (mm)
WWAN Main Ant.	195	190	100	200
WLAN Main Ant-0	410	3.6	102.87	203.83
BT/WLAN Aux. Ant-1	410	3.6	184.37	121.93

4.3 Tissue Verification

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

Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Test Date
750	23.2	0.886	43.438	0.89	41.9	-0.45	3.67	Feb. 07, 2020
750	23.3	0.9	41.7	0.89	41.9	1.12	-0.48	Feb. 08, 2020
750	23.3	0.84	42.807	0.89	41.9	-5.62	2.16	Feb. 10, 2020
750	23.2	0.886	43.472	0.89	41.9	-0.45	3.75	Feb. 20, 2020
750	23.1	0.897	42.647	0.89	41.9	0.79	1.78	Feb. 22, 2020
750	23.2	0.897	41.295	0.89	41.9	0.79	-1.44	Feb. 24, 2020
835	23.3	0.901	42.636	0.9	41.5	0.11	2.74	Feb. 08, 2020
835	23.2	0.927	42.44	0.9	41.5	3.00	2.27	Feb. 08, 2020
835	23.5	0.942	41.369	0.9	41.5	4.67	-0.32	Feb. 10, 2020
835	23.3	0.92	41.297	0.9	41.5	2.22	-0.49	Feb. 29, 2020
835	23.3	0.923	41.242	0.9	41.5	2.56	-0.62	Feb. 29, 2020
1750	23.3	1.319	40.264	1.37	40.1	-3.72	0.41	Feb. 08, 2020
1750	23.2	1.348	41.105	1.37	40.1	-1.61	2.51	Feb. 20, 2020
1750	23.3	1.326	40.434	1.37	40.1	-3.21	0.83	Feb. 28, 2020
1750	23.3	1.329	39.098	1.37	40.1	-2.99	-2.50	Feb. 29, 2020
1750	23.2	1.343	41.026	1.37	40.1	-1.97	2.31	Mar. 02, 2020
1900	23.3	1.456	39.753	1.4	40	4.00	-0.62	Feb. 08, 2020
1900	23.3	1.454	39.751	1.4	40	3.86	-0.62	Feb. 10, 2020
1900	23.1	1.46	40.788	1.4	40	4.29	1.97	Feb. 20, 2020
1900	23.3	1.462	39.843	1.4	40	4.43	-0.39	Feb. 28, 2020
1900	23.3	1.458	38.53	1.4	40	4.14	-3.68	Feb. 29, 2020
1900	23.3	1.454	39.396	1.4	40	3.86	-1.51	Mar. 01, 2020
2300	23.3	1.715	39.74	1.67	39.5	2.69	0.61	Feb. 07, 2020
2300	23.1	1.684	39.442	1.67	39.5	0.84	-0.15	Feb. 20, 2020
2300	23.1	1.704	38.984	1.67	39.5	2.04	-1.31	Feb. 22, 2020
2300	23.2	1.706	39.847	1.67	39.5	2.16	0.88	Feb. 24, 2020
2600	23.3	2.035	38.57	1.96	39	3.83	-1.10	Feb. 10, 2020
2600	23.5	2.045	37.848	1.96	39	4.34	-2.95	Feb. 10, 2020

Note:

The dielectric properties of the tissue simulating liquid have been measured within 24 hours before the SAR testing and within ±10 % of the target values. Liquid temperature during the SAR testing has kept 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
Feb. 07, 2020	3820	750	0.886	43.438	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 08, 2020	7537	750	0.9	41.7	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10, 2020	7537	750	0.84	42.807	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 20, 2020	7472	750	0.886	43.472	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 22, 2020	7472	750	0.897	42.647	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 24, 2020	3650	750	0.897	41.295	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 08, 2020	3820	835	0.901	42.636	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 08, 2020	3650	835	0.927	42.44	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10, 2020	7472	835	0.942	41.369	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 29, 2020	3650	835	0.92	41.297	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 29, 2020	3650	835	0.923	41.242	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 08, 2020	7537	1750	1.319	40.264	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 20, 2020	7472	1750	1.348	41.105	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 28, 2020	3650	1750	1.326	40.434	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 29, 2020	3650	1750	1.329	39.098	Pass	Pass	Pass	N/A	N/A	N/A
Mar. 02, 2020	3650	1750	1.343	41.026	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 08, 2020	7537	1900	1.456	39.753	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10, 2020	7537	1900	1.454	39.751	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 20, 2020	7472	1900	1.46	40.788	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 28, 2020	3650	1900	1.462	39.843	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 29, 2020	3650	1900	1.458	38.53	Pass	Pass	Pass	N/A	N/A	N/A
Mar. 01, 2020	3650	1900	1.454	39.396	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 07, 2020	7537	2300	1.715	39.74	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 20, 2020	7472	2300	1.684	39.442	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 22, 2020	7472	2300	1.704	38.984	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 24, 2020	3650	2300	1.706	39.847	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10, 2020	7537	2600	2.035	38.57	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10, 2020	7472	2600	2.045	37.848	Pass	Pass	Pass	N/A	N/A	N/A

4.5 System Verification

The measuring result for system verification is tabulated as below.

Test Date	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
Feb. 07, 2020	750	8.56	0.388	7.76	-9.35	1013	3820	916
Feb. 08, 2020	750	8.56	0.395	7.90	-7.71	1013	7537	1585
Feb. 10, 2020	750	8.56	0.394	7.88	-7.94	1013	7537	1585
Feb. 20, 2020	750	8.56	0.394	7.88	-7.94	1013	7472	1431
Feb. 22, 2020	750	8.56	0.393	7.86	-8.18	1013	7472	1431
Feb. 24, 2020	750	8.56	0.389	7.78	-9.11	1013	3650	861
Feb. 08, 2020	835	9.61	0.457	9.14	-4.89	4d121	3820	916
Feb. 08, 2020	835	9.61	0.453	9.06	-5.72	4d121	3650	861
Feb. 10, 2020	835	9.61	0.472	9.44	-1.77	4d121	7472	1431
Feb. 29, 2020	835	9.61	0.437	8.74	-9.05	4d121	3650	861
Feb. 29, 2020	835	9.61	0.449	8.98	-6.56	4d121	3650	861
Feb. 08, 2020	1750	37.00	1.71	34.20	-7.57	1055	7537	1585
Feb. 20, 2020	1750	37.00	1.84	36.80	-0.54	1055	7472	1431
Feb. 28, 2020	1750	37.00	1.8	36.00	-2.70	1055	3650	861
Feb. 29, 2020	1750	37.00	1.82	36.40	-1.62	1055	3650	861
Mar. 02, 2020	1750	37.00	1.78	35.60	-3.78	1055	3650	861
Feb. 08, 2020	1900	40.30	1.98	39.60	-1.74	5d018	7537	1585
Feb. 10, 2020	1900	40.30	1.82	36.40	-9.68	5d018	7537	1585
Feb. 20, 2020	1900	40.30	1.95	39.00	-3.23	5d018	7472	1431
Feb. 28, 2020	1900	40.30	1.91	38.20	-5.21	5d018	3650	861
Feb. 29, 2020	1900	40.30	1.89	37.80	-6.20	5d018	3650	861
Mar. 01, 2020	1900	40.30	1.89	37.80	-6.20	5d018	3650	861
Feb. 07, 2020	2300	47.90	2.41	48.20	0.63	1092	7537	1585
Feb. 20, 2020	2300	47.90	2.32	46.40	-3.13	1092	7472	1431
Feb. 22, 2020	2300	47.90	2.33	46.60	-2.71	1092	7472	1431
Feb. 24, 2020	2300	47.90	2.41	48.20	0.63	1092	3650	861
Feb. 10, 2020	2600	57.30	2.9	58.00	1.22	1020	7537	1585
Feb. 10, 2020	2600	57.30	2.69	53.80	-6.11	1020	7472	1431

Note:

Comparing to the reference SAR value provided by SPEAG in dipole calibration certificate, the deviation of system check results is within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots please refer 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.

Laptop Mode:

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	18.0	19.0	20.5
HSDPA / HSUPA / DC-HSDPA	18.0	19.0	20.5

Mode	LTE 2	LTE 4	LTE 5	LTE 7
Maximum Target Power	18.5	19.0	21.5	16.5

Mode	LTE 12	LTE 13	LTE 14	LTE 17
Maximum Target Power	21.0	22.0	21.0	21.0

Mode	LTE 25	LTE 26	LTE 30	LTE 38
Maximum Target Power	18.5	20.5	17.5	19.0

Mode	LTE 41	LTE 66
Maximum Target Power	17.0	18.5

4.6.2 Measured Conducted Power Result

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

Laptop Mode:

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	17.77	17.92	**17.99**	18.96	**18.99**	18.88	20.24	**20.49**	20.33	-
HSDPA Subtest-1	16.76	16.91	17.00	17.69	18.21	18.11	19.37	19.63	19.41	0
HSDPA Subtest-2	16.88	16.98	17.01	17.75	18.15	18.08	19.41	19.62	19.44	0
HSDPA Subtest-3	16.28	16.38	16.53	17.13	17.67	17.43	18.86	19.15	18.97	0.5
HSDPA Subtest-4	16.33	16.41	16.52	17.46	17.66	17.51	18.91	19.21	18.92	0.5
DC-HSDPA Subtest-1	16.69	16.84	16.93	17.63	18.15	18.05	19.35	19.62	19.40	0
DC-HSDPA Subtest-2	16.81	16.91	16.94	17.69	18.09	18.02	19.36	19.60	19.42	0
DC-HSDPA Subtest-3	16.21	16.31	16.46	17.07	17.61	17.37	18.86	19.11	18.97	0.5
DC-HSDPA Subtest-4	16.26	16.34	16.45	17.40	17.60	17.45	18.90	19.15	18.90	0.5
HSUPA Subtest-1	16.74	16.88	17.05	17.62	17.99	17.87	19.34	19.62	19.46	0
HSUPA Subtest-2	14.76	14.75	14.98	15.99	16.03	15.91	17.39	17.69	17.42	2
HSUPA Subtest-3	15.88	15.79	15.94	16.93	17.12	16.89	18.36	18.65	18.42	1
HSUPA Subtest-4	14.73	14.84	14.98	15.88	16.03	15.91	17.29	17.68	17.44	2
HSUPA Subtest-5	16.80	16.83	17.03	17.98	18.02	17.92	19.30	19.70	19.40	0

LTE Band 2

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	18.33	**18.49**	18.41	0	15M	QPSK	1	0	17.26	17.42	17.42	0
		1	50	18.21	18.37	18.29	0			1	37	17.21	17.46	17.40	0
		1	99	18.17	18.33	18.25	0			1	74	17.26	17.40	17.34	0
		50	0	18.23	**18.39**	18.31	0			36	0	17.24	17.37	17.38	0
		50	25	18.20	18.36	18.28	0			36	19	17.18	17.34	17.29	0
		50	50	18.16	18.32	18.24	0			36	39	17.15	17.34	17.25	0
		100	0	18.21	**18.37**	18.29	0			75	0	17.17	17.41	17.29	0
	16QAM	1	0	18.25	18.41	18.33	0		16QAM	1	0	17.18	17.41	17.34	0
		1	50	18.13	18.29	18.21	0			1	37	17.26	17.41	17.31	0
		1	99	18.09	18.25	18.17	0			1	74	17.23	17.31	17.28	0
		50	0	18.15	18.31	18.23	0			36	0	17.24	17.34	17.26	0
		50	25	18.12	18.28	18.20	0			36	19	17.22	17.36	17.29	0
		50	50	18.08	18.24	18.16	0			36	39	17.19	17.32	17.27	0
		100	0	18.13	18.29	18.21	0			75	0	17.18	17.37	17.27	0
	64QAM	1	0	18.20	18.36	18.28	0		64QAM	1	0	17.19	17.37	17.26	0
		1	50	18.08	18.24	18.16	0			1	37	17.13	17.32	17.28	0
		1	99	18.04	18.20	18.12	0			1	74	17.20	17.29	17.23	0
		50	0	18.10	18.26	18.18	0			36	0	17.14	17.35	17.30	0
		50	25	18.07	18.23	18.15	0			36	19	17.10	17.26	17.26	0
		50	50	18.03	18.19	18.11	0			36	39	17.17	17.31	17.16	0
		100	0	18.08	18.24	18.16	0			75	0	17.12	17.30	17.25	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855.0	1880.0	1905.0				Frequency (MHz)		1852.5	1880.0	1907.5	
10M	QPSK	1	0	17.15	17.45	17.29	0	5M	QPSK	1	0	17.24	17.49	17.24	0
		1	24	17.18	17.42	17.34	0			1	12	17.29	17.35	17.28	0
		1	49	17.22	17.33	17.30	0			1	24	17.17	17.35	17.26	0
		25	0	17.11	17.29	17.26	0			12	0	17.14	17.23	17.15	0
		25	12	17.14	17.30	17.18	0			12	6	17.09	17.41	17.28	0
		25	25	17.09	17.26	17.24	0			12	13	17.18	17.23	17.21	0
		50	0	17.12	17.31	17.29	0			25	0	17.17	17.32	17.21	0
	16QAM	1	0	17.09	17.30	17.17	0		16QAM	1	0	17.19	17.43	17.21	0
		1	24	17.08	17.25	17.30	0			1	12	17.07	17.31	17.25	0
		1	49	17.08	17.27	17.18	0			1	24	17.11	17.21	17.25	0
		25	0	17.13	17.18	17.10	0			12	0	17.09	17.35	17.19	0
		25	12	17.18	17.33	17.08	0			12	6	17.12	17.30	17.20	0
		25	25	17.13	17.20	17.16	0			12	13	16.98	17.21	17.21	0
		50	0	17.13	17.22	17.18	0			25	0	17.09	17.23	17.26	0
	64QAM	1	0	17.11	17.24	17.25	0		64QAM	1	0	17.23	17.32	17.22	0
		1	24	17.15	17.25	17.18	0			1	12	17.06	17.36	17.22	0
		1	49	17.11	17.26	17.22	0			1	24	17.11	17.30	17.22	0
		25	0	17.02	17.25	17.18	0			12	0	17.12	17.25	17.15	0
		25	12	16.96	17.18	17.19	0			12	6	17.01	17.15	17.07	0
		25	25	17.09	17.17	17.02	0			12	13	17.06	17.24	17.07	0
		50	0	16.93	17.11	17.21	0			25	0	17.16	17.15	17.13	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880.0	1908.5				Frequency (MHz)		1850.7	1880.0	1909.3	
3M	QPSK	1	0	17.25	17.35	17.25	0	1.4M	QPSK	1	0	17.20	17.31	17.34	0
		1	7	17.20	17.33	17.26	0			1	2	17.14	17.39	17.26	0
		1	14	17.27	17.33	17.29	0			1	5	17.08	17.33	17.34	0
		8	0	17.22	17.33	17.22	0			3	0	17.19	17.27	17.25	0
		8	3	17.17	17.36	17.21	0			3	1	17.15	17.33	17.21	0
		8	7	17.05	17.32	17.25	0			3	3	17.04	17.35	17.26	0
		15	0	17.14	17.30	17.25	0			6	0	17.11	17.33	17.21	0
	16QAM	1	0	17.09	17.29	17.25	0		16QAM	1	0	17.05	17.32	17.35	0
		1	7	17.16	17.31	17.20	0			1	2	17.18	17.33	17.26	0
		1	14	17.16	17.38	17.14	0			1	5	17.07	17.37	17.24	0
		8	0	17.14	17.25	17.15	0			3	0	17.10	17.38	17.30	0
		8	3	17.15	17.34	17.22	0			3	1	17.00	17.30	17.27	0
		8	7	17.09	17.30	17.24	0			3	3	17.14	17.20	17.21	0
		15	0	16.96	17.28	17.13	0			6	0	16.98	17.22	17.23	0
	64QAM	1	0	17.18	17.37	17.27	0		64QAM	1	0	17.11	17.27	17.15	0
		1	7	17.17	17.24	17.14	0			1	2	17.16	17.29	17.23	0
		1	14	17.02	17.31	17.22	0			1	5	17.07	17.25	17.09	0
		8	0	17.02	17.33	17.12	0			3	0	17.03	17.24	17.17	0
		8	3	17.15	17.21	17.12	0			3	1	17.11	17.23	17.16	0
		8	7	17.02	17.24	17.18	0			3	3	16.97	17.23	17.12	0
		15	0	17.11	17.33	17.24	0			6	0	17.14	17.14	17.14	0

LTE Band 4

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	**18.89**	18.72	18.86	0	15M	QPSK	1	0	18.81	18.67	18.65	0
		1	50	18.60	18.43	18.37	0			1	37	18.52	18.34	18.34	0
		1	99	18.58	18.41	18.35	0			1	74	18.50	18.37	18.28	0
		50	0	**18.80**	18.63	18.57	0			36	0	18.77	18.63	18.47	0
		50	25	18.62	18.45	18.39	0			36	19	18.55	18.43	18.33	0
		50	50	18.56	18.39	18.33	0			36	39	18.52	18.29	18.25	0
		100	0	**18.64**	18.47	18.41	0			75	0	18.64	18.44	18.38	0
	16QAM	1	0	18.84	18.67	18.61	0		16QAM	1	0	18.80	18.59	18.59	0
		1	50	18.55	18.38	18.32	0			1	37	18.53	18.28	18.22	0
		1	99	18.53	18.36	18.30	0			1	74	18.45	18.31	18.23	0
		50	0	18.75	18.58	18.52	0			36	0	18.69	18.54	18.49	0
		50	25	18.57	18.40	18.34	0			36	19	18.55	18.33	18.28	0
		50	50	18.51	18.34	18.28	0			36	39	18.49	18.28	18.26	0
		100	0	18.59	18.42	18.36	0			75	0	18.50	18.36	18.26	0
	64QAM	1	0	18.81	18.64	18.58	0		64QAM	1	0	18.71	18.58	18.54	0
		1	50	18.52	18.35	18.29	0			1	37	18.43	18.26	18.19	0
		1	99	18.50	18.33	18.27	0			1	74	18.49	18.27	18.26	0
		50	0	18.72	18.55	18.49	0			36	0	18.69	18.55	18.46	0
		50	25	18.54	18.37	18.31	0			36	19	18.48	18.33	18.30	0
		50	50	18.48	18.31	18.25	0			36	39	18.39	18.30	18.21	0
		100	0	18.56	18.39	18.33	0			75	0	18.50	18.38	18.28	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20000	20175	20350				Channel		19975	20175	20375	
		Frequency (MHz)		1715.0	1732.5	1750.0				Frequency (MHz)		1712.5	1732.5	1752.5	
10M	QPSK	1	0	18.72	18.62	18.62	0	5M	QPSK	1	0	18.74	18.62	18.41	0
		1	24	18.44	18.27	18.20	0			1	12	18.51	18.27	18.18	0
		1	49	18.44	18.24	18.19	0			1	24	18.47	18.30	18.08	0
		25	0	18.74	18.54	18.37	0			12	0	18.67	18.60	18.25	0
		25	12	18.48	18.28	18.23	0			12	6	18.61	18.30	18.08	0
		25	25	18.34	18.30	18.21	0			12	13	18.32	18.27	18.12	0
		50	0	18.50	18.33	18.22	0			25	0	18.49	18.30	18.19	0
	16QAM	1	0	18.62	18.52	18.44	0		16QAM	1	0	18.62	18.56	18.54	0
		1	24	18.40	18.24	18.19	0			1	12	18.45	18.23	18.20	0
		1	49	18.51	18.29	18.12	0			1	24	18.43	18.29	18.29	0
		25	0	18.68	18.45	18.48	0			12	0	18.64	18.45	18.37	0
		25	12	18.49	18.28	18.17	0			12	6	18.37	18.17	18.31	0
		25	25	18.37	18.10	18.19	0			12	13	18.36	18.25	18.08	0
		50	0	18.51	18.27	18.27	0			25	0	18.51	18.36	18.23	0
	64QAM	1	0	18.62	18.58	18.37	0		64QAM	1	0	18.64	18.43	18.43	0
		1	24	18.40	18.15	18.20	0			1	12	18.39	18.22	18.09	0
		1	49	18.38	18.12	18.14	0			1	24	18.41	18.27	18.20	0
		25	0	18.58	18.38	18.41	0			12	0	18.68	18.39	18.40	0
		25	12	18.34	18.14	18.09	0			12	6	18.33	18.12	18.23	0
		25	25	18.30	18.13	18.11	0			12	13	18.40	18.25	18.22	0
		50	0	18.47	18.35	18.23	0			25	0	18.35	18.18	18.14	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	18.86	18.70	18.50	0	1.4M	QPSK	1	0	18.81	18.63	18.49	0
		1	7	18.45	18.41	18.26	0			1	2	18.53	18.43	18.20	0
		1	14	18.53	18.28	18.22	0			1	5	18.39	18.27	18.18	0
		8	0	18.69	18.41	18.42	0			3	0	18.64	18.52	18.55	0
		8	3	18.50	18.25	18.30	0			3	1	18.43	18.34	18.31	0
		8	7	18.49	18.19	18.13	0			3	3	18.38	18.20	18.21	0
		15	0	18.58	18.37	18.25	0			6	0	18.48	18.39	18.34	0
	16QAM	1	0	18.61	18.62	18.55	0		16QAM	1	0	18.65	18.60	18.46	0
		1	7	18.41	18.17	18.22	0			1	2	18.44	18.25	18.27	0
		1	14	18.41	18.21	18.23	0			1	5	18.36	18.17	18.26	0
		8	0	18.67	18.45	18.41	0			3	0	18.73	18.47	18.49	0
		8	3	18.49	18.31	18.21	0			3	1	18.41	18.26	18.25	0
		8	7	18.37	18.13	18.04	0			3	3	18.38	18.10	18.14	0
		15	0	18.54	18.29	18.27	0			6	0	18.50	18.26	18.18	0
	64QAM	1	0	18.66	18.51	18.46	0		64QAM	1	0	18.66	18.55	18.39	0
		1	7	18.36	18.23	18.23	0			1	2	18.43	18.23	18.22	0
		1	14	18.30	18.17	18.14	0			1	5	18.42	18.21	18.06	0
		8	0	18.61	18.44	18.29	0			3	0	18.71	18.49	18.32	0
		8	3	18.43	18.30	18.12	0			3	1	18.44	18.16	18.27	0
		8	7	18.46	18.14	18.06	0			3	3	18.43	18.18	18.11	0
		15	0	18.48	18.22	18.09	0			6	0	18.45	18.21	18.16	0

LTE Band 5

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	21.48	**21.50**	21.49	0	5M	QPSK	1	0	21.35	21.39	21.28	0
		1	24	21.39	21.45	21.41	0			1	12	21.31	21.33	21.12	0
		1	49	21.34	21.39	21.36	0			1	24	21.21	21.24	21.06	0
		25	0	21.36	**21.42**	21.38	0			12	0	21.20	21.24	21.09	0
		25	12	21.34	21.39	21.36	0			12	6	21.17	21.22	21.23	0
		25	25	21.32	21.38	21.34	0			12	13	21.20	21.21	21.17	0
		50	0	21.38	**21.43**	21.40	0			25	0	21.28	21.39	21.26	0
	16QAM	1	0	21.42	21.47	21.44	0		16QAM	1	0	21.26	21.36	21.33	0
		1	24	21.40	21.45	21.42	0			1	12	21.22	21.31	21.41	0
		1	49	21.31	21.36	21.33	0			1	24	21.25	21.20	21.26	0
		25	0	21.38	21.43	21.40	0			12	0	21.27	21.37	21.28	0
		25	12	21.25	21.30	21.27	0			12	6	21.19	21.09	21.19	0
		25	25	21.28	21.33	21.30	0			12	13	21.22	21.25	21.26	0
		50	0	21.24	21.29	21.26	0			25	0	21.04	21.23	21.13	0
	64QAM	1	0	21.39	21.44	21.41	0		64QAM	1	0	21.34	21.22	21.27	0
		1	24	21.34	21.39	21.36	0			1	12	21.23	21.25	21.20	0
		1	49	21.32	21.37	21.34	0			1	24	21.16	21.19	21.20	0
		25	0	20.76	20.81	20.78	0			12	0	20.63	20.75	20.78	0
		25	12	20.77	20.82	20.79	0			12	6	20.69	20.79	20.59	0
		25	25	20.71	20.76	20.73	0			12	13	20.64	20.58	20.52	0
		50	0	20.75	20.80	20.77	0			25	0	20.64	20.63	20.61	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	21.36	21.38	21.38	0	1.4M	QPSK	1	0	21.27	21.29	21.32	0
		1	7	21.21	21.30	21.32	0			1	2	21.22	21.31	21.16	0
		1	14	21.16	21.34	21.23	0			1	5	21.26	21.31	21.26	0
		8	0	21.36	21.33	21.18	0			3	0	21.46	21.41	21.40	0
		8	3	21.26	21.24	21.27	0			3	1	21.30	21.36	21.31	0
		8	7	21.23	21.22	21.18	0			3	3	21.27	21.30	21.21	0
		15	0	21.24	21.25	21.20	0			6	0	21.31	21.23	21.24	0
	16QAM	1	0	21.26	21.35	21.31	0		16QAM	1	0	21.31	21.40	21.28	0
		1	7	21.21	21.45	21.39	0			1	2	21.28	21.37	21.28	0
		1	14	21.17	21.16	21.20	0			1	5	21.14	21.21	21.13	0
		8	0	21.20	21.38	21.38	0			3	0	21.16	21.26	21.18	0
		8	3	21.15	21.20	21.12	0			3	1	21.18	21.26	21.11	0
		8	7	21.20	21.23	21.09	0			3	3	21.29	21.33	21.30	0
		15	0	21.18	21.24	21.15	0			6	0	21.11	21.17	21.11	0
	64QAM	1	0	21.26	21.34	21.20	0		64QAM	1	0	21.38	21.35	21.30	0
		1	7	21.26	21.17	21.23	0			1	2	21.27	21.33	21.24	0
		1	14	21.13	21.31	21.32	0			1	5	21.28	21.33	21.29	0
		8	0	20.71	20.65	20.61	0			3	0	21.31	21.34	21.31	0
		8	3	20.62	20.70	20.63	0			3	1	21.14	21.29	21.33	0
		8	7	20.48	20.63	20.61	0			3	3	20.67	20.74	20.62	0
		15	0	20.64	20.67	20.68	0			6	0	20.72	20.59	20.62	0

LTE Band 7																
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	16.33	**16.48**	16.42	0	15M	QPSK	1	0	16.31	16.41	16.33	0
		1	50	16.09	16.18	16.11	0			1	37	16.08	16.18	16.05	0
		1	99	15.89	16.04	15.97	0			1	74	15.89	15.99	15.89	0
		50	0	16.03	**16.20**	16.14	0			36	0	15.99	16.11	16.13	0
		50	25	16.00	16.13	16.12	0			36	19	15.96	16.07	16.12	0
		50	50	15.91	16.06	16.00	0			36	39	15.89	16.01	15.91	0
		100	0	15.97	**16.14**	16.10	0			75	0	15.95	16.09	16.03	0
	16QAM	1	0	16.30	16.45	16.39	0		16QAM	1	0	16.26	16.42	16.33	0
		1	50	15.92	16.09	16.03	0			1	37	15.86	16.00	15.94	0
		1	99	15.91	16.07	16.01	0			1	74	15.82	16.01	15.97	0
		50	0	15.86	16.01	15.97	0			36	0	15.84	15.91	15.97	0
		50	25	15.82	15.94	15.88	0			36	19	15.74	15.91	15.82	0
		50	50	15.73	15.88	15.84	0			36	39	15.66	15.81	15.83	0
		100	0	15.80	15.92	15.90	0			75	0	15.76	15.86	15.83	0
	64QAM	1	0	16.19	16.34	16.28	0		64QAM	1	0	16.17	16.24	16.21	0
		1	50	15.81	15.96	15.90	0			1	37	15.77	15.94	15.84	0
		1	99	15.81	15.98	15.92	0			1	74	15.76	15.96	15.85	0
		50	0	15.90	16.05	15.99	0			36	0	15.82	16.03	15.98	0
		50	25	15.90	16.03	15.99	0			36	19	15.84	15.98	15.94	0
		50	50	15.77	15.92	15.86	0			36	39	15.74	15.87	15.82	0
		100	0	15.80	15.98	15.96	0			75	0	15.73	15.98	15.90	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	16.30	16.45	16.40	0	5M	QPSK	1	0	16.31	16.40	16.41	0
		1	24	16.07	16.15	16.06	0			1	12	16.02	16.15	16.04	0
		1	49	15.89	16.04	15.97	0			1	24	15.82	16.01	15.93	0
		25	0	15.97	16.11	16.04	0			12	0	15.93	16.20	16.12	0
		25	12	15.94	16.13	16.09	0			12	6	15.91	16.13	16.04	0
		25	25	15.91	16.05	15.96	0			12	13	15.88	15.97	15.93	0
		50	0	15.88	16.14	16.04	0			25	0	15.91	16.05	16.02	0
	16QAM	1	0	16.26	16.43	16.34	0		16QAM	1	0	16.25	16.39	16.36	0
		1	24	15.88	16.03	15.93	0			1	12	15.88	16.04	15.94	0
		1	49	15.90	16.06	15.99	0			1	24	15.88	16.01	15.98	0
		25	0	15.79	16.01	15.90	0			12	0	15.79	15.99	15.97	0
		25	12	15.81	15.92	15.78	0			12	6	15.82	15.86	15.87	0
		25	25	15.73	15.80	15.74	0			12	13	15.63	15.88	15.74	0
		50	0	15.79	15.88	15.82	0			25	0	15.73	15.89	15.85	0
	64QAM	1	0	16.17	16.29	16.26	0		64QAM	1	0	16.17	16.25	16.23	0
		1	24	15.77	15.90	15.80	0			1	12	15.75	15.90	15.82	0
		1	49	15.76	15.88	15.87	0			1	24	15.77	15.93	15.92	0
		25	0	15.86	16.00	15.99	0			12	0	15.83	15.96	15.96	0
		25	12	15.80	15.98	15.99	0			12	6	15.87	16.03	15.97	0
		25	25	15.72	15.90	15.76	0			12	13	15.76	15.90	15.78	0
		50	0	15.74	15.93	15.96	0			25	0	15.78	15.93	15.94	0

LTE Band 12																	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	20.82	**20.95**	20.94	0	5M	QPSK	1	0	20.80	20.92	20.78	0
		1	24	20.71	20.84	20.76	0			1	12	20.66	20.84	20.75	0
		1	49	20.60	20.73	20.65	0			1	24	20.57	20.69	20.64	0
		25	0	20.72	**20.85**	20.77	0			12	0	20.62	20.84	20.69	0
		25	12	20.70	20.83	20.75	0			12	6	20.61	20.76	20.73	0
		25	25	20.58	20.71	20.63	0			12	13	20.50	20.70	20.59	0
		50	0	20.69	**20.82**	20.74	0			25	0	20.69	20.79	20.67	0
	16QAM	1	0	20.77	20.90	20.82	0		16QAM	1	0	20.76	20.81	20.72	0
		1	24	20.66	20.79	20.71	0			1	12	20.62	20.76	20.63	0
		1	49	20.55	20.68	20.60	0			1	24	20.50	20.61	20.60	0
		25	0	20.67	20.80	20.72	0			12	0	20.59	20.72	20.72	0
		25	12	20.65	20.78	20.70	0			12	6	20.59	20.70	20.60	0
		25	25	20.53	20.66	20.58	0			12	13	20.49	20.60	20.49	0
		50	0	20.64	20.77	20.69	0			25	0	20.56	20.73	20.59	0
	64QAM	1	0	20.74	20.87	20.79	0		64QAM	1	0	20.66	20.80	20.69	0
		1	24	20.63	20.76	20.68	0			1	12	20.62	20.67	20.68	0
		1	49	20.52	20.65	20.57	0			1	24	20.51	20.57	20.49	0
		25	0	20.64	20.77	20.69	0			12	0	20.64	20.71	20.66	0
		25	12	20.62	20.75	20.67	0			12	6	20.53	20.71	20.61	0
		25	25	20.50	20.63	20.55	0			12	13	20.49	20.55	20.50	0
		50	0	20.61	20.74	20.66	0			25	0	20.53	20.72	20.56	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23025	23095	23165				Channel		23017	23095	23173	
		Frequency (MHz)		700.5	707.5	714.5				Frequency (MHz)		699.7	707.5	715.3	
3M	QPSK	1	0	20.67	20.83	20.66	0	1.4M	QPSK	1	0	20.82	20.77	20.70	0
		1	7	20.63	20.61	20.54	0			1	2	20.62	20.82	20.60	0
		1	14	20.40	20.51	20.63	0			1	5	20.48	20.58	20.36	0
		8	0	20.59	20.75	20.66	0			3	0	20.58	20.69	20.62	0
		8	3	20.54	20.76	20.59	0			3	1	20.60	20.78	20.47	0
		8	7	20.47	20.61	20.54	0			3	3	20.48	20.50	20.46	0
		15	0	20.60	20.64	20.69	0			6	0	20.63	20.71	20.49	0
	16QAM	1	0	20.61	20.74	20.71	0		16QAM	1	0	20.67	20.71	20.68	0
		1	7	20.54	20.65	20.50	0			1	2	20.54	20.61	20.62	0
		1	14	20.32	20.60	20.36	0			1	5	20.41	20.62	20.38	0
		8	0	20.60	20.78	20.61	0			3	0	20.53	20.77	20.58	0
		8	3	20.62	20.67	20.49	0			3	1	20.46	20.70	20.60	0
		8	7	20.34	20.51	20.43	0			3	3	20.43	20.56	20.44	0
		15	0	20.50	20.57	20.54	0			6	0	20.58	20.73	20.52	0
	64QAM	1	0	20.62	20.77	20.63	0		64QAM	1	0	20.71	20.72	20.68	0
		1	7	20.48	20.63	20.50	0			1	2	20.51	20.59	20.48	0
		1	14	20.41	20.54	20.33	0			1	5	20.42	20.54	20.43	0
		8	0	20.52	20.66	20.62	0			3	0	20.42	20.69	20.54	0
		8	3	20.49	20.59	20.54	0			3	1	20.46	20.56	20.54	0
		8	7	20.34	20.51	20.36	0			3	3	20.39	20.53	20.39	0
		15	0	20.59	20.56	20.59	0			6	0	20.55	20.59	20.58	0

LTE Band 13															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		**21.90**		0	5M	QPSK	1	0	21.57	21.64	21.54	0
		1	24		21.64		0			1	12	21.52	21.63	21.40	0
		1	49		21.58		0			1	24	21.42	21.54	21.44	0
		25	0		**21.69**		0			12	0	21.58	21.65	21.46	0
		25	12		21.67		0			12	6	21.51	21.65	21.43	0
		25	25		21.61		0			12	13	21.49	21.60	21.47	0
		50	0		**21.64**		0			25	0	21.48	21.62	21.45	0
	16QAM	1	0		21.65		0		16QAM	1	0	21.50	21.62	21.47	0
		1	24		21.58		0			1	12	21.41	21.57	21.39	0
		1	49		21.52		0			1	24	21.41	21.53	21.34	0
		25	0		21.63		0			12	0	21.52	21.55	21.46	0
		25	12		21.61		0			12	6	21.48	21.59	21.39	0
		25	25		21.55		0			12	13	21.38	21.49	21.42	0
		50	0		21.58		0			25	0	21.42	21.52	21.42	0
	64QAM	1	0		21.60		0		64QAM	1	0	21.51	21.57	21.46	0
		1	24		21.53		0			1	12	21.39	21.53	21.37	0
		1	49		21.47		0			1	24	21.40	21.40	21.26	0
		25	0		21.58		0			12	0	21.45	21.59	21.46	0
		25	12		21.56		0			12	6	21.40	21.53	21.43	0
		25	25		21.50		0			12	13	21.34	21.52	21.37	0
		50	0		21.53		0			25	0	21.39	21.56	21.39	0

LTE Band 14

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			23330					Channel		23305	23330	23355	
		Frequency (MHz)			793.0					Frequency (MHz)		790.5	793.0	795.5	
10M	QPSK	1	0		**20.94**		0	5M	QPSK	1	0	20.80	20.91	20.79	0
		1	24		20.83		0			1	12	20.67	20.82	20.69	0
		1	49		20.71		0			1	24	20.58	20.66	20.56	0
		25	0		**20.92**		0			12	0	20.72	20.86	20.75	0
		25	12		20.82		0			12	6	20.70	20.76	20.66	0
		25	25		20.73		0			12	13	20.53	20.68	20.60	0
		50	0		**20.81**		0			25	0	20.63	20.74	20.72	0
	16QAM	1	0		20.88		0		16QAM	1	0	20.67	20.85	20.82	0
		1	24		20.77		0			1	12	20.65	20.68	20.61	0
		1	49		20.65		0			1	24	20.52	20.57	20.52	0
		25	0		20.86		0			12	0	20.68	20.82	20.74	0
		25	12		20.76		0			12	6	20.62	20.74	20.69	0
		25	25		20.67		0			12	13	20.50	20.67	20.56	0
		50	0		20.75		0			25	0	20.64	20.71	20.60	0
	64QAM	1	0		20.83		0		64QAM	1	0	20.72	20.81	20.74	0
		1	24		20.72		0			1	12	20.62	20.71	20.62	0
		1	49		20.60		0			1	24	20.43	20.54	20.52	0
		25	0		20.81		0			12	0	20.71	20.83	20.75	0
		25	12		20.71		0			12	6	20.57	20.69	20.61	0
		25	25		20.62		0			12	13	20.43	20.61	20.48	0
		50	0		20.70		0			25	0	20.52	20.69	20.63	0

LTE Band 17

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800				Channel		23755	23790	23825	
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5	
10M	QPSK	1	0	20.94	**20.97**	20.91	0	5M	QPSK	1	0	20.70	20.86	20.65	0
		1	24	20.87	20.90	20.84	0			1	12	20.71	20.88	20.73	0
		1	49	20.63	20.66	20.60	0			1	24	20.57	20.56	20.36	0
		25	0	20.86	**20.89**	20.83	0			12	0	20.67	20.83	20.59	0
		25	12	20.83	20.86	20.80	0			12	6	20.71	20.83	20.62	0
		25	25	20.77	20.80	20.74	0			12	13	20.69	20.67	20.52	0
		50	0	20.82	**20.85**	20.79	0			25	0	20.62	20.73	20.71	0
	16QAM	1	0	20.92	20.91	20.86	0		16QAM	1	0	20.82	20.75	20.76	0
		1	24	20.83	20.80	20.80	0			1	12	20.65	20.74	20.60	0
		1	49	20.58	20.57	20.53	0			1	24	20.47	20.60	20.41	0
		25	0	20.77	20.86	20.80	0			12	0	20.71	20.84	20.66	0
		25	12	20.82	20.83	20.73	0			12	6	20.68	20.60	20.55	0
		25	25	20.77	20.72	20.64	0			12	13	20.68	20.65	20.60	0
		50	0	20.75	20.82	20.76	0			25	0	20.67	20.54	20.73	0
	64QAM	1	0	20.87	20.92	20.88	0		64QAM	1	0	20.69	20.79	20.69	0
		1	24	20.77	20.89	20.75	0			1	12	20.74	20.72	20.70	0
		1	49	20.54	20.58	20.58	0			1	24	20.43	20.50	20.39	0
		25	0	20.81	20.80	20.83	0			12	0	20.74	20.76	20.77	0
		25	12	20.83	20.76	20.71	0			12	6	20.62	20.57	20.57	0
		25	25	20.70	20.77	20.70	0			12	13	20.58	20.70	20.55	0
		50	0	20.77	20.79	20.73	0			25	0	20.68	20.65	20.59	0

LTE Band 25															
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	18.35	18.41	**18.49**	0	15M	QPSK	1	0	18.32	18.41	18.44	0
		1	50	18.32	18.38	18.46	0			1	37	18.31	18.34	18.41	0
		1	99	18.28	18.34	18.42	0			1	74	18.21	18.32	18.41	0
		50	0	18.33	18.39	**18.47**	0			36	0	18.30	18.37	18.45	0
		50	25	18.29	18.35	18.43	0			36	19	18.24	18.35	18.42	0
		50	50	18.27	18.33	18.41	0			36	39	18.20	18.27	18.40	0
		100	0	18.26	18.32	**18.40**	0			75	0	18.26	18.31	18.38	0
	16QAM	1	0	18.29	18.35	18.43	0		16QAM	1	0	18.25	18.30	18.33	0
		1	50	18.26	18.32	18.40	0			1	37	18.16	18.31	18.38	0
		1	99	18.22	18.28	18.36	0			1	74	18.20	18.20	18.30	0
		50	0	18.27	18.33	18.41	0			36	0	18.19	18.28	18.35	0
		50	25	18.23	18.29	18.37	0			36	19	18.13	18.23	18.30	0
		50	50	18.21	18.27	18.35	0			36	39	18.20	18.24	18.27	0
		100	0	18.20	18.26	18.34	0			75	0	18.20	18.22	18.31	0
	64QAM	1	0	18.24	18.30	18.38	0		64QAM	1	0	18.15	18.22	18.34	0
		1	50	18.21	18.27	18.35	0			1	37	18.19	18.24	18.34	0
		1	99	18.17	18.23	18.31	0			1	74	18.13	18.16	18.22	0
		50	0	18.22	18.28	18.36	0			36	0	18.19	18.25	18.35	0
		50	25	18.18	18.24	18.32	0			36	19	18.11	18.17	18.23	0
		50	50	18.16	18.22	18.30	0			36	39	18.09	18.22	18.22	0
		100	0	18.15	18.21	18.29	0			75	0	18.09	18.13	18.24	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	18.26	18.30	18.38	0	5M	QPSK	1	0	18.21	18.35	18.46	0
		1	24	18.24	18.22	18.32	0			1	12	18.15	18.19	18.17	0
		1	49	18.07	18.16	18.24	0			1	24	18.05	18.29	18.32	0
		25	0	18.25	18.21	18.32	0			12	0	18.27	18.31	18.34	0
		25	12	18.17	18.24	18.37	0			12	6	18.23	18.17	18.25	0
		25	25	18.13	18.18	18.27	0			12	13	18.18	18.16	18.23	0
		50	0	18.25	18.26	18.17	0			25	0	18.11	18.13	18.18	0
	16QAM	1	0	18.28	18.27	18.19	0		16QAM	1	0	18.21	18.29	18.22	0
		1	24	18.11	18.23	18.26	0			1	12	18.10	18.16	18.26	0
		1	49	18.16	18.18	18.24	0			1	24	18.06	18.19	18.27	0
		25	0	18.09	18.12	18.23	0			12	0	18.08	18.22	18.26	0
		25	12	18.08	18.15	18.18	0			12	6	18.15	18.24	18.28	0
		25	25	18.10	18.24	18.32	0			12	13	18.00	18.03	18.16	0
		50	0	18.06	18.10	18.15	0			25	0	17.97	18.19	18.14	0
	64QAM	1	0	18.07	18.17	18.20	0		64QAM	1	0	18.14	18.12	18.15	0
		1	24	18.06	18.19	18.30	0			1	12	18.15	18.20	18.21	0
		1	49	18.04	18.16	18.16	0			1	24	18.02	18.08	18.12	0
		25	0	18.09	18.07	18.31	0			12	0	18.19	18.23	18.29	0
		25	12	18.07	18.18	18.23	0			12	6	18.04	18.11	18.17	0
		25	25	18.08	18.02	18.26	0			12	13	18.13	18.10	18.10	0
		50	0	18.10	18.14	18.24	0			25	0	18.07	18.19	18.20	0
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	18.18	18.39	18.41	0	1.4M	QPSK	1	0	18.19	18.31	18.40	0
		1	7	18.15	18.19	18.35	0			1	2	18.16	18.29	18.37	0
		1	14	18.19	18.24	18.30	0			1	5	18.08	18.13	18.31	0
		8	0	18.24	18.23	18.38	0			3	0	18.20	18.30	18.35	0
		8	3	18.26	18.21	18.30	0			3	1	18.16	18.14	18.22	0
		8	7	18.06	18.26	18.19	0			3	3	18.14	18.19	18.22	0
		15	0	18.07	18.18	18.23	0			6	0	18.18	18.16	18.31	0
	16QAM	1	0	18.20	18.29	18.35	0		16QAM	1	0	18.11	18.34	18.39	0
		1	7	18.18	18.15	18.26	0			1	2	18.16	18.25	18.38	0
		1	14	18.09	18.20	18.25	0			1	5	18.11	18.22	18.30	0
		8	0	18.14	18.27	18.28	0			3	0	18.11	18.10	18.33	0
		8	3	18.02	18.12	18.16	0			3	1	18.16	18.26	18.27	0
		8	7	18.10	18.15	18.29	0			3	3	18.02	18.11	18.14	0
		15	0	18.13	18.13	18.25	0			6	0	18.10	18.06	18.26	0
	64QAM	1	0	18.14	18.07	18.23	0		64QAM	1	0	18.19	18.16	18.28	0
		1	7	18.02	18.09	18.16	0			1	2	18.05	18.07	18.26	0
		1	14	18.09	18.11	18.11	0			1	5	18.09	18.04	18.12	0
		8	0	18.19	18.19	18.30	0			3	0	18.03	18.17	18.26	0
		8	3	18.03	18.13	18.21	0			3	1	18.01	18.13	18.30	0
		8	7	18.03	18.09	18.24	0			3	3	18.11	18.10	18.17	0
		15	0	18.01	18.13	18.07	0			6	0	18.09	18.12	18.17	0

LTE Band 26

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	**20.28**	20.24	20.16	0
		1	37	20.26	20.22	20.14	0
		1	74	20.19	20.15	20.07	0
		36	0	**20.26**	20.22	20.14	0
		36	19	20.16	20.12	20.04	0
		36	39	20.15	20.11	20.03	0
		75	0	**20.11**	20.07	19.99	0
	16QAM	1	0	20.21	20.17	20.09	0
		1	37	20.19	20.15	20.07	0
		1	74	20.12	20.08	20.00	0
		36	0	20.19	20.15	20.07	0
		36	19	20.09	20.05	19.97	0
		36	39	20.08	20.04	19.96	0
		75	0	20.04	20.00	19.92	0
	64QAM	1	0	20.17	20.13	20.05	0
		1	37	20.15	20.11	20.03	0
		1	74	20.08	20.04	19.96	0
		36	0	20.15	20.11	20.03	0
		36	19	20.05	20.01	19.93	0
		36	39	20.04	20.00	19.92	0
		75	0	20.00	19.96	19.88	0

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	20.24	20.19	20.10	0
		1	24	20.17	20.14	20.12	0
		1	49	20.11	20.10	19.99	0
		25	0	20.21	20.13	20.06	0
		25	12	20.11	20.05	19.94	0
		25	25	20.06	20.04	19.93	0
		50	0	20.08	20.03	19.97	0
	16QAM	1	0	20.19	20.11	20.03	0
		1	24	20.14	20.10	20.07	0
		1	49	20.12	20.06	19.91	0
		25	0	20.14	20.08	19.97	0
		25	12	20.03	20.00	19.87	0
		25	25	20.08	20.00	19.87	0
		50	0	20.02	19.99	19.82	0
	64QAM	1	0	20.15	20.11	20.03	0
		1	24	20.15	20.02	19.93	0
		1	49	20.01	19.96	19.93	0
		25	0	20.13	20.01	19.96	0
		25	12	19.95	19.91	19.83	0
		25	25	19.95	19.94	19.86	0
		50	0	20.00	19.92	19.79	0

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	20.18	20.03	19.99	0
		1	12	20.07	20.04	20.07	0
		1	24	19.95	19.98	19.89	0
		12	0	20.15	20.04	19.98	0
		12	6	20.00	20.07	19.97	0
		12	13	20.00	19.96	19.86	0
		25	0	20.10	19.97	19.75	0
	16QAM	1	0	20.04	20.11	19.96	0
		1	12	19.94	19.97	20.02	0
		1	24	20.02	19.92	19.88	0
		12	0	20.02	19.95	19.98	0
		12	6	20.00	19.91	19.90	0
		12	13	19.98	19.90	19.84	0
		25	0	20.01	19.80	19.83	0
	64QAM	1	0	20.13	20.09	19.99	0
		1	12	20.10	20.02	19.95	0
		1	24	19.95	19.84	19.79	0
		12	0	19.90	19.94	19.87	0
		12	6	19.91	19.94	19.82	0
		12	13	19.83	19.87	19.76	0
		25	0	19.84	19.84	19.79	0

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	20.17	20.13	19.95	0
		1	7	20.04	20.13	19.89	0
		1	14	20.02	20.03	19.93	0
		8	0	20.14	20.02	19.94	0
		8	3	20.09	19.98	19.88	0
		8	7	20.06	19.98	19.83	0
		15	0	19.94	19.93	19.80	0
	16QAM	1	0	20.18	20.01	19.93	0
		1	7	20.09	20.03	20.02	0
		1	14	20.06	20.01	19.87	0
		8	0	20.02	20.10	19.95	0
		8	3	19.98	19.92	19.92	0
		8	7	19.96	19.91	19.75	0
		15	0	19.85	19.90	19.78	0
	64QAM	1	0	20.09	19.88	19.82	0
		1	7	20.02	19.90	19.88	0
		1	14	20.03	19.90	19.71	0
		8	0	19.98	19.94	19.88	0
		8	3	19.98	19.98	19.82	0
		8	7	19.88	19.90	19.82	0
		15	0	19.94	19.78	19.74	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26697	26865	27033	
		Frequency (MHz)		814.7	831.5	848.3	
1.4M	QPSK	1	0	20.21	20.10	20.03	0
		1	2	20.12	20.09	20.00	0
		1	5	20.08	20.02	19.92	0
		3	0	20.13	20.06	20.06	0
		3	1	19.99	19.94	19.95	0
		3	3	19.94	20.03	19.93	0
		6	0	20.02	20.00	19.93	0
	16QAM	1	0	20.16	20.00	19.94	0
		1	2	20.10	20.11	19.86	0
		1	5	20.05	20.01	19.85	0
		3	0	20.03	19.98	20.03	0
		3	1	20.03	19.94	19.90	0
		3	3	19.83	19.91	19.77	0
		6	0	19.84	19.91	19.77	0
	64QAM	1	0	20.06	20.00	19.82	0
		1	2	20.07	19.92	19.98	0
		1	5	19.88	19.90	19.88	0
		3	0	19.98	19.99	19.84	0
		3	1	20.00	19.84	19.86	0
		3	3	19.96	19.90	19.80	0
		6	0	19.95	19.88	19.83	0

LTE Band 30

BW	MCS Index	RB Size	RB Offset		Mid		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			27710					Channel		27685	27710	27735	
		Frequency (MHz)			2310.0					Frequency (MHz)		2307.5	2310.0	2312.5	
10M	QPSK	1	0		***17.38***		0	5M	QPSK	1	0	17.16	17.19	17.07	0
		1	24		17.18		0			1	12	17.13	17.09	16.92	0
		1	49		17.11		0			1	24	17.06	16.92	16.99	0
		25	0		**17.22**		0			12	0	17.19	17.13	16.84	0
		25	12		17.15		0			12	6	17.06	17.03	16.89	0
		25	25		17.06		0			12	13	17.02	16.86	16.71	0
		50	0		**17.11**		0			25	0	17.12	16.98	16.79	0
	16QAM	1	0		17.18		0		16QAM	1	0	16.99	16.98	17.00	0
		1	24		17.12		0			1	12	17.01	17.05	16.83	0
		1	49		17.05		0			1	24	16.99	16.95	16.93	0
		25	0		17.16		0			12	0	17.06	16.97	16.92	0
		25	12		17.09		0			12	6	16.95	16.88	16.80	0
		25	25		17.00		0			12	13	16.96	16.94	16.74	0
		50	0		17.05		0			25	0	16.97	16.86	16.83	0
	64QAM	1	0		17.13		0		64QAM	1	0	17.09	17.00	16.84	0
		1	24		17.07		0			1	12	17.05	17.05	16.93	0
		1	49		17.00		0			1	24	17.00	16.82	16.86	0
		25	0		17.11		0			12	0	17.02	16.91	16.84	0
		25	12		17.04		0			12	6	16.99	16.96	16.80	0
		25	25		16.95		0			12	13	16.84	16.84	16.69	0
		50	0		17.00		0			25	0	16.88	16.91	16.81	0

LTE Band 38

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37850	38000	38150				Channel		37825	38000	38175	
		Frequency (MHz)		2580	2595	2610				Frequency (MHz)		2577.5	2595	2612.5	
20M	QPSK	1	0	**18.89**	18.83	18.66	0	15M	QPSK	1	0	18.80	18.73	18.66	0
		1	50	18.59	18.52	18.36	0			1	37	18.56	18.47	18.28	0
		1	99	18.48	18.42	18.30	0			1	74	18.38	18.40	18.23	0
		50	0	**18.77**	18.71	18.54	0			36	0	18.75	18.68	18.53	0
		50	25	18.74	18.61	18.51	0			36	19	18.72	18.60	18.45	0
		50	50	18.55	18.49	18.31	0			36	39	18.53	18.45	18.23	0
		100	0	**18.69**	18.62	18.50	0			75	0	18.67	18.58	18.46	0
	16QAM	1	0	18.85	18.79	18.65	0		16QAM	1	0	18.84	18.75	18.60	0
		1	50	18.57	18.51	18.40	0			1	37	18.57	18.47	18.31	0
		1	99	18.54	18.45	18.31	0			1	74	18.54	18.37	18.26	0
		50	0	18.78	18.72	18.52	0			36	0	18.78	18.62	18.47	0
		50	25	18.74	18.68	18.51	0			36	19	18.73	18.61	18.41	0
		50	50	18.56	18.51	18.33	0			36	39	18.46	18.45	18.27	0
		100	0	18.75	18.72	18.54	0			75	0	18.74	18.63	18.46	0
	64QAM	1	0	18.47	18.41	18.30	0		64QAM	1	0	18.47	18.32	18.23	0
		1	50	18.23	18.17	18.00	0			1	37	18.16	18.11	17.90	0
		1	99	18.15	18.10	17.96	0			1	74	18.06	18.07	17.94	0
		50	0	18.77	18.71	18.54	0			36	0	18.77	18.67	18.52	0
		50	25	18.72	18.70	18.47	0			36	19	18.63	18.63	18.37	0
		50	50	18.63	18.62	18.42	0			36	39	18.61	18.53	18.35	0
		100	0	18.74	18.68	18.50	0			75	0	18.71	18.64	18.41	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37800	38000	38200				Channel		37775	38000	38225	
		Frequency (MHz)		2575	2595	2615				Frequency (MHz)		2572.5	2595	2617.5	
10M	QPSK	1	0	18.81	18.75	18.64	0	5M	QPSK	1	0	18.82	18.81	18.62	0
		1	24	18.54	18.46	18.33	0			1	12	18.54	18.42	18.27	0
		1	49	18.43	18.39	18.21	0			1	24	18.45	18.32	18.26	0
		25	0	18.72	18.71	18.46	0			12	0	18.69	18.66	18.44	0
		25	12	18.73	18.53	18.41	0			12	6	18.67	18.59	18.43	0
		25	25	18.46	18.39	18.25	0			12	13	18.48	18.44	18.23	0
		50	0	18.65	18.60	18.47	0			25	0	18.69	18.54	18.46	0
	16QAM	1	0	18.82	18.76	18.63	0		16QAM	1	0	18.76	18.73	18.58	0
		1	24	18.50	18.47	18.40	0			1	12	18.50	18.44	18.38	0
		1	49	18.48	18.42	18.31	0			1	24	18.49	18.41	18.29	0
		25	0	18.75	18.64	18.44	0			12	0	18.71	18.65	18.42	0
		25	12	18.74	18.68	18.46	0			12	6	18.65	18.63	18.47	0
		25	25	18.46	18.46	18.31	0			12	13	18.50	18.45	18.24	0
		50	0	18.70	18.71	18.49	0			25	0	18.73	18.64	18.50	0
	64QAM	1	0	18.43	18.35	18.21	0		64QAM	1	0	18.39	18.31	18.29	0
		1	24	18.13	18.11	18.00	0			1	12	18.16	18.08	17.94	0
		1	49	18.08	18.09	17.91	0			1	24	18.10	18.03	17.86	0
		25	0	18.69	18.63	18.46	0			12	0	18.70	18.63	18.50	0
		25	12	18.72	18.67	18.42	0			12	6	18.63	18.70	18.40	0
		25	25	18.53	18.55	18.33	0			12	13	18.54	18.58	18.41	0
		50	0	18.74	18.62	18.50	0			25	0	18.73	18.68	18.45	0

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BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39750	40185	40620	41055	41490	
		Frequency (MHz)		2506.0	2549.5	2593.0	2636.5	2680.0	
20M	QPSK	1	0	16.77	16.83	16.79	**16.85**	16.73	0
		1	50	16.66	16.72	16.68	16.74	16.62	0
		1	99	16.56	16.62	16.58	16.64	16.52	0
		50	0	16.69	16.75	16.71	**16.77**	16.65	0
		50	25	16.57	16.63	16.59	16.65	16.53	0
		50	50	16.53	16.59	16.55	16.61	16.49	0
		100	0	16.49	16.55	16.51	**16.57**	16.45	0
	16QAM	1	0	16.72	16.78	16.74	16.80	16.68	0
		1	50	16.61	16.67	16.63	16.69	16.57	0
		1	99	16.51	16.57	16.53	16.59	16.47	0
		50	0	16.64	16.70	16.66	16.72	16.60	0
		50	25	16.52	16.58	16.54	16.60	16.48	0
		50	50	16.48	16.54	16.50	16.56	16.44	0
		100	0	16.44	16.50	16.46	16.52	16.40	0
	64QAM	1	0	16.66	16.72	16.68	16.74	16.62	0
		1	50	16.55	16.61	16.57	16.63	16.51	0
		1	99	16.45	16.51	16.47	16.53	16.41	0
		50	0	16.58	16.64	16.60	16.66	16.54	0
		50	25	16.46	16.52	16.48	16.54	16.42	0
		50	50	16.42	16.48	16.44	16.50	16.38	0
		100	0	16.38	16.44	16.40	16.46	16.34	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39700	40160	40620	41080	41540	
		Frequency (MHz)		2501.0	2547.0	2593.0	2639.0	2685.0	
10M	QPSK	1	0	16.77	16.78	16.72	16.78	16.69	0
		1	24	16.66	16.62	16.66	16.68	16.62	0
		1	49	16.52	16.56	16.57	16.57	16.45	0
		25	0	16.68	16.70	16.68	16.73	16.60	0
		25	12	16.57	16.60	16.57	16.59	16.44	0
		25	25	16.52	16.54	16.54	16.52	16.42	0
		50	0	16.46	16.49	16.41	16.49	16.36	0
	16QAM	1	0	16.71	16.83	16.72	16.84	16.67	0
		1	24	16.65	16.70	16.60	16.70	16.62	0
		1	49	16.51	16.56	16.48	16.59	16.52	0
		25	0	16.69	16.67	16.65	16.68	16.62	0
		25	12	16.57	16.58	16.49	16.59	16.43	0
		25	25	16.51	16.51	16.54	16.59	16.42	0
		50	0	16.41	16.49	16.51	16.56	16.41	0
	64QAM	1	0	16.69	16.78	16.77	16.79	16.71	0
		1	24	16.59	16.67	16.62	16.74	16.57	0
		1	49	16.54	16.57	16.48	16.60	16.43	0
		25	0	16.68	16.73	16.68	16.68	16.61	0
		25	12	16.57	16.54	16.51	16.57	16.43	0
		25	25	16.46	16.49	16.48	16.61	16.41	0
		50	0	16.46	16.55	16.47	16.52	16.41	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39725	40173	40620	41068	41515	
		Frequency (MHz)		2503.5	2548.3	2593.0	2637.8	2682.5	
15M	QPSK	1	0	16.67	16.73	16.79	16.83	16.67	0
		1	37	16.57	16.70	16.65	16.70	16.53	0
		1	74	16.52	16.58	16.51	16.60	16.49	0
		36	0	16.62	16.66	16.70	16.71	16.62	0
		36	19	16.47	16.61	16.49	16.60	16.49	0
		36	39	16.47	16.49	16.54	16.55	16.47	0
		75	0	16.44	16.52	16.46	16.55	16.39	0
	16QAM	1	0	16.70	16.78	16.72	16.78	16.66	0
		1	37	16.61	16.67	16.58	16.72	16.54	0
		1	74	16.48	16.57	16.53	16.55	16.48	0
		36	0	16.61	16.73	16.61	16.70	16.56	0
		36	19	16.53	16.53	16.59	16.58	16.45	0
		36	39	16.47	16.51	16.50	16.54	16.40	0
		75	0	16.45	16.51	16.41	16.57	16.40	0
	64QAM	1	0	16.68	16.80	16.76	16.84	16.69	0
		1	37	16.57	16.69	16.64	16.66	16.62	0
		1	74	16.55	16.54	16.51	16.57	16.47	0
		36	0	16.65	16.71	16.62	16.70	16.61	0
		36	19	16.52	16.63	16.59	16.59	16.47	0
		36	39	16.49	16.50	16.50	16.60	16.44	0
		75	0	16.49	16.51	16.42	16.47	16.44	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39675	40148	40620	41093	41565	
		Frequency (MHz)		2498.5	2545.8	2593.0	2640.3	2687.5	
5M	QPSK	1	0	16.73	16.83	16.78	16.84	16.68	0
		1	12	16.62	16.70	16.62	16.68	16.53	0
		1	24	16.46	16.62	16.55	16.59	16.51	0
		12	0	16.63	16.67	16.69	16.72	16.57	0
		12	6	16.52	16.57	16.59	16.59	16.48	0
		12	13	16.48	16.52	16.49	16.57	16.43	0
		25	0	16.47	16.50	16.43	16.52	16.37	0
	16QAM	1	0	16.76	16.83	16.72	16.84	16.69	0
		1	12	16.58	16.69	16.66	16.69	16.54	0
		1	24	16.53	16.57	16.53	16.61	16.50	0
		12	0	16.69	16.72	16.67	16.69	16.57	0
		12	6	16.50	16.62	16.53	16.64	16.48	0
		12	13	16.51	16.53	16.50	16.55	16.49	0
		25	0	16.43	16.45	16.46	16.52	16.36	0
	64QAM	1	0	16.74	16.78	16.71	16.80	16.67	0
		1	12	16.64	16.66	16.61	16.65	16.52	0
		1	24	16.52	16.54	16.53	16.60	16.42	0
		12	0	16.60	16.72	16.66	16.69	16.58	0
		12	6	16.57	16.56	16.49	16.62	16.51	0
		12	13	16.53	16.59	16.45	16.60	16.45	0
		25	0	16.40	16.49	16.51	16.48	16.41	0

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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	18.24	**18.33**	18.22	0	15M	QPSK	1	0	18.15	18.32	18.18	0
		1	50	18.02	18.11	18.01	0			1	37	17.95	18.06	17.96	0
		1	99	18.00	18.09	17.99	0			1	74	17.97	18.04	17.90	0
		50	0	18.12	**18.21**	18.11	0			36	0	18.07	18.14	18.11	0
		50	25	18.06	18.15	18.05	0			36	19	18.02	18.08	18.00	0
		50	50	18.03	18.12	18.02	0			36	39	17.97	18.08	17.94	0
		100	0	18.08	**18.17**	18.07	0			75	0	18.03	18.13	17.97	0
	16QAM	1	0	18.19	18.28	18.17	0		16QAM	1	0	18.12	18.23	18.12	0
		1	50	17.97	18.06	17.96	0			1	37	17.96	18.05	17.91	0
		1	99	17.95	18.04	17.94	0			1	74	17.87	18.04	17.87	0
		50	0	18.07	18.16	18.06	0			36	0	18.02	18.16	18.06	0
		50	25	18.01	18.10	18.00	0			36	19	18.01	18.00	17.97	0
		50	50	17.98	18.07	17.97	0			36	39	17.91	18.02	17.90	0
		100	0	18.03	18.12	18.02	0			75	0	17.93	18.07	18.02	0
	64QAM	1	0	18.15	18.24	18.13	0		64QAM	1	0	18.13	18.17	18.08	0
		1	50	17.93	18.02	17.92	0			1	37	17.86	18.02	17.87	0
		1	99	17.91	18.00	17.90	0			1	74	17.84	17.91	17.84	0
		50	0	18.03	18.12	18.02	0			36	0	17.97	18.12	17.94	0
		50	25	17.97	18.06	17.96	0			36	19	17.95	18.05	17.93	0
		50	50	17.94	18.03	17.93	0			36	39	17.84	18.01	17.93	0
		100	0	17.99	18.08	17.98	0			75	0	17.93	18.04	17.96	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	18.20	18.31	18.13	0	5M	QPSK	1	0	18.10	18.24	18.03	0
		1	24	17.92	17.95	17.94	0			1	12	17.91	17.99	17.80	0
		1	49	17.79	17.89	17.87	0			1	24	17.94	17.84	17.69	0
		25	0	18.03	18.16	17.97	0			12	0	18.00	18.09	18.00	0
		25	12	17.95	17.98	17.90	0			12	6	17.96	18.07	17.85	0
		25	25	17.89	17.97	17.88	0			12	13	17.97	17.97	17.85	0
		50	0	18.02	17.96	17.87	0			25	0	17.88	17.98	17.90	0
	16QAM	1	0	18.07	18.10	18.01	0		16QAM	1	0	17.94	18.14	18.09	0
		1	24	17.87	17.90	17.87	0			1	12	17.86	17.92	17.88	0
		1	49	17.82	17.95	17.86	0			1	24	17.87	17.88	17.88	0
		25	0	17.85	18.05	17.88	0			12	0	18.00	17.97	17.95	0
		25	12	17.86	17.98	17.86	0			12	6	17.93	17.95	17.80	0
		25	25	17.90	17.88	17.74	0			12	13	17.86	18.01	17.73	0
		50	0	17.93	17.99	17.99	0			25	0	17.98	18.01	17.93	0
	64QAM	1	0	18.04	18.01	17.92	0		64QAM	1	0	18.10	18.15	18.00	0
		1	24	17.92	17.91	17.88	0			1	12	17.87	17.82	17.76	0
		1	49	17.87	17.85	17.73	0			1	24	17.81	17.79	17.82	0
		25	0	17.86	17.95	17.96	0			12	0	17.79	18.00	17.85	0
		25	12	17.97	17.96	17.85	0			12	6	17.90	17.90	17.86	0
		25	25	17.80	17.90	17.69	0			12	13	17.82	17.87	17.71	0
		50	0	17.93	17.98	17.95	0			25	0	17.90	17.93	17.88	0

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		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	18.18	18.20	18.18	0	1.4M	QPSK	1	0	18.05	18.09	18.15	0
		1	7	17.79	18.05	17.90	0			1	2	17.94	17.95	17.91	0
		1	14	17.79	18.01	17.88	0			1	5	17.95	17.95	17.90	0
		8	0	17.89	18.04	17.98	0			3	0	17.95	18.13	17.91	0
		8	3	18.01	18.04	17.94	0			3	1	17.98	18.09	17.84	0
		8	7	17.87	18.03	17.91	0			3	3	17.81	18.03	17.80	0
		15	0	17.96	17.99	17.88	0			6	0	17.92	18.04	17.87	0
	16QAM	1	0	18.10	18.18	17.98	0		16QAM	1	0	17.98	18.17	17.95	0
		1	7	17.91	17.92	17.82	0			1	2	17.88	18.00	17.90	0
		1	14	17.82	17.85	17.86	0			1	5	17.87	17.93	17.81	0
		8	0	18.01	18.00	18.00	0			3	0	17.94	18.00	18.01	0
		8	3	17.76	18.03	17.85	0			3	1	17.98	17.92	17.94	0
		8	7	17.88	18.03	17.92	0			3	3	17.93	18.07	17.78	0
		15	0	17.93	18.06	17.84	0			6	0	17.97	18.08	17.98	0
	64QAM	1	0	18.08	18.23	18.06	0		64QAM	1	0	18.03	18.22	17.93	0
		1	7	17.72	17.89	17.76	0			1	2	17.83	17.87	17.78	0
		1	14	17.70	17.87	17.71	0			1	5	17.74	17.94	17.79	0
		8	0	17.95	17.92	17.99	0			3	0	17.93	17.99	17.86	0
		8	3	17.86	17.99	17.91	0			3	1	17.86	17.93	17.71	0
		8	7	17.84	17.97	17.84	0			3	3	17.80	17.90	17.76	0
		15	0	17.90	18.03	17.77	0			6	0	17.91	17.95	17.84	0

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 Inter-Band Downlink CA

CA Combination	PCC								SCC1				SCC2				SCC3				SCC4				SCC2	
	LTE Band	BW (MHz)	LTE Band	LTE Band	LTE Band	LTE Band	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	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-5B-30A-66A	2	20	18900	1880	1	0	900	1960	5	10	2450	874	5	10	2549	838.9	30	10	9820	2355	66	20	66786	1745	18.16	18.49
CA_2A-12A-30A-66A	2	20	18900	1880	1	0	900	1960	12	10	5095	737.5	30	10	9820	2355	66	20	66786	1745					18.11	18.49
CA_2A-13A-46D	2	20	18900	1880	1	0	900	1960	13	10	5230	751	46	20	50492	5520.2	46	20	50690	5540	46	20	50888	5559.8	18.07	18.49
CA_2A-46D-66A	2	20	18900	1880	1	0	900	1960	46	20	50490	5520.2	66	20	66786	1745									18.22	18.49
CA_13A-46D-66A	13	10	23230	782	1	0	5230	751	46	20	50490	5520.2	66	20	66786	1745									21.68	21.71
CA_2A-2A-13A-66A	2	20	18900	1880	1	0	900	1960	2	20	1100	1980	13	10	5230	751	66	20	66786	1745					18.46	18.49
CA_2A-13A-66A-66A	2	20	18900	1880	1	0	900	1960	13	10	5230	751	66	20	66536	2120	66	20	66734	2139.8					18.43	18.49
CA_2A-13A-66B	2	20	18900	1880	1	0	900	1960	13	10	5230	751	66	15	67061	2172.5	66	5	66966	2163					18.36	18.49
CA_2A-13A-66C	2	20	18900	1880	1	0	900	1960	13	10	5230	751	66	20	66536	2120	66	20	66734	2139.8					18.33	18.49
CA_2A-4A-5A	2	20	18900	1880	1	0	900	1960	4	20	2175	2132.5	5	10	2525	881.5									18.27	18.49
CA_2A-4A-13A	2	20	18900	1880	1	0	900	1960	4	20	2175	2132.5	13	10	5230	751									18.21	18.49
CA_2A-14A-30A	2	20	18900	1880	1	0	900	1960	14	10	5330	763	30	10	9820	2355									18.28	18.49
CA_14A-66A-66A	14	10	23330	793	1	0	5330	763	66	20	66786	2145	66	20	67036	2170									20.93	20.94
CA_2A-29A	2	20	18900	1880	1	0	900	1960	29	10	9715	722.5													18.37	18.49
CA_2A-46A	2	20	18900	1880	1	0	900	1960	46	20	50665	5537.5													18.31	18.49
CA_4A-5A	4	20	20175	1732.5	1	0	2175	2132.5	5	10	2525	881.5													18.67	18.89
CA_4A-13A	4	20	20175	1732.5	1	0	2175	2132.5	13	10	5230	751													18.58	18.89
CA_4A-46A	4	20	20175	1732.5	1	0	2175	2132.5	46	20	50665	5537.5													18.55	18.89
CA_25A-26A	25	20	26365	1882.5	1	0	8365	1962.5	26	15	8865	876.5													18.41	18.49
CA_30A-29A	30	10	27710	2310	1	0	9820	2355	29	10	9715	722.5													17.15	17.24
CA_66A-29A	66	20	132322	1745	1	0	66786	2145	29	10	9715	722.5													18.31	18.33

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.

4.7.2 SAR Results for Body Exposure Condition (Test Separation Distance is 0 mm)

Laptop Mode:

Plot No.	Band	Mode	Test Position	Ch.	EUT Config.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
01	WCDMA II	RMC12.2K	Bottom	9538	1	4 Cell	18.00	17.99	1.00	-0.11	1.15	**1.15**
	WCDMA II	RMC12.2K	Bottom	9262	1	4 Cell	18.00	17.77	1.05	-0.18	0.801	0.84
	WCDMA II	RMC12.2K	Bottom	9400	1	4 Cell	18.00	17.92	1.02	-0.12	0.841	0.86
	WCDMA II	RMC12.2K	Bottom	9538	2	4 Cell	18.00	17.99	1.00	-0.05	0.975	0.98
	WCDMA II	RMC12.2K	Bottom	9262	2	4 Cell	18.00	17.77	1.05	-0.05	0.775	0.81
	WCDMA II	RMC12.2K	Bottom	9400	2	4 Cell	18.00	17.92	1.02	-0.05	0.82	0.84
	WCDMA II	RMC12.2K	Bottom	9538	3	4 Cell	18.00	17.99	1.00	-0.05	0.811	0.81
	WCDMA II	RMC12.2K	Bottom	9262	3	4 Cell	18.00	17.77	1.05	0.03	0.801	0.84
	WCDMA II	RMC12.2K	Bottom	9400	3	4 Cell	18.00	17.92	1.02	-0.15	0.813	0.83
	WCDMA II	RMC12.2K	Bottom	9538	4	4 Cell	18.00	17.99	1.00	-0.03	1.05	1.05
	WCDMA II	RMC12.2K	Bottom	9262	4	4 Cell	18.00	17.77	1.05	-0.04	1.05	1.10
	WCDMA II	RMC12.2K	Bottom	9400	4	4 Cell	18.00	17.92	1.02	-0.02	1.06	1.08
	WCDMA II	RMC12.2K	Bottom	9538	1	6 Cell	18.00	17.99	1.00	-0.09	0.805	0.81
	WCDMA II	RMC12.2K	Bottom	9262	1	6 Cell	18.00	17.77	1.05	-0.08	0.751	0.79
	WCDMA II	RMC12.2K	Bottom	9400	1	6 Cell	18.00	17.92	1.02	-0.11	0.875	0.89
	WCDMA II	RMC12.2K	Bottom	9538	1	4 Cell	18.00	17.99	1.00	0.03	1.12	1.12
	WCDMA IV	RMC12.2K	Bottom	1413	1	4 Cell	19.00	18.99	1.00	-0.1	0.948	0.95
	WCDMA IV	RMC12.2K	Bottom	1312	1	4 Cell	19.00	18.96	1.01	0.01	0.994	1.00
02	WCDMA IV	RMC12.2K	Bottom	1513	1	4 Cell	19.00	18.88	1.03	-0.04	1.21	**1.25**
	WCDMA IV	RMC12.2K	Bottom	1513	2	4 Cell	19.00	18.88	1.03	-0.07	0.857	0.88
	WCDMA IV	RMC12.2K	Bottom	1312	2	4 Cell	19.00	18.96	1.01	-0.04	0.697	0.70
	WCDMA IV	RMC12.2K	Bottom	1413	2	4 Cell	19.00	18.99	1.00	0.03	0.736	0.74
	WCDMA IV	RMC12.2K	Bottom	1513	3	4 Cell	19.00	18.88	1.03	0.16	0.903	0.93
	WCDMA IV	RMC12.2K	Bottom	1312	3	4 Cell	19.00	18.96	1.01	0.02	0.881	0.89
	WCDMA IV	RMC12.2K	Bottom	1413	3	4 Cell	19.00	18.99	1.00	-0.08	0.932	0.93
	WCDMA IV	RMC12.2K	Bottom	1513	4	4 Cell	19.00	18.88	1.03	-0.02	0.954	0.98
	WCDMA IV	RMC12.2K	Bottom	1312	4	4 Cell	19.00	18.96	1.01	-0.01	0.655	0.66
	WCDMA IV	RMC12.2K	Bottom	1413	4	4 Cell	19.00	18.99	1.00	-0.05	0.813	0.81
	WCDMA IV	RMC12.2K	Bottom	1513	1	6 Cell	19.00	18.88	1.03	-0.06	0.97	1.00
	WCDMA IV	RMC12.2K	Bottom	1312	1	6 Cell	19.00	18.96	1.01	-0.07	0.893	0.90
	WCDMA IV	RMC12.2K	Bottom	1413	1	6 Cell	19.00	18.99	1.00	-0.04	0.95	0.95
	WCDMA IV	RMC12.2K	Bottom	1513	1	4 Cell	19.00	18.88	1.03	0.15	1.18	1.22
03	WCDMA V	RMC12.2K	Bottom	4182	1	4 Cell	20.50	20.49	1.00	-0.18	0.982	**0.98**
	WCDMA V	RMC12.2K	Bottom	4132	1	4 Cell	20.50	20.24	1.06	-0.09	0.885	0.94
	WCDMA V	RMC12.2K	Bottom	4233	1	4 Cell	20.50	20.33	1.04	-0.08	0.886	0.92
	WCDMA V	RMC12.2K	Bottom	4182	2	4 Cell	20.50	20.49	1.00	-0.15	0.791	0.79
	WCDMA V	RMC12.2K	Bottom	4182	3	4 Cell	20.50	20.49	1.00	-0.11	0.538	0.54
	WCDMA V	RMC12.2K	Bottom	4182	4	4 Cell	20.50	20.49	1.00	0.03	0.893	0.89
	WCDMA V	RMC12.2K	Bottom	4132	4	4 Cell	20.50	20.24	1.06	0.06	0.807	0.86
	WCDMA V	RMC12.2K	Bottom	4233	4	4 Cell	20.50	20.33	1.04	-0.15	0.801	0.83
	WCDMA V	RMC12.2K	Bottom	4182	1	6 Cell	20.50	20.49	1.00	-0.03	0.959	0.96
	WCDMA V	RMC12.2K	Bottom	4132	1	6 Cell	20.50	20.24	1.06	0.06	0.902	0.96
	WCDMA V	RMC12.2K	Bottom	4233	1	6 Cell	20.50	20.33	1.04	0.13	0.826	0.86
	WCDMA V	RMC12.2K	Bottom	4182	1	4 Cell	20.50	20.49	1.00	-0.18	0.977	0.98

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	EUT Config.	Battery	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 2	QPSK20M	Bottom	18900	1	0	1	4 Cell	18.50	18.49	1.00	-0.03	0.966	0.97
	LTE 2	QPSK20M	Bottom	18900	50	0	1	4 Cell	18.50	18.39	1.03	-0.02	0.98	1.01
	LTE 2	QPSK20M	Bottom	18700	1	0	1	4 Cell	18.50	18.33	1.04	-0.09	0.943	0.98
04	LTE 2	QPSK20M	Bottom	19100	1	0	1	4 Cell	18.50	18.41	1.02	-0.05	1.27	**1.30**
	LTE 2	QPSK20M	Bottom	18700	50	0	1	4 Cell	18.50	18.23	1.06	-0.04	0.954	1.01
	LTE 2	QPSK20M	Bottom	19100	50	0	1	4 Cell	18.50	18.31	1.04	-0.03	1.11	1.15
	LTE 2	QPSK20M	Bottom	18900	100	0	1	4 Cell	18.50	18.37	1.03	-0.05	0.972	1.00
	LTE 2	QPSK20M	Bottom	19100	1	0	2	4 Cell	18.50	18.41	1.02	-0.02	1.24	1.26
	LTE 2	QPSK20M	Bottom	18700	1	0	2	4 Cell	18.50	18.33	1.04	-0.01	0.89	0.93
	LTE 2	QPSK20M	Bottom	18900	1	0	2	4 Cell	18.50	18.49	1.00	-0.04	0.974	0.97
	LTE 2	QPSK20M	Bottom	19100	1	0	3	4 Cell	18.50	18.41	1.02	0.12	0.936	0.95
	LTE 2	QPSK20M	Bottom	18700	1	0	3	4 Cell	18.50	18.33	1.04	-0.17	0.875	0.91
	LTE 2	QPSK20M	Bottom	18900	1	0	3	4 Cell	18.50	18.49	1.00	0.18	0.931	0.93
	LTE 2	QPSK20M	Bottom	19100	1	0	4	4 Cell	18.50	18.41	1.02	-0.05	1.26	1.29
	LTE 2	QPSK20M	Bottom	18700	1	0	4	4 Cell	18.50	18.33	1.04	-0.07	1.15	1.20
	LTE 2	QPSK20M	Bottom	18900	1	0	4	4 Cell	18.50	18.49	1.00	-0.06	1.17	1.17
	LTE 2	QPSK20M	Bottom	19100	1	0	1	6 Cell	18.50	18.41	1.02	0	1.18	1.20
	LTE 2	QPSK20M	Bottom	18700	1	0	1	6 Cell	18.50	18.33	1.04	-0.04	1.01	1.05
	LTE 2	QPSK20M	Bottom	18900	1	0	1	6 Cell	18.50	18.49	1.00	-0.1	1.03	1.03
	LTE 2	QPSK20M	Bottom	19100	1	0	1	4 Cell	18.50	18.41	1.02	-0.07	1.25	1.28
	LTE 4	QPSK20M	Bottom	20050	1	0	1	4 Cell	19.00	18.89	1.03	0.01	0.954	0.98
	LTE 4	QPSK20M	Bottom	20050	50	0	1	4 Cell	19.00	18.80	1.05	-0.03	0.952	1.00
	LTE 4	QPSK20M	Bottom	20175	1	0	1	4 Cell	19.00	18.72	1.07	-0.04	0.981	1.05
05	LTE 4	QPSK20M	Bottom	20300	1	0	1	4 Cell	19.00	18.86	1.03	-0.03	1.17	**1.21**
	LTE 4	QPSK20M	Bottom	20175	50	0	1	4 Cell	19.00	18.63	1.09	-0.01	0.968	1.06
	LTE 4	QPSK20M	Bottom	20300	50	0	1	4 Cell	19.00	18.57	1.10	0.06	0.988	1.09
	LTE 4	QPSK20M	Bottom	20050	100	0	1	4 Cell	19.00	18.64	1.09	0.03	0.978	1.07
	LTE 4	QPSK20M	Bottom	20300	1	0	2	4 Cell	19.00	18.86	1.03	-0.01	0.778	0.80
	LTE 4	QPSK20M	Bottom	20050	1	0	2	4 Cell	19.00	18.89	1.03	-0.02	0.66	0.68
	LTE 4	QPSK20M	Bottom	20175	1	0	2	4 Cell	19.00	18.72	1.07	-0.08	0.715	0.77
	LTE 4	QPSK20M	Bottom	20300	1	0	3	4 Cell	19.00	18.86	1.03	0.1	0.852	0.88
	LTE 4	QPSK20M	Bottom	20050	1	0	3	4 Cell	19.00	18.89	1.03	-0.08	0.835	0.86
	LTE 4	QPSK20M	Bottom	20175	1	0	3	4 Cell	19.00	18.72	1.07	-0.11	0.846	0.91
	LTE 4	QPSK20M	Bottom	20300	1	0	4	4 Cell	19.00	18.86	1.03	0.03	0.679	0.70
	LTE 4	QPSK20M	Bottom	20300	1	0	1	6 Cell	19.00	18.86	1.03	-0.16	0.938	0.97
	LTE 4	QPSK20M	Bottom	20050	1	0	1	6 Cell	19.00	18.89	1.03	0.02	0.893	0.92
	LTE 4	QPSK20M	Bottom	20175	1	0	1	6 Cell	19.00	18.72	1.07	-0.01	0.898	0.96
	LTE 4	QPSK20M	Bottom	20300	1	0	1	4 Cell	19.00	18.86	1.03	0	1.09	1.12

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	EUT Config.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
06	LTE 5	QPSK10M	Bottom	20525	1	0	1	4 Cell	21.50	21.50	1.00	-0.04	1.18	**1.18**
	LTE 5	QPSK10M	Bottom	20525	25	0	1	4 Cell	21.50	21.42	1.02	-0.18	1.12	1.14
	LTE 5	QPSK10M	Bottom	20450	1	0	1	4 Cell	21.50	21.48	1.00	0.1	1.09	1.09
	LTE 5	QPSK10M	Bottom	20600	1	0	1	4 Cell	21.50	21.49	1.00	0.02	1.15	1.15
	LTE 5	QPSK10M	Bottom	20450	25	0	1	4 Cell	21.50	21.36	1.03	0.17	1.13	1.16
	LTE 5	QPSK10M	Bottom	20600	25	0	1	4 Cell	21.50	21.38	1.03	0.15	1.13	1.16
	LTE 5	QPSK10M	Bottom	20525	50	0	1	4 Cell	21.50	21.43	1.02	0.01	1.13	1.15
	LTE 5	QPSK10M	Bottom	20525	1	0	2	4 Cell	21.50	21.50	1.00	0.08	0.901	0.90
	LTE 5	QPSK10M	Bottom	20450	1	0	2	4 Cell	21.50	21.48	1.00	-0.01	0.882	0.88
	LTE 5	QPSK10M	Bottom	20600	1	0	2	4 Cell	21.50	21.49	1.00	-0.12	0.885	0.89
	LTE 5	QPSK10M	Bottom	20525	1	0	3	4 Cell	21.50	21.50	1.00	0.11	0.659	0.66
	LTE 5	QPSK10M	Bottom	20525	1	0	4	4 Cell	21.50	21.50	1.00	-0.05	1.11	1.11
	LTE 5	QPSK10M	Bottom	20450	1	0	4	4 Cell	21.50	21.48	1.00	-0.02	1.09	1.09
	LTE 5	QPSK10M	Bottom	20600	1	0	4	4 Cell	21.50	21.49	1.00	-0.05	1.07	1.07
	LTE 5	QPSK10M	Bottom	20525	1	0	1	6 Cell	21.50	21.50	1.00	0.02	1.11	1.11
	LTE 5	QPSK10M	Bottom	20450	1	0	1	6 Cell	21.50	21.48	1.00	0.12	1.02	1.02
	LTE 5	QPSK10M	Bottom	20600	1	0	1	6 Cell	21.50	21.49	1.00	-0.07	1.07	1.07
	LTE 5	QPSK10M	Bottom	20525	1	0	1	4 Cell	21.50	21.50	1.00	0.03	1.16	1.16
	LTE 7	QPSK20M	Bottom	21100	1	0	1	4 Cell	16.50	16.48	1.00	0.02	0.757	0.76
	LTE 7	QPSK20M	Bottom	21100	50	0	1	4 Cell	16.50	16.20	1.07	-0.11	0.715	0.77
07	LTE 7	QPSK20M	Bottom	20850	1	0	1	4 Cell	16.50	16.33	1.04	-0.17	0.771	**0.80**
	LTE 7	QPSK20M	Bottom	21350	1	0	1	4 Cell	16.50	16.42	1.02	-0.13	0.686	0.70
	LTE 7	QPSK20M	Bottom	21100	100	0	1	4 Cell	16.50	16.14	1.09	0.11	0.693	0.76
	LTE 7	QPSK20M	Bottom	20850	1	0	2	4 Cell	16.50	16.33	1.04	-0.08	0.567	0.59
	LTE 7	QPSK20M	Bottom	20850	1	0	3	4 Cell	16.50	16.33	1.04	0.01	0.527	0.55
	LTE 7	QPSK20M	Bottom	20850	1	0	4	4 Cell	16.50	16.33	1.04	-0.15	0.523	0.54
	LTE 7	QPSK20M	Bottom	20850	1	0	1	6 Cell	16.50	16.33	1.04	0.02	0.723	0.75
	LTE 12	QPSK10M	Bottom	23095	1	0	1	4 Cell	21.00	20.95	1.01	0.03	1.19	1.20
	LTE 12	QPSK10M	Bottom	23095	25	0	1	4 Cell	21.00	20.85	1.04	0.1	1.16	1.21
	LTE 12	QPSK10M	Bottom	23060	1	0	1	4 Cell	21.00	20.82	1.04	0.15	1.13	1.18
08	LTE 12	QPSK10M	Bottom	23130	1	0	1	4 Cell	21.00	20.94	1.01	-0.02	1.24	**1.25**
	LTE 12	QPSK10M	Bottom	23060	25	0	1	4 Cell	21.00	20.72	1.07	0.02	1.15	1.23
	LTE 12	QPSK10M	Bottom	23130	25	0	1	4 Cell	21.00	20.77	1.05	-0.02	1.18	1.24
	LTE 12	QPSK10M	Bottom	23095	50	0	1	4 Cell	21.00	20.82	1.04	-0.11	1.16	1.21
	LTE 12	QPSK10M	Bottom	23130	1	0	2	4 Cell	21.00	20.94	1.01	-0.01	0.971	0.98
	LTE 12	QPSK10M	Bottom	23060	1	0	2	4 Cell	21.00	20.82	1.04	0.02	0.912	0.95
	LTE 12	QPSK10M	Bottom	23095	1	0	2	4 Cell	21.00	20.95	1.01	0.17	0.943	0.95
	LTE 12	QPSK10M	Bottom	23130	1	0	3	4 Cell	21.00	20.94	1.01	0.04	0.953	0.96
	LTE 12	QPSK10M	Bottom	23060	1	0	3	4 Cell	21.00	20.82	1.04	0.11	0.921	0.96
	LTE 12	QPSK10M	Bottom	23095	1	0	3	4 Cell	21.00	20.95	1.01	-0.02	0.927	0.94
	LTE 12	QPSK10M	Bottom	23130	1	0	4	4 Cell	21.00	20.94	1.01	0.17	0.598	0.60
	LTE 12	QPSK10M	Bottom	23130	1	0	1	6 Cell	21.00	20.94	1.01	0.02	1.17	1.18
	LTE 12	QPSK10M	Bottom	23060	1	0	1	6 Cell	21.00	20.82	1.04	-0.05	1.08	1.12
	LTE 12	QPSK10M	Bottom	23095	1	0	1	6 Cell	21.00	20.95	1.01	0.01	1.15	1.16
	LTE 12	QPSK10M	Bottom	23130	1	0	1	4 Cell	21.00	20.94	1.01	0.08	1.21	1.22

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	EUT Config.	Battery	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	Bottom	23230	1	0	1	4 Cell	22.00	21.90	1.02	-0.03	1.11	1.13
	LTE 13	QPSK10M	Bottom	23230	25	0	1	4 Cell	22.00	21.69	1.07	0.02	1.03	1.10
	LTE 13	QPSK10M	Bottom	23230	50	0	1	4 Cell	22.00	21.64	1.09	0.18	1.07	1.17
	LTE 13	QPSK10M	Bottom	23230	1	0	2	4 Cell	22.00	21.90	1.02	-0.15	0.805	0.82
	LTE 13	QPSK10M	Bottom	23230	1	0	3	4 Cell	22.00	21.90	1.02	0.01	0.888	0.91
09	LTE 13	QPSK10M	Bottom	23230	1	0	4	4 Cell	22.00	21.90	1.02	-0.03	1.19	**1.21**
	LTE 13	QPSK10M	Bottom	23230	1	0	4	6 Cell	22.00	21.90	1.02	0.02	1.13	1.15
	LTE 13	QPSK10M	Bottom	23230	1	0	4	4 Cell	22.00	21.90	1.02	0.01	1.16	1.18
	LTE 14	QPSK10M	Bottom	23330	1	0	1	4 Cell	21.00	20.94	1.01	-0.01	0.939	0.95
	LTE 14	QPSK10M	Bottom	23330	25	0	1	4 Cell	21.00	20.92	1.02	0.02	0.912	0.93
	LTE 14	QPSK10M	Bottom	23330	50	0	1	4 Cell	21.00	20.81	1.04	-0.15	0.903	0.94
	LTE 14	QPSK10M	Bottom	23330	1	0	2	4 Cell	21.00	20.94	1.01	-0.08	0.768	0.78
	LTE 14	QPSK10M	Bottom	23330	1	0	3	4 Cell	21.00	20.94	1.01	0.01	0.622	0.63
10	LTE 14	QPSK10M	Bottom	23330	1	0	4	4 Cell	21.00	20.94	1.01	0.01	0.973	**0.98**
	LTE 14	QPSK10M	Bottom	23330	1	0	4	6 Cell	21.00	20.94	1.01	0.17	0.968	0.98
	LTE 14	QPSK10M	Bottom	23330	1	0	4	4 Cell	21.00	20.94	1.01	-0.01	0.963	0.97
	LTE 17	QPSK10M	Bottom	23790	1	0	1	4 Cell	21.00	20.97	1.01	0.1	1.04	1.05
	LTE 17	QPSK10M	Bottom	23790	25	0	1	4 Cell	21.00	20.89	1.03	-0.17	1.03	1.06
	LTE 17	QPSK10M	Bottom	23780	1	0	1	4 Cell	21.00	20.94	1.01	-0.04	1	1.01
11	LTE 17	QPSK10M	Bottom	23800	1	0	1	4 Cell	21.00	20.91	1.02	0.03	1.06	**1.08**
	LTE 17	QPSK10M	Bottom	23780	25	0	1	4 Cell	21.00	20.86	1.03	0.05	1.03	1.06
	LTE 17	QPSK10M	Bottom	23800	25	0	1	4 Cell	21.00	20.83	1.04	-0.11	1.04	1.08
	LTE 17	QPSK10M	Bottom	23800	50	0	1	4 Cell	21.00	20.85	1.04	0.02	1.03	1.07
	LTE 17	QPSK10M	Bottom	23800	1	0	2	4 Cell	21.00	20.91	1.02	-0.01	0.879	0.90
	LTE 17	QPSK10M	Bottom	23780	1	0	2	4 Cell	21.00	20.94	1.01	0.02	0.85	0.86
	LTE 17	QPSK10M	Bottom	23790	1	0	2	4 Cell	21.00	20.97	1.01	-0.15	0.867	0.88
	LTE 17	QPSK10M	Bottom	23800	1	0	3	4 Cell	21.00	20.91	1.02	-0.17	0.801	0.82
	LTE 17	QPSK10M	Bottom	23780	1	0	3	4 Cell	21.00	20.94	1.01	0.02	0.949	0.96
	LTE 17	QPSK10M	Bottom	23790	1	0	3	4 Cell	21.00	20.97	1.01	-0.15	1.02	1.03
	LTE 17	QPSK10M	Bottom	23800	1	0	4	4 Cell	21.00	20.91	1.02	0.18	0.536	0.55
	LTE 17	QPSK10M	Bottom	23800	1	0	1	6 Cell	21.00	20.91	1.02	0.02	1	1.02
	LTE 17	QPSK10M	Bottom	23780	1	0	1	6 Cell	21.00	20.94	1.01	-0.11	0.949	0.96
	LTE 17	QPSK10M	Bottom	23790	1	0	1	6 Cell	21.00	20.97	1.01	0.11	0.972	0.98
	LTE 17	QPSK10M	Bottom	23800	1	0	1	4 Cell	21.00	20.91	1.02	0.02	1.01	1.03
12	LTE 25	QPSK20M	Bottom	26590	1	0	1	4 Cell	18.50	18.49	1.00	0.03	1.38	**1.38**
	LTE 25	QPSK20M	Bottom	26590	50	0	1	4 Cell	18.50	18.47	1.01	-0.15	1.36	1.37
	LTE 25	QPSK20M	Bottom	26140	1	0	1	4 Cell	18.50	18.35	1.04	0.12	1.15	1.20
	LTE 25	QPSK20M	Bottom	26365	1	0	1	4 Cell	18.50	18.41	1.02	0.07	1.22	1.24
	LTE 25	QPSK20M	Bottom	26140	50	0	1	4 Cell	18.50	18.33	1.04	0.02	1.17	1.22
	LTE 25	QPSK20M	Bottom	26365	50	0	1	4 Cell	18.50	18.39	1.03	0.15	1.25	1.29
	LTE 25	QPSK20M	Bottom	26590	100	0	1	4 Cell	18.50	18.40	1.02	0.02	1.33	1.36
	LTE 25	QPSK20M	Bottom	26590	1	0	2	4 Cell	18.50	18.49	1.00	-0.01	1.26	1.26
	LTE 25	QPSK20M	Bottom	26140	1	0	2	4 Cell	18.50	18.35	1.04	0.09	0.998	1.04
	LTE 25	QPSK20M	Bottom	26365	1	0	2	4 Cell	18.50	18.41	1.02	-0.01	1.11	1.13
	LTE 25	QPSK20M	Bottom	26590	1	0	3	4 Cell	18.50	18.49	1.00	0.05	1.05	1.05
	LTE 25	QPSK20M	Bottom	26140	1	0	3	4 Cell	18.50	18.35	1.04	-0.03	0.881	0.92
	LTE 25	QPSK20M	Bottom	26365	1	0	3	4 Cell	18.50	18.41	1.02	0.18	0.948	0.97
	LTE 25	QPSK20M	Bottom	26590	1	0	4	4 Cell	18.50	18.49	1.00	0.13	1.13	1.13
	LTE 25	QPSK20M	Bottom	26140	1	0	4	4 Cell	18.50	18.35	1.04	0.12	1.08	1.12
	LTE 25	QPSK20M	Bottom	26365	1	0	4	4 Cell	18.50	18.41	1.02	-0.03	1.09	1.11
	LTE 25	QPSK20M	Bottom	26590	1	0	1	6 Cell	18.50	18.49	1.00	0.05	1.27	1.27
	LTE 25	QPSK20M	Bottom	26140	1	0	1	6 Cell	18.50	18.35	1.04	-0.07	1.02	1.06
	LTE 25	QPSK20M	Bottom	26365	1	0	1	6 Cell	18.50	18.41	1.02	0.15	1.18	1.20
	LTE 25	QPSK20M	Bottom	26590	1	0	1	4 Cell	18.50	18.49	1.00	-0.12	1.36	1.36

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	EUT Config.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 26	QPSK15M	Bottom	26765	1	0	1	4 Cell	20.50	20.28	1.05	0.02	0.79	0.83
	LTE 26	QPSK15M	Bottom	26765	36	0	1	4 Cell	20.50	20.26	1.06	0.15	0.785	0.83
	LTE 26	QPSK15M	Bottom	26865	1	0	1	4 Cell	20.50	20.24	1.06	0.08	0.753	0.80
	LTE 26	QPSK15M	Bottom	26965	1	0	1	4 Cell	20.50	20.16	1.08	-0.08	0.756	0.82
	LTE 26	QPSK15M	Bottom	26865	36	0	1	4 Cell	20.50	20.22	1.07	-0.01	0.765	0.82
	LTE 26	QPSK15M	Bottom	26965	36	0	1	4 Cell	20.50	20.14	1.09	-0.05	0.761	0.83
	LTE 26	QPSK15M	Bottom	26765	75	0	1	4 Cell	20.50	20.11	1.09	-0.08	0.765	0.83
	LTE 26	QPSK15M	Bottom	26765	1	0	2	4 Cell	20.50	20.28	1.05	0	0.619	0.65
	LTE 26	QPSK15M	Bottom	26765	1	0	3	4 Cell	20.50	20.28	1.05	0.17	0.465	0.49
13	LTE 26	QPSK15M	Bottom	26765	1	0	4	4 Cell	20.50	20.28	1.05	-0.06	0.832	**0.87**
	LTE 26	QPSK15M	Bottom	26865	1	0	4	4 Cell	20.50	20.24	1.06	0.13	0.771	0.82
	LTE 26	QPSK15M	Bottom	26965	1	0	4	4 Cell	20.50	20.16	1.08	0.05	0.728	0.79
	LTE 26	QPSK15M	Bottom	26765	1	0	4	6 Cell	20.50	20.28	1.05	-0.12	0.819	0.86
	LTE 26	QPSK15M	Bottom	26865	1	0	4	6 Cell	20.50	20.24	1.06	-0.08	0.733	0.78
	LTE 26	QPSK15M	Bottom	26965	1	0	4	6 Cell	20.50	20.16	1.08	0.03	0.741	0.80
	LTE 26	QPSK15M	Bottom	26765	1	0	4	4 Cell	20.50	20.28	1.05	-0.01	0.821	0.86
14	LTE 30	QPSK10M	Bottom	27710	1	0	1	4 Cell	17.50	17.38	1.03	-0.06	1.35	**1.39**
	LTE 30	QPSK10M	Bottom	27710	25	0	1	4 Cell	17.50	17.22	1.07	0.02	1.28	1.37
	LTE 30	QPSK10M	Bottom	27710	50	0	1	4 Cell	17.50	17.11	1.09	-0.01	1.27	1.38
	LTE 30	QPSK10M	Bottom	27710	1	0	2	4 Cell	17.50	17.38	1.03	-0.03	0.892	0.92
	LTE 30	QPSK10M	Bottom	27710	1	0	3	4 Cell	17.50	17.38	1.03	0.11	0.857	0.88
	LTE 30	QPSK10M	Bottom	27710	1	0	4	4 Cell	17.50	17.38	1.03	0.17	0.811	0.84
	LTE 30	QPSK10M	Bottom	27710	1	0	1	6 Cell	17.50	17.38	1.03	0.02	1.32	1.36
	LTE 30	QPSK10M	Bottom	27710	1	0	1	4 Cell	17.50	17.38	1.03	0.15	1.31	1.35
15	LTE 38	QPSK20M	Bottom	37850	1	0	1	4 Cell	19.00	18.89	1.03	-0.11	1.04	**1.07**
	LTE 38	QPSK20M	Bottom	37850	50	0	1	4 Cell	19.00	18.77	1.05	-0.03	1	1.05
	LTE 38	QPSK20M	Bottom	38000	1	0	1	4 Cell	19.00	18.83	1.04	0.07	0.973	1.01
	LTE 38	QPSK20M	Bottom	38150	1	0	1	4 Cell	19.00	18.66	1.08	0.12	0.922	1.00
	LTE 38	QPSK20M	Bottom	38000	50	0	1	4 Cell	19.00	18.71	1.07	0.05	0.962	1.03
	LTE 38	QPSK20M	Bottom	38150	50	0	1	4 Cell	19.00	18.54	1.11	-0.06	0.899	1.00
	LTE 38	QPSK20M	Bottom	37850	100	0	1	4 Cell	19.00	18.69	1.07	0.13	0.988	1.06
	LTE 38	QPSK20M	Bottom	37850	1	0	2	4 Cell	19.00	18.89	1.03	-0.06	0.556	0.57
	LTE 38	QPSK20M	Bottom	37850	1	0	3	4 Cell	19.00	18.89	1.03	0.07	0.728	0.75
	LTE 38	QPSK20M	Bottom	37850	1	0	4	4 Cell	19.00	18.89	1.03	0.11	0.635	0.65
	LTE 38	QPSK20M	Bottom	38750	1	0	1	6 Cell	19.00	18.89	1.03	0.17	1.01	1.04
	LTE 38	QPSK20M	Bottom	38000	1	0	1	6 Cell	19.00	18.83	1.04	-0.06	0.962	1.00
	LTE 38	QPSK20M	Bottom	38150	1	0	1	6 Cell	19.00	18.66	1.08	0.02	0.713	0.77
	LTE 38	QPSK20M	Bottom	37850	1	0	1	4 Cell	19.00	18.89	1.03	0.06	1.02	1.05

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	EUT Config.	Battery	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	Bottom	41055	1	0	1	4 Cell	17.00	16.85	1.04	-0.08	0.391	0.41
	LTE 41	QPSK20M	Bottom	41055	50	0	1	4 Cell	17.00	16.77	1.05	0.02	0.374	0.39
17	LTE 41	QPSK20M	Bottom	39750	1	0	1	4 Cell	17.00	16.77	1.05	-0.11	0.501	**0.53**
	LTE 41	QPSK20M	Bottom	40185	1	0	1	4 Cell	17.00	16.83	1.04	0.03	0.466	0.48
	LTE 41	QPSK20M	Bottom	40620	1	0	1	4 Cell	17.00	16.79	1.05	0.06	0.424	0.45
	LTE 41	QPSK20M	Bottom	41490	1	0	1	4 Cell	17.00	16.73	1.06	-0.05	0.383	0.41
	LTE 41	QPSK20M	Bottom	39750	1	0	2	4 Cell	17.00	16.77	1.05	-0.07	0.374	0.39
	LTE 41	QPSK20M	Bottom	39750	1	0	3	4 Cell	17.00	16.77	1.05	0.12	0.356	0.37
	LTE 41	QPSK20M	Bottom	39750	1	0	4	4 Cell	17.00	16.77	1.05	-0.05	0.323	0.34
	LTE 41	QPSK20M	Bottom	39750	1	0	1	6 Cell	17.00	16.77	1.05	-0.03	0.492	0.52
	LTE 66	QPSK20M	Bottom	132322	1	0	1	4 Cell	18.50	18.33	1.04	-0.12	0.983	1.02
	LTE 66	QPSK20M	Bottom	132322	50	0	1	4 Cell	18.50	18.21	1.07	0.08	0.956	1.02
	LTE 66	QPSK20M	Bottom	132072	1	0	1	4 Cell	18.50	18.24	1.06	0.01	0.894	0.95
20	LTE 66	QPSK20M	Bottom	132572	1	0	1	4 Cell	18.50	18.22	1.07	-0.04	1.01	**1.08**
	LTE 66	QPSK20M	Bottom	132072	50	0	1	4 Cell	18.50	18.12	1.09	0.07	0.921	1.00
	LTE 66	QPSK20M	Bottom	132572	50	0	1	4 Cell	18.50	18.11	1.09	-0.13	0.965	1.05
	LTE 66	QPSK20M	Bottom	132322	100	0	1	4 Cell	18.50	18.17	1.08	0.02	0.992	1.07
	LTE 66	QPSK20M	Bottom	132572	1	0	2	4 Cell	18.50	18.22	1.07	0.05	0.78	0.83
	LTE 66	QPSK20M	Bottom	132072	1	0	2	4 Cell	18.50	18.24	1.06	-0.11	0.648	0.69
	LTE 66	QPSK20M	Bottom	132322	1	0	2	4 Cell	18.50	18.33	1.04	0.01	0.729	0.76
	LTE 66	QPSK20M	Bottom	132572	1	0	3	4 Cell	18.50	18.22	1.07	0.03	0.706	0.76
	LTE 66	QPSK20M	Bottom	132572	1	0	4	4 Cell	18.50	18.22	1.07	-0.09	0.718	0.77
	LTE 66	QPSK20M	Bottom	132572	1	0	1	6 Cell	18.50	18.22	1.07	0.13	0.992	1.06
	LTE 66	QPSK20M	Bottom	132072	1	0	1	6 Cell	18.50	18.24	1.06	-0.06	0.882	0.93
	LTE 66	QPSK20M	Bottom	132322	1	0	1	6 Cell	18.50	18.33	1.04	0.01	0.973	1.01
	LTE 66	QPSK20M	Bottom	132572	1	0	1	4 Cell	18.50	18.22	1.07	-0.14	0.991	1.06

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 maybe 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	Bottom	9538	1.15	1.12	1.03	N/A	N/A	N/A	N/A
WCDMA IV	RMC12.2K	Bottom	1513	1.21	1.18	1.03	N/A	N/A	N/A	N/A
WCDMA V	RMC12.2K	Bottom	4182	0.982	0.977	1.01	N/A	N/A	N/A	N/A
LTE 2	QPSK20M	Bottom	19100	1.27	1.25	1.02	N/A	N/A	N/A	N/A
LTE 4	QPSK20M	Bottom	20300	1.17	1.09	1.07	N/A	N/A	N/A	N/A
LTE 5	QPSK10M	Bottom	20525	1.18	1.16	1.02	N/A	N/A	N/A	N/A
LTE 12	QPSK10M	Bottom	23130	1.24	1.21	1.02	N/A	N/A	N/A	N/A
LTE 13	QPSK10M	Bottom	23230	1.19	1.16	1.03	N/A	N/A	N/A	N/A
LTE 14	QPSK10M	Bottom	23330	0.973	0.963	1.01	N/A	N/A	N/A	N/A
LTE 17	QPSK10M	Bottom	23800	1.06	1.01	1.05	N/A	N/A	N/A	N/A
LTE 25	QPSK20M	Bottom	26590	1.38	1.36	1.01	N/A	N/A	N/A	N/A
LTE 26	QPSK15M	Bottom	26765	0.832	0.821	1.01	N/A	N/A	N/A	N/A
LTE 30	QPSK10M	Bottom	27710	1.35	1.31	1.03	N/A	N/A	N/A	N/A
LTE 38	QPSK20M	Bottom	37850	1.04	1.02	1.02	N/A	N/A	N/A	N/A
LTE 66	QPSK20M	Bottom	132572	1.01	0.991	1.02	N/A	N/A	N/A	N/A

4.7.4 Simultaneous Multi-band Transmission Evaluation

<Possibilities of Simultaneous Transmission>

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

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition
1	WWAN + WLAN 2.4G_Ant-0	Yes
2	WWAN + WLAN 2.4G_Ant-1	Yes
3	WWAN + WLAN5G_Ant0	Yes
4	WWAN + WLAN 5G_Ant-1	Yes
5	WWAN + BT_Ant1	Yes
6	WWAN + WLAN 2.4G MIMO	Yes
7	WWAN + WLAN5G MIMO	Yes
8	WWAN + WLAN 2.4G_Ant-0 + BT_Ant-1	Yes
9	WWAN + WLAN 5G_Ant-0 + BT_Ant-1	Yes
10	WWAN + WLAN 5G MIMO + BT_Ant-1	Yes

Note :

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. Plot 1 is covered by Plot 8.
3. Plot 3 is covered by Plot 9.
4. Plot 5 is covered by Plot 10.
5. Plot 7 is covered by Plot 10.

<SAR Summation Analysis>

This evaluation is combined other operating band data of this model from Intel Report No.: 191219-03.TR01 and 191219-03.TR02.

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.

Band	Position	1g SAR W/kg								Summing Result 1g SAR W/kg					
		1	2	3	2+3	5	6	7	8						
		Max WWAN	WLAN 2.4GHz Ant-0	WLAN 2.4GHz Ant-1	WLAN 2.4GHz Ant-0+1	WLAN 5GHz Ant-0	WLAN 5GHz Ant-1	WLAN 5GHz Ant-0+1	BT Ant-1	1+3	1+6	1+2+3	1+2+8	1+5+8	1+7+8
WCDMA II	Bottom	1.15	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.82	1.89	2.43	1.89	2.17	2.80
WCDMA IV	Bottom	1.25	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.92	1.99	2.53	1.99	2.27	2.90
WCDMA V	Bottom	0.98	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.65	1.72	2.26	1.72	2.00	2.63
LTE 2	Bottom	1.30	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.97	2.04	2.58	2.04	2.32	2.95
LTE 4	Bottom	1.21	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.88	1.95	2.49	1.95	2.23	2.86
LTE 5	Bottom	1.18	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.85	1.92	2.46	1.92	2.20	2.83
LTE 7	Bottom	0.80	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.47	1.54	2.08	1.54	1.82	2.45
LTE 12	Bottom	1.25	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.92	1.99	2.53	1.99	2.27	2.90
LTE 13	Bottom	1.21	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.88	1.95	2.49	1.95	2.23	2.86
LTE 14	Bottom	0.98	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.65	1.72	2.26	1.72	2.00	2.63
LTE 17	Bottom	1.08	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.75	1.82	2.36	1.82	2.10	2.73
LTE 25	Bottom	1.38	0.61	0.67	1.28	0.89	0.74	1.52	0.13	2.05	2.12	2.66	2.12	2.40	3.03
LTE 26	Bottom	0.87	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.54	1.61	2.15	1.61	1.89	2.52
LTE 30	Bottom	1.39	0.61	0.67	1.28	0.89	0.74	1.52	0.13	2.06	2.13	2.67	2.13	2.41	3.04
LTE 38	Bottom	1.07	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.74	1.81	2.35	1.81	2.09	2.72
LTE 41	Bottom	0.53	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.20	1.27	1.81	1.27	**1.55**	2.18
LTE 66	Bottom	1.08	0.61	0.67	1.28	0.89	0.74	1.52	0.13	1.75	1.82	2.36	1.82	2.10	2.73

<SAR to Peak Location Separation Ratio Analysis>

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR. When SAR is measured for both antennas in the pair, the peak location separation distance is computed by the following formula.

$$\text{Peak Location Separation Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

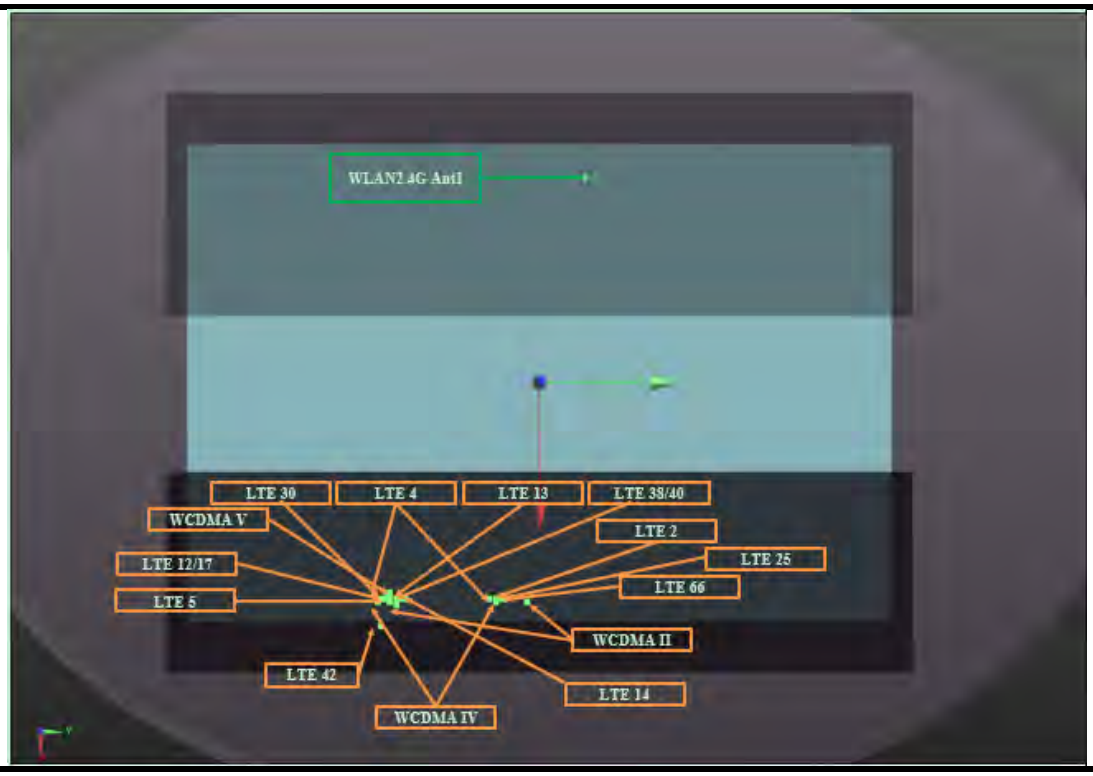
When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

The SPLSR is determined by the following formula.

$$\text{SPLSR} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{R_i}$$

Where SAR_1 and SAR_2 are the highest reported or estimated SAR for each antenna in the pair, and R_i is the separation distance between the peak SAR locations for the antenna pair in mm.

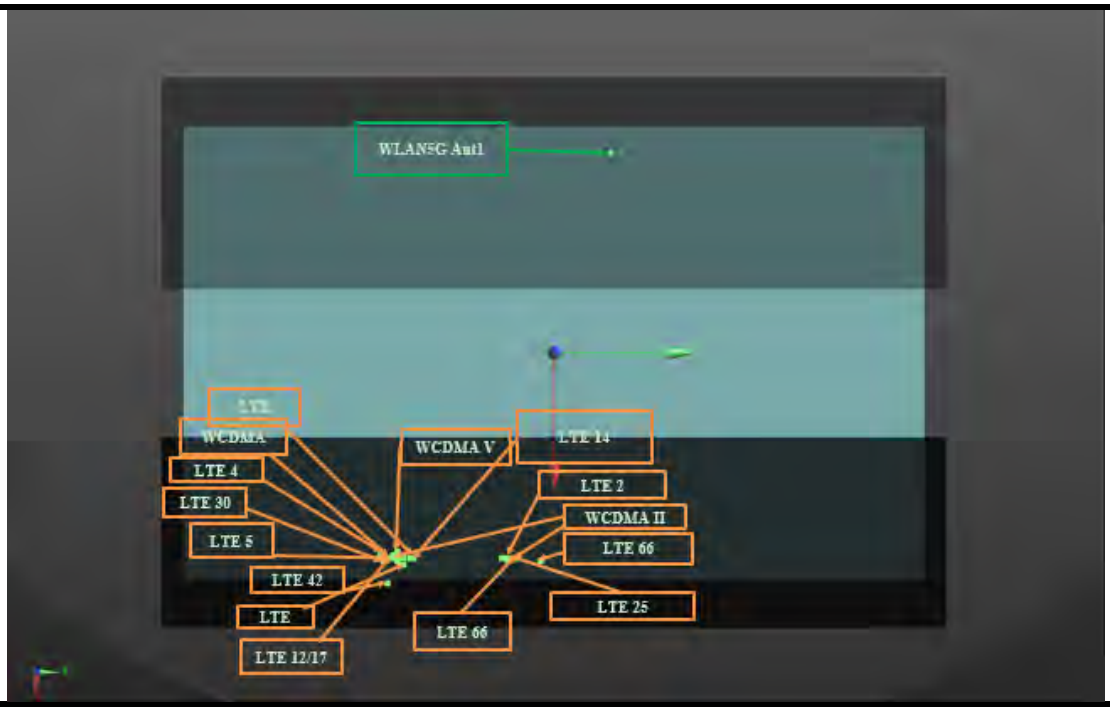
When the SPLSR is <= 0.04, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	196.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	218.9	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	217.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	203.1	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	211.5	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	201.3	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	220.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	217.0	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	202.0	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	215.1	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	213.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	214.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	212.8	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	213.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			

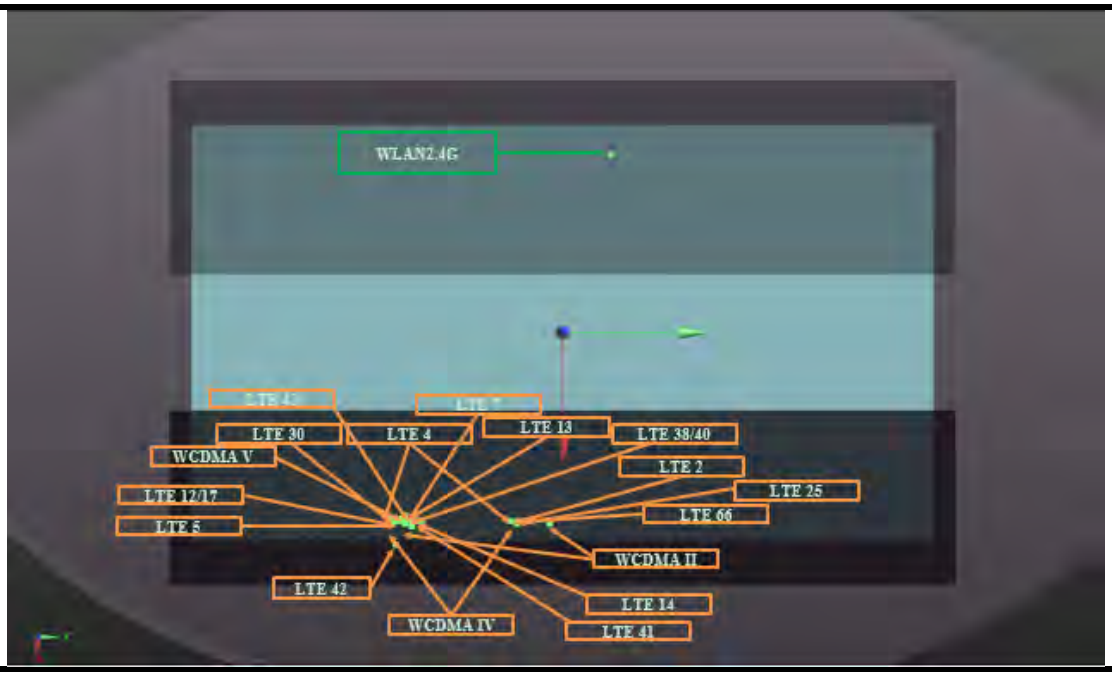
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	195.1	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	217.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	222.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	214.7	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	199.5	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	213.3	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-1			0.67	-93	28	-2.53			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	194.1	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	215.5	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	213.9	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	200.5	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	207.8	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	198.7	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	216.7	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	213.2	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	199.4	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	211.3	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	209.8	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	211.0	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	209.3	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	209.8	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			

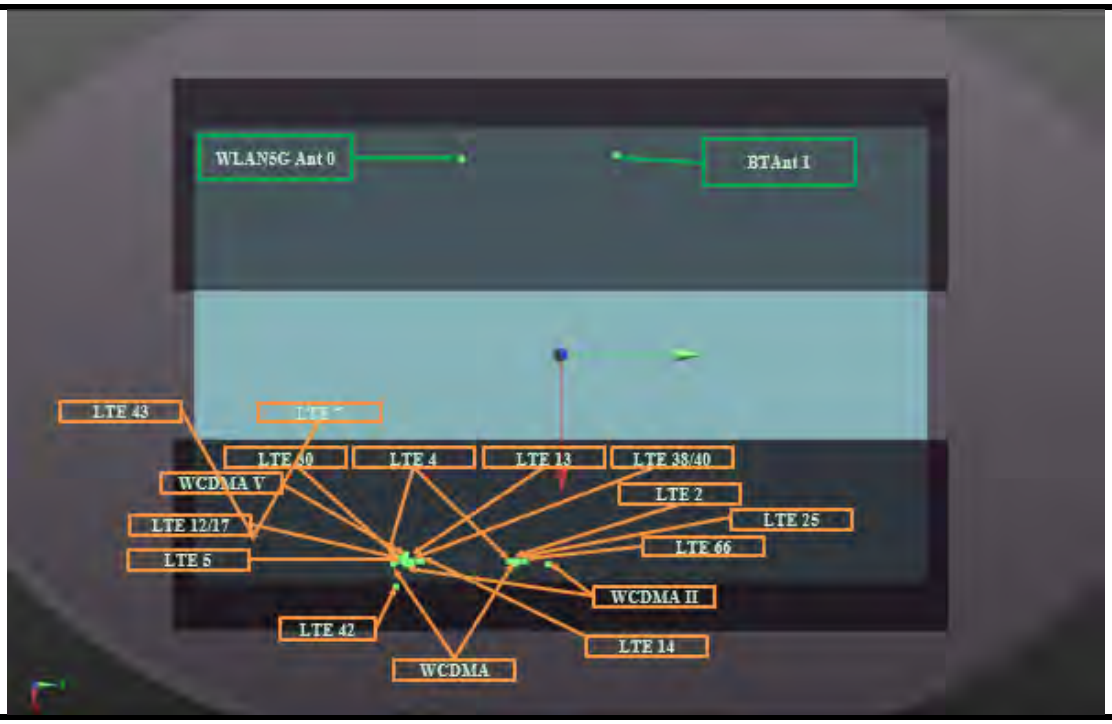
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	192.6	0.02	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	213.9	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	214.5	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	218.7	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	197.0	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	209.8	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	211.2	0.01	SPLSR ≤ 0.04, Not required
WLAN5.6G_ 802.11ac VHT160_ Ch114_ Ant-1			0.74	-91.6	22.8	-2.6			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	196.4	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	218.9	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	217.6	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	203.1	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	211.5	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	201.3	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	220.4	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	217.0	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	202.0	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	215.1	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 7_ Ch20850	Body	Bottom	0.8	97	-71.7	0.67	214.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	213.4	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	214.6	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	212.8	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	213.4	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	195.1	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	217.6	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	218.2	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G _802.11b_Ch6_ Ant0+1			1.28	-93	28	-2.53			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	222.4	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	199.5	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	213.3	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	214.7	0.02	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			
LTE 41_ Ch39750	Body	Bottom	0.53	98.5	-73.5	0.66	216.8	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0+1			1.28	-93	28	-2.53			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	194.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	201.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	197.1	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	226.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

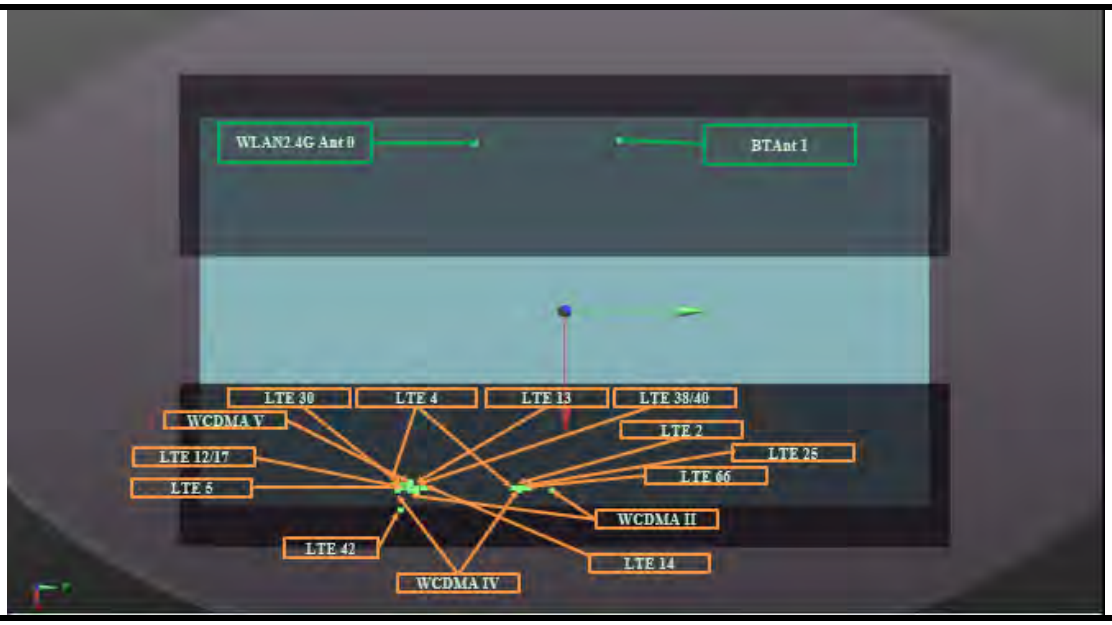
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	191.3	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	225.9	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	195.2	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	208.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	186.0	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	219.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	193.9	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	206.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	194.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	228.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	190.0	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	225.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	193.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	207.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	188.3	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	223.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	188.7	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	190.1	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	222.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	190.8	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	220.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	188.7	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	189.9	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	200.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	192.3	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	225.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	193.5	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	226.2	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	196.6	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	230.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	194.8	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	204.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	191.0	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	221.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	192.4	0.01	SPLSR ≤ 0.04, Not required
WLAN2.4G_ 802.11b_ Ch6_ Ant-0			0.61	-91	-43	-2.16			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	222.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN2.4G_ 802.11b_ Ch6_ Ant-0	Body	Bottom	0.61	-91	-43	-2.16	84.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	196.5	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	201.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	200.0	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	226.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	194.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	225.9	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	197.6	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	208.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	189.0	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	219.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	196.2	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	206.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	197.4	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	228.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	193.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	225.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

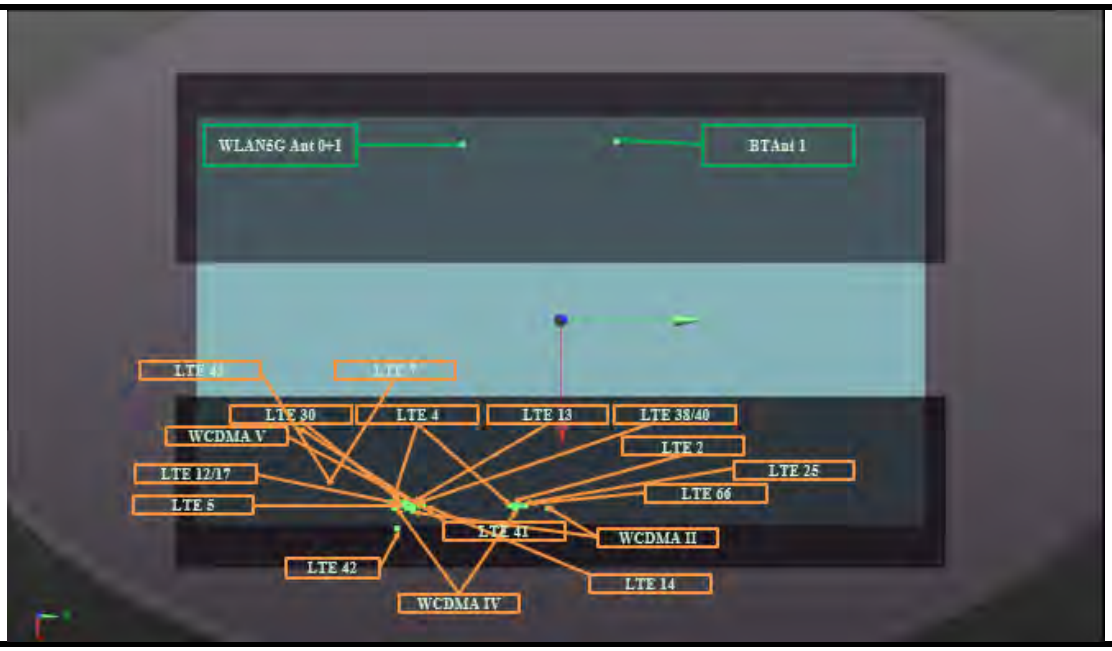
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	196.0	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	207.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	191.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	223.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 7_ Ch20850	Body	Bottom	0.8	97	-71.7	0.67	193.2	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 7_ Ch20850	Body	Bottom	0.8	97	-71.7	0.67	222.7	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	191.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	193.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	222.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	193.7	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	220.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	191.7	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	192.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	200.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	195.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	225.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	196.5	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	226.2	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	199.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	230.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	197.1	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	204.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	193.9	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	221.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	195.3	0.01	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0			0.89	-93.6	-40.4	-2.45			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	222.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0	Body	Bottom	0.89	-93.6	-40.4	-2.45	81.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	196.5	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
WCDMA II_ Ch9538_ Cube0	Body	Bottom	1.15	100.1	-7.6	-0.4	201.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	200.0	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
WCDMA II_ Ch9538_ Cube1	Body	Bottom	1	104.8	-65.8	-0.4	226.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	194.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
WCDMA IV_ Ch1513_ Cube0	Body	Bottom	1.25	97	-78.1	-1.28	225.9	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	197.6	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
WCDMA IV_ Ch1513_ Cube1	Body	Bottom	1.1	103.3	-24.2	-1.39	208.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	189.0	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
WCDMA V_ Ch4182	Body	Bottom	0.98	92.4	-73.6	1.56	219.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	196.2	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 2_ Ch19100_ Cube0	Body	Bottom	1.3	101.8	-22.6	-1.41	206.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	197.4	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 2_ Ch19100_ Cube1	Body	Bottom	1.11	100.2	-78.1	-1.27	228.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	193.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 4_ Ch20300_ Cube0	Body	Bottom	1.21	95.5	-79.5	-0.7	225.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	196.0	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 4_ Ch20300_ Cube1	Body	Bottom	1.04	101.8	-25.6	-0.9	207.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	191.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 5_ Ch20525	Body	Bottom	1.18	93.9	-78.3	1.51	223.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 7_ Ch20850	Body	Bottom	0.8	97	-71.7	0.67	193.2	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 7_ Ch20850	Body	Bottom	0.8	97	-71.7	0.67	222.7	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	191.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 12_ Ch23130	Body	Bottom	1.25	95.5	-72	-0.39	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	193.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 13_ Ch23230	Body	Bottom	1.21	96.9	-72	-0.92	222.7	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	193.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 14_ Ch23330	Body	Bottom	0.98	98.6	-64.5	-1.18	220.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	191.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 17_ Ch23800	Body	Bottom	1.08	95.5	-72	-0.4	221.5	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	192.1	0.03	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 25_ 26590_ Cube0	Body	Bottom	1.38	97	-16.3	-0.53	200.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	195.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 25_ 26590_ Cube1	Body	Bottom	1.22	98.6	-75.1	-0.5	225.8	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	196.5	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 26_ Ch26765	Body	Bottom	0.87	100.1	-73.5	0.39	226.2	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	199.7	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 30_ Ch27710	Body	Bottom	1.39	102.5	-78	-0.67	230.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	197.1	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 66_ Ch132572_ Cube0	Body	Bottom	0.98	101.8	-14.9	-0.82	204.6	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	193.9	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 66_ Ch132572_ Cube1	Body	Bottom	1.08	98.6	-65.8	-0.81	221.1	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	195.3	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 38_ Ch37850	Body	Bottom	1.07	100	-66	-0.68	222.4	0.01	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 41_ Ch39750	Body	Bottom	0.53	98.5	-73.5	0.66	195.0	0.02	SPLSR ≤ 0.04, Not required
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1			1.52	-93.6	-40.4	-2.45			
LTE 41_ Ch39750	Body	Bottom	0.53	98.5	-73.5	0.66	224.9	0.00	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			
WLAN5.3G_ 802.11ac VHT160_ Ch50_ Ant-0+1	Body	Bottom	1.52	-93.6	-40.4	-2.45	81.4	0.03	SPLSR ≤ 0.04, Not required
BT_ Ch7_ Ant-1			0.13	-95	41	-2.6			

Test Engineer：Mars Chang, and Willy Chang

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1013	Aug. 23, 2019	1 Year
System Validation Dipole	SPEAG	D835V2	4d121	Aug. 23, 2019	1 Year
System Validation Dipole	SPEAG	D1750V2	1055	Aug. 23, 2019	1 Year
System Validation Dipole	SPEAG	D1900V2	5d018	Jun. 27, 2019	1 Year
System Validation Dipole	SPEAG	D2300V2	1092	Dec. 13, 2019	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 26, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3650	May. 20, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7472	Aug. 30, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7537	Jun. 18, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3820	Jun. 25, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 25, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	861	May. 08, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1585	Jun. 07, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	916	Dec. 17, 2020	1 Year
Universal Radio Communication Tester	Anritsu	MT8821C	6201502978	Jun. 13, 2019	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 26, 2019	1 Year
Thermometer	YFE	YF-160A	150601219	Apr. 22, 2019	1 Year
Dielectric Assessment Kit	SPEAG	DAK-3.5	1151	Aug. 20, 2019	1 Year
Dielectric Assessment Kit	SPEAG	DAKS-3.5	1092	May. 07, 2019	1 Year
Dielectric Assessment Kit	SPEAG	DAKS_VNA R140	0010917	May. 08, 2019	1 Year
Powersource1	SPEAG	SE_UMS_160 BA	4010	Aug. 21, 2019	1 Year

6. Measurement Uncertainty

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

7. Information of the Testing Laboratories

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

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Web Site: https://ee.bureauveritas.com.tw/BVInternet/Default

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: 2020/02/07

System Check_H750_200207

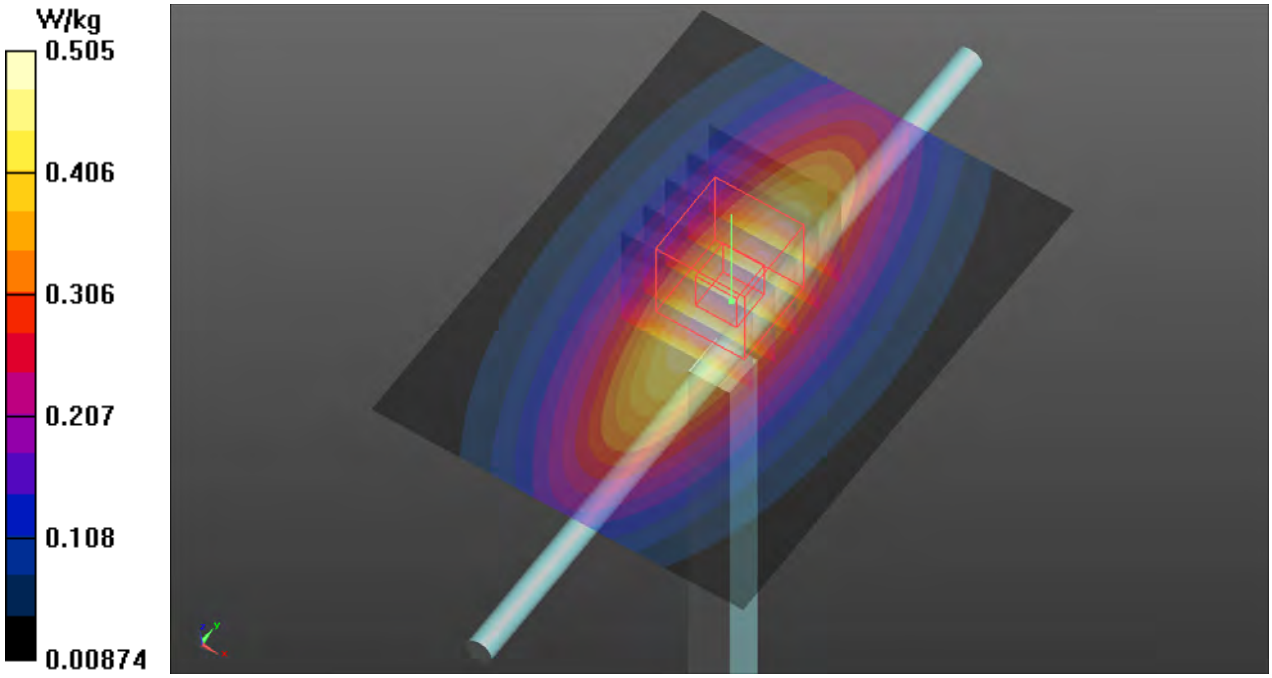
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: H06T09N1_0207 Medium parameters used: f = 750 MHz; σ = 0.886 S/m; ε_r = 43.438; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3820; ConvF(9.62, 9.62, 9.62); Calibrated: 2019/06/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=50mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.505 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.12 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.388 W/kg; SAR(10 g) = 0.255 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.513 W/kg



System Check_H835_200229

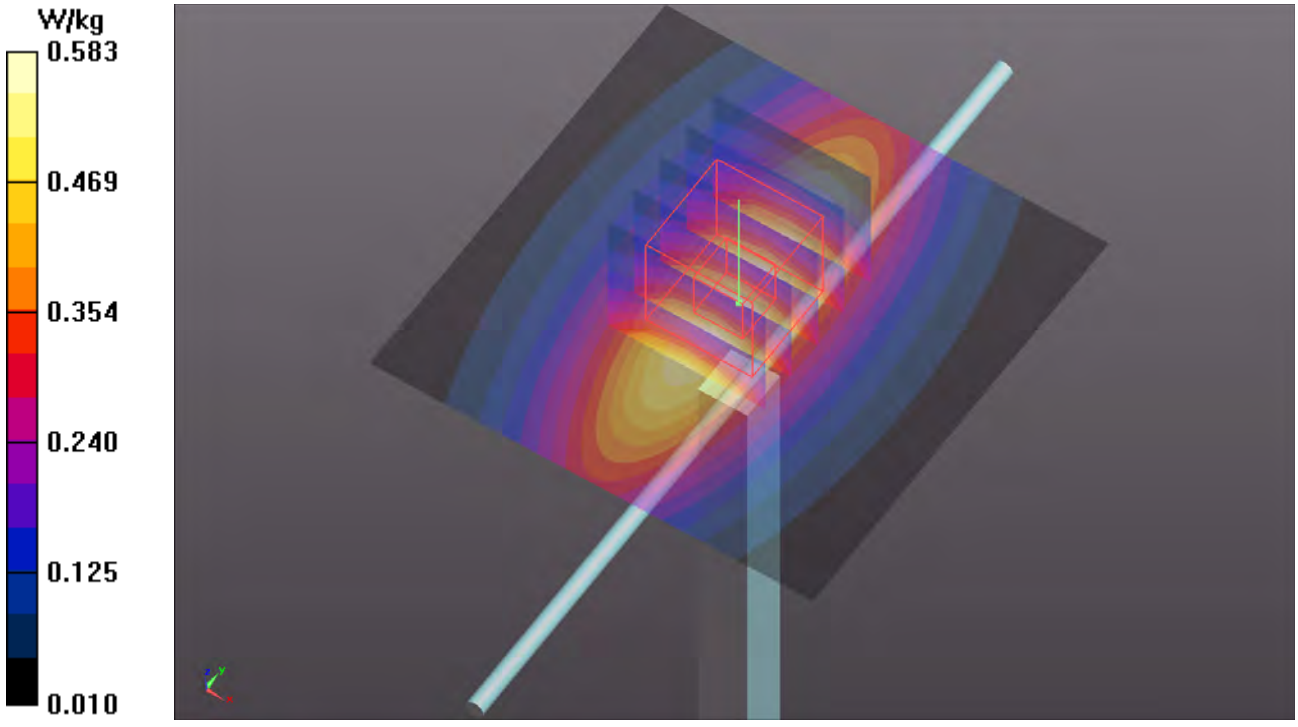
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: H07T10N3_0229 Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 41.297; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.82, 9.82, 9.82); Calibrated: 2019/05/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2019/05/08
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.583 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.72 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.656 W/kg
SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.289 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.586 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/02/08

System Check_H1750_200208

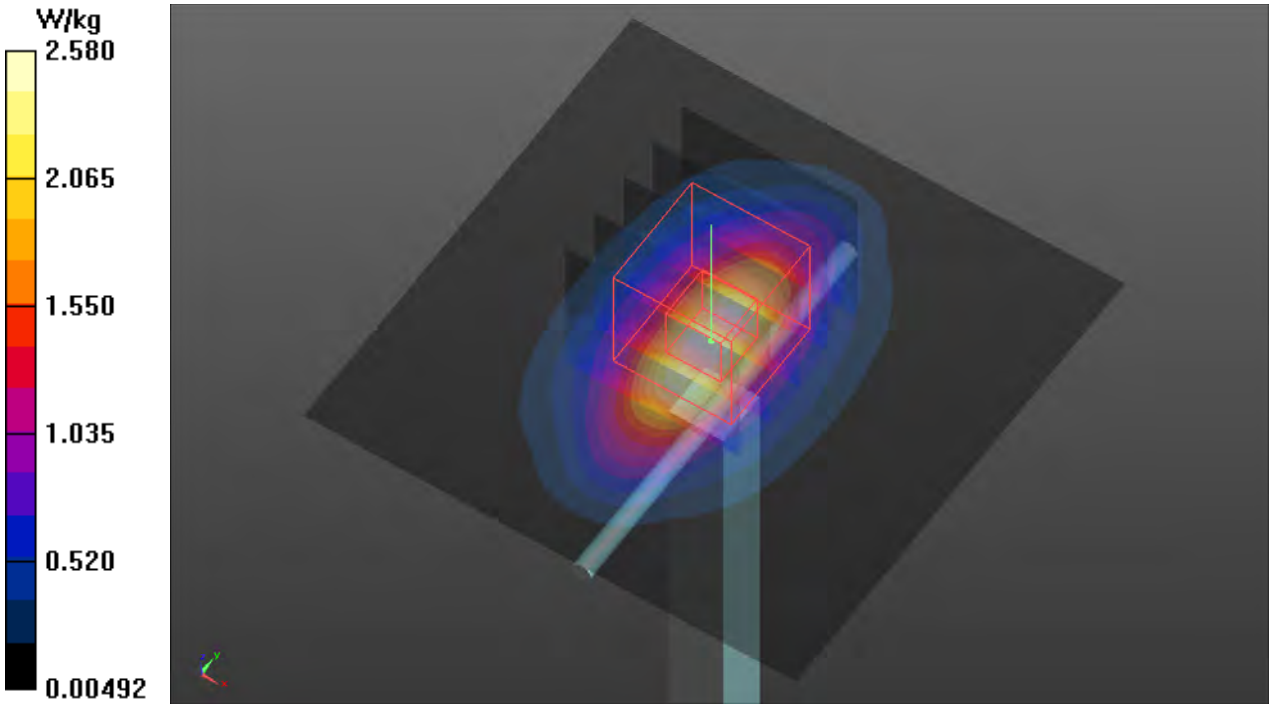
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: H16T20N1_0208 Medium parameters used: f = 1750 MHz; σ = 1.319 S/m; ε_r = 40.264; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.58 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.56 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.06 W/kg
SAR(1 g) = 1.71 W/kg; SAR(10 g) = 0.899 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.58 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/02/10

System Check_H1900_200210

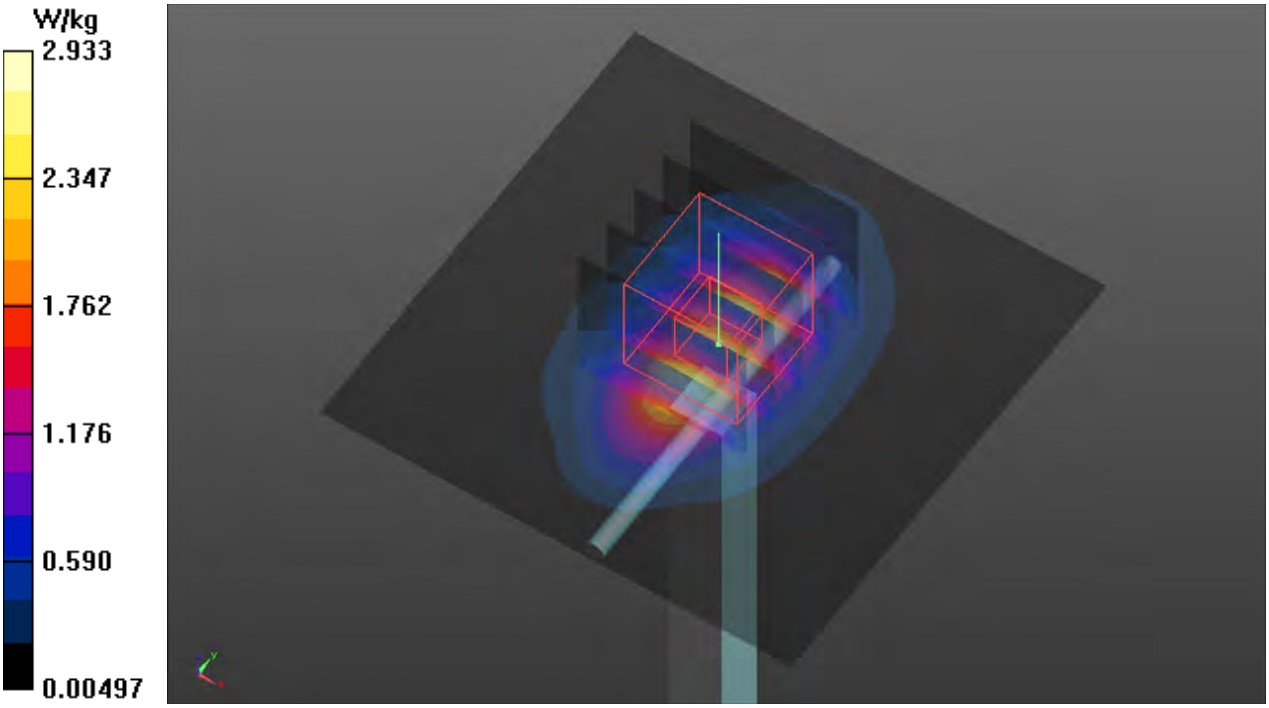
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d018

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: H16T20N1_0210 Medium parameters used: f = 1900 MHz; σ = 1.454 S/m; ε_r = 39.751; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.13, 8.13, 8.13); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=50mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.93 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.16 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 1.82 W/kg; SAR(10 g) = 0.935 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.95 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/02/20

System Check_H2300_200220

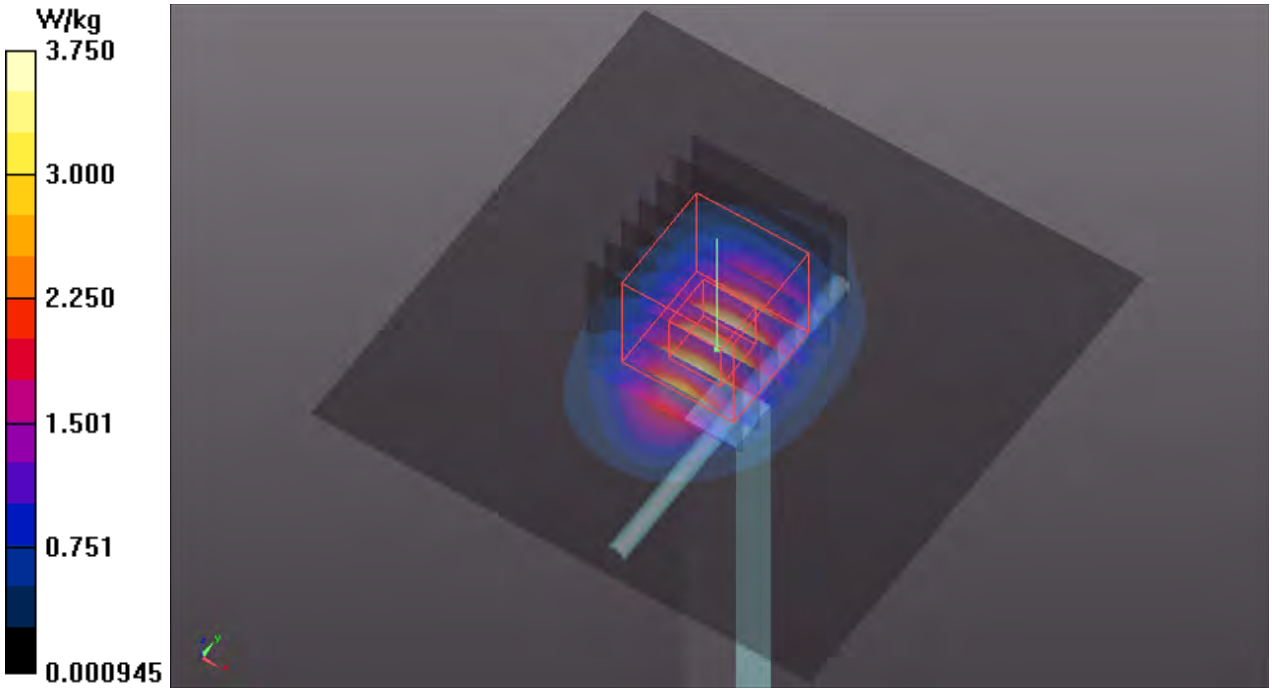
DUT: Dipole 2300 MHz; Type: D2300V2; SN:1092

Communication System: CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0220 Medium parameters used: f = 2300 MHz; σ = 1.684 S/m; ε_r = 39.442; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(8.11, 8.11, 8.11); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 3.75 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.99 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.60 W/kg
SAR(1 g) = 2.32 W/kg; SAR(10 g) = 1.13 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.77 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/02/10

System Check_H2600_200210

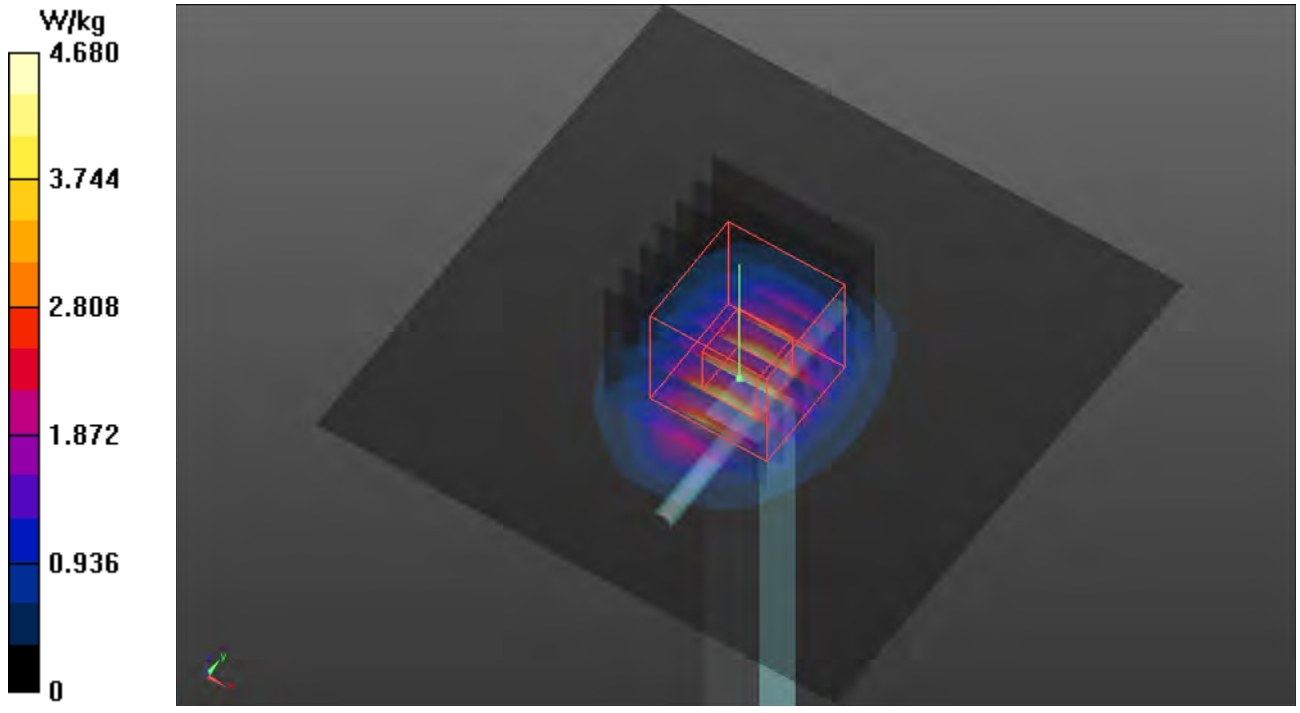
DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0210 Medium parameters used: f = 2600 MHz; σ = 2.045 S/m; ε_r = 37.848; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(7.64, 7.64, 7.64); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_2105; Type: QD OVA 004 Ax; Serial: 2105
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=50mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 4.68 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.69 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 5.77 W/kg
SAR(1 g) = 2.69 W/kg; SAR(10 g) = 1.23 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 4.64 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_Bottom_Ch9538_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

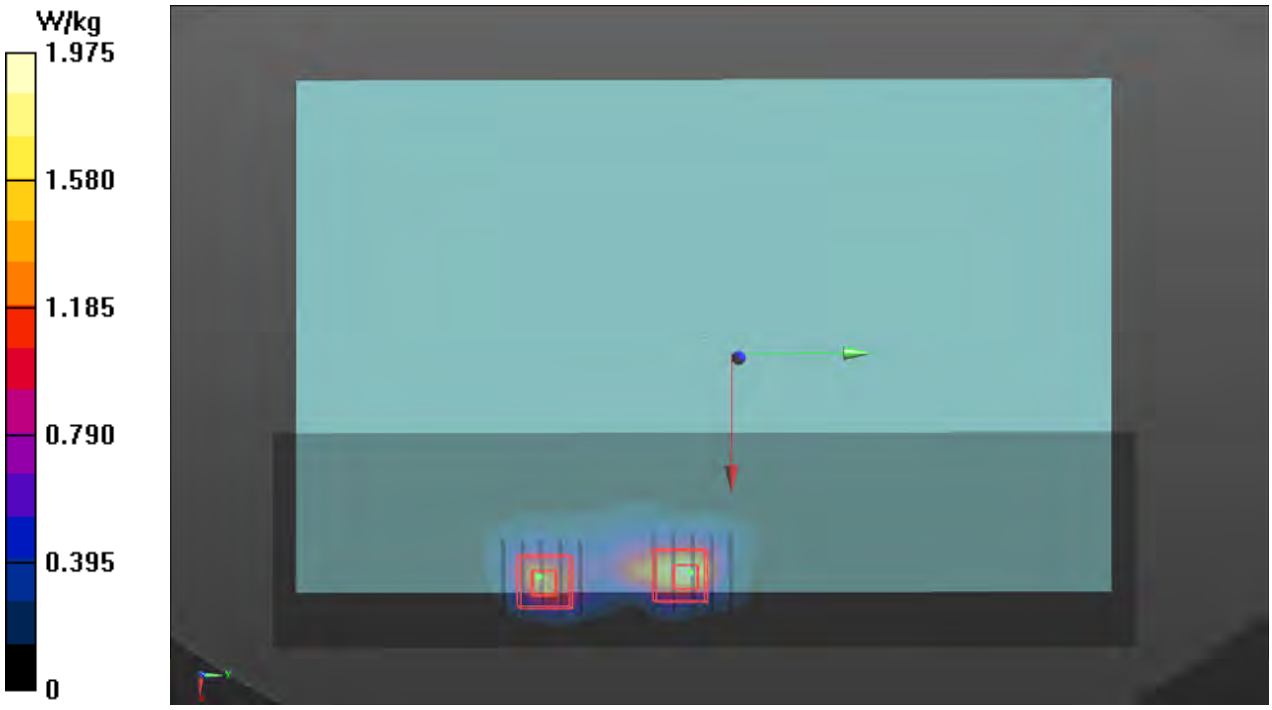
Communication System: UMTS-FDD (WCDMA); Frequency: 1907.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_0210 Medium parameters used: f = 1908 MHz; σ = 1.466 S/m; ε_r = 39.706; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.13, 8.13, 8.13); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.98 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.71 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.68 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.551 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.6 mm
Ratio of SAR at M2 to SAR at M1 = 42.8%
Maximum value of SAR (measured) = 2.07 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.71 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.35 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.467 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.6 mm
Ratio of SAR at M2 to SAR at M1 = 46.3%
Maximum value of SAR (measured) = 1.61 W/kg


W/kg
1.975
1.580
1.185
0.790
0.395
0

P02 WCDMA IV_RMC12.2K_Bottom_Ch1513_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

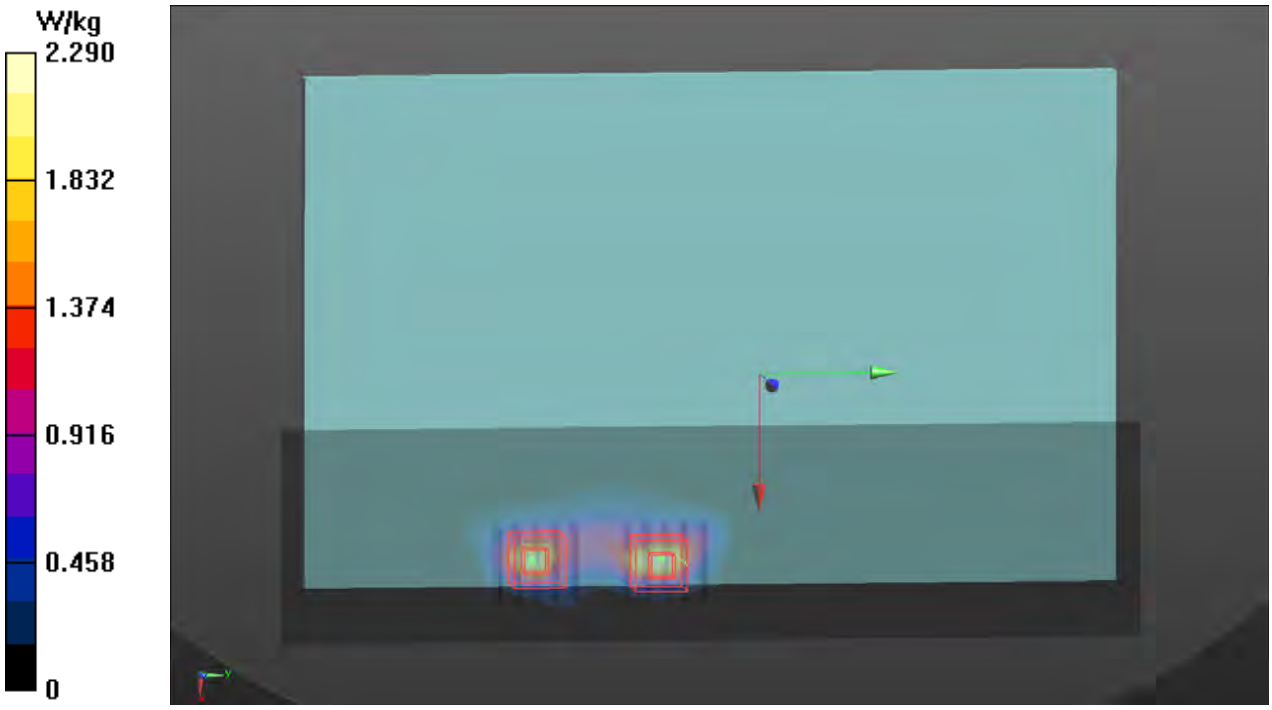
Communication System: UMTS-FDD (WCDMA); Frequency: 1752.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_0208 Medium parameters used: f = 1753 MHz; σ = 1.321 S/m; ε_r = 40.256; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ; Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.29 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.91 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.66 W/kg
SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.559 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 44.5%
Maximum value of SAR (measured) = 2.04 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.91 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.29 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.535 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.1 mm
Ratio of SAR at M2 to SAR at M1 = 44.8%
Maximum value of SAR (measured) = 1.77 W/kg


W/kg
2.290
1.832
1.374
0.916
0.458
0

P03 WCDMA V_RMC12.2K_Bottom_Ch4182_Sample1_Battery 4cell_Reduction Power_w

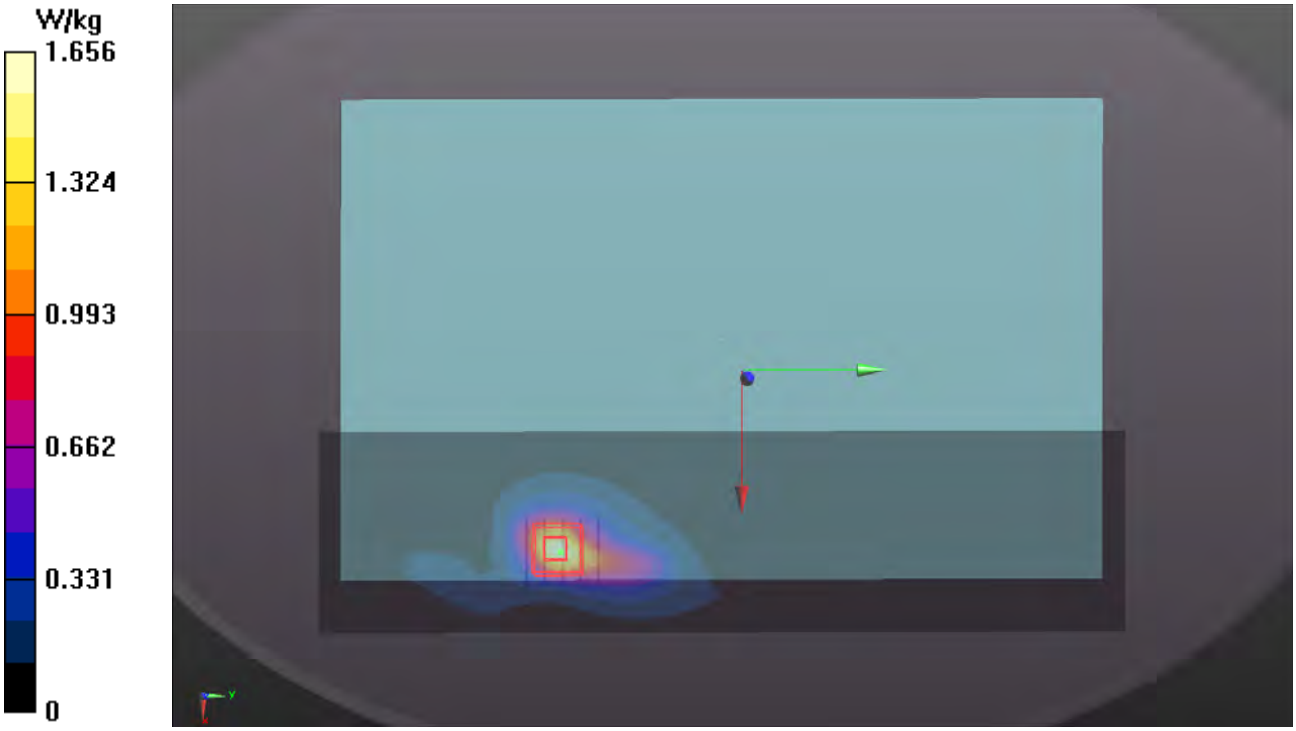
DUT: 191206C08

Communication System: UMTS-FDD (WCDMA); Frequency: 836.4 MHz;Duty Cycle: 1:1.95
Medium: H07T10N3_0208 Medium parameters used: f = 836.4 MHz; σ = 0.928 S/m; ε_r = 42.42; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.82, 9.82, 9.82); Calibrated: 2019/05/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2019/05/08
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.66 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.06 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.93 W/kg
SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.521 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.3 mm
Ratio of SAR at M2 to SAR at M1 = 51.7%
Maximum value of SAR (measured) = 1.55 W/kg



P04 LTE 2_QPSK20M_Bottom_Ch19100_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

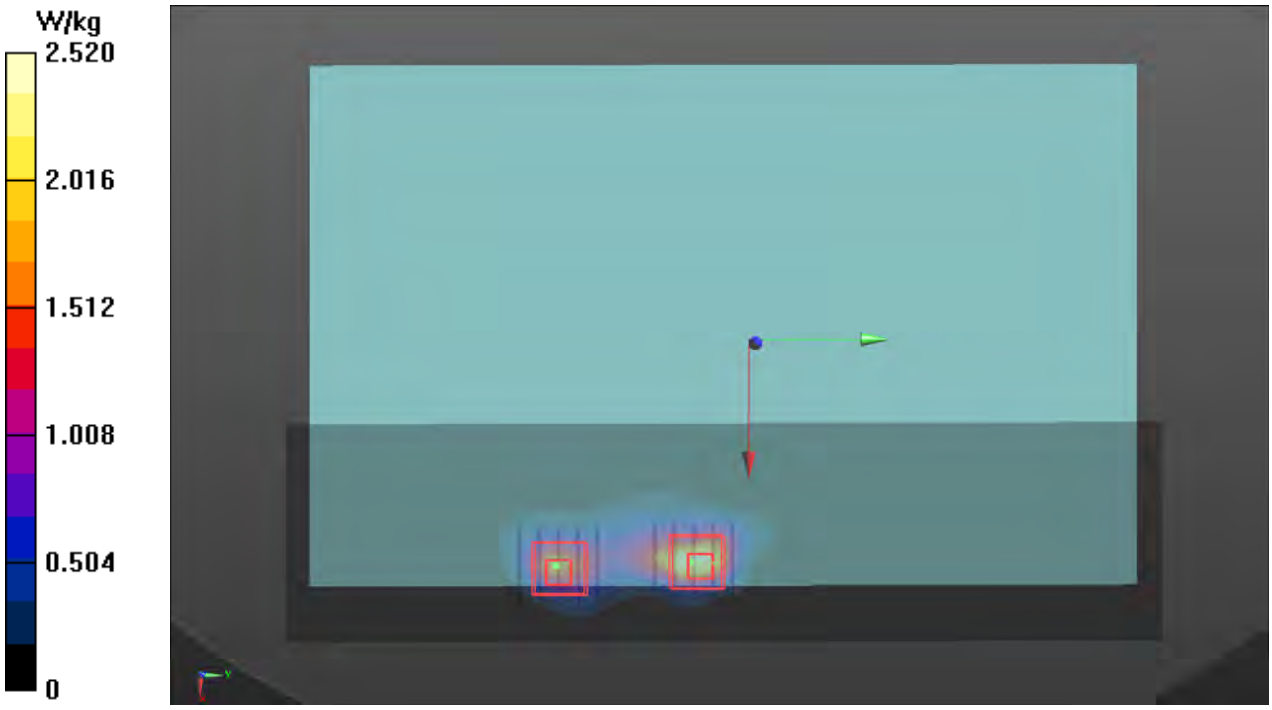
Communication System: LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1900 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0208 Medium parameters used: f = 1900 MHz; σ = 1.456 S/m; ε_r = 39.753; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.13, 8.13, 8.13); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.52 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 39.99 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.01 W/kg
SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.616 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 43.4%
Maximum value of SAR (measured) = 2.29 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 39.99 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.50 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.511 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 45%
Maximum value of SAR (measured) = 1.86 W/kg


W/kg
2.520
2.016
1.512
1.008
0.504
0

P05 LTE 4_QPSK20M_Bottom_Ch20300_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

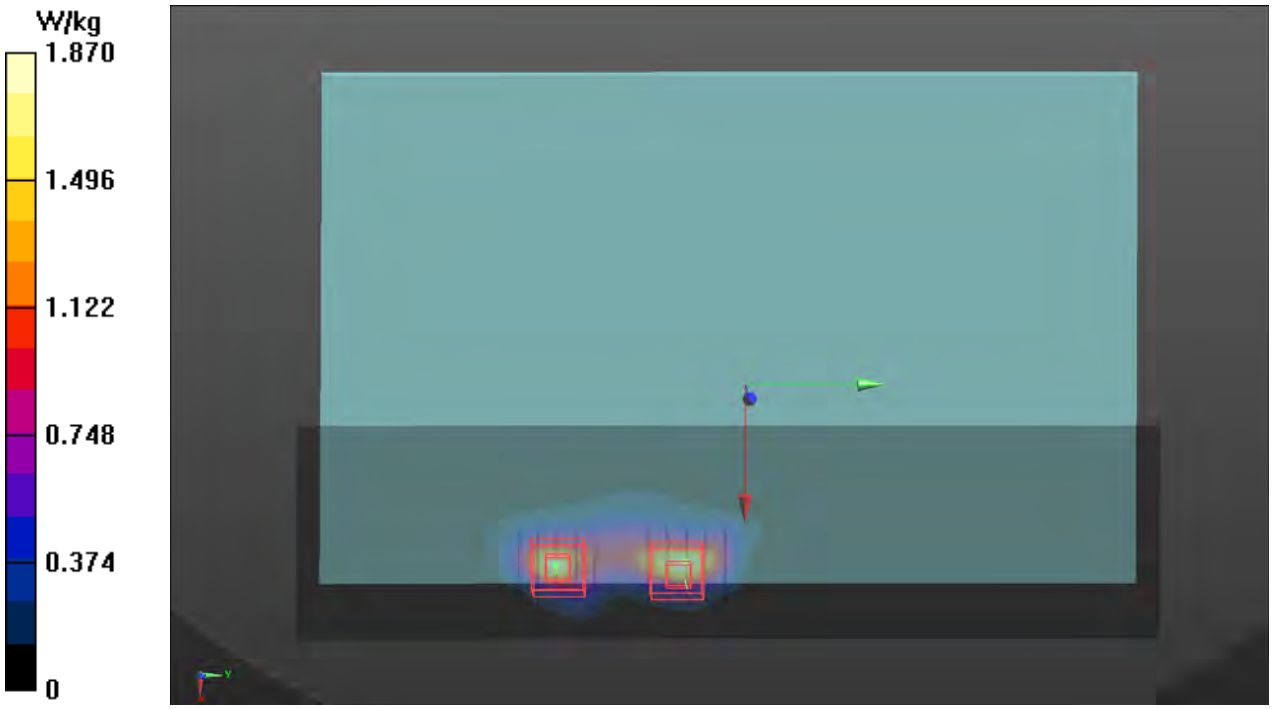
Communication System: LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1745 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0208 Medium parameters used: f = 1745 MHz; σ = 1.317 S/m; ε_r = 40.276; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.87 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.84 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.57 W/kg
SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.536 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9.3 mm
Ratio of SAR at M2 to SAR at M1 = 44.7%
Maximum value of SAR (measured) = 1.96 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.84 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.04 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.488 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.4 mm
Ratio of SAR at M2 to SAR at M1 = 51.7%
Maximum value of SAR (measured) = 1.55 W/kg


W/kg
1.870
1.496
1.122
0.748
0.374
0

P06 LTE 5_QPSK10M_Bottom_Ch20525_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

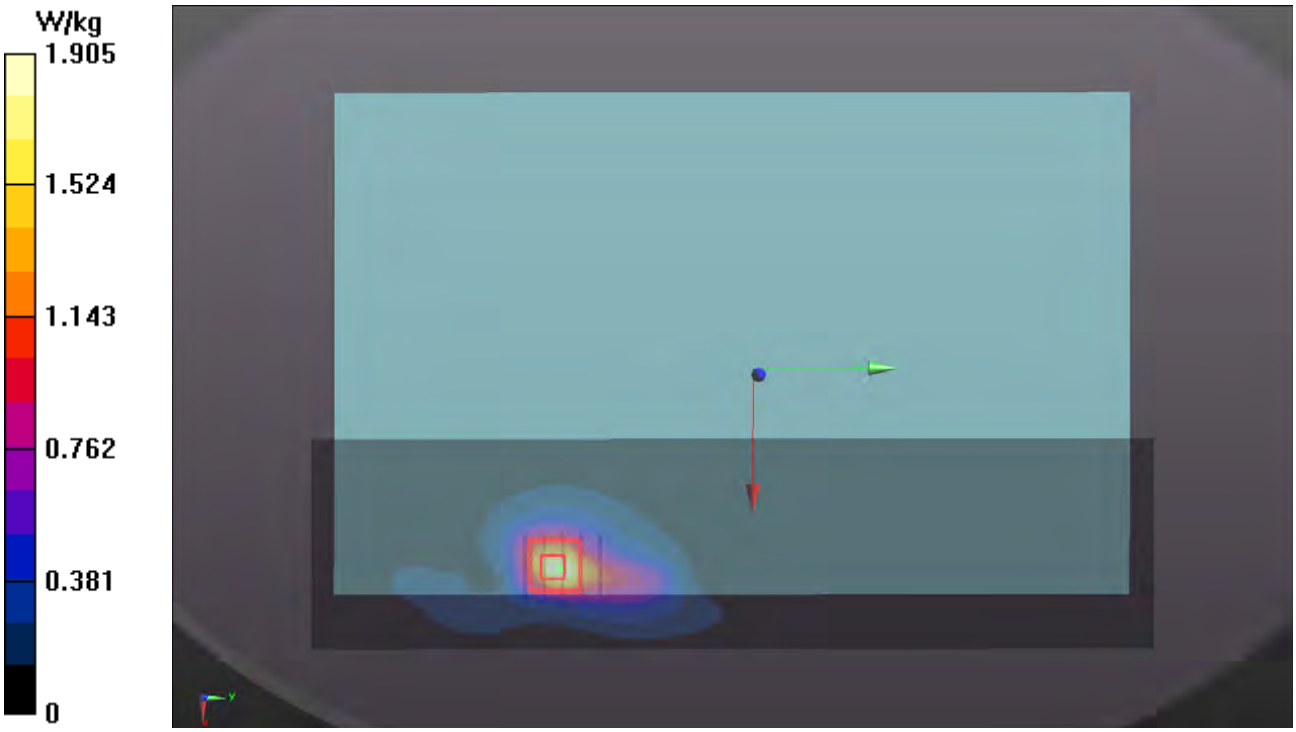
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz;Duty Cycle: 1:3.74
Medium: H07T10N3_0208 Medium parameters used: f = 836.5 MHz; σ = 0.929 S/m; ε_r = 42.419; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(9.82, 9.82, 9.82); Calibrated: 2019/05/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2019/05/08
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.90 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.25 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.31 W/kg
SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.625 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.3 mm
Ratio of SAR at M2 to SAR at M1 = 53.2%
Maximum value of SAR (measured) = 1.78 W/kg



P07 LTE 7_QPSK20M_Bottom_Ch20850_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

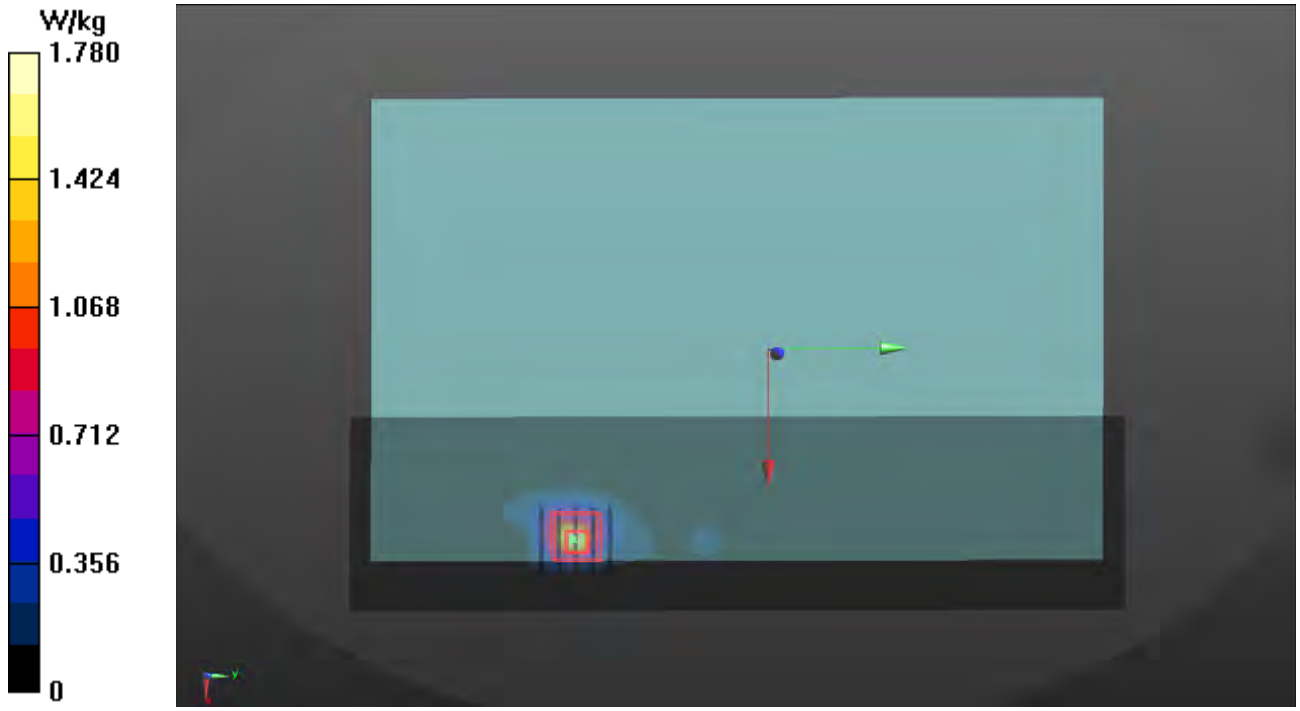
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2510 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0210 Medium parameters used: f = 2510 MHz; σ = 1.947 S/m; ε_r = 38.178; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(7.64, 7.64, 7.64); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_2105; Type: QD OVA 004 Ax; Serial: 2105
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (81x301x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.37 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 0.771 W/kg; SAR(10 g) = 0.349 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 41.7%
Maximum value of SAR (measured) = 1.31 W/kg



P08 LTE 12_QPSK10M_Bottom_Ch23130_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

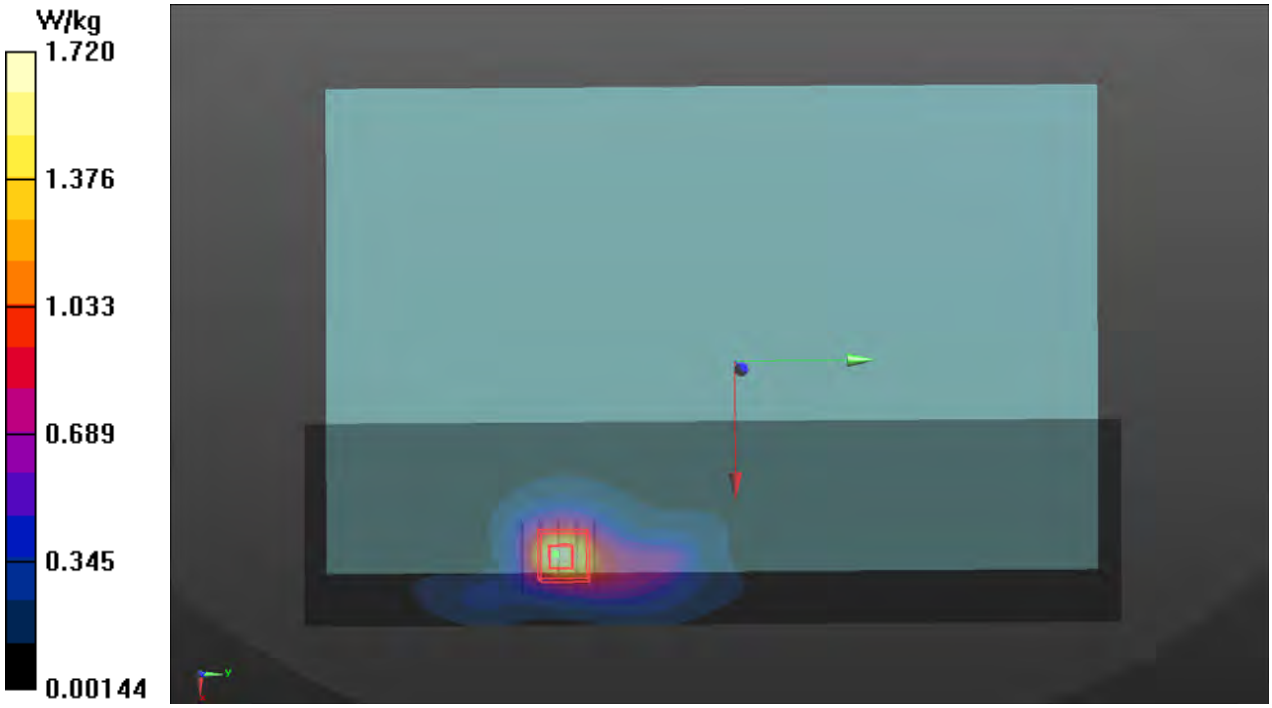
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0208 Medium parameters used: f = 711 MHz; σ = 0.865 S/m; ε_r = 42.194; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(10.77, 10.77, 10.77); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.72 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.55 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.36 W/kg
SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.656 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 10.7 mm
Ratio of SAR at M2 to SAR at M1 = 52.5%
Maximum value of SAR (measured) = 1.90 W/kg



P09 LTE 13_QPSK10M_Bottom_Ch23230_1RB_OS0_Sample4_Battery 4cell_Reduction Power_w

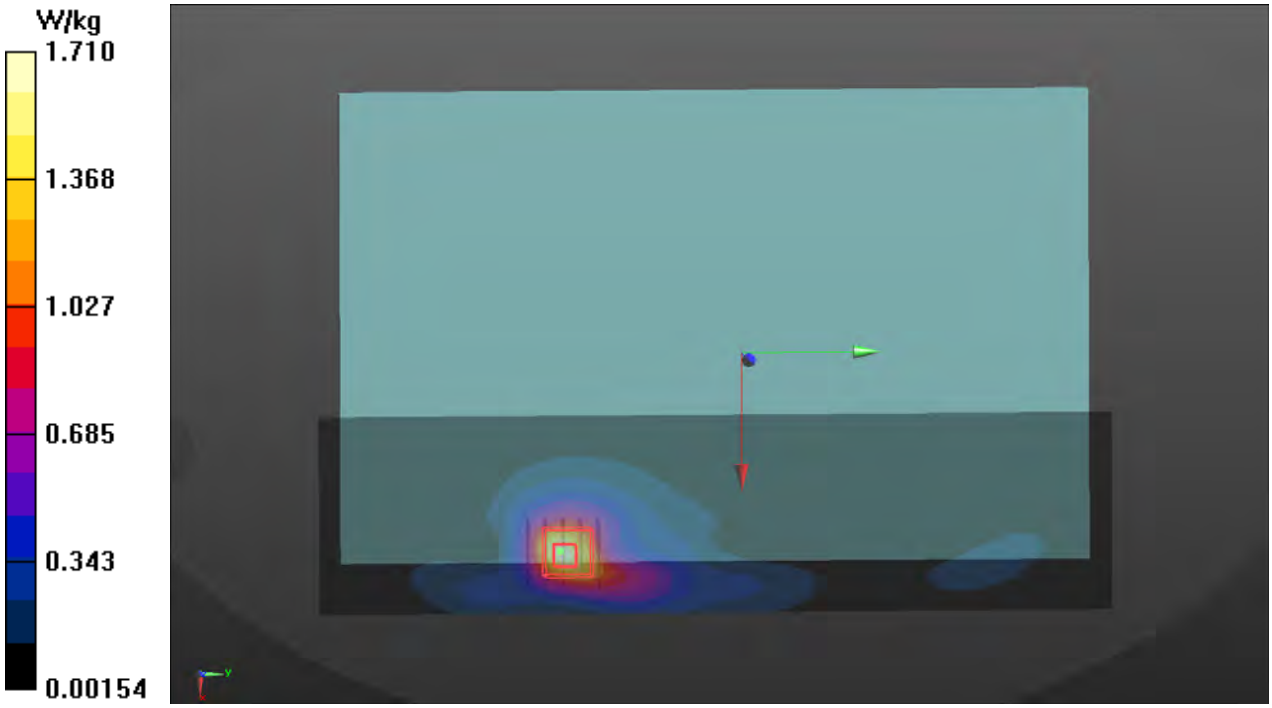
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0208 Medium parameters used: f = 782 MHz; σ = 0.929 S/m; ε_r = 41.263; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(10.77, 10.77, 10.77); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.71 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.87 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.27 W/kg
SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.662 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.6 mm
Ratio of SAR at M2 to SAR at M1 = 55.4%
Maximum value of SAR (measured) = 1.85 W/kg



P10 LTE 14_QPSK10M_Bottom_Ch23330_1RB_OS0_Sample4_Battery 4cell_Reduction Power_w

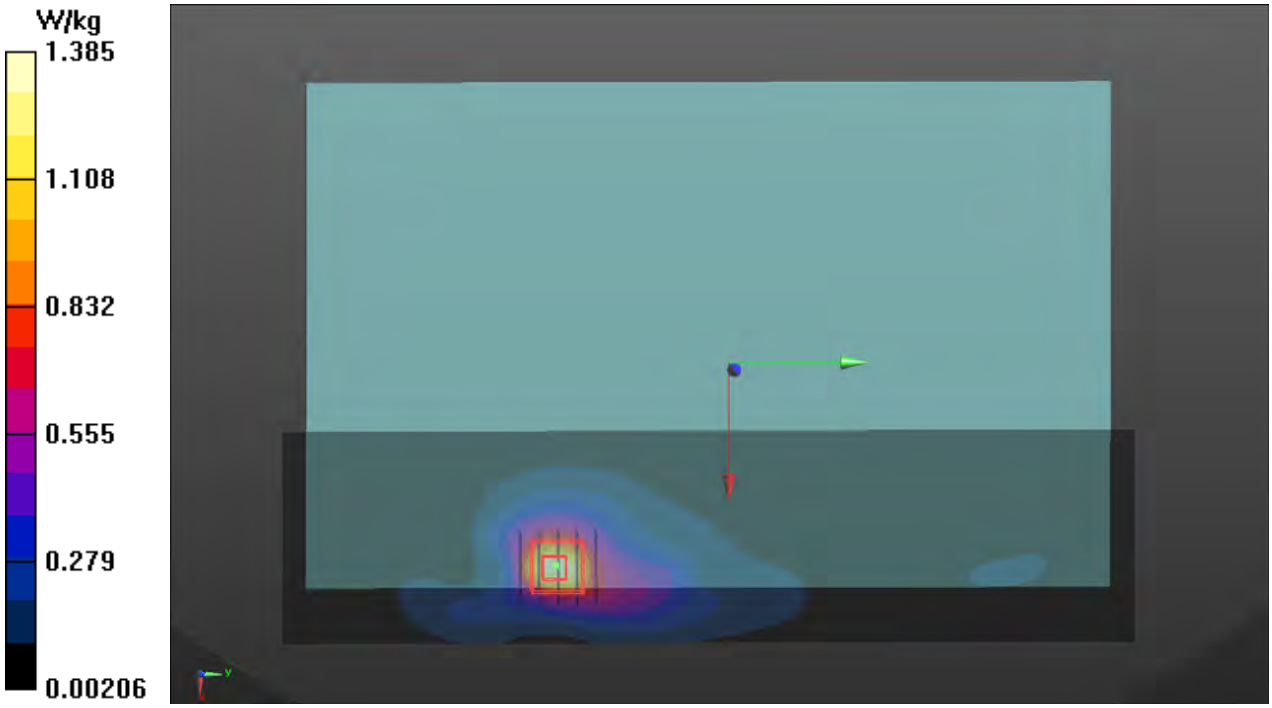
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 793 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0210 Medium parameters used: f = 793 MHz; σ = 0.879 S/m; ε_r = 42.272; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(10.77, 10.77, 10.77); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.38 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 41.01 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 0.973 W/kg; SAR(10 g) = 0.530 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.6 mm
Ratio of SAR at M2 to SAR at M1 = 54.3%
Maximum value of SAR (measured) = 1.47 W/kg



P11 LTE 17_QPSK10M_Bottom_Ch23800_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

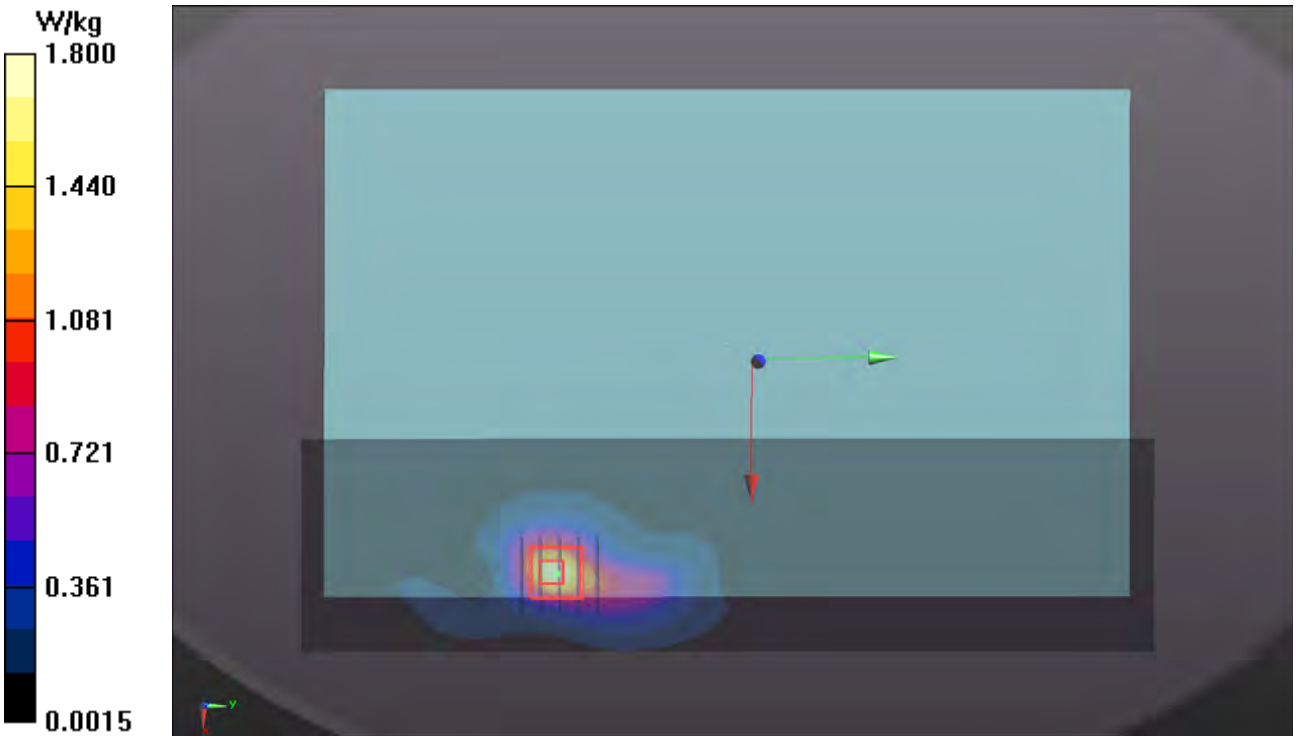
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0224 Medium parameters used: f = 711 MHz; σ = 0.86 S/m; ε_r = 41.805; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(10.06, 10.06, 10.06); Calibrated: 2019/05/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2019/05/08
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.80 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.80 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.566 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 12.2 mm
Ratio of SAR at M2 to SAR at M1 = 52.2%
Maximum value of SAR (measured) = 1.58 W/kg



P12 LTE 25_QPSK20M_Bottom_Ch26590_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

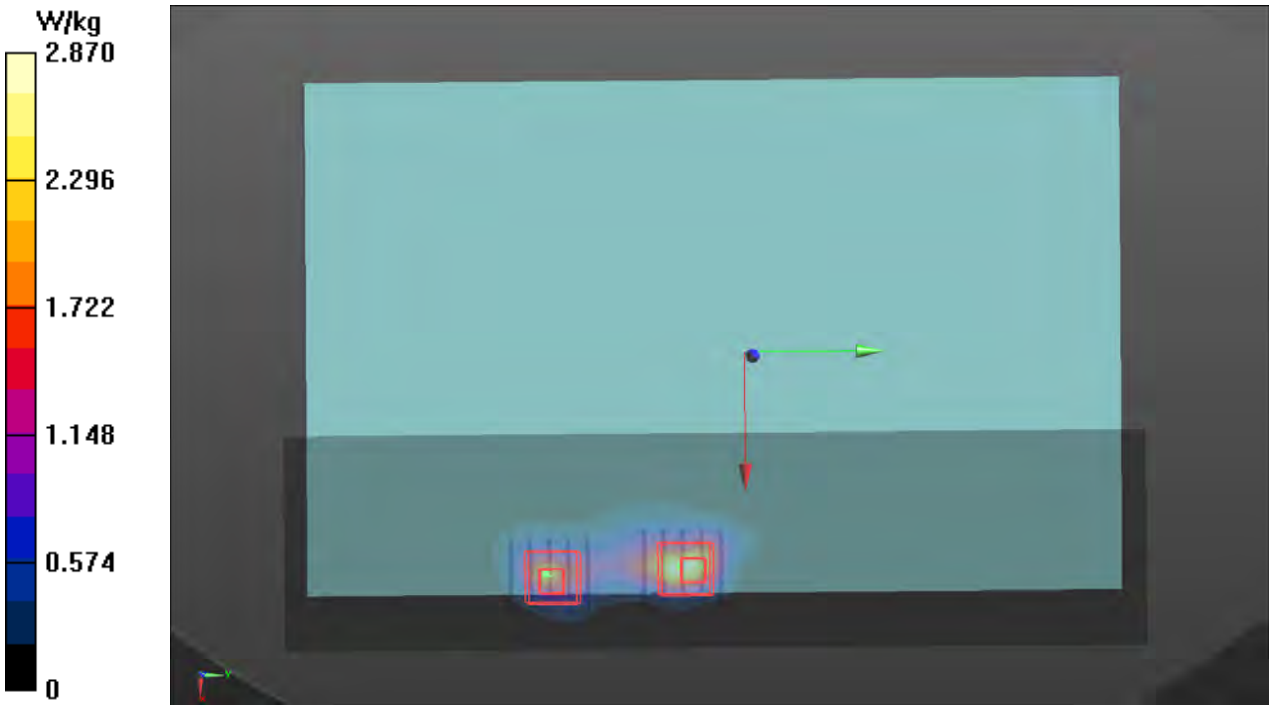
Communication System: LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1905 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0208 Medium parameters used: f = 1905 MHz; σ = 1.463 S/m; ε_r = 39.718; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.13, 8.13, 8.13); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.87 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.01 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.24 W/kg
SAR(1 g) = 1.38 W/kg; SAR(10 g) = 0.673 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9.1 mm
Ratio of SAR at M2 to SAR at M1 = 43.4%
Maximum value of SAR (measured) = 2.52 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.01 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.79 W/kg
SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.566 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 45.8%
Maximum value of SAR (measured) = 2.03 W/kg


W/kg
2.870
2.296
1.722
1.148
0.574
0

P13 LTE 26_QPSK15M_Bottom_Ch26765_1RB_OS0_Sample4_Battery 4cell_Reduction Power_w

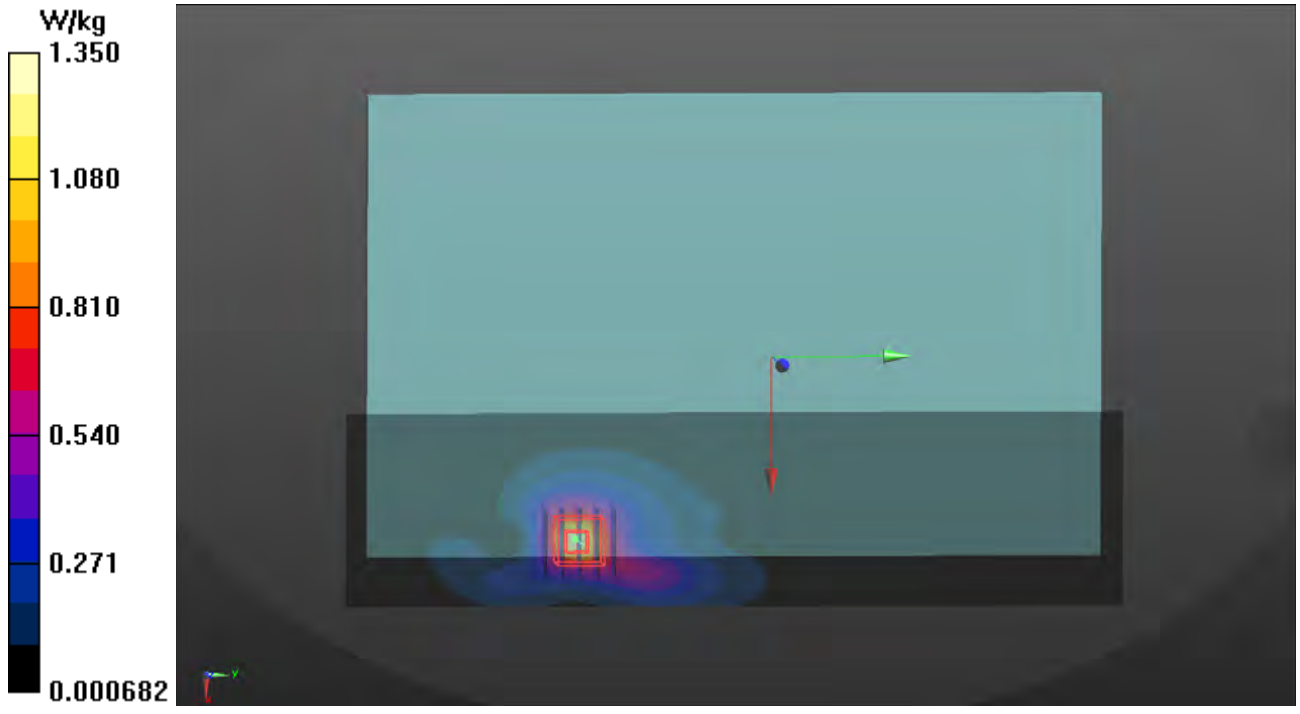
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK); Frequency: 821.5 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0210 Medium parameters used: f = 821.5 MHz; σ = 0.971 S/m; ε_r = 42.426; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(10.18, 10.18, 10.18); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_2105; Type: QD OVA 004 Ax; Serial: 2105
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 39.09 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.832 W/kg; SAR(10 g) = 0.469 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 12.8 mm
Ratio of SAR at M2 to SAR at M1 = 55.8%
Maximum value of SAR (measured) = 1.32 W/kg



P14 LTE 30_QPSK10M_Bottom_Ch27710_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

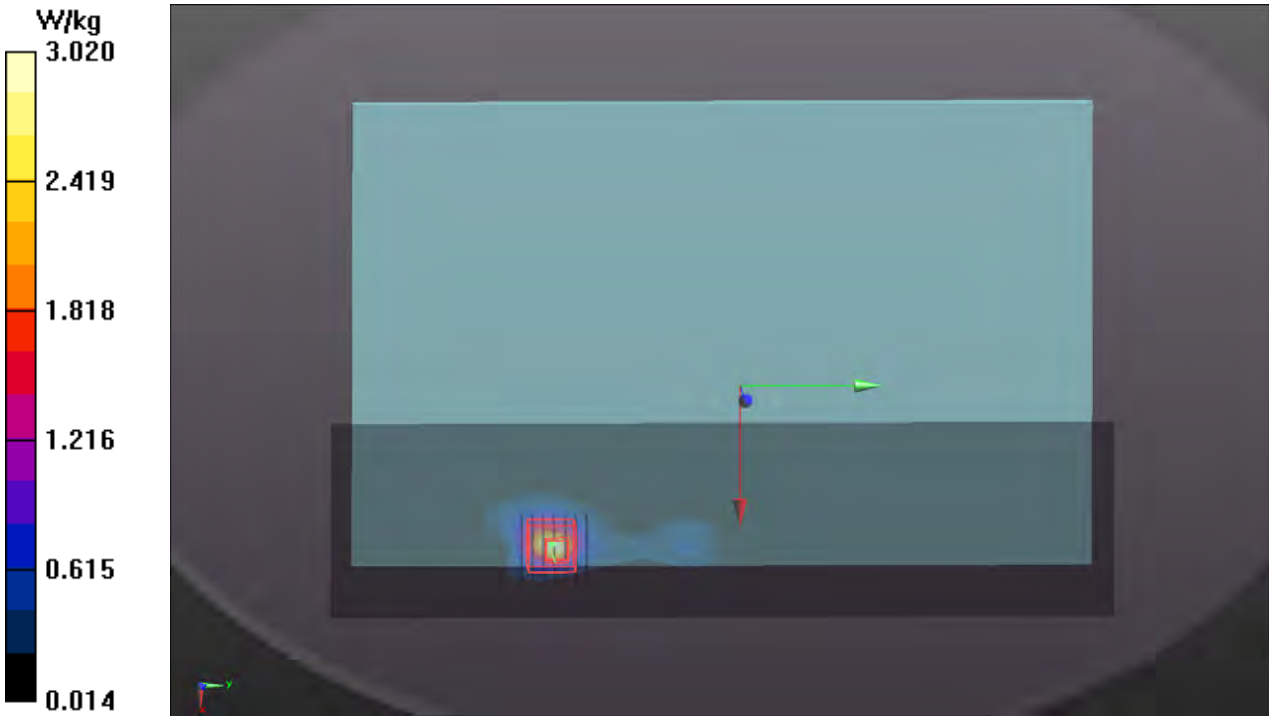
DUT: 191206C08

Communication System: LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 2310 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0222 Medium parameters used: f = 2310 MHz; σ = 1.714 S/m; ε_r = 38.954; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(8.11, 8.11, 8.11); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- Area Scan (81x301x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 3.02 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 34.31 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.36 W/kg
SAR(1 g) = 1.35 W/kg; SAR(10 g) = 0.624 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7.1 mm
Ratio of SAR at M2 to SAR at M1 = 40.9%
Maximum value of SAR (measured) = 2.50 W/kg



P15 LTE 38_QPSK20M_Bottom_Ch37850_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

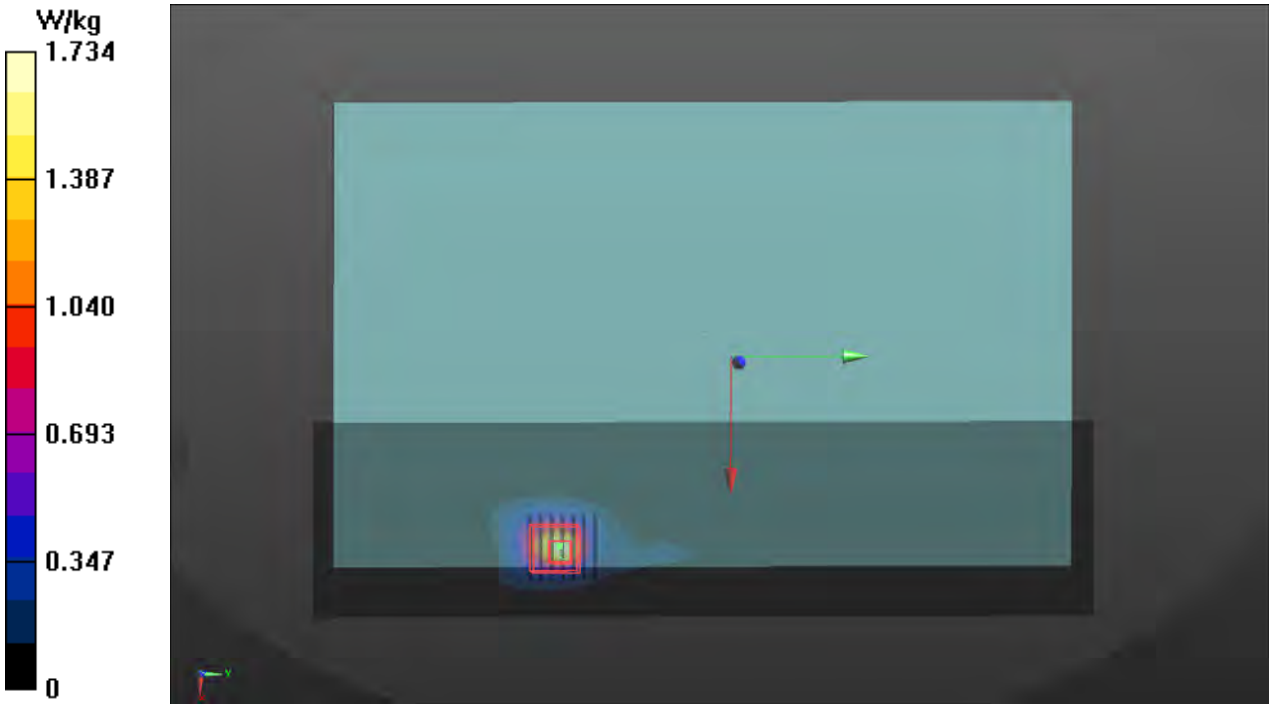
DUT: 191206C08

Communication System: LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2580 MHz;Duty Cycle: 1:8.33
Medium: H19T27N1_0210 Medium parameters used: f = 2580 MHz; σ = 2.009 S/m; ε_r = 38.618; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(7.19, 7.19, 7.19); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (81x301x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.73 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.77 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.444 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7.6 mm
Ratio of SAR at M2 to SAR at M1 = 35.8%
Maximum value of SAR (measured) = 2.07 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/02/10

P17 LTE 41_QPSK20M_Bottom_Ch39750_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

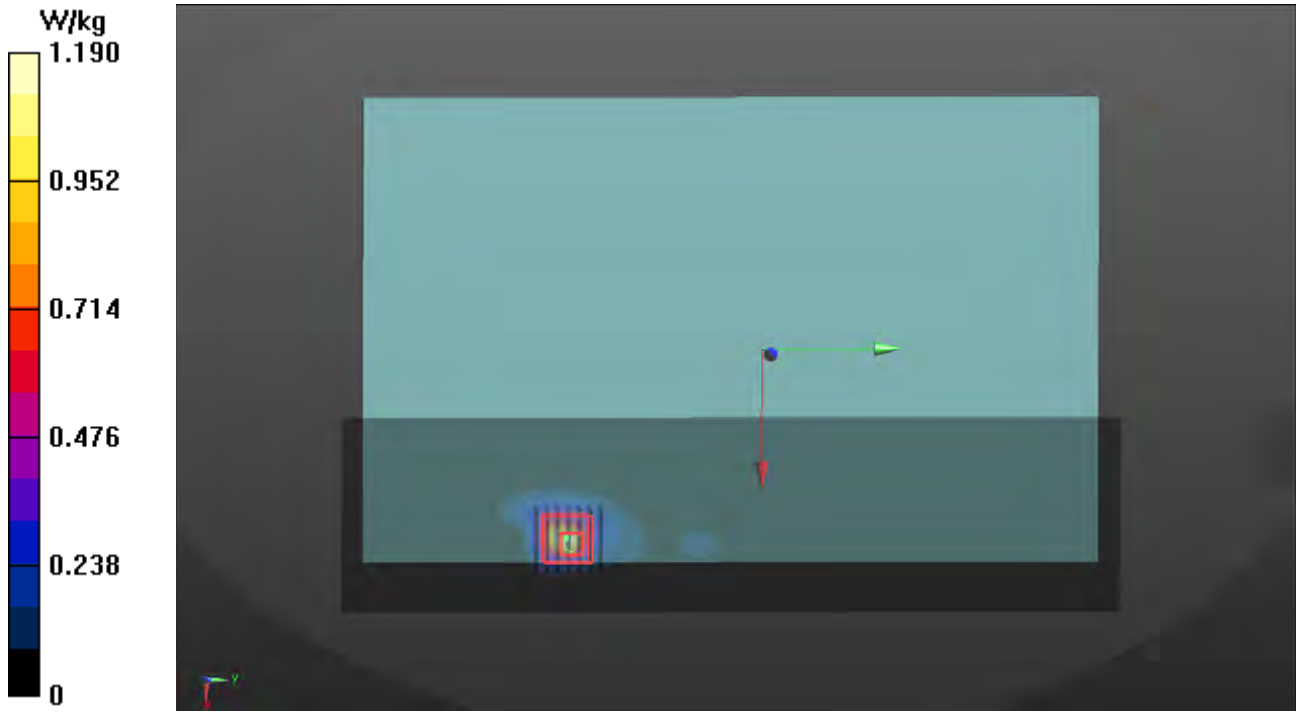
DUT: 191206C08

Communication System: LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2506 MHz;Duty Cycle: 1:8.33
Medium: H19T27N1_0210 Medium parameters used: f = 2506 MHz; σ = 1.944 S/m; ε_r = 38.187; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ； Liquid Temperature：23.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(7.64, 7.64, 7.64); Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2019/03/25
- Phantom: ELI Phantom_2105; Type: QD OVA 004 Ax; Serial: 2105
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (81x301x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.60 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.222 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6.3 mm
Ratio of SAR at M2 to SAR at M1 = 38.7%
Maximum value of SAR (measured) = 0.935 W/kg



P20 LTE 66_QPSK20M_Bottom_Ch132572_1RB_OS0_Sample1_Battery 4cell_Reduction Power_w

DUT: 191206C08

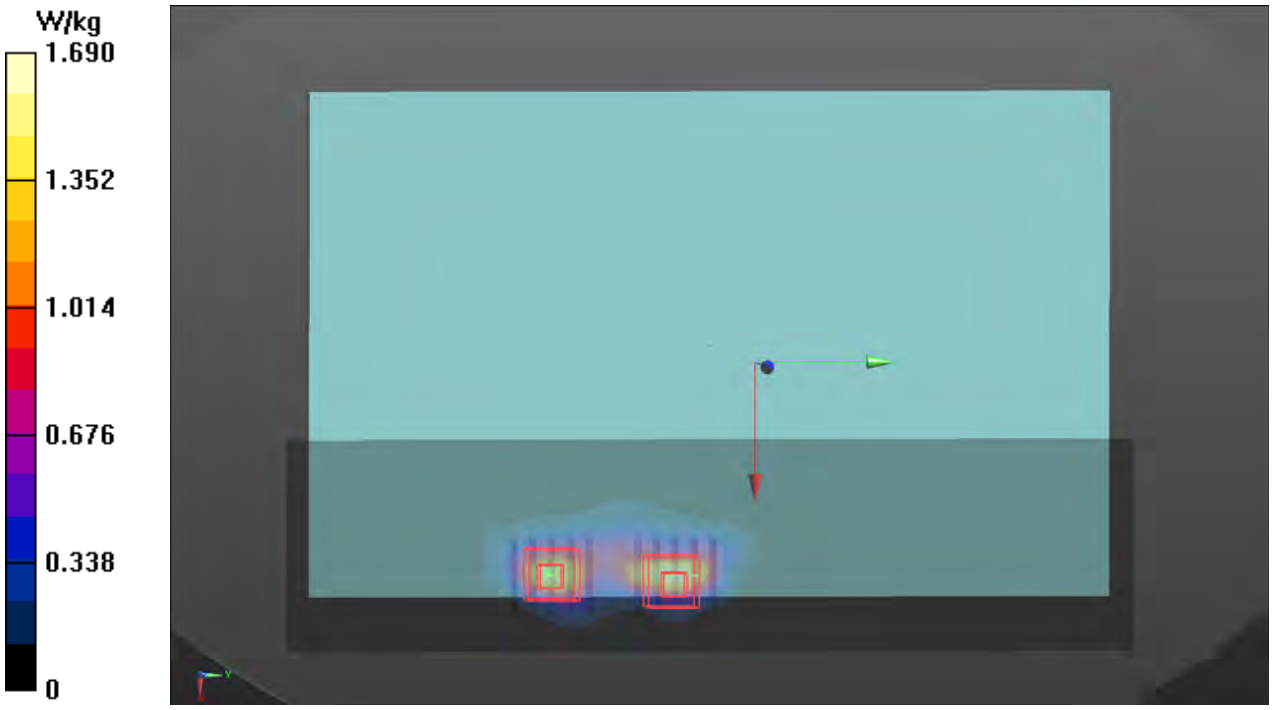
Communication System: LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1770 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0208 Medium parameters used: f = 1770 MHz; σ = 1.336 S/m; ε_r = 40.175; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.44, 8.44, 8.44); Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2019/06/07
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

- Area Scan (61x241x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.69 W/kg

- Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.55 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.19 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.466 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 46%
Maximum value of SAR (measured) = 1.64 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.55 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 0.918 W/kg; SAR(10 g) = 0.448 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.4 mm
Ratio of SAR at M2 to SAR at M1 = 44.8%
Maximum value of SAR (measured) = 1.40 W/kg


W/kg
1.690
1.352
1.014
0.676
0.338
0

Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **B.V. ADT (Auden)** **Certificate No: D750V3-1013_Aug19**

CALIBRATION CERTIFICATE

Object D750V3 - SN:1013

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: August 23, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 23, 2019

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.7 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.56 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.62 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.7 Ω - 0.2 jΩ
Return Loss	- 28.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.034 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 23.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ε_r = 42.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

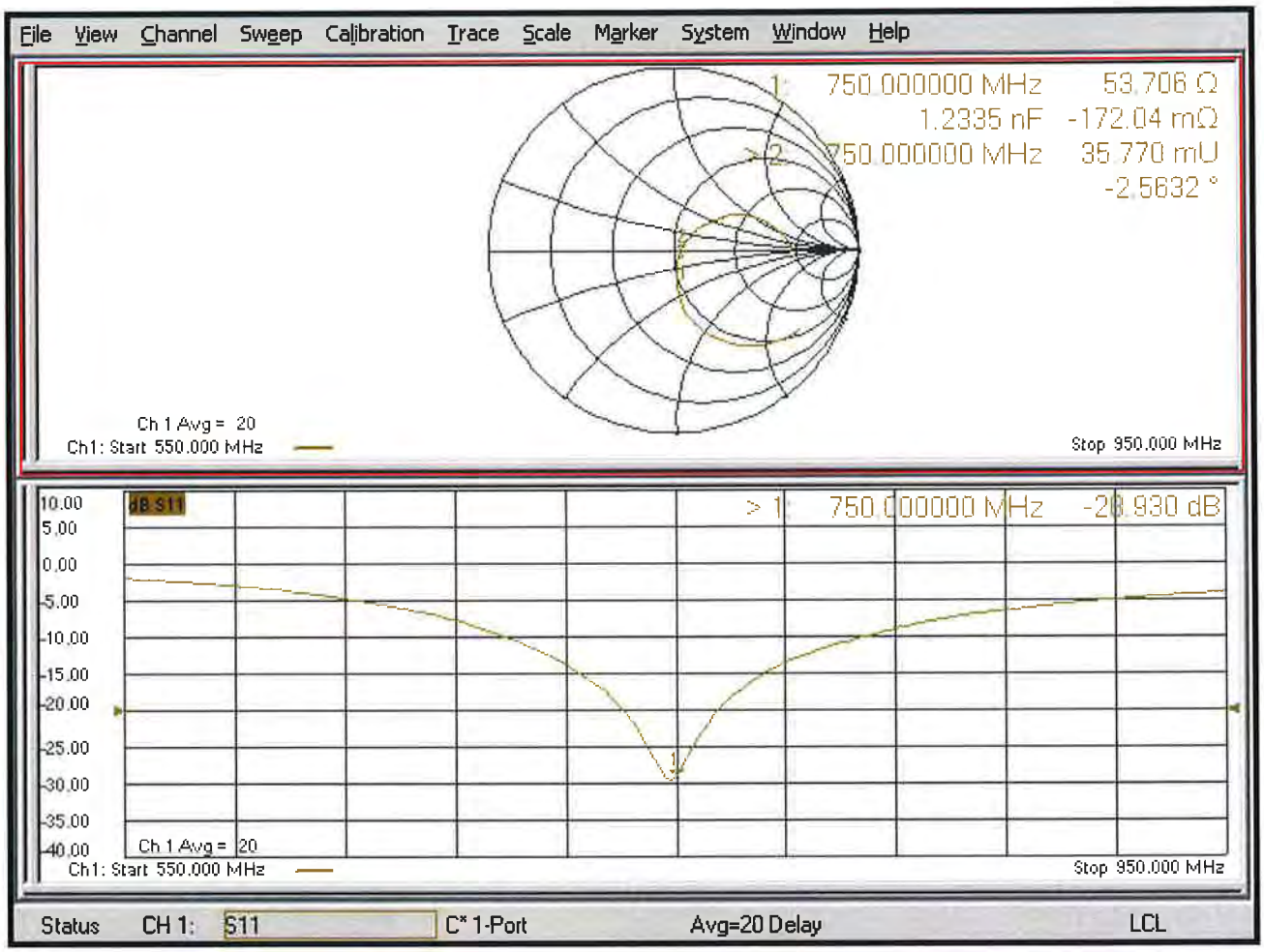
- Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07) @ 750 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.83 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.41 W/kg
Maximum value of SAR (measured) = 2.86 W/kg

0 dB = 2.86 W/kg = 4.56 dBW/kg

Impedance Measurement Plot for Head TSL



Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **B.V. ADT (Auden)** **Certificate No: D835V2-4d121_Aug19**

CALIBRATION CERTIFICATE

Object D835V2 - SN:4d121

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: August 23, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 23, 2019

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.5 ± 6 %	0.92 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.61 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.22 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω - 2.7 jΩ
Return Loss	- 31.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.395 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 23.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

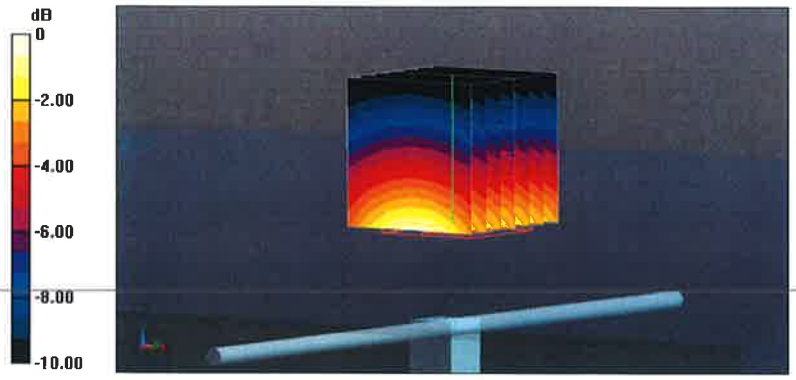
Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.92 S/m; ε_r = 42.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.89, 9.89, 9.89) @ 835 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

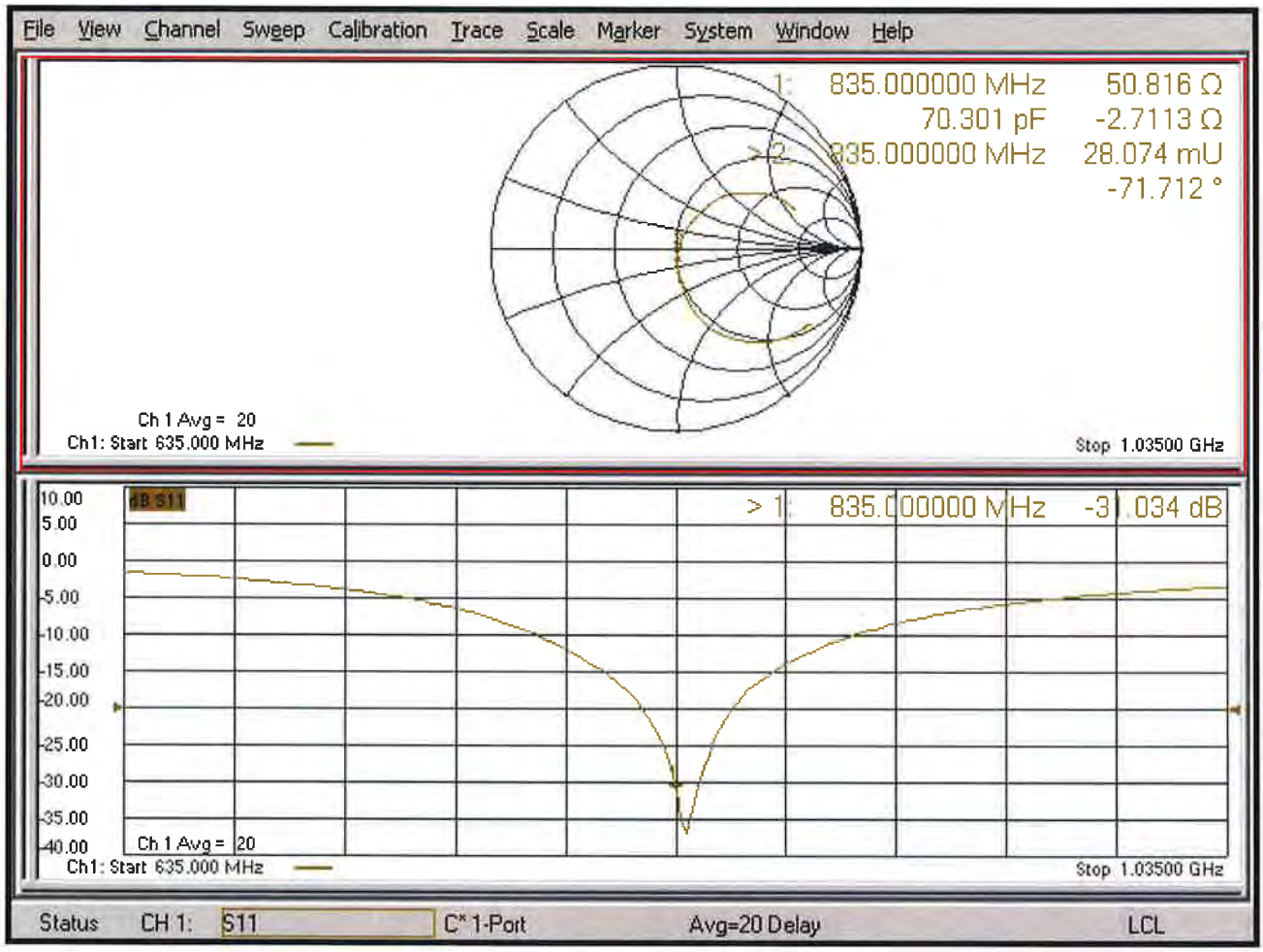
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 63.40 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (measured) = 3.23 W/kg



0 dB = 3.23 W/kg = 5.09 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client **B.V. ADT (Auden)** **Certificate No: D1750V2-1055_Aug19**

CALIBRATION CERTIFICATE

Object	D1750V2 - SN:1055
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	August 23, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 23, 2019

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.8 ± 6 %	1.36 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**37.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.85 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.5 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8 Ω + 1.1 jΩ
Return Loss	- 39.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 23.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

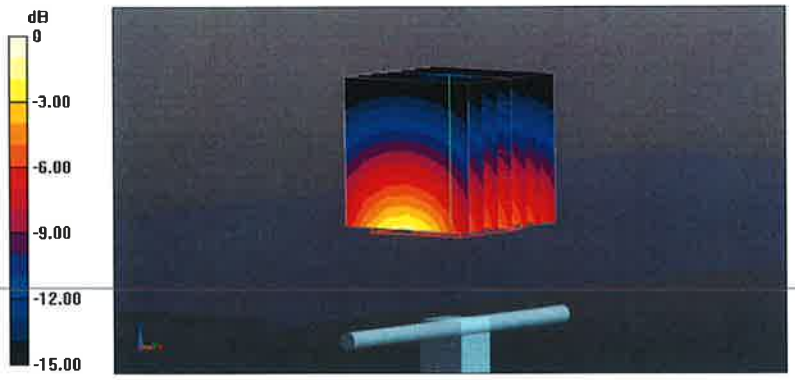
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.36 S/m; ε_r = 40.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.67, 8.67, 8.67) @ 1750 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

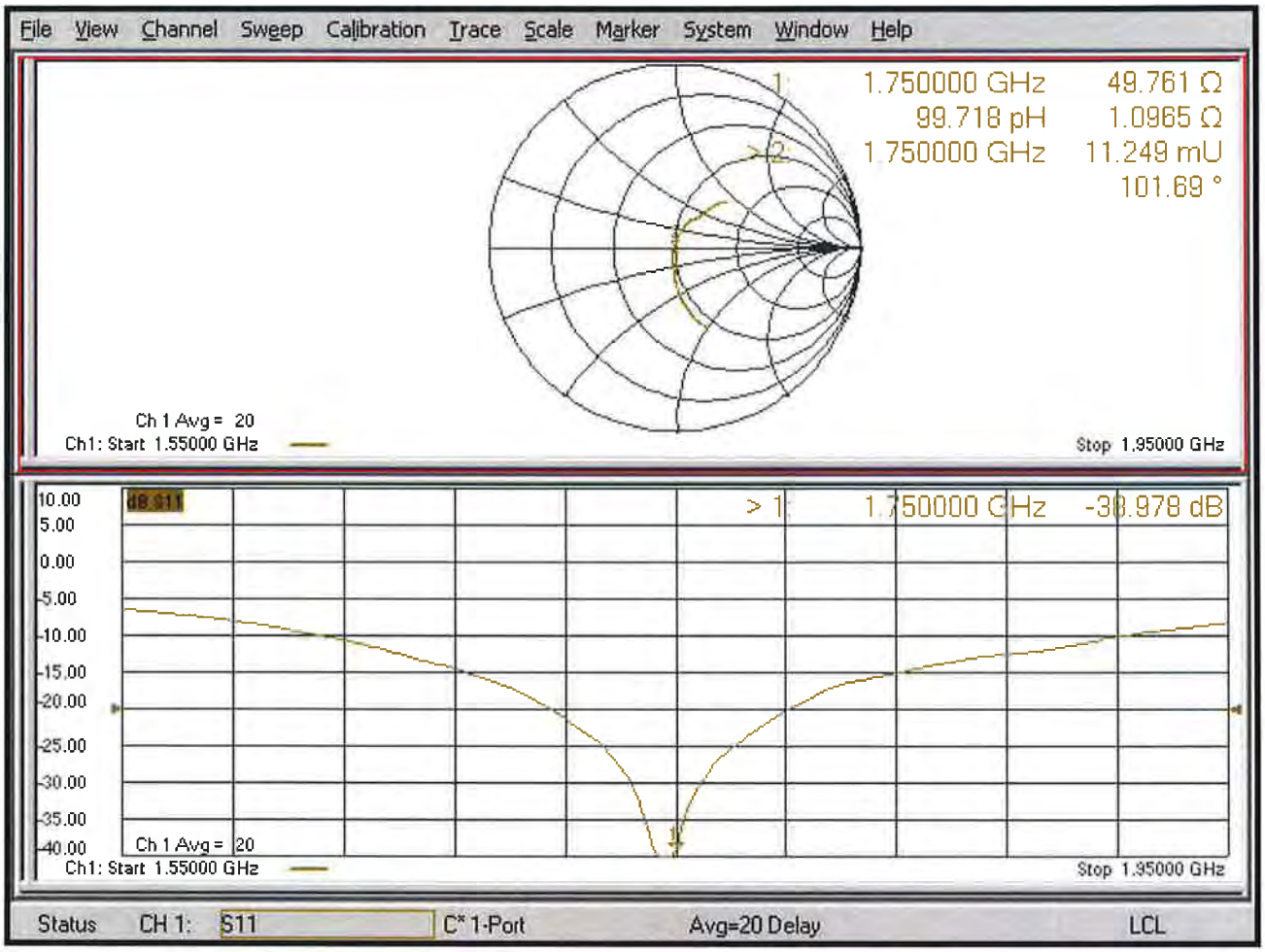
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.5 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 9.17 W/kg; SAR(10 g) = 4.85 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client **Auden**

Certificate No: D1900V2-5d018_Jun19

CALIBRATION CERTIFICATE

Object	D1900V2 - SN:5d018
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	June 27, 2019

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 27, 2019

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.4 ± 6 %	1.39 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.96 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.24 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.1 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	1.50 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.91 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**40.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω + 1.8 jΩ
Return Loss	- 34.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.5 Ω + 3.0 jΩ
Return Loss	- 28.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 27.06.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d018

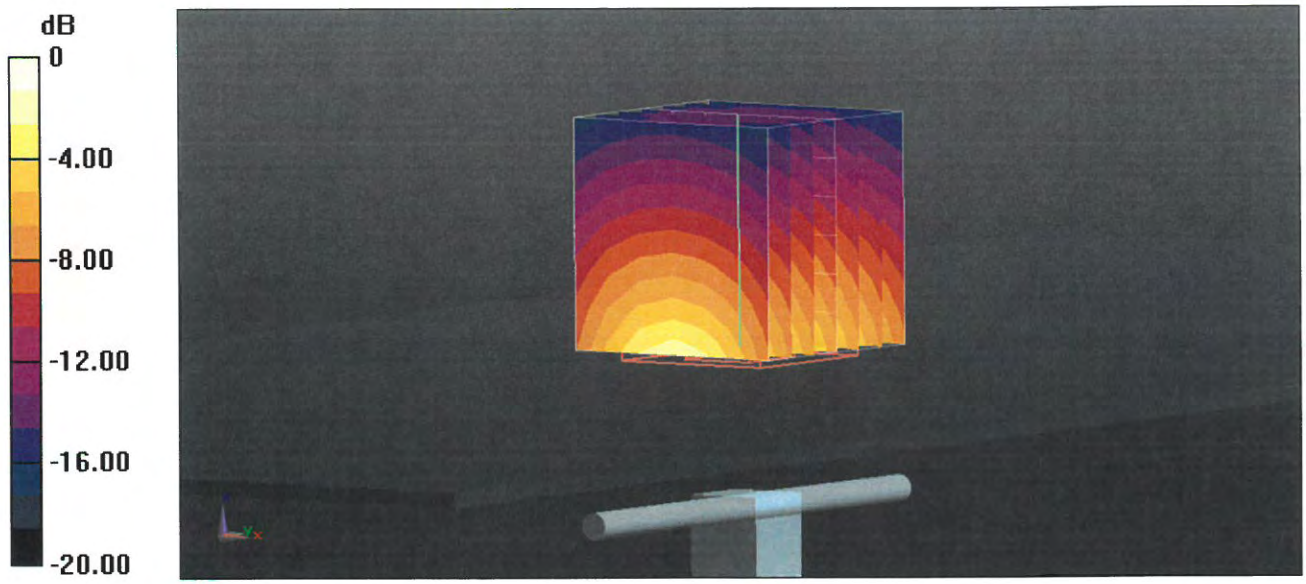
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.39 S/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.44, 8.44, 8.44) @ 1900 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.9 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 9.96 W/kg; SAR(10 g) = 5.24 W/kg
Maximum value of SAR (measured) = 15.5 W/kg



0 dB = 15.5 W/kg = 11.90 dBW/kg