SAR Test Report

Report No.	:	**SFBEDV-WTW-P20060155**
Applicant	:	**Microsoft Corporation**
Address	:	**One Microsoft Way Redmond, WA 98052-6399, U.S.A**
Product	:	**Portable Computing Device**
FCC ID	:	**C3K1961 and C3K1988** **EUT: Model 1961 with Wi-Fi and WWAN Certified transmitter Modules**
Brand	:	**Microsoft**
Model No.	:	**1961**
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 616217 D04 v01r02** **KDB 941225 D01 v03r01, KDB 941225 D05 v02r05, KDB 941225 D05A v01r02**
Sample Received Date	:	**Jun. 29, 2020**
Date of Testing	:	**Jul. 06, 2020 ~ Sep. 26, 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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Gordon Lin / Manager

FCC Accredited No.: TW0003

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Release Control Record

Report No.	Reason for Change	Date Issued
SFBEDV-WTW-P20060155	Initial release	Sep. 07, 2020

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Body (W/kg)	
		Tablet	Laptop
PCB	WCDMA II	0.70	0.36
	WCDMA V	0.88	0.16
	LTE 2 & 25	0.70	0.44
	LTE 4	0.68	0.23
	LTE 5	0.78	0.22
	LTE 7	1.17	0.17
	LTE 12	0.69	0.10
	LTE 13	0.75	0.13
	LTE 14	0.75	0.12
	LTE 26	0.85	0.18
	LTE 30	0.81	0.06
	LTE 38 & 41	1.06	0.10
	LTE 66	0.51	0.14
DTS	2.4G WLAN	0.78	0.06
NII	5.3G WLAN	0.95	0.18
	5.6G WLAN	1.19	0.27
	5.8G WLAN	1.18	0.40
DSS	Bluetooth	0.55	0.00

Highest Simultaneous Transmission SAR	Highest SAR-1g Body (W/kg)	
	Tablet	Laptop
	1.56	0.84

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. This device supports both LTE band 25 and band 2. The frequency span of LTE band 25 can completely cover LTE band 2, and they has the same tune-up power. SAR was tested for LTE band 25 only.
3. This device supports both LTE band 41 and band 38. The frequency span of LTE band 41 can completely cover LTE band 38, and they has the same tune-up power. SAR was tested for LTE band 41 only.

2. Description of Equipment Under Test

EUT Type	Portable Computing Device
FCC ID	C3K1961 and C3K1988
Brand Name	Microsoft
Model Name	1961 with Wi-Fi and WWAN Certified transmitter Modules
Tx Frequency Bands (Unit: MHz)	WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band V : 826.4 ~ 846.6 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 14 : 790.5 ~ 795.5 (BW: 5M, 10M) LTE Band 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 26 : 814.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M, 15M) LTE Band 30 : 2307.5 ~ 2312.5 (BW: 5M, 10M) LTE Band 38 : 2572.5 ~ 2617.5 (BW: 5M, 10M, 15M, 20M) LTE Band 41 : 2502.5 ~ 2687.5 (BW: 5M, 10M, 15M, 20M) LTE Band 66 : 1710.7 ~ 1779.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) WLAN : 2412 ~ 2472, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720,5745 ~ 5825 Bluetooth : 2402 ~ 2480
Uplink Modulations	802.11b : DSSS 802.11a/g/n : OFDM 802.11ax : OFDMA Bluetooth : GFSK, π/4-DQPSK, 8DPSK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	PIFA Antenna
EUT Stage	Engineering Sample

Note:

1. The WWAN module with FCCID: C3K1988 (Brand: Quectel, Model:EM12-G) was installed in the host whose model number is 1961.
2. The WLAN/BT module with FCCID: C3K1961 (Brand: Intel, Model: AX201D2W) was installed in the host whose model number is 1961.

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.

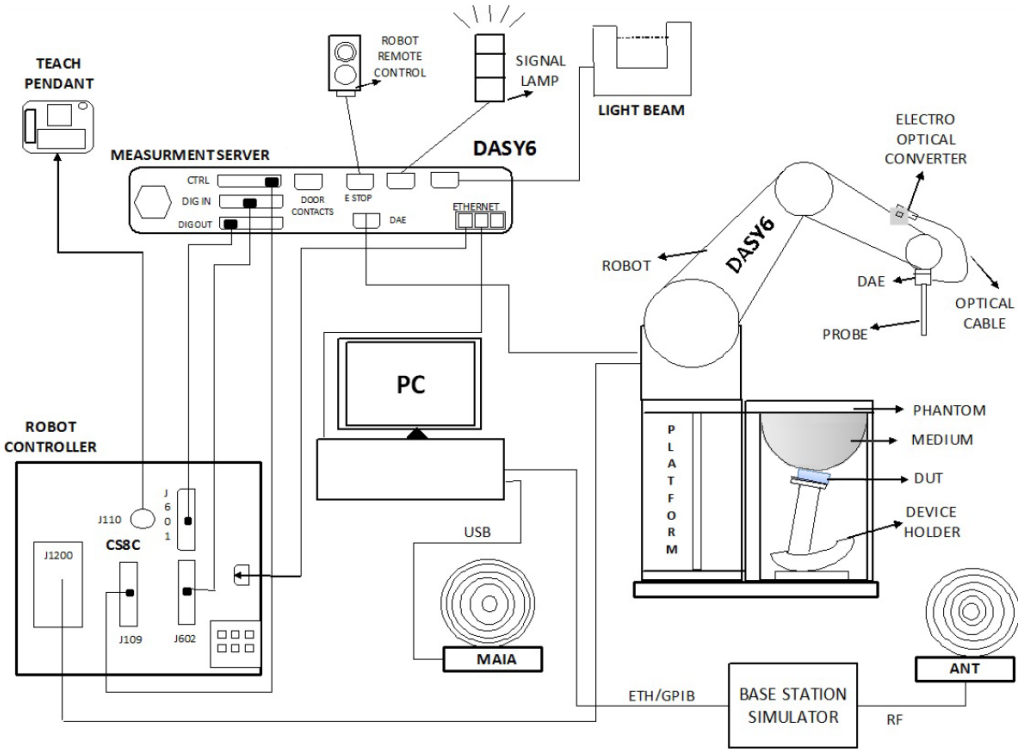


Fig-3.1 SPEAG DASY6 System Setup

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.

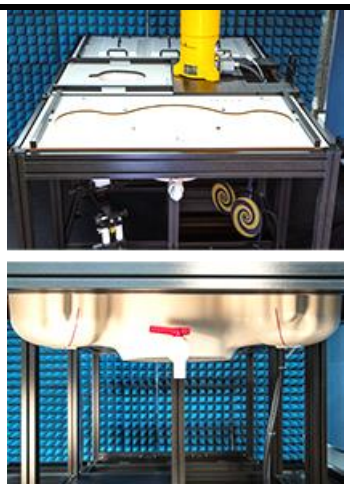
Model	EX3DV4
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
Frequency	4 MHz to 10 GHz Linearity: ± 0.2 dB
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation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

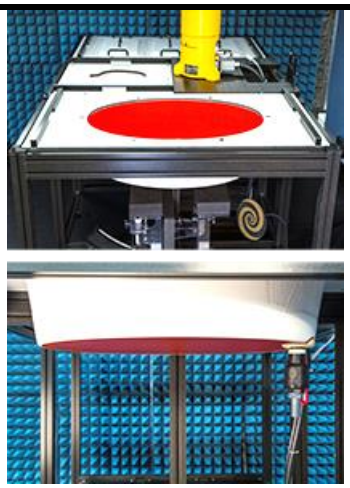
Model	DAE3, DAE4
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 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.

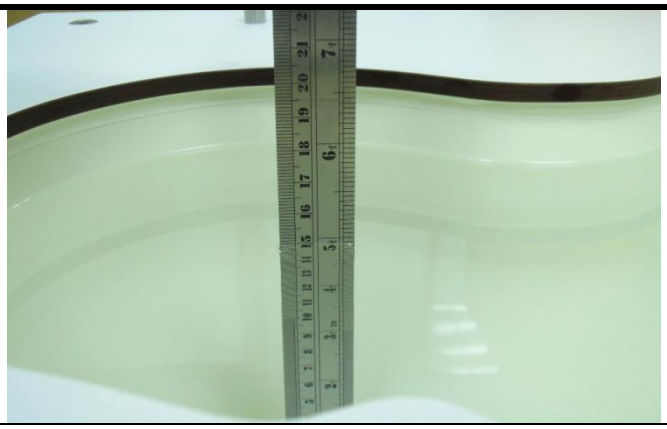


Photo of Liquid Height for Head Position

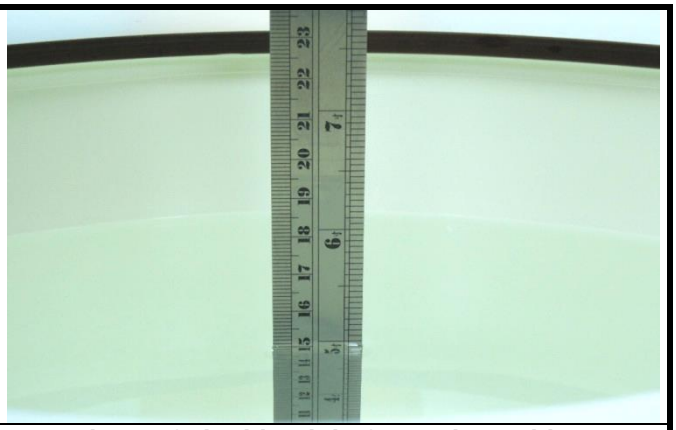


Photo of Liquid Height for Body Position

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.

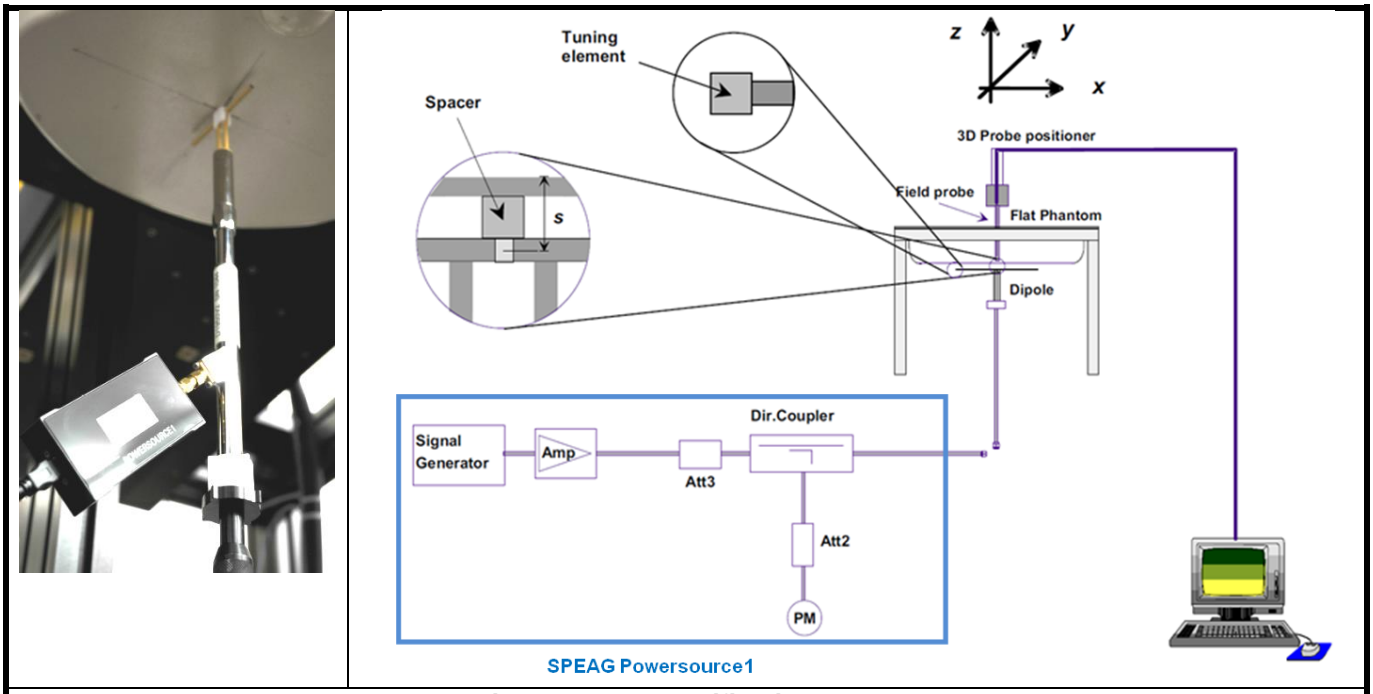


Fig-3.3 System Verification Setup

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

<Considerations Related to Proximity Sensor>

The device supports WWAN, WLAN, and Bluetooth capabilities. It is designed with a proximity sensor which can trigger/not trigger power reduction for WCDMA and LTE on Rear Face, Right Side and Top Side of EUT for SAR compliance. The power levels for all wireless technologies and the power reduction please refer to section 4.6 of this report.

Proximity Sensor Triggering Distances (KDB 616217 D04 §6.2)

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

<Tablet>

Output Power Verification in dBm for EUT Back Surface											
Distance (mm)	18	19	20	21	22	23	24	25	26	27	28
WCDMA II	13.7	13.7	13.5	13.8	13.6	13.4	23.7	23.5	23.9	23.8	23.9
WCDMA V	20.4	20.0	20.0	20.0	20.4	20.5	23.6	23.7	23.4	23.7	23.4
LTE 2	13.4	13.3	13.4	13.5	13.6	13.4	23.1	23.3	23.0	23.2	23.0
LTE 4	14.6	14.2	14.1	14.2	14.5	14.6	23.1	23.4	23.4	23.6	23.3
LTE 5	19.5	19.8	19.6	19.8	19.7	19.7	23.5	23.6	23.6	23.2	23.3
LTE 7	13.9	13.7	14.0	13.5	13.8	13.5	23.8	23.9	24.3	24.2	23.8
LTE 12	17.4	17.5	17.5	17.7	17.4	17.4	23.4	23.2	23.2	23.2	23.6
LTE 13	18.2	18.2	18.6	18.2	18.2	18.1	23.4	23.1	23.6	23.5	23.6
LTE 14	18.6	18.4	18.2	18.2	18.6	18.1	23.0	23.4	23.0	23.0	23.4
LTE 25	13.5	13.5	13.5	13.4	13.7	13.4	23.6	23.2	23.3	23.1	23.1
LTE 26	19.4	19.5	19.6	19.6	19.8	19.6	23.9	23.8	23.6	23.8	23.9
LTE 30	14.7	14.6	14.4	14.4	14.5	14.7	20.2	20.2	20.0	20.0	20.2
LTE 66	14.7	14.2	14.5	14.5	14.3	14.3	22.8	23.1	22.8	22.9	23.0
LTE 38	18.0	17.6	17.7	17.7	17.6	17.9	23.2	23.2	23.4	23.7	23.4
LTE 41	18.3	18.5	18.3	18.3	18.6	18.5	23.7	24.1	23.8	24.0	23.7

Output Power Verification in dBm for EUT Top Edge											
Distance (mm)	25	26	27	28	29	30	31	32	33	34	35
WCDMA II	13.5	13.5	13.9	13.8	13.4	13.7	23.6	23.9	23.5	23.9	23.7
WCDMA V	20.4	20.3	20.3	20.5	20.0	20.3	23.3	23.8	23.7	23.3	23.6
LTE 2	13.8	13.4	13.3	13.7	13.6	13.8	23.1	23.0	22.8	22.9	23.2
LTE 4	14.5	14.3	14.2	14.5	14.2	14.6	23.4	23.6	23.6	23.3	23.6
LTE 5	19.8	19.8	19.8	19.5	19.6	19.8	23.7	23.2	23.6	23.4	23.5
LTE 7	14.0	13.6	13.8	13.9	13.7	13.9	24.3	23.8	24.1	23.9	24.1
LTE 12	17.7	17.3	17.4	17.3	17.2	17.3	23.7	23.7	23.5	23.5	23.7
LTE 13	18.3	18.6	18.4	18.2	18.1	18.5	23.5	23.4	23.4	23.3	23.6
LTE 14	18.6	18.2	18.6	18.5	18.1	18.1	23.3	23.2	22.9	23.3	23.1
LTE 25	13.9	13.5	13.5	13.5	13.6	13.9	23.1	23.5	23.2	23.2	23.6
LTE 26	19.6	19.5	19.6	19.6	19.6	19.4	23.9	23.7	23.9	23.7	23.8
LTE 30	14.2	14.2	14.3	14.7	14.2	14.6	20.0	19.8	20.2	19.9	19.9
LTE 66	14.3	14.3	14.3	14.7	14.4	14.6	20.7	20.2	20.6	20.7	20.4
LTE 38	14.2	14.4	14.6	14.4	14.7	14.3	22.8	23.2	23.1	22.9	23.0
LTE 41	18.4	18.4	18.6	18.4	18.5	18.7	23.7	23.8	23.7	24.0	23.7

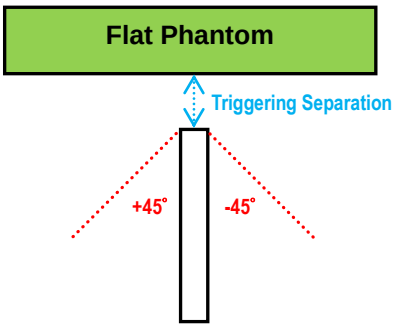
Output Power Verification in dBm for EUT Right Edge									
Distance (mm)	0	1	2	3	4	5	6	7	8
WCDMA II	13.5	13.4	13.4	13.9	23.6	24.0	23.8	23.6	23.8
WCDMA V	20.4	20.1	20.0	20.0	23.4	23.7	23.7	23.6	23.4
LTE 2	13.5	13.5	13.5	13.6	23.2	22.8	22.8	23.3	23.0
LTE 4	14.3	14.6	14.3	14.3	23.3	23.1	23.5	23.4	23.2
LTE 5	19.6	19.8	19.9	19.6	23.6	23.5	23.6	23.5	23.2
LTE 7	13.8	13.7	13.8	13.5	24.2	24.0	23.8	24.3	23.8
LTE 12	17.3	17.6	17.3	17.6	23.4	23.2	23.7	23.5	23.2
LTE 13	18.1	18.2	18.5	18.2	23.1	23.3	23.4	23.3	23.3
LTE 14	18.1	18.3	18.6	18.3	22.9	23.2	22.9	23.3	22.9
LTE 17	-0.2	-0.1	-0.4	-0.4	-0.3	-0.5	-0.2	-0.1	-0.1
LTE 25	13.6	13.6	13.6	13.4	23.2	23.6	23.6	23.4	23.1
LTE 26	19.8	19.8	19.8	19.8	24.0	23.9	23.8	23.6	24.1
LTE 30	14.3	14.5	14.6	14.2	19.7	20.1	19.8	20.1	19.9
LTE 66	14.5	14.2	14.7	14.6	23.2	22.7	22.9	23.2	22.7
LTE 38	17.8	17.9	18.0	17.7	23.5	23.6	23.2	23.4	23.6
LTE 41	18.5	18.8	18.5	18.5	24.0	23.6	23.7	24.1	24.0

Proximity Sensor Coverage (KDB 616217 D04 §6.3)

Since the proximity sensor is collocated with antenna in one component, the procedure for proximity sensor coverage is not required.

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

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



Orientation	Separation Distance (mm)	Tilt Angle										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
Top Edge	30	On	On	On	On	On	On	On	On	On	On	On
Right Edge	3	On	On	On	On	On	On	On	On	On	On	On

Summary for Proximity Sensor Triggering Test

<Tablet>

According to the procedures noticed in KDB 616217 D04, the proximity sensor triggering distance is 23 mm for EUT Rear Face, 30 mm for Top Side and 3 mm for Right Side. The separation distance of 30 mm determined by the smallest triggering distance on Top Side and 3 mm determined by the smallest triggering distance on Right Side is used to access the tilt angle influence and the sensor does not release during ±45 degree. Therefore, the smallest separation distance for tilt angle influence is 29 mm for the Top Side and 2 mm for the Right Side. The conservation triggering distances based on the separation distance for the sensor trigger / not triggered as EUT with power reduction at 0 mm, and EUT without power reduction at 22 mm for EUT Rear Face, 29 mm for Top Side and 2 mm for Top Side were used to test SAR.

The real SAR of test separation distance is 20mm for Rear Face and Top Side, 2mm for Right Side that declared by manufacture.

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

<Connections between EUT and System Simulator>

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during

<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 16QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for both QPSK and 16QAM modulation. The results please refer to section 4.6 of this report.

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	**BW 1.4 MHz**	**BW 3 MHz**	**BW 5 MHz**	**BW 10 MHz**	**BW 15 MHz**	**BW 20 MHz**
2	**V**	**V**	**V**	**V**	**V**	**V**
4	**V**	**V**	**V**	**V**	**V**	**V**
5	**V**	**V**	**V**	**V**		
7			**V**	**V**	**V**	**V**
12	**V**	**V**	**V**	**V**		
13			**V**	**V**		
14			**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**

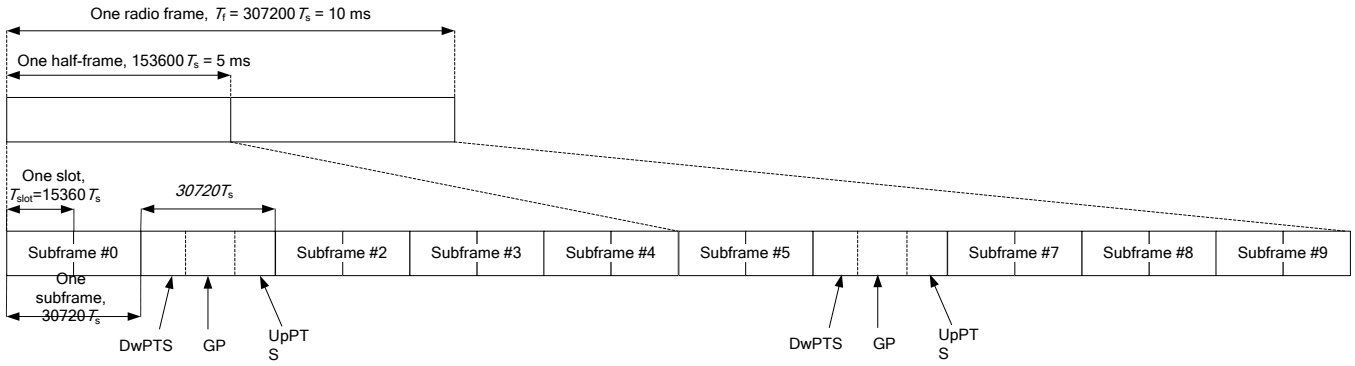
Note: MPR is according to the standard and implemented in the circuit (mandatory).

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%

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

LTE Uplink Carrier Aggregation (CA) Setup Configurations

This device supports LTE uplink CA for band 41 only with a maximum of two 20 MHz carrier components in the uplink. The maximum output power for uplink intra-band contiguous CA specified in Table 6.2.2A-1 of 3GPP TS 36.101 is the same as single carrier specified in Table 6.2.2-1 of 3GPP TS 36.101. In Table 6.2.3A-1 of 3GPP TS 36.101, the MPR (maximum power reduction) for several dB is allowed due to modulation and contiguously aggregated transmit bandwidth configuration. All the RF parameters in this device have followed above 3GPP criteria.

This device does not support full CA (Carrier Aggregation) features on 3GPP release 12. Its capability for LTE CA is for LTE band 41 only and supported configuration is shown in above. For network enhancement features, it does not support Wi-Fi Offloading, Enhanced SC-FDMA, Uplink MIMO, CoMP, HetNet, Relay, SON, Cross-Carrier Scheduling, eICIC, Enhanced Downlink MIMO, MBMS, M2M/D2D. All other uplink communications are identical to the LTE Release 8 specifications.

The Uplink Carrier Aggregation(CA) spec please refer to Appendix F

<Considerations Related to WLAN for Setup and Testing>

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

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

Initial Test Configuration

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

Subsequent Test Configuration

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

SAR Test Configuration and Channel Selection

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

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

2) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

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

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

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

2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

<Considerations Related to Bluetooth for Setup and Testing>

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

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

Time-domain plot for Bluetooth transmission signal

The duty factor of Bluetooth signal has been calculated as following.
Duty Factor = Pulse Width / Total Period = (9.21 - 6.36) / (10.11 - 6.36) = 76.00 %

4.2 EUT Testing Position

4.2.1 Body Exposure Conditions

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

The bystander SAR measurement procedure is as following.

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

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

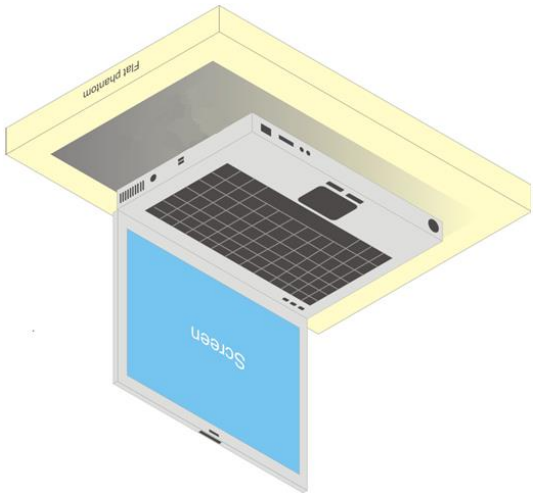


Fig-4.1 Illustration for Laptop Setup

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

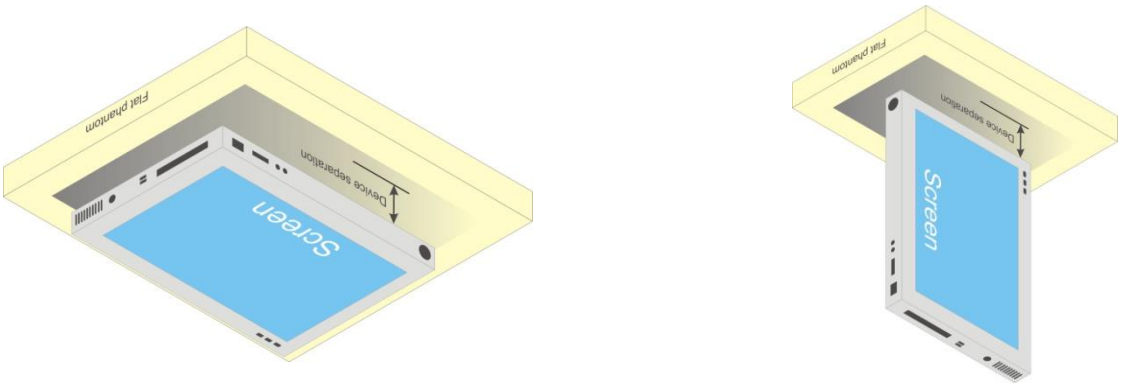


Fig-4.2 Illustration for Tablet Setup

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	23.3	0.897	42.647	0.89	41.9	0.79	1.78	Jul. 06, 2020
750	23.4	0.897	42.864	0.89	41.9	0.79	2.30	Jul. 07, 2020
750	23.4	0.897	42.647	0.89	41.9	0.79	1.78	Jul. 09, 2020
750	23.4	0.894	42.717	0.89	41.9	0.45	1.95	Jul. 13, 2020
750	23.4	0.885	42.46	0.89	41.9	-0.56	1.34	Jul. 14, 2020
750	23.1	0.894	43.432	0.89	41.9	0.45	3.66	Jul. 22, 2020
750	23.1	0.887	43.364	0.89	41.9	-0.34	3.49	Aug. 22, 2020
835	23.4	0.925	42.485	0.9	41.5	2.78	2.37	Jul. 09, 2020
835	23.4	0.93	41.83	0.9	41.5	3.33	0.80	Jul. 10, 2020
835	23.1	0.905	41.821	0.9	41.5	0.56	0.77	Jul. 18, 2020
835	23.4	0.918	42.893	0.9	41.5	2.00	3.36	Jul. 23, 2020
835	23.1	0.919	41.728	0.9	41.5	2.11	0.55	Aug. 21, 2020
835	23.3	0.921	42.338	0.9	41.5	2.33	2.02	Sep. 19, 2020
1750	23.3	1.333	39.613	1.37	40.1	-2.70	-1.21	Jul. 06, 2020
1750	23.4	1.323	38.792	1.37	40.1	-3.43	-3.26	Jul. 07, 2020
1750	23.4	1.328	40.776	1.37	40.1	-3.07	1.69	Jul. 10, 2020
1750	23.1	1.318	39.352	1.37	40.1	-3.80	-1.87	Jul. 20, 2020
1750	23.2	1.328	40.136	1.37	40.1	-3.07	0.09	Aug. 21, 2020
1900	23.4	1.461	38.219	1.4	40	4.36	-4.45	Jul. 07, 2020
1900	23.4	1.462	39.099	1.4	40	4.43	-2.25	Jul. 09, 2020
1900	23.4	1.457	40.352	1.4	40	4.07	0.88	Jul. 10, 2020
1900	23.4	1.46	38.238	1.4	40	4.29	-4.41	Jul. 14, 2020
1900	23.1	1.453	40.451	1.4	40	3.79	1.13	Jul. 18, 2020
1900	23.2	1.458	39.592	1.4	40	4.14	-1.02	Aug. 21, 2020
1900	23.3	1.453	40.45	1.4	40	3.79	1.13	Sep. 19, 2020
2300	23.4	1.721	39.83	1.67	39.5	3.05	0.84	Jul. 07, 2020
2300	23.4	1.703	38.707	1.67	39.5	1.98	-2.01	Jul. 10, 2020
2300	23.1	1.731	38.65	1.67	39.5	3.65	-2.15	Aug. 22, 2020
2300	23.3	1.725	38.606	1.67	39.5	3.29	-2.26	Sep. 19, 2020
2450	23.3	1.86	38.7	1.8	39.2	3.33	-1.28	Jul. 15, 2020
2450	23.4	1.876	39.282	1.8	39.2	4.22	0.21	Jul. 15, 2020
2450	23.2	1.87	37.896	1.8	39.2	3.89	-3.33	Jul. 16, 2020
2450	23.3	1.854	38.402	1.8	39.2	3.00	-2.04	Jul. 18, 2020
2450	23.1	1.878	38.844	1.8	39.2	4.33	-0.91	Jul. 18, 2020
2450	23.2	1.867	37.958	1.8	39.2	3.72	-3.17	Aug. 20, 2020

Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Test Date
2600	23.3	2.031	38.41	1.96	39	3.62	-1.51	Jul. 06, 2020
2600	23.4	2.037	38.801	1.96	39	3.93	-0.51	Jul. 07, 2020
2600	23.5	2.053	38.305	1.96	39	4.74	-1.78	Jul. 08, 2020
2600	23.2	1.993	38.211	1.96	39	1.68	-2.02	Jul. 09, 2020
2600	23.4	2.048	38.644	1.96	39	4.49	-0.91	Jul. 09, 2020
2600	23.4	2.005	37.66	1.96	39	2.30	-3.44	Jul. 10, 2020
2600	23.4	2.049	38.315	1.96	39	4.54	-1.76	Jul. 22, 2020
2600	23.4	2.029	38.505	1.96	39	3.52	-1.27	Jul. 23, 2020
2600	23.1	2.041	37.598	1.96	39	4.13	-3.59	Aug. 22, 2020
2600	23.4	2.035	38.413	1.96	39	3.83	-1.51	Sep. 01, 2020
5250	23.3	4.829	36.349	4.71	35.9	2.527	1.25	Jul. 14, 2020
5250	23.2	4.66	35.57	4.71	35.9	-1.06	-0.92	Jul. 16, 2020
5250	23.2	4.7	36.799	4.71	35.9	-0.21	2.50	Aug. 20, 2020
5600	23.3	5.102	36.508	5.07	35.5	0.63	2.84	Jul. 14, 2020
5600	23.4	5.025	34.997	5.07	35.5	-0.89	-1.42	Jul. 15, 2020
5600	23.2	5.03	35.094	5.07	35.5	-0.79	-1.14	Jul. 16, 2020
5600	23.2	5.074	36.37	5.07	35.5	0.08	2.45	Aug. 20, 2020
5750	23.3	5.262	36.283	5.22	35.4	0.80	2.49	Jul. 14, 2020
5750	23.4	5.165	34.56	5.22	35.4	-1.05	-2.37	Jul. 15, 2020
5750	23.2	5.185	34.875	5.22	35.4	-0.67	-1.48	Jul. 16, 2020
5750	23.2	5.121	36.517	5.22	35.4	-1.90	3.16	Aug. 20, 2020
5750	23.2	5.356	35.593	5.22	35.4	2.61	0.55	Sep. 26, 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
Jul. 06, 2020	7350	750	0.897	42.647	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 07, 2020	7350	750	0.897	42.864	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 09, 2020	7350	750	0.897	42.647	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 13, 2020	7350	750	0.894	42.717	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 14, 2020	7350	750	0.885	42.46	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 22, 2020	7472	750	0.894	43.432	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 22, 2020	7350	750	0.887	43.364	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 09, 2020	7350	835	0.925	42.485	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 10, 2020	7350	835	0.93	41.83	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 18, 2020	7537	835	0.905	41.821	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 23, 2020	7472	835	0.918	42.893	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 21, 2020	7350	835	0.919	41.728	Pass	Pass	Pass	N/A	N/A	N/A
Sep. 19, 2020	7350	1431	0.921	42.338	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 06, 2020	7350	1750	1.333	39.613	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 07, 2020	7350	1750	1.323	38.792	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 10, 2020	7350	1750	1.328	40.776	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 20, 2020	3971	1750	1.318	39.352	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 21, 2020	7350	1750	1.328	40.136	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 07, 2020	7350	1900	1.461	38.219	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 09, 2020	7350	1900	1.462	39.099	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 10, 2020	7350	1900	1.457	40.352	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 14, 2020	7350	1900	1.46	38.238	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 18, 2020	7537	1900	1.453	40.451	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 21, 2020	7350	1900	1.458	39.592	Pass	Pass	Pass	N/A	N/A	N/A
Sep. 19, 2020	7350	1431	1.453	40.45	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 07, 2020	7350	2300	1.721	39.83	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 10, 2020	7350	2300	1.703	38.707	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 22, 2020	7350	2300	1.731	38.65	Pass	Pass	Pass	N/A	N/A	N/A
Sep. 19, 2020	7350	1431	1.725	38.606	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 15, 2020	7472	2450	1.86	38.7	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 15, 2020	7350	2450	1.876	39.282	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 16, 2020	7350	2450	1.87	37.896	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 18, 2020	3650	2450	1.854	38.402	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 18, 2020	7537	2450	1.878	38.844	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 20, 2020	7350	2450	1.867	37.958	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 06, 2020	7350	2600	2.031	38.41	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 07, 2020	7350	2600	2.037	38.801	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 08, 2020	7472	2600	2.053	38.305	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 09, 2020	7472	2600	1.993	38.211	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 09, 2020	7350	2600	2.048	38.644	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 10, 2020	7350	2600	2.005	37.66	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 22, 2020	7472	2600	2.049	38.315	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 23, 2020	7472	2600	2.029	38.505	Pass	Pass	Pass	N/A	N/A	N/A
Aug. 22, 2020	7350	2600	2.041	37.598	Pass	Pass	Pass	N/A	N/A	N/A
Sep. 01, 2020	3971	2600	2.035	38.413	Pass	Pass	Pass	N/A	N/A	N/A
Jul. 14, 2020	7472	5250	4.829	36.349	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 16, 2020	7350	5250	4.66	35.57	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 20, 2020	7350	5250	4.7	36.799	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 14, 2020	7472	5600	5.102	36.508	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 15, 2020	7350	5600	5.025	34.997	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 16, 2020	7350	5600	5.03	35.094	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 20, 2020	7350	5600	5.074	36.37	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 14, 2020	7472	5750	5.262	36.283	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 15, 2020	7350	5750	5.165	34.56	Pass	Pass	Pass	OFDM	N/A	Pass
Jul. 16, 2020	7350	5750	5.185	34.875	Pass	Pass	Pass	OFDM	N/A	Pass
Aug. 20, 2020	7350	5750	5.121	36.517	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 26, 2020	7350	5750	5.356	35.593	Pass	Pass	Pass	OFDM	N/A	Pass

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
Jul. 06, 2020	750	8.56	0.395	7.90	-7.71	1013	7350	917
Jul. 07, 2020	750	8.56	0.388	7.76	-9.35	1013	7350	917
Jul. 09, 2020	750	8.56	0.388	7.76	-9.35	1013	7350	917
Jul. 13, 2020	750	8.56	0.41	8.20	-4.21	1013	7350	917
Jul. 14, 2020	750	8.56	0.412	8.24	-3.74	1013	7350	917
Jul. 22, 2020	750	8.56	0.397	7.94	-7.24	1013	7472	579
Aug. 22, 2020	750	8.56	0.387	7.74	-9.58	1013	7350	1431
Jul. 09, 2020	835	9.61	0.448	8.96	-6.76	4d121	7350	917
Jul. 10, 2020	835	9.61	0.464	9.28	-3.43	4d121	7350	917
Jul. 18, 2020	835	9.61	0.46	9.20	-4.27	4d121	7537	1585
Jul. 23, 2020	835	9.61	0.465	9.30	-3.23	4d121	7472	579
Aug. 21, 2020	835	9.61	0.471	9.42	-1.98	4d121	7350	1431
Sep. 19, 2020	835	9.44	0.492	9.84	4.24	4d166	7350	1431
Jul. 06, 2020	1750	37.00	1.73	34.60	-6.49	1055	7350	917
Jul. 07, 2020	1750	37.00	1.72	34.40	-7.03	1055	7350	917
Jul. 10, 2020	1750	37.00	1.73	34.60	-6.49	1055	7350	917
Jul. 20, 2020	1750	37.00	1.76	35.20	-4.86	1055	3971	1277
Aug. 21, 2020	1750	37.00	1.79	35.80	-3.24	1055	7350	1431
Jul. 07, 2020	1900	40.30	1.84	36.80	-8.68	5d036	7350	917
Jul. 09, 2020	1900	40.30	1.85	37.00	-8.19	5d036	7350	917
Jul. 10, 2020	1900	40.30	1.84	36.80	-8.68	5d036	7350	917
Jul. 14, 2020	1900	40.30	1.88	37.60	-6.70	5d036	7350	917
Jul. 18, 2020	1900	40.30	1.95	39.00	-3.23	5d036	7537	1585
Aug. 21, 2020	1900	40.30	1.95	39.00	-3.23	5d036	7350	1431
Sep. 19, 2020	1900	40.30	1.97	39.40	-2.23	5d036	7350	1431
Jul. 07, 2020	2300	48.80	2.3	46.00	-5.74	1004	7350	917
Jul. 10, 2020	2300	48.80	2.29	45.80	-6.15	1004	7350	917
Aug. 22, 2020	2300	48.80	2.39	47.80	-2.05	1004	7350	1431
Sep. 19, 2020	2300	48.80	2.36	47.20	-3.28	1004	7350	1431
Jul. 15, 2020	2450	52.70	2.45	49.00	-7.02	737	7472	579
Jul. 15, 2020	2450	52.70	2.46	49.20	-6.64	737	7350	917
Jul. 16, 2020	2450	52.70	2.44	48.80	-7.40	737	7350	917
Jul. 18, 2020	2450	52.70	2.58	51.60	-2.09	737	3650	861
Jul. 18, 2020	2450	52.70	2.51	50.20	-4.74	737	7537	1585
Aug. 20, 2020	2450	52.70	2.55	51.00	-3.23	737	7350	1431
Jul. 06, 2020	2600	57.30	2.81	56.20	-1.92	1020	7350	917
Jul. 07, 2020	2600	57.30	2.81	56.20	-1.92	1020	7350	917
Jul. 08, 2020	2600	57.30	3.08	61.60	7.50	1020	7472	579
Jul. 09, 2020	2600	57.30	3.03	60.60	5.76	1020	7472	579
Jul. 09, 2020	2600	57.30	2.8	56.00	-2.27	1020	7350	917
Jul. 10, 2020	2600	57.30	2.65	53.00	-7.50	1020	7350	917
Jul. 22, 2020	2600	57.30	3.07	61.40	7.16	1020	7472	579
Jul. 23, 2020	2600	57.30	3.07	61.40	7.16	1020	7472	579
Aug. 22, 2020	2600	57.30	3.07	61.40	7.16	1020	7350	1431
Sep. 01, 2020	2600	55.90	2.98	59.60	6.62	1077	3971	1277
Jul. 14, 2020	5250	79.70	3.81	76.20	-4.39	1019	7472	579
Jul. 16, 2020	5250	79.70	3.9	78.00	-2.13	1019	7350	917
Aug. 20, 2020	5250	79.70	3.83	76.60	-3.89	1019	7350	1431
Jul. 14, 2020	5600	83.80	3.96	79.20	-5.49	1019	7472	579
Jul. 15, 2020	5600	83.80	4.32	86.40	3.10	1019	7350	917
Jul. 16, 2020	5600	83.80	4.33	86.60	3.34	1019	7350	917
Aug. 20, 2020	5600	83.80	4.33	86.60	3.34	1019	7350	1431
Jul. 14, 2020	5750	80.40	3.84	76.80	-4.48	1019	7472	579
Jul. 15, 2020	5750	80.40	3.85	77.00	-4.23	1019	7350	917
Jul. 16, 2020	5750	80.40	3.92	78.40	-2.49	1019	7350	917
Aug. 20, 2020	5750	80.40	3.87	77.40	-3.73	1019	7350	1431
Sep. 26, 2020	5750	80.40	4.16	83.20	3.48	1019	7350	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

Refer to Appendix E.

4.6.2 Measured Conducted Power Result

Refer to Appendix F.

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 248227 D01, SAR Guidance for Wi-Fi Transmitters>

(1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

(2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is >1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n),SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

(3) For WLAN 5GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <=1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

(4) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

4.7.2 SAR Results for Body Exposure Condition

<Tablet>

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Ant Status	P-Sensor	Keyboard	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WCDMA II	RMC12.2K	Rear Face	20	9262	Ant 0	w/o		24.00	23.99	1.00	0.02	0.271	0.27
	WCDMA II	RMC12.2K	Left Side	0	9262	Ant 0	w/o		24.00	23.99	1.00	0	<0.001	0.00
	WCDMA II	RMC12.2K	Right Side	0	9262	Ant 0	w/o		24.00	23.99	1.00	-0.11	0.285	0.29
	WCDMA II	RMC12.2K	Top Side	20	9262	Ant 0	w/o		24.00	23.99	1.00	0.06	0.152	0.15
	WCDMA II	RMC12.2K	Bottom Side	0	9262	Ant 0	w/o		24.00	23.99	1.00	0	<0.001	0.00
	WCDMA II	RMC12.2K	Rear Face	0	9262	Ant 0	w/		14.00	13.89	1.03	-0.1	0.588	0.61
	WCDMA II	RMC12.2K	Top Side	0	9262	Ant 0	w/		14.00	13.89	1.03	-0.1	0.191	0.20
01	WCDMA II	RMC12.2K	Rear Face	0	9400	Ant 0	w/		14.00	13.74	1.06	0.15	0.664	**0.70**
	WCDMA II	RMC12.2K	Rear Face	0	9538	Ant 0	w/		14.00	13.85	1.04	-0.12	0.662	0.69
	WCDMA II	RMC12.2K	Rear Face	0	9400	Ant 0	w/	v	14.00	13.74	1.06	-0.18	0.338	0.36
	WCDMA V	RMC12.2K	Rear Face	20	4132	Ant 0	w/o		24.00	23.79	1.05	0.02	0.115	0.12
	WCDMA V	RMC12.2K	Left Side	0	4132	Ant 0	w/o		24.00	23.79	1.05	0	<0.001	0.00
	WCDMA V	RMC12.2K	Right Side	0	4132	Ant 0	w/o		24.00	23.79	1.05	-0.18	0.376	0.39
	WCDMA V	RMC12.2K	Top Side	20	4132	Ant 0	w/o		24.00	23.79	1.05	0.03	0.110	0.12
	WCDMA V	RMC12.2K	Bottom Side	0	4132	Ant 0	w/o		24.00	23.79	1.05	0	<0.001	0.00
	WCDMA V	RMC12.2K	Rear Face	0	4132	Ant 0	w/		20.50	20.49	1.00	-0.14	0.548	0.55
02	WCDMA V	RMC12.2K	Top Side	0	4132	Ant 0	w/		20.50	20.49	1.00	0.1	0.884	**0.88**
	WCDMA V	RMC12.2K	Top Side	0	4182	Ant 0	w/		20.50	20.38	1.03	0.05	0.783	0.81
	WCDMA V	RMC12.2K	Top Side	0	4233	Ant 0	w/		20.50	20.41	1.02	0.19	0.856	0.87
	WCDMA V	RMC12.2K	Top Side	0	4132	Ant 0	w/	v	20.50	20.49	1.00	-0.12	0.785	0.79
	WCDMA V	RMC12.2K	Top Side	0	4132	Ant 0	w/		20.50	20.49	1.00	0.1	0.868	0.87

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Keyboard	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 4	QPSK20M	Rear Face	20	20300	1	0	Ant 0	w/o		24.50	23.56	1.24	-0.06	0.357	0.44
	LTE 4	QPSK20M	Left Side	0	20300	1	0	Ant 0	w/o		24.50	23.56	1.24	0	<0.001	0.00
	LTE 4	QPSK20M	Right Side	0	20300	1	0	Ant 0	w/o		24.50	23.56	1.24	0.02	0.32	0.40
	LTE 4	QPSK20M	Top Side	20	20300	1	0	Ant 0	w/o		24.50	23.56	1.24	-0.02	0.236	0.29
	LTE 4	QPSK20M	Bottom Side	0	20300	1	0	Ant 0	w/o		24.50	23.56	1.24	0	<0.001	0.00
	LTE 4	QPSK20M	Rear Face	20	20300	50	25	Ant 0	w/o		23.50	23.02	1.12	-0.07	0.289	0.32
	LTE 4	QPSK20M	Left Side	0	20300	50	25	Ant 0	w/o		23.50	23.02	1.12	0	<0.001	0.00
	LTE 4	QPSK20M	Right Side	0	20300	50	25	Ant 0	w/o		23.50	23.02	1.12	0.05	0.253	0.28
	LTE 4	QPSK20M	Top Side	20	20300	50	25	Ant 0	w/o		23.50	23.02	1.12	0.07	0.207	0.23
	LTE 4	QPSK20M	Bottom Side	0	20300	50	25	Ant 0	w/o		23.50	23.02	1.12	0	<0.001	0.00
03	LTE 4	QPSK20M	Rear Face	0	20300	1	0	Ant 0	w/		15.00	14.64	1.09	-0.1	0.623	**0.68**
	LTE 4	QPSK20M	Top Side	0	20300	1	0	Ant 0	w/		15.00	14.64	1.09	-0.18	0.214	0.23
	LTE 4	QPSK20M	Rear Face	0	20300	50	0	Ant 0	w/		14.00	13.71	1.07	-0.05	0.447	0.48
	LTE 4	QPSK20M	Top Side	0	20300	50	0	Ant 0	w/		14.00	13.71	1.07	0.06	0.181	0.19
	LTE 4	QPSK20M	Rear Face	0	20050	1	0	Ant 0	w/		15.00	14.32	1.17	-0.18	0.484	0.57
	LTE 4	QPSK20M	Rear Face	0	20175	1	0	Ant 0	w/		15.00	14.49	1.12	-0.17	0.523	0.59
	LTE 4	QPSK20M	Rear Face	0	20300	1	0	Ant 0	w/	v	15.00	14.64	1.09	0.04	0.195	0.21
	LTE 5	QPSK10M	Rear Face	20	20450	1	0	Ant 0	w/o		24.50	23.69	1.21	0.02	0.124	0.15
	LTE 5	QPSK10M	Left Side	0	20450	1	0	Ant 0	w/o		24.50	23.69	1.21	0	<0.001	0.00
	LTE 5	QPSK10M	Right Side	0	20450	1	0	Ant 0	w/o		24.50	23.69	1.21	-0.06	0.325	0.39
	LTE 5	QPSK10M	Top Side	20	20450	1	0	Ant 0	w/o		24.50	23.69	1.21	0.06	0.104	0.13
	LTE 5	QPSK10M	Bottom Side	0	20450	1	0	Ant 0	w/o		24.50	23.69	1.21	0	<0.001	0.00
	LTE 5	QPSK10M	Rear Face	20	20450	25	0	Ant 0	w/o		23.50	23.14	1.09	0.08	0.110	0.12
	LTE 5	QPSK10M	Left Side	0	20450	25	0	Ant 0	w/o		23.50	23.14	1.09	0	<0.001	0.00
	LTE 5	QPSK10M	Right Side	0	20450	25	0	Ant 0	w/o		23.50	23.14	1.09	0.11	0.293	0.32
	LTE 5	QPSK10M	Top Side	20	20450	25	0	Ant 0	w/o		23.50	23.14	1.09	0.06	0.089	0.10
	LTE 5	QPSK10M	Bottom Side	0	20450	25	0	Ant 0	w/o		23.50	23.14	1.09	0	<0.001	0.00
	LTE 5	QPSK10M	Rear Face	0	20450	1	0	Ant 0	w/		20.00	19.91	1.02	-0.12	0.527	0.54
	LTE 5	QPSK10M	Top Side	0	20450	1	0	Ant 0	w/		20.00	19.91	1.02	-0.1	0.712	0.73
	LTE 5	QPSK10M	Rear Face	0	20450	25	0	Ant 0	w/		19.00	18.98	1.00	-0.07	0.432	0.43
	LTE 5	QPSK10M	Top Side	0	20450	25	0	Ant 0	w/		19.00	18.98	1.00	-0.09	0.578	0.58
	LTE 5	QPSK10M	Top Side	0	20525	1	0	Ant 0	w/		20.00	19.87	1.03	-0.09	0.747	0.77
04	LTE 5	QPSK10M	Top Side	0	20600	1	0	Ant 0	w/		20.00	19.83	1.04	-0.08	0.747	**0.78**
	LTE 5	QPSK10M	Top Side	0	20600	1	0	Ant 0	w/	v	20.00	19.83	1.04	-0.12	0.698	0.73

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Keyboard	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 7	QPSK20M	Rear Face	20	20850	1	0	Ant 0	w/o		24.50	24.32	1.04	0.12	0.28	0.29
	LTE 7	QPSK20M	Left Side	0	20850	1	0	Ant 0	w/o		24.50	24.32	1.04	0	<0.001	0.00
	LTE 7	QPSK20M	Right Side	2	20850	1	0	Ant 0	w/o		24.50	24.32	1.04	-0.15	1.08	1.12
	LTE 7	QPSK20M	Top Side	20	20850	1	0	Ant 0	w/o		24.50	24.32	1.04	0.17	0.177	0.18
	LTE 7	QPSK20M	Bottom Side	0	20850	1	0	Ant 0	w/o		24.50	24.32	1.04	0	<0.001	0.00
	LTE 7	QPSK20M	Rear Face	20	20850	50	0	Ant 0	w/o		23.50	23.46	1.01	-0.01	0.216	0.22
	LTE 7	QPSK20M	Left Side	0	20850	50	0	Ant 0	w/o		23.50	23.46	1.01	0	<0.001	0.00
	LTE 7	QPSK20M	Right Side	2	20850	50	0	Ant 0	w/o		23.50	23.46	1.01	-0.15	0.857	0.87
	LTE 7	QPSK20M	Top Side	20	20850	50	0	Ant 0	w/o		23.50	23.46	1.01	0.03	0.151	0.15
	LTE 7	QPSK20M	Bottom Side	0	20850	50	0	Ant 0	w/o		23.50	23.46	1.01	0	<0.001	0.00
	LTE 7	QPSK20M	Right Side	2	20850	100	0	Ant 0	w/o		23.50	23.42	1.02	0.02	0.839	0.86
	LTE 7	QPSK20M	Rear Face	0	20850	1	0	Ant 0	w/		14.00	13.99	1.00	-0.11	0.618	0.62
	LTE 7	QPSK20M	Right Side	0	20850	1	0	Ant 0	w/		14.00	13.99	1.00	0.09	0.118	0.12
	LTE 7	QPSK20M	Top Side	0	20850	1	0	Ant 0	w/		14.00	13.99	1.00	-0.05	0.251	0.25
	LTE 7	QPSK20M	Rear Face	0	20850	50	0	Ant 0	w/		13.00	12.97	1.01	0.03	0.456	0.46
	LTE 7	QPSK20M	Right Side	0	20850	50	0	Ant 0	w/		13.00	12.97	1.01	0.08	0.095	0.10
	LTE 7	QPSK20M	Top Side	0	20850	50	0	Ant 0	w/		13.00	12.97	1.01	-0.13	0.315	0.32
05	LTE 7	QPSK20M	Right Side	2	21100	1	0	Ant 0	w/o		24.50	24.13	1.09	-0.1	1.07	**1.17**
	LTE 7	QPSK20M	Right Side	2	21350	1	0	Ant 0	w/o		24.50	24.12	1.09	-0.18	1.05	1.14
	LTE 7	QPSK20M	Right Side	2	21100	50	0	Ant 0	w/o		23.50	23.45	1.01	-0.11	0.881	0.89
	LTE 7	QPSK20M	Right Side	2	21350	50	0	Ant 0	w/o		23.50	23.46	1.01	0.05	0.905	0.91
	LTE 7	QPSK20M	Right Side	2	21100	1	0	Ant 0	w/o	v	24.50	24.13	1.09	-0.06	0.729	0.79
	LTE 7	QPSK20M	Right Side	2	21100	1	0	Ant 0	w/o		24.50	24.13	1.09	-0.12	1.02	1.11
	LTE 12	QPSK10M	Rear Face	20	23130	1	0	Ant 0	w/o		24.50	23.71	1.20	-0.03	0.165	0.20
	LTE 12	QPSK10M	Left Side	0	23130	1	0	Ant 0	w/o		24.50	23.71	1.20	0	<0.001	0.00
	LTE 12	QPSK10M	Right Side	0	23130	1	0	Ant 0	w/o		24.50	23.71	1.20	-0.05	0.367	0.44
	LTE 12	QPSK10M	Top Side	20	23130	1	0	Ant 0	w/o		24.50	23.71	1.20	-0.11	0.130	0.16
	LTE 12	QPSK10M	Bottom Side	0	23130	1	0	Ant 0	w/o		24.50	23.71	1.20	0	<0.001	0.00
	LTE 12	QPSK10M	Rear Face	20	23130	25	0	Ant 0	w/o		23.50	23.13	1.09	-0.09	0.163	0.18
	LTE 12	QPSK10M	Left Side	0	23130	25	0	Ant 0	w/o		23.50	23.13	1.09	0	<0.001	0.00
	LTE 12	QPSK10M	Right Side	0	23130	25	0	Ant 0	w/o		23.50	23.13	1.09	-0.06	0.315	0.34
	LTE 12	QPSK10M	Top Side	20	23130	25	0	Ant 0	w/o		23.50	23.13	1.09	-0.06	0.127	0.14
	LTE 12	QPSK10M	Bottom Side	0	23130	25	0	Ant 0	w/o		23.50	23.13	1.09	0	<0.001	0.00
06	LTE 12	QPSK10M	Rear Face	0	23130	1	0	Ant 0	w/		18.00	17.66	1.08	-0.14	0.642	**0.69**
	LTE 12	QPSK10M	Top Side	0	23130	1	0	Ant 0	w/		18.00	17.66	1.08	-0.03	0.560	0.60
	LTE 12	QPSK10M	Rear Face	0	23130	25	0	Ant 0	w/		17.00	16.62	1.09	-0.04	0.494	0.54
	LTE 12	QPSK10M	Top Side	0	23130	25	0	Ant 0	w/		17.00	16.62	1.09	-0.09	0.429	0.47
	LTE 12	QPSK10M	Rear Face	0	23060	1	0	Ant 0	w/		18.00	17.56	1.11	-0.01	0.614	0.68
	LTE 12	QPSK10M	Rear Face	0	23095	1	0	Ant 0	w/		18.00	17.61	1.09	-0.03	0.628	0.68
	LTE 12	QPSK10M	Rear Face	0	23130	1	0	Ant 0	w/	v	18.00	17.66	1.08	-0.14	0.268	0.29
	LTE 13	QPSK10M	Rear Face	20	23230	1	0	Ant 0	w/o		24.50	23.63	1.22	-0.12	0.132	0.16
	LTE 13	QPSK10M	Left Side	0	23230	1	0	Ant 0	w/o		24.50	23.63	1.22	0	<0.001	0.00
	LTE 13	QPSK10M	Right Side	0	23230	1	0	Ant 0	w/o		24.50	23.63	1.22	0.03	0.324	0.40
	LTE 13	QPSK10M	Top Side	20	23230	1	0	Ant 0	w/o		24.50	23.63	1.22	0.03	0.158	0.19
	LTE 13	QPSK10M	Bottom Side	0	23230	1	0	Ant 0	w/o		24.50	23.63	1.22	0	<0.001	0.00
	LTE 13	QPSK10M	Rear Face	20	23230	25	0	Ant 0	w/o		23.50	23.45	1.01	-0.11	0.137	0.14
	LTE 13	QPSK10M	Left Side	0	23230	25	0	Ant 0	w/o		23.50	23.45	1.01	0	<0.001	0.00
	LTE 13	QPSK10M	Right Side	0	23230	25	0	Ant 0	w/o		23.50	23.45	1.01	0.09	0.331	0.33
	LTE 13	QPSK10M	Top Side	20	23230	25	0	Ant 0	w/o		23.50	23.45	1.01	-0.04	0.170	0.17
	LTE 13	QPSK10M	Bottom Side	0	23230	25	0	Ant 0	w/o		23.50	23.45	1.01	0	<0.001	0.00
	LTE 13	QPSK10M	Rear Face	0	23230	1	0	Ant 0	w/		19.00	18.55	1.11	-0.05	0.544	0.60
07	LTE 13	QPSK10M	Top Side	0	23230	1	0	Ant 0	w/		19.00	18.55	1.11	-0.03	0.674	**0.75**
	LTE 13	QPSK10M	Rear Face	0	23230	25	0	Ant 0	w/		18.00	17.71	1.07	-0.08	0.421	0.45
	LTE 13	QPSK10M	Top Side	0	23230	25	0	Ant 0	w/		18.00	17.71	1.07	-0.07	0.534	0.57
	LTE 13	QPSK10M	Top Side	0	23230	1	0	Ant 0	w/	v	19.00	18.55	1.11	-0.09	0.618	0.69
	LTE 14	QPSK10M	Rear Face	20	23330	1	0	Ant 0	w/o		24.00	23.40	1.15	-0.05	0.144	0.17
	LTE 14	QPSK10M	Left Side	0	23330	1	0	Ant 0	w/o		24.00	23.40	1.15	0	<0.001	0.00
	LTE 14	QPSK10M	Right Side	0	23330	1	0	Ant 0	w/o		24.00	23.40	1.15	-0.12	0.336	0.39
	LTE 14	QPSK10M	Top Side	20	23330	1	0	Ant 0	w/o		24.00	23.40	1.15	-0.02	0.163	0.19
	LTE 14	QPSK10M	Bottom Side	0	23330	1	0	Ant 0	w/o		24.00	23.40	1.15	0	<0.001	0.00
	LTE 14	QPSK10M	Rear Face	20	23330	25	0	Ant 0	w/o		23.00	22.36	1.16	-0.13	0.113	0.13
	LTE 14	QPSK10M	Left Side	0	23330	25	0	Ant 0	w/o		23.00	22.36	1.16	0	<0.001	0.00
	LTE 14	QPSK10M	Right Side	0	23330	25	0	Ant 0	w/o		23.00	22.36	1.16	-0.19	0.274	0.32
	LTE 14	QPSK10M	Top Side	20	23330	25	0	Ant 0	w/o		23.00	22.36	1.16	-0.06	0.142	0.16
	LTE 14	QPSK10M	Bottom Side	0	23330	25	0	Ant 0	w/o		23.00	22.36	1.16	0	<0.001	0.00
	LTE 14	QPSK10M	Rear Face	0	23330	1	0	Ant 0	w/		19.00	18.57	1.10	-0.05	0.513	0.56
08	LTE 14	QPSK10M	Top Side	0	23330	1	0	Ant 0	w/		19.00	18.57	1.10	-0.09	0.683	**0.75**
	LTE 14	QPSK10M	Rear Face	0	23330	25	0	Ant 0	w/		18.00	17.59	1.10	-0.12	0.406	0.45
	LTE 14	QPSK10M	Top Side	0	23330	25	0	Ant 0	w/		18.00	17.59	1.10	-0.06	0.479	0.53
	LTE 14	QPSK10M	Top Side	0	23330	1	0	Ant 0	w/	v	19.00	18.57	1.10	-0.01	0.625	0.69

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Keyboard	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 25	QPSK20M	Rear Face	20	26590	1	0	Ant 0	w/o		24.50	23.57	1.24	-0.1	0.487	0.60
	LTE 25	QPSK20M	Left Side	0	26590	1	0	Ant 0	w/o		24.50	23.57	1.24	0	<0.001	0.00
	LTE 25	QPSK20M	Right Side	0	26590	1	0	Ant 0	w/o		24.50	23.57	1.24	0.03	0.317	0.39
	LTE 25	QPSK20M	Top Side	20	26590	1	0	Ant 0	w/o		24.50	23.57	1.24	0.13	0.435	0.54
	LTE 25	QPSK20M	Bottom Side	0	26590	1	0	Ant 0	w/o		24.50	23.57	1.24	0	<0.001	0.00
	LTE 25	QPSK20M	Rear Face	20	26590	50	0	Ant 0	w/o		23.50	22.97	1.13	0.01	0.419	0.47
	LTE 25	QPSK20M	Left Side	0	26590	50	0	Ant 0	w/o		23.50	22.97	1.13	0	<0.001	0.00
	LTE 25	QPSK20M	Right Side	0	26590	50	0	Ant 0	w/o		23.50	22.97	1.13	0.06	0.225	0.25
	LTE 25	QPSK20M	Top Side	20	26590	50	0	Ant 0	w/o		23.50	22.97	1.13	0.09	0.386	0.44
	LTE 25	QPSK20M	Bottom Side	0	26590	50	0	Ant 0	w/o		23.50	22.97	1.13	0	<0.001	0.00
	LTE 25	QPSK20M	Rear Face	0	26365	1	0	Ant 0	w/		14.00	13.94	1.01	-0.14	0.658	0.66
	LTE 25	QPSK20M	Top Side	0	26365	1	0	Ant 0	w/		14.00	13.94	1.01	0.16	0.169	0.17
	LTE 25	QPSK20M	Rear Face	0	26365	50	0	Ant 0	w/		13.00	12.98	1.00	-0.16	0.524	0.52
	LTE 25	QPSK20M	Top Side	0	26365	50	0	Ant 0	w/		13.00	12.98	1.00	0.12	0.13	0.13
	LTE 25	QPSK20M	Rear Face	0	26140	1	0	Ant 0	w/		14.00	13.89	1.03	-0.11	0.682	0.70
09	LTE 25	QPSK20M	Rear Face	0	26590	1	0	Ant 0	w/		14.00	13.92	1.02	-0.19	0.688	**0.70**
	LTE 25	QPSK20M	Rear Face	0	26590	1	0	Ant 0	w/	v	14.00	13.92	1.02	0.04	0.338	0.34
	LTE 26	QPSK15M	Rear Face	20	26865	1	0	Ant 0	w/o		24.50	24.05	1.11	-0.06	0.147	0.16
	LTE 26	QPSK15M	Left Side	0	26865	1	0	Ant 0	w/o		24.50	24.05	1.11	0	<0.001	0.00
	LTE 26	QPSK15M	Right Side	0	26865	1	0	Ant 0	w/o		24.50	24.05	1.11	0.02	0.398	0.44
	LTE 26	QPSK15M	Top Side	20	26865	1	0	Ant 0	w/o		24.50	24.05	1.11	0.01	0.118	0.13
	LTE 26	QPSK15M	Bottom Side	0	26865	1	0	Ant 0	w/o		24.50	24.05	1.11	0	<0.001	0.00
	LTE 26	QPSK15M	Rear Face	20	26865	36	0	Ant 0	w/o		23.50	23.40	1.02	-0.12	0.112	0.11
	LTE 26	QPSK15M	Left Side	0	26865	36	0	Ant 0	w/o		23.50	23.40	1.02	0	<0.001	0.00
	LTE 26	QPSK15M	Right Side	0	26865	36	0	Ant 0	w/o		23.50	23.40	1.02	0.06	0.337	0.34
	LTE 26	QPSK15M	Top Side	20	26865	36	0	Ant 0	w/o		23.50	23.40	1.02	0.08	0.093	0.09
	LTE 26	QPSK15M	Bottom Side	0	26865	36	0	Ant 0	w/o		23.50	23.40	1.02	0	<0.001	0.00
	LTE 26	QPSK15M	Rear Face	0	26865	1	0	Ant 0	w/		20.00	19.91	1.02	-0.13	0.427	0.44
	LTE 26	QPSK15M	Top Side	0	26865	1	0	Ant 0	w/		20.00	19.91	1.02	-0.1	0.804	0.82
	LTE 26	QPSK15M	Rear Face	0	26865	36	0	Ant 0	w/		19.00	18.97	1.01	0.02	0.673	0.68
	LTE 26	QPSK15M	Top Side	0	26865	36	0	Ant 0	w/		19.00	18.97	1.01	-0.09	0.575	0.58
	LTE 26	QPSK15M	Top Side	0	26865	75	0	Ant 0	w/		19.00	18.95	1.01	-0.06	0.554	0.56
10	LTE 26	QPSK15M	Top Side	0	26765	1	0	Ant 0	w/		20.00	19.89	1.03	-0.04	0.830	**0.85**
	LTE 26	QPSK15M	Top Side	0	26965	1	0	Ant 0	w/		20.00	19.87	1.03	-0.08	0.788	0.81
	LTE 26	QPSK15M	Top Side	0	26765	1	0	Ant 0	w/	v	20.00	19.89	1.03	-0.11	0.763	0.79
	LTE 26	QPSK15M	Top Side	0	26765	1	0	Ant 0	w/		20.00	19.89	1.03	0.02	0.816	0.84
	LTE 30	QPSK10M	Rear Face	20	27710	1	0	Ant 0	w/o		20.50	20.21	1.07	0.13	0.118	0.13
	LTE 30	QPSK10M	Left Side	0	27710	1	0	Ant 0	w/o		20.50	20.21	1.07	0	<0.001	0.00
	LTE 30	QPSK10M	Right Side	0	27710	1	0	Ant 0	w/o		20.50	20.21	1.07	-0.17	0.515	0.55
	LTE 30	QPSK10M	Top Side	20	27710	1	0	Ant 0	w/o		20.50	20.21	1.07	0.05	0.068	0.07
	LTE 30	QPSK10M	Bottom Side	0	27710	1	0	Ant 0	w/o		20.50	20.21	1.07	0	<0.001	0.00
	LTE 30	QPSK10M	Rear Face	20	27710	25	0	Ant 0	w/o		19.50	19.14	1.09	0.06	0.086	0.09
	LTE 30	QPSK10M	Left Side	0	27710	25	0	Ant 0	w/o		19.50	19.14	1.09	0	<0.001	0.00
	LTE 30	QPSK10M	Right Side	0	27710	25	0	Ant 0	w/o		19.50	19.14	1.09	-0.13	0.387	0.42
	LTE 30	QPSK10M	Top Side	20	27710	25	0	Ant 0	w/o		19.50	19.14	1.09	0.05	0.053	0.06
	LTE 30	QPSK10M	Bottom Side	0	27710	25	0	Ant 0	w/o		19.50	19.14	1.09	0	<0.001	0.00
11	LTE 30	QPSK10M	Rear Face	0	27710	1	0	Ant 0	w/		15.00	14.67	1.08	-0.08	0.747	**0.81**
	LTE 30	QPSK10M	Top Side	0	27710	1	0	Ant 0	w/		15.00	14.67	1.08	-0.12	0.233	0.25
	LTE 30	QPSK10M	Rear Face	0	27710	25	0	Ant 0	w/		14.00	13.73	1.06	0.08	0.642	0.68
	LTE 30	QPSK10M	Top Side	0	27710	25	0	Ant 0	w/		14.00	13.73	1.06	-0.19	0.165	0.17
	LTE 30	QPSK10M	Rear Face	0	27710	1	0	Ant 0	w/	v	15.00	14.67	1.08	-0.03	0.303	0.33

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Keyboard	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 41	QPSK20M	Rear Face	20	40620	1	0	Ant 0	w/o		24.50	24.09	1.10	-0.04	0.194	0.21
	LTE 41	QPSK20M	Left Side	0	40620	1	0	Ant 0	w/o		24.50	24.09	1.10	0	<0.001	0.00
	LTE 41	QPSK20M	Right Side	2	40620	1	0	Ant 0	w/o		24.50	24.09	1.10	-0.12	0.925	1.02
	LTE 41	QPSK20M	Top Side	20	40620	1	0	Ant 0	w/o		24.50	24.09	1.10	-0.11	0.181	0.20
	LTE 41	QPSK20M	Bottom Side	0	40620	1	0	Ant 0	w/o		24.50	24.09	1.10	0	<0.001	0.00
	LTE 41	QPSK20M	Rear Face	20	40620	50	0	Ant 0	w/o		23.50	23.49	1.00	-0.04	0.153	0.15
	LTE 41	QPSK20M	Left Side	0	40620	50	0	Ant 0	w/o		23.50	23.49	1.00	0	<0.001	0.00
	LTE 41	QPSK20M	Right Side	2	40620	50	0	Ant 0	w/o		23.50	23.49	1.00	0.02	0.635	0.64
	LTE 41	QPSK20M	Top Side	20	40620	50	0	Ant 0	w/o		23.50	23.49	1.00	-0.13	0.18	0.18
	LTE 41	QPSK20M	Bottom Side	0	40620	50	0	Ant 0	w/o		23.50	23.49	1.00	0	<0.001	0.00
	LTE 41	QPSK20M	Right Side	2	40620	100	0	Ant 0	w/o		23.50	23.44	1.01	-0.02	0.615	0.62
	LTE 41	QPSK20M	Rear Face	0	41055	1	0	Ant 0	w/		17.00	16.59	1.10	0.14	0.811	0.89
	LTE 41	QPSK20M	Right Side	0	41055	1	0	Ant 0	w/		17.00	16.59	1.10	0.16	0.218	0.24
	LTE 41	QPSK20M	Top Side	0	41055	1	0	Ant 0	w/		17.00	16.59	1.10	-0.15	0.563	0.62
	LTE 41	QPSK20M	Rear Face	0	41055	50	0	Ant 0	w/		16.00	15.47	1.13	-0.13	0.539	0.61
	LTE 41	QPSK20M	Right Side	0	41055	50	0	Ant 0	w/		16.00	15.47	1.13	-0.14	0.116	0.13
	LTE 41	QPSK20M	Top Side	0	41055	50	0	Ant 0	w/		16.00	15.47	1.13	-0.17	0.533	0.60
	LTE 41	QPSK20M	Rear Face	0	41055	100	0	Ant 0	w/		16.00	15.23	1.19	-0.14	0.525	0.62
	LTE 41	QPSK20M	Right Side	2	39750	1	0	Ant 0	w/o		24.50	23.94	1.14	-0.05	0.625	0.71
	LTE 41	QPSK20M	Right Side	2	39790	1	0	Ant 0	w/o		24.50	23.89	1.15	-0.06	0.662	0.76
	LTE 41	QPSK20M	Right Side	2	40185	1	0	Ant 0	w/o		24.50	23.88	1.15	-0.09	0.824	0.95
12	LTE 41	QPSK20M	Right Side	2	41055	1	0	Ant 0	w/o		24.50	24.08	1.10	-0.04	0.966	**1.06**
	LTE 41	QPSK20M	Right Side	2	41490	1	0	Ant 0	w/o		24.50	23.19	1.35	-0.06	0.543	0.73
	LTE 41	QPSK20M	Rear Face	0	39750	1	0	Ant 0	w/		17.00	16.32	1.17	-0.12	0.642	0.75
	LTE 41	QPSK20M	Rear Face	0	39790	1	0	Ant 0	w/		17.00	16.31	1.17	-0.11	0.635	0.74
	LTE 41	QPSK20M	Rear Face	0	40185	1	0	Ant 0	w/		17.00	16.27	1.18	-0.14	0.632	0.75
	LTE 41	QPSK20M	Rear Face	0	40620	1	0	Ant 0	w/		17.00	16.58	1.10	-0.02	0.734	0.81
	LTE 41	QPSK20M	Rear Face	0	41490	1	0	Ant 0	w/		17.00	15.79	1.32	-0.14	0.551	0.73
	LTE 41	QPSK20M	Right Side	2	41055	1	0	Ant 0	w/o	v	24.50	24.08	1.10	0.05	0.713	0.78
	LTE 41	QPSK20M	Right Side	2	41055	1	0	Ant 0	w/o		24.50	24.08	1.10	-0.04	0.952	1.05
	LTE 41	QPSK20M	Right Side	2	PCC 40620 SCC 40818	1 1	99 0	Ant 0	w/o		24.50	23.82	1.17	0.01	0.822	0.96
	LTE 41	QPSK20M	Right Side	2	PCC 39750 SCC 39948	1 1	99 0	Ant 0	w/o		24.50	23.27	1.33	-0.12	0.694	0.92
	LTE 41	QPSK20M	Right Side	2	PCC 40185 SCC 40383	1 1	99 0	Ant 0	w/o		24.50	23.41	1.29	0.09	0.702	0.91
	LTE 41	QPSK20M	Right Side	2	PCC 41055 SCC 41253	1 1	99 0	Ant 0	w/o		24.50	23.40	1.29	-0.11	0.712	0.92
	LTE 41	QPSK20M	Right Side	2	PCC 41292 SCC 41490	1 1	99 0	Ant 0	w/o		24.50	22.86	1.46	0.08	0.615	0.90
	LTE 66	QPSK20M	Rear Face	20	132072	1	0	Ant 0	w/o		24.00	23.19	1.21	-0.03	0.155	0.19
	LTE 66	QPSK20M	Left Side	0	132072	1	0	Ant 0	w/o		24.00	23.19	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Right Side	0	132072	1	0	Ant 0	w/o		24.00	23.19	1.21	-0.06	0.177	0.21
	LTE 66	QPSK20M	Top Side	20	132072	1	0	Ant 0	w/o		24.00	23.19	1.21	0.01	0.087	0.11
	LTE 66	QPSK20M	Bottom Side	0	132072	1	0	Ant 0	w/o		24.00	23.19	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Rear Face	20	132072	50	0	Ant 0	w/o		23.00	22.16	1.21	0.02	0.136	0.16
	LTE 66	QPSK20M	Left Side	0	132072	50	0	Ant 0	w/o		23.00	22.16	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Right Side	0	132072	50	0	Ant 0	w/o		23.00	22.16	1.21	0.09	0.14	0.17
	LTE 66	QPSK20M	Top Side	20	132072	50	0	Ant 0	w/o		23.00	22.16	1.21	-0.12	0.075	0.09
	LTE 66	QPSK20M	Bottom Side	0	132072	50	0	Ant 0	w/o		23.00	22.16	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Rear Face	0	132572	1	0	Ant 0	w/		15.00	14.69	1.07	-0.01	0.471	0.50
	LTE 66	QPSK20M	Top Side	0	132572	1	0	Ant 0	w/		15.00	14.69	1.07	0.13	0.231	0.25
	LTE 66	QPSK20M	Rear Face	0	132572	50	0	Ant 0	w/		14.00	13.71	1.07	-0.11	0.398	0.43
	LTE 66	QPSK20M	Top Side	0	132572	50	0	Ant 0	w/		14.00	13.71	1.07	0.15	0.138	0.15
13	LTE 66	QPSK20M	Rear Face	0	132072	1	0	Ant 0	w/		15.00	14.67	1.08	-0.07	0.474	**0.51**
	LTE 66	QPSK20M	Rear Face	0	132322	1	0	Ant 0	w/		15.00	14.65	1.08	-0.04	0.469	0.51
	LTE 66	QPSK20M	Rear Face	0	132072	1	0	Ant 0	w/	v	15.00	14.67	1.08	0.07	0.154	0.17

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Ant Status	Keyboard	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN2.4G	802.11b	Rear Face	0	1	Ant 0		99.20	1.01	13.00	12.88	1.03	-0.11	0.434	0.45
	WLAN2.4G	802.11b	Left Side	0	1	Ant 0		99.20	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Right side	0	1	Ant 0		99.20	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	1	Ant 0		99.20	1.01	13.00	12.88	1.03	-0.02	0.319	0.33
	WLAN2.4G	802.11b	Bottom Side	0	1	Ant 0		99.20	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Rear Face	0	1	Ant 1		99.00	1.01	13.00	12.89	1.03	-0.15	0.730	0.76
	WLAN2.4G	802.11b	Left Side	0	1	Ant 1		99.00	1.01	13.00	12.89	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Right side	0	1	Ant 1		99.00	1.01	13.00	12.89	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Top Side	0	1	Ant 1		99.00	1.01	13.00	12.89	1.03	-0.16	0.289	0.30
	WLAN2.4G	802.11b	Bottom Side	0	1	Ant 1		99.00	1.01	13.00	12.89	1.03	0	<0.001	0.00
	WLAN2.4G	802.11n HT40	Rear Face	0	3	Ant 0		99.00	1.01	13.00	12.88	1.03	-0.11	0.381	0.40
						Ant 1		99.00	1.01	13.00	12.88	1.03	-0.11	0.658	0.68
	WLAN2.4G	802.11n HT40	Left Side	0	3	Ant 0		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
						Ant 1		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11n HT40	Right Side	0	3	Ant 0		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
						Ant 1		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11n HT40	Top Side	0	3	Ant 0		99.00	1.01	13.00	12.88	1.03	-0.14	0.384	0.40
						Ant 1		99.00	1.01	13.00	12.88	1.03	-0.14	0.373	0.39
	WLAN2.4G	802.11n HT40	Bottom Side	0	3	Ant 0		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
						Ant 1		99.00	1.01	13.00	12.88	1.03	0	<0.001	0.00
	WLAN2.4G	802.11b	Rear Face	0	6	Ant 1		99.00	1.01	13.00	12.75	1.06	-0.12	0.723	0.77
14	WLAN2.4G	802.11b	Rear Face	0	11	Ant 1		99.00	1.01	13.00	12.76	1.06	-0.16	0.731	**0.78**
	WLAN2.4G	802.11b	Rear Face	0	12	Ant 1		99.00	1.01	13.00	12.82	1.04	-0.13	0.730	0.77
	WLAN2.4G	802.11b	Rear Face	0	13	Ant 1		99.00	1.01	13.00	12.86	1.03	-0.13	0.661	0.69
	WLAN2.4G	802.11b	Rear Face	0	11	Ant 1	v	99.00	1.01	13.00	12.76	1.06	0.06	0.270	0.29
	WLAN5.3G	802.11ac VHT160	Rear Face	0	50	Ant 0		97.10	1.03	11.00	10.81	1.04	0.03	0.526	0.56
	WLAN5.3G	802.11ac VHT160	Left Side	0	50	Ant 0		97.10	1.03	11.00	10.81	1.04	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Right side	0	50	Ant 0		97.10	1.03	11.00	10.81	1.04	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Top Side	0	50	Ant 0		97.10	1.03	11.00	10.81	1.04	-0.09	0.324	0.35
	WLAN5.3G	802.11ac VHT160	Bottom Side	0	50	Ant 0		97.10	1.03	11.00	10.81	1.04	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Rear Face	0	50	Ant 1		94.50	1.06	11.00	10.90	1.02	-0.13	0.656	0.71
	WLAN5.3G	802.11ac VHT160	Left Side	0	50	Ant 1		94.50	1.06	11.00	10.90	1.02	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Right side	0	50	Ant 1		94.50	1.06	11.00	10.90	1.02	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Top Side	0	50	Ant 1		94.50	1.06	11.00	10.90	1.02	-0.06	0.615	0.66
	WLAN5.3G	802.11ac VHT160	Bottom Side	0	50	Ant 1		94.50	1.06	11.00	10.90	1.02	0	<0.001	0.00
15	WLAN5.3G	802.11ac VHT160	Rear Face	0	50	Ant 0		89.60	1.12	11.00	10.76	1.06	0.12	0.797	**0.95**
				0	50	Ant 1		89.60	1.12	11.00	10.74	1.06	0.12	0.510	0.61
	WLAN5.3G	802.11ac VHT160	Left Side	0	50	Ant 0		89.60	1.12	11.00	10.76	1.06	0	<0.001	0.00
				0	50	Ant 1		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Right Side	0	50	Ant 0		89.60	1.12	11.00	10.76	1.06	0	<0.001	0.00
				0	50	Ant 1		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Top Side	0	50	Ant 0		89.60	1.12	11.00	10.76	1.06	-0.11	0.388	0.46
				0	50	Ant 1		89.60	1.12	11.00	10.74	1.06	-0.11	0.740	0.88
	WLAN5.3G	802.11ac VHT160	Bottom Side	0	50	Ant 0		89.60	1.12	11.00	10.76	1.06	0	<0.001	0.00
				0	50	Ant 1		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
	WLAN5.3G	802.11ac VHT160	Rear Face	0	50	Ant 0	v	89.60	1.12	11.00	10.76	1.06	0.03	0.308	0.37
				0	50	Ant 1	v	89.60	1.12	11.00	10.74	1.06	0.03	0.145	0.17

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Ant Status	Keyboard	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN5.6G	802.11ac VHT160	Rear Face	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	-0.13	1.11	1.15
	WLAN5.6G	802.11ac VHT160	Left Side	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Right side	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Top Side	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	0	0.337	0.35
	WLAN5.6G	802.11ac VHT160	Bottom Side	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Rear Face	0	114	Ant 1		94.50	1.06	11.00	10.89	1.03	0.11	0.616	0.67
	WLAN5.6G	802.11ac VHT160	Left Side	0	114	Ant 1		94.50	1.06	11.00	10.89	1.03	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Right side	0	114	Ant 1		94.50	1.06	11.00	10.89	1.03	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Top Side	0	114	Ant 1		94.50	1.06	11.00	10.89	1.03	-0.04	0.517	0.56
	WLAN5.6G	802.11ac VHT160	Bottom Side	0	114	Ant 1		94.50	1.06	11.00	10.89	1.03	0	<0.001	0.00
16	WLAN5.6G	802.11ac VHT160	Rear Face	0	114	Ant 0		89.60	1.12	11.00	10.74	1.06	-0.13	1	**1.19**
				0	114	Ant 1		89.60	1.12	11.00	10.75	1.06	-0.13	0.555	0.66
	WLAN5.6G	802.11ac VHT160	Left Side	0	114	Ant 0		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
				0	114	Ant 1		89.60	1.12	11.00	10.75	1.06	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Right Side	0	114	Ant 0		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
				0	114	Ant 1		89.60	1.12	11.00	10.75	1.06	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Top Side	0	114	Ant 0		89.60	1.12	11.00	10.74	1.06	0.11	0.366	0.43
				0	114	Ant 1		89.60	1.12	11.00	10.75	1.06	0.11	0.59	0.70
	WLAN5.6G	802.11ac VHT160	Bottom Side	0	114	Ant 0		89.60	1.12	11.00	10.74	1.06	0	<0.001	0.00
				0	114	Ant 1		89.60	1.12	11.00	10.75	1.06	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT160	Rear Face	0	114	Ant 0	v	89.60	1.12	11.00	10.74	1.06	0.01	0.297	0.35
				0	114	Ant 1	v	89.60	1.12	11.00	10.75	1.06	0.01	0.139	0.17
	WLAN5.6G	802.11ac VHT160	Rear Face	0	114	Ant 0		97.10	1.03	11.00	10.96	1.01	-0.13	1.09	1.13

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Ant Status	Keyboard	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Ant 0		96.30	1.04	11.00	10.88	1.03	-0.08	0.977	1.05
	WLAN5.8G	802.11ac VHT80	Left Side	0	155	Ant 0		96.30	1.04	11.00	10.88	1.03	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Right side	0	155	Ant 0		96.30	1.04	11.00	10.88	1.03	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Ant 0		96.30	1.04	11.00	10.88	1.03	0.07	0.321	0.34
	WLAN5.8G	802.11ac VHT80	Bottom Side	0	155	Ant 0		96.30	1.04	11.00	10.88	1.03	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Ant 1		96.90	1.03	11.00	10.94	1.01	-0.05	0.662	0.69
	WLAN5.8G	802.11ac VHT80	Left Side	0	155	Ant 1		96.90	1.03	11.00	10.94	1.01	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Right side	0	155	Ant 1		96.90	1.03	11.00	10.94	1.01	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Ant 1		96.90	1.03	11.00	10.94	1.01	-0.09	0.939	0.98
	WLAN5.8G	802.11ac VHT80	Bottom Side	0	155	Ant 1		96.90	1.03	11.00	10.94	1.01	0	<0.001	0.00
18	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	0.11	1.08	**1.18**
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	0.11	0.665	0.74
	WLAN5.8G	802.11ac VHT80	Left Side	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	0	<0.001	0.00
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Right Side	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	0	<0.001	0.00
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Top Side	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	-0.01	0.358	0.39
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	-0.01	0.885	0.99
	WLAN5.8G	802.11ac VHT80	Bottom Side	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	0	<0.001	0.00
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	0	<0.001	0.00
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Ant 0	v	94.20	1.06	11.00	10.88	1.03	-0.09	0.37	0.40
				0	155	Ant 1	v	94.20	1.06	11.00	10.78	1.05	-0.09	0.166	0.18
	WLAN5.8G	802.11ac VHT80	Rear Face	0	155	Ant 0		94.20	1.06	11.00	10.88	1.03	0.13	1.06	1.16
				0	155	Ant 1		94.20	1.06	11.00	10.78	1.05	0.13	0.645	0.72
19	BT	BDR	Rear Face	0	78	Ant 1		76.00	1.32	11.00	10.04	1.25	-0.15	0.335	**0.55**
	BT	BDR	Left Side	0	78	Ant 1		76.00	1.32	11.00	10.04	1.25	-0.19	0.00851	0.01
	BT	BDR	Right Side	0	78	Ant 1		76.00	1.32	11.00	10.04	1.25	-0.12	0.015	0.02
	BT	BDR	Top Side	0	78	Ant 1		76.00	1.32	11.00	10.04	1.25	0.18	0.124	0.20
	BT	BDR	Bottom Side	0	78	Ant 1		76.00	1.32	11.00	10.04	1.25	-0.17	0.000255	0.00
	BT	BDR	Rear Face	0	0	Ant 1		76.00	1.32	11.00	9.54	1.40	-0.07	0.259	0.48
	BT	BDR	Rear Face	0	39	Ant 1		76.00	1.32	11.00	9.88	1.29	-0.07	0.268	0.46
	BT	BDR	Rear Face	0	78	Ant 1	v	76.00	1.32	11.00	10.04	1.25	0	<0.001	0.00

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

<Laptop>

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	Ant Status	P-Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WCDMA II	RMC12.2K	Bottom	0	9262	Ant 0	w/o	24.00	23.99	1.00	0	<0.001	0.00
	WCDMA II	RMC12.2K	Back of Panel	25	9262	Ant 0	w/o	24.00	23.99	1.00	0.13	0.274	0.27
	WCDMA II	RMC12.2K	Top Side of Panel	25	9262	Ant 0	w/o	24.00	23.99	1.00	0.02	0.352	0.35
	WCDMA II	RMC12.2K	Right Side of Panel	25	9262	Ant 0	w/o	24.00	23.99	1.00	-0.11	0.062	0.06
	WCDMA II	RMC12.2K	Top Side of Panel	25	9400	Ant 0	w/o	24.00	23.98	1.00	0.02	0.305	0.31
20	WCDMA II	RMC12.2K	Top Side of Panel	25	9538	Ant 0	w/o	24.00	23.94	1.01	0.01	0.357	**0.36**
	WCDMA V	RMC12.2K	Bottom	0	4132	Ant 0	w/o	24.00	23.79	1.05	0	<0.001	0.00
	WCDMA V	RMC12.2K	Back of Panel	25	4132	Ant 0	w/o	24.00	23.79	1.05	0.13	0.126	0.13
21	WCDMA V	RMC12.2K	Top Side of Panel	25	4132	Ant 0	w/o	24.00	23.79	1.05	-0.01	0.156	**0.16**
	WCDMA V	RMC12.2K	Right Side of Panel	25	4132	Ant 0	w/o	24.00	23.79	1.05	0	<0.001	0.00
	WCDMA V	RMC12.2K	Top Side of Panel	25	4182	Ant 0	w/o	24.00	23.53	1.11	0.01	0.130	0.14
	WCDMA V	RMC12.2K	Top Side of Panel	25	4233	Ant 0	w/o	24.00	23.74	1.06	0.05	0.137	0.15

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 4	QPSK20M	Bottom	0	20300	1	0	Ant 0	w/o	24.50	23.56	1.24	0	<0.001	0.00
	LTE 4	QPSK20M	Back of Panel	25	20300	1	0	Ant 0	w/o	24.50	23.56	1.24	0.14	0.171	0.21
22	LTE 4	QPSK20M	Top Side of Panel	25	20300	1	0	Ant 0	w/o	24.50	23.56	1.24	-0.16	0.185	**0.23**
	LTE 4	QPSK20M	Right Side of Panel	25	20300	1	0	Ant 0	w/o	24.50	23.56	1.24	-0.09	0.029	0.04
	LTE 4	QPSK20M	Bottom	0	20300	50	25	Ant 0	w/o	23.50	23.02	1.12	0	<0.001	0.00
	LTE 4	QPSK20M	Back of Panel	25	20300	50	25	Ant 0	w/o	23.50	23.02	1.12	-0.03	0.135	0.15
	LTE 4	QPSK20M	Top Side of Panel	25	20300	50	25	Ant 0	w/o	23.50	23.02	1.12	-0.08	0.181	0.20
	LTE 4	QPSK20M	Right Side of Panel	25	20300	50	25	Ant 0	w/o	23.50	23.02	1.12	0.17	0.028	0.03
	LTE 4	QPSK20M	Top Side of Panel	25	20050	1	0	Ant 0	w/o	24.50	23.28	1.32	-0.01	0.121	0.16
	LTE 4	QPSK20M	Top Side of Panel	25	20175	1	0	Ant 0	w/o	24.50	23.43	1.28	-0.1	0.171	0.22
	LTE 5	QPSK10M	Bottom	0	20450	1	0	Ant 0	w/o	24.50	23.69	1.21	0	<0.001	0.00
	LTE 5	QPSK10M	Back of Panel	25	20450	1	0	Ant 0	w/o	24.50	23.69	1.21	-0.14	0.109	0.13
	LTE 5	QPSK10M	Top Side of Panel	25	20450	1	0	Ant 0	w/o	24.50	23.69	1.21	0.14	0.121	0.15
	LTE 5	QPSK10M	Right Side of Panel	25	20450	1	0	Ant 0	w/o	23.50	23.69	0.96	0	<0.001	0.00
	LTE 5	QPSK10M	Bottom	0	20450	25	0	Ant 0	w/o	23.50	23.14	1.09	0	<0.001	0.00
	LTE 5	QPSK10M	Back of Panel	25	20450	25	0	Ant 0	w/o	23.50	23.14	1.09	0.02	0.114	0.12
	LTE 5	QPSK10M	Top Side of Panel	25	20450	25	0	Ant 0	w/o	23.50	23.14	1.09	0.11	0.118	0.13
	LTE 5	QPSK10M	Right Side of Panel	25	20450	25	0	Ant 0	w/o	23.50	23.14	1.09	0	<0.001	0.00
23	LTE 5	QPSK10M	Top Side of Panel	25	20525	1	0	Ant 0	w/o	24.50	23.57	1.24	-0.15	0.177	**0.22**
	LTE 5	QPSK10M	Top Side of Panel	25	20600	1	0	Ant 0	w/o	24.50	23.57	1.24	0.12	0.147	0.18
	LTE 7	QPSK20M	Bottom	0	20850	1	0	Ant 0	w/o	24.50	24.32	1.04	0	<0.001	0.00
	LTE 7	QPSK20M	Back of Panel	25	20850	1	0	Ant 0	w/o	24.50	24.32	1.04	0.02	0.074	0.08
	LTE 7	QPSK20M	Top Side of Panel	25	20850	1	0	Ant 0	w/o	24.50	24.32	1.04	0.03	0.13	0.14
	LTE 7	QPSK20M	Right Side of Panel	25	20850	1	0	Ant 0	w/o	24.50	24.32	1.04	-0.06	0.04	0.04
	LTE 7	QPSK20M	Bottom	0	20850	50	0	Ant 0	w/o	23.50	23.46	1.01	0	<0.001	0.00
	LTE 7	QPSK20M	Back of Panel	25	20850	50	0	Ant 0	w/o	23.50	23.46	1.01	0.08	0.075	0.08
	LTE 7	QPSK20M	Top Side of Panel	25	20850	50	0	Ant 0	w/o	23.50	23.46	1.01	-0.01	0.079	0.08
	LTE 7	QPSK20M	Right Side of Panel	25	20850	50	0	Ant 0	w/o	23.50	23.46	1.01	-0.04	0.044	0.04
	LTE 7	QPSK20M	Top Side of Panel	25	21100	1	0	Ant 0	w/o	24.50	24.13	1.09	0.01	0.133	0.14
24	LTE 7	QPSK20M	Top Side of Panel	25	21350	1	0	Ant 0	w/o	24.50	24.12	1.09	-0.09	0.159	**0.17**
	LTE 12	QPSK10M	Bottom	0	23130	1	0	Ant 0	w/o	24.50	23.71	1.20	0	<0.001	0.00
	LTE 12	QPSK10M	Back of Panel	25	23130	1	0	Ant 0	w/o	24.50	23.71	1.20	0.02	0.060	0.07
25	LTE 12	QPSK10M	Top Side of Panel	25	23130	1	0	Ant 0	w/o	24.50	23.71	1.20	-0.16	0.080	**0.10**
	LTE 12	QPSK10M	Right Side of Panel	25	23130	1	0	Ant 0	w/o	24.50	23.71	1.20	0	<0.001	0.00
	LTE 12	QPSK10M	Bottom	0	23130	25	0	Ant 0	w/o	23.50	23.13	1.09	0	<0.001	0.00
	LTE 12	QPSK10M	Back of Panel	25	23130	25	0	Ant 0	w/o	23.50	23.13	1.09	0.04	0.043	0.05
	LTE 12	QPSK10M	Top Side of Panel	25	23130	25	0	Ant 0	w/o	23.50	23.13	1.09	-0.06	0.041	0.04
	LTE 12	QPSK10M	Right Side of Panel	25	23130	25	0	Ant 0	w/o	23.50	23.13	1.09	0	<0.001	0.00
	LTE 12	QPSK10M	Top Side of Panel	25	23060	1	0	Ant 0	w/o	24.50	23.54	1.25	-0.04	0.060	0.08
	LTE 12	QPSK10M	Top Side of Panel	25	23095	1	0	Ant 0	w/o	24.50	23.61	1.23	-0.01	0.073	0.09
	LTE 13	QPSK10M	Bottom	0	23230	1	0	Ant 0	w/o	24.50	23.63	1.22	0	<0.001	0.00
	LTE 13	QPSK10M	Back of Panel	25	23230	1	0	Ant 0	w/o	24.50	23.63	1.22	-0.05	0.082	0.10
26	LTE 13	QPSK10M	Top Side of Panel	25	23230	1	0	Ant 0	w/o	24.50	23.63	1.22	-0.1	0.105	**0.13**
	LTE 13	QPSK10M	Right Side of Panel	25	23230	1	0	Ant 0	w/o	24.50	23.63	1.22	0	<0.001	0.00
	LTE 13	QPSK10M	Bottom	0	23230	25	0	Ant 0	w/o	23.50	23.45	1.01	0	<0.001	0.00
	LTE 13	QPSK10M	Back of Panel	25	23230	25	0	Ant 0	w/o	23.50	23.45	1.01	-0.01	0.070	0.07
	LTE 13	QPSK10M	Top Side of Panel	25	23230	25	0	Ant 0	w/o	23.50	23.45	1.01	0.03	0.084	0.08
	LTE 13	QPSK10M	Right Side of Panel	25	23230	25	0	Ant 0	w/o	23.50	23.45	1.01	0	<0.001	0.00
	LTE 14	QPSK10M	Bottom	0	23330	1	0	Ant 0	w/o	24.00	23.40	1.15	0	<0.001	0.00
	LTE 14	QPSK10M	Back of Panel	25	23330	1	0	Ant 0	w/o	24.00	23.40	1.15	0.06	0.096	0.11
27	LTE 14	QPSK10M	Top Side of Panel	25	23330	1	0	Ant 0	w/o	24.00	23.40	1.15	-0.09	0.104	**0.12**
	LTE 14	QPSK10M	Right Side of Panel	25	23330	1	0	Ant 0	w/o	24.00	23.40	1.15	0	<0.001	0.00
	LTE 14	QPSK10M	Bottom	0	23330	25	0	Ant 0	w/o	23.00	22.36	1.16	0	<0.001	0.00
	LTE 14	QPSK10M	Back of Panel	25	23330	25	0	Ant 0	w/o	23.00	22.36	1.16	0.04	0.078	0.09
	LTE 14	QPSK10M	Top Side of Panel	25	23330	25	0	Ant 0	w/o	23.00	22.36	1.16	-0.03	0.074	0.09
	LTE 14	QPSK10M	Right Side of Panel	25	23330	25	0	Ant 0	w/o	23.00	22.36	1.16	0	<0.001	0.00

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Ch.	RB	offset	Ant Status	P-Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 25	QPSK20M	Bottom	0	26590	1	0	Ant 0	w/o	24.50	23.57	1.24	0	<0.001	0.00
	LTE 25	QPSK20M	Back of Panel	25	26590	1	0	Ant 0	w/o	24.50	23.57	1.24	0.16	0.194	0.24
28	LTE 25	QPSK20M	Top Side of Panel	25	26590	1	0	Ant 0	w/o	24.50	23.57	1.24	-0.18	0.353	**0.44**
	LTE 25	QPSK20M	Right Side of Panel	25	26590	1	0	Ant 0	w/o	24.50	23.57	1.24	-0.08	0.031	0.04
	LTE 25	QPSK20M	Bottom	0	26590	50	0	Ant 0	w/o	23.50	22.97	1.13	0.02	<0.001	0.00
	LTE 25	QPSK20M	Back of Panel	25	26590	50	0	Ant 0	w/o	23.50	22.97	1.13	-0.12	0.153	0.17
	LTE 25	QPSK20M	Top Side of Panel	25	26590	50	0	Ant 0	w/o	23.50	22.97	1.13	-0.02	0.272	0.31
	LTE 25	QPSK20M	Right Side of Panel	25	26590	50	0	Ant 0	w/o	23.50	22.97	1.13	0.03	0.031	0.04
	LTE 25	QPSK20M	Top Side of Panel	25	26140	1	0	Ant 0	w/o	24.50	23.37	1.30	-0.14	0.298	0.39
	LTE 25	QPSK20M	Top Side of Panel	25	26365	1	0	Ant 0	w/o	24.50	23.18	1.36	0.15	0.315	0.43
	LTE 26	QPSK15M	Bottom	0	26865	1	0	Ant 0	w/o	24.50	24.05	1.11	0	<0.001	0.00
	LTE 26	QPSK15M	Back of Panel	25	26865	1	0	Ant 0	w/o	24.50	24.05	1.11	0.11	0.151	0.17
29	LTE 26	QPSK15M	Top Side of Panel	25	26865	1	0	Ant 0	w/o	24.50	24.05	1.11	-0.04	0.166	**0.18**
	LTE 26	QPSK15M	Right Side of Panel	25	26865	1	0	Ant 0	w/o	24.50	24.05	1.11	0	<0.001	0.00
	LTE 26	QPSK15M	Bottom	0	26865	36	0	Ant 0	w/o	23.50	23.40	1.02	0	<0.001	0.00
	LTE 26	QPSK15M	Back of Panel	25	26865	36	0	Ant 0	w/o	23.50	23.40	1.02	0.11	0.119	0.12
	LTE 26	QPSK15M	Top Side of Panel	25	26865	36	0	Ant 0	w/o	23.50	23.40	1.02	-0.15	0.155	0.16
	LTE 26	QPSK15M	Right Side of Panel	25	26865	36	0	Ant 0	w/o	23.50	23.40	1.02	0	<0.001	0.00
	LTE 26	QPSK15M	Top Side of Panel	25	26765	1	0	Ant 0	w/o	24.50	23.87	1.16	-0.14	0.157	0.18
	LTE 26	QPSK15M	Top Side of Panel	25	26965	1	0	Ant 0	w/o	24.50	23.92	1.14	0.17	0.139	0.16
	LTE 30	QPSK10M	Bottom	0	27710	1	0	Ant 0	w/o	20.50	20.21	1.07	0	<0.001	0.00
	LTE 30	QPSK10M	Back of Panel	25	27710	1	0	Ant 0	w/o	20.50	20.21	1.07	0.02	0.053	0.06
30	LTE 30	QPSK10M	Top Side of Panel	25	27710	1	0	Ant 0	w/o	20.50	20.21	1.07	-0.06	0.057	**0.06**
	LTE 30	QPSK10M	Right Side of Panel	25	27710	1	0	Ant 0	w/o	20.50	20.21	1.07	0.06	0.031	0.03
	LTE 30	QPSK10M	Bottom	0	27710	25	0	Ant 0	w/o	19.50	19.14	1.09	0	<0.001	0.00
	LTE 30	QPSK10M	Back of Panel	25	27710	25	0	Ant 0	w/o	19.50	19.14	1.09	0.05	0.045	0.05
	LTE 30	QPSK10M	Top Side of Panel	25	27710	25	0	Ant 0	w/o	19.50	19.14	1.09	-0.13	0.050	0.05
	LTE 30	QPSK10M	Right Side of Panel	25	27710	25	0	Ant 0	w/o	19.50	19.14	1.09	0	<0.001	0.00
	LTE 41	QPSK20M	Bottom	0	40620	1	0	Ant 0	w/o	24.50	24.09	1.10	0	<0.001	0.00
	LTE 41	QPSK20M	Back of Panel	25	40620	1	0	Ant 0	w/o	24.50	24.09	1.10	0.01	0.060	0.07
31	LTE 41	QPSK20M	Top Side of Panel	25	40620	1	0	Ant 0	w/o	24.50	24.09	1.10	-0.06	0.091	**0.10**
	LTE 41	QPSK20M	Right Side of Panel	25	40620	1	0	Ant 0	w/o	24.50	24.09	1.10	-0.02	0.034	0.04
	LTE 41	QPSK20M	Bottom	0	40620	50	0	Ant 0	w/o	23.50	23.49	1.00	0	<0.001	0.00
	LTE 41	QPSK20M	Back of Panel	25	40620	50	0	Ant 0	w/o	23.50	23.49	1.00	0.01	0.050	0.05
	LTE 41	QPSK20M	Top Side of Panel	25	40620	50	0	Ant 0	w/o	23.50	23.49	1.00	-0.03	0.071	0.07
	LTE 41	QPSK20M	Right Side of Panel	25	40620	50	0	Ant 0	w/o	23.50	23.49	1.00	0.01	0.019	0.02
	LTE 41	QPSK20M	Top Side of Panel	25	39790	1	0	Ant 0	w/o	24.50	23.89	1.15	-0.08	0.041	0.05
	LTE 41	QPSK20M	Top Side of Panel	25	39750	1	0	Ant 0	w/o	24.50	23.94	1.14	0.07	0.043	0.05
	LTE 41	QPSK20M	Top Side of Panel	25	40185	1	0	Ant 0	w/o	24.50	23.88	1.15	0.1	0.052	0.06
	LTE 41	QPSK20M	Top Side of Panel	25	41055	1	0	Ant 0	w/o	24.50	24.08	1.10	0.03	0.057	0.06
	LTE 41	QPSK20M	Top Side of Panel	25	41490	1	0	Ant 0	w/o	24.50	23.19	1.35	0.02	0.033	0.04
	LTE 41	QPSK20M	Top Side of Panel	25	PCC 40620 SCC 40818	1 1	99 0	Ant 0	w/o	24.50	23.82	1.17	-0.03	0.072	0.08
	LTE 66	QPSK20M	Bottom	0	132072	1	0	Ant 0	w/o	24.00	23.19	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Back of Panel	25	132072	1	0	Ant 0	w/o	24.00	23.19	1.21	-0.12	0.083	0.10
	LTE 66	QPSK20M	Top Side of Panel	25	132072	1	0	Ant 0	w/o	24.00	23.19	1.21	0.02	0.087	0.11
	LTE 66	QPSK20M	Right Side of Panel	25	132072	1	0	Ant 0	w/o	24.00	23.19	1.21	-0.12	0.018	0.02
	LTE 66	QPSK20M	Bottom	0	132072	50	0	Ant 0	w/o	23.00	22.16	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Back of Panel	25	132072	50	0	Ant 0	w/o	23.00	22.16	1.21	0.04	0.068	0.08
	LTE 66	QPSK20M	Top Side of Panel	25	132072	50	0	Ant 0	w/o	23.00	22.16	1.21	0.13	0.071	0.09
	LTE 66	QPSK20M	Right Side of Panel	25	132072	50	0	Ant 0	w/o	23.00	22.16	1.21	0	<0.001	0.00
	LTE 66	QPSK20M	Top Side of Panel	25	132322	1	0	Ant 0	w/o	24.00	23.15	1.22	0.09	0.103	0.13
32	LTE 66	QPSK20M	Top Side of Panel	25	132572	1	0	Ant 0	w/o	24.00	23.18	1.21	-0.09	0.113	**0.14**

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

Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	Ant Status	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN2.4G	802.11b	Bottom	0	6	Ant 0	99.20	1.01	20.00	19.56	1.11	0	<0.001	0.00
	WLAN2.4G	802.11b	Back of Panel	25	6	Ant 0	99.20	1.01	20.00	19.56	1.11	0	<0.001	0.00
	WLAN2.4G	802.11b	Top Side of Panel	25	6	Ant 0	99.20	1.01	20.00	19.56	1.11	0.02	0.039	0.04
	WLAN2.4G	802.11b	Right Side of Panel	25	6	Ant 0	99.20	1.01	20.00	19.56	1.11	0	<0.001	0.00
	WLAN2.4G	802.11b	Bottom	0	6	Ant 1	99.00	1.01	20.00	19.64	1.09	0	<0.001	0.00
	WLAN2.4G	802.11b	Back of Panel	25	6	Ant 1	99.00	1.01	20.00	19.64	1.09	0	<0.001	0.00
33	WLAN2.4G	802.11b	Top Side of Panel	25	6	Ant 1	99.00	1.01	20.00	19.64	1.09	-0.1	0.054	**0.06**
	WLAN2.4G	802.11b	Right Side of Panel	25	6	Ant 1	99.00	1.01	20.00	19.64	1.09	0	<0.001	0.00
	WLAN2.4G	802.11n HT20	Bottom	0	6	Ant 0	99.00	1.01	17.00	16.58	1.10	0	<0.001	0.00
						Ant 1	99.00	1.01	17.00	16.71	1.07	0	<0.001	0.00
	WLAN2.4G	802.11n HT20	Back of Panel	25	6	Ant 0	99.00	1.01	17.00	16.58	1.10	0	<0.001	0.00
						Ant 1	99.00	1.01	17.00	16.71	1.07	0	<0.001	0.00
	WLAN2.4G	802.11n HT20	Top Side of Panel	25	6	Ant 0	99.00	1.01	17.00	16.58	1.10	0	<0.001	0.00
						Ant 1	99.00	1.01	17.00	16.71	1.07	0	<0.001	0.00
	WLAN2.4G	802.11n HT20	Right Side of Panel	25	6	Ant 0	99.00	1.01	17.00	16.58	1.10	0	<0.001	0.00
						Ant 1	99.00	1.01	17.00	16.71	1.07	0	<0.001	0.00
	WLAN2.4G	802.11b	Top Side of Panel	25	1	Ant 1	99.00	1.01	19.00	18.65	1.08	-0.06	0.033	0.04
	WLAN2.4G	802.11b	Top Side of Panel	25	11	Ant 1	99.00	1.01	19.00	18.68	1.08	0.02	0.043	0.05
	WLAN2.4G	802.11b	Top Side of Panel	25	12	Ant 1	99.00	1.01	18.00	17.55	1.11	0.07	0.031	0.03
	WLAN2.4G	802.11b	Top Side of Panel	25	13	Ant 1	99.00	1.01	17.50	17.40	1.02	0.13	0.032	0.03
	WLAN5.3G	802.11n HT40	Bottom	0	54	Ant 0	98.20	1.02	20.00	19.83	1.04	0	<0.001	0.00
	WLAN5.3G	802.11n HT40	Back of Panel	25	54	Ant 0	98.20	1.02	20.00	19.83	1.04	0.03	0.028	0.03
34	WLAN5.3G	802.11n HT40	Top Side of Panel	25	54	Ant 0	98.20	1.02	20.00	19.83	1.04	-0.15	0.169	**0.18**
	WLAN5.3G	802.11n HT40	Right Side of Panel	25	54	Ant 0	98.20	1.02	20.00	19.83	1.04	0	<0.001	0.00
	WLAN5.3G	802.11n HT40	Bottom	0	54	Ant 1	97.20	1.03	20.00	19.59	1.10	0	<0.001	0.00
	WLAN5.3G	802.11n HT40	Back of Panel	25	54	Ant 1	97.20	1.03	20.00	19.59	1.10	0.07	0.018	0.02
	WLAN5.3G	802.11n HT40	Top Side of Panel	25	54	Ant 1	97.20	1.03	20.00	19.59	1.10	-0.02	0.105	0.12
	WLAN5.3G	802.11n HT40	Right Side of Panel	25	54	Ant 1	97.20	1.03	20.00	19.59	1.10	0	<0.001	0.00
	WLAN5.3G	802.11ax HE40	Bottom	0	54	Ant 0	99.90	1.00	18.00	17.69	1.07	0	<0.001	0.00
						Ant 1	99.90	1.00	18.00	17.80	1.05	0	<0.001	0.00
	WLAN5.3G	802.11ax HE40	Back of Panel	25	54	Ant 0	99.90	1.00	18.00	17.69	1.07	0.04	0.031	0.03
						Ant 1	99.90	1.00	18.00	17.80	1.05	-0.03	0.012	0.01
	WLAN5.3G	802.11ax HE40	Top Side of Panel	25	54	Ant 0	99.90	1.00	18.00	17.69	1.07	0.17	0.133	0.14
						Ant 1	99.90	1.00	18.00	17.80	1.05	0.03	0.054	0.06
	WLAN5.3G	802.11ax HE40	Right Side of Panel	25	54	Ant 0	99.90	1.00	18.00	17.69	1.07	0	<0.001	0.00
						Ant 1	99.90	1.00	18.00	17.80	1.05	0	<0.001	0.00
	WLAN5.3G	802.11n HT40	Top Side of Panel	25	62	Ant 0	98.20	1.02	16.25	16.08	1.04	-0.15	0.103	0.11
	WLAN5.6G	802.11ac VHT80	Bottom	0	138	Ant 0	96.30	1.04	20.00	19.68	1.08	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Ant 0	96.30	1.04	20.00	19.68	1.08	0.03	0.041	0.05
	WLAN5.6G	802.11ac VHT80	Top Side of Panel	25	138	Ant 0	96.30	1.04	20.00	19.68	1.08	-0.06	0.127	0.14
	WLAN5.6G	802.11ac VHT80	Right Side of Panel	25	138	Ant 0	96.30	1.04	20.00	19.68	1.08	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT80	Bottom	0	138	Ant 1	96.90	1.03	20.00	19.68	1.08	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT80	Back of Panel	25	138	Ant 1	96.90	1.03	20.00	19.68	1.08	0.02	0.062	0.07
35	WLAN5.6G	802.11ac VHT80	Top Side of Panel	25	138	Ant 1	96.90	1.03	20.00	19.68	1.08	-0.07	0.245	**0.27**
	WLAN5.6G	802.11ac VHT80	Right Side of Panel	25	138	Ant 1	96.90	1.03	20.00	19.68	1.08	0	<0.001	0.00
	WLAN5.6G	802.11ax HE40	Bottom	0	134	Ant 0	97.20	1.03	18.25	18.08	1.04	0	<0.001	0.00
						Ant 1	97.20	1.03	18.25	18.11	1.03	0	<0.001	0.00
	WLAN5.6G	802.11ax HE40	Back of Panel	25	134	Ant 0	97.20	1.03	18.25	18.08	1.04	0.07	0.035	0.04
						Ant 1	97.20	1.03	18.25	18.11	1.03	-0.12	0.033	0.04
	WLAN5.6G	802.11ax HE40	Top Side of Panel	25	134	Ant 0	97.20	1.03	18.25	18.08	1.04	0.05	0.121	0.13
						Ant 1	97.20	1.03	18.25	18.11	1.03	-0.06	0.119	0.13
	WLAN5.6G	802.11ax HE40	Right Side of Panel	25	134	Ant 0	97.20	1.03	18.25	18.08	1.04	0	<0.001	0.00
						Ant 1	97.20	1.03	18.25	18.11	1.03	0	<0.001	0.00
	WLAN5.6G	802.11ac VHT80	Top Side of Panel	25	106	Ant 1	96.90	1.03	17.50	17.38	1.03	0.03	0.173	0.18
	WLAN5.6G	802.11ac VHT80	Top Side of Panel	25	122	Ant 1	96.90	1.03	19.00	18.65	1.08	0.01	0.204	0.23
	WLAN5.8G	802.11n HT40	Bottom	0	151	Ant 0	98.40	1.02	20.00	19.57	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Back of Panel	25	151	Ant 0	98.40	1.02	20.00	19.57	1.10	0.03	0.051	0.06
	WLAN5.8G	802.11n HT40	Top Side of Panel	25	151	Ant 0	98.40	1.02	20.00	19.57	1.10	0.07	0.123	0.14
	WLAN5.8G	802.11n HT40	Right Side of Panel	25	151	Ant 0	98.40	1.02	20.00	19.57	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Bottom	0	151	Ant 1	97.80	1.02	20.00	19.57	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Back of Panel	25	151	Ant 1	97.80	1.02	20.00	19.57	1.10	-0.05	0.073	0.08
36	WLAN5.8G	802.11n HT40	Top Side of Panel	25	151	Ant 1	97.80	1.02	20.00	19.57	1.10	-0.06	0.353	**0.40**
	WLAN5.8G	802.11n HT40	Right Side of Panel	25	151	Ant 1	97.80	1.02	20.00	19.57	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Bottom	0	159	Ant 0	98.70	1.01	18.00	17.70	1.07	0	<0.001	0.00
						Ant 1	98.70	1.01	18.00	17.59	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Back of Panel	25	159	Ant 0	98.70	1.01	18.00	17.70	1.07	0.03	0.041	0.04
						Ant 1	98.70	1.01	18.00	17.59	1.10	-0.06	0.039	0.04
	WLAN5.8G	802.11n HT40	Top Side of Panel	25	159	Ant 0	98.70	1.01	18.00	17.70	1.07	0.13	0.099	0.11
						Ant 1	98.70	1.01	18.00	17.59	1.10	0.08	0.138	0.15
	WLAN5.8G	802.11n HT40	Right Side of Panel	25	159	Ant 0	98.70	1.01	18.00	17.70	1.07	0	<0.001	0.00
						Ant 1	98.70	1.01	18.00	17.59	1.10	0	<0.001	0.00
	WLAN5.8G	802.11n HT40	Top Side of Panel	25	159	Ant 1	97.80	1.02	20.00	19.55	1.11	-0.03	0.326	0.37
	BT	BDR	Bottom	0	78	Ant 1	76.00	1.32	11.00	9.89	1.29	0	0.000881	0.00
	BT	BDR	Back of Panel	25	78	Ant 1	76.00	1.32	11.00	9.89	1.29	0	0.00101	0.00
37	BT	BDR	Top Side of Panel	25	78	Ant 1	76.00	1.32	11.00	9.89	1.29	-0.02	0.00223	**0.00**
	BT	BDR	Right Side of Panel	25	78	Ant 1	76.00	1.32	11.00	9.89	1.29	0	<0.001	0.00
	BT	BDR	Top Side of Panel	25	0	Ant 1	76.00	1.32	11.00	9.04	1.57	-0.09	0.00185	0.00
	BT	BDR	Top Side of Panel	25	39	Ant 1	76.00	1.32	11.00	9.49	1.42	0.03	0.00161	0.00

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

4.7.3 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium 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 V	RMC12.2K	Top Side	4132	0.884	0.868	1.02	N/A	N/A	N/A	N/A
LTE 7	QPSK20M	Right Side	21100	1.07	1.02	1.05	N/A	N/A	N/A	N/A
LTE 26	QPSK15M	Top Side	26765	0.83	0.816	1.02	N/A	N/A	N/A	N/A
LTE 41	QPSK20M	Right Side	41055	0.966	0.952	1.01	N/A	N/A	N/A	N/A
WLAN5.6G	802.11ac VHT160	Rear Face	114	1.11	1.09	1.02	N/A	N/A	N/A	N/A
WLAN5.8G	WLAN5.8G	Rear Face	155	1.08	1.06	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+ WLAN2.4G_Ant0	Yes
2	WWAN+ WLAN2.4G_Ant1	Yes
3	WWAN+ WLAN5G_Ant0	Yes
4	WWAN+ WLAN5G_Ant1	Yes
5	WWAN+ WLAN2.4G_Ant0+BT_Ant1	Yes
6	WWAN+ WLAN5G_Ant0+BT_Ant1	Yes
7	WWAN+ WLAN5G_Ant1+BT_Ant1	Yes

Note :

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. Combination 1 is covered by combination 5
3. Combination 3 is covered by combination 6
4. Combination 4 is covered by combination 7

5. Ant0 and Ant 1 are separated far enough apart (~7cm) that the hot spots are sufficiently separated, there are no risk of Simultaneous Multi-band Transmission Evaluation.

6. WLAN output power is reduced when the device is in tablet mode using a proprietary sensing mechanism and in tablet mode Wi-Fi antenna 1 is disabled when the WWAN transmitter is active. A detailed description and validation data are included in the Operational Description exhibits.
7. Due to the note 6 , therefore conditions 2,4 and 7 only apply to laptop mode.

<SAR Summation Analysis>

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

Refer to Appendix G

<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.

Refer to Appendix H

Test Engineer：Tim Cheng, and Rex Tseng

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	D835V2	4d121	Aug. 13, 2020	1 Year
System Validation Dipole	SPEAG	D1750V2	1055	Aug. 23, 2019	1 Year
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 21, 2020	1 Year
System Validation Dipole	SPEAG	D2300V2	1004	Jan. 21, 2020	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 26, 2019	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 26, 2019	1 Year
System Validation Dipole	SPEAG	D2600V2	1077	Apr. 26, 2020	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1019	Mar. 13, 2020	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3650	Mar. 25, 2020	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3971	Jan. 27, 2020	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7472	Aug. 30, 2019	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7537	May. 29, 2020	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7350	Dec. 16, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE3	579	Aug. 27, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	861	May. 27, 2020	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 18, 2020	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1277	Jan. 24, 2020	1 Year
Data Acquisition Electronics	SPEAG	DAE4	917	Dec. 17, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1585	May. 28, 2020	1 Year
Universal Radio Communication Tester	R&S	CMW500	164864	Apr. 16, 2020	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 26, 2020	1 Year
Universal Wireless Test Set	Anritsu	MT8870A/MU887000A	6201699387	Oct. 07, 2019	1 Year
Thermometer	YFE	YF-160A	120702365	Aug. 06, 2019	1 Year
Thermometer	YFE	YF-160A	150601219	Apr. 21, 2020	1 Year
Dielectric Assessment Kit	SPEAG	DAKS-3.5	1092	May. 26, 2020	1 Year
Powersource1	SPEAG	SE_UMS_160BA	4010	Aug. 21, 2019	1 Year

6. Measurement Uncertainty

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	4.8	Rectangular	√3	1	1	2.8	2.8	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.02	Rectangular	√3	1	1	0.01	0.01	∞
Probe Positioning with Respect to Phantom	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	2.82 / 1.60	Normal	1	1	1	2.8	1.6	35
Device Holder Uncertainty	2.55 / 2.76	Normal	1	1	1	2.6	2.8	7
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
PowerScaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	5.7	Rectangular	√3	1	1	3.3	3.3	∞
Liquid Conductivity (Temperature Uncertainty)	2.58	Rectangular	√3	0.78	0.71	1.2	1.1	∞
Liquid Conductivity (Measured)	2.95	Normal	1	0.78	0.71	2.3	2.1	61
Liquid Permittivity (Temperature Uncertainty)	1.97	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Liquid Permittivity (Measured)	3.04	Normal	1	0.23	0.26	0.7	0.8	47
Combined Standard Uncertainty						± 10.9 %	± 10.7 %	
Expanded Uncertainty (K=2)						**± 21.8 %**	**± 21.4 %**	

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

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	4.8	Rectangular	√3	1	1	2.8	2.8	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.04	Rectangular	√3	1	1	0.02	0.02	∞
Probe Positioning with Respect to Phantom	0.8	Rectangular	√3	1	1	0.5	0.5	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.82 / 1.60	Normal	1	1	1	2.8	1.6	35
Device Holder Uncertainty	2.55 / 2.76	Normal	1	1	1	2.6	2.8	7
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
PowerScaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	6.2	Rectangular	√3	1	1	3.6	3.6	∞
Liquid Conductivity (Temperature Uncertainty)	2.58	Rectangular	√3	0.78	0.71	1.2	1.1	∞
Liquid Conductivity (Measured)	2.95	Normal	1	0.78	0.71	2.3	2.1	61
Liquid Permittivity (Temperature Uncertainty)	1.97	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Liquid Permittivity (Measured)	3.04	Normal	1	0.23	0.26	0.7	0.8	47
Combined Standard Uncertainty						± 11.6 %	± 11.3 %	
Expanded Uncertainty (K=2)						**± 23.2 %**	**± 22.6 %**	

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

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	4.8	Rectangular	√3	1	1	2.8	2.8	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.02	Rectangular	√3	1	1	0.01	0.01	∞
Probe Positioning with Respect to Phantom	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	3.68 / 1.73	Normal	1	1	1	3.7	1.7	29
Device Holder Uncertainty	2.55 / 2.76	Normal	1	1	1	2.6	2.8	7
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
PowerScaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity (Temperature Uncertainty)	2.58	Rectangular	√3	0.78	0.71	1.2	1.1	∞
Liquid Conductivity (Measured)	2.95	Normal	1	0.78	0.71	2.3	2.1	61
Liquid Permittivity (Temperature Uncertainty)	1.97	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Liquid Permittivity (Measured)	3.04	Normal	1	0.23	0.26	0.7	0.8	47
Combined Standard Uncertainty						± 11.5 %	± 11.0 %	
Expanded Uncertainty (K=2)						**± 23.0 %**	**± 22.0 %**	

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

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	4.8	Rectangular	√3	1	1	2.8	2.8	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.04	Rectangular	√3	1	1	0.02	0.02	∞
Probe Positioning with Respect to Phantom	0.8	Rectangular	√3	1	1	0.5	0.5	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	3.68 / 1.73	Normal	1	1	1	3.7	1.7	29
Device Holder Uncertainty	2.55 / 2.76	Normal	1	1	1	2.6	2.8	7
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
PowerScaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity (Temperature Uncertainty)	2.58	Rectangular	√3	0.78	0.71	1.2	1.1	∞
Liquid Conductivity (Measured)	2.95	Normal	1	0.78	0.71	2.3	2.1	61
Liquid Permittivity (Temperature Uncertainty)	1.97	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Liquid Permittivity (Measured)	3.04	Normal	1	0.23	0.26	0.7	0.8	47
Combined Standard Uncertainty						± 12.1 %	± 11.6 %	
Expanded Uncertainty (K=2)						**± 24.2 %**	**± 23.2 %**	

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

7. Information of the Testing Laboratories

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

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

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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.

System Check_H750_200822

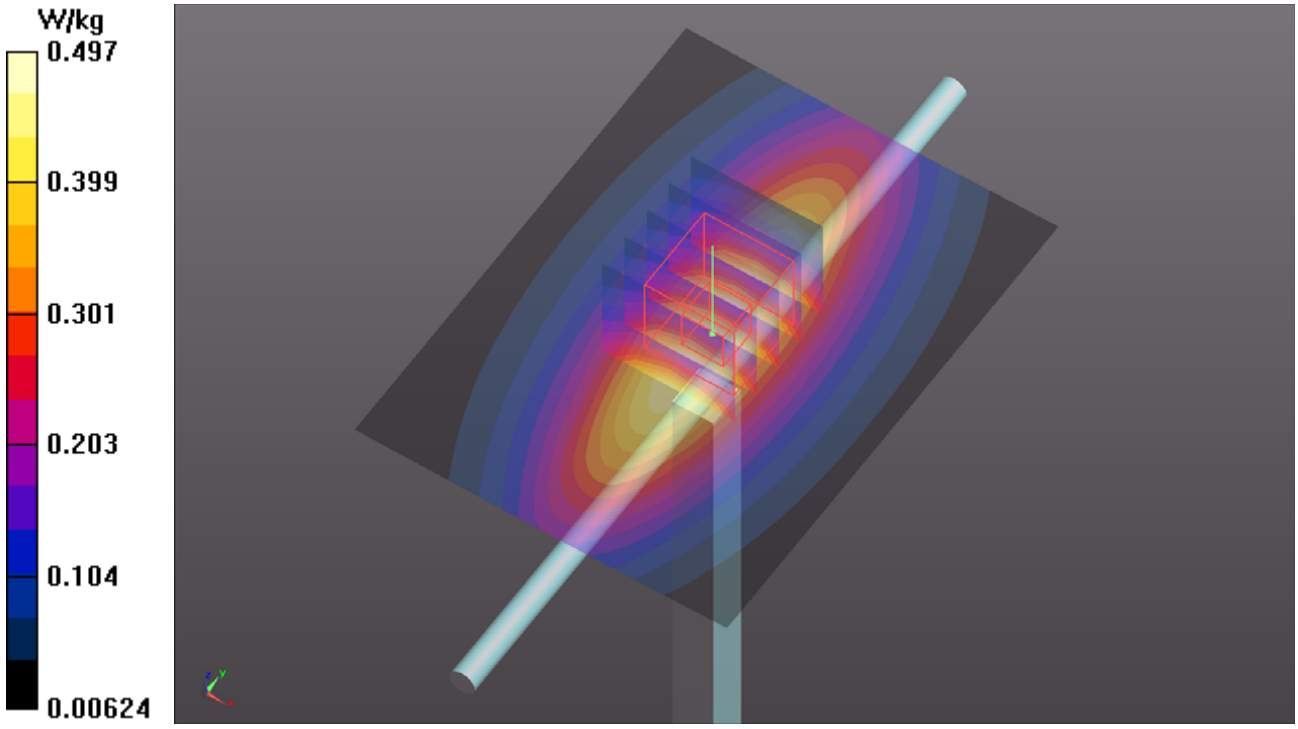
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: H06T09N3_0822 Medium parameters used: f = 750 MHz; σ = 0.887 S/m; ε_r = 43.364; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 750 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.497 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.52 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.546 W/kg
SAR(1 g) = 0.387 W/kg; SAR(10 g) = 0.258 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.497 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/09

System Check_H835_200709

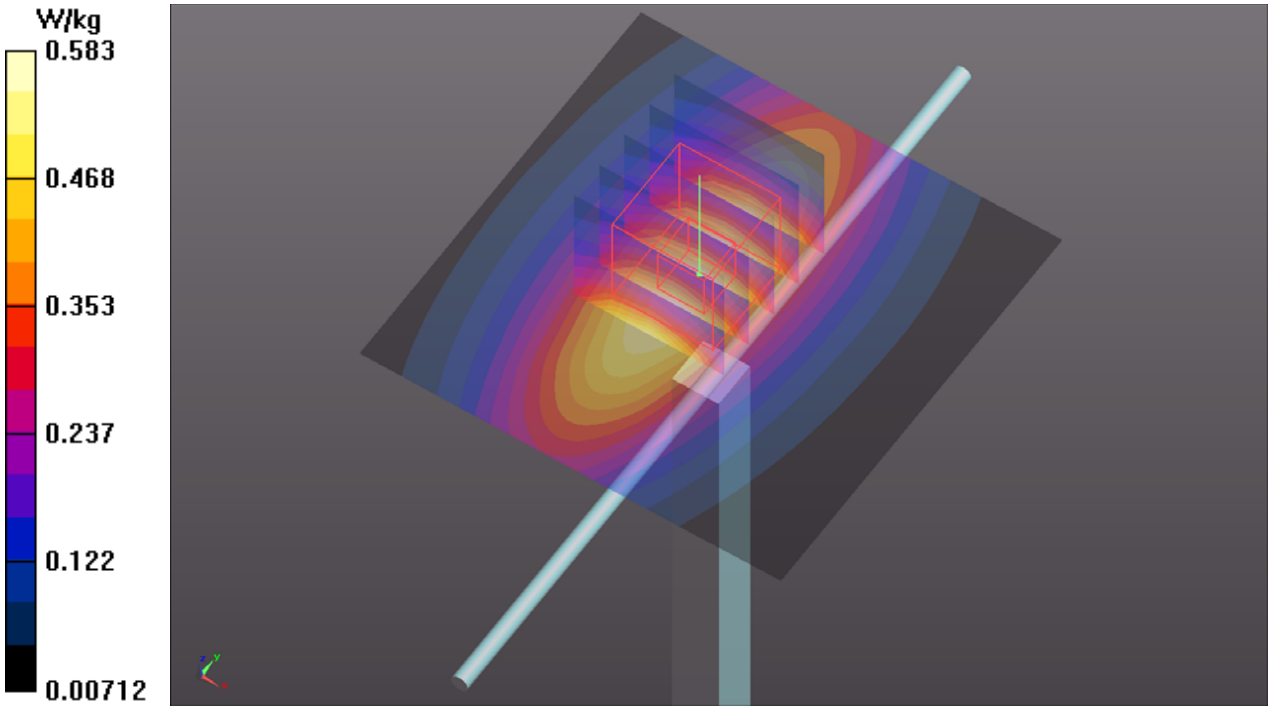
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: H07T10N1_0709 Medium parameters used: f = 835 MHz; σ = 0.925 S/m; ε_r = 42.485; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 835 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; 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 = 25.83 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.647 W/kg
SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.299 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.589 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/07

System Check_H1750_200707

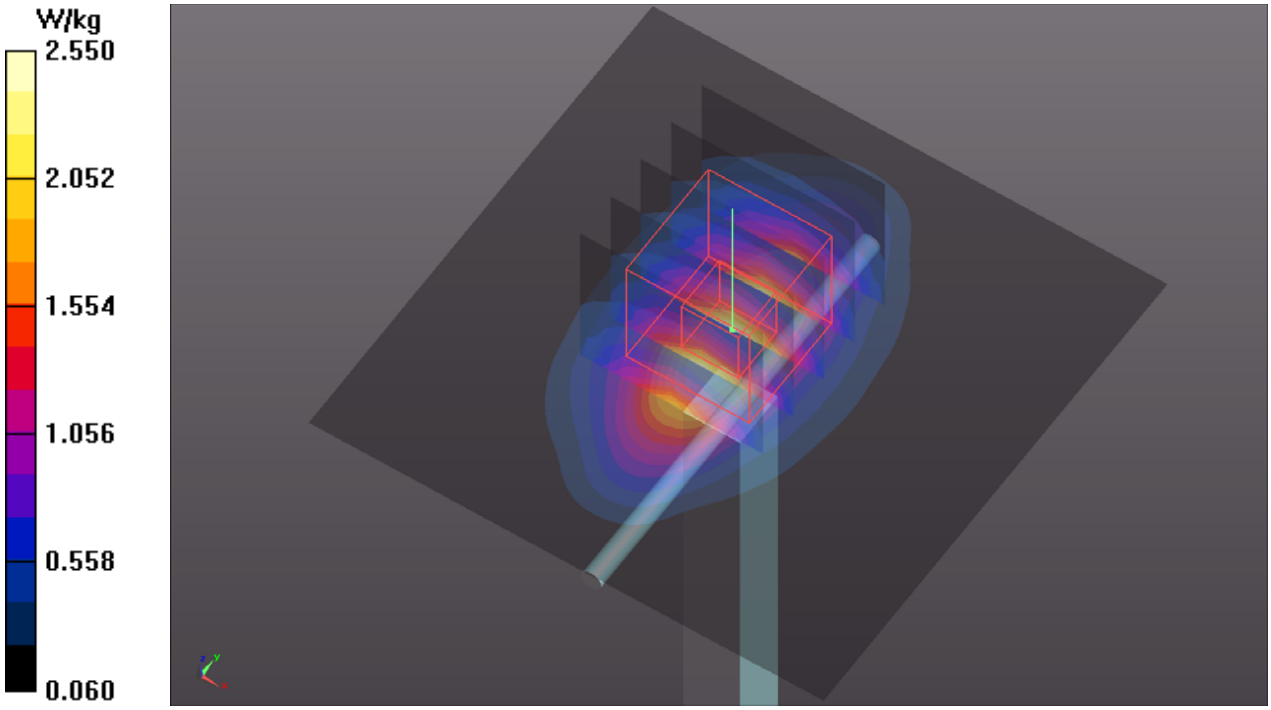
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: H16T20N1_0707 Medium parameters used: f = 1750 MHz; σ = 1.323 S/m; ε_r = 38.792; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.54, 8.54, 8.54) @ 1750 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; 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) = 2.51 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.14 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 1.72 W/kg; SAR(10 g) = 0.928 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.55 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/07

System Check_H1900_200707

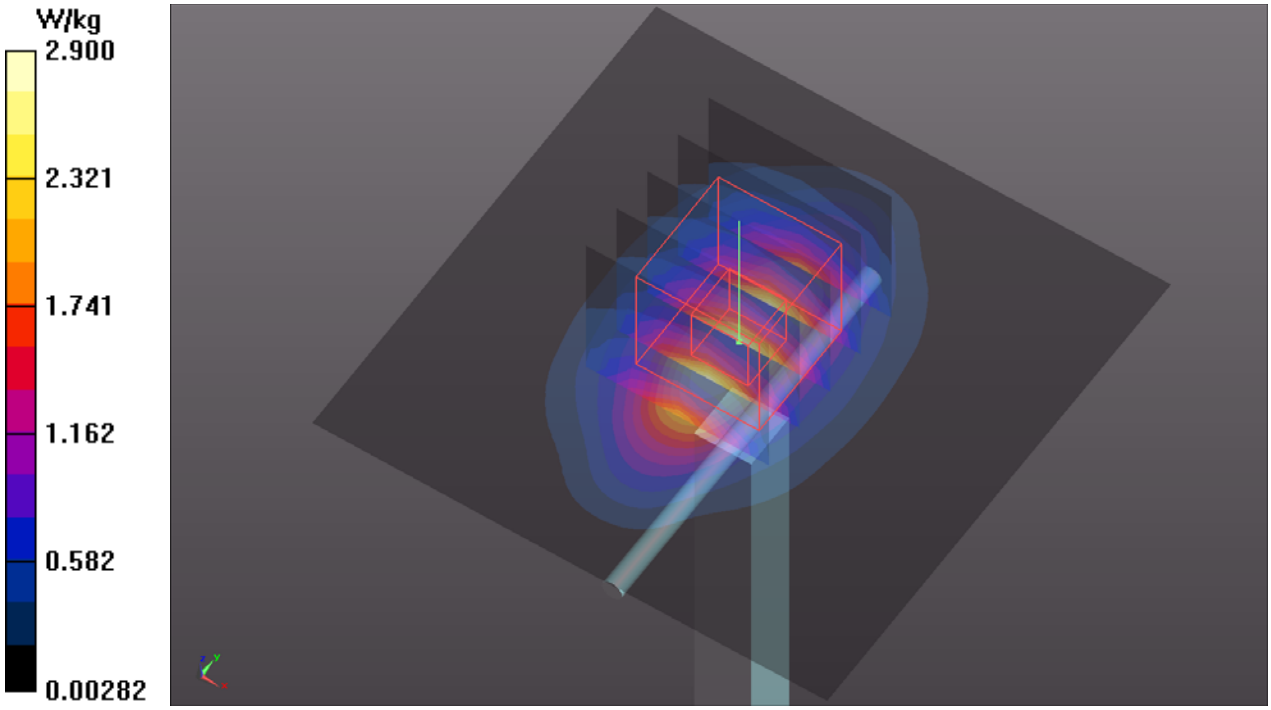
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: H16T20N1_0707 Medium parameters used: f = 1900 MHz; σ = 1.461 S/m; ε_r = 38.219; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.25, 8.25, 8.25) @ 1900 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; 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) = 2.90 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.77 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.45 W/kg
SAR(1 g) = 1.84 W/kg; SAR(10 g) = 0.989 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.92 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/10

System Check_H2300_200710

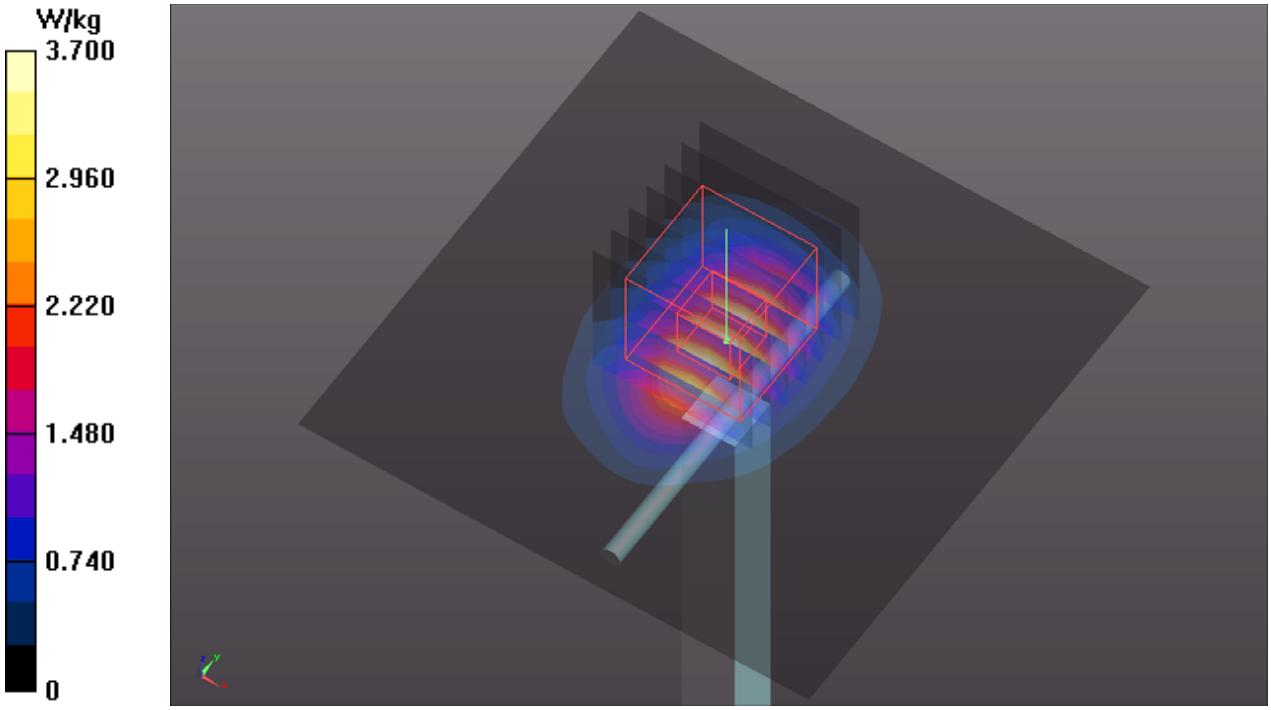
DUT: Dipole 2300 MHz; Type: D2300V2; SN:1004

Communication System: UID 0, CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0710 Medium parameters used: f = 2300 MHz; σ = 1.703 S/m; ε_r = 38.707; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.98, 7.98, 7.98) @ 2300 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- 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) = 3.70 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.83 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.54 W/kg
SAR(1 g) = 2.29 W/kg; SAR(10 g) = 1.13 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.75 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/16

System Check_H2450_200716

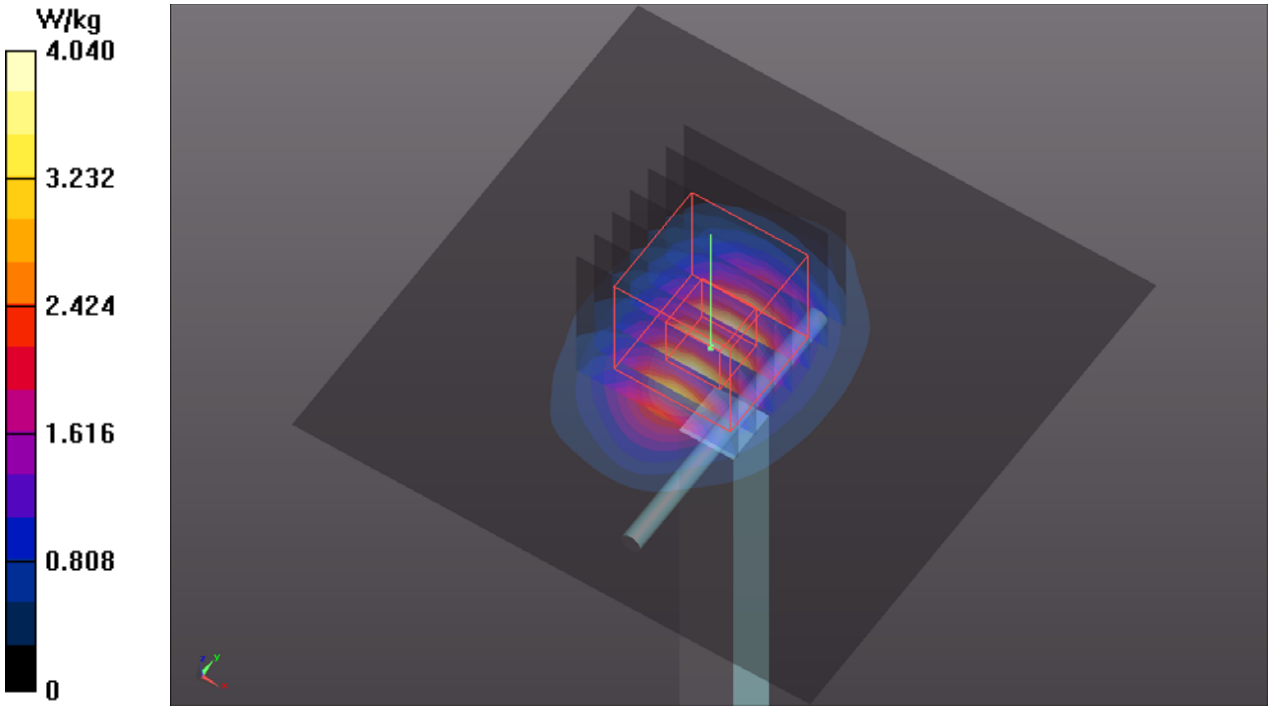
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: H19T27N2_0716 Medium parameters used (interpolated): f = 2450 MHz; σ = 1.87 S/m; ε_r = 37.896; ρ = 1000 kg/m^3
Ambient Temperature：23.6℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.7, 7.7, 7.7) @ 2450 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- 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) = 4.04 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.30 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 4.98 W/kg
SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.18 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 4.08 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/10

System Check_H2600_200710

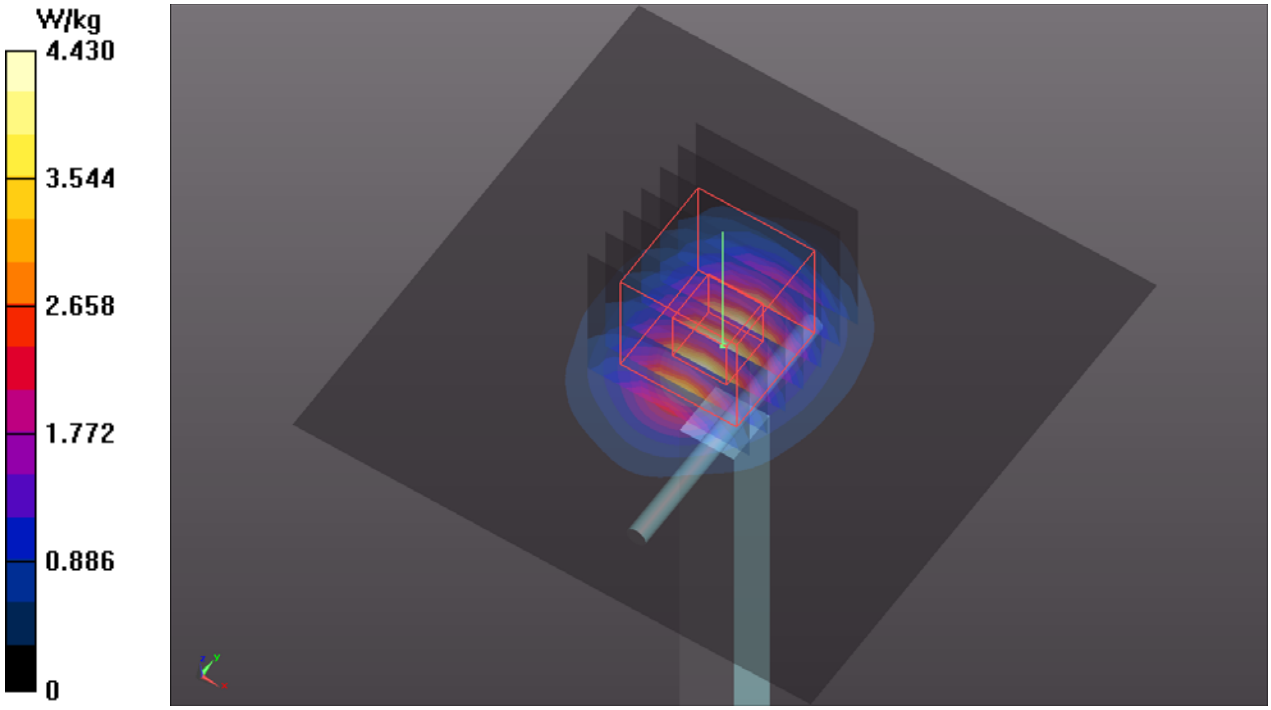
DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0710 Medium parameters used: f = 2600 MHz; σ = 2.005 S/m; ε_r = 37.66; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.48, 7.48, 7.48) @ 2600 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- 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) = 4.43 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.74 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.51 W/kg
SAR(1 g) = 2.65 W/kg; SAR(10 g) = 1.23 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 4.49 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/14

System Check_H5250_200714

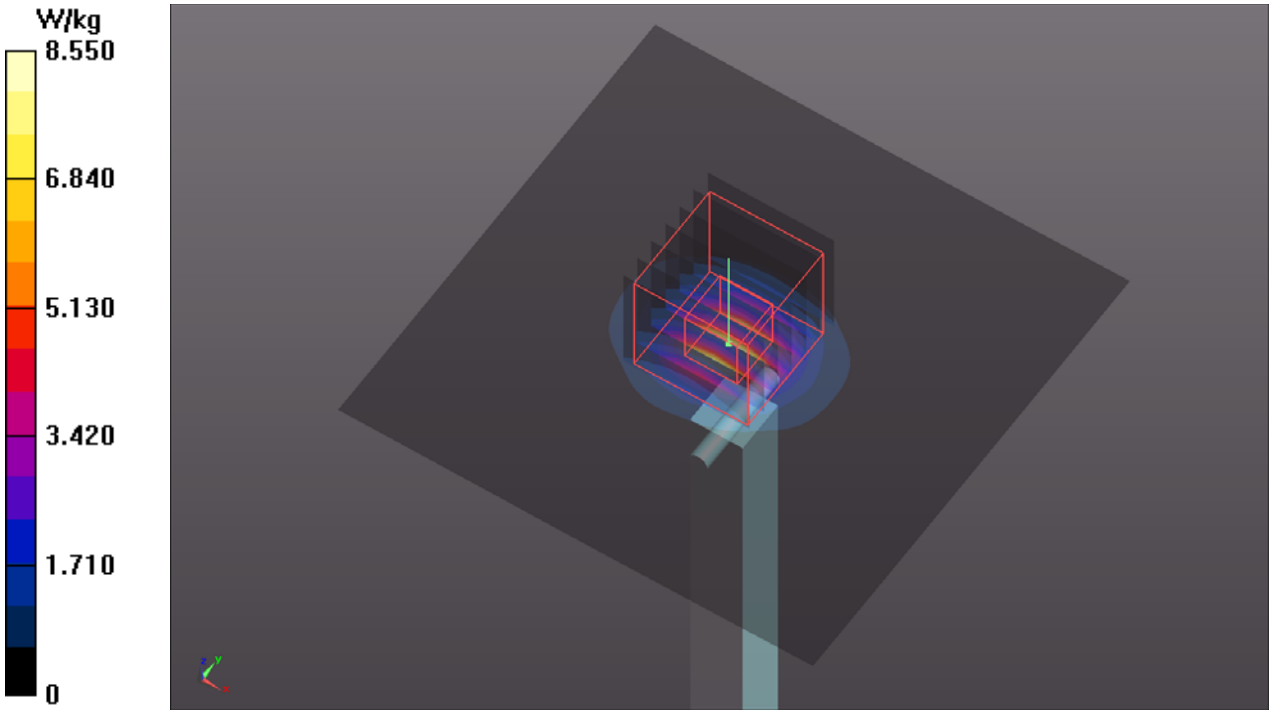
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: H34T60N2_0714 Medium parameters used: f = 5250 MHz; σ = 4.829 S/m; ε_r = 36.349; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.67, 5.67, 5.67) @ 5250 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.55 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.40 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 13.5 W/kg
SAR(1 g) = 3.81 W/kg; SAR(10 g) = 1.13 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 9.12 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/14

System Check_H5600_200714

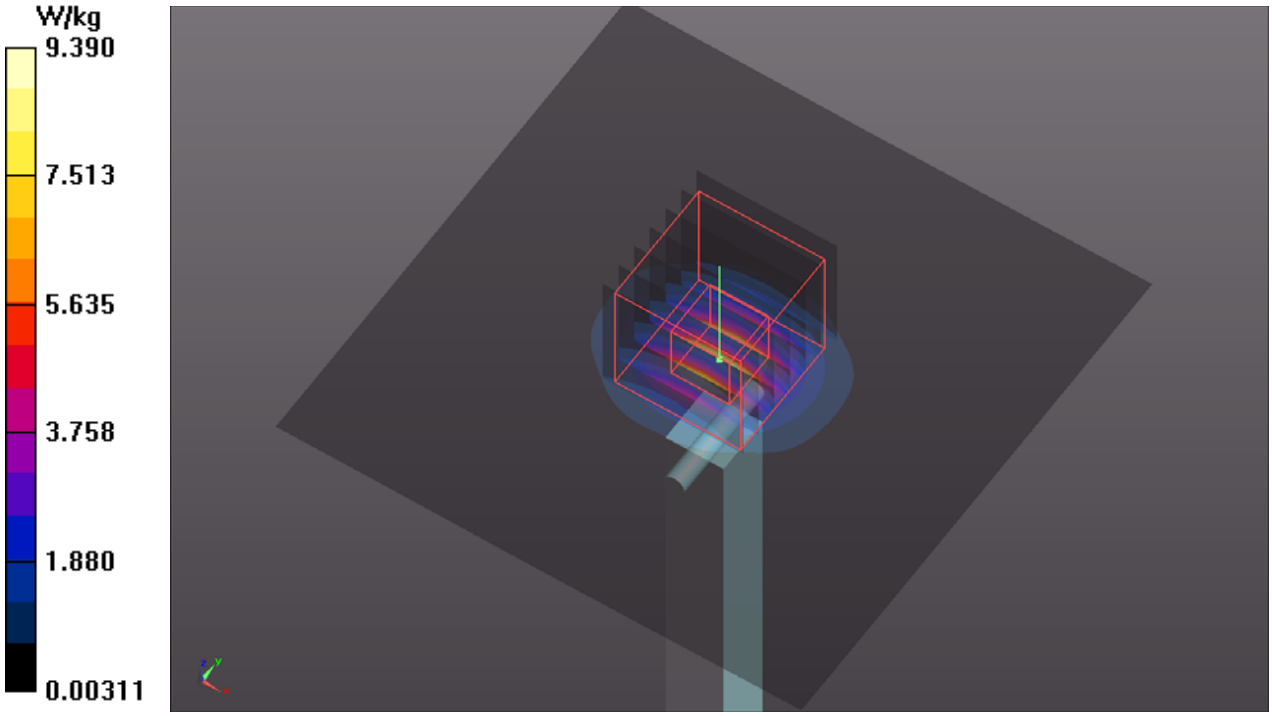
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: H34T60N1_0714 Medium parameters used: f = 5600 MHz; σ = 5.102 S/m; ε_r = 36.508; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.1, 5.1, 5.1) @ 5600 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.39 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.56 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 3.96 W/kg; SAR(10 g) = 1.16 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 9.80 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/07/14

System Check_H5750_200714

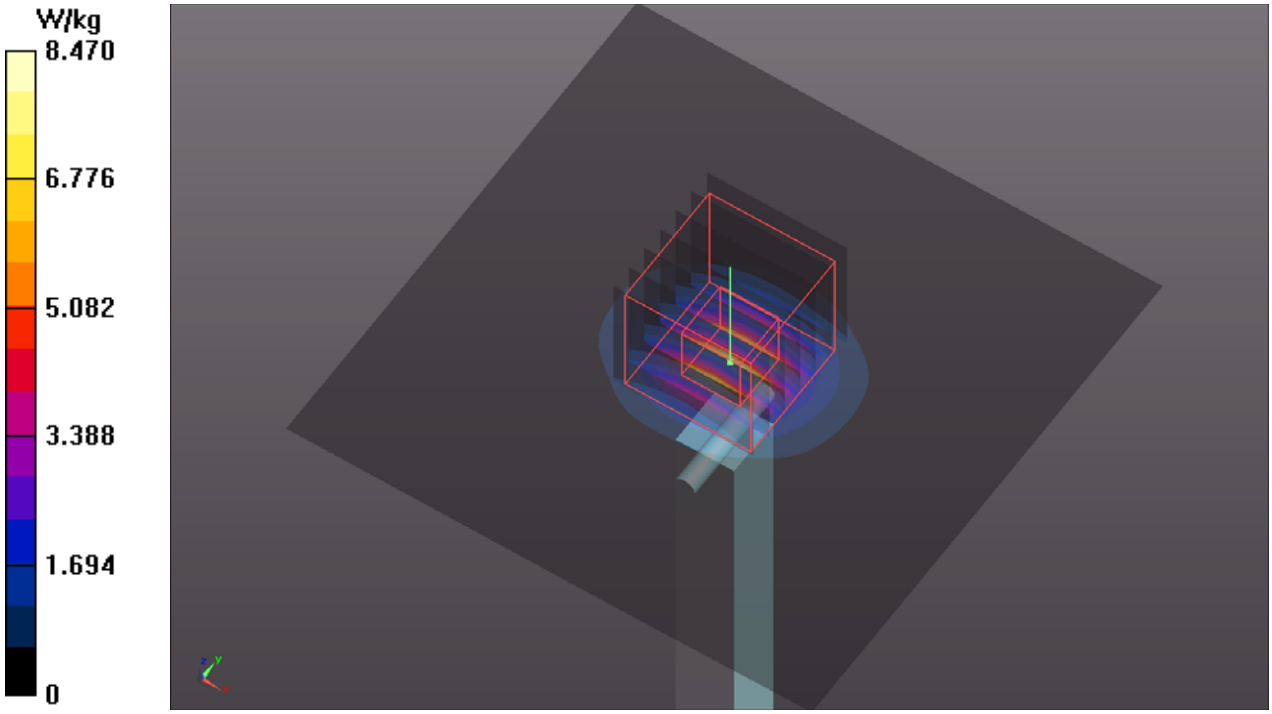
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: H34T60N1_0714 Medium parameters used: f = 5750 MHz; σ = 5.262 S/m; ε_r = 36.283; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.23, 5.23, 5.23) @ 5750 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Pin=50mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.47 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 45.84 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 14.7 W/kg
SAR(1 g) = 3.84 W/kg; SAR(10 g) = 1.11 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 8.97 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_Rear Face_0mm_Ch9400_P-Sensor_w_Keyboard_w_o

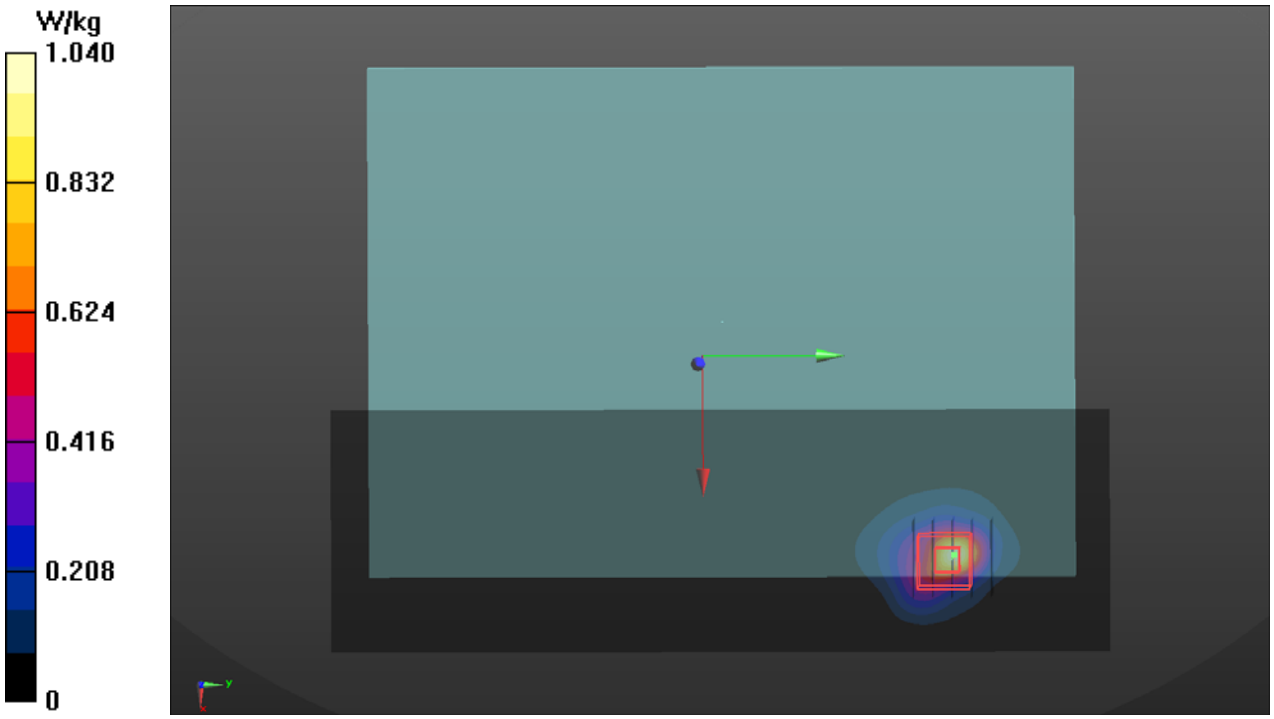
DUT: BEDV-WTW-P20060155

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_0718 Medium parameters used: f = 1880 MHz; σ = 1.434 S/m; ε_r = 40.527; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(8.02, 8.02, 8.02) @ 1880 MHz; Calibrated: 2020/5/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1585; Calibrated: 2020/5/28
- Phantom: ELI Phantom_2105; Type: QD OVA 004 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.04 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.47 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 0.664 W/kg; SAR(10 g) = 0.324 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 = 43.9%
Maximum value of SAR (measured) = 1.29 W/kg



P02 WCDMA V_RMC12.2K_Top Side_0mm_Ch4132_P-Sensor_w_Keyboard_w_o

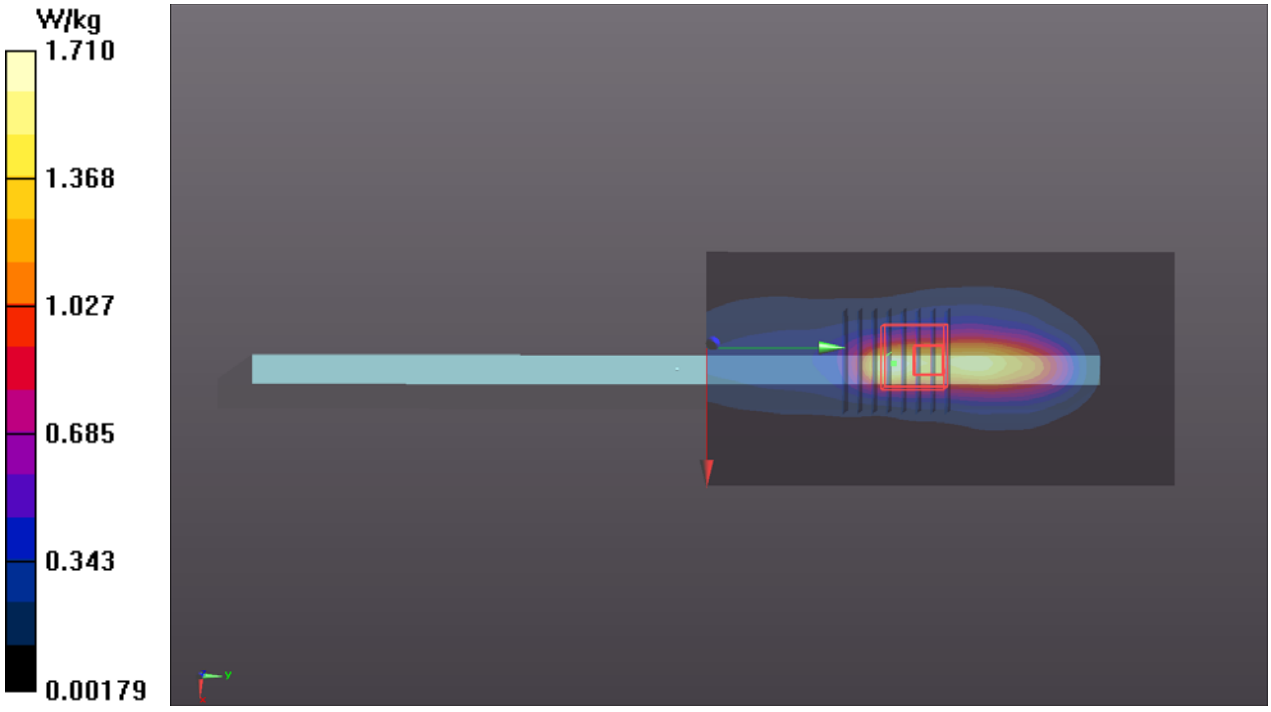
DUT: BEDV-WTW-P20060155

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 826.4 MHz;Duty Cycle: 1:1.95
Medium: H07T10N1_0709 Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.917 S/m; ε_r = 42.598; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 826.4 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.71 W/kg

Zoom Scan 2 (8x8x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm
Reference Value = 44.56 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.79 W/kg
SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.454 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 72.7%
Maximum value of SAR (measured) = 1.46 W/kg



P03 LTE 4_QPSK20M_Rear Face_0mm_Ch20300_1RB_OS0_P-Sensor_w_Keyboard_w_o

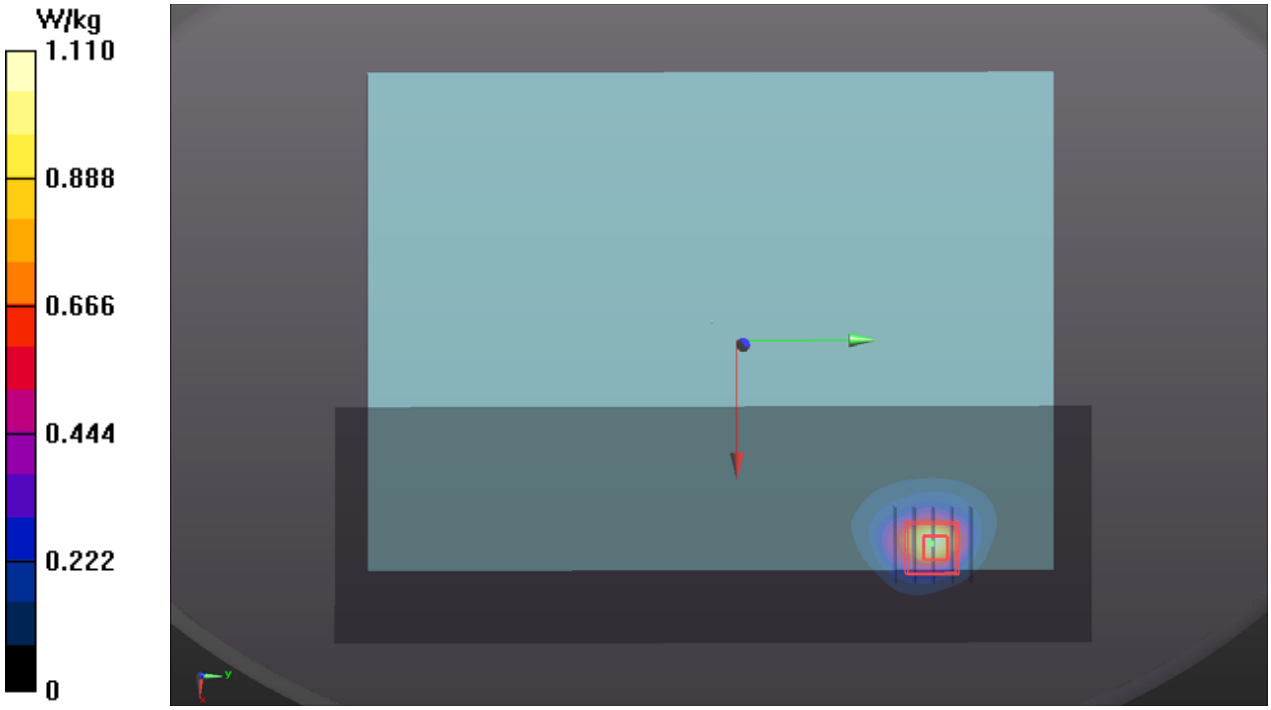
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1745 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0706 Medium parameters used (interpolated): f = 1745 MHz; σ = 1.329 S/m;
ε_r = 39.629; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ; Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.54, 8.54, 8.54) @ 1745 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.11 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.80 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.312 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 = 48.9%
Maximum value of SAR (measured) = 0.926 W/kg



P04 LTE 5_QPSK10M_Top Side_0mm_Ch20600_1RB_OS0_P-Sensor_w_Keyboard_w_o

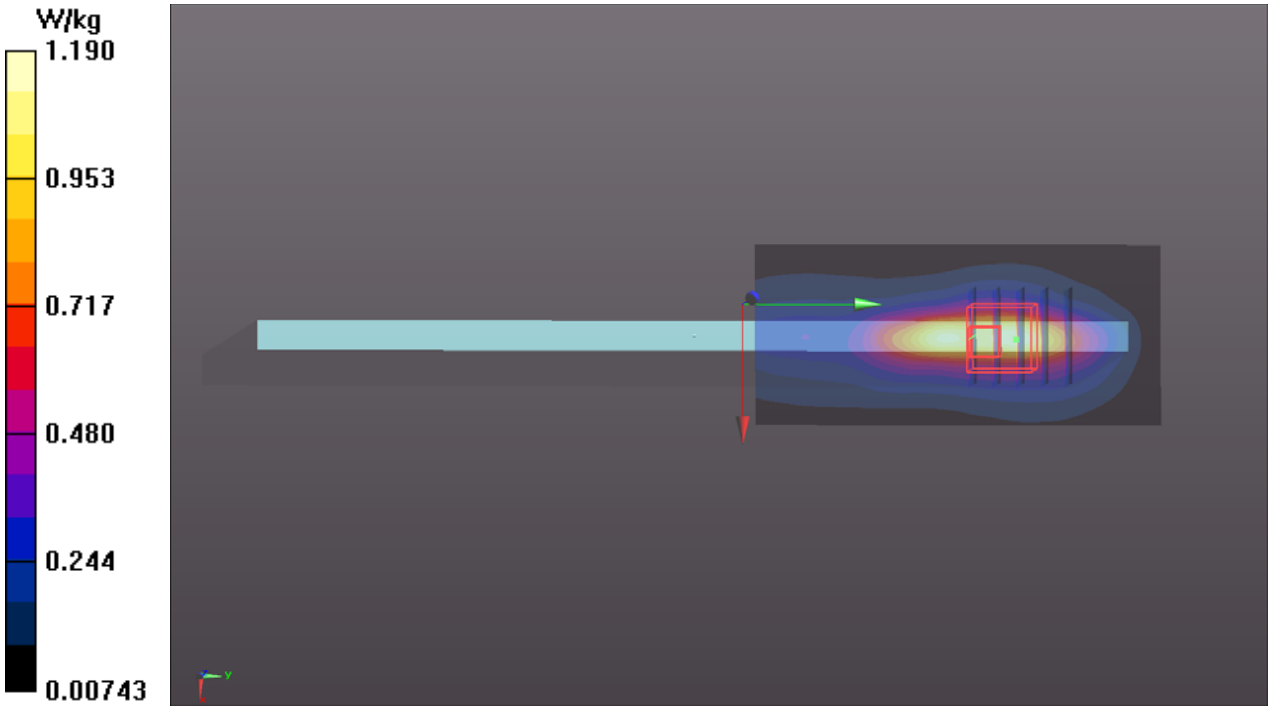
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 844 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0710 Medium parameters used: f = 844 MHz; σ = 0.938 S/m; ε_r = 41.712; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 844 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.98 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.747 W/kg; SAR(10 g) = 0.411 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 = 48.6%
Maximum value of SAR (measured) = 1.30 W/kg



P05 LTE 7_QPSK20M_Right Side_2mm_Ch21100_1RB_OS0_P-Sensor_w_o_Keyboard_w_o

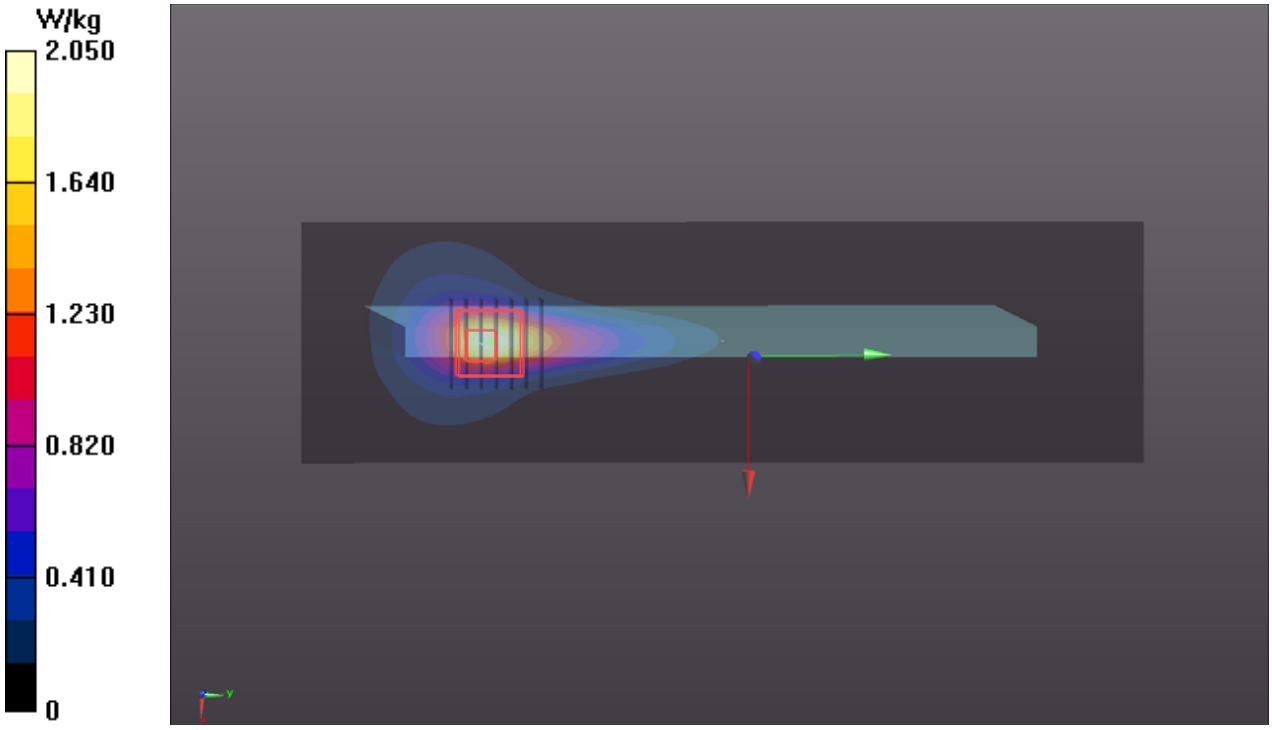
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0709 Medium parameters used (interpolated): f = 2535 MHz; σ = 1.92 S/m; ε_r = 38.359; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(7.64, 7.64, 7.64) @ 2535 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x241x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.05 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.73 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.62 W/kg
SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.527 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7 mm
Ratio of SAR at M2 to SAR at M1 = 45.5%
Maximum value of SAR (measured) = 2.03 W/kg



P06 LTE 12_QPSK10M_Rear Face_0mm_Ch23130_1RB_OS0_P-Sensor_w_Keyboard_w_o

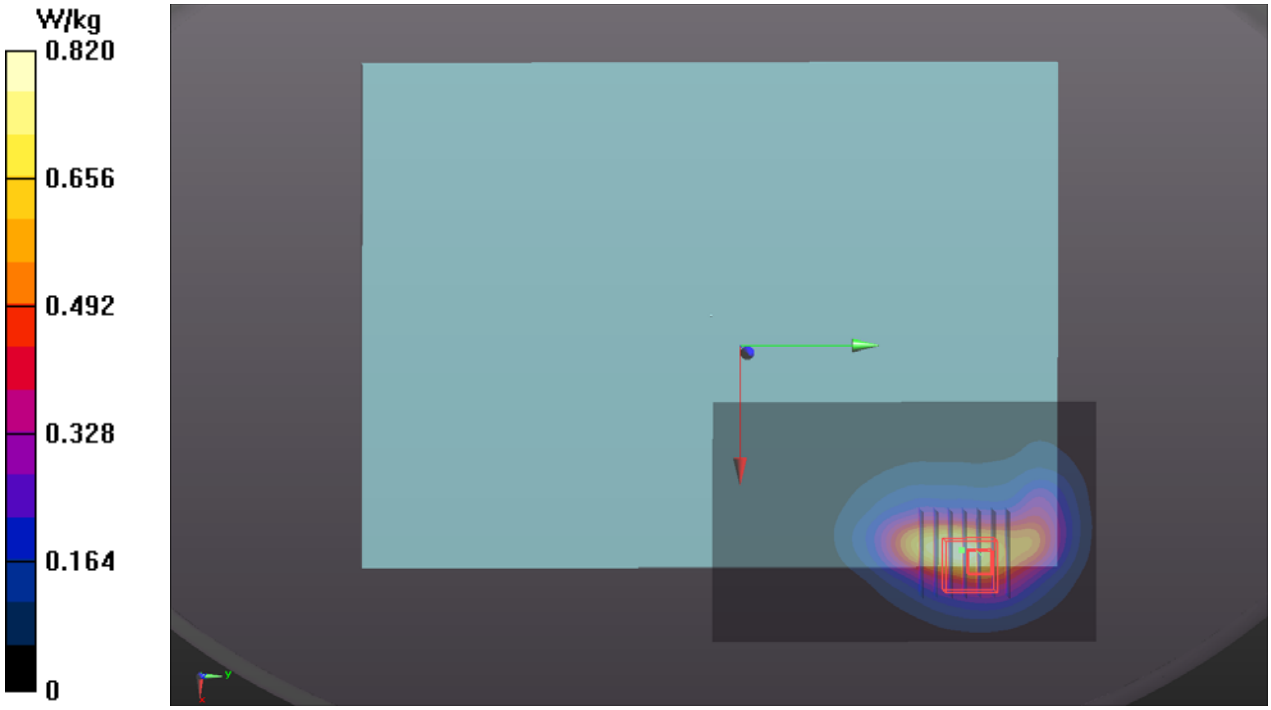
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0713 Medium parameters used: f = 711 MHz; σ = 0.859 S/m; ε_r = 43.215; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 711 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.820 W/kg

Zoom Scan 2 (7x7x8)/Cube 0: Measurement grid: dx=6mm, dy=6mm, dz=1.4mm
Reference Value = 32.40 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.642 W/kg; SAR(10 g) = 0.344 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6.6 mm
Ratio of SAR at M2 to SAR at M1 = 81.8%
Maximum value of SAR (measured) = 0.895 W/kg



P07 LTE 13_QPSK10M_Top Side_0mm_Ch23230_1RB_OS0_P-Sensor_w_Keyboard_w_o

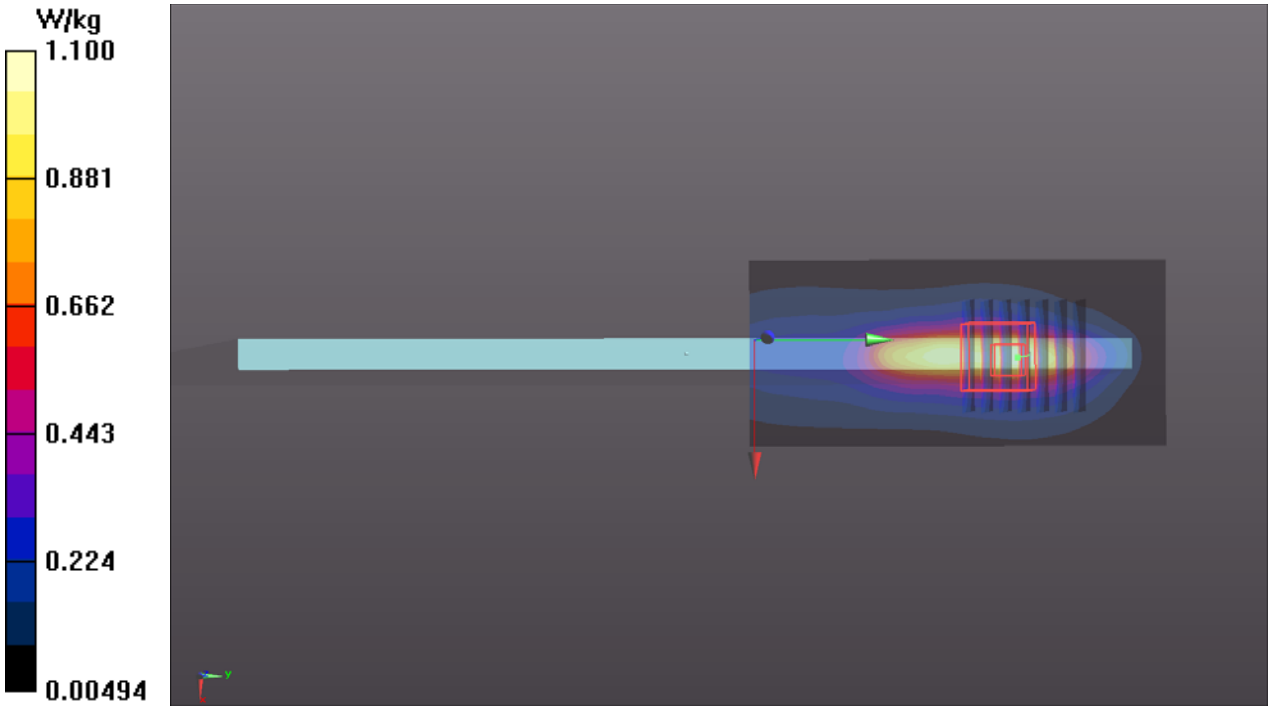
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0709 Medium parameters used: f = 782 MHz; σ = 0.927 S/m; ε_r = 42.219; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 782 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Zoom Scan 2 (7x7x8)/Cube 0: Measurement grid: dx=6mm, dy=6mm, dz=1.4mm
Reference Value = 35.73 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.674 W/kg; SAR(10 g) = 0.366 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7 mm
Ratio of SAR at M2 to SAR at M1 = 79.7%
Maximum value of SAR (measured) = 1.16 W/kg



P08 LTE 14_QPSK10M_Top Side_0mm_Ch23330_1RB_OS0_P-Sensor_w_Keyboard_w_o

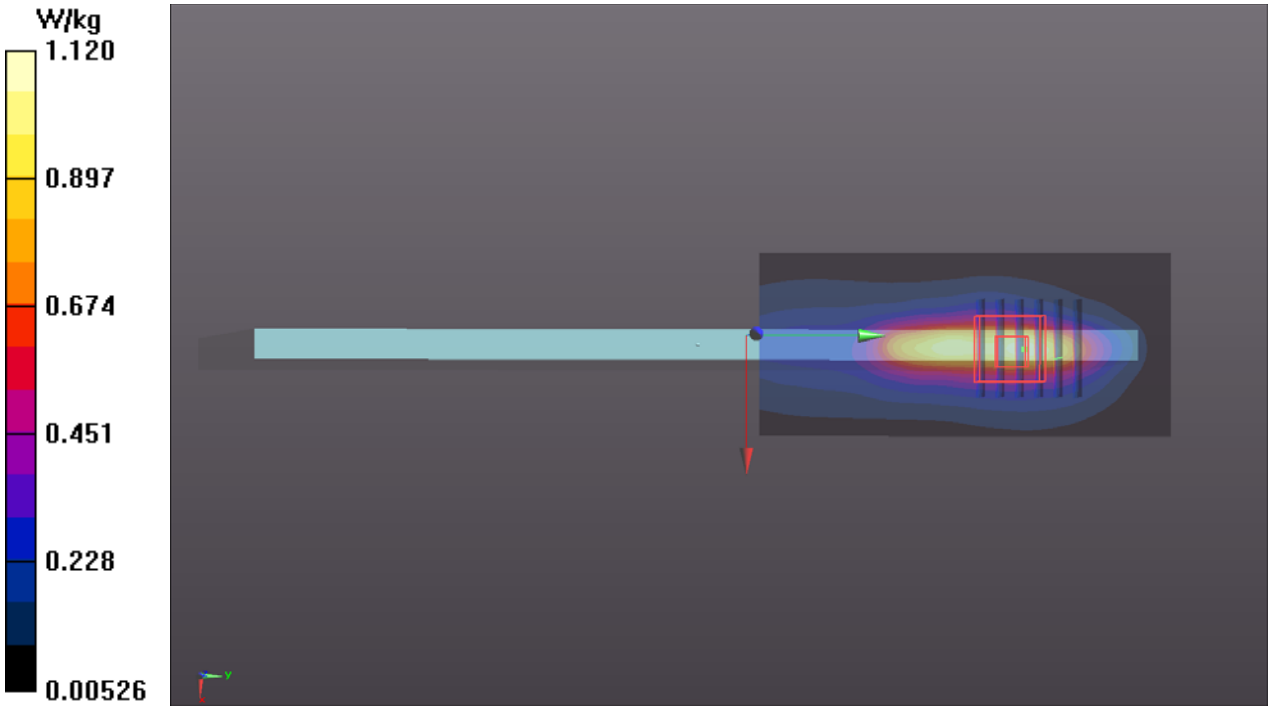
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 793 MHz;Duty Cycle: 1:3.74
Medium: H06T09N1_0709 Medium parameters used: f = 793 MHz; σ = 0.937 S/m; ε_r = 42.071; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 793 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.12 W/kg

Zoom Scan 2 (6x6x8)/Cube 0: Measurement grid: dx=6.4mm, dy=6.4mm, dz=1.4mm
Reference Value = 35.71 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 0.683 W/kg; SAR(10 g) = 0.368 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7 mm
Ratio of SAR at M2 to SAR at M1 = 75.3%
Maximum value of SAR (measured) = 1.14 W/kg



P09 LTE 25_QPSK20M_Rear Face_0mm_Ch26590_1RB_OS0_P-Sensor_w_Keyboard_w_o

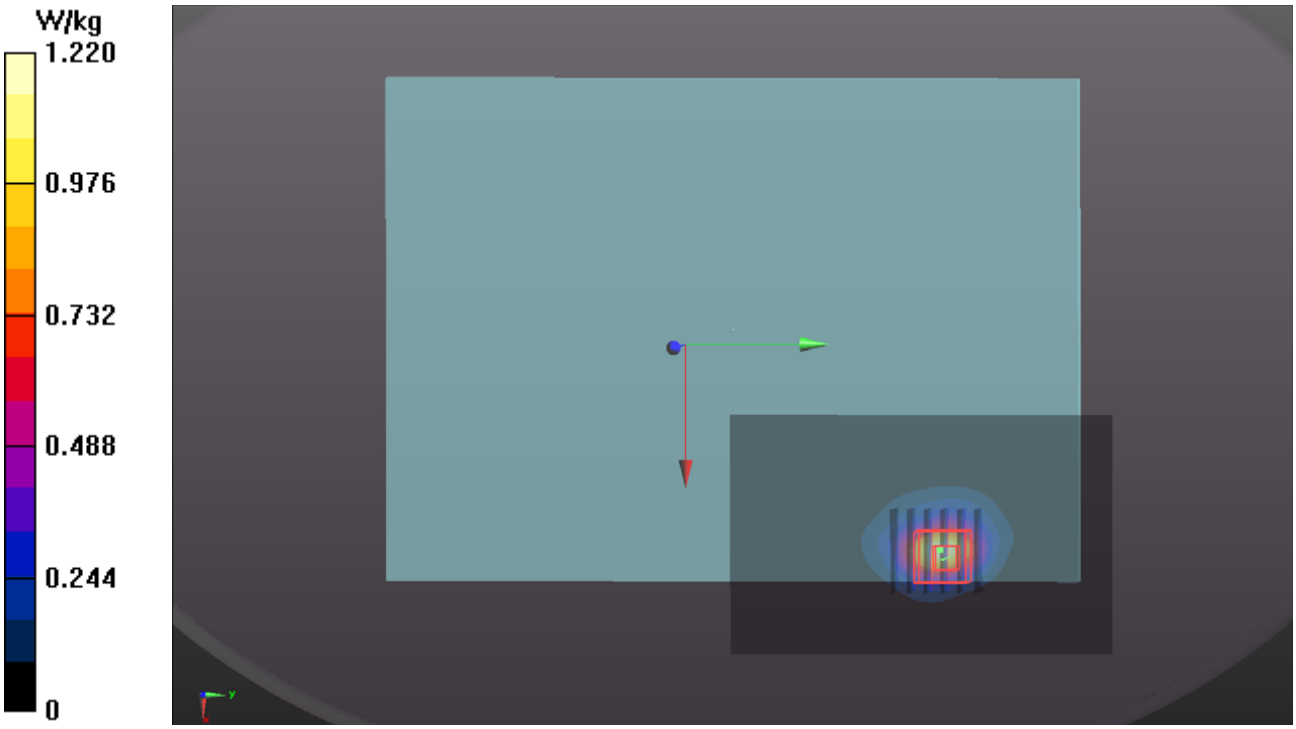
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1905 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0714 Medium parameters used (interpolated): f = 1905 MHz; σ = 1.464 S/m; ε_r = 38.221; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.25, 8.25, 8.25) @ 1905 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.22 W/kg

Zoom Scan 2 (6x6x8)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=1.4mm
Reference Value = 25.32 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.688 W/kg; SAR(10 g) = 0.339 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 78.9%
Maximum value of SAR (measured) = 1.24 W/kg



P10 LTE 26_QPSK15M_Top Side_0mm_Ch26765_1RB_OS0_P-Sensor_w_Keyboard_w_o

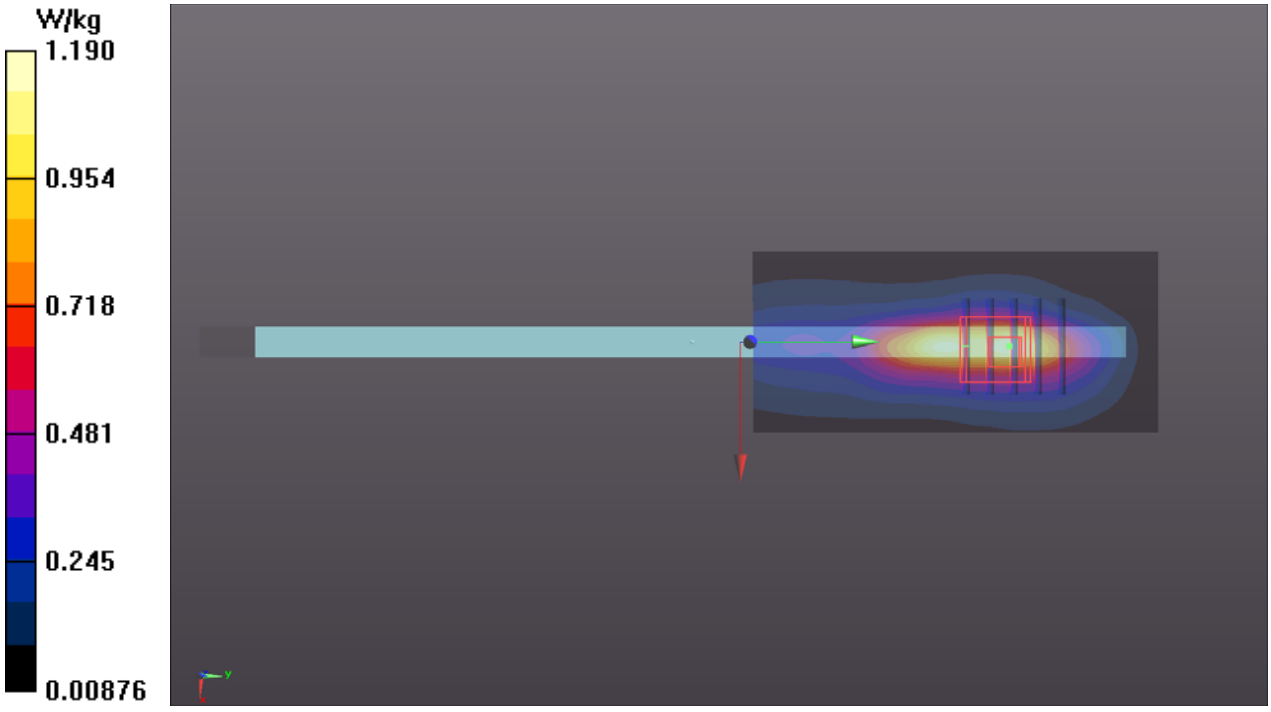
DUT: BEDV-WTW-P20060155

Communication System: UID 10181 - CAE, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK);
Frequency: 821.5 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0710 Medium parameters used (interpolated): f = 821.5 MHz; σ = 0.918 S/m;
ε_r = 41.984; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 821.5 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.50 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.830 W/kg; SAR(10 g) = 0.457 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 = 49.1%
Maximum value of SAR (measured) = 1.40 W/kg



P11 LTE 30_QPSK10M_Rear Face_0mm_Ch27710_1RB_OS0_P-Sensor_w_Keyboard_w_o

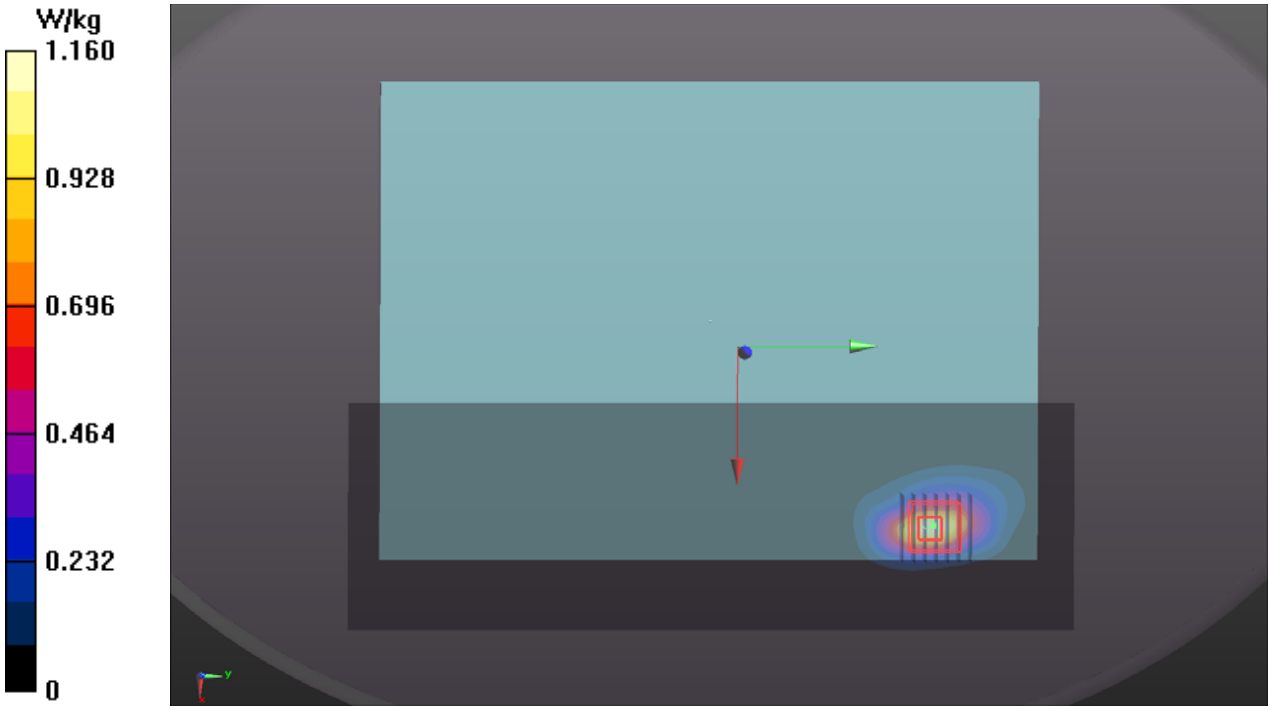
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 2310 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0707 Medium parameters used: f = 2310 MHz; σ = 1.731 S/m; ε_r = 39.775; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.98, 7.98, 7.98) @ 2310 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x271x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.51 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 0.747 W/kg; SAR(10 g) = 0.326 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8 mm
Ratio of SAR at M2 to SAR at M1 = 39.8%
Maximum value of SAR (measured) = 1.36 W/kg



P12 LTE 41_QPSK20M_Right Side_2mm_Ch41055_1RB_OS0_P-Sensor_w_o_Keyboard_w_o

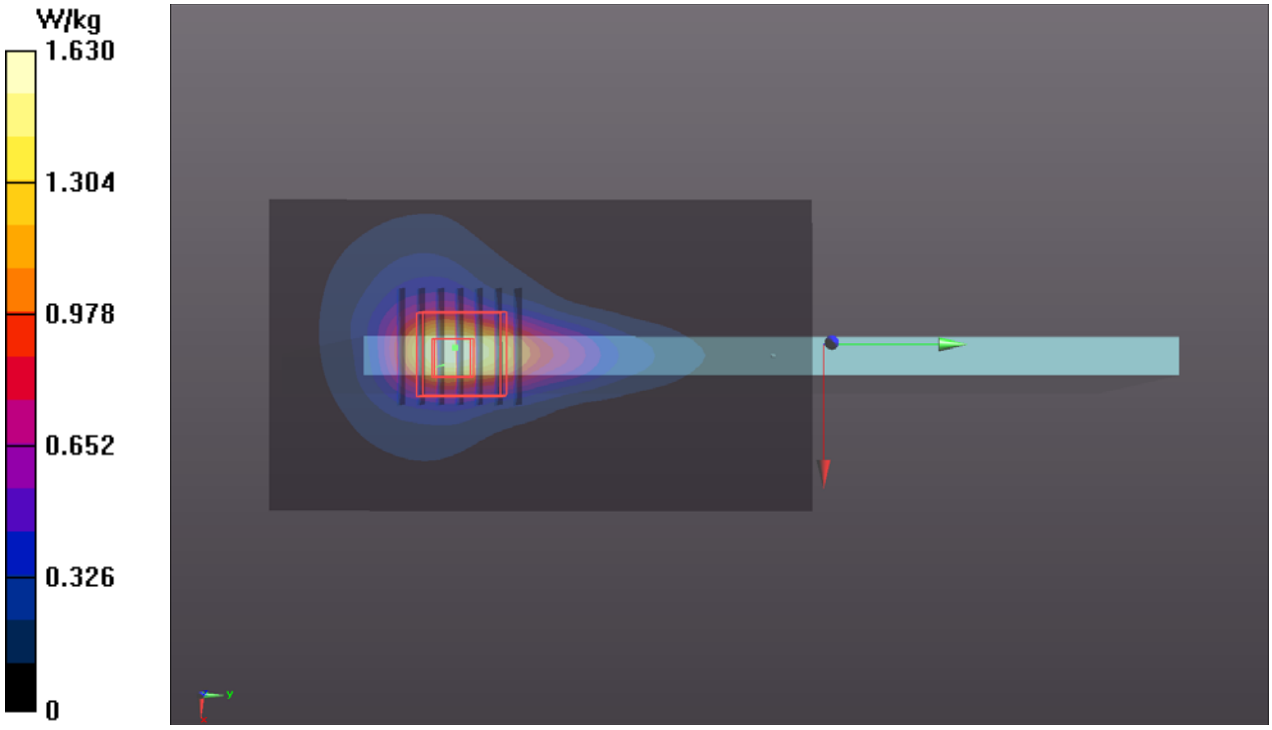
DUT: BEDV-WTW-P20060155

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2636.5 MHz;Duty Cycle: 1:8.33
Medium: H19T27N1_0708 Medium parameters used (interpolated): f = 2636.5 MHz; σ = 2.092 S/m; ε_r = 38.193; 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) @ 2636.5 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.63 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.26 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.41 W/kg
SAR(1 g) = 0.966 W/kg; SAR(10 g) = 0.425 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6 mm
Ratio of SAR at M2 to SAR at M1 = 42.5%
Maximum value of SAR (measured) = 1.79 W/kg



P13 LTE 66_QPSK20M_Rear Face_0mm_Ch132072_1RB_OS0_P-Sensor_w_Keyboard_w_o

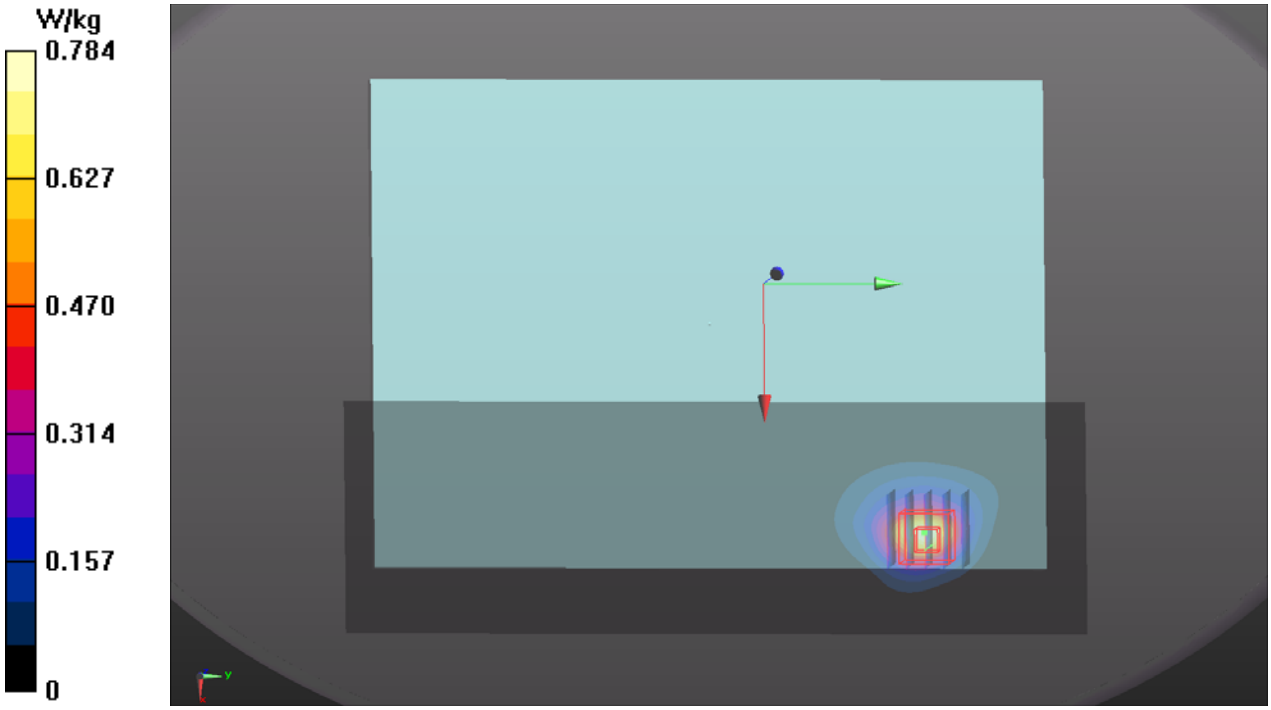
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1720 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0707 Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 38.901; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ; Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.54, 8.54, 8.54) @ 1720 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.784 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.86 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.947 W/kg
SAR(1 g) = 0.474 W/kg; SAR(10 g) = 0.241 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 = 51%
Maximum value of SAR (measured) = 0.717 W/kg



P14 WLAN2.4G_802.11b_Rear Face_0mm_Ch11_Ant 1_Keyboard_w_o

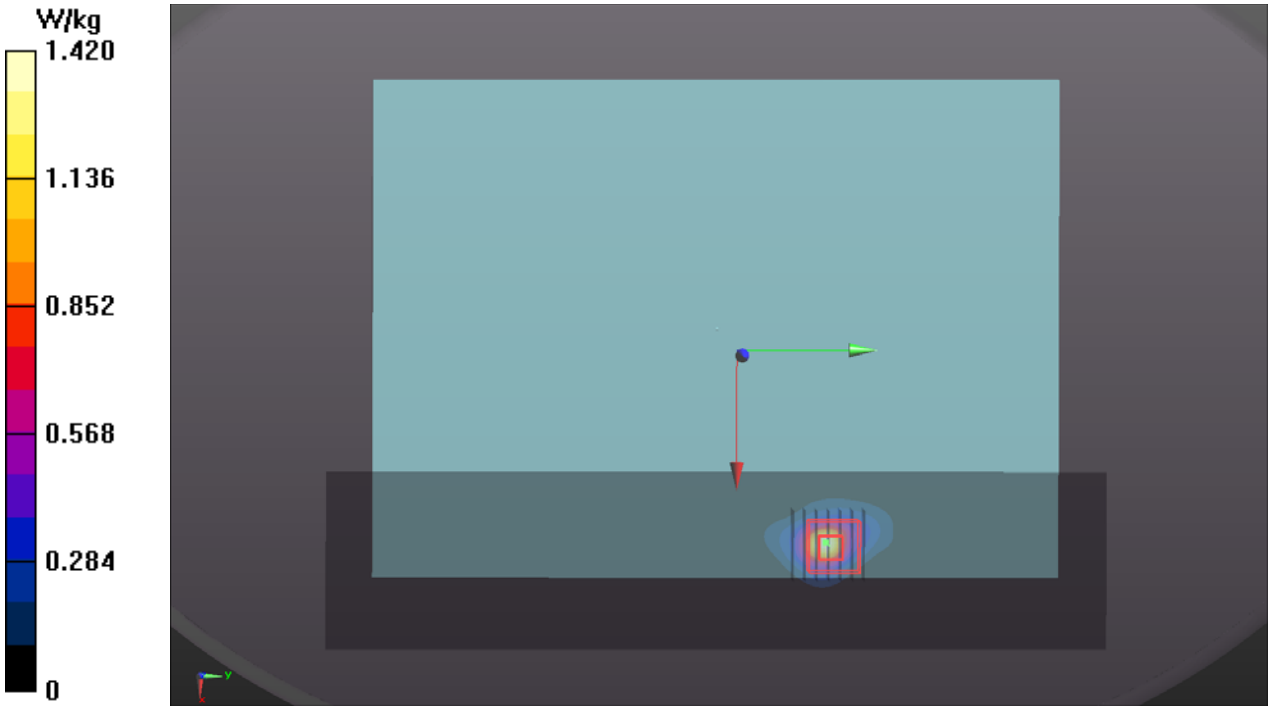
DUT: BEDV-WTW-P20060155

Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2462 MHz;Duty Cycle: 1:1.01
Medium: H19T27N2_0716 Medium parameters used: f = 2462 MHz; σ = 1.884 S/m; ε_r = 37.866; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ; Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.7, 7.7, 7.7) @ 2462 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: ELI Phantom_1204; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x281x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.42 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.51 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 2.12 W/kg
SAR(1 g) = 0.731 W/kg; SAR(10 g) = 0.271 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 = 36.3%
Maximum value of SAR (measured) = 1.51 W/kg



P15 WLAN5.3G_802.11ac VHT160_Rear Face_0mm_Ch50_Ant 0 +1_Keyboard_w_o

DUT: BEDV-WTW-P20060155

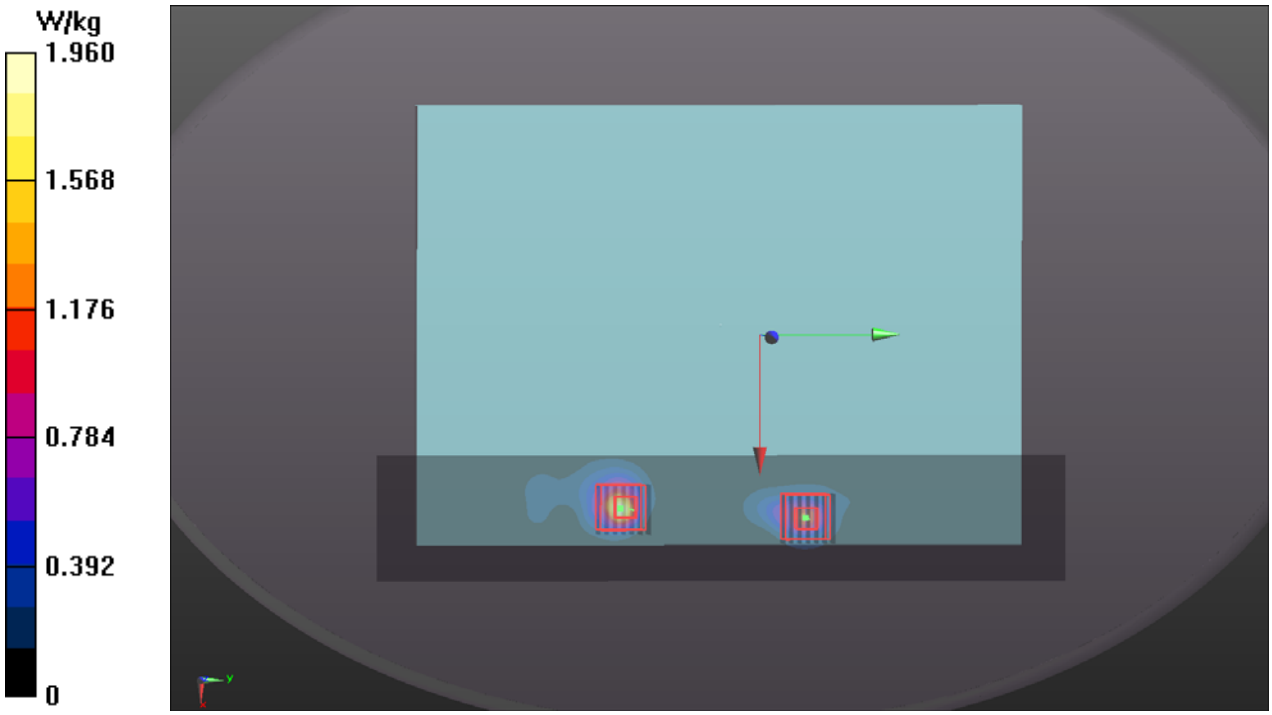
Communication System: UID 10636 - AAC, IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle); Frequency: 5250 MHz;Duty Cycle: 1:1.12
Medium: H34T60N2_0714 Medium parameters used: f = 5250 MHz; σ = 4.829 S/m; ε_r = 36.349; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ; Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.67, 5.67, 5.67) @ 5250 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x331x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.96 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 18.20 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.88 W/kg
SAR(1 g) = 0.797 W/kg; SAR(10 g) = 0.248 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6.1 mm
Ratio of SAR at M2 to SAR at M1 = 67.8%
Maximum value of SAR (measured) = 1.84 W/kg

Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 18.20 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 0.510 W/kg; SAR(10 g) = 0.158 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 68.2%
Maximum value of SAR (measured) = 1.23 W/kg


W/kg
1.960
1.568
1.176
0.784
0.392
0

P16 WLAN5.6G_802.11ac VHT160_Rear Face_0mm_Ch114_Ant 0 +1_Keyboard_w_o

DUT: BEDV-WTW-P20060155

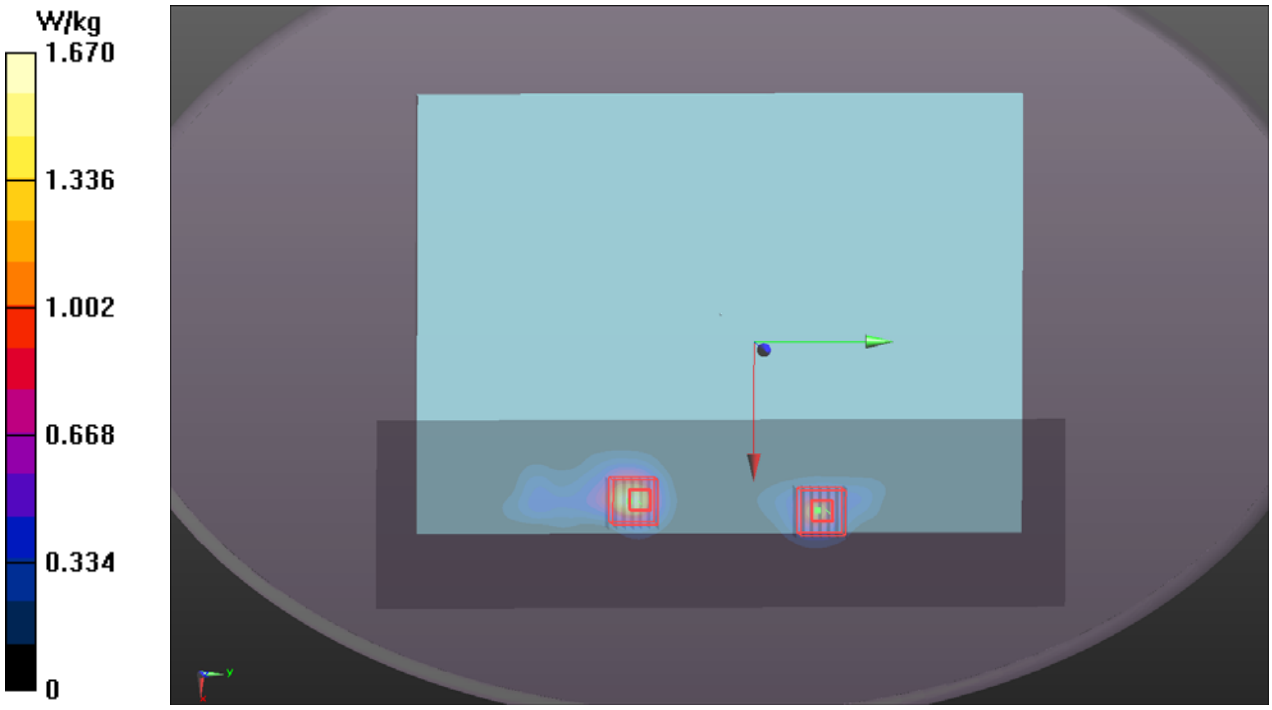
Communication System: UID 10636 - AAC, IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle); Frequency: 5570 MHz;Duty Cycle: 1:1.12
Medium: H34T60N2_0714 Medium parameters used: f = 5570 MHz; σ = 5.188 S/m; ε_r = 35.778; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ; Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.1, 5.1, 5.1) @ 5570 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x331x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.67 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 16.40 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 3.97 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.297 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 64.9%
Maximum value of SAR (measured) = 2.49 W/kg

Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 16.40 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.39 W/kg
SAR(1 g) = 0.555 W/kg; SAR(10 g) = 0.165 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 65.2%
Maximum value of SAR (measured) = 1.35 W/kg


W/kg
1.670
1.336
1.002
0.668
0.334
0

P18 WLAN5.8G_802.11ac VHT80_Rear Face_0mm_Ch155_Ant 0 +1_Keyboard_w_o

DUT: BEDV-WTW-P20060155

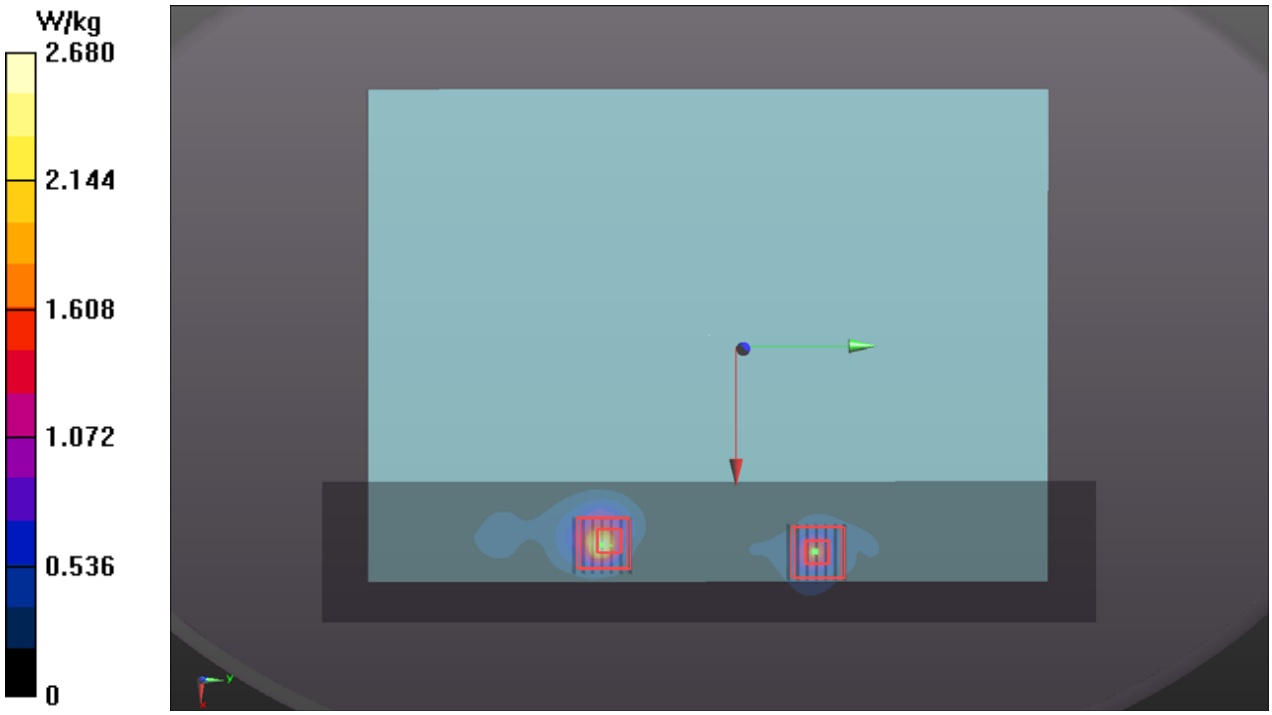
Communication System: UID 10626 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle); Frequency: 5775 MHz;Duty Cycle: 1:1.06
Medium: H34T60N2_0714 Medium parameters used: f = 5775 MHz; σ = 5.423 S/m; ε_r = 35.383; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ; Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7472; ConvF(5.23, 5.23, 5.23) @ 5775 MHz; Calibrated: 2019/08/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2019/08/27
- Phantom: ELI Phantom_1206; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x331x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.68 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 22.45 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.87 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.333 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 6.6 mm
Ratio of SAR at M2 to SAR at M1 = 64%
Maximum value of SAR (measured) = 2.94 W/kg

Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 22.45 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.01 W/kg
SAR(1 g) = 0.665 W/kg; SAR(10 g) = 0.187 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 5.6 mm
Ratio of SAR at M2 to SAR at M1 = 62.1%
Maximum value of SAR (measured) = 1.77 W/kg


W/kg
2.680
2.144
1.608
1.072
0.536
0

P19 BT_BDR_Rear Face_0mm_Ch78_Ant 1_Keyboard_w_o

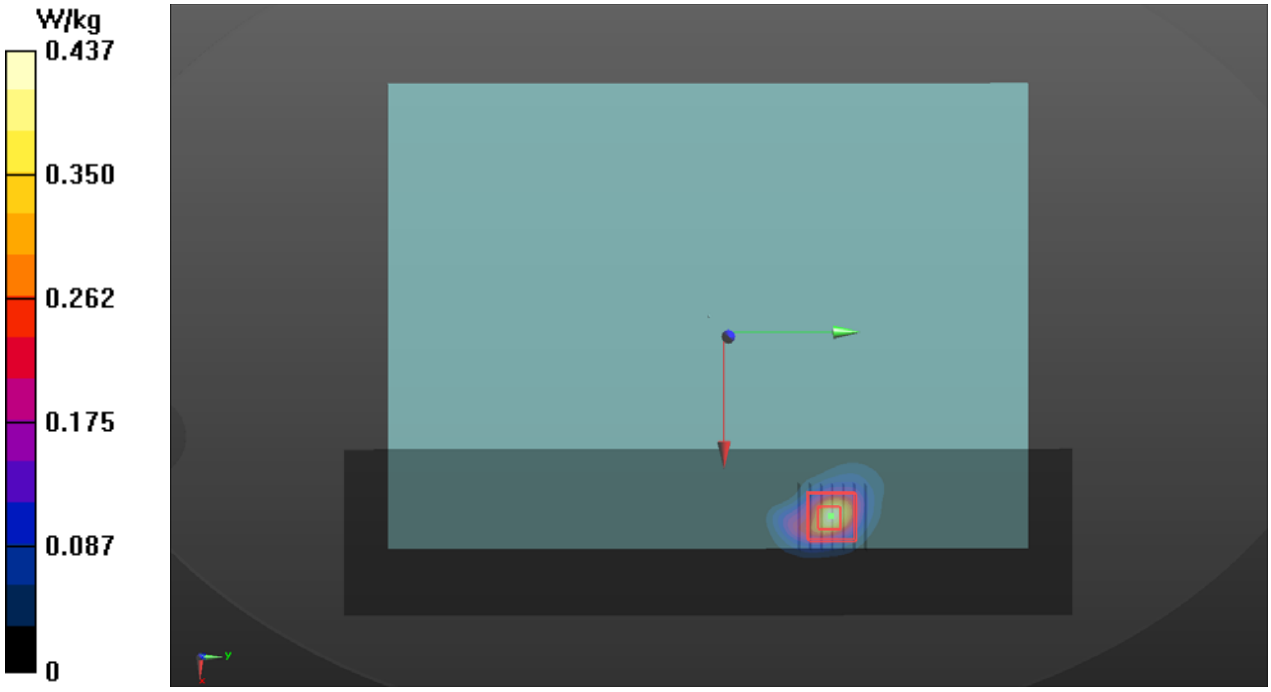
DUT: BEDV-WTW-P20060155

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2480 MHz;Duty Cycle: 1:1.31
Medium: H19T27N1_0718 Medium parameters used: f = 2480 MHz; σ = 1.884 S/m; ε_r = 38.29; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃ ; Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(7.75, 7.75, 7.75) @ 2480 MHz; Calibrated: 2020/03/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2020/05/27
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x281x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.437 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.23 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.969 W/kg
SAR(1 g) = 0.335 W/kg; SAR(10 g) = 0.121 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 43.2%
Maximum value of SAR (measured) = 0.627 W/kg



P20 WCDMA II_RMC12.2K_Top Side of Pannel_25mm_Ch9538_P-Sensor_w_o

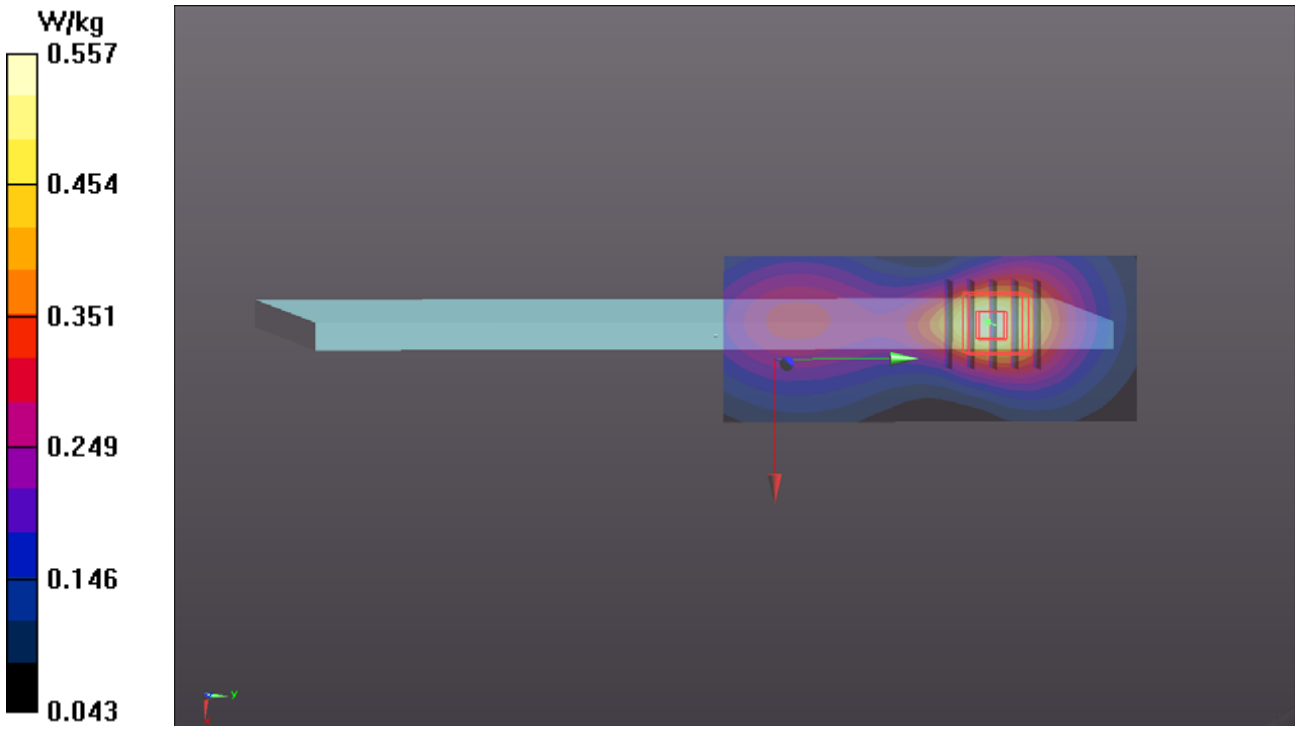
DUT: BEDV-WTW-P20060155

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_0919 Medium parameters used: f = 1908 MHz; σ = 1.462 S/m; ε_r = 40.388; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.25, 8.25, 8.25) @ 1907.6 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.557 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.63 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.637 W/kg
SAR(1 g) = 0.357 W/kg; SAR(10 g) = 0.213 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.7 mm
Ratio of SAR at M2 to SAR at M1 = 60.8%
Maximum value of SAR (measured) = 0.546 W/kg



P21 WCDMA V_RMC12.2K_Top Side of Pannel_25mm_Ch4132_P-Sensor_w_o

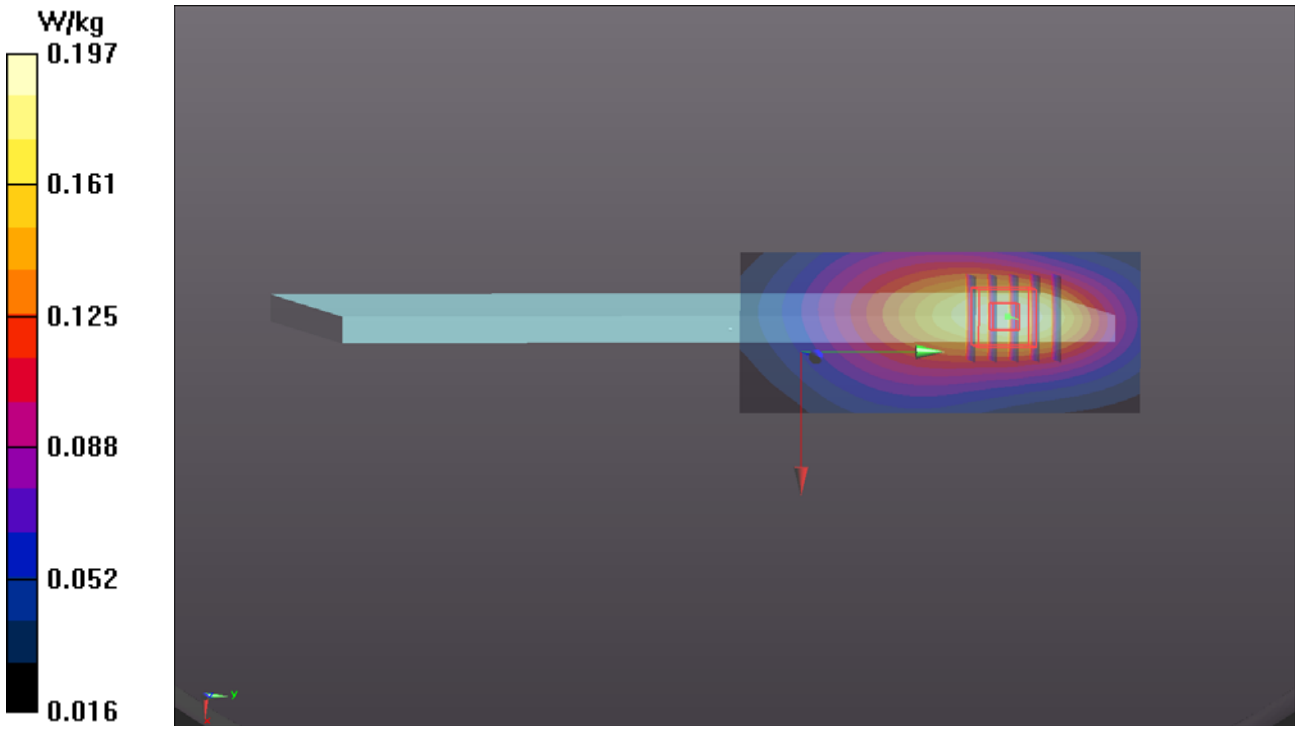
DUT: BEDV-WTW-P20060155

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 826.4 MHz;Duty Cycle: 1:1.95
Medium: H07T10N1_0919 Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.913 S/m; ε_r = 42.44; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 826.4 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.197 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.93 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.211 W/kg
SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.111 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 23.8 mm
Ratio of SAR at M2 to SAR at M1 = 74.1%
Maximum value of SAR (measured) = 0.193 W/kg



P22 LTE 4_QPSK20M_Top Side of Pannel_25mm_Ch20300_1RB_OS0_P-Sensor_w_o

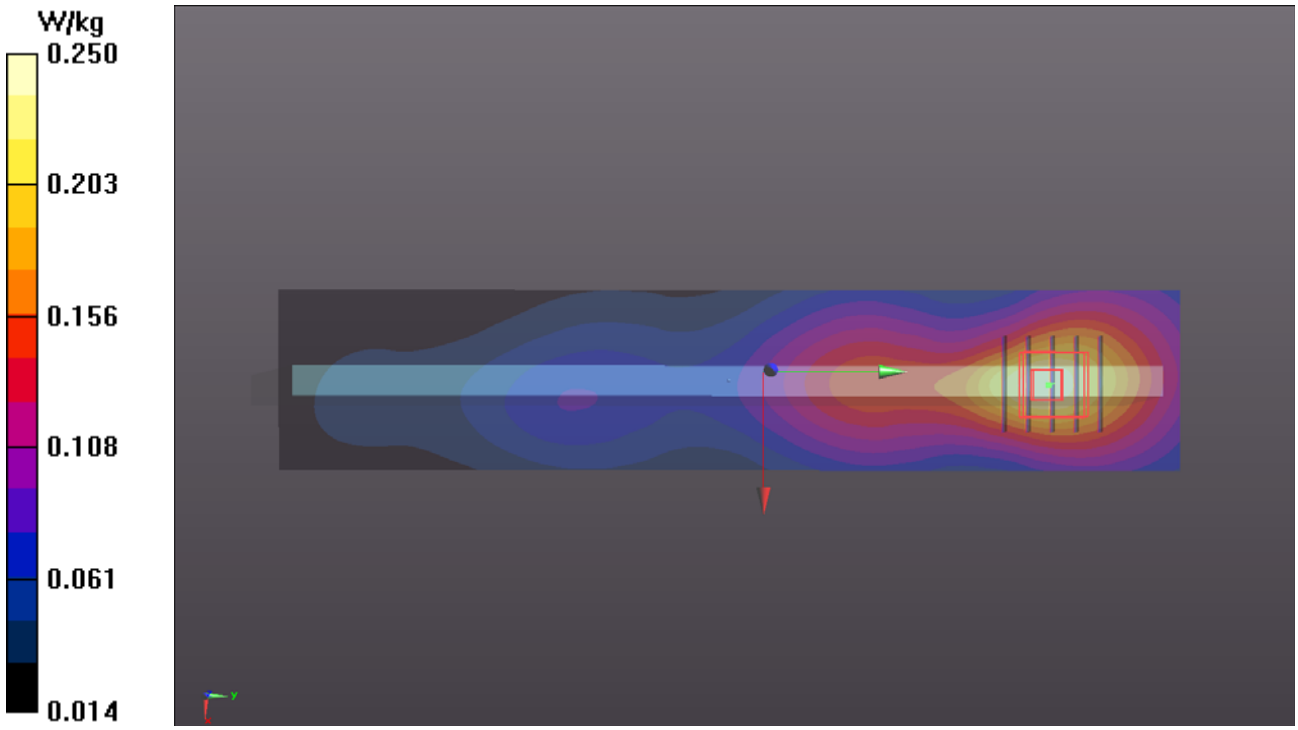
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1745 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0821 Medium parameters used (interpolated): f = 1745 MHz; σ = 1.323 S/m;
ε_r = 40.154; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.54, 8.54, 8.54) @ 1745 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.250 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.20 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.279 W/kg
SAR(1 g) = 0.185 W/kg; SAR(10 g) = 0.119 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 64.8%
Maximum value of SAR (measured) = 0.245 W/kg



P23 LTE 5_QPSK10M_Top Side of Pannel_25mm_Ch20525_1RB_OS0_P-Sensor_w_o

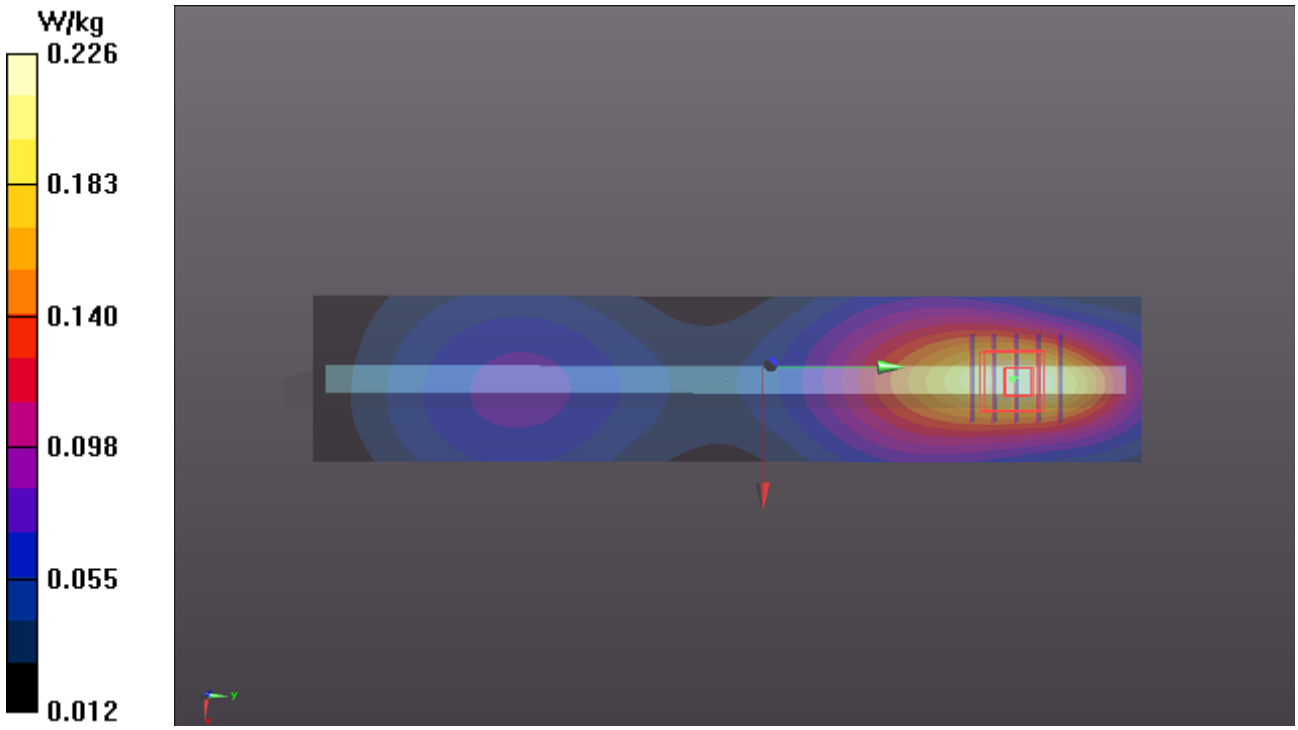
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 836.5 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0821 Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.92 S/m; ε_r = 41.711; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 836.5 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.226 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.49 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.177 W/kg; SAR(10 g) = 0.126 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 21.5 mm
Ratio of SAR at M2 to SAR at M1 = 74%
Maximum value of SAR (measured) = 0.223 W/kg



P24 LTE 7_QPSK20M_Top Side of Pannel_25mm_Ch21350_1RB_OS0_P-Sensor_w_o

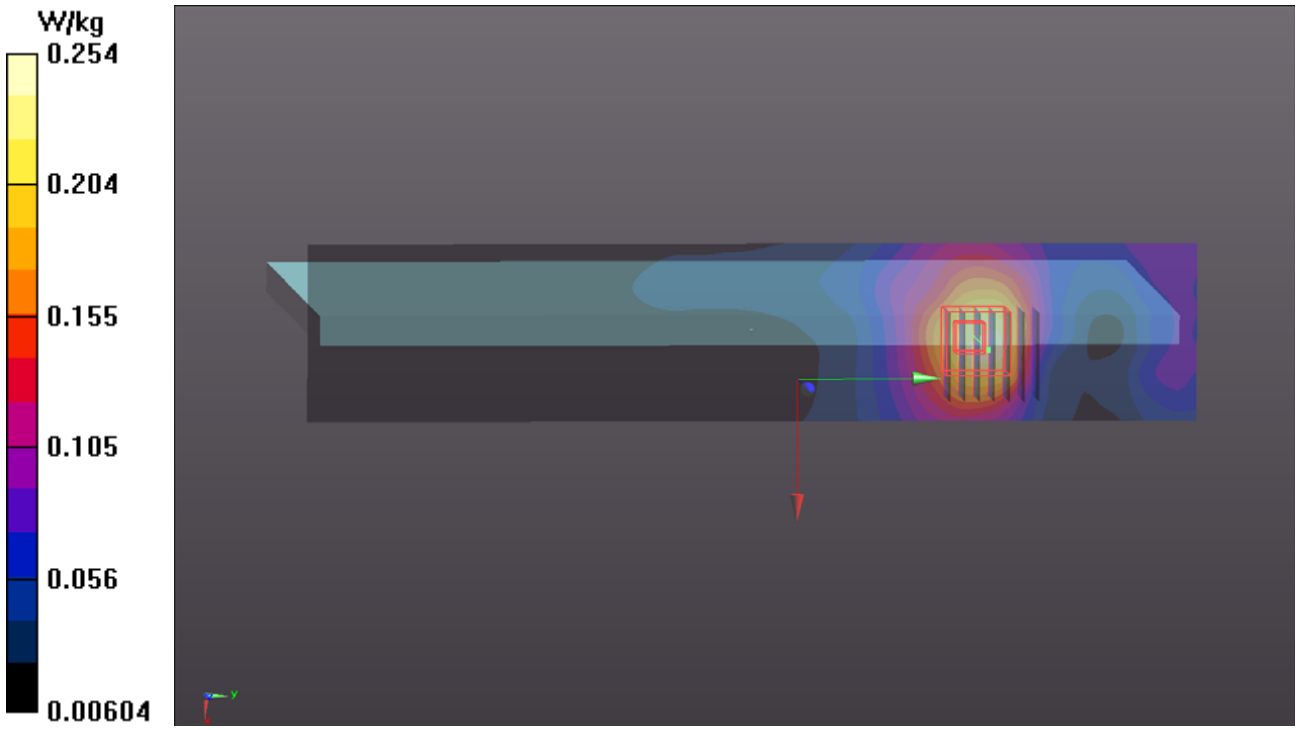
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2560 MHz;Duty Cycle: 1:3.74
Medium: H19T27N3_0822 Medium parameters used: f = 2560 MHz; σ = 1.995 S/m; ε_r = 37.727; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.48, 7.48, 7.48) @ 2560 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (51x251x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.254 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.56 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.303 W/kg
SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.092 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 19.9 mm
Ratio of SAR at M2 to SAR at M1 = 57.1%
Maximum value of SAR (measured) = 0.254 W/kg



P25 LTE 12_QPSK10M_Top Side of Pannel_25mm_Ch23130_1RB_OS0_P-Sensor_w_o

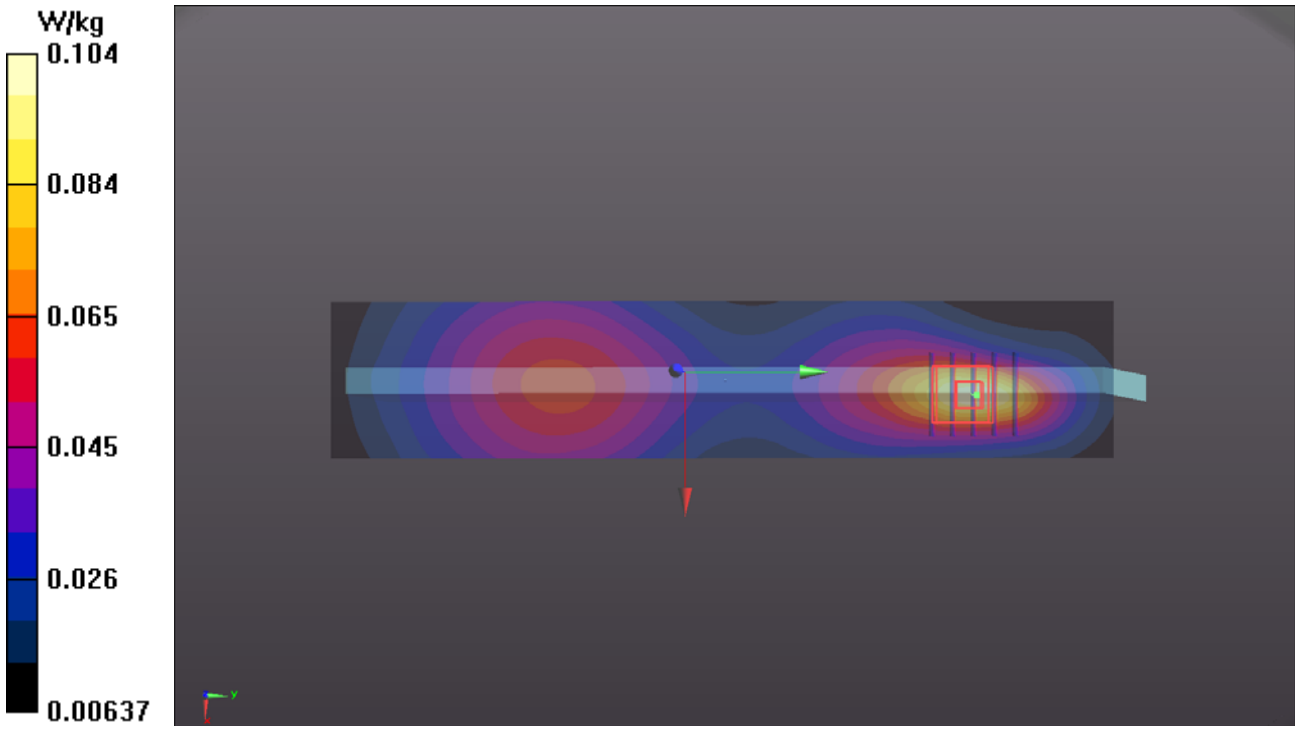
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N3_0822 Medium parameters used: f = 711 MHz; σ = 0.855 S/m; ε_r = 43.899; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 711 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.104 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.81 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.106 W/kg
SAR(1 g) = 0.080 W/kg; SAR(10 g) = 0.055 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 73.8%
Maximum value of SAR (measured) = 0.0967 W/kg



P26 LTE 13_QPSK10M_Top Side of Pannel_25mm_Ch23230_1RB_OS0_P-Sensor_w_o

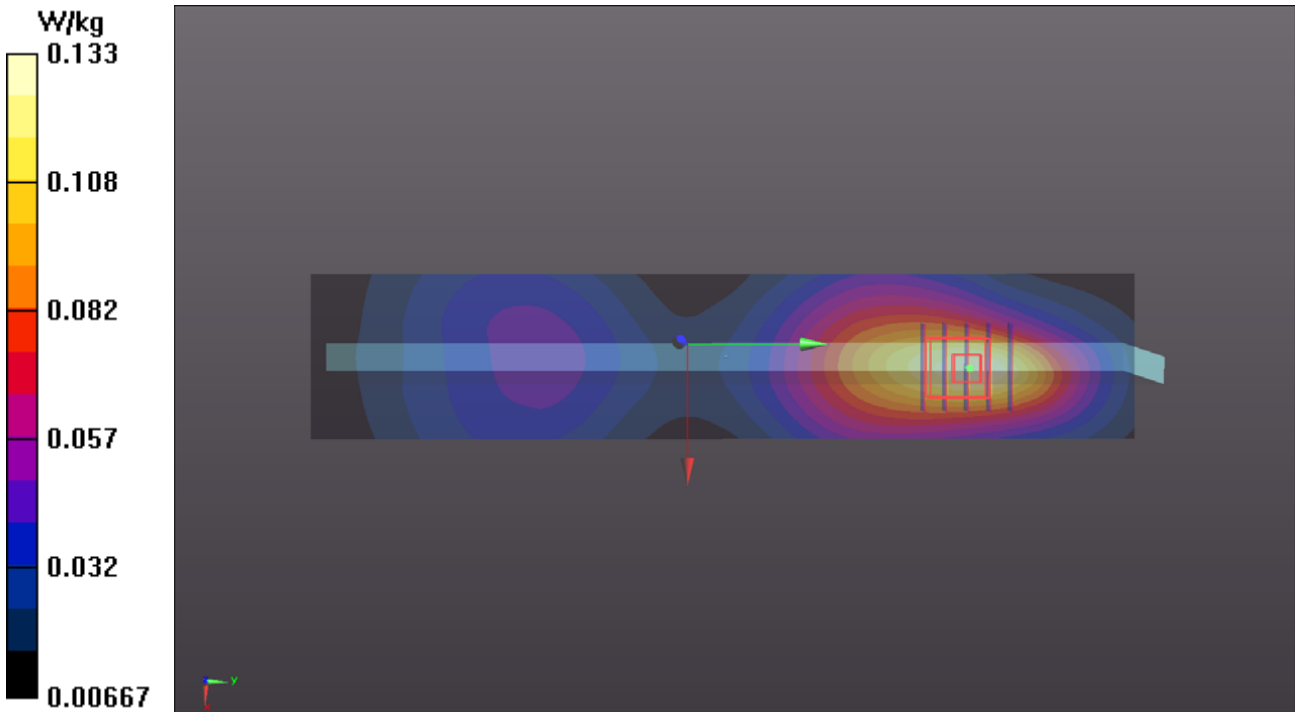
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N3_0822 Medium parameters used: f = 782 MHz; σ = 0.913 S/m; ε_r = 42.916; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 782 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.133 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.43 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.141 W/kg
SAR(1 g) = 0.105 W/kg; SAR(10 g) = 0.075 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 20.5 mm
Ratio of SAR at M2 to SAR at M1 = 75.1%
Maximum value of SAR (measured) = 0.131 W/kg



P27 LTE 14_QPSK10M_Top Side of Pannel_25mm_Ch23330_1RB_OS0_P-Sensor_w_o

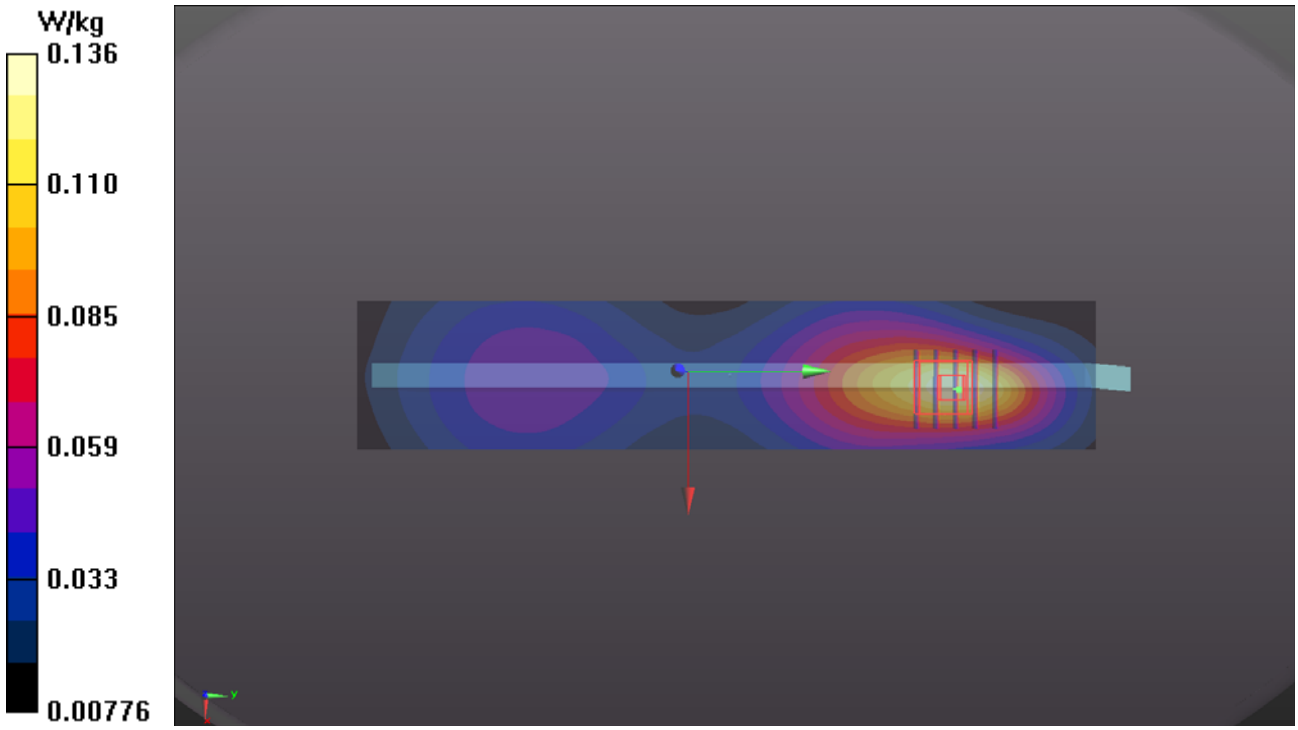
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 793 MHz;Duty Cycle: 1:3.74
Medium: H06T09N3_0822 Medium parameters used: f = 793 MHz; σ = 0.923 S/m; ε_r = 42.783; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(10, 10, 10) @ 793 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.136 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.41 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.074 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 20.5 mm
Ratio of SAR at M2 to SAR at M1 = 73.7%
Maximum value of SAR (measured) = 0.133 W/kg



P28 LTE 25_QPSK20M_Top Side of Pannel_25mm_Ch26590_1RB_OS0_P-Sensor_w_o

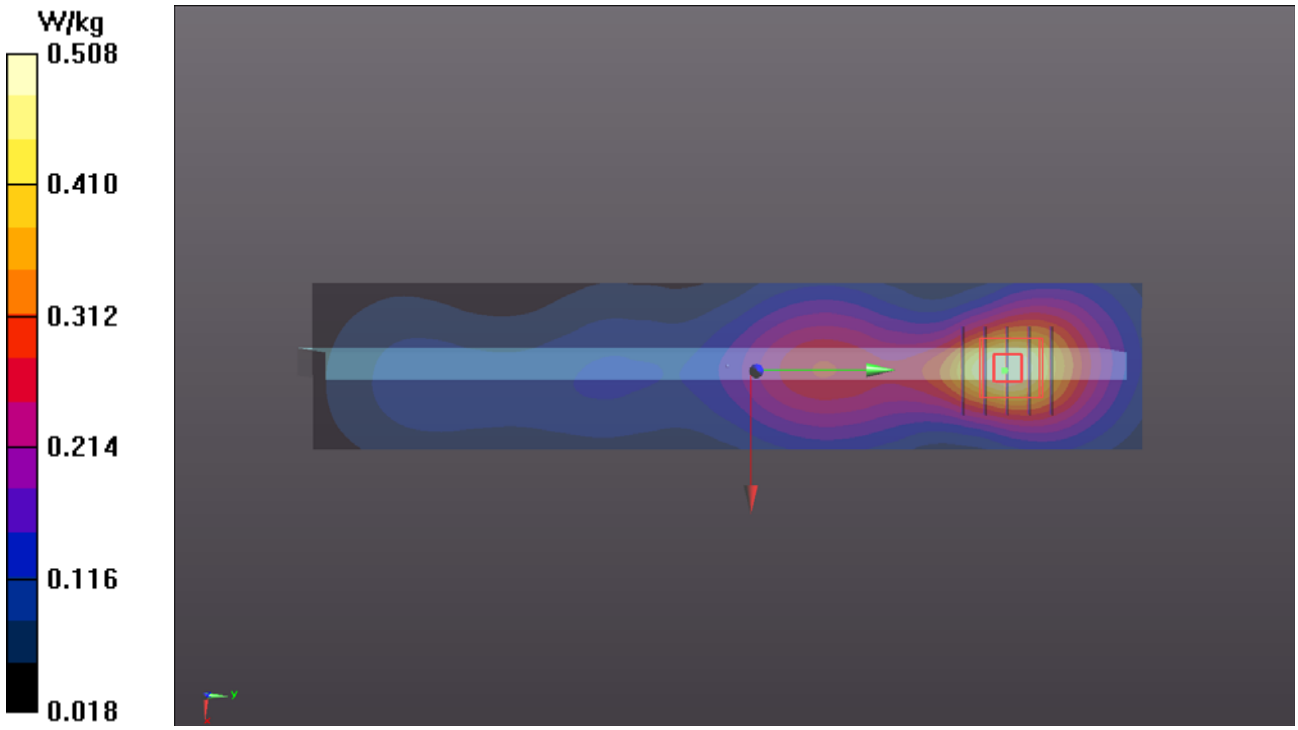
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1905 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0821 Medium parameters used (interpolated): f = 1905 MHz; σ = 1.462 S/m;
ε_r = 39.58; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.25, 8.25, 8.25) @ 1905 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.516 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.11 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.590 W/kg
SAR(1 g) = 0.353 W/kg; SAR(10 g) = 0.221 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 17.2 mm
Ratio of SAR at M2 to SAR at M1 = 61.7%
Maximum value of SAR (measured) = 0.508 W/kg



P29 LTE 26_QPSK15M_Top Side of Pannel_25mm_Ch26865_1RB_OS0_P-Sensor_w_o

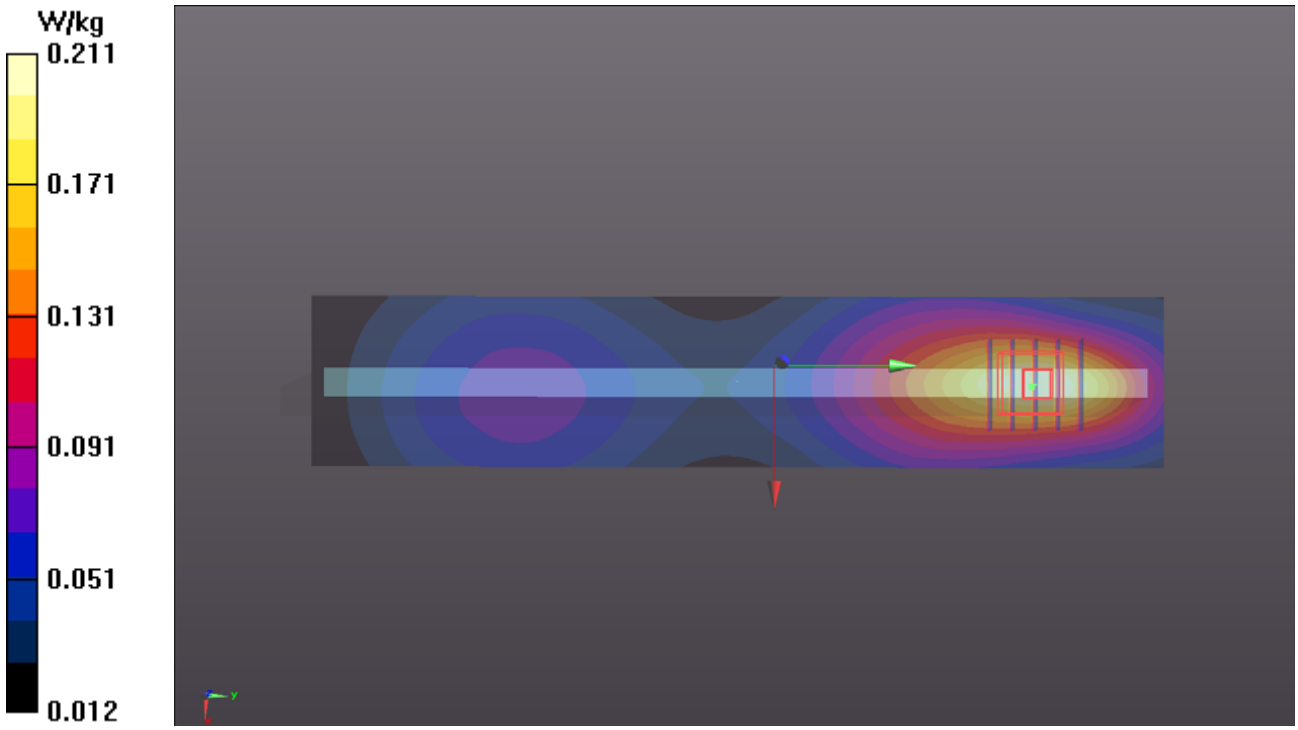
DUT: BEDV-WTW-P20060155

Communication System: UID 10181 - CAE, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK);
Frequency: 831.5 MHz;Duty Cycle: 1:3.74
Medium: H07T10N1_0821 Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.916 S/m;
ε_r = 41.774; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(9.79, 9.79, 9.79) @ 831.5 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.211 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.06 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.226 W/kg
SAR(1 g) = 0.166 W/kg; SAR(10 g) = 0.118 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 74.1%
Maximum value of SAR (measured) = 0.207 W/kg



P30 LTE 30_QPSK10M_Top Side of Pannel_25mm_Ch27710_1RB_OS0_P-Sensor_w_o

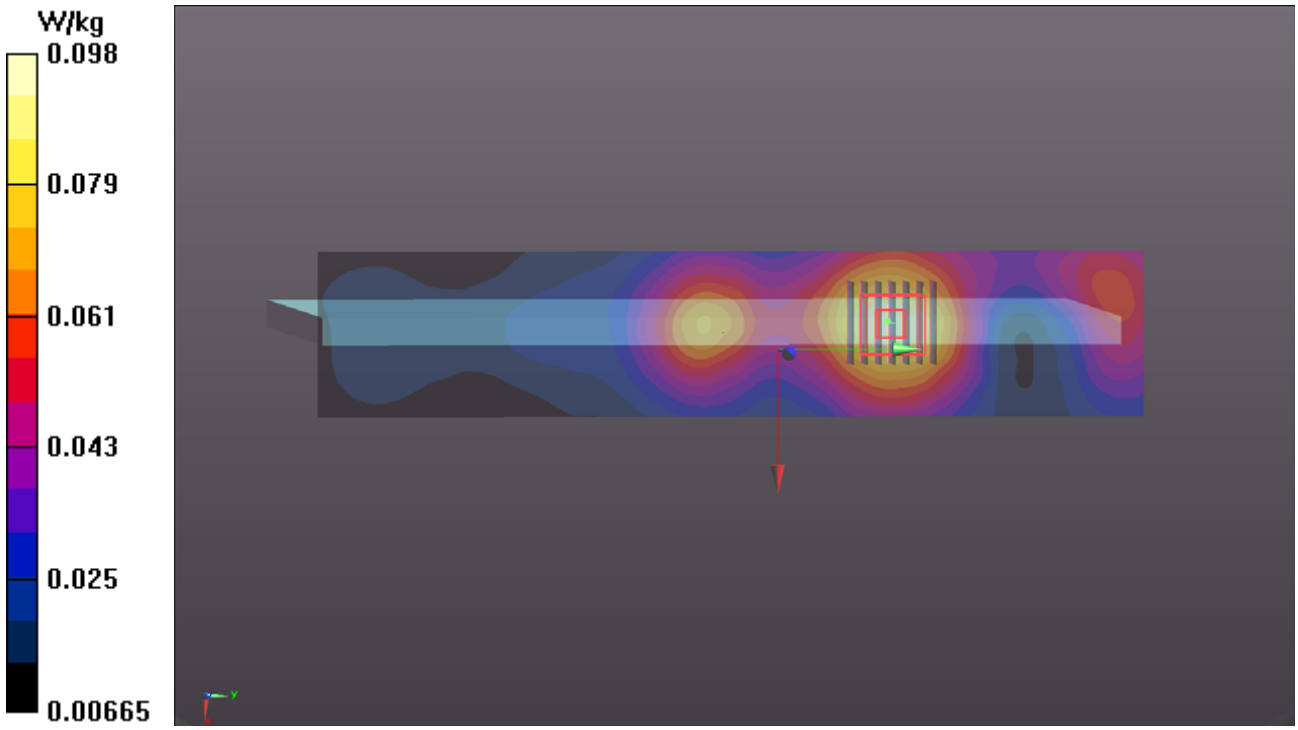
DUT: BEDV-WTW-P20060155

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 2310 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0919 Medium parameters used: f = 2310 MHz; σ = 1.734 S/m; ε_r = 38.56; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.98, 7.98, 7.98) @ 2310 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (51x251x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0976 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.666 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.115 W/kg
SAR(1 g) = 0.057 W/kg; SAR(10 g) = 0.038 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 58.7%
Maximum value of SAR (measured) = 0.0975 W/kg



P31 LTE 41_QPSK20M_Top Side of Pannel_25mm_Ch40620_1RB_OS0_P-Sensor_w_o

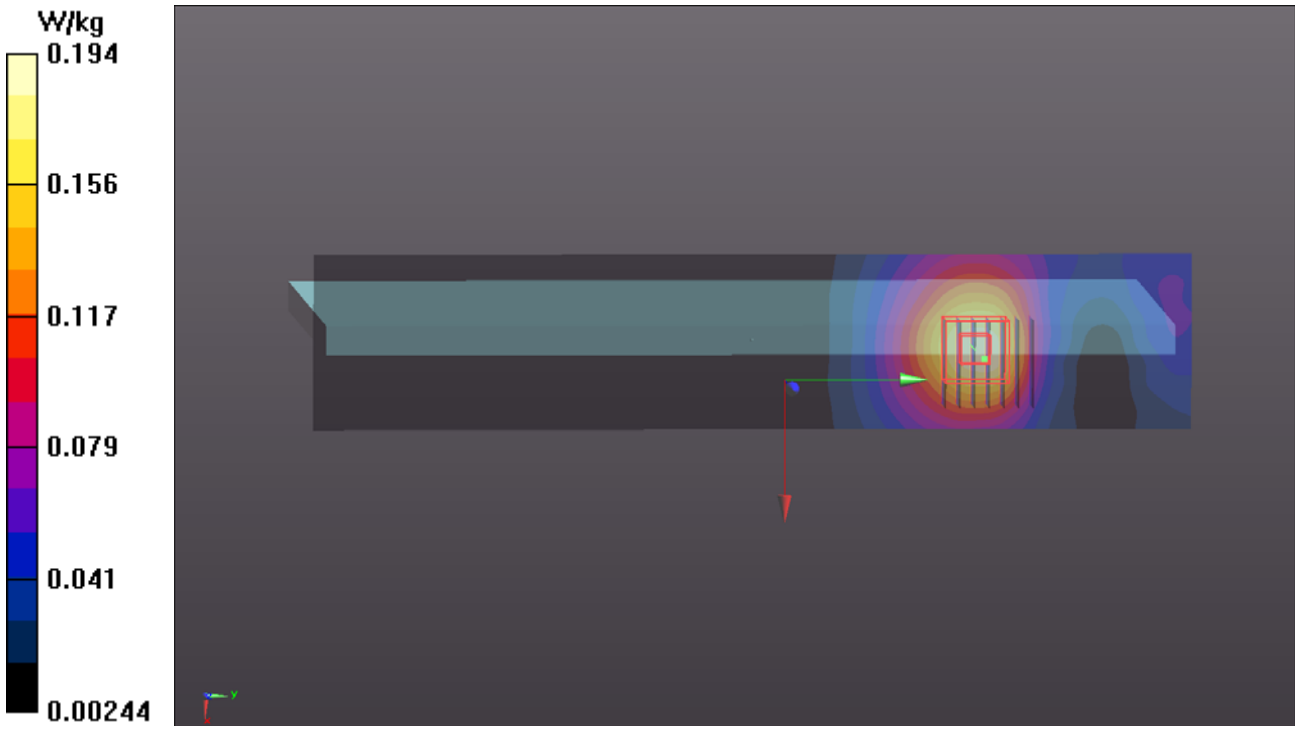
DUT: BEDV-WTW-P20060155

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2593 MHz;Duty Cycle: 1:8.33
Medium: H19T27N3_0822 Medium parameters used (interpolated): f = 2593 MHz; σ = 2.032 S/m;
ε_r = 37.621; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃ ； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.48, 7.48, 7.48) @ 2593 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (51x251x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.194 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.07 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.228 W/kg
SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.051 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 22 mm
Ratio of SAR at M2 to SAR at M1 = 55.9%
Maximum value of SAR (measured) = 0.190 W/kg



P32 LTE 66_QPSK20M_Top Side of Pannel_25mm_Ch132572_1RB_OS0_P-Sensor_w_o

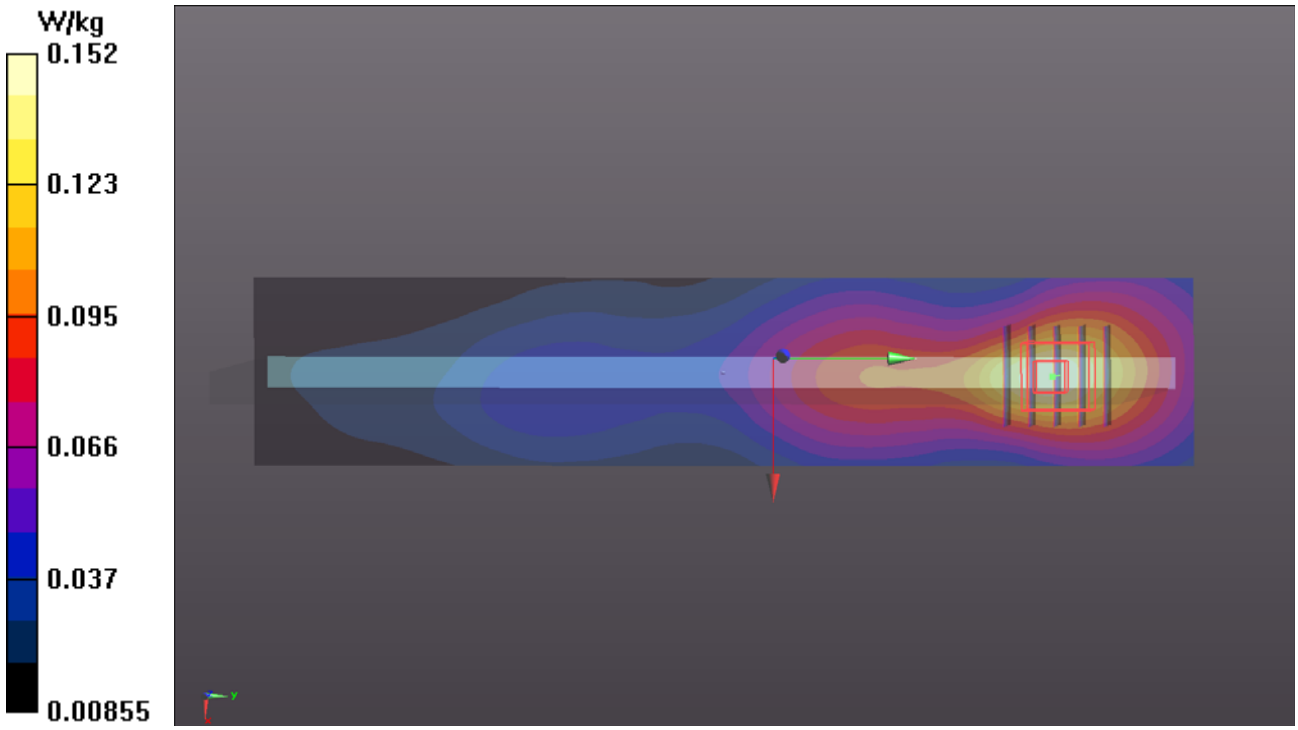
DUT: BEDV-WTW-P20060155

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1770 MHz;Duty Cycle: 1:3.74
Medium: H16T20N1_0821 Medium parameters used: f = 1770 MHz; σ = 1.346 S/m; ε_r = 40.072; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(8.54, 8.54, 8.54) @ 1770 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (41x201x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.152 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.97 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.173 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.072 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 21.5 mm
Ratio of SAR at M2 to SAR at M1 = 63.9%
Maximum value of SAR (measured) = 0.151 W/kg



P33 WLAN2.4G_802.11b_Top Side of Pannel_25mm_Ch6_Ant 1

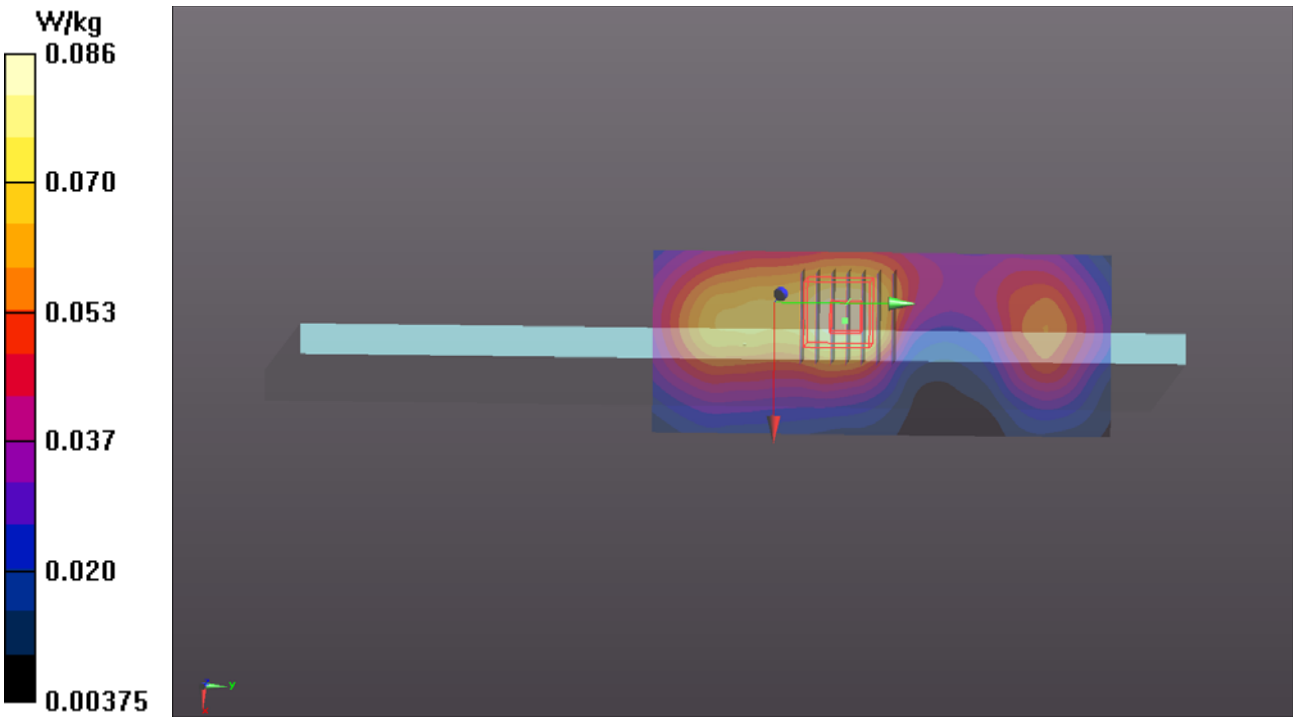
DUT: BEDV-WTW-P20060155

Communication System: UID 10415 - AAA, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2437 MHz;Duty Cycle: 1:1.01
Medium: H19T27N1_0820 Medium parameters used (interpolated): f = 2437 MHz; σ = 1.851 S/m; ε_r = 38.001; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.7, 7.7, 7.7) @ 2437 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (51x131x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0864 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.743 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.032 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 41.8%
Maximum value of SAR (measured) = 0.0876 W/kg



P34 WLAN5.3G_802.11n HT40_Top Side of Pannel_25mm_Ch54_Ant 0

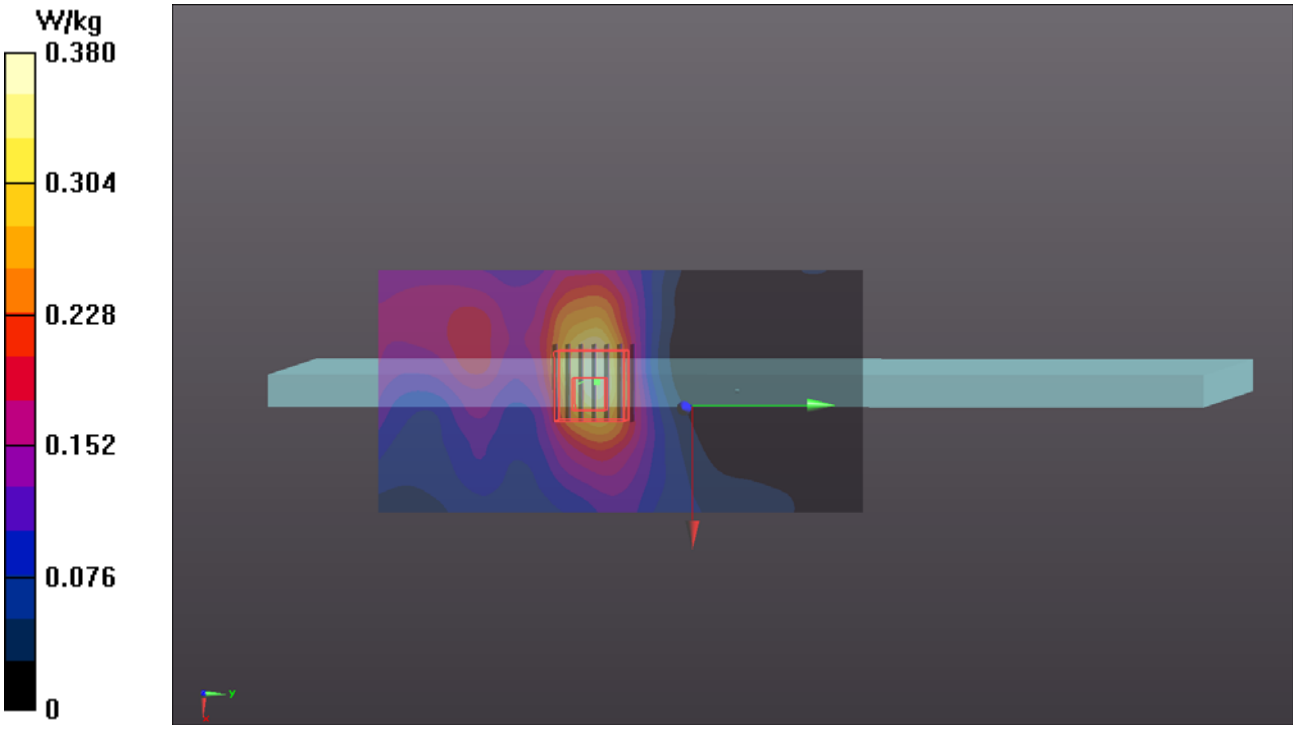
DUT: BEDV-WTW-P20060155

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle); Frequency: 5270 MHz;Duty Cycle: 1:1.02
Medium: H34T60N1_0820 Medium parameters used: f = 5270 MHz; σ = 4.723 S/m; ε_r = 36.886; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(5.31, 5.31, 5.31) @ 5270 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.380 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.431 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.659 W/kg
SAR(1 g) = 0.169 W/kg; SAR(10 g) = 0.061 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.9 mm
Ratio of SAR at M2 to SAR at M1 = 66.6%
Maximum value of SAR (measured) = 0.365 W/kg



P35 WLAN5.6G_802.11ac VHT80_Top Side of Pannel_25mm_Ch138_Ant 1

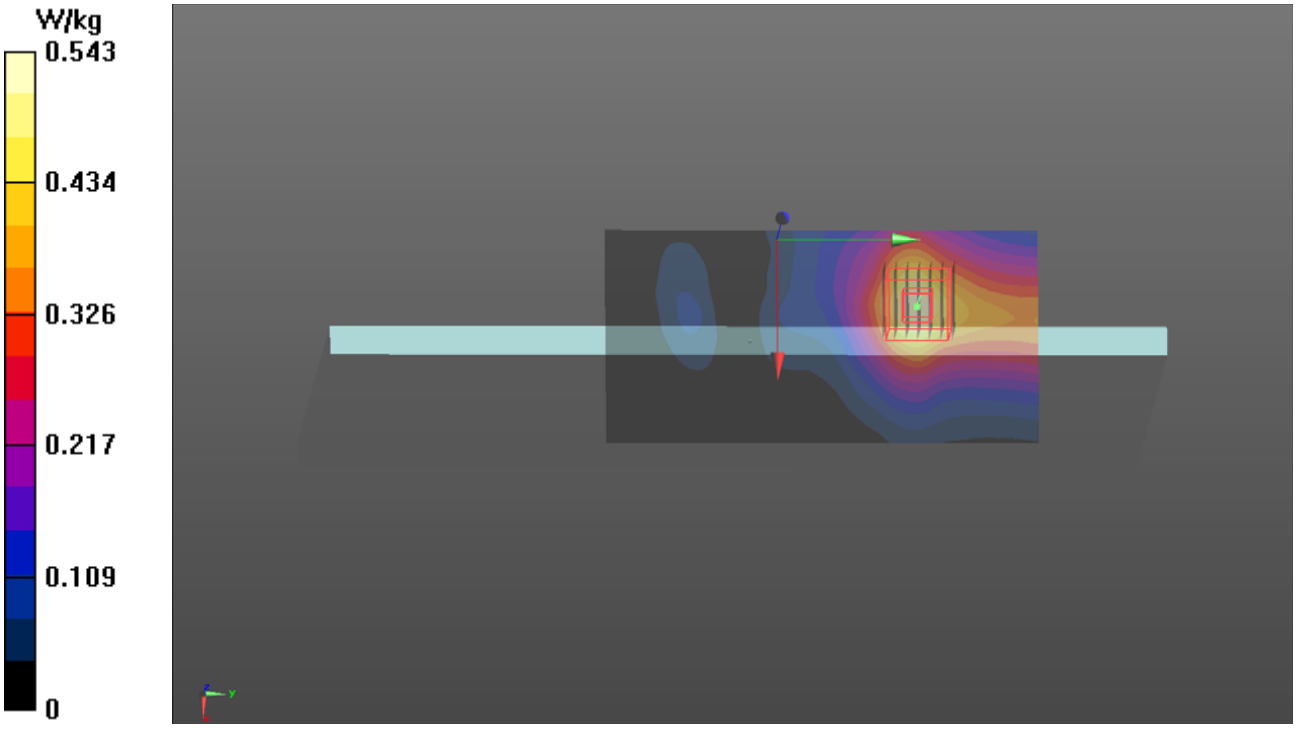
DUT: BEDV-WTW-P20060155

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle); Frequency: 5690 MHz;Duty Cycle: 1:1.03
Medium: H34T60N1_0820 Medium parameters used: f = 5690 MHz; σ = 5.106 S/m; ε_r = 36.082; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(4.75, 4.75, 4.75) @ 5690 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.543 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 11.24 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.920 W/kg
SAR(1 g) = 0.245 W/kg; SAR(10 g) = 0.104 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.4 mm
Ratio of SAR at M2 to SAR at M1 = 61.6%
Maximum value of SAR (measured) = 0.537 W/kg



P36 WLAN5.8G_802.11n HT40_Top Side of Pannel_25mm_Ch151_Ant 1

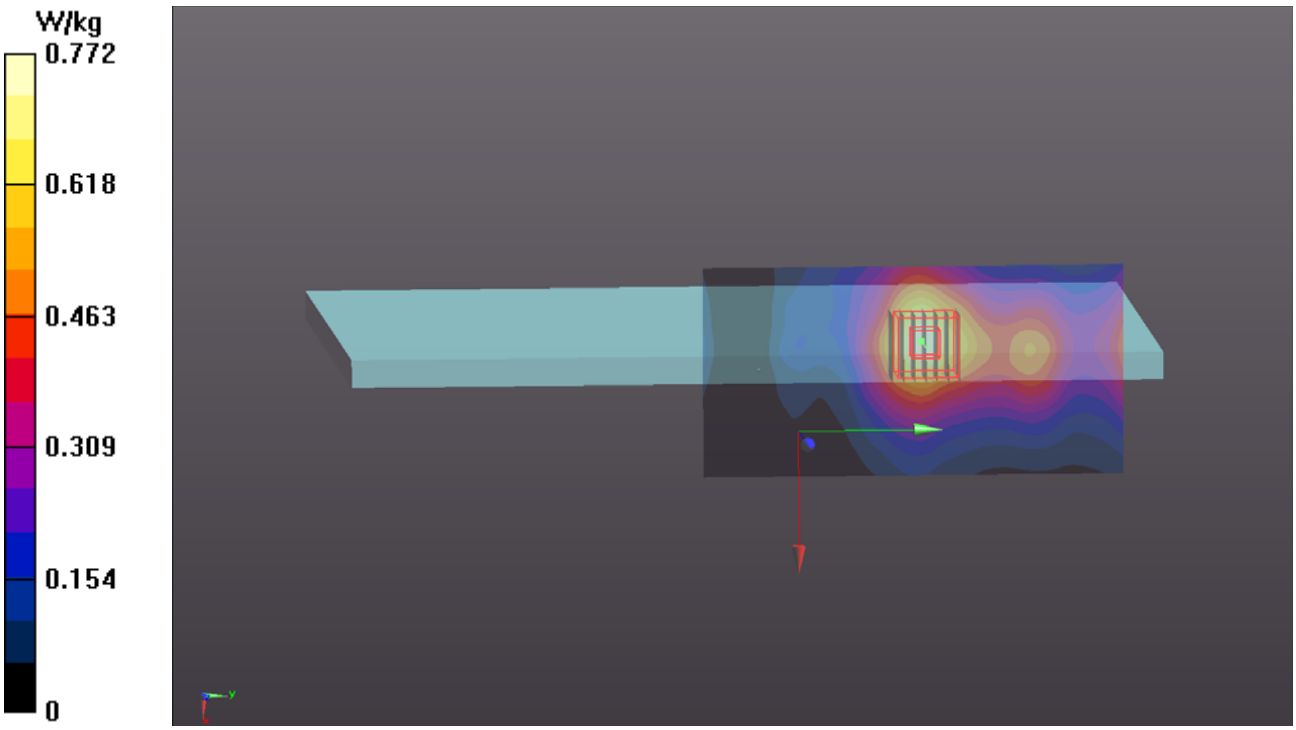
DUT: BEDV-WTW-P20060155

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle); Frequency: 5755 MHz;Duty Cycle: 1:1.02
Medium: H34T60N1_0820 Medium parameters used: f = 5755 MHz; σ = 5.108 S/m; ε_r = 36.499; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(4.75, 4.75, 4.75) @ 5755 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.772 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 13.34 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.353 W/kg; SAR(10 g) = 0.155 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 61.1%
Maximum value of SAR (measured) = 0.761 W/kg



P37 BT_BDR_Top Side of Pannel_25mm_Ch78_Ant 1

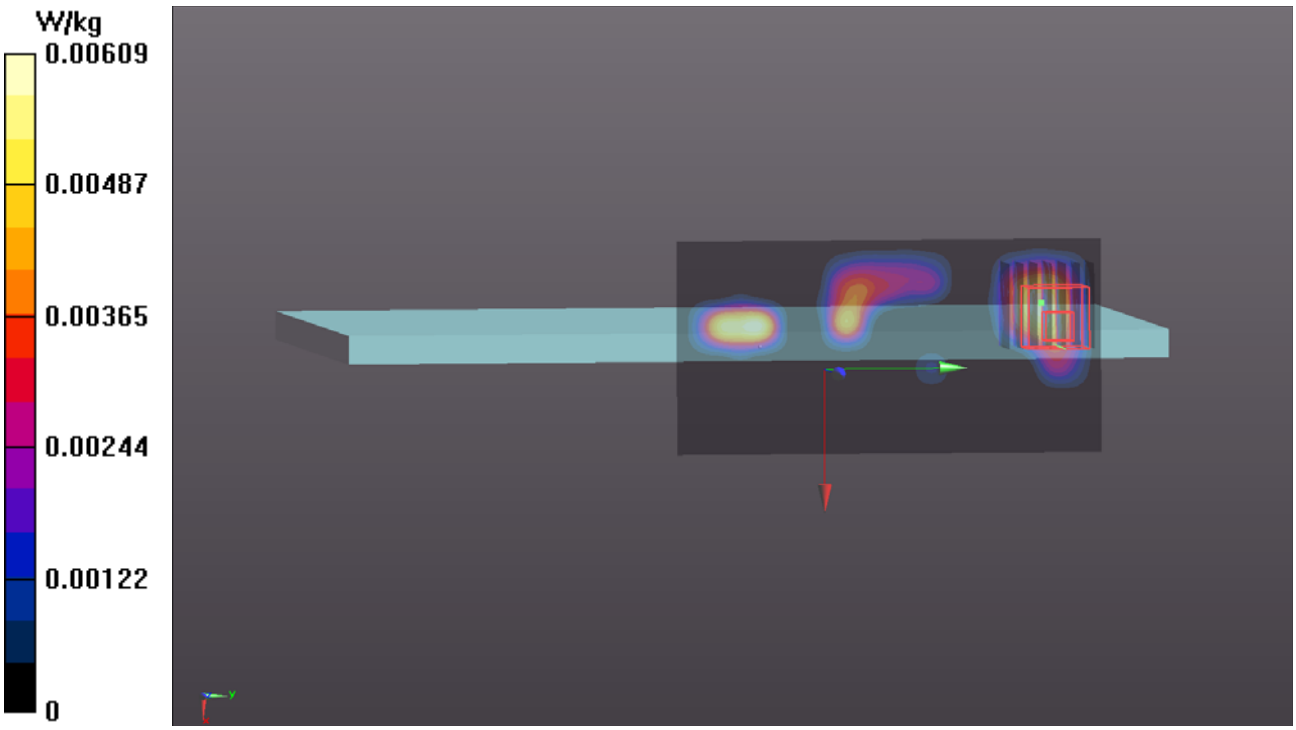
DUT: BEDV-WTW-P20060155

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2480 MHz;Duty Cycle: 1:1.32
Medium: H19T27N1_0820 Medium parameters used: f = 2480 MHz; σ = 1.898 S/m; ε_r = 37.889; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ； Liquid Temperature：23.2 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7350; ConvF(7.7, 7.7, 7.7) @ 2480 MHz; Calibrated: 2019/12/16
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2020/03/18
- Phantom: ELI Phantom_1043; Type: QDOVA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.00609 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.762 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.00635 W/kg
SAR(1 g) = 0.00223 W/kg; SAR(10 g) = 0.000836 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 42.1%
Maximum value of SAR (measured) = 0.00437 W/kg



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

S Schweizerischer Kalibrierdienst
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

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
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

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%.