SAR Test Report

Report No.	:	**SF200428C03**
Applicant	:	**DENSO WAVE INCORPORATED**
Address	:	**1 Yoshiike Kusagi Agui-cho,Chita-gun Aichi 470-2297, Japan**
Product	:	**2D Code Handy Terminal**
FCC ID	:	**PZWBHTM80QWG**
Brand	:	**DENSO**
Model No.	:	**BHT-M80-QWG**
Standards	:	**FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013** **KDB 865664 D01 v01r04, KDB 865664 D02 v01r02** **KDB 248227 D01 v02r02, KDB 447498 D01 v06, KDB 648474 D04 v01r03** **KDB 941225 D01 v03r01, KDB 941225 D05 v02r05, KDB 941225 D06 v02r01**
Sample Received Date	:	**Apr. 28, 2020**
Date of Testing	:	**May. 13, 2020 ~ Oct. 13, 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.

Prepared By : Shelly Hsueh

Shelly Hsueh / Specialist

Approved By : Gordon Lin

Gordon Lin / Manager

Testing Laboratory 2021

FCC Accredited No.: TW0003

Table of Contents

Release Control Record

Report No.	Reason for Change	Date Issued
SF200428C03	Initial release	Oct. 22, 2020

1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Head (W/kg)	Highest SAR-1g Body-worn Tested at 10 mm (W/kg)	Highest SAR-1g Hotspot Tested at 10 mm (W/kg)	Highest SAR-10g Product Specific Tested at 0 mm (W/kg)
PCB	GSM850	0.71	0.43	0.43	N/A
	GSM1900	0.59	0.64	0.75	N/A
	WCDMA II	0.85	0.83	0.95	N/A
	WCDMA V	0.63	0.52	0.52	N/A
	LTE 2	0.60	0.58	0.62	N/A
	LTE 4	0.32	0.23	0.30	N/A
	LTE 5	0.40	0.34	0.34	N/A
	LTE 7	0.26	0.70	1.12	N/A
	LTE 12	0.27	0.29	0.29	N/A
	LTE 13	0.31	0.34	0.34	N/A
	LTE 17	0.27	0.30	0.30	N/A
	LTE 25	0.65	0.56	0.47	N/A
DTS	2.4G WLAN	0.36	0.31	0.80	N/A
NII	5.2G WLAN	0.48	0.42	0.91	N/A
	5.3G WLAN	N/A	N/A	N/A	1.25
	5.6G WLAN	0.80	0.63	N/A	2.17
	5.8G WLAN	0.68	0.42	1.19	N/A
DSS	Bluetooth / EDR	N/A	N/A	N/A	N/A
DTS	Bluetooth / LE	0.00	0.00	0.00	N/A

Highest Simultaneous Transmission SAR	Highest SAR-1g Head (W/kg)	Highest SAR-1g Body-worn Tested at 10 mm (W/kg)	Highest SAR-1g Hotspot Tested at 10 mm (W/kg)	Highest SAR-10g Product Specific Tested at 0 mm (W/kg)
	1.50	1.46	1.59	N/A

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. Description of Equipment Under Test

EUT Type	2D Code Handy Terminal
FCC ID	PZWBHTM80QWG
Brand Name	DENSO
Model Name	BHT-M80-QWG
Tx Frequency Bands (Unit: MHz)	GSM850 : 824.2 ~ 848.8 GSM1900 : 1850.2 ~ 1909.8 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 17 : 706.5 ~ 713.5 (BW: 5M, 10M) LTE Band 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) WLAN : 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720,5745 ~ 5825 Bluetooth : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	GSM & GPRS : GMSK EDGE : 8PSK WCDMA : QPSK CDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n/ac : OFDM Bluetooth : GFSK, π/4-DQPSK, 8-DPSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	PIFA Antenna Ant 0: Peak Antenna Gain : 1.36 dBi for 2.4GHz, 3.45 dBi for 5GHz Ant 1: Peak Antenna Gain : 1.47 dBi for 2.4GHz, 3.80 dBi for 5GHz
EUT Stage	Engineering Sample

Note:

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

List of Accessory:

Battery 1	**Brand Name**	DENSO
	Model Name	BT1
	Power Rating	3.85Vdc, 4020mAh, 15.47Wh
	Type	Li-ion
Battery 2	**Brand Name**	DENSO
	Model Name	BT1S
	Power Rating	3.85Vdc, 2900mAh, 11.16Wh
	Type	Li-ion

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

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

SAR measurement can be related to the electrical field in the tissue by

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

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

3.2 SPEAG 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.

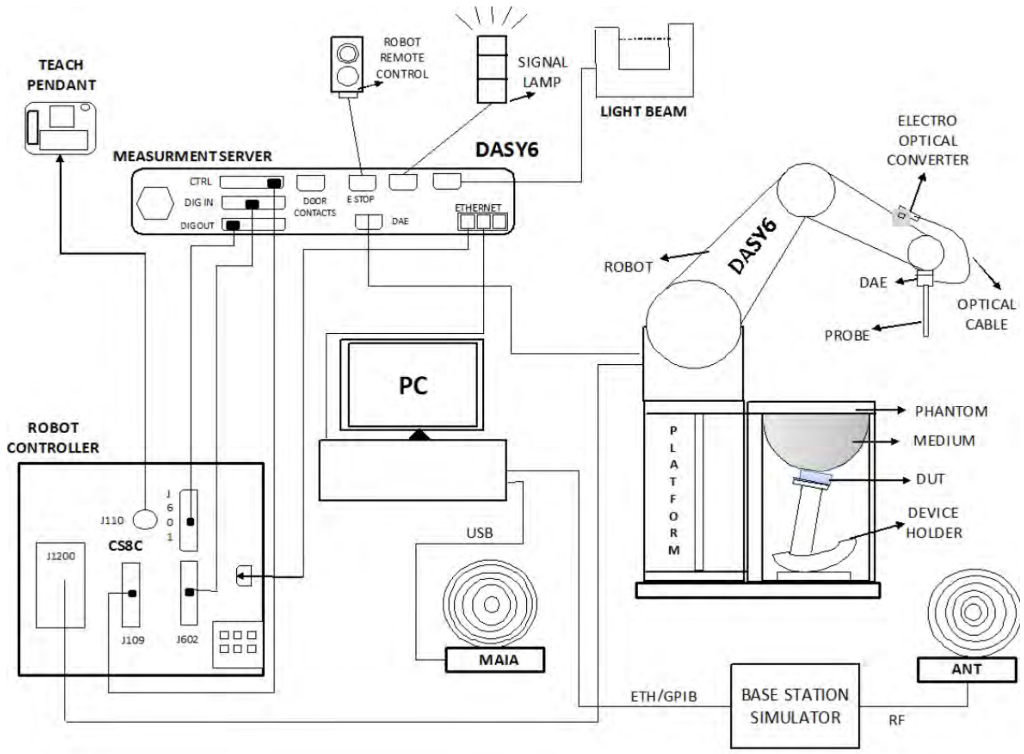


Fig-3.1 SPEAG DASY6 System Setup

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

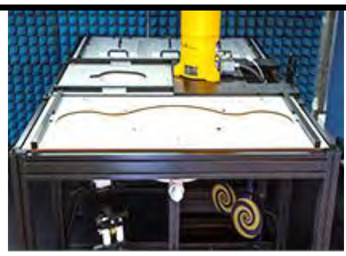
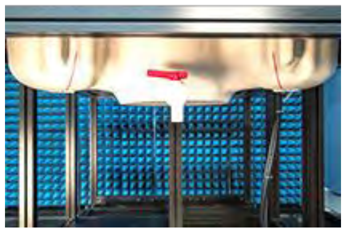
The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

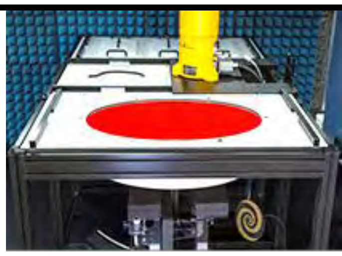
Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	4 MHz to 10 GHz Linearity: ± 0.2 dB	
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL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

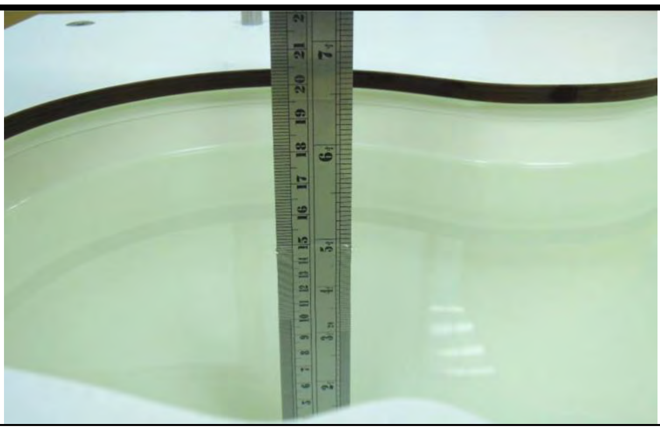


Photo of Liquid Height for Head Position

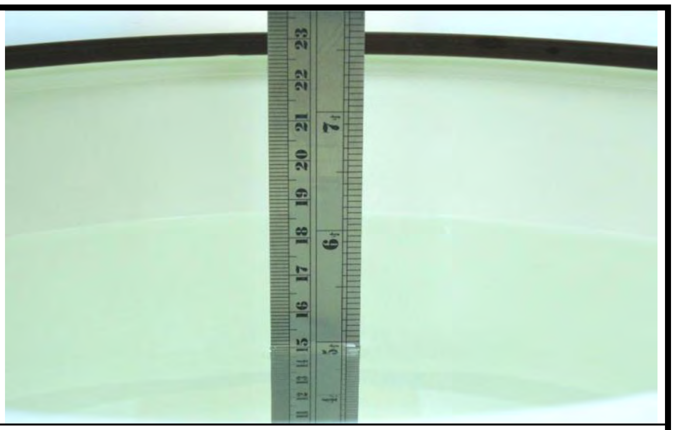


Photo of Liquid Height for Body Position

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.

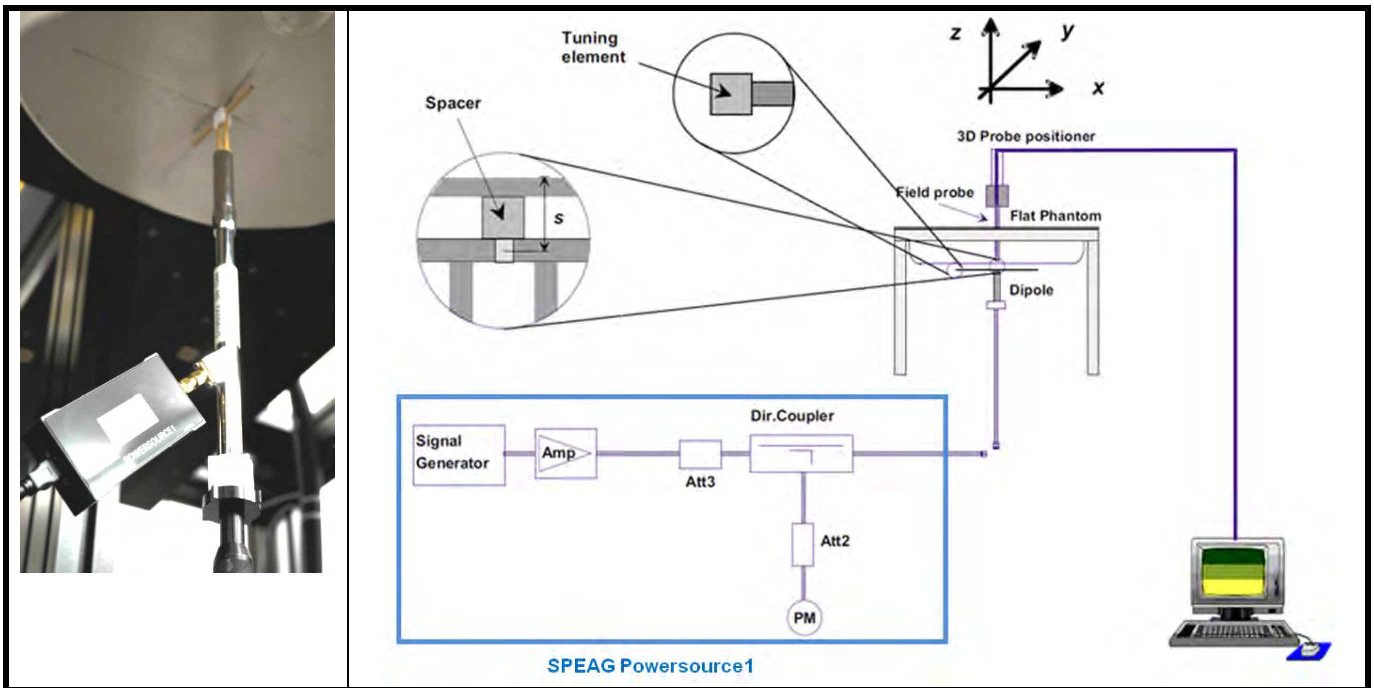


Fig-3.3 System Verification Setup

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

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

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

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

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

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

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

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

3.4.2 Volume Scan Procedure

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

3.4.3 Power Drift Monitoring

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

3.4.4 Spatial Peak SAR Evaluation

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

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

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

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

3.4.5 SAR Averaged Methods

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

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

4. SAR Measurement Evaluation

4.1 EUT Configuration and Setting

<Connections between EUT and System Simulator>

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

<Considerations Related to GSM / GPRS / EDGE for Setup and Testing>

The maximum multi-slot capability supported by this device is as below.

1. This EUT is class B device
2. This EUT supports GPRS multi-slot class 12 (max. uplink: 4, max. downlink: 4, total timeslots: 5)
3. This EUT supports EDGE multi-slot class 12 (max. uplink: 4, max. downlink: 4, total timeslots: 5)

For GSM850 frequency band, the power control level is set to 5 for GSM mode and GPRS (GMSK: CS1), and set to 8 for EDGE (GMSK: MCS1, 8PSK: MCS9). For GSM1900 frequency band, the power control level is set to 0 for GSM mode and GPRS (GMSK: CS1), and set to 2 for EDGE (GMSK: MCS1, 8PSK: MCS9).

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

<Considerations Related to WCDMA for Setup and Testing>

WCDMA Handsets Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode.

WCDMA Handsets Body-worn SAR

SAR for body-worn configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple $DPDCH_n$ configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices”, for the highest reported SAR body-worn exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

Handsets with Release 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices”, for the highest reported body-worn exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

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

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

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{HS} =30/15* β_c.
Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{HS} =30/15* β_c, and Δ_{CQI}=24/15 with β_{HS} =24/15* β_c.
Note 3: CM = 1 for β_c/β_d =12/15, β_{HS}/β_c =24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d= 15/15.

Release 6 HSUPA Data Devices

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

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

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

HSPA+ SAR Guidance

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

Sub-test	β_c (3)	β_d	β_{HS} (1)	β_{ec}	β_{ed} (4) (2xSF2)	β_{ed} (4) (2xSF4)	CM(2) (dB)	MPR(2) (dB)	AG(4) Index	E-TFCI (5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

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

DC-HSDPA SAR Guidance

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

<Considerations Related to LTE for Setup and Testing>

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

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

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

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

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

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

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

<Considerations Related to WLAN for Setup and Testing>

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

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

Initial Test Configuration

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

Subsequent Test Configuration

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

SAR Test Configuration and Channel Selection

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

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

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

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

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

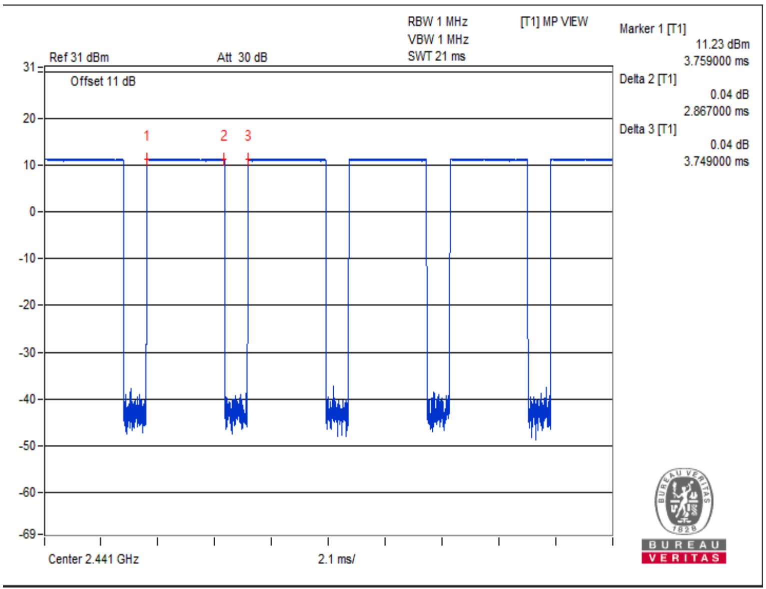
1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition).

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

<Considerations Related to Bluetooth for Setup and Testing>

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

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



Time-domain plot for Bluetooth transmission signal

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

Duty Factor = Pulse Width / Total Period = 2.867 / 3.749 = 76.47 %

4.2 EUT Testing Position

According to KDB 648474 D04, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

4.2.1 Head Exposure Conditions

Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2003 using the SAM phantom illustrated as below.

1. Define two imaginary lines on the handset

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

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

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

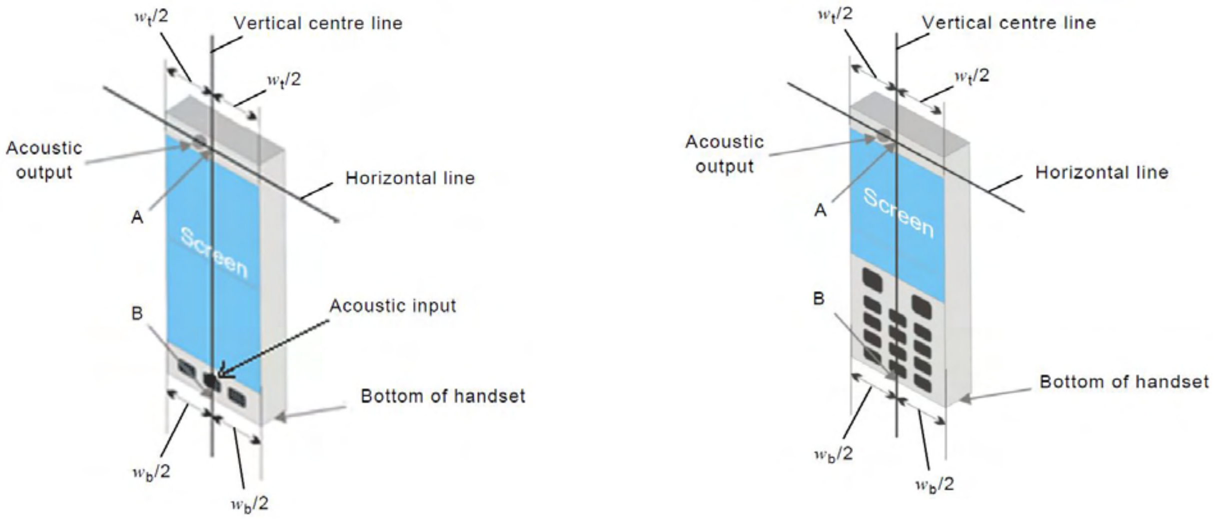


Fig-4.1 Illustration for Handset Vertical and Horizontal Reference Lines

2. Cheek Position
(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see Fig-4.2).

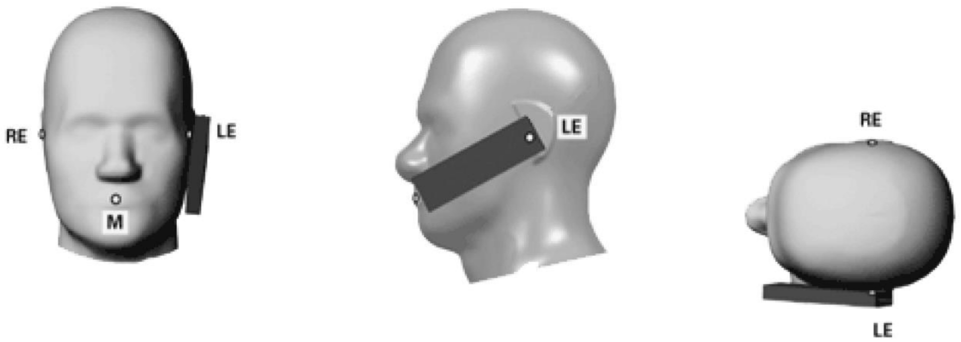


Fig-4.2 Illustration for Cheek Position

3. Tilted Position
(a) To position the device in the “cheek” position described above.
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig-4.3).

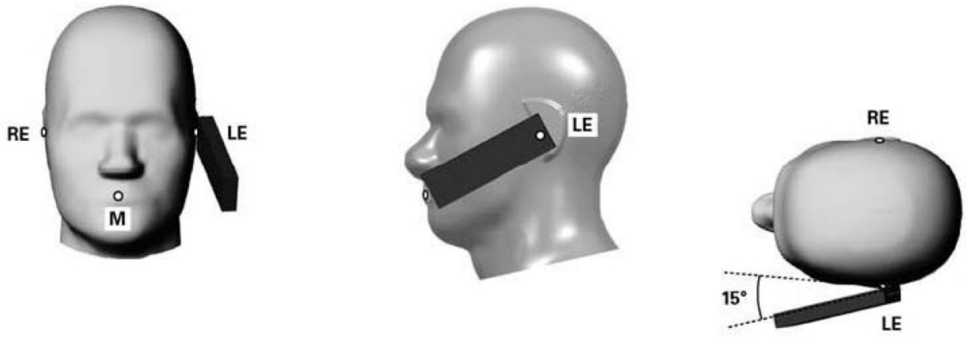


Fig-4.3 Illustration for Tilted Position

4.2.2 Body-worn Accessory Exposure Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is> 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required.

A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.

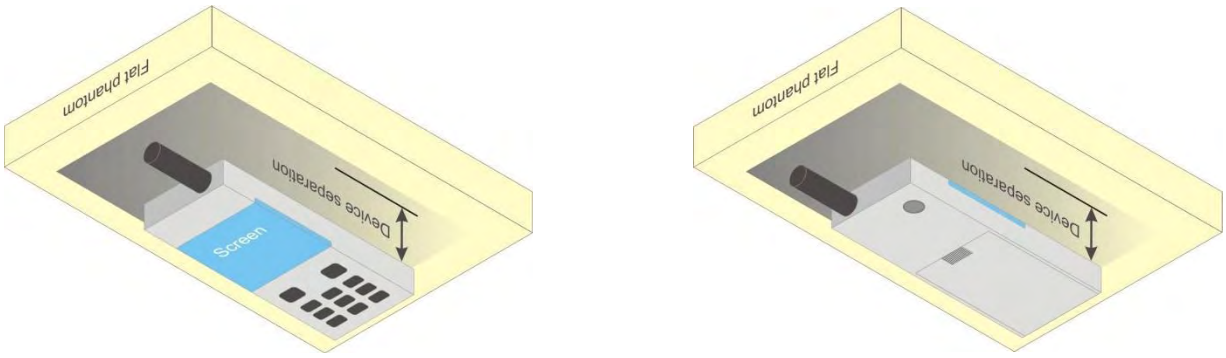
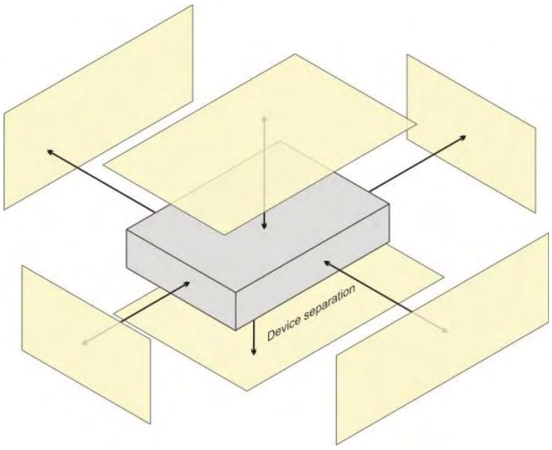


Fig-4.4 Illustration for Body Worn Position

4.2.3 Hotspot Mode Exposure Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225 D06. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



Based on the antenna location shown on appendix D of this report, the SAR testing required for hotspot mode is listed as below.

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
WWAN	V	V	V	V		V
WLAN Ant-0	V	V	V		V	
WLAN Ant-1	V	V		V	V	
BT	V	V	V		V	

4.2.4 Product Specific (Phablet) Exposure Conditions

For smart phones with a display diagonal dimension > 15 cm or an overall diagonal dimension > 16 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the following Phablet procedures should be applied to evaluate SAR compliance for each applicable wireless mode and frequency band. Devices marketed as Phablets, regardless of form factors and operating characteristics must be tested as a Phablet to determine SAR compliance.

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at <= 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg. The normal tablet procedures in KDB 616217 are required when the over diagonal dimension of the device is > 20 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of large form factor full size tablets. The more conservative tablet SAR results can be used to support the 10-g extremity SAR for Phablet mode.
3. The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless mode and exposure conditions.

4.3 Tissue Verification

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

Head / Body-worn/ Hotspot

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	0.905	42.383	0.89	41.9	1.69	1.15	May. 13, 2020
750	23.3	0.891	42.847	0.89	41.9	0.11	2.26	Sep. 25, 2020
750	23.4	0.9	42.71	0.89	41.9	1.12	1.93	Oct. 13, 2020
835	23.3	0.908	42.279	0.9	41.5	0.89	1.88	May. 13, 2020
835	23.3	0.905	42.447	0.9	41.5	0.56	2.28	May. 14, 2020
835	23.1	0.928	42.022	0.9	41.5	3.11	1.26	Oct. 08, 2020
835	23.1	0.944	43.03	0.9	41.5	4.89	3.69	Oct. 12, 2020
1750	23.3	1.322	39.378	1.37	40.1	-3.50	-1.80	May. 13, 2020
1750	23.2	1.322	39.328	1.37	40.1	-3.50	-1.93	May. 15, 2020
1750	23.4	1.332	39.526	1.37	40.1	-2.77	-1.43	Oct. 13, 2020
1900	23.3	1.459	38.812	1.4	40	4.21	-2.97	May. 13, 2020
1900	23.3	1.454	38.287	1.4	40	3.86	-4.28	May. 14, 2020
1900	23.2	1.457	38.756	1.4	40	4.07	-3.11	May. 15, 2020
1900	23.1	1.449	38.48	1.4	40	3.50	-3.80	Oct. 08, 2020
1900	23.1	1.46	40.91	1.4	40	4.29	2.27	Oct. 12, 2020
1900	23.6	1.458	39.579	1.4	40	4.14	-1.05	Oct. 28, 2020
2450	23.1	1.885	38.339	1.8	39.2	4.72	-2.20	Sep. 24, 2020
2450	23.6	1.884	38.34	1.8	39.2	4.67	-2.19	Sep. 26, 2020
2450	23.2	1.851	38.205	1.8	39.2	2.83	-2.54	Sep. 28, 2020
2450	23.4	1.88	38.637	1.8	39.2	4.44	-1.44	Oct. 13, 2020
2600	23.3	2.029	38.61	1.96	39	3.52	-1.00	May. 13, 2020
2600	23.3	2.035	38.57	1.96	39	3.83	-1.10	May. 14, 2020
2600	23.4	2.036	38.081	1.96	39	3.88	-2.36	Oct. 13, 2020
5250	23.1	4.85	36.45	4.71	35.9	2.97	1.53	Sep. 24, 2020
5250	23.6	4.889	36.69	4.71	35.9	3.80	2.20	Sep. 26, 2020
5250	23.4	4.835	36.46	4.71	35.9	2.65	1.56	Oct. 13, 2020
5600	23.1	5.242	35.908	5.07	35.5	3.39	1.15	Sep. 24, 2020
5600	23.6	5.224	36.11	5.07	35.5	3.04	1.72	Sep. 26, 2020
5600	23.4	5.224	35.924	5.07	35.5	3.04	1.19	Oct. 13, 2020
5750	23.1	5.173	35.788	5.22	35.4	-0.90	1.10	Oct. 08, 2020
5750	23.1	5.313	34.366	5.22	35.4	1.78	-2.92	Oct. 12, 2020

Product Specific

Frequency (MHz)	Liquid Temp. (℃)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Test Date
5250	23.1	4.85	36.45	4.71	35.9	2.97	1.53	Sep. 24, 2020
5250	23.4	4.835	36.46	4.71	35.9	2.65	1.56	Oct. 13, 2020
5600	23.1	5.242	35.908	5.07	35.5	3.39	1.15	Sep. 24, 2020
5600	23.4	5.224	35.942	5.07	35.5	3.04	1.25	Oct. 13, 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.

Head / Body-worn/ Hotspot

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
May. 13, 2020	3971	750	0.905	42.383	Pass	Pass	Pass	N/A	N/A	N/A
Sep. 25, 2020	3971	750	0.891	42.847	Pass	Pass	Pass	N/A	N/A	N/A
Oct. 13, 2020	7537	750	0.9	42.71	Pass	Pass	Pass	N/A	N/A	N/A
May. 13, 2020	3971	835	0.908	42.279	Pass	Pass	Pass	GMSK	Pass	N/A
May. 14, 2020	3971	835	0.905	42.447	Pass	Pass	Pass	GMSK	Pass	N/A
Oct. 08, 2020	3820	835	0.928	42.022	Pass	Pass	Pass	GMSK	Pass	N/A
Oct. 12, 2020	7537	835	0.944	43.03	Pass	Pass	Pass	GMSK	Pass	N/A
May. 13, 2020	3971	1750	1.322	39.378	Pass	Pass	Pass	N/A	N/A	N/A
May. 15, 2020	7472	1750	1.322	39.328	Pass	Pass	Pass	N/A	N/A	N/A
Oct. 13, 2020	7537	1750	1.332	39.526	Pass	Pass	Pass	N/A	N/A	N/A
May. 13, 2020	3971	1900	1.459	38.812	Pass	Pass	Pass	GMSK	Pass	N/A
May. 14, 2020	3971	1900	1.454	38.287	Pass	Pass	Pass	GMSK	Pass	N/A
May. 15, 2020	7472	1900	1.457	38.756	Pass	Pass	Pass	GMSK	Pass	N/A
Oct. 08, 2020	3820	1900	1.449	38.48	Pass	Pass	Pass	GMSK	Pass	N/A
Oct. 12, 2020	7537	1900	1.46	40.91	Pass	Pass	Pass	GMSK	Pass	N/A
Oct. 28, 2020	3971	1900	1.458	39.579	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 24, 2020	3971	2450	1.885	38.339	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 26, 2020	3650	2450	1.884	38.34	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 28, 2020	7537	2450	1.851	38.205	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 13, 2020	7537	2450	1.88	38.637	Pass	Pass	Pass	N/A	N/A	N/A
May. 13, 2020	7537	2600	2.029	38.61	Pass	Pass	Pass	N/A	N/A	N/A
May. 14, 2020	3971	2600	2.035	38.57	Pass	Pass	Pass	N/A	N/A	N/A
Oct. 13, 2020	7537	2600	2.036	38.081	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 24, 2020	3971	5250	4.85	36.45	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 26, 2020	3650	5250	4.889	36.69	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 13, 2020	7537	5250	4.835	36.46	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 24, 2020	3971	5600	5.242	35.908	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 26, 2020	3650	5600	5.224	36.11	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 13, 2020	7537	5600	5.224	35.924	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 08, 2020	3820	5750	5.173	35.788	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 12, 2020	7537	5750	5.313	34.366	Pass	Pass	Pass	OFDM	N/A	Pass

Product Specific

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
Sep. 24, 2020	3971	5250	4.85	36.45	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 13, 2020	7537	5250	4.835	36.46	Pass	Pass	Pass	OFDM	N/A	Pass
Sep. 24, 2020	3971	5600	5.242	35.908	Pass	Pass	Pass	OFDM	N/A	Pass
Oct. 13, 2020	7537	5600	5.224	35.942	Pass	Pass	Pass	OFDM	N/A	Pass

4.5 System Verification

The measuring result for system verification is tabulated as below.

Head / Body-worn/ Hotspot

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
May. 13, 2020	750	8.56	0.392	7.84	-8.41	1013	3971	1277
Sep. 25, 2020	750	8.56	0.406	8.12	-5.14	1013	3971	1277
Oct. 13, 2020	750	8.48	0.411	8.22	-3.07	1013	7537	1277
May. 13, 2020	835	9.61	0.456	9.12	-5.10	4d121	3971	1277
May. 14, 2020	835	9.61	0.452	9.04	-5.93	4d121	3971	1277
Oct. 08, 2020	835	9.52	0.468	9.36	-1.68	4d121	3820	914
Oct. 12, 2020	835	9.52	0.503	10.06	5.67	4d121	7537	1277
May. 13, 2020	1750	37.00	1.75	35.00	-5.41	1055	3971	1277
May. 15, 2020	1750	37.00	1.77	35.40	-4.32	1055	7472	579
Oct. 13, 2020	1750	36.00	1.82	36.40	1.11	1055	7537	1277
May. 13, 2020	1900	40.30	1.93	38.60	-4.22	5d036	3971	1277
May. 14, 2020	1900	40.30	1.92	38.40	-4.71	5d036	3971	1277
May. 15, 2020	1900	40.30	1.93	38.60	-4.22	5d036	7472	579
Oct. 08, 2020	1900	40.30	2.01	40.20	-0.25	5d036	3820	914
Oct. 12, 2020	1900	40.30	2.01	40.20	-0.25	5d036	7537	1277
Oct. 28, 2020	1900	40.30	2.02	40.40	0.25	5d036	3971	917
Sep. 24, 2020	2450	51.60	2.41	48.20	-6.59	737	3971	917
Sep. 26, 2020	2450	51.60	2.65	53.00	2.71	737	3650	861
Sep. 28, 2020	2450	51.60	2.51	50.20	-2.71	737	7537	1277
Oct. 13, 2020	2450	51.60	2.53	50.60	-1.94	737	7537	1277
May. 13, 2020	2600	57.30	2.68	53.60	-6.46	1020	7537	1277
May. 14, 2020	2600	57.30	2.7	54.00	-5.76	1020	3971	1277
Oct. 13, 2020	2600	55.50	2.78	55.60	0.18	1020	7537	1277
Sep. 24, 2020	5250	79.70	3.77	75.40	-5.40	1019	3971	917
Sep. 26, 2020	5250	79.70	4.15	83.00	4.14	1019	3650	861
Oct. 13, 2020	5250	79.70	3.91	78.20	-1.88	1019	7537	1277
Sep. 24, 2020	5600	83.80	4.14	82.80	-1.19	1019	3971	917
Sep. 26, 2020	5600	83.80	4.51	90.20	7.64	1019	3650	861
Oct. 13, 2020	5600	83.80	4.07	81.40	-2.86	1019	7537	1277
Oct. 08, 2020	5750	80.40	4.26	85.20	5.97	1019	3820	914
Oct. 12, 2020	5750	80.40	4.36	87.20	8.46	1019	7537	1277

Product Specific

Test Date	Frequency (MHz)	1W Target SAR-10g (W/kg)	Measured SAR-10g (W/kg)	Normalized to 1W SAR-10g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Sep. 24, 2020	5250	22.80	1.14	22.80	0.00	1019	3971	917
Oct. 13, 2020	5250	22.80	1.15	23.00	0.88	1019	7537	1277
Sep. 24, 2020	5600	23.70	1.24	24.80	4.64	1019	3971	917
Oct. 13, 2020	5600	23.70	1.21	24.20	2.11	1019	7537	1277

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 th transmission duty factor could not achieve 100%, the reported SAR will be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up power. The scaling factor for the duty factor is defined as 100% / transmission duty cycle (%). The reported SAR would be calculated by measured SAR x tune-up power scaling factor x duty cycle scaling factor.

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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

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

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

(2) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(3) Higher order modulations

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

(4) Other channel bandwidth

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

<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 Head Exposure Condition

Plot No.	Band	Mode	Test Position	Ch.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	GSM850	GPRS12	Right Cheek	251	1	29.00	28.84	1.04	-0.12	0.532	0.55
	GSM850	GPRS12	Right Tilted	251	1	29.00	28.84	1.04	0.04	0.379	0.39
	GSM850	GPRS12	Left Cheek	251	1	29.00	28.84	1.04	0.01	0.521	0.54
	GSM850	GPRS12	Left Tilted	251	1	29.00	28.84	1.04	0.06	0.445	0.46
	GSM850	GPRS12	Right Cheek	128	1	29.00	28.68	1.08	-0.01	0.615	0.66
01	GSM850	GPRS12	Right Cheek	189	1	29.00	28.75	1.06	-0.09	0.668	0.71
	GSM850	GPRS12	Right Cheek	189	2	29.00	28.75	1.06	-0.03	0.647	0.69
	GSM1900	GPRS11	Right Cheek	661	1	28.50	28.31	1.04	0.06	0.511	0.53
	GSM1900	GPRS11	Right Tilted	661	1	28.50	28.31	1.04	-0.02	0.201	0.21
	GSM1900	GPRS11	Left Cheek	661	1	28.50	28.31	1.04	-0.04	0.283	0.29
	GSM1900	GPRS11	Left Tilted	661	1	28.50	28.31	1.04	0.01	0.206	0.21
	GSM1900	GPRS11	Right Cheek	512	1	28.50	28.10	1.10	-0.12	0.501	0.55
02	GSM1900	GPRS11	Right Cheek	810	1	28.50	28.23	1.06	0.02	0.561	0.59
	GSM1900	GPRS11	Right Cheek	810	2	28.50	28.23	1.06	-0.07	0.539	0.57
	WCDMA II	RMC12.2K	Right Cheek	9262	1	24.50	24.47	1.01	0.16	0.806	0.81
	WCDMA II	RMC12.2K	Right Tilted	9262	1	24.50	24.47	1.01	0.18	0.251	0.25
	WCDMA II	RMC12.2K	Left Cheek	9262	1	24.50	24.47	1.01	0.01	0.494	0.50
	WCDMA II	RMC12.2K	Left Tilted	9262	1	24.50	24.47	1.01	0.06	0.344	0.35
	WCDMA II	RMC12.2K	Right Cheek	9400	1	24.50	24.42	1.02	0.18	0.8	0.82
03	WCDMA II	RMC12.2K	Right Cheek	9538	1	24.50	24.33	1.04	-0.01	0.821	0.85
	WCDMA II	RMC12.2K	Right Cheek	9538	2	24.50	24.33	1.04	-0.09	0.777	0.81
	WCDMA II	RMC12.2K	Right Cheek	9538	1	24.50	24.33	1.04	0.05	0.809	0.84
	WCDMA V	RMC12.2K	Right Cheek	4132	1	24.50	24.42	1.02	-0.01	0.483	0.49
	WCDMA V	RMC12.2K	Right Tilted	4132	1	24.50	24.42	1.02	-0.03	0.3	0.31
	WCDMA V	RMC12.2K	Left Cheek	4132	1	24.50	24.42	1.02	-0.03	0.454	0.46
	WCDMA V	RMC12.2K	Left Tilted	4132	1	24.50	24.42	1.02	-0.04	0.27	0.28
	WCDMA V	RMC12.2K	Right Cheek	4182	1	24.50	24.32	1.04	-0.08	0.581	0.60
04	WCDMA V	RMC12.2K	Right Cheek	4233	1	24.50	24.35	1.04	-0.01	0.601	0.63
	WCDMA V	RMC12.2K	Right Cheek	4233	2	24.50	24.35	1.04	-0.01	0.526	0.55

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 2	QPSK20M	Right Cheek	18700	1	0	1	23.50	23.48	1.00	-0.07	0.591	0.59
	LTE 2	QPSK20M	Right Tilted	18700	1	0	1	23.50	23.48	1.00	-0.03	0.163	0.16
	LTE 2	QPSK20M	Left Cheek	18700	1	0	1	23.50	23.48	1.00	-0.06	0.393	0.39
	LTE 2	QPSK20M	Left Tilted	18700	1	0	1	23.50	23.48	1.00	-0.01	0.218	0.22
	LTE 2	QPSK20M	Right Cheek	18700	50	0	1	22.50	22.47	1.01	-0.07	0.467	0.47
	LTE 2	QPSK20M	Right Tilted	18700	50	0	1	22.50	22.47	1.01	-0.04	0.127	0.13
	LTE 2	QPSK20M	Left Cheek	18700	50	0	1	22.50	22.47	1.01	-0.01	0.321	0.32
	LTE 2	QPSK20M	Left Tilted	18700	50	0	1	22.50	22.47	1.01	0.03	0.177	0.18
	LTE 2	QPSK20M	Right Cheek	18900	1	0	1	23.50	23.46	1.01	-0.07	0.577	0.58
05	LTE 2	QPSK20M	Right Cheek	19100	1	0	1	23.50	23.43	1.02	0.11	0.591	0.60
	LTE 2	QPSK20M	Right Cheek	19100	1	0	2	23.50	23.43	1.02	0.11	0.561	0.57
	LTE 4	QPSK20M	Right Cheek	20050	1	0	1	23.50	23.45	1.01	0.12	0.275	0.28
	LTE 4	QPSK20M	Right Tilted	20050	1	0	1	23.50	23.45	1.01	0.11	0.078	0.08
	LTE 4	QPSK20M	Left Cheek	20050	1	0	1	23.50	23.45	1.01	-0.1	0.162	0.16
	LTE 4	QPSK20M	Left Tilted	20050	1	0	1	23.50	23.45	1.01	-0.05	0.093	0.09
	LTE 4	QPSK20M	Right Cheek	20050	50	0	1	22.50	22.47	1.01	0.09	0.214	0.22
	LTE 4	QPSK20M	Right Tilted	20050	50	0	1	22.50	22.47	1.01	0.15	0.071	0.07
	LTE 4	QPSK20M	Left Cheek	20050	50	0	1	22.50	22.47	1.01	-0.01	0.145	0.15
	LTE 4	QPSK20M	Left Tilted	20050	50	0	1	22.50	22.47	1.01	-0.13	0.069	0.07
	LTE 4	QPSK20M	Right Cheek	20175	1	0	1	23.50	23.41	1.02	0.13	0.294	0.30
06	LTE 4	QPSK20M	Right Cheek	20300	1	0	1	23.50	23.42	1.02	0.04	0.31	0.32
	LTE 4	QPSK20M	Right Cheek	20300	1	0	2	23.50	23.42	1.02	0.04	0.299	0.30
07	LTE 5	QPSK10M	Right Cheek	20600	1	0	1	23.50	23.46	1.01	-0.03	0.396	0.40
	LTE 5	QPSK10M	Right Tilted	20600	1	0	1	23.50	23.46	1.01	-0.11	0.268	0.27
	LTE 5	QPSK10M	Left Cheek	20600	1	0	1	23.50	23.46	1.01	-0.01	0.345	0.35
	LTE 5	QPSK10M	Left Tilted	20600	1	0	1	23.50	23.46	1.01	-0.03	0.236	0.24
	LTE 5	QPSK10M	Right Cheek	20600	25	0	1	22.50	22.49	1.00	0.15	0.33	0.33
	LTE 5	QPSK10M	Right Tilted	20600	25	0	1	22.50	22.49	1.00	-0.01	0.229	0.23
	LTE 5	QPSK10M	Left Cheek	20600	25	0	1	22.50	22.49	1.00	-0.03	0.283	0.28
	LTE 5	QPSK10M	Left Tilted	20600	25	0	1	22.50	22.49	1.00	-0.15	0.196	0.20
	LTE 5	QPSK10M	Right Cheek	20450	1	0	1	23.50	23.36	1.03	-0.02	0.362	0.37
	LTE 5	QPSK10M	Right Cheek	20525	1	0	1	23.50	23.44	1.01	-0.05	0.396	0.40
	LTE 5	QPSK10M	Right Cheek	20600	1	0	2	23.50	23.46	1.01	-0.03	0.355	0.36

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 7	QPSK20M	Right Cheek	21100	1	0	1	24.00	23.78	1.05	0.08	0.23	0.24
	LTE 7	QPSK20M	Right Tilted	21100	1	0	1	24.00	23.78	1.05	0.12	0.11	0.12
	LTE 7	QPSK20M	Left Cheek	21100	1	0	1	24.00	23.78	1.05	-0.18	0.098	0.10
	LTE 7	QPSK20M	Left Tilted	21100	1	0	1	24.00	23.78	1.05	0.03	0.111	0.12
	LTE 7	QPSK20M	Right Cheek	21100	50	0	1	23.00	22.83	1.04	0.08	0.211	0.22
	LTE 7	QPSK20M	Right Tilted	21100	50	0	1	23.00	22.83	1.04	0.11	0.087	0.09
	LTE 7	QPSK20M	Left Cheek	21100	50	0	1	23.00	22.83	1.04	-0.01	0.139	0.14
	LTE 7	QPSK20M	Left Tilted	21100	50	0	1	23.00	22.83	1.04	-0.11	0.092	0.10
	LTE 7	QPSK20M	Right Cheek	20850	1	0	1	24.00	23.68	1.08	0.04	0.239	0.26
08	LTE 7	QPSK20M	Right Cheek	21350	1	0	1	24.00	23.74	1.06	-0.06	0.243	0.26
	LTE 7	QPSK20M	Right Cheek	21350	1	0	2	24.00	23.74	1.06	-0.06	0.231	0.24
09	LTE 12	QPSK10M	Right Cheek	23130	1	0	1	23.50	23.47	1.01	0.1	0.264	0.27
	LTE 12	QPSK10M	Right Tilted	23130	1	0	1	23.50	23.47	1.01	0.17	0.157	0.16
	LTE 12	QPSK10M	Left Cheek	23130	1	0	1	23.50	23.47	1.01	-0.1	0.221	0.22
	LTE 12	QPSK10M	Left Tilted	23130	1	0	1	23.50	23.47	1.01	-0.12	0.137	0.14
	LTE 12	QPSK10M	Right Cheek	23130	25	0	1	22.50	22.49	1.00	0.09	0.192	0.19
	LTE 12	QPSK10M	Right Tilted	23130	25	0	1	22.50	22.49	1.00	0.1	0.141	0.14
	LTE 12	QPSK10M	Left Cheek	23130	25	0	1	22.50	22.49	1.00	0.03	0.172	0.17
	LTE 12	QPSK10M	Left Tilted	23130	25	0	1	22.50	22.49	1.00	-0.07	0.098	0.10
	LTE 12	QPSK10M	Right Cheek	23060	1	0	1	23.50	23.42	1.02	0.06	0.203	0.21
	LTE 12	QPSK10M	Right Cheek	23095	1	0	1	23.50	23.44	1.01	0.09	0.222	0.22
	LTE 12	QPSK10M	Right Cheek	23130	1	0	2	23.50	23.47	1.01	0.19	0.218	0.22
	LTE 12	QPSK10M	Right Cheek	23130	1	0	1	23.50	23.47	1.01	0.1	0.264	0.27
	LTE 12	QPSK10M	Right Tilted	23130	1	0	1	23.50	23.47	1.01	0.17	0.157	0.16
10	LTE 13	QPSK10M	Right Cheek	23230	1	0	1	23.50	23.37	1.03	-0.01	0.297	0.31
	LTE 13	QPSK10M	Right Tilted	23230	1	0	1	23.50	23.37	1.03	0.13	0.232	0.24
	LTE 13	QPSK10M	Left Cheek	23230	1	0	1	23.50	23.37	1.03	-0.05	0.239	0.25
	LTE 13	QPSK10M	Left Tilted	23230	1	0	1	23.50	23.37	1.03	-0.12	0.204	0.21
	LTE 13	QPSK10M	Right Cheek	23230	25	0	1	22.50	22.45	1.01	-0.1	0.226	0.23
	LTE 13	QPSK10M	Right Tilted	23230	25	0	1	22.50	22.45	1.01	-0.13	0.181	0.18
	LTE 13	QPSK10M	Left Cheek	23230	25	0	1	22.50	22.45	1.01	0.04	0.182	0.18
	LTE 13	QPSK10M	Left Tilted	23230	25	0	1	22.50	22.45	1.01	-0.1	0.152	0.15
	LTE 13	QPSK10M	Right Cheek	23230	1	0	2	23.50	23.37	1.03	-0.08	0.251	0.26
	LTE 17	QPSK10M	Right Cheek	23790	1	0	1	23.50	23.48	1.00	-0.15	0.251	0.25
	LTE 17	QPSK10M	Right Tilted	23790	1	0	1	23.50	23.48	1.00	-0.16	0.179	0.18
	LTE 17	QPSK10M	Left Cheek	23790	1	0	1	23.50	23.48	1.00	-0.18	0.226	0.23
	LTE 17	QPSK10M	Left Tilted	23790	1	0	1	23.50	23.48	1.00	0.19	0.107	0.11
	LTE 17	QPSK10M	Right Cheek	23790	25	0	1	22.50	22.48	1.00	0.01	0.208	0.21
	LTE 17	QPSK10M	Right Tilted	23790	25	0	1	22.50	22.48	1.00	-0.12	0.143	0.14
	LTE 17	QPSK10M	Left Cheek	23790	25	0	1	22.50	22.48	1.00	-0.15	0.184	0.18
	LTE 17	QPSK10M	Left Tilted	23790	25	0	1	22.50	22.48	1.00	0.07	0.094	0.09
11	LTE 17	QPSK10M	Right Cheek	23780	1	0	1	23.50	23.43	1.02	-0.04	0.263	0.27
	LTE 17	QPSK10M	Right Cheek	23800	1	0	1	23.50	23.46	1.01	0.01	0.255	0.26
	LTE 17	QPSK10M	Right Cheek	23780	1	0	2	23.50	23.43	1.02	-0.04	0.237	0.24
12	LTE 25	QPSK20M	Right Cheek	26365	1	0	1	23.50	23.48	1.00	0.04	0.65	0.65
	LTE 25	QPSK20M	Right Tilted	26365	1	0	1	23.50	23.48	1.00	0.04	0.178	0.18
	LTE 25	QPSK20M	Left Cheek	26365	1	0	1	23.50	23.48	1.00	-0.05	0.409	0.41
	LTE 25	QPSK20M	Left Tilted	26365	1	0	1	23.50	23.48	1.00	-0.02	0.256	0.26
	LTE 25	QPSK20M	Right Cheek	26365	50	0	1	22.50	22.49	1.00	-0.09	0.526	0.53
	LTE 25	QPSK20M	Right Tilted	26365	50	0	1	22.50	22.49	1.00	0.06	0.146	0.15
	LTE 25	QPSK20M	Left Cheek	26365	50	0	1	22.50	22.49	1.00	-0.06	0.336	0.34
	LTE 25	QPSK20M	Left Tilted	26365	50	0	1	22.50	22.49	1.00	-0.04	0.205	0.21
	LTE 25	QPSK20M	Right Cheek	26140	1	0	1	23.50	23.44	1.01	-0.07	0.633	0.64
	LTE 25	QPSK20M	Right Cheek	26590	1	0	1	23.50	23.46	1.01	-0.08	0.604	0.61
	LTE 25	QPSK20M	Right Cheek	26365	1	0	2	23.50	23.48	1.00	0.04	0.637	0.64

Plot No.	Band	Mode	Test Position	Ch.	Ant Status	Battery	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	Right Cheek	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	-0.05	0.191	0.21
	WLAN2.4G	802.11b	Right Tilted	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	0.17	0.161	0.17
	WLAN2.4G	802.11b	Left Cheek	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	0.05	0.077	0.08
	WLAN2.4G	802.11b	Left Tilted	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	-0.09	0.064	0.07
	WLAN2.4G	802.11b	Right Cheek	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.03	0.052	0.06
	WLAN2.4G	802.11b	Right Tilted	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	0.13	0.045	0.05
	WLAN2.4G	802.11b	Left Cheek	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	0.18	0.076	0.08
	WLAN2.4G	802.11b	Left Tilted	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	0.15	0.048	0.05
13	WLAN2.4G	802.11b	Right Cheek	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.14	0.347	**0.36**
	WLAN2.4G	802.11b	Right Tilted	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.14	0.257	0.27
	WLAN2.4G	802.11b	Left Cheek	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.01	0.177	0.18
	WLAN2.4G	802.11b	Left Tilted	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	0.05	0.169	0.18
	WLAN2.4G	802.11b	Right Cheek	1	Ant 0+1	1	98.76	1.01	22.50	22.21	1.07	0.18	0.256	0.28
	WLAN2.4G	802.11b	Right Cheek	11	Ant 0+1	1	98.76	1.01	22.00	21.65	1.08	0.17	0.204	0.22
	WLAN2.4G	802.11b	Right Cheek	6	Ant 0+1	2	98.76	1.01	23.50	23.37	1.03	0.16	0.306	0.32
	WLAN5.2G	802.11n HT40	Right Cheek	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	0.06	0.269	0.32
	WLAN5.2G	802.11n HT40	Right Tilted	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	-0.03	0.159	0.19
	WLAN5.2G	802.11n HT40	Left Cheek	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	0.11	0.199	0.24
	WLAN5.2G	802.11n HT40	Left Tilted	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	-0.09	0.168	0.20
	WLAN5.2G	802.11n HT40	Right Cheek	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.12	0.202	0.24
	WLAN5.2G	802.11n HT40	Right Tilted	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.15	0.212	0.26
14	WLAN5.2G	802.11n HT40	Left Cheek	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.08	0.393	**0.48**
	WLAN5.2G	802.11n HT40	Left Tilted	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	0.14	0.331	0.40
	WLAN5.2G	802.11n HT40	Right Cheek	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.05	0.271	0.30
	WLAN5.2G	802.11n HT40	Right Tilted	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	-0.01	0.212	0.23
	WLAN5.2G	802.11n HT40	Left Cheek	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.08	0.374	0.41
	WLAN5.2G	802.11n HT40	Left Tilted	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	-0.18	0.369	0.41
	WLAN5.2G	802.11n HT40	Left Cheek	38	Ant 1	1	91.12	1.10	20.00	19.69	1.07	-0.02	0.321	0.38
	WLAN5.2G	802.11n HT40	Left Cheek	46	Ant 1	2	91.12	1.10	21.50	21.10	1.10	-0.15	0.329	0.40
	WLAN5.6G	802.11ac VHT80	Right Cheek	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	0.12	0.539	0.65
	WLAN5.6G	802.11ac VHT80	Right Tilted	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	0.11	0.387	0.47
15	WLAN5.6G	802.11ac VHT80	Left Cheek	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	-0.11	0.662	**0.80**
	WLAN5.6G	802.11ac VHT80	Left Tilted	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	0.09	0.484	0.59
	WLAN5.6G	802.11ac VHT80	Right Cheek	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	0.02	0.149	0.19
	WLAN5.6G	802.11ac VHT80	Right Tilted	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	0.03	0.135	0.17
	WLAN5.6G	802.11ac VHT80	Left Cheek	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	-0.01	0.485	0.61
	WLAN5.6G	802.11ac VHT80	Left Tilted	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	0.12	0.374	0.47
	WLAN5.6G	802.11ac VHT80	Right Cheek	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.12	0.465	0.59
	WLAN5.6G	802.11ac VHT80	Right Tilted	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.14	0.296	0.38
	WLAN5.6G	802.11ac VHT80	Left Cheek	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	-0.03	0.623	0.79
	WLAN5.6G	802.11ac VHT80	Left Tilted	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.15	0.437	0.56
	WLAN5.6G	802.11ac VHT80	Left Cheek	106	Ant 0	1	83.95	1.19	19.00	18.73	1.06	-0.11	0.611	0.77
	WLAN5.6G	802.11ac VHT80	Left Cheek	122	Ant 0	1	83.95	1.19	20.50	20.40	1.02	-0.11	0.649	0.79
	WLAN5.6G	802.11ac VHT80	Left Cheek	138	Ant 0	2	83.95	1.19	20.50	20.41	1.02	-0.11	0.631	0.77
	WLAN5.8G	802.11ac VHT80	Right Cheek	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	-0.08	0.289	0.35
	WLAN5.8G	802.11ac VHT80	Right Tilted	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.13	0.242	0.29
	WLAN5.8G	802.11ac VHT80	Left Cheek	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.05	0.375	0.45
	WLAN5.8G	802.11ac VHT80	Left Tilted	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.07	0.331	0.40
	WLAN5.8G	802.11ac VHT80	Right Cheek	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	0.11	0.451	0.55
	WLAN5.8G	802.11ac VHT80	Right Tilted	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.06	0.415	0.50
16	WLAN5.8G	802.11ac VHT80	Left Cheek	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.07	0.557	**0.68**
	WLAN5.8G	802.11ac VHT80	Left Tilted	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.03	0.547	0.66
	WLAN5.8G	802.11ac VHT80	Right Cheek	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	-0.07	0.269	0.32
	WLAN5.8G	802.11ac VHT80	Right Tilted	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.12	0.241	0.29
	WLAN5.8G	802.11ac VHT80	Left Cheek	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.05	0.366	0.44
	WLAN5.8G	802.11ac VHT80	Left Tilted	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	-0.08	0.418	0.50
	WLAN5.8G	802.11ac VHT80	Left Cheek	155	Ant 1	2	83.95	1.19	19.00	18.93	1.02	0.01	0.525	0.64
	BT	LE	Right Cheek	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Right Tilted	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Left Cheek	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Left Tilted	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Right Cheek	0	Ant 0	1	61.94	1.61	1.00	0.34	1.16	0	<0.001	0.00
	BT	LE	Right Cheek	39	Ant 0	1	61.94	1.61	1.00	0.64	1.09	0	<0.001	0.00
	BT	LE	Right Cheek	19	Ant 0	2	61.94	1.61	1.00	0.97	1.01	0	<0.001	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 Results for Body-worn Exposure Condition (Test Separation Distance is 10 mm)

Plot No.	Band	Mode	Test Position	Ch.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	GSM850	GPRS12	Front Face	251	1	29.00	28.84	1.04	0.06	0.348	0.36
	GSM850	GPRS12	Rear Face	251	1	29.00	28.84	1.04	0.08	0.324	0.34
	GSM850	GPRS12	Front Face	128	1	29.00	28.68	1.08	0.03	0.348	0.38
17	GSM850	GPRS12	Front Face	189	1	29.00	28.75	1.06	-0.09	0.403	0.43
	GSM850	GPRS12	Front Face	189	2	29.00	28.75	1.06	-0.09	0.285	0.30
	GSM1900	GPRS11	Front Face	661	1	28.50	28.31	1.04	-0.01	0.456	0.47
	GSM1900	GPRS11	Rear Face	661	1	28.50	28.31	1.04	-0.11	0.552	0.57
	GSM1900	GPRS11	Rear Face	512	1	28.50	28.10	1.10	0.05	0.481	0.53
18	GSM1900	GPRS11	Rear Face	810	1	28.50	28.23	1.06	-0.06	0.608	0.64
	GSM1900	GPRS11	Rear Face	810	2	28.50	28.23	1.06	-0.03	0.582	0.62
	WCDMA II	RMC12.2K	Front Face	9262	1	24.50	24.47	1.01	0.16	0.59	0.60
	WCDMA II	RMC12.2K	Rear Face	9262	1	24.50	24.47	1.01	-0.06	0.668	0.67
	WCDMA II	RMC12.2K	Rear Face	9400	1	24.50	24.42	1.02	-0.11	0.78	0.80
19	WCDMA II	RMC12.2K	Rear Face	9538	1	24.50	24.33	1.04	0.09	0.799	0.83
	WCDMA II	RMC12.2K	Rear Face	9538	2	24.50	24.33	1.04	0.04	0.783	0.81
	WCDMA II	RMC12.2K	Rear Face	9262	2	24.50	24.47	1.01	0.03	0.656	0.66
	WCDMA II	RMC12.2K	Rear Face	9400	2	24.50	24.42	1.02	0.01	0.759	0.77
	WCDMA V	RMC12.2K	Front Face	4132	1	24.50	24.42	1.02	0.02	0.458	0.47
	WCDMA V	RMC12.2K	Rear Face	4132	1	24.50	24.42	1.02	0.09	0.294	0.30
	WCDMA V	RMC12.2K	Front Face	4182	1	24.50	24.32	1.04	-0.06	0.493	0.51
20	WCDMA V	RMC12.2K	Front Face	4233	1	24.50	24.35	1.04	0.01	0.498	0.52
	WCDMA V	RMC12.2K	Front Face	4233	2	24.50	24.35	1.04	0.01	0.484	0.50

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 2	QPSK20M	Front Face	18700	1	0	1	23.50	23.48	1.00	0.05	0.365	0.37
	LTE 2	QPSK20M	Rear Face	18700	1	0	1	23.50	23.48	1.00	0.08	0.413	0.41
	LTE 2	QPSK20M	Front Face	18700	50	0	1	22.50	22.47	1.01	0.15	0.297	0.30
	LTE 2	QPSK20M	Rear Face	18700	50	0	1	22.50	22.47	1.01	-0.03	0.346	0.35
	LTE 2	QPSK20M	Rear Face	18900	1	0	1	23.50	23.46	1.01	0.06	0.555	0.56
21	LTE 2	QPSK20M	Rear Face	19100	1	0	1	23.50	23.43	1.02	0.02	0.569	0.58
	LTE 2	QPSK20M	Rear Face	19100	1	0	2	23.50	23.43	1.02	0.02	0.557	0.57
	LTE 4	QPSK20M	Front Face	20050	1	0	1	23.50	23.45	1.01	-0.02	0.108	0.11
	LTE 4	QPSK20M	Rear Face	20050	1	0	1	23.50	23.45	1.01	-0.06	0.129	0.13
	LTE 4	QPSK20M	Front Face	20050	50	0	1	22.50	22.47	1.01	-0.14	0.088	0.09
	LTE 4	QPSK20M	Rear Face	20050	50	0	1	22.50	22.47	1.01	0.06	0.098	0.10
22	LTE 4	QPSK20M	Rear Face	20175	1	0	1	23.50	23.41	1.02	-0.03	0.225	0.23
	LTE 4	QPSK20M	Rear Face	20300	1	0	1	23.50	23.42	1.02	0.03	0.134	0.14
	LTE 4	QPSK20M	Rear Face	20175	1	0	2	23.50	23.41	1.02	-0.03	0.151	0.15
23	LTE 5	QPSK10M	Front Face	20600	1	0	1	23.50	23.46	1.01	0	0.335	0.34
	LTE 5	QPSK10M	Rear Face	20600	1	0	1	23.50	23.46	1.01	0.17	0.273	0.28
	LTE 5	QPSK10M	Front Face	20600	25	0	1	22.50	22.49	1.00	0.16	0.268	0.27
	LTE 5	QPSK10M	Rear Face	20600	25	0	1	22.50	22.49	1.00	0.03	0.221	0.22
	LTE 5	QPSK10M	Front Face	20450	1	0	1	23.50	23.36	1.03	0.09	0.321	0.33
	LTE 5	QPSK10M	Front Face	20525	1	0	1	23.50	23.44	1.01	0.19	0.322	0.33
	LTE 5	QPSK10M	Front Face	20600	1	0	2	23.50	23.46	1.01	0.15	0.315	0.32
	LTE 7	QPSK20M	Front Face	21100	1	0	1	24.00	23.78	1.05	0.03	0.294	0.31
	LTE 7	QPSK20M	Rear Face	21100	1	0	1	24.00	23.78	1.05	0.05	0.615	0.65
	LTE 7	QPSK20M	Front Face	21100	50	0	1	23.00	22.83	1.04	0.04	0.248	0.26
	LTE 7	QPSK20M	Rear Face	21100	50	0	1	23.00	22.83	1.04	-0.06	0.518	0.54
	LTE 7	QPSK20M	Rear Face	20850	1	0	1	24.00	23.68	1.08	-0.1	0.626	0.68
24	LTE 7	QPSK20M	Rear Face	21350	1	0	1	24.00	23.74	1.06	-0.01	0.664	0.70
	LTE 7	QPSK20M	Rear Face	21350	1	0	2	24.00	23.74	1.06	-0.01	0.643	0.68
25	LTE 12	QPSK10M	Front Face	23130	1	0	1	23.50	23.47	1.01	-0.01	0.291	0.29
	LTE 12	QPSK10M	Rear Face	23130	1	0	1	23.50	23.47	1.01	0.11	0.245	0.25
	LTE 12	QPSK10M	Front Face	23130	25	0	1	22.50	22.49	1.00	-0.1	0.233	0.23
	LTE 12	QPSK10M	Rear Face	23130	25	0	1	22.50	22.49	1.00	0.16	0.197	0.20
	LTE 12	QPSK10M	Front Face	23060	1	0	1	23.50	23.42	1.02	-0.11	0.279	0.28
	LTE 12	QPSK10M	Front Face	23095	1	0	1	23.50	23.44	1.01	0.11	0.282	0.28
	LTE 12	QPSK10M	Front Face	23130	1	0	2	23.50	23.47	1.01	-0.01	0.252	0.25

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
26	LTE 13	QPSK10M	Front Face	23230	1	0	1	23.50	23.37	1.03	-0.1	0.327	0.34
	LTE 13	QPSK10M	Rear Face	23230	1	0	1	23.50	23.37	1.03	-0.13	0.218	0.22
	LTE 13	QPSK10M	Front Face	23230	25	0	1	22.50	22.45	1.01	0.14	0.271	0.27
	LTE 13	QPSK10M	Rear Face	23230	25	0	1	22.50	22.45	1.01	-0.16	0.176	0.18
	LTE 13	QPSK10M	Front Face	23230	1	0	2	23.50	23.37	1.03	0.09	0.302	0.31
	LTE 17	QPSK10M	Front Face	23790	1	0	1	23.50	23.48	1.00	-0.02	0.292	0.29
	LTE 17	QPSK10M	Rear Face	23790	1	0	1	23.50	23.48	1.00	-0.04	0.251	0.25
	LTE 17	QPSK10M	Front Face	23790	25	0	1	22.50	22.48	1.00	-0.17	0.248	0.25
	LTE 17	QPSK10M	Rear Face	23790	25	0	1	22.50	22.48	1.00	0.03	0.211	0.21
27	LTE 17	QPSK10M	Front Face	23780	1	0	1	23.50	23.43	1.02	-0.02	0.295	0.30
	LTE 17	QPSK10M	Front Face	23800	1	0	1	23.50	23.46	1.01	0.17	0.291	0.29
	LTE 17	QPSK10M	Front Face	23780	1	0	2	23.50	23.43	1.02	-0.02	0.259	0.26
	LTE 25	QPSK20M	Front Face	26365	1	0	1	23.50	23.48	1.00	0.12	0.311	0.31
	LTE 25	QPSK20M	Rear Face	26365	1	0	1	23.50	23.48	1.00	0.05	0.379	0.38
	LTE 25	QPSK20M	Front Face	26365	50	0	1	22.50	22.49	1.00	-0.08	0.251	0.25
	LTE 25	QPSK20M	Rear Face	26365	50	0	1	22.50	22.49	1.00	-0.12	0.327	0.33
	LTE 25	QPSK20M	Rear Face	26140	1	0	1	23.50	23.44	1.01	-0.05	0.483	0.49
28	LTE 25	QPSK20M	Rear Face	26590	1	0	1	23.50	23.46	1.01	-0.01	0.556	0.56
	LTE 25	QPSK20M	Rear Face	26590	1	0	2	23.50	23.46	1.01	-0.01	0.531	0.54

Plot No.	Band	Mode	Test Position	Ch.	Ant Status	Battery	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	Front Face	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	0.12	0.202	0.22
	WLAN2.4G	802.11b	Rear Face	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	-0.07	0.189	0.20
	WLAN2.4G	802.11b	Front Face	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.09	0.134	0.14
	WLAN2.4G	802.11b	Rear Face	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.17	0.191	0.20
	WLAN2.4G	802.11b	Front Face	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.02	0.181	0.19
29	WLAN2.4G	802.11b	Rear Face	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	0.09	0.295	0.31
	WLAN2.4G	802.11b	Rear Face	1	Ant 0+1	1	98.76	1.01	22.50	22.21	1.07	0.11	0.192	0.21
	WLAN2.4G	802.11b	Rear Face	11	Ant 0+1	1	98.76	1.01	22.00	21.65	1.08	-0.05	0.212	0.23
	WLAN2.4G	802.11b	Rear Face	6	Ant 0+1	2	98.76	1.01	23.50	23.37	1.03	0.06	0.252	0.26
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	0.15	0.243	0.29
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	-0.03	0.112	0.13
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	0.09	0.171	0.21
30	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.06	0.347	0.42
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.12	0.118	0.13
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.03	0.223	0.25
	WLAN5.2G	802.11n HT40	Rear Face	38	Ant 1	1	91.12	1.10	20.00	19.69	1.07	-0.05	0.321	0.38
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 1	2	91.12	1.10	21.50	21.10	1.10	-0.06	0.285	0.34
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	-0.11	0.438	0.53
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	0.02	0.465	0.56
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	0.01	0.359	0.45
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	-0.11	0.39	0.49
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	-0.05	0.316	0.40
31	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.01	0.492	0.63
	WLAN5.6G	802.11ac VHT80	Rear Face	106	Ant 0+1	1	83.95	1.19	22.50	22.16	1.08	-0.11	0.258	0.33
	WLAN5.6G	802.11ac VHT80	Rear Face	122	Ant 0+1	1	83.95	1.19	24.00	23.60	1.10	0.03	0.421	0.55
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 0+1	2	83.95	1.19	24.00	23.70	1.07	0.11	0.457	0.58
	WLAN5.8G	802.11ac VHT80	Front Face	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.02	0.122	0.15
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.03	0.228	0.27
	WLAN5.8G	802.11ac VHT80	Front Face	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.05	0.223	0.27
32	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.15	0.347	0.42
	WLAN5.8G	802.11ac VHT80	Front Face	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	-0.02	0.148	0.18
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.13	0.275	0.33
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 1	2	83.95	1.19	19.00	18.93	1.02	0.07	0.307	0.37
	BT	LE	Front Face	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Rear Face	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Rear Face	0	Ant 0	1	61.94	1.61	1.00	0.34	1.16	0	<0.001	0.00
	BT	LE	Rear Face	39	Ant 0	1	61.94	1.61	1.00	0.64	1.09	0	<0.001	0.00
	BT	LE	Rear Face	19	Ant 0	2	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00

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

4.7.4 SAR Results for Hotspot Exposure Condition (Test Separation Distance is 10 mm)

Plot No.	Band	Mode	Test Position	Ch.	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	GSM850	GPRS12	Front Face	251	1	29.00	28.84	1.04	0.06	0.348	0.36
	GSM850	GPRS12	Rear Face	251	1	29.00	28.84	1.04	0.08	0.324	0.34
	GSM850	GPRS12	Left Side	251	1	29.00	28.84	1.04	0.04	0.051	0.05
	GSM850	GPRS12	Right Side	251	1	29.00	28.84	1.04	-0.16	0.229	0.24
	GSM850	GPRS12	Bottom Side	251	1	29.00	28.84	1.04	0.08	0.302	0.31
	GSM850	GPRS12	Front Face	128	1	29.00	28.68	1.08	0.03	0.348	0.38
33	GSM850	GPRS12	Front Face	189	1	29.00	28.75	1.06	-0.09	0.403	0.43
	GSM850	GPRS12	Front Face	189	2	29.00	28.75	1.06	-0.09	0.285	0.30
	GSM1900	GPRS11	Front Face	661	1	28.50	28.31	1.04	-0.01	0.326	0.34
	GSM1900	GPRS11	Rear Face	661	1	28.50	28.31	1.04	-0.11	0.383	0.40
	GSM1900	GPRS11	Left Side	661	1	28.50	28.31	1.04	-0.08	0.041	0.04
	GSM1900	GPRS11	Right Side	661	1	28.50	28.31	1.04	0.17	0.192	0.20
	GSM1900	GPRS11	Bottom Side	661	1	28.50	28.31	1.04	-0.1	0.548	0.57
	GSM1900	GPRS11	Bottom Side	512	1	28.50	28.10	1.10	0.1	0.528	0.58
34	GSM1900	GPRS11	Bottom Side	810	1	28.50	28.23	1.06	-0.06	0.704	0.75
	GSM1900	GPRS11	Bottom Side	810	2	28.50	28.23	1.06	0.05	0.689	0.73
	WCDMA II	RMC12.2K	Front Face	9262	1	24.50	24.47	1.01	0.16	0.59	0.60
	WCDMA II	RMC12.2K	Rear Face	9262	1	24.50	24.47	1.01	-0.06	0.668	0.67
	WCDMA II	RMC12.2K	Left Side	9262	1	24.50	24.47	1.01	0.08	0.114	0.12
	WCDMA II	RMC12.2K	Right Side	9262	1	24.50	24.47	1.01	0.04	0.485	0.49
	WCDMA II	RMC12.2K	Bottom Side	9262	1	24.50	24.47	1.01	-0.04	0.769	0.78
	WCDMA II	RMC12.2K	Bottom Side	9400	1	24.50	24.42	1.02	-0.09	0.812	0.83
35	WCDMA II	RMC12.2K	Bottom Side	9538	1	24.50	24.33	1.04	-0.07	0.915	0.95
	WCDMA II	RMC12.2K	Bottom Side	9538	2	24.50	24.33	1.04	0.04	0.884	0.92
	WCDMA V	RMC12.2K	Front Face	4132	1	24.50	24.42	1.02	0.02	0.458	0.47
	WCDMA V	RMC12.2K	Rear Face	4132	1	24.50	24.42	1.02	0.09	0.294	0.30
	WCDMA V	RMC12.2K	Left Side	4132	1	24.50	24.42	1.02	0.09	0.229	0.23
	WCDMA V	RMC12.2K	Right Side	4132	1	24.50	24.42	1.02	0.09	0.351	0.36
	WCDMA V	RMC12.2K	Bottom Side	4132	1	24.50	24.42	1.02	-0.02	0.418	0.43
	WCDMA V	RMC12.2K	Front Face	4182	1	24.50	24.32	1.04	0.08	0.493	0.51
36	WCDMA V	RMC12.2K	Front Face	4233	1	24.50	24.35	1.04	0.01	0.498	0.52
	WCDMA V	RMC12.2K	Front Face	4233	2	24.50	24.35	1.04	0.01	0.484	0.50

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 2	QPSK20M	Front Face	18700	1	0	1	23.50	23.48	1.00	0.05	0.365	0.37
	LTE 2	QPSK20M	Rear Face	18700	1	0	1	23.50	23.48	1.00	0.08	0.413	0.41
	LTE 2	QPSK20M	Left Side	18700	1	0	1	23.50	23.48	1.00	-0.07	0.076	0.08
	LTE 2	QPSK20M	Right Side	18700	1	0	1	23.50	23.48	1.00	0	0.333	0.33
	LTE 2	QPSK20M	Bottom Side	18700	1	0	1	23.50	23.48	1.00	0.19	0.455	0.46
	LTE 2	QPSK20M	Front Face	18700	50	0	1	22.50	22.47	1.01	0.15	0.297	0.30
	LTE 2	QPSK20M	Rear Face	18700	50	0	1	22.50	22.47	1.01	-0.03	0.346	0.35
	LTE 2	QPSK20M	Left Side	18700	50	0	1	22.50	22.47	1.01	0.12	0.038	0.04
	LTE 2	QPSK20M	Right Side	18700	50	0	1	22.50	22.47	1.01	-0.06	0.258	0.26
	LTE 2	QPSK20M	Bottom Side	18700	50	0	1	22.50	22.47	1.01	0.15	0.421	0.43
	LTE 2	QPSK20M	Bottom Side	18900	1	0	1	23.50	23.46	1.01	0.11	0.537	0.54
37	LTE 2	QPSK20M	Bottom Side	19100	1	0	1	23.50	23.43	1.02	0.1	0.605	0.62
	LTE 2	QPSK20M	Bottom Side	19100	1	0	2	23.50	23.43	1.02	-0.03	0.585	0.60
	LTE 4	QPSK20M	Front Face	20050	1	0	1	23.50	23.45	1.01	-0.02	0.108	0.11
	LTE 4	QPSK20M	Rear Face	20050	1	0	1	23.50	23.45	1.01	-0.06	0.129	0.13
	LTE 4	QPSK20M	Left Side	20050	1	0	1	23.50	23.45	1.01	0	<0.001	0.00
	LTE 4	QPSK20M	Right Side	20050	1	0	1	23.50	23.45	1.01	-0.02	0.191	0.19
	LTE 4	QPSK20M	Bottom Side	20050	1	0	1	23.50	23.45	1.01	-0.08	0.259	0.26
	LTE 4	QPSK20M	Front Face	20050	50	0	1	22.50	22.47	1.01	-0.14	0.088	0.09
	LTE 4	QPSK20M	Rear Face	20050	50	0	1	22.50	22.47	1.01	0.06	0.098	0.10
	LTE 4	QPSK20M	Left Side	20050	50	0	1	22.50	22.47	1.01	0	<0.001	0.00
	LTE 4	QPSK20M	Right Side	20050	50	0	1	22.50	22.47	1.01	0	0.149	0.15
	LTE 4	QPSK20M	Bottom Side	20050	50	0	1	22.50	22.47	1.01	-0.14	0.232	0.23
	LTE 4	QPSK20M	Bottom Side	20175	1	0	1	23.50	23.41	1.02	0.15	0.287	0.29
38	LTE 4	QPSK20M	Bottom Side	20300	1	0	1	23.50	23.42	1.02	0.13	0.293	0.30
	LTE 4	QPSK20M	Bottom Side	20300	1	0	2	23.50	23.42	1.02	0.13	0.286	0.29

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
39	LTE 5	QPSK10M	Front Face	20600	1	0	1	23.50	23.46	1.01	0	0.335	0.34
	LTE 5	QPSK10M	Rear Face	20600	1	0	1	23.50	23.46	1.01	0.17	0.273	0.28
	LTE 5	QPSK10M	Left Side	20600	1	0	1	23.50	23.46	1.01	0.08	0.152	0.15
	LTE 5	QPSK10M	Right Side	20600	1	0	1	23.50	23.46	1.01	0.14	0.287	0.29
	LTE 5	QPSK10M	Bottom Side	20600	1	0	1	23.50	23.46	1.01	0.14	0.327	0.33
	LTE 5	QPSK10M	Front Face	20600	25	0	1	22.50	22.49	1.00	0.16	0.268	0.27
	LTE 5	QPSK10M	Rear Face	20600	25	0	1	22.50	22.49	1.00	0.03	0.221	0.22
	LTE 5	QPSK10M	Left Side	20600	25	0	1	22.50	22.49	1.00	0.05	0.125	0.13
	LTE 5	QPSK10M	Right Side	20600	25	0	1	22.50	22.49	1.00	0.06	0.235	0.24
	LTE 5	QPSK10M	Bottom Side	20600	25	0	1	22.50	22.49	1.00	-0.11	0.262	0.26
	LTE 5	QPSK10M	Front Face	20450	1	0	1	23.50	23.36	1.03	-0.17	0.321	0.33
	LTE 5	QPSK10M	Front Face	20525	1	0	1	23.50	23.44	1.01	-0.19	0.322	0.33
	LTE 5	QPSK10M	Front Face	20600	1	0	2	23.50	23.46	1.01	0.15	0.315	0.32
	LTE 7	QPSK20M	Front Face	21100	1	0	1	24.00	23.78	1.05	0.03	0.294	0.31
	LTE 7	QPSK20M	Rear Face	21100	1	0	1	24.00	23.78	1.05	0.05	0.615	0.65
	LTE 7	QPSK20M	Left Side	21100	1	0	1	24.00	23.78	1.05	0.1	0.065	0.07
	LTE 7	QPSK20M	Right Side	21100	1	0	1	24.00	23.78	1.05	-0.19	0.474	0.50
	LTE 7	QPSK20M	Bottom Side	21100	1	0	1	24.00	23.78	1.05	-0.16	0.993	1.04
	LTE 7	QPSK20M	Front Face	21100	50	0	1	23.00	22.83	1.04	0.04	0.248	0.26
	LTE 7	QPSK20M	Rear Face	21100	50	0	1	23.00	22.83	1.04	-0.06	0.518	0.54
	LTE 7	QPSK20M	Left Side	21100	50	0	1	23.00	22.83	1.04	-0.06	0.056	0.06
	LTE 7	QPSK20M	Right Side	21100	50	0	1	23.00	22.83	1.04	-0.08	0.411	0.43
	LTE 7	QPSK20M	Bottom Side	21100	50	0	1	23.00	22.83	1.04	0.19	0.755	0.79
	LTE 7	QPSK20M	Bottom Side	21100	100	0	1	23.00	22.77	1.05	0.11	0.779	0.82
	LTE 7	QPSK20M	Bottom Side	20850	1	0	1	24.00	23.68	1.08	0.03	0.931	1.01
40	LTE 7	QPSK20M	Bottom Side	21350	1	0	1	24.00	23.74	1.06	0.19	1.06	1.12
	LTE 7	QPSK20M	Bottom Side	21350	1	0	2	24.00	23.74	1.06	0.19	0.928	0.98
	LTE 7	QPSK20M	Bottom Side	20850	1	0	2	24.00	23.68	1.08	0.11	0.911	0.98
	LTE 7	QPSK20M	Bottom Side	21100	1	0	2	24.00	23.78	1.05	0.09	0.885	0.93
	LTE 7	QPSK20M	Bottom Side	20850	1	0	2	24.00	23.68	1.08	0.11	0.911	0.98
	LTE 7	QPSK20M	Bottom Side	21350	1	0	1	24.00	23.74	1.06	0.05	1.01	1.07
41	LTE 12	QPSK10M	Front Face	23130	1	0	1	23.50	23.47	1.01	-0.01	0.291	0.29
	LTE 12	QPSK10M	Rear Face	23130	1	0	1	23.50	23.47	1.01	0.11	0.245	0.25
	LTE 12	QPSK10M	Left Side	23130	1	0	1	23.50	23.47	1.01	0.05	0.196	0.20
	LTE 12	QPSK10M	Right Side	23130	1	0	1	23.50	23.47	1.01	-0.07	0.268	0.27
	LTE 12	QPSK10M	Bottom Side	23130	1	0	1	23.50	23.47	1.01	0.07	0.138	0.14
	LTE 12	QPSK10M	Front Face	23130	25	0	1	22.50	22.49	1.00	-0.1	0.233	0.23
	LTE 12	QPSK10M	Rear Face	23130	25	0	1	22.50	22.49	1.00	0.16	0.197	0.20
	LTE 12	QPSK10M	Left Side	23130	25	0	1	22.50	22.49	1.00	0.12	0.177	0.18
	LTE 12	QPSK10M	Right Side	23130	25	0	1	22.50	22.49	1.00	-0.06	0.224	0.22
	LTE 12	QPSK10M	Bottom Side	23130	25	0	1	22.50	22.49	1.00	0.19	0.104	0.10
	LTE 12	QPSK10M	Front Face	23060	1	0	1	23.50	23.42	1.02	-0.11	0.279	0.28
	LTE 12	QPSK10M	Front Face	23095	1	0	1	23.50	23.44	1.01	0.11	0.282	0.28
	LTE 12	QPSK10M	Front Face	23130	1	0	2	23.50	23.47	1.01	-0.01	0.252	0.25
42	LTE 13	QPSK10M	Front Face	23230	1	0	1	23.50	23.37	1.03	-0.1	0.327	0.34
	LTE 13	QPSK10M	Rear Face	23230	1	0	1	23.50	23.37	1.03	-0.13	0.218	0.22
	LTE 13	QPSK10M	Left Side	23230	1	0	1	23.50	23.37	1.03	0.01	0.177	0.18
	LTE 13	QPSK10M	Right Side	23230	1	0	1	23.50	23.37	1.03	0.14	0.272	0.28
	LTE 13	QPSK10M	Bottom Side	23230	1	0	1	23.50	23.37	1.03	0.11	0.239	0.25
	LTE 13	QPSK10M	Front Face	23230	25	0	1	22.50	22.45	1.01	0.14	0.271	0.27
	LTE 13	QPSK10M	Rear Face	23230	25	0	1	22.50	22.45	1.01	-0.16	0.176	0.18
	LTE 13	QPSK10M	Left Side	23230	25	0	1	22.50	22.45	1.01	0.05	0.173	0.17
	LTE 13	QPSK10M	Right Side	23230	25	0	1	22.50	22.45	1.01	0.12	0.228	0.23
	LTE 13	QPSK10M	Bottom Side	23230	25	0	1	22.50	22.45	1.01	0.16	0.218	0.22
	LTE 13	QPSK10M	Front Face	23230	1	0	2	23.50	23.37	1.03	0.09	0.302	0.31
	LTE 17	QPSK10M	Front Face	23790	1	0	1	23.50	23.48	1.00	-0.02	0.292	0.29
	LTE 17	QPSK10M	Rear Face	23790	1	0	1	23.50	23.48	1.00	-0.04	0.251	0.25
	LTE 17	QPSK10M	Left Side	23790	1	0	1	23.50	23.48	1.00	-0.17	0.229	0.23
	LTE 17	QPSK10M	Right Side	23790	1	0	1	23.50	23.48	1.00	0.16	0.286	0.29
	LTE 17	QPSK10M	Bottom Side	23790	1	0	1	23.50	23.48	1.00	0.1	0.129	0.13
	LTE 17	QPSK10M	Front Face	23790	25	0	1	22.50	22.48	1.00	-0.17	0.248	0.25
	LTE 17	QPSK10M	Rear Face	23790	25	0	1	22.50	22.48	1.00	0.03	0.211	0.21
	LTE 17	QPSK10M	Left Side	23790	25	0	1	22.50	22.48	1.00	0.18	0.155	0.16
	LTE 17	QPSK10M	Right Side	23790	25	0	1	22.50	22.48	1.00	0.12	0.207	0.21
	LTE 17	QPSK10M	Bottom Side	23790	25	0	1	22.50	22.48	1.00	-0.06	0.16	0.16
43	LTE 17	QPSK10M	Front Face	23780	1	0	1	23.50	23.43	1.02	-0.02	0.295	0.30
	LTE 17	QPSK10M	Front Face	23800	1	0	1	23.50	23.46	1.01	0.17	0.291	0.29
	LTE 17	QPSK10M	Front Face	23780	1	0	2	23.50	23.43	1.02	-0.02	0.259	0.26

Plot No.	Band	Mode	Test Position	Ch.	RB	offset	Battery	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 25	QPSK20M	Front Face	26365	1	0	1	23.50	23.48	1.00	0.12	0.311	0.31
	LTE 25	QPSK20M	Rear Face	26365	1	0	1	23.50	23.48	1.00	0.05	0.379	0.38
	LTE 25	QPSK20M	Left Side	26365	1	0	1	23.50	23.48	1.00	0.06	0.039	0.04
	LTE 25	QPSK20M	Right Side	26365	1	0	1	23.50	23.48	1.00	-0.09	0.241	0.24
	LTE 25	QPSK20M	Bottom Side	26365	1	0	1	23.50	23.48	1.00	0.13	0.437	0.44
	LTE 25	QPSK20M	Front Face	26365	50	0	1	22.50	22.49	1.00	-0.08	0.251	0.25
	LTE 25	QPSK20M	Rear Face	26365	50	0	1	22.50	22.49	1.00	-0.12	0.327	0.33
	LTE 25	QPSK20M	Left Side	26365	50	0	1	22.50	22.49	1.00	0.05	0.033	0.03
	LTE 25	QPSK20M	Right Side	26365	50	0	1	22.50	22.49	1.00	-0.07	0.221	0.22
	LTE 25	QPSK20M	Bottom Side	26365	50	0	1	22.50	22.49	1.00	0.06	0.361	0.36
44	LTE 25	QPSK20M	Bottom Side	26140	1	0	1	23.50	23.44	1.01	-0.01	0.469	**0.47**
	LTE 25	QPSK20M	Bottom Side	26590	1	0	1	23.50	23.46	1.01	0.02	0.451	0.46
	LTE 25	QPSK20M	Bottom Side	26140	1	0	2	23.50	23.44	1.01	-0.08	0.451	0.46

Plot No.	Band	Mode	Test Position	Ch.	Ant Status	Battery	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	Front Face	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	0.12	0.202	0.22
	WLAN2.4G	802.11b	Rear Face	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	-0.07	0.189	0.20
	WLAN2.4G	802.11b	Left Side	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	-0.14	0.467	0.50
	WLAN2.4G	802.11b	Top Side	6	Ant 0	1	98.76	1.01	20.50	20.22	1.07	0.02	0.326	0.35
	WLAN2.4G	802.11b	Front Face	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.09	0.134	0.14
	WLAN2.4G	802.11b	Rear Face	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.17	0.191	0.20
45	WLAN2.4G	802.11b	Right Side	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	-0.04	0.75	**0.80**
	WLAN2.4G	802.11b	Top Side	6	Ant 1	1	98.76	1.01	20.50	20.27	1.05	0.17	0.246	0.26
	WLAN2.4G	802.11b	Front Face	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.02	0.181	0.19
	WLAN2.4G	802.11b	Rear Face	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	0.09	0.295	0.31
	WLAN2.4G	802.11b	Left Side	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	0.13	0.387	0.40
	WLAN2.4G	802.11b	Right Side	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.16	0.619	0.64
	WLAN2.4G	802.11b	Top Side	6	Ant 0+1	1	98.76	1.01	23.50	23.37	1.03	-0.15	0.277	0.29
	WLAN2.4G	802.11b	Right Side	1	Ant 1	1	98.76	1.01	19.50	19.19	1.07	0.09	0.563	0.61
	WLAN2.4G	802.11b	Right Side	11	Ant 1	1	98.76	1.00	19.00	18.92	1.02	-0.19	0.475	0.48
	WLAN2.4G	802.11b	Right Side	6	Ant 1	2	98.76	1.01	20.50	20.27	1.05	-0.04	0.698	0.74
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	0.15	0.243	0.29
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	-0.03	0.112	0.13
	WLAN5.2G	802.11n HT40	Left Side	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	-0.04	0.74	0.89
	WLAN5.2G	802.11n HT40	Top Side	46	Ant 0	1	91.12	1.10	21.00	20.63	1.09	0.01	0.521	0.62
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	0.09	0.171	0.21
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.06	0.347	0.42
	WLAN5.2G	802.11n HT40	Right Side	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	0.05	0.647	0.78
	WLAN5.2G	802.11n HT40	Top Side	46	Ant 1	1	91.12	1.10	21.50	21.10	1.10	-0.06	0.249	0.30
	WLAN5.2G	802.11n HT40	Front Face	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.12	0.118	0.13
	WLAN5.2G	802.11n HT40	Rear Face	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.03	0.223	0.25
	WLAN5.2G	802.11n HT40	Left Side	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	-0.17	0.76	0.84
46	WLAN5.2G	802.11n HT40	Right Side	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	-0.08	0.827	**0.91**
	WLAN5.2G	802.11n HT40	Top Side	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	0.07	0.616	0.68
	WLAN5.2G	802.11n HT40	Left Side	38	Ant 0	1	91.12	1.10	19.50	19.25	1.06	-0.04	0.711	0.83
	WLAN5.2G	802.11n HT40	Left Side	38	Ant 0+1	1	91.12	1.10	23.00	22.58	1.10	-0.12	0.732	0.89
	WLAN5.2G	802.11n HT40	Right Side	38	Ant 0+1	1	91.12	1.10	23.00	22.58	1.10	-0.08	0.745	0.90
	WLAN5.2G	802.11n HT40	Right Side	46	Ant 0+1	2	91.12	1.10	24.00	23.99	1.00	0.03	0.772	0.85
	WLAN5.2G	802.11n HT40	Right Side	38	Ant 0+1	2	91.12	1.10	23.00	22.58	1.10	-0.01	0.513	0.62
	WLAN5.2G	802.11n HT40	Right Side	46	Ant 0+1	1	91.12	1.10	24.00	23.99	1.00	-0.08	0.811	0.89

Plot No.	Band	Mode	Test Position	Ch.	Ant Status	Battery	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	Front Face	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.02	0.122	0.15
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.03	0.228	0.27
47	WLAN5.8G	802.11ac VHT80	Left Side	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.09	0.994	1.19
	WLAN5.8G	802.11ac VHT80	Top Side	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.04	0.173	0.21
	WLAN5.8G	802.11ac VHT80	Front Face	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.05	0.233	0.28
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.15	0.347	0.42
	WLAN5.8G	802.11ac VHT80	Right Side	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	0.01	0.896	1.09
	WLAN5.8G	802.11ac VHT80	Top Side	155	Ant 1	1	83.95	1.19	19.00	18.93	1.02	-0.07	0.271	0.33
	WLAN5.8G	802.11ac VHT80	Front Face	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	-0.02	0.148	0.18
	WLAN5.8G	802.11ac VHT80	Rear Face	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.13	0.275	0.33
	WLAN5.8G	802.11ac VHT80	Left Side	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.05	0.826	0.99
	WLAN5.8G	802.11ac VHT80	Right Side	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	0.08	0.456	0.55
	WLAN5.8G	802.11ac VHT80	Top Side	155	Ant 0+1	1	83.95	1.19	19.50	19.47	1.01	-0.07	0.161	0.19
	WLAN5.8G	802.11ac VHT80	Left Side	155	Ant 0	2	83.95	1.19	17.00	16.97	1.01	-0.08	0.923	1.11
	WLAN5.8G	802.11ac VHT80	Left Side	155	Ant 0	1	83.95	1.19	17.00	16.97	1.01	0.06	0.969	1.16
	BT	LE	Front Face	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Rear Face	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Left Side	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Top Side	19	Ant 0	1	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00
	BT	LE	Left Side	0	Ant 0	1	61.94	1.61	1.00	0.34	1.16	0	<0.001	0.00
	BT	LE	Left Side	39	Ant 0	1	61.94	1.61	1.00	0.64	1.09	0	<0.001	0.00
	BT	LE	Left Side	19	Ant 0	2	61.94	1.61	1.00	0.97	1.01	0	<0.001	0.00

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

4.7.5 SAR Results for Product Specific Exposure Condition (Test Separation Distance is 0 mm)

Plot No.	Band	Mode	Test Position	Ch.	Ant Status	Battery	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	WLAN5.3G	802.11n HT40	Front Face	54	Ant 0	1	91.12	1.10	20.50	20.30	1.05	0.15	0.261	0.30
	WLAN5.3G	802.11n HT40	Rear Face	54	Ant 0	1	91.12	1.10	20.50	20.30	1.05	-0.06	0.128	0.15
	WLAN5.3G	802.11n HT40	Left Side	54	Ant 0	1	91.12	1.10	20.50	20.30	1.05	-0.15	0.493	0.57
	WLAN5.3G	802.11n HT40	Top Side	54	Ant 0	1	91.12	1.10	20.50	20.30	1.05	-0.01	0.404	0.47
	WLAN5.3G	802.11n HT40	Front Face	54	Ant 1	1	91.12	1.10	21.00	20.58	1.10	-0.15	0.245	0.30
	WLAN5.3G	802.11n HT40	Rear Face	54	Ant 1	1	91.12	1.10	21.00	20.58	1.10	-0.01	0.219	0.26
	WLAN5.3G	802.11n HT40	Right Side	54	Ant 1	1	91.12	1.10	21.00	20.58	1.10	-0.1	0.792	0.96
	WLAN5.3G	802.11n HT40	Top Side	54	Ant 1	1	91.12	1.10	21.00	20.58	1.10	0.15	0.151	0.18
	WLAN5.3G	802.11n HT40	Front Face	54	Ant 0+1	1	91.12	1.10	24.00	23.59	1.10	-0.1	0.247	0.30
	WLAN5.3G	802.11n HT40	Rear Face	54	Ant 0+1	1	91.12	1.10	24.00	23.59	1.10	-0.16	0.233	0.28
	WLAN5.3G	802.11n HT40	Left Side	54	Ant 0+1	1	91.12	1.10	24.00	23.59	1.10	-0.08	0.531	0.64
48	WLAN5.3G	802.11n HT40	Right Side	54	Ant 0+1	1	91.12	1.10	24.00	23.59	1.10	0.17	1.03	1.25
	WLAN5.3G	802.11n HT40	Top Side	54	Ant 0+1	1	91.12	1.10	24.00	23.59	1.10	-0.03	0.394	0.48
	WLAN5.3G	802.11n HT40	Right Side	62	Ant 0+1	1	91.12	1.10	22.50	22.05	1.11	0.08	0.711	0.87
	WLAN5.3G	802.11n HT40	Right Side	54	Ant 0+1	2	91.12	1.10	24.00	23.59	1.10	0.01	0.991	1.20
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	-0.02	0.466	0.57
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	0.08	0.401	0.49
49	WLAN5.6G	802.11ac VHT80	Left Side	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	-0.04	1.79	2.17
	WLAN5.6G	802.11ac VHT80	Top Side	138	Ant 0	1	83.95	1.19	20.50	20.41	1.02	-0.13	0.535	0.65
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	-0.15	0.282	0.35
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	0.09	0.181	0.23
	WLAN5.6G	802.11ac VHT80	Right Side	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	-0.03	0.698	0.87
	WLAN5.6G	802.11ac VHT80	Top Side	138	Ant 1	1	83.95	1.19	21.00	20.77	1.05	-0.14	0.156	0.19
	WLAN5.6G	802.11ac VHT80	Front Face	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	-0.09	0.499	0.64
	WLAN5.6G	802.11ac VHT80	Rear Face	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.16	0.407	0.52
	WLAN5.6G	802.11ac VHT80	Left Side	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	-0.04	1.48	1.88
	WLAN5.6G	802.11ac VHT80	Right Side	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	0.19	0.684	0.87
	WLAN5.6G	802.11ac VHT80	Top Side	138	Ant 0+1	1	83.95	1.19	24.00	23.70	1.07	-0.09	0.491	0.63
	WLAN5.6G	802.11ac VHT80	Left Side	106	Ant 0	1	83.95	1.19	19.00	18.73	1.06	0.04	0.977	1.23
	WLAN5.6G	802.11ac VHT80	Left Side	122	Ant 0	1	83.95	1.19	20.50	20.40	1.02	-0.08	1.4	1.70
	WLAN5.6G	802.11ac VHT80	Left Side	138	Ant 0	2	83.95	1.19	20.50	20.41	1.02	0.02	1.68	2.04

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

4.7.6 SAR Measurement Variability

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

SAR repeated measurement procedure:

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

Band	Mode	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
WCDMA II	RMC12.2K	Right Cheek	9538	0.821	0.809	1.01	N/A	N/A	N/A	N/A
LTE 7	QPSK20M	Bottom Side	21350	1.06	1.01	1.05	N/A	N/A	N/A	N/A
WLAN5.2G	802.11n HT40	Right Side	46	0.827	0.811	1.02	N/A	N/A	N/A	N/A
WLAN5.8G	802.11ac VHT80	Left Side	155	0.994	0.969	1.03	N/A	N/A	N/A	N/A

4.7.7 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	Head Exposure Condition	Body Exposure Condition
1	WWAN + WLAN	Yes	Yes
2	WWAN + BT	Yes	Yes

Note:

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. The WLAN and Bluetooth cannot transmit simultaneously."

<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

Test Engineer：Chienlun Huang, and Zeke Wang

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	D750V3	1013	Aug. 13, 2020	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	D1750V2	1055	Aug. 14, 2020	1 Year
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 21, 2020	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 26, 2019	1 Year
System Validation Dipole	SPEAG	D2450V2	737	Aug. 13, 2020	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 26, 2019	1 Year
System Validation Dipole	SPEAG	D2600V2	1020	Aug. 13, 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	3820	Jun. 25, 2020	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	917	Dec. 17, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1277	Jan. 24, 2020	1 Year
Data Acquisition Electronics	SPEAG	DAE4	914	Jun. 22, 2020	1 Year
Radio Communication Analyzer	Anritsu	MT8821C	6201381727	Jun. 11, 2020	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 26, 2020	1 Year
Power Meter	Anritsu	ML2495A	1218009	Jun. 24, 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. 07, 2019	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:

Taiwan Huaya Lab:
Add: No. 19, Huaya 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan
Tel: +886-(0)3-318-3232
Fax: +886-(0)3-211-5834

Taiwan Linkou Lab:
Add: No. 47-2, Baodoucuokeng, Linkou Dist., New Taipei City 244, Taiwan
Tel: +886-(0)2-2605-2180
Fax: +886-(0)2-2605-2943

Taiwan Hsinchu Lab1:
Add: E-2, No. 1, Lixing 1st Rd., East Dist., Hsinchu City 300, Taiwan
Tel: +886-(0)3-666-8565
Fax: +886-(0)3-666-8323

Taiwan Hsinchu Lab2:
Add: No. 49, Ln. 206, Wende Rd., Qionglin Township, Hsinchu County 307, Taiwan
Tel: +886-(0)3-512-0595
Fax: +886-(0)3-512-0568

Taiwan Xindian Lab:
Add: B2F., No. 215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan
Tel: +886-(0)2-8914-5882
Fax: +886-(0)2-8914-5840

Email: service.adt@tw.bureauveritas.com
Web Site: https://ee.bureauveritas.com.tw/BVInternet/Default

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

---END---

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_200513

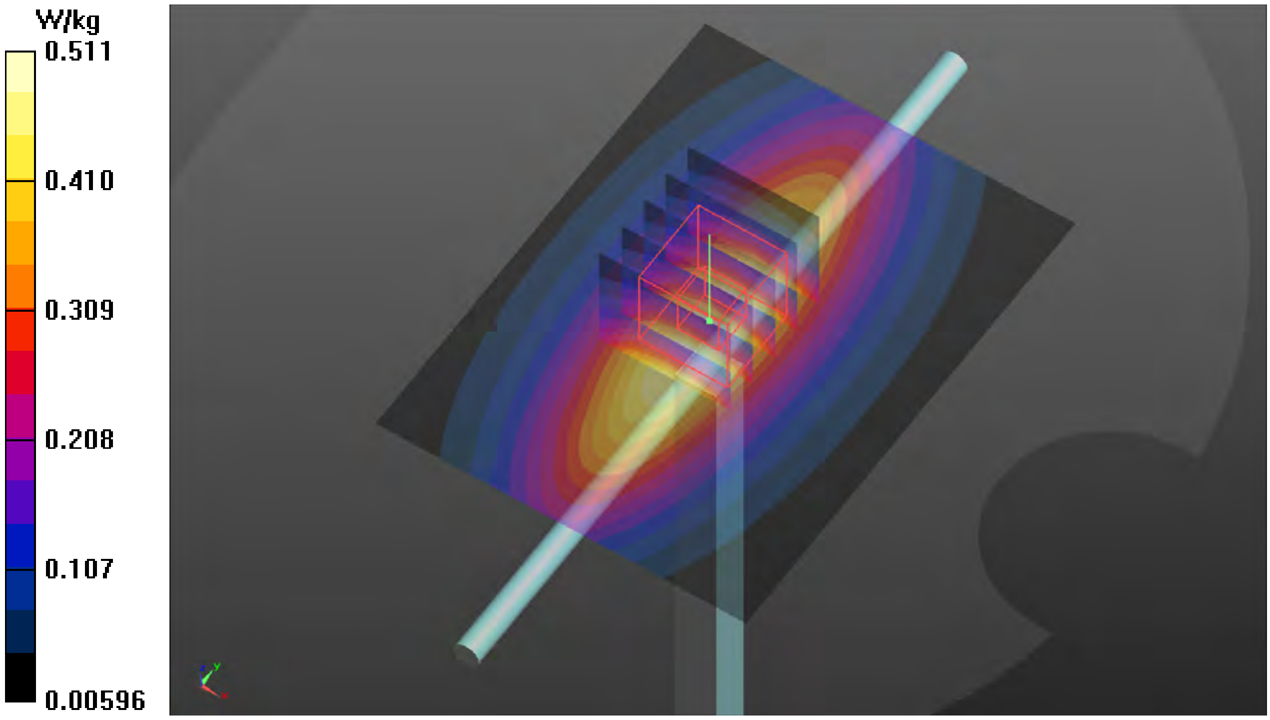
DUT: Dipole 750 MHz; Type: D750V3; SN: 1013

Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: H06T09N4_0513 Medium parameters used: f = 750 MHz; σ = 0.905 S/m; ε_r = 42.383; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 750 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- 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) = 0.511 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.89 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.392 W/kg; SAR(10 g) = 0.265 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.517 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/05/14

System Check_H835_200514

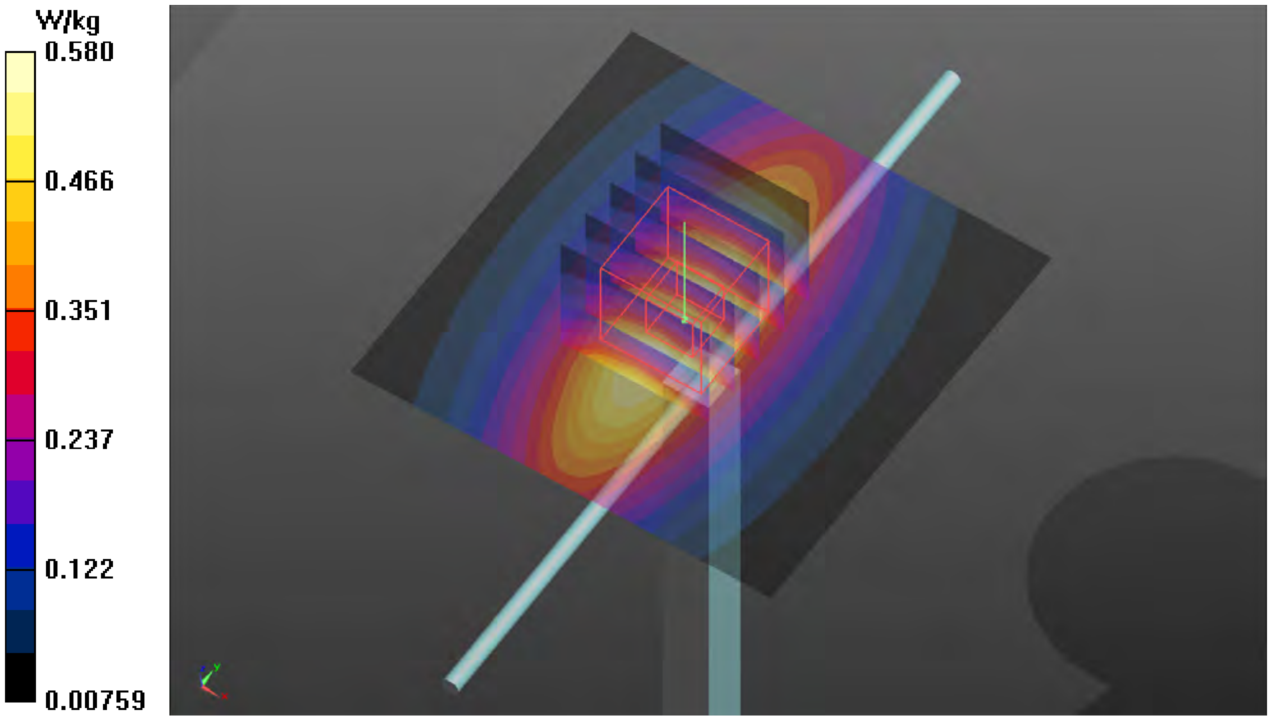
DUT: Dipole 835 MHz; Type: D835V2; SN: 4d121

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: H07T10N4_0514 Medium parameters used: f = 835 MHz; σ = 0.905 S/m; ε_r = 42.447; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 835 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- 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) = 0.580 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.66 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.452 W/kg; SAR(10 g) = 0.297 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.590 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

System Check_H1750_200513

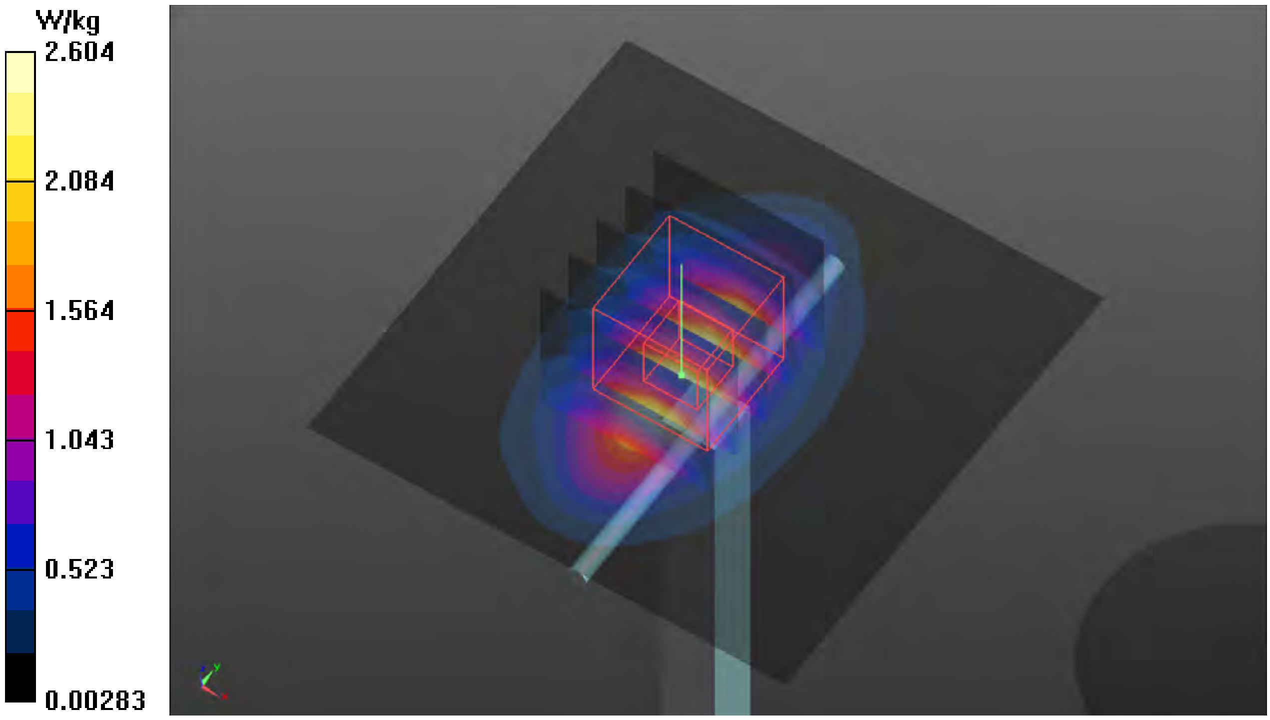
DUT: Dipole 1750 MHz; Type: D1750V2; SN: 1055

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: H16T20N4_0513 Medium parameters used: f = 1750 MHz; σ = 1.322 S/m; ε_r = 39.378; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.73, 8.73, 8.73) @ 1750 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- 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) = 2.60 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.22 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.09 W/kg
SAR(1 g) = 1.75 W/kg; SAR(10 g) = 0.931 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.61 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/05/14

System Check_H1900_200514

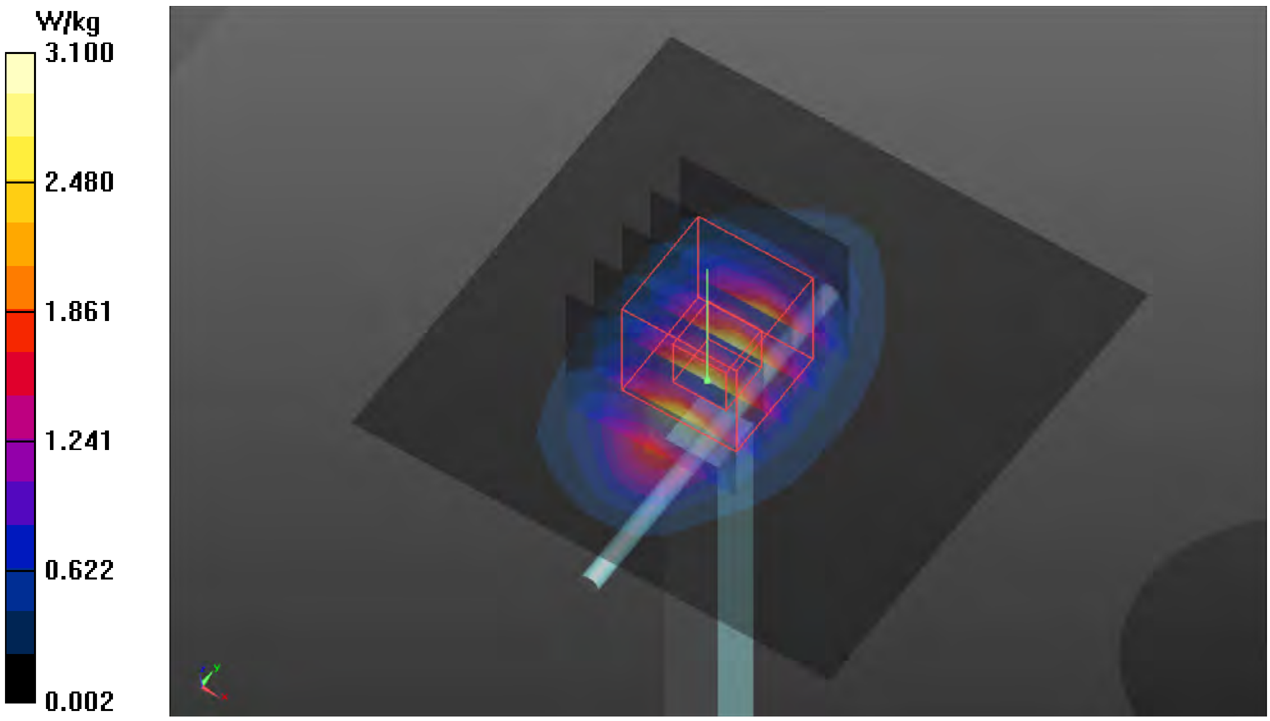
DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: H16T20N1_0514 Medium parameters used: f = 1900 MHz; σ = 1.454 S/m; ε_r = 38.287; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃；Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1900 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- 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) = 3.10 W/kg

Pin=50mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.59 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 1.92 W/kg; SAR(10 g) = 1.02 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.05 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/9/24

System Check_H2450_200924

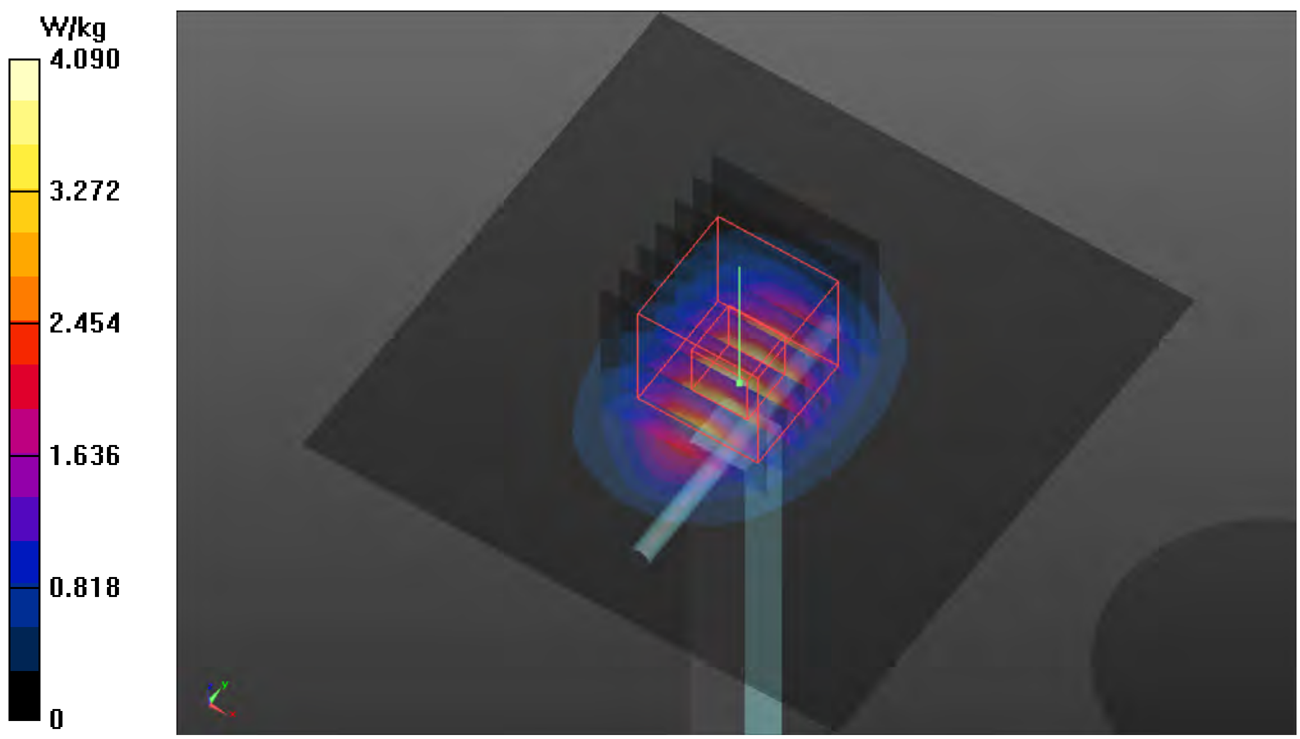
DUT: Dipole 2450 MHz; Type: D2450V2; SN: 737

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0924 Medium parameters used (interpolated): f = 2450 MHz; σ = 1.885 S/m; ε_r = 38.339; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8, 8, 8) @ 2450 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- 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) = 4.09 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 47.84 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 4.96 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.17 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 4.05 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

System Check_H2600_200513

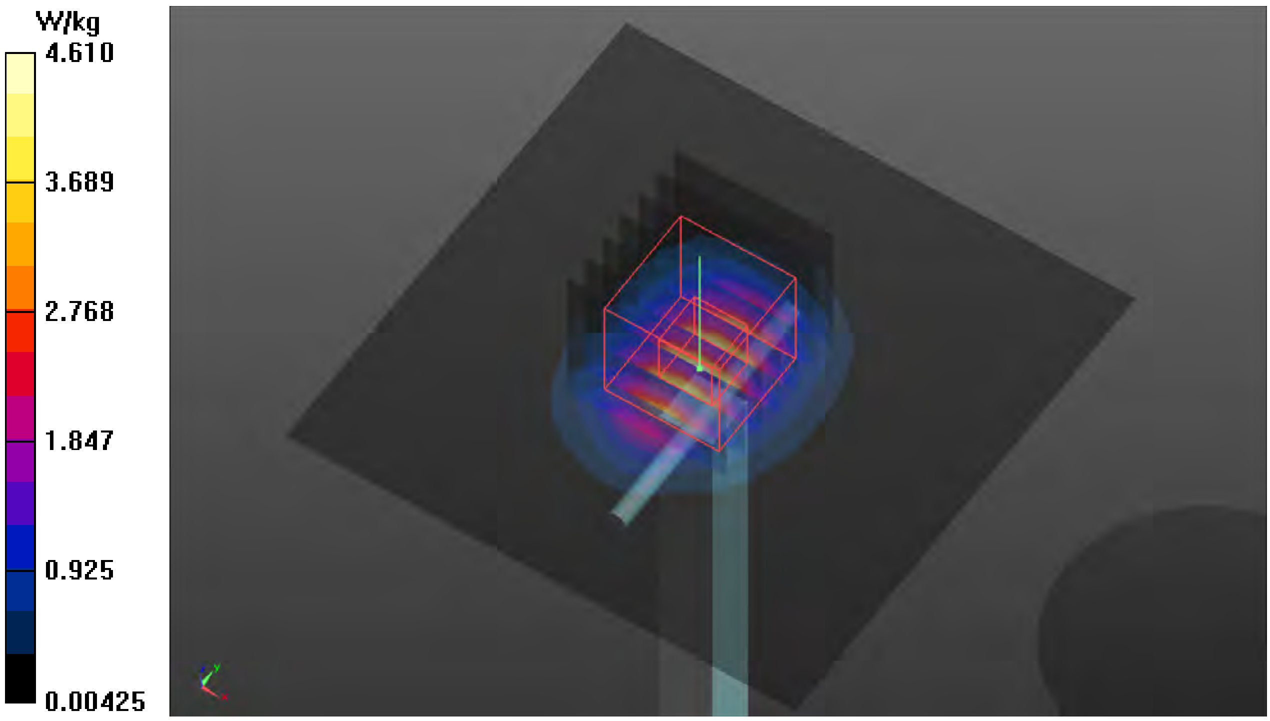
DUT: Dipole 2600 MHz; Type: D2600V2; SN: 1020

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: H19T27N1_0513 Medium parameters used: f = 2600 MHz; σ = 2.029 S/m; ε_r = 38.61; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(7.19, 7.19, 7.19) @ 2600 MHz; Calibrated: 2019/06/18
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- 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) = 4.61 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.16 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 5.74 W/kg
SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.24 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 4.63 W/kg



System Check_H5250_200924

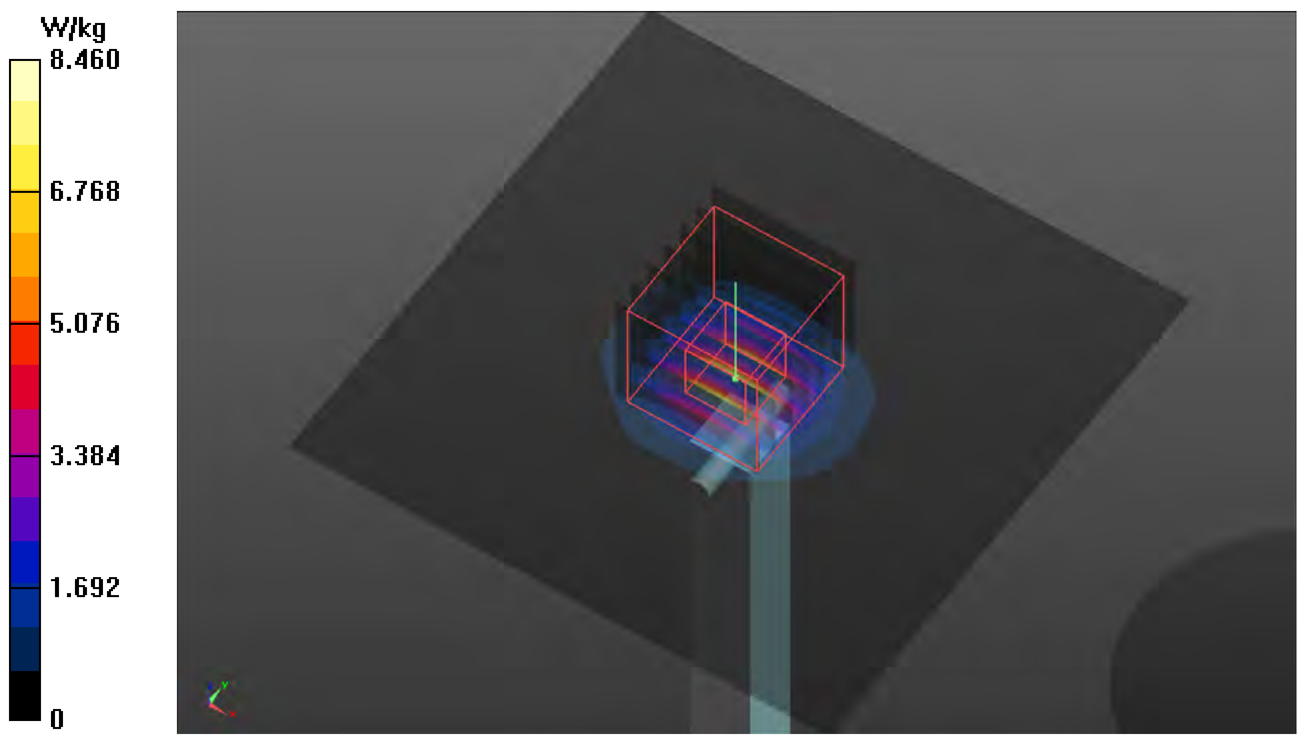
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: H34T60N1_0924 Medium parameters used: f = 5250 MHz; σ = 4.85 S/m; ε_r = 36.45; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.28, 5.28, 5.28) @ 5250 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- 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) = 8.46 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.53 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 14.0 W/kg
SAR(1 g) = 3.77 W/kg; SAR(10 g) = 1.14 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 9.07 W/kg



System Check_H5600_200926

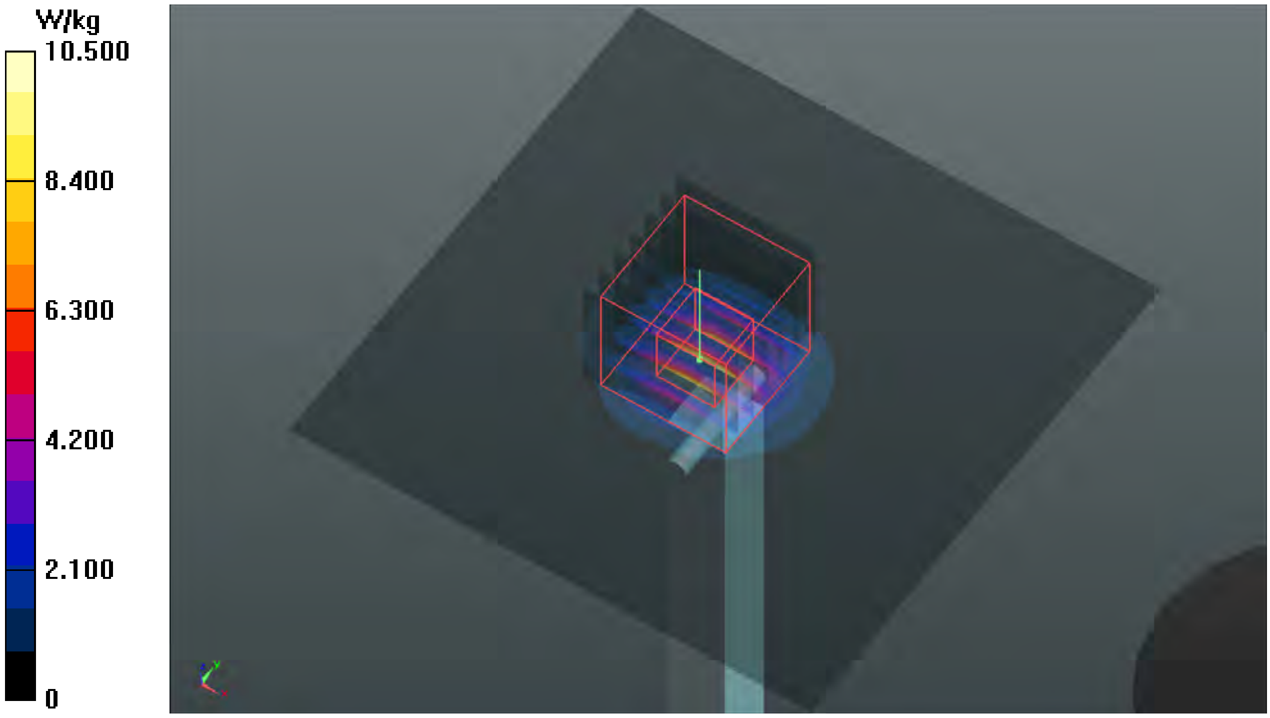
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: H34T60N1_0926 Medium parameters used: f = 5600 MHz; σ = 5.224 S/m; ε_r = 36.11; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃； Liquid Temperature：23.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(4.88, 4.88, 4.88) @ 5600 MHz; Calibrated: 2020/03/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2020/05/27
- Phantom: Twin SAM Phantom_1653; Type: QD000P40CD;
- 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) = 10.5 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.24 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 19.6 W/kg
SAR(1 g) = 4.51 W/kg; SAR(10 g) = 1.3 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 10.9 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/12

System Check_H5750_201012

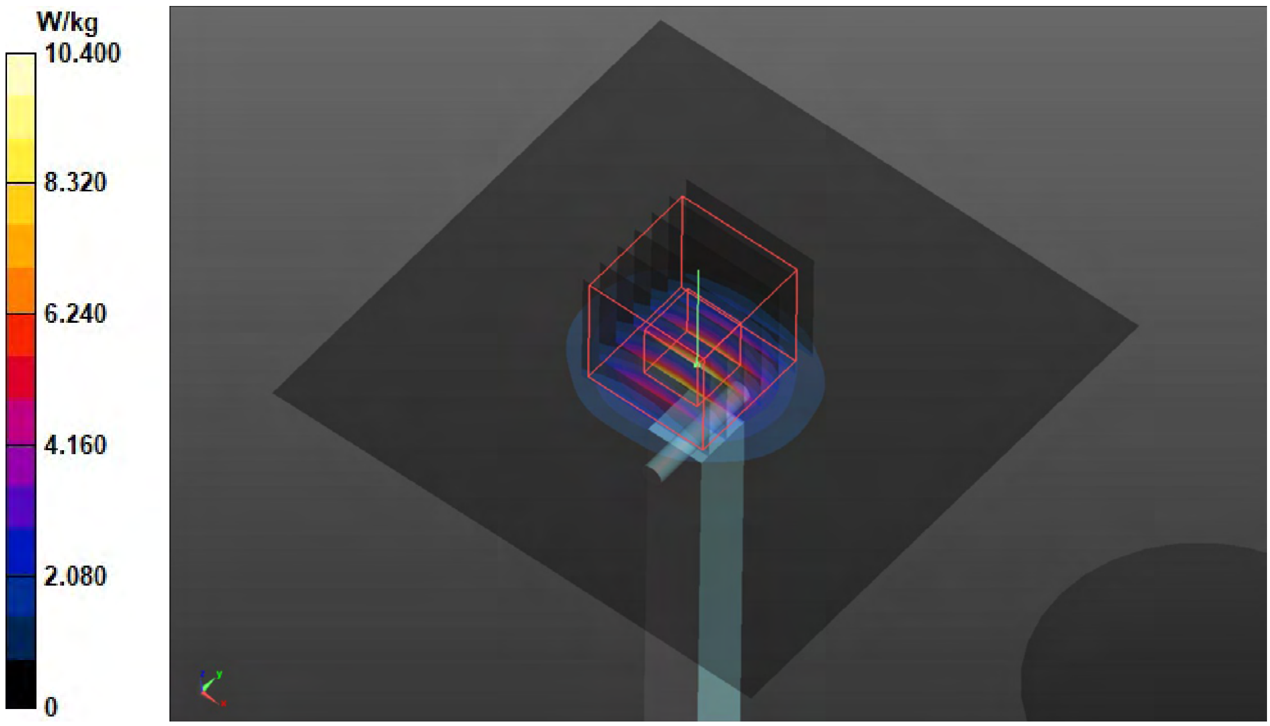
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: H34T60N1_1012 Medium parameters used: f = 5750 MHz; σ = 5.313 S/m; ε_r = 34.366; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃; Liquid Temperature：23.1℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(4.95, 4.95, 4.95) @ 5750 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- 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) = 10.4 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.36 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 18.4 W/kg
SAR(1 g) = 4.36 W/kg; SAR(10 g) = 1.27 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 11.1 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/13

System Check_H5250_201013

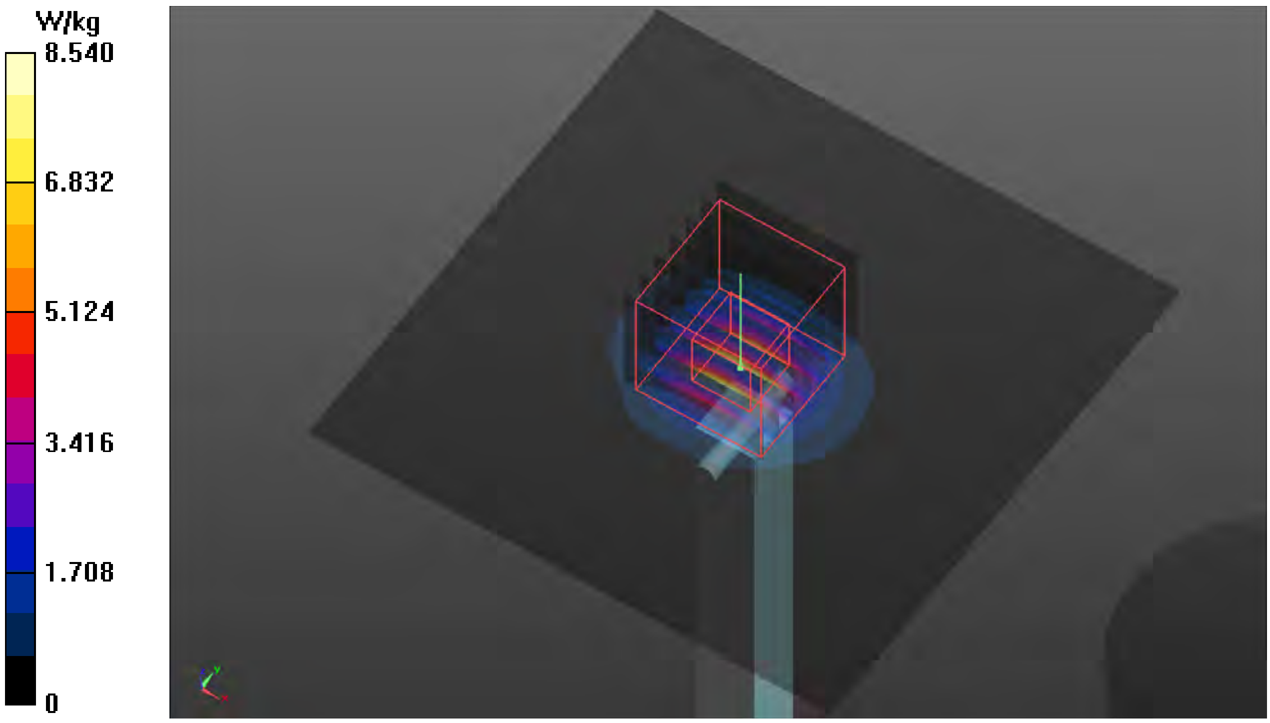
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: H34T60N1_1013 Medium parameters used: f = 5250 MHz; σ = 4.835 S/m; ε_r = 36.46; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃；Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(5.35, 5.35, 5.35) @ 5250 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- 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) = 8.54 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.85 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 14.3 W/kg
SAR(1 g) = 3.91 W/kg; SAR(10 g) = 1.15 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 9.18 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab　　　　　　　　　　Date: 2020/9/24

System Check_H5600_200924

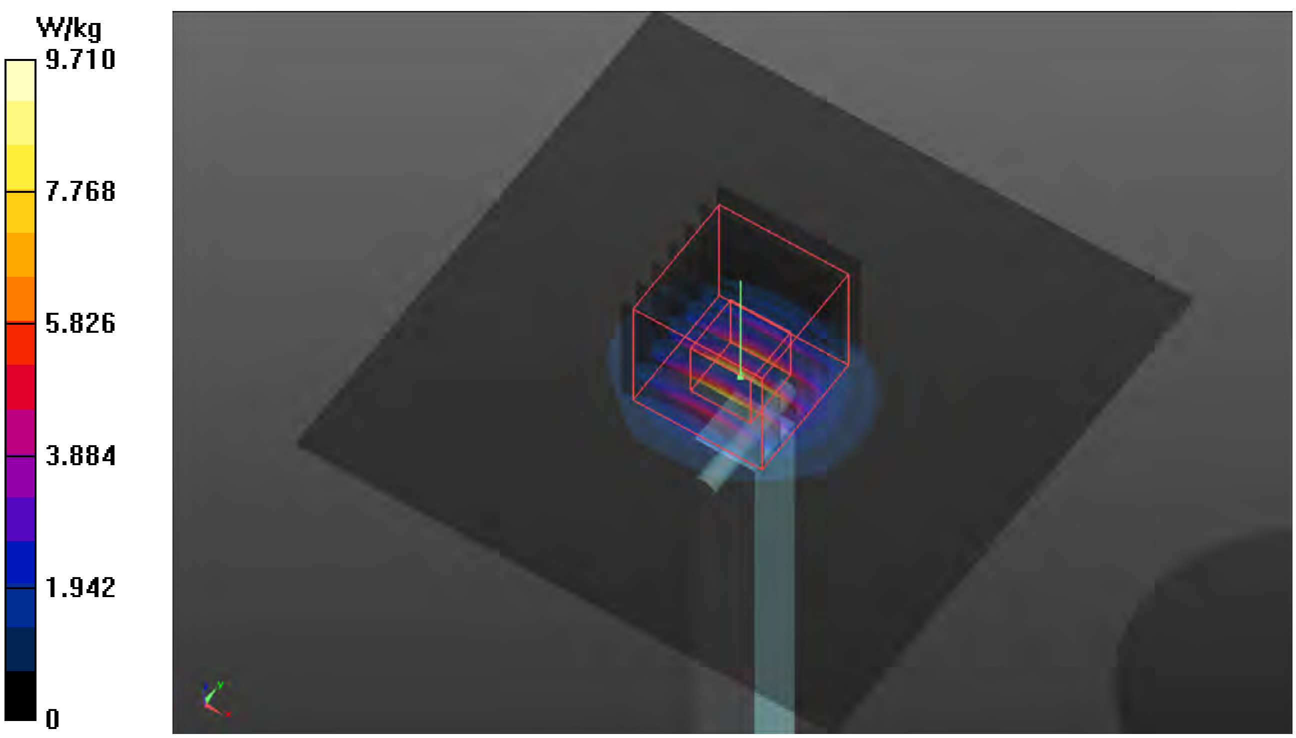
DUT: Dipole 5 GHz; Type: D5GHzV2; SN: 1019

Communication System: UID 0, CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: H34T60N1_0924 Medium parameters used: f = 5600 MHz; σ = 5.242 S/m; ε_r = 35.908; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃ ; Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(4.89, 4.89, 4.89) @ 5600 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- 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) = 9.71 W/kg

Pin=50mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.76 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 17.4 W/kg
SAR(1 g) = 4.14 W/kg; SAR(10 g) = 1.24 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 10.4 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.

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/12

P01 GSM850_GPRS12_Right Cheek_Ch189

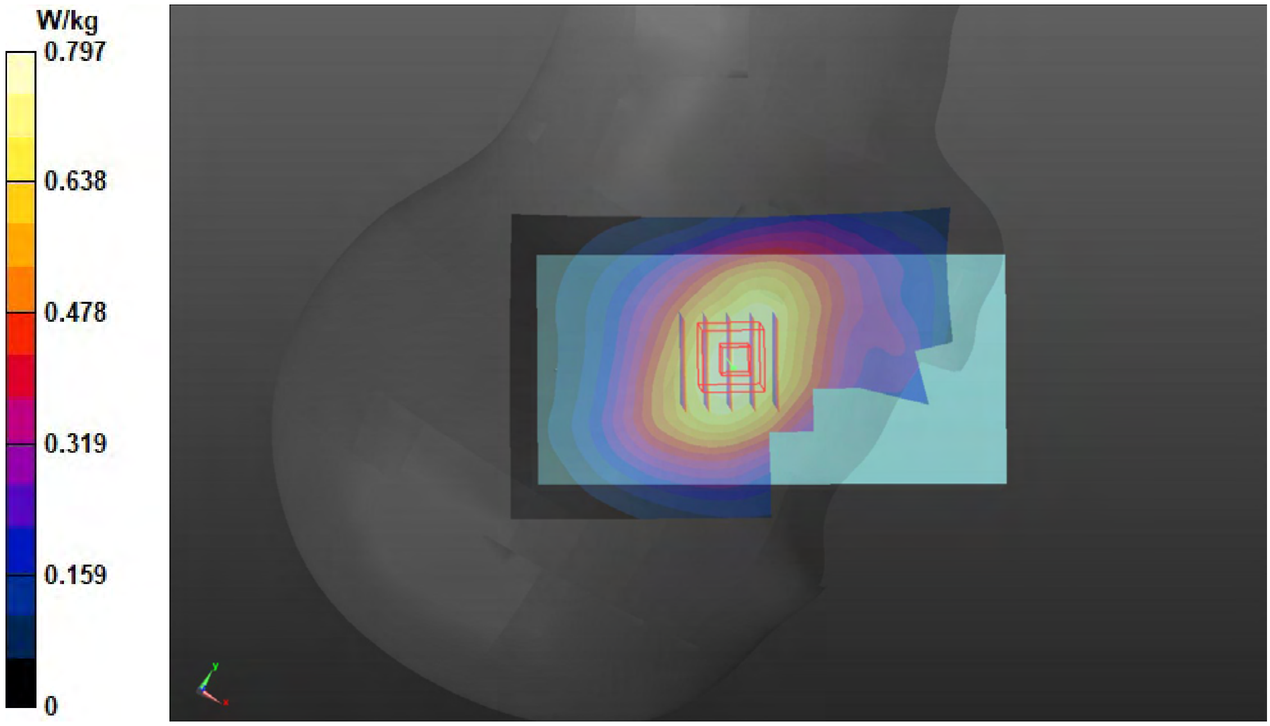
DUT: 200504C19

Communication System: UID 10028 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2-3); Frequency: 836.6 MHz;Duty Cycle: 1:2.27
Medium: H07T10N1_1012 Medium parameters used: f = 837 MHz; σ = 0.948 S/m; ε_r = 43; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃; Liquid Temperature：23.1℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(10.34, 10.34, 10.34) @ 836.6 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.797 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.57 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.833 W/kg
SAR(1 g) = 0.668 W/kg; SAR(10 g) = 0.528 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 = 82.2%
Maximum value of SAR (measured) = 0.790 W/kg



P02 GSM1900_GPRS11_Right Cheek_Ch810

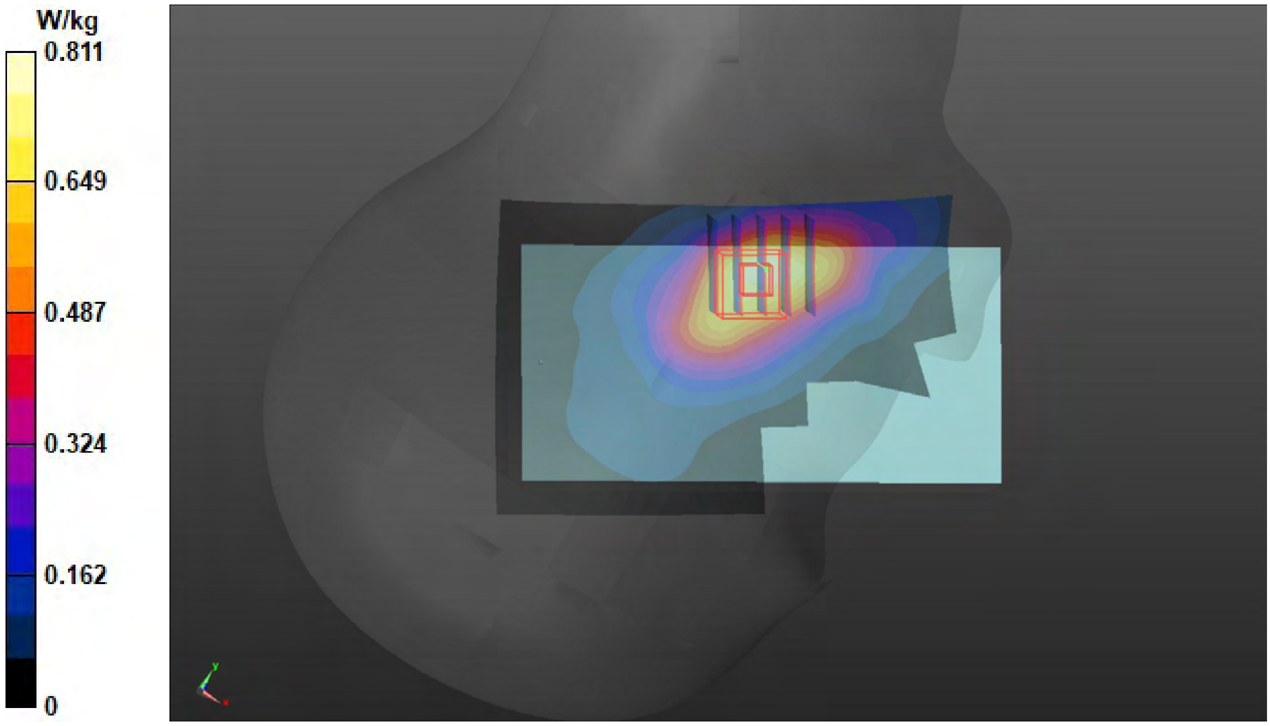
DUT: 200504C19

Communication System: UID 10027 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2); Frequency: 1909.8 MHz;Duty Cycle: 1:3.02
Medium: H16T20N1_1012 Medium parameters used: f = 1910 MHz; σ = 1.468 S/m; ε_r = 40.876; 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) @ 1909.8 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.811 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.15 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.858 W/kg
SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.371 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.1 mm
Ratio of SAR at M2 to SAR at M1 = 65.9%
Maximum value of SAR (measured) = 0.755 W/kg



P03 WCDMA II_RMC12.2K_Right Cheek_Ch9538_Battery 1

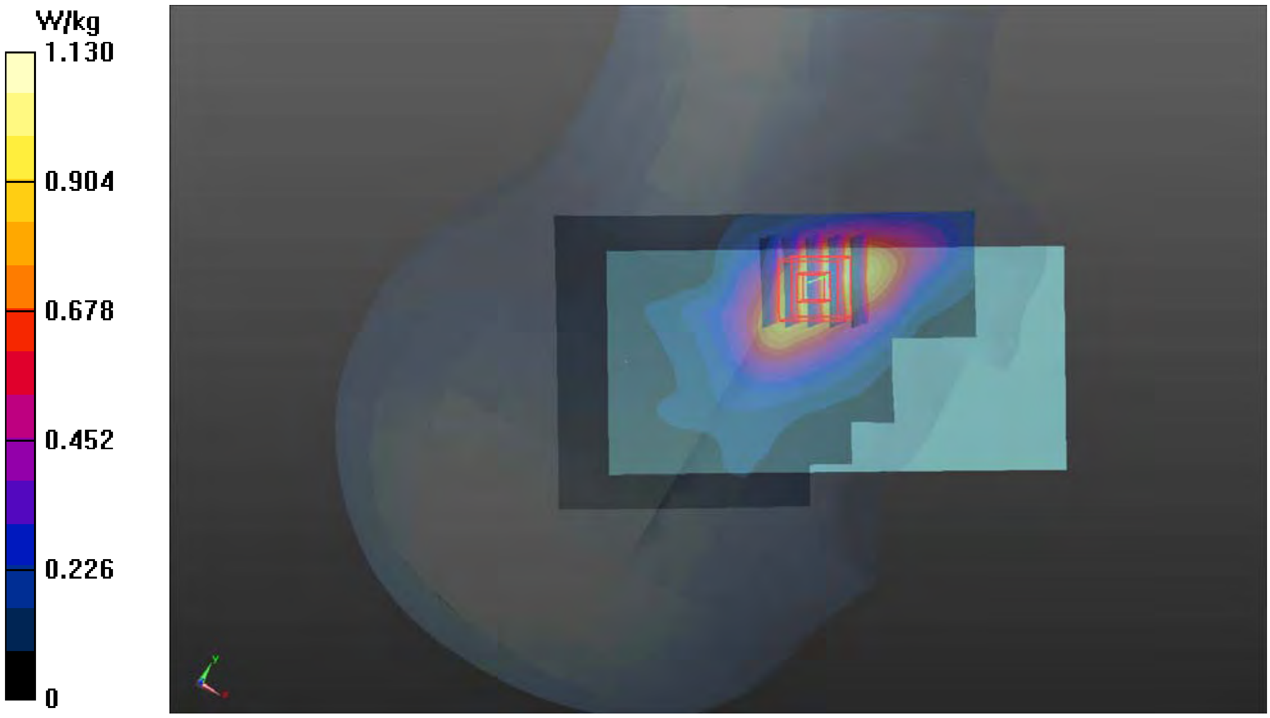
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_1028 Medium parameters used: f = 1908 MHz; σ = 1.465 S/m; ε_r = 39.561; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1907.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: Twin SAM Phantom_1653; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.14 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.821 W/kg; SAR(10 g) = 0.568 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 13 mm
Ratio of SAR at M2 to SAR at M1 = 72.2%
Maximum value of SAR (measured) = 1.05 W/kg



P04 WCDMA V_RMC12.2K_Right Cheek_Ch4233

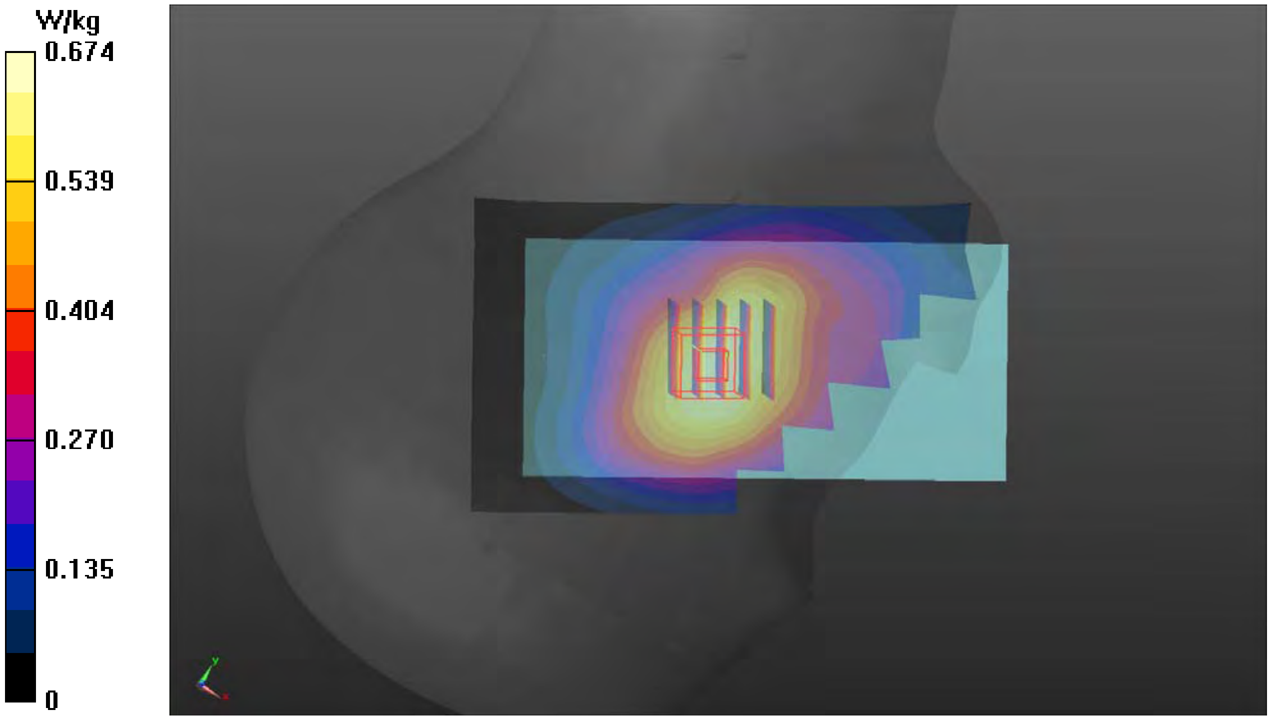
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 846.6 MHz;Duty Cycle: 1:1.95
Medium: H07T10N4_0514 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 42.306; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 846.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.674 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.81 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.710 W/kg
SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.478 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 = 83.9%
Maximum value of SAR (measured) = 0.674 W/kg



P05 LTE 2_QPSK20M_Right Cheek_Ch19100_1RB_OS0

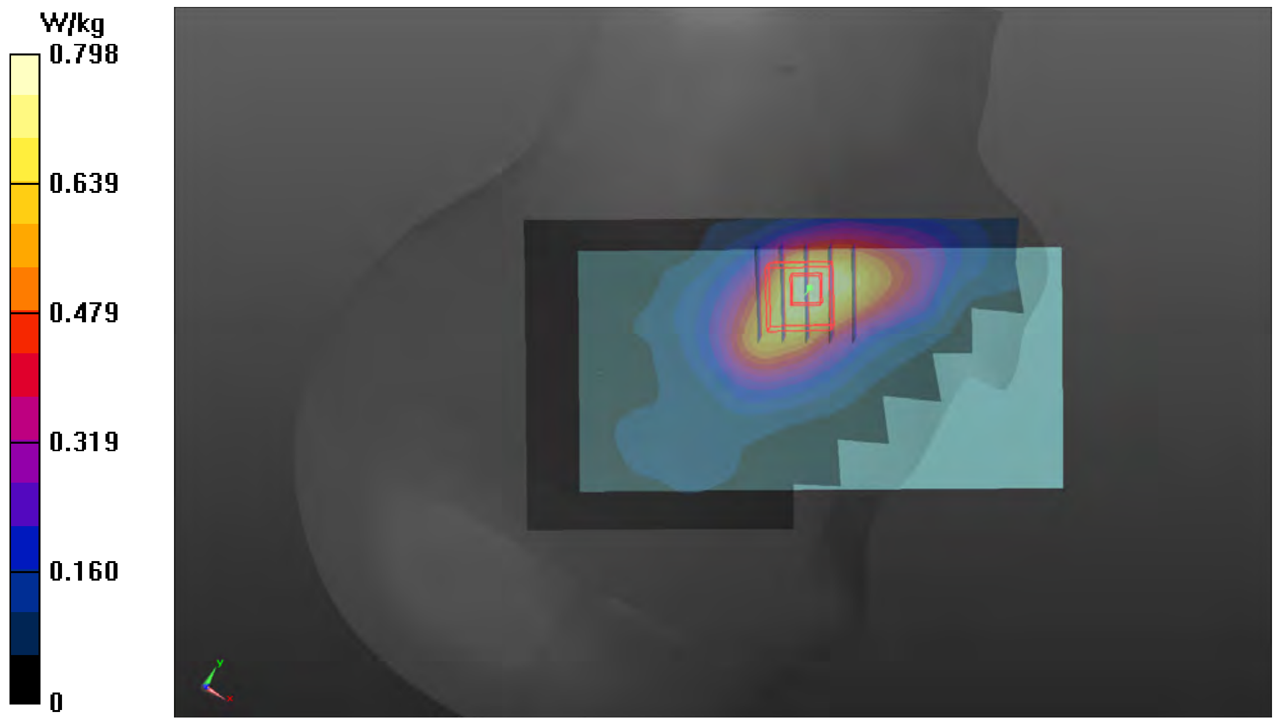
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1900 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used: f = 1900 MHz; σ = 1.459 S/m; ε_r = 38.812; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1900 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.798 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.29 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.904 W/kg
SAR(1 g) = 0.591 W/kg; SAR(10 g) = 0.385 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 15 mm
Ratio of SAR at M2 to SAR at M1 = 68.5%
Maximum value of SAR (measured) = 0.803 W/kg



P06 LTE 4_QPSK20M_Right Cheek_Ch20300_1RB_OS0

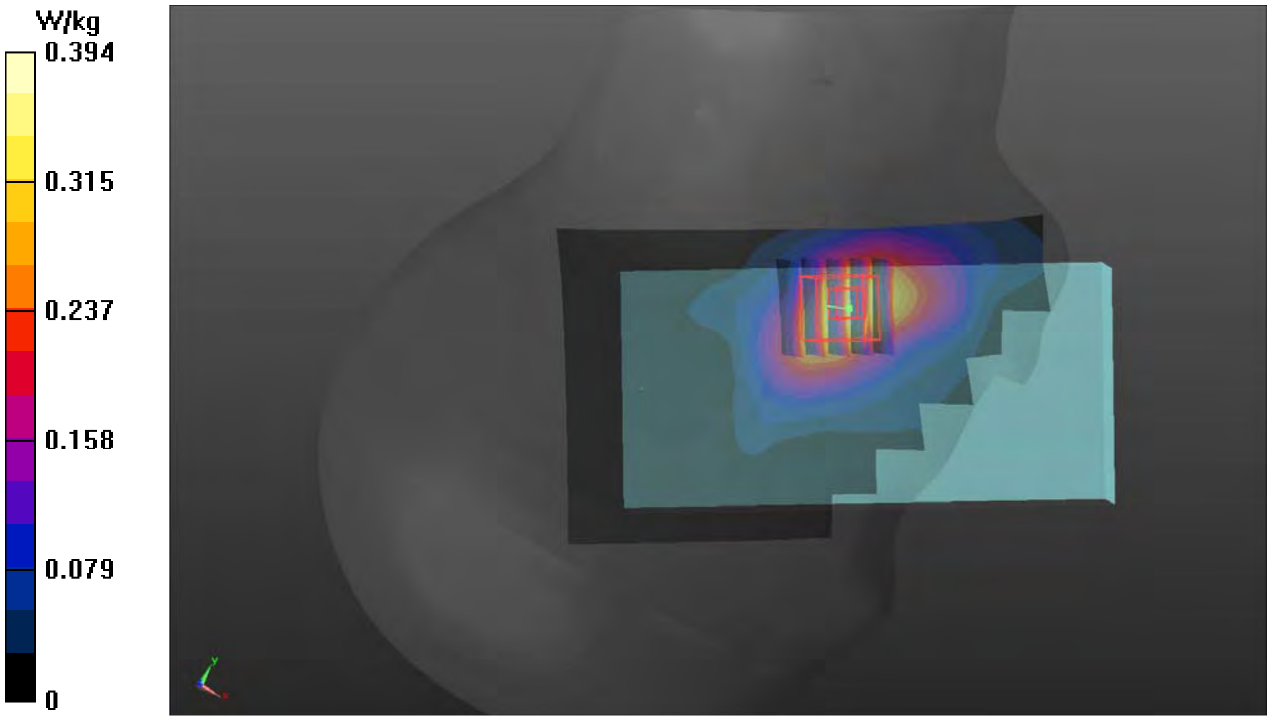
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1745 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used (interpolated): f = 1745 MHz; σ = 1.317 S/m; ε_r = 39.393; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.73, 8.73, 8.73) @ 1745 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.394 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.35 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.451 W/kg
SAR(1 g) = 0.310 W/kg; SAR(10 g) = 0.204 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 15.2 mm
Ratio of SAR at M2 to SAR at M1 = 71.2%
Maximum value of SAR (measured) = 0.388 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P07 LTE 5_QPSK10M_Right Cheek_Ch20600_1RB_OS0

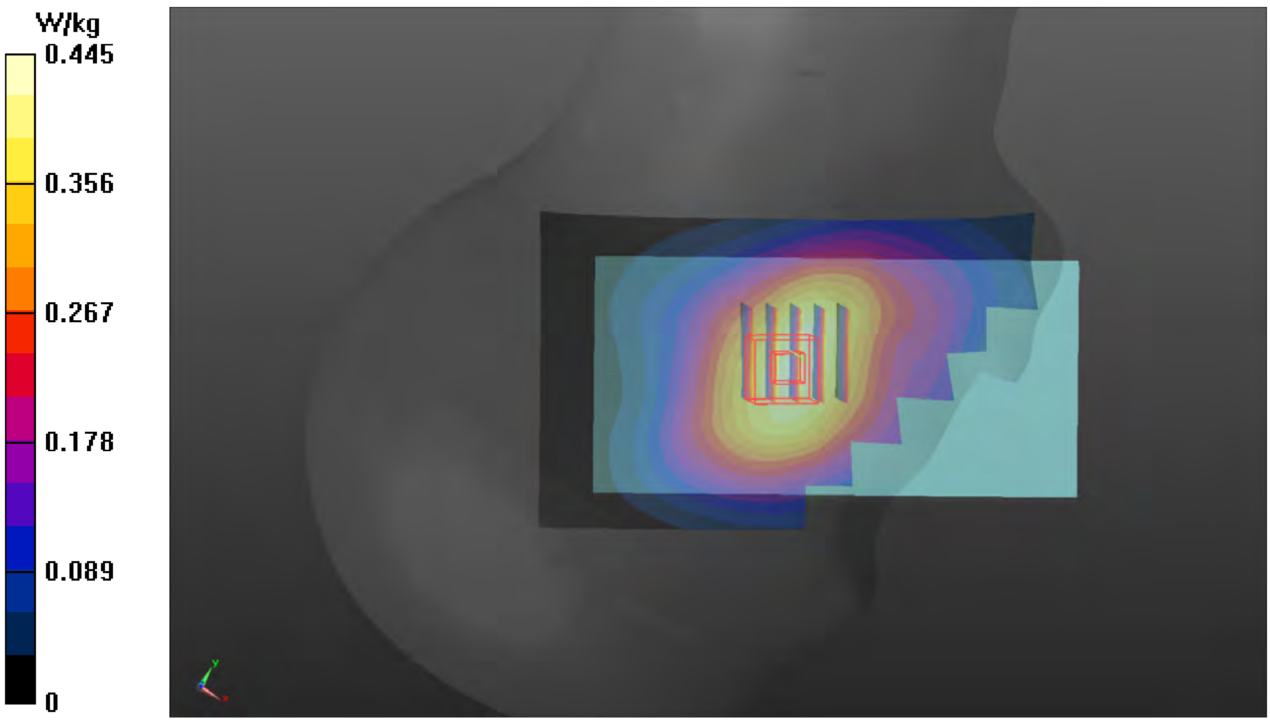
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 844 MHz;Duty Cycle: 1:3.74
Medium: H07T10N4_0513 Medium parameters used: f = 844 MHz; σ = 0.917 S/m; ε_r = 42.163; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃；Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 844 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.445 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.05 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.469 W/kg
SAR(1 g) = 0.396 W/kg; SAR(10 g) = 0.315 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 = 84%
Maximum value of SAR (measured) = 0.444 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P08 LTE 7_QPSK20M_Right Cheek_Ch21350_1RB_OS0

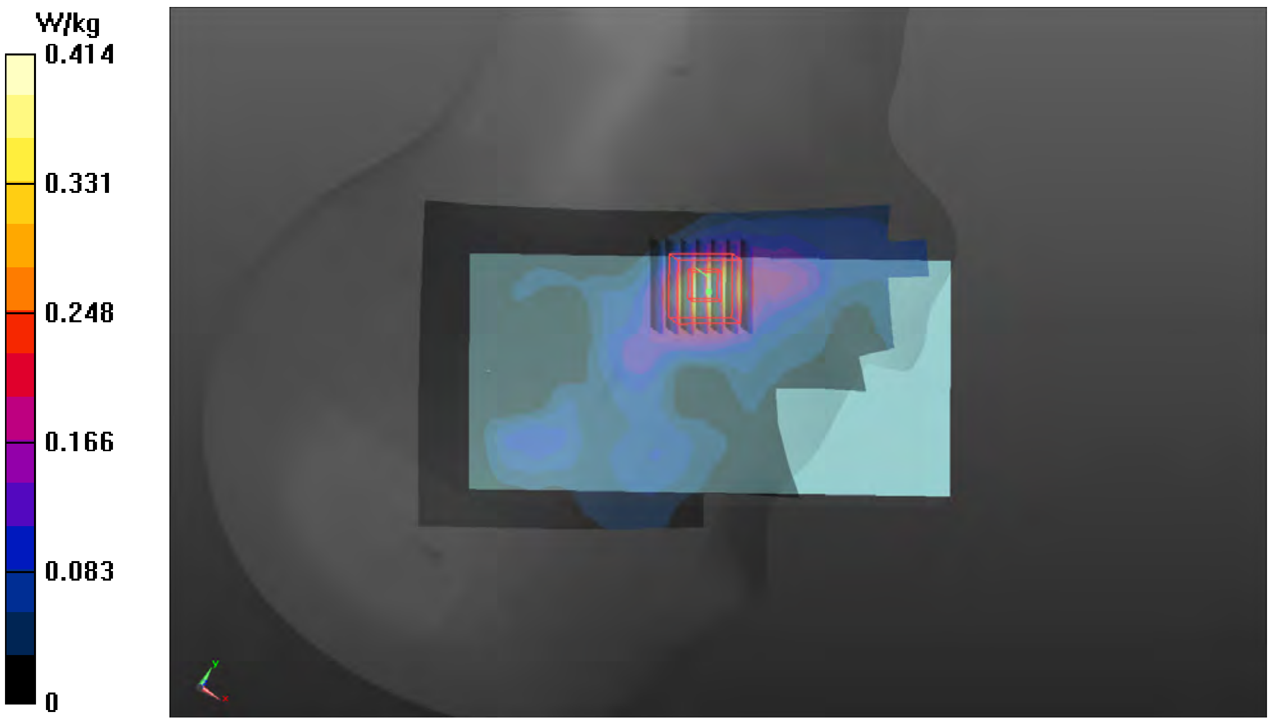
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2560 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0513 Medium parameters used: f = 2560 MHz; σ = 1.983 S/m; ε_r = 38.724; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃；Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.71, 7.71, 7.71) @ 2560 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.414 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.45 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.457 W/kg
SAR(1 g) = 0.243 W/kg; SAR(10 g) = 0.129 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.3 mm
Ratio of SAR at M2 to SAR at M1 = 54.4%
Maximum value of SAR (measured) = 0.373 W/kg



P09 LTE 12_QPSK10M_Right Cheek_Ch23130_1RB_OS0

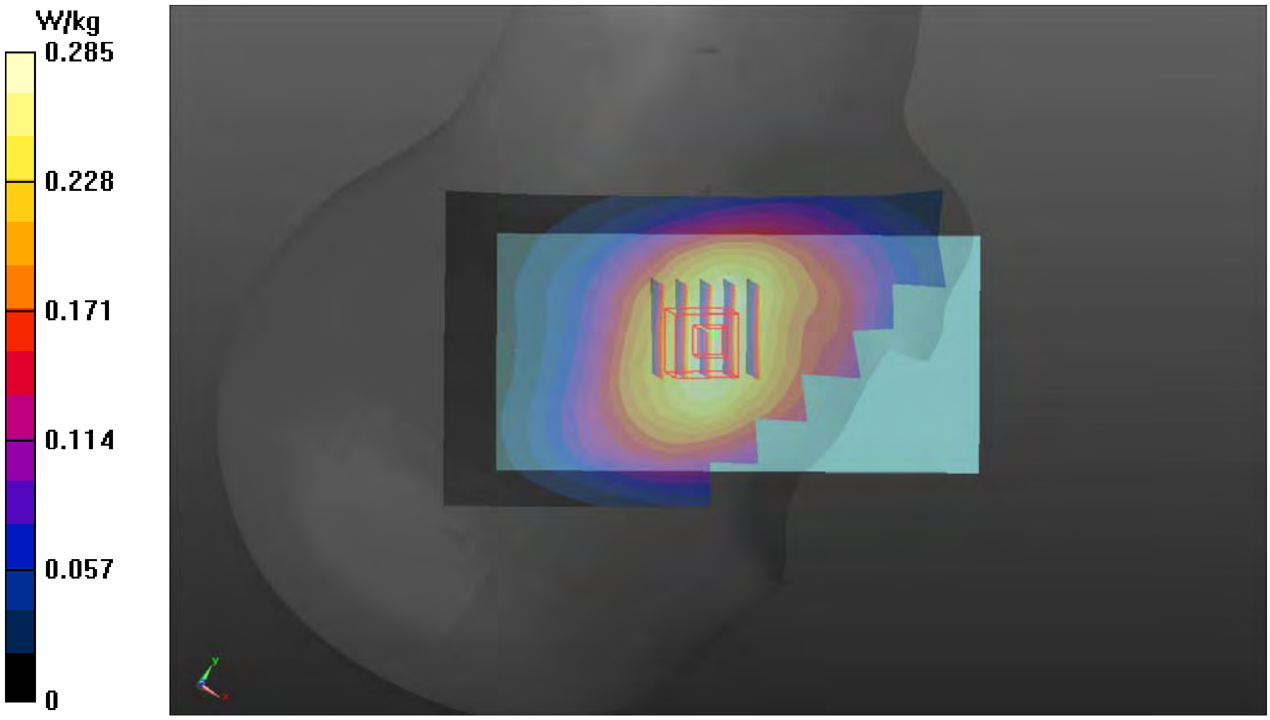
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 711 MHz; σ = 0.861 S/m; ε_r = 43.015; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 711 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.285 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.26 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.296 W/kg
SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.215 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 = 87.3%
Maximum value of SAR (measured) = 0.285 W/kg



P10 LTE 13_QPSK10M_Right Cheek_Ch23230_1RB_OS0

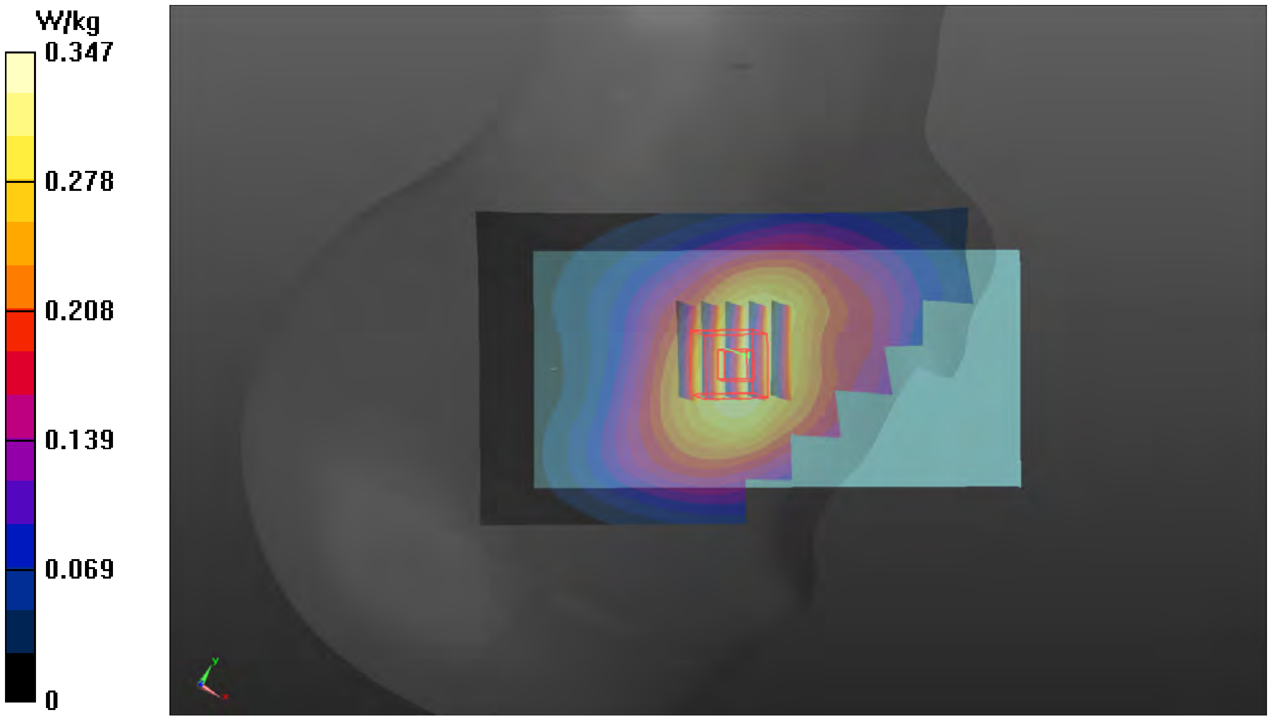
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 782 MHz; σ = 0.933 S/m; ε_r = 42.466; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 782 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD; Serial: 1823
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.347 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.33 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.355 W/kg
SAR(1 g) = 0.297 W/kg; SAR(10 g) = 0.240 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 = 86%
Maximum value of SAR (measured) = 0.341 W/kg



P11 LTE 17_QPSK10M_Right Cheek_Ch23780_1RB_OS0

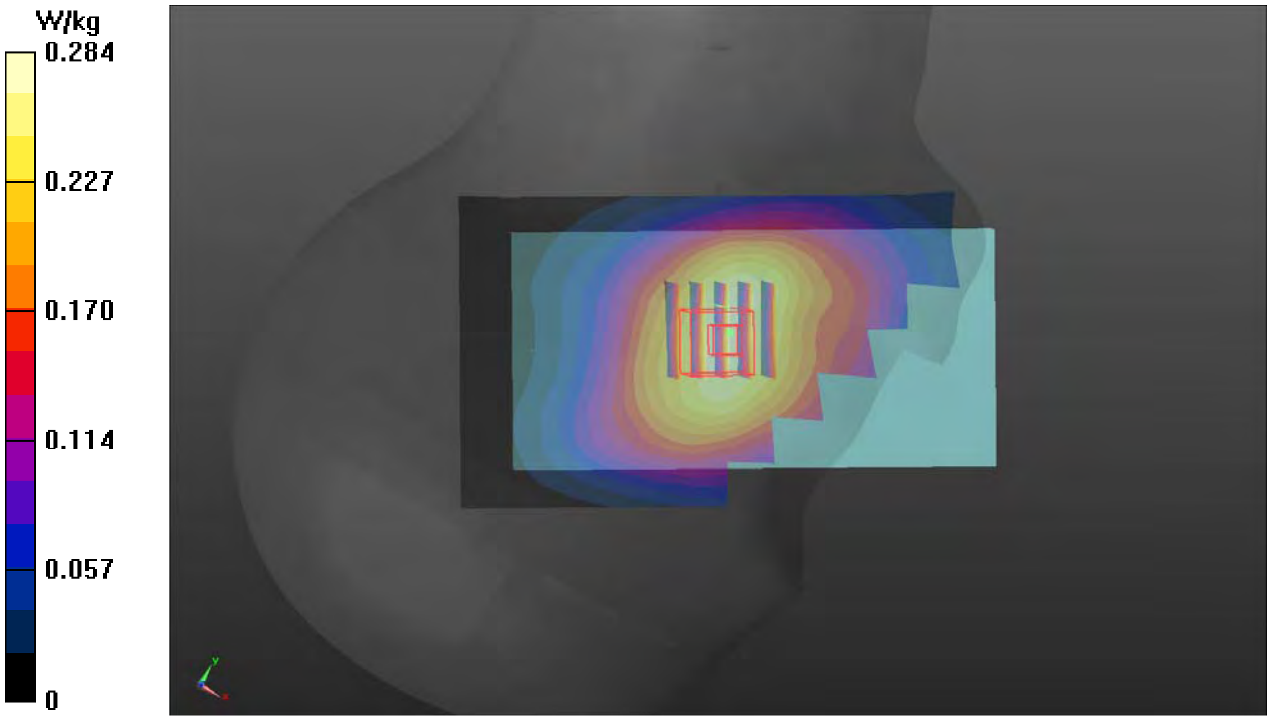
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 709 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 709 MHz; $\sigma = 0.859$ S/m; $\varepsilon_r = 43.074$; $\rho = 1000$ kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 709 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.284 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.32 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.295 W/kg
SAR(1 g) = 0.263 W/kg; SAR(10 g) = 0.214 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 = 84%
Maximum value of SAR (measured) = 0.283 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P12 LTE 25_QPSK20M_Right Cheek_Ch26365_1RB_OS0

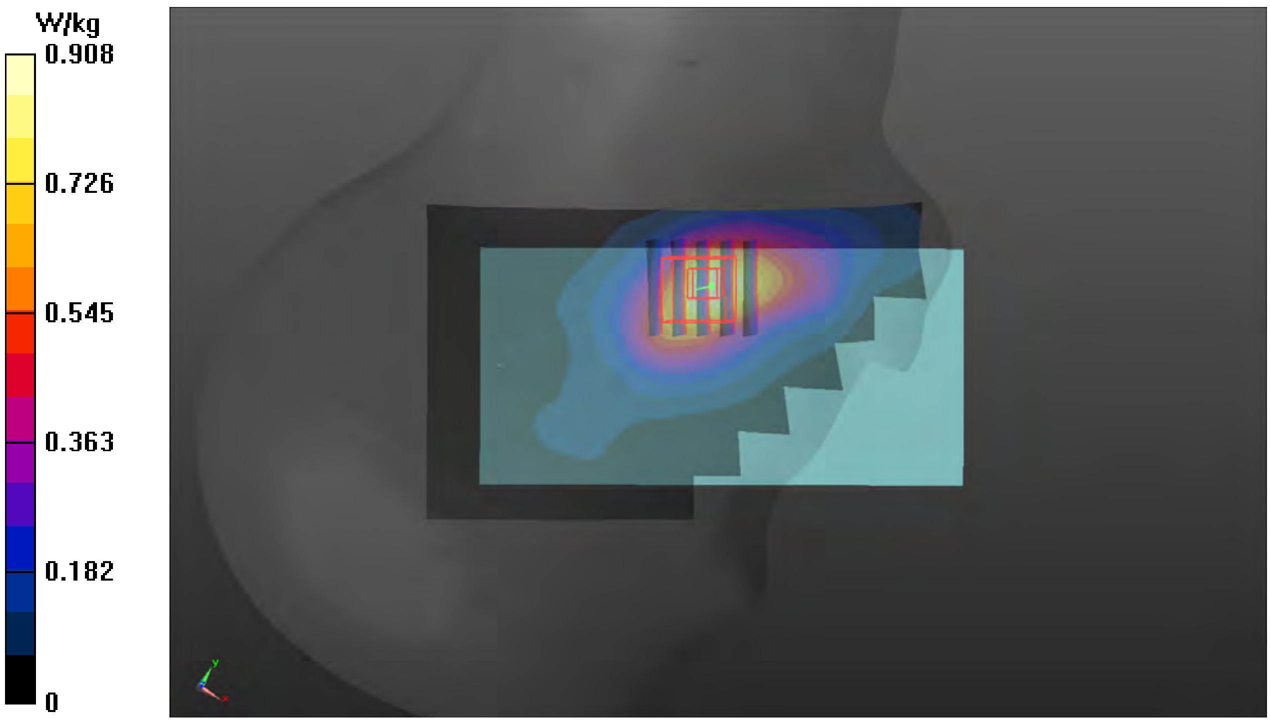
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1882.5 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.443 S/m; ε_r = 38.871; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1882.5 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.908 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.72 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.650 W/kg; SAR(10 g) = 0.419 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 11.3 mm
Ratio of SAR at M2 to SAR at M1 = 68.6%
Maximum value of SAR (measured) = 0.866 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/9/24

P13 WLAN2.4G_802.11b_Right Cheek_Ch6_Ant 0+1

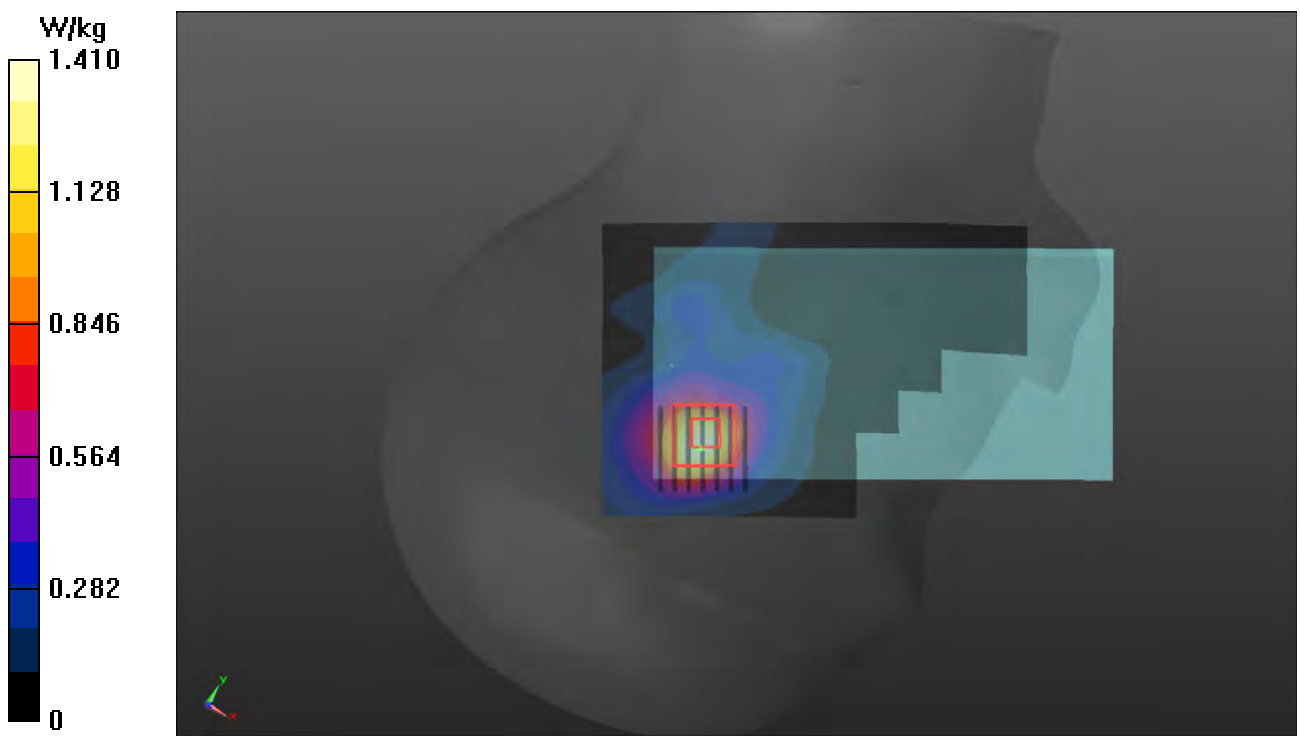
DUT: 200504C19

Communication System: UID 10012 - CAB, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2437 MHz;Duty Cycle: 1:1.01
Medium: H19T27N1_0924 Medium parameters used (interpolated): f = 2437 MHz; σ = 1.871 S/m; ε_r = 38.387; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8, 8, 8) @ 2437 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.44 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.639 W/kg
SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.189 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 10.4 mm
Ratio of SAR at M2 to SAR at M1 = 55.9%
Maximum value of SAR (measured) = 0.523 W/kg



P14 WLAN5.2G_802.11n HT40_Left Cheek_Ch46_Ant 1

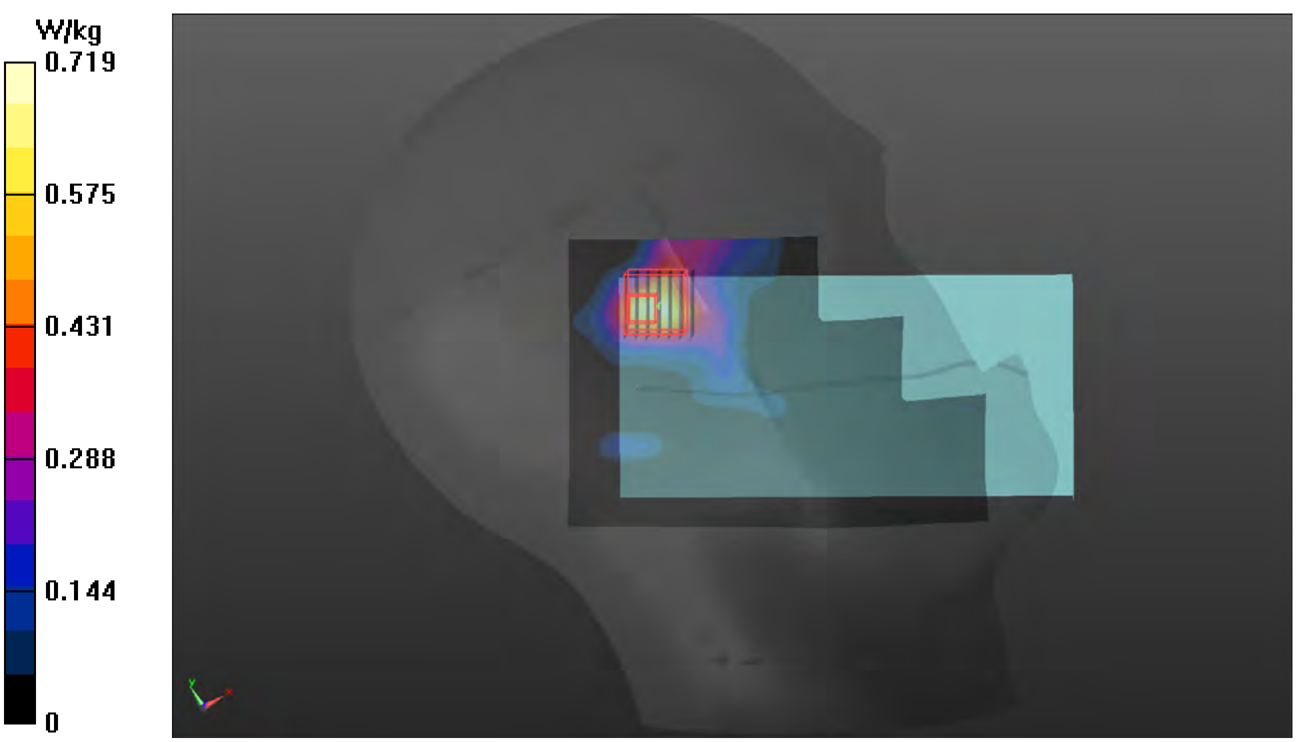
DUT: 200504C19

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0); Frequency: 5230 MHz;Duty Cycle: 1:1.1
Medium: H34T60N1_0924 Medium parameters used: f = 5230 MHz; σ = 4.795 S/m; ε_r = 36.443; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.28, 5.28, 5.28) @ 5230 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (111x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.719 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 11.77 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.393 W/kg; SAR(10 g) = 0.128 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 69.4%
Maximum value of SAR (measured) = 0.877 W/kg



P15 WLAN5.6G_802.11ac VHT80_Left Cheek_Ch138_Ant0

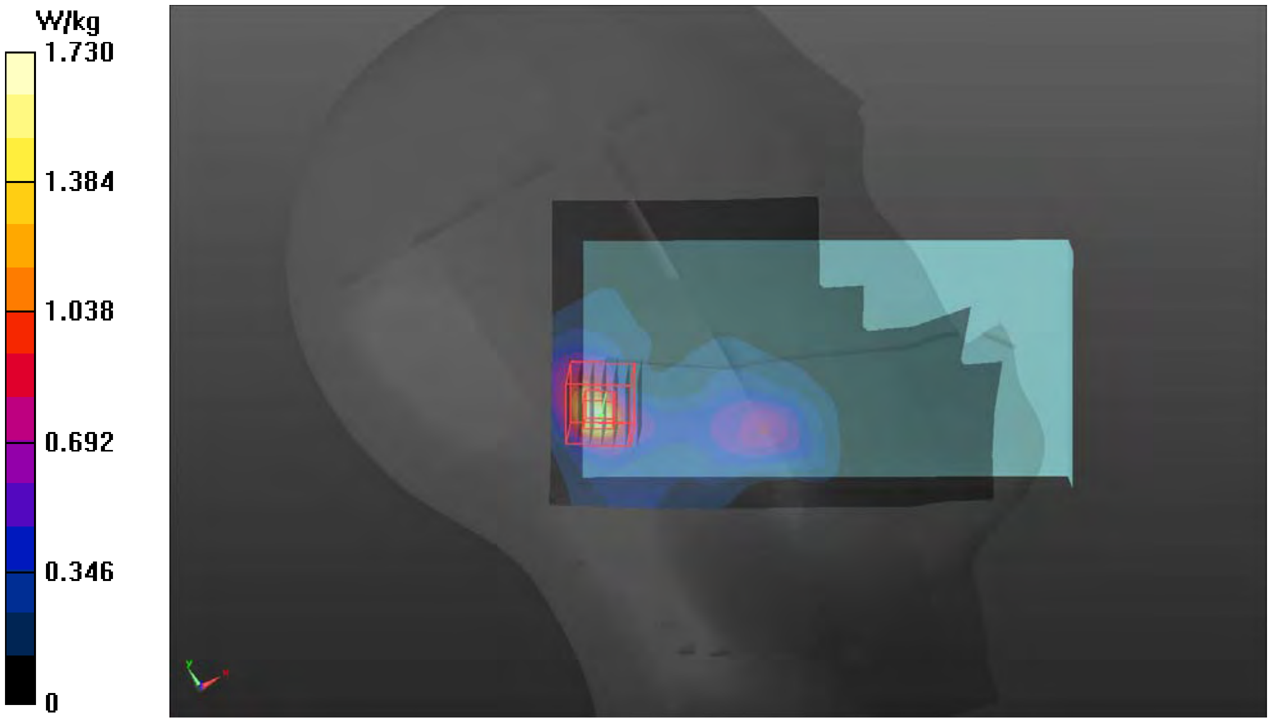
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5690 MHz;Duty Cycle: 1:1.19
Medium: H34T60N1_1013 Medium parameters used: f = 5690 MHz; σ = 5.260 S/m; ε_r = 35.757; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(4.95, 4.95, 4.95) @ 5690 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.73 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 20.14 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.61 W/kg
SAR(1 g) = 0.662 W/kg; SAR(10 g) = 0.213 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 8.3 mm
Ratio of SAR at M2 to SAR at M1 = 66.6%
Maximum value of SAR (measured) = 1.72 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/12

P16 WLAN5.8G_802.11ac VHT80_Left Cheek_Ch155_Ant1

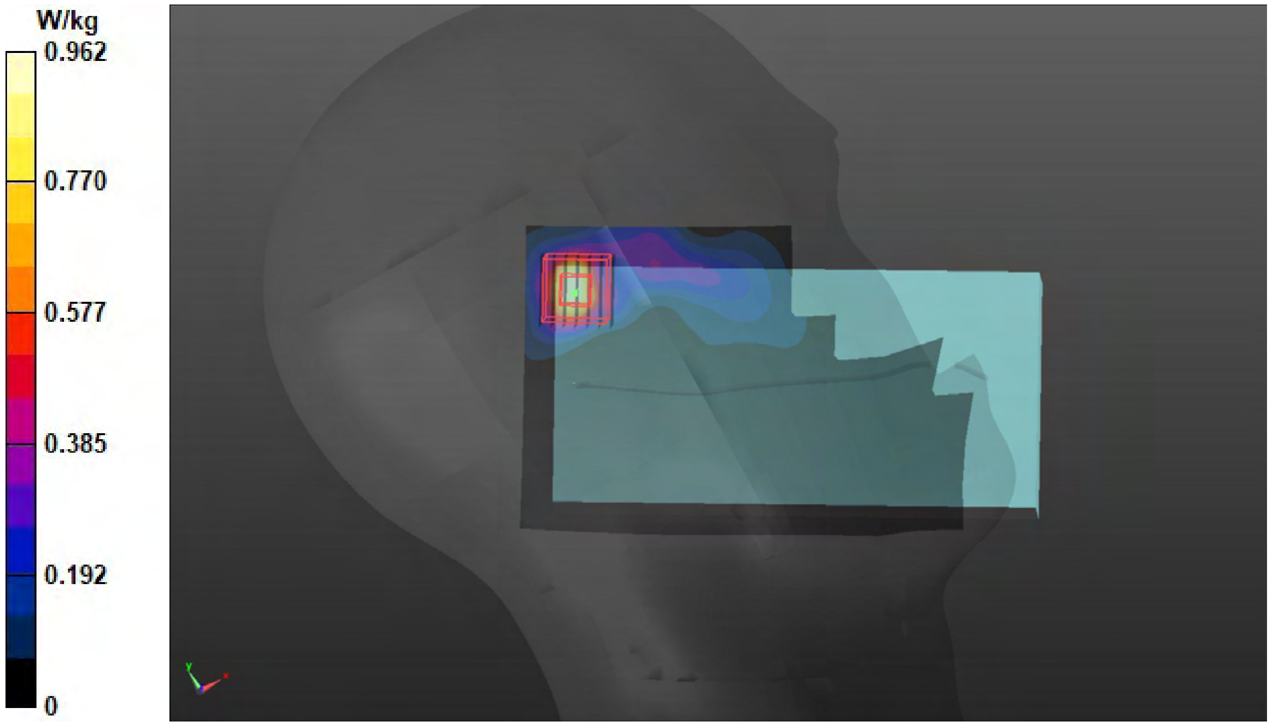
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5775 MHz;Duty Cycle: 1:1.19
Medium: H34T60N1_1012 Medium parameters used: f = 5775 MHz; σ = 5.354 S/m; ε_r = 34.336; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃; Liquid Temperature：23.1℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(4.95, 4.95, 4.95) @ 5775 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.962 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm==
Reference Value = 12.70 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 2.55 W/kg
SAR(1 g) = 0.557 W/kg; SAR(10 g) = 0.149 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 = 65.3%
Maximum value of SAR (measured) = 1.58 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/08

P17 GSM850_GPRS12_Front Face_10mm_Ch189

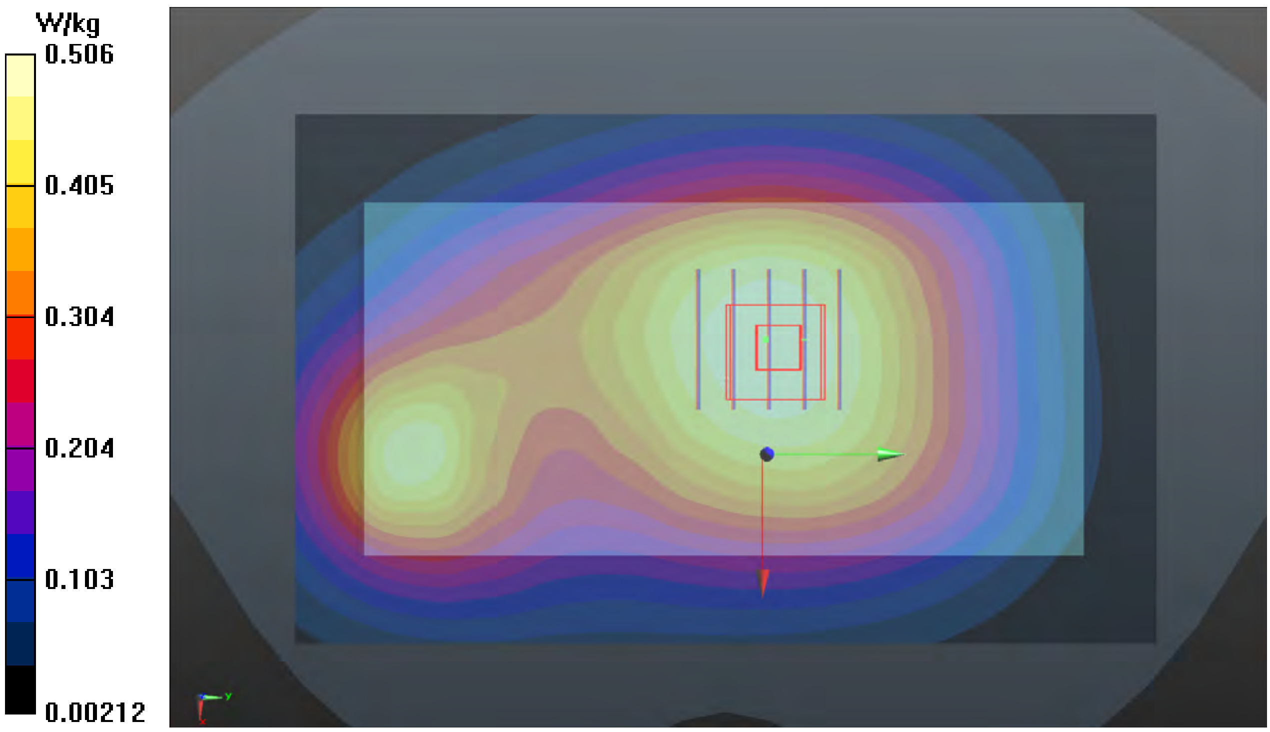
DUT: 200504C19

Communication System: UID 10028 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2-3); Frequency: 836.4 MHz;Duty Cycle: 1:2.27
Medium: H07T10N1_1008 Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.929 S/m; ε_r = 42.003; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3820; ConvF(9.01, 9.01, 9.01) @ 836.4 MHz; Calibrated: 2020/06/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn914; Calibrated: 2020/06/22
- Phantom: Twin SAM Phantom_1823; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.506 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.12 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.545 W/kg
SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.306 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 = 74.4%
Maximum value of SAR (measured) = 0.494 W/kg



P18 GSM1900_GPRS11_Rear Face_10mm_Ch810

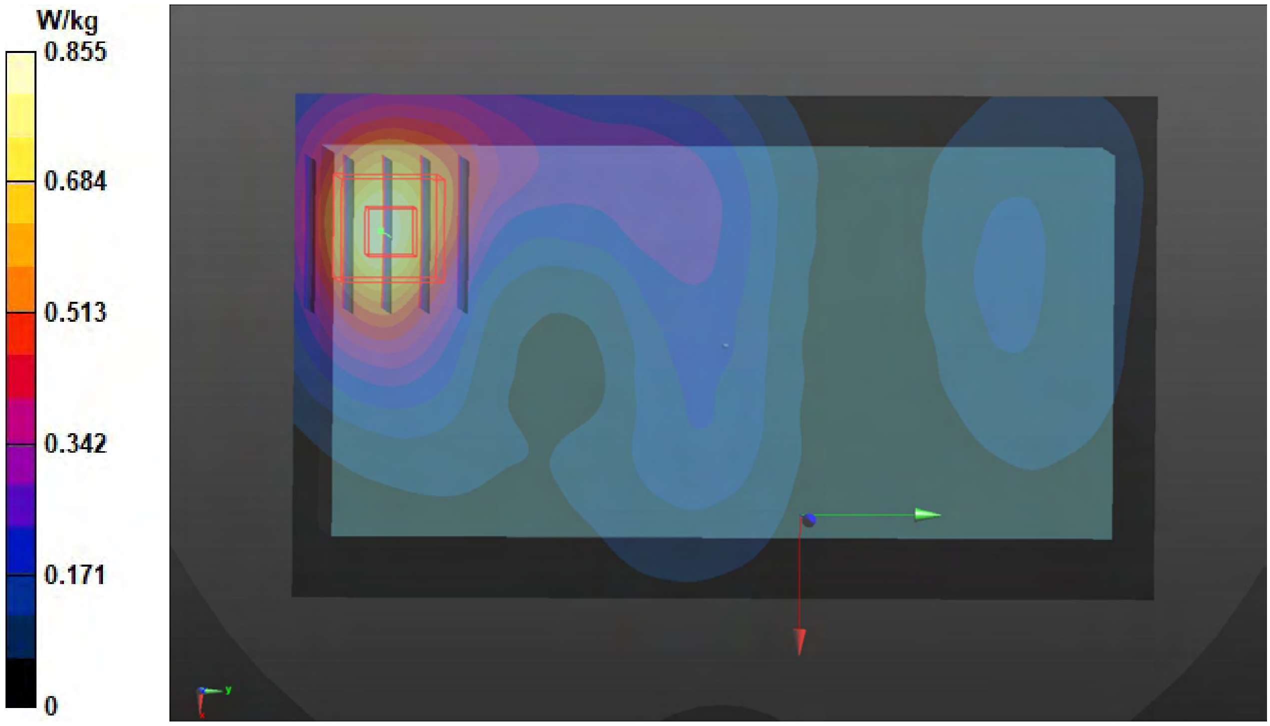
DUT: 200504C19

Communication System: UID 10027 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2); Frequency: 1909.8 MHz;Duty Cycle: 1:3.02
Medium: H16T20N1_1012 Medium parameters used: f = 1910 MHz; σ = 1.468 S/m; ε_r = 40.876; 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) @ 1909.8 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.855 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.28 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.608 W/kg; SAR(10 g) = 0.352 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 13.7 mm
Ratio of SAR at M2 to SAR at M1 = 62.5%
Maximum value of SAR (measured) = 0.878 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/28

P19 WCDMA II_RMC12.2K_Rear Face_10mm_Ch9538_Battery 1

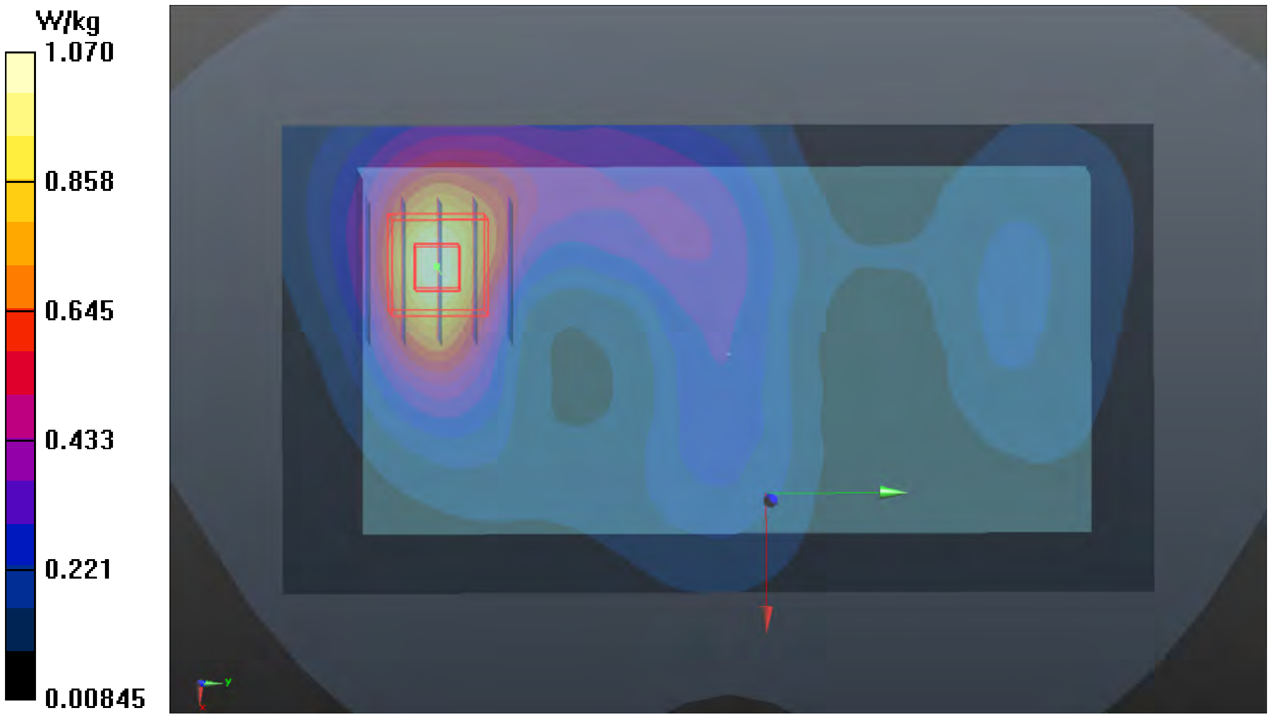
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_1028 Medium parameters used: f = 1908 MHz; σ = 1.465 S/m; ε_r = 39.561; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1907.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: Twin SAM Phantom_1653; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.34 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.799 W/kg; SAR(10 g) = 0.476 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 12.8 mm
Ratio of SAR at M2 to SAR at M1 = 65.3%
Maximum value of SAR (measured) = 1.15 W/kg



P20 WCDMA V_RMC12.2K_Front Face_10mm_Ch4233

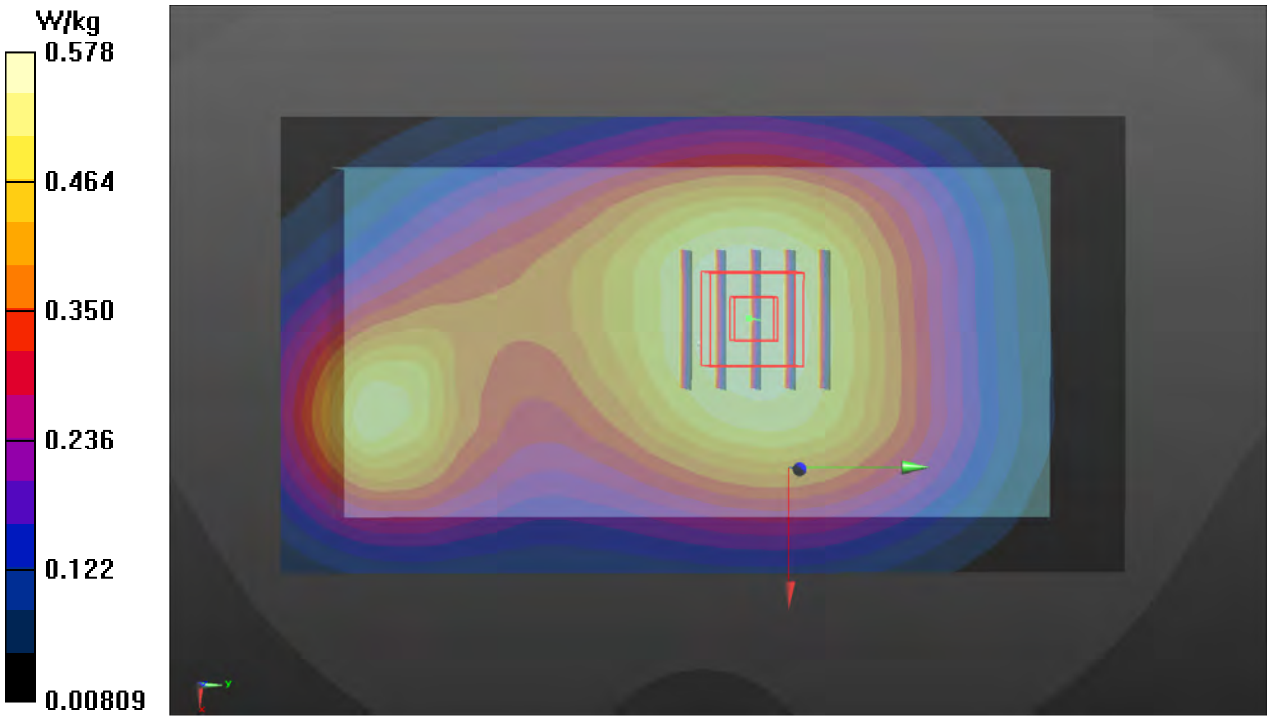
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 846.6 MHz;Duty Cycle: 1:1.95
Medium: H07T10N4_0514 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 42.306; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 846.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.578 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.46 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.621 W/kg
SAR(1 g) = 0.498 W/kg; SAR(10 g) = 0.385 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 = 79.9%
Maximum value of SAR (measured) = 0.584 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P21 LTE 2_QPSK20M_Rear Face_10mm_Ch19100_1RB_OS0

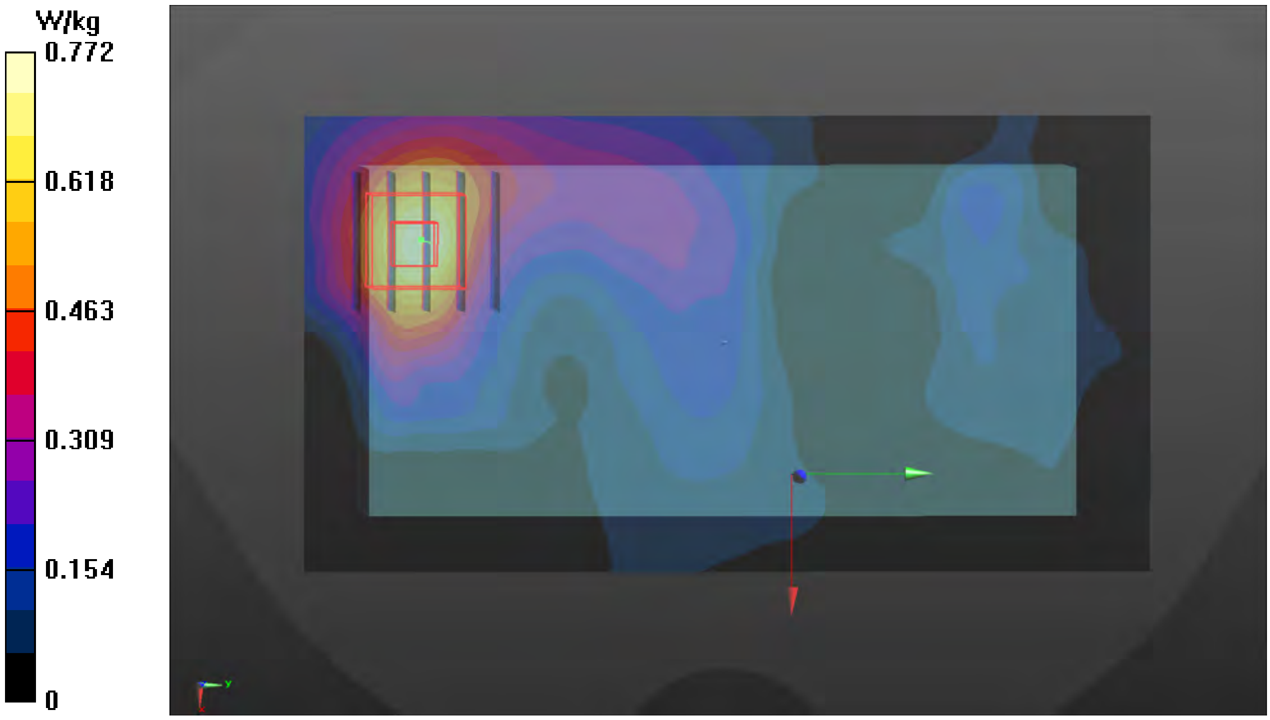
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1900 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used: f = 1900 MHz; σ = 1.459 S/m; ε_r = 38.812; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1900 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.772 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.68 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.930 W/kg
SAR(1 g) = 0.569 W/kg; SAR(10 g) = 0.337 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 14.3 mm
Ratio of SAR at M2 to SAR at M1 = 64.3%
Maximum value of SAR (measured) = 0.812 W/kg



P22 LTE 4_QPSK20M_Rear Face_10mm_Ch20175_1RB_OS0

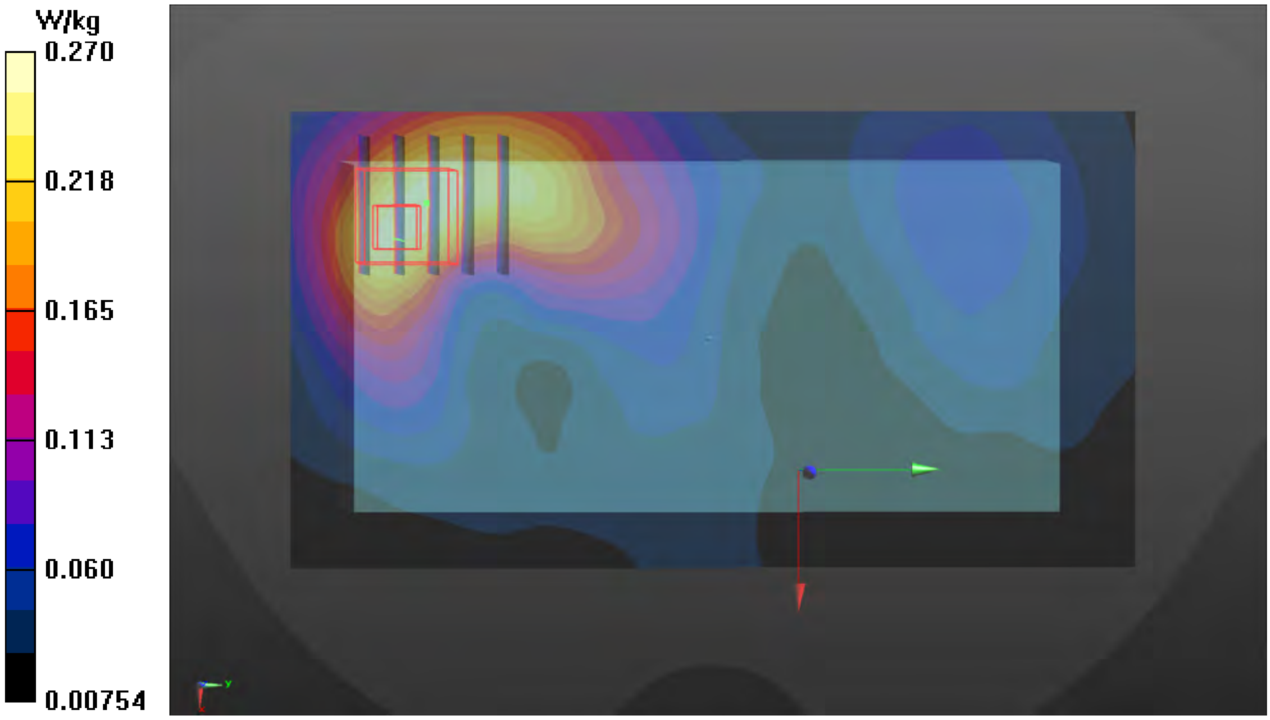
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1732.5 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used: f = 1733 MHz; σ = 1.305 S/m; ε_r = 39.437; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.73, 8.73, 8.73) @ 1732.5 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.270 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.50 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.343 W/kg
SAR(1 g) = 0.225 W/kg; SAR(10 g) = 0.139 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 13.8 mm
Ratio of SAR at M2 to SAR at M1 = 66.2%
Maximum value of SAR (measured) = 0.302 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P23 LTE 5_QPSK10M_Front Face_10mm_Ch20600_1RB_OS0

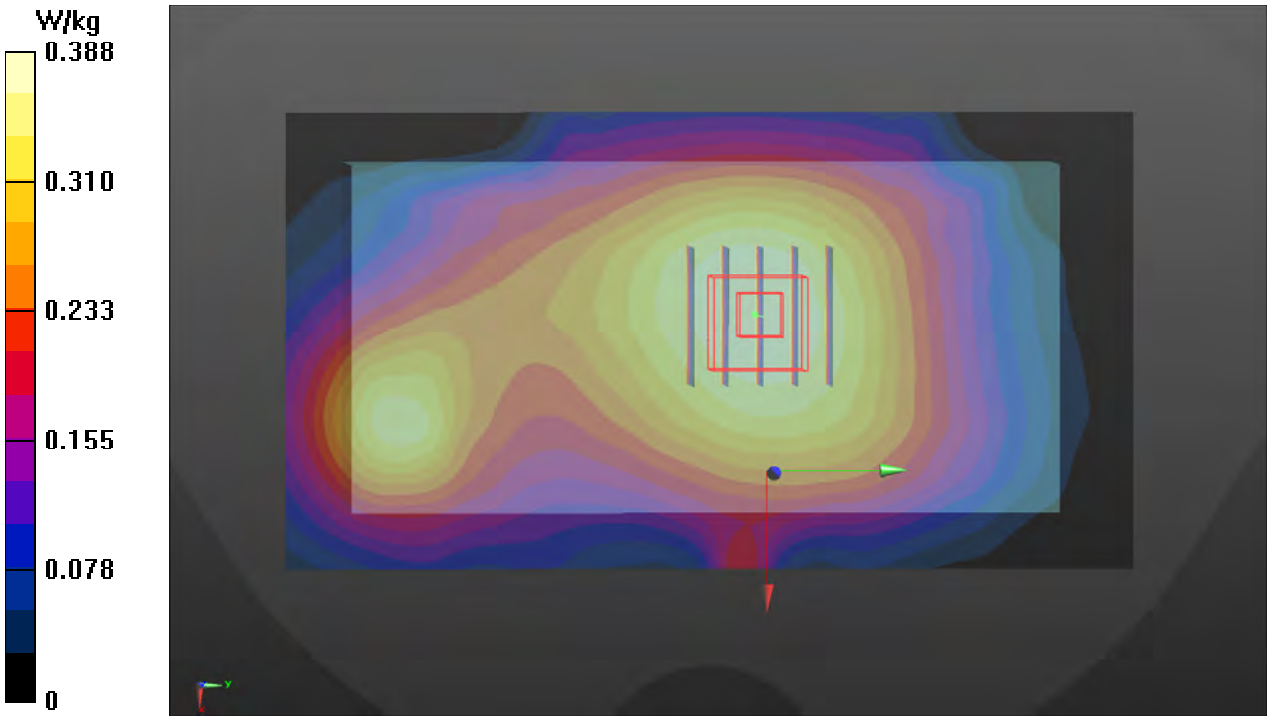
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 844 MHz;Duty Cycle: 1:3.74
Medium: H07T10N4_0513 Medium parameters used: f = 844 MHz; σ = 0.917 S/m; ε_r = 42.163; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 844 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.388 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.77 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.420 W/kg
SAR(1 g) = 0.335 W/kg; SAR(10 g) = 0.259 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 = 79.2%
Maximum value of SAR (measured) = 0.394 W/kg



P24 LTE 7_QPSK20M_Rear Face_10mm_Ch21350_1RB_OS0

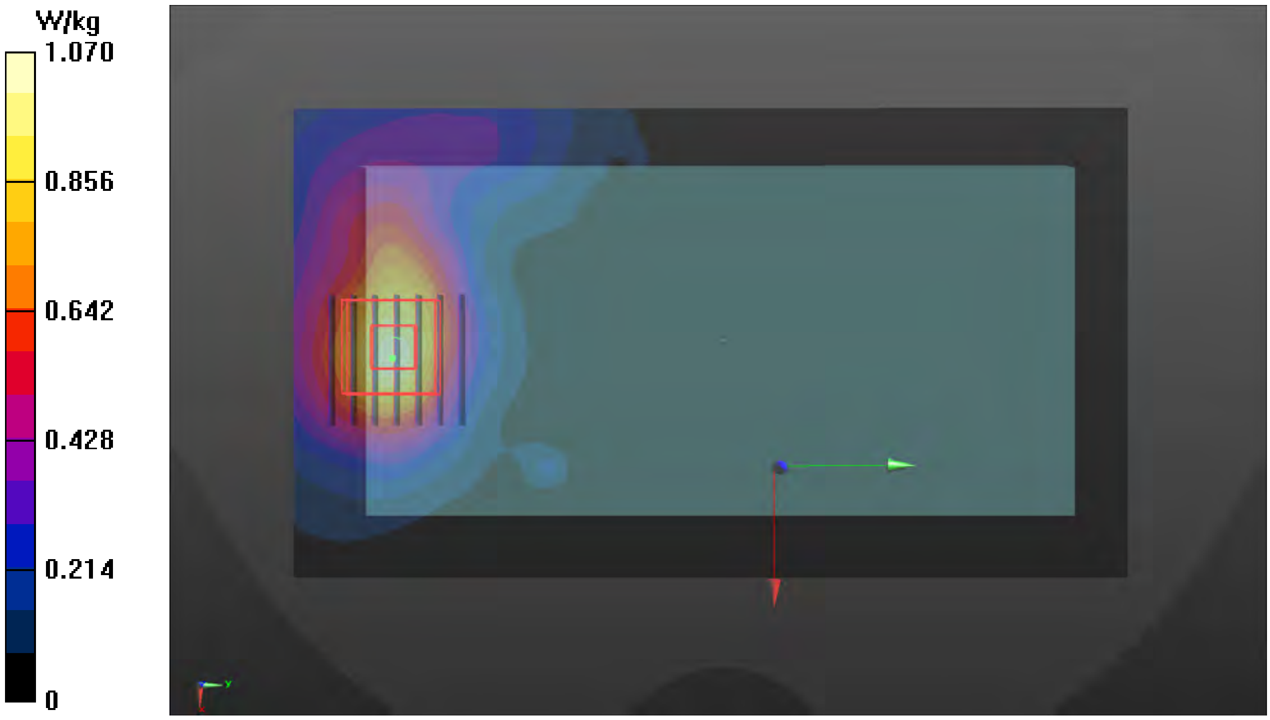
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2560 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0513 Medium parameters used: f = 2560 MHz; σ = 1.983 S/m; ε_r = 38.724; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.71, 7.71, 7.71) @ 2560 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.91 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.664 W/kg; SAR(10 g) = 0.375 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 14.6 mm
Ratio of SAR at M2 to SAR at M1 = 54.7%
Maximum value of SAR (measured) = 1.00 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/05/13

P25 LTE 12_QPSK10M_Front Face_10mm_Ch23130_1RB_OS0

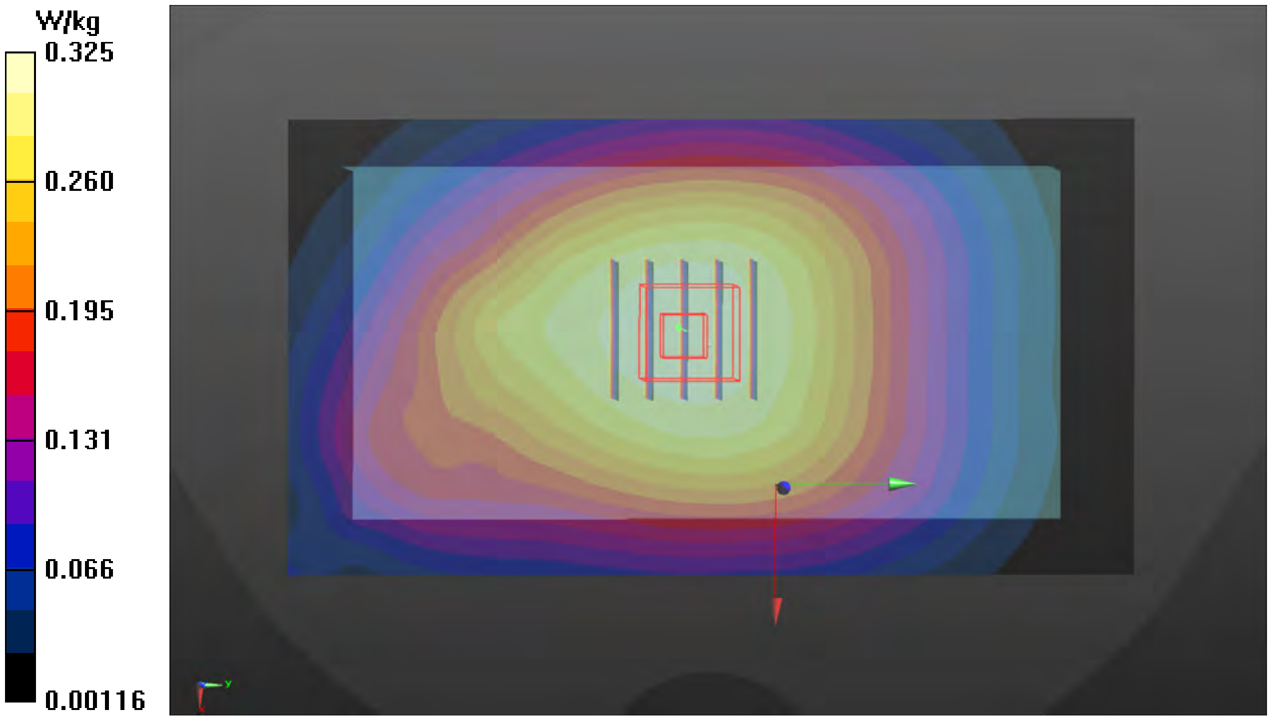
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 711 MHz; $\sigma = 0.861$ S/m; $\varepsilon_r = 43.015$; $\rho = 1000$ kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 711 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.325 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.57 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.344 W/kg
SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.228 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 = 81.7%
Maximum value of SAR (measured) = 0.326 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P26 LTE 13_QPSK10M_Front Face_10mm_Ch23230_1RB_OS0

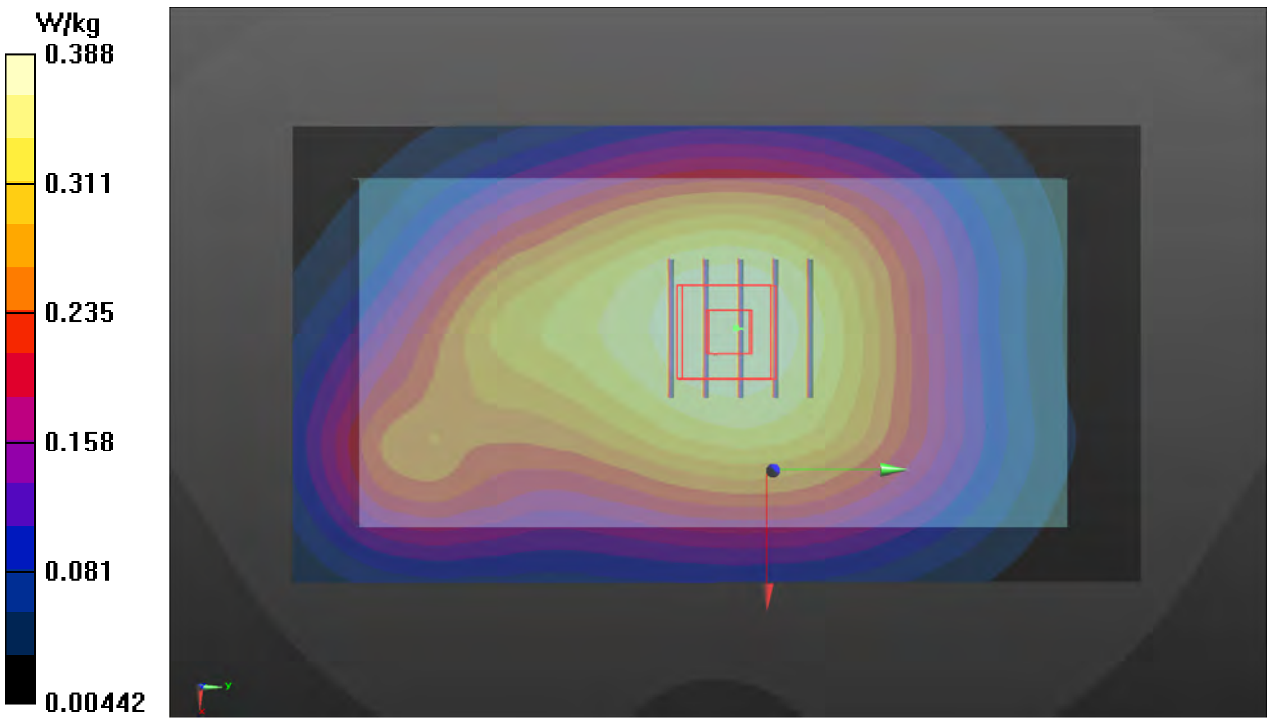
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 782 MHz; $\sigma = 0.933$ S/m; $\varepsilon_r = 42.466$; $\rho = 1000$ kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 782 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.388 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.57 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.412 W/kg
SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.258 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 = 80.8%
Maximum value of SAR (measured) = 0.390 W/kg



P27 LTE 17_QPSK10M_Front Face_10mm_Ch23780_1RB_OS0

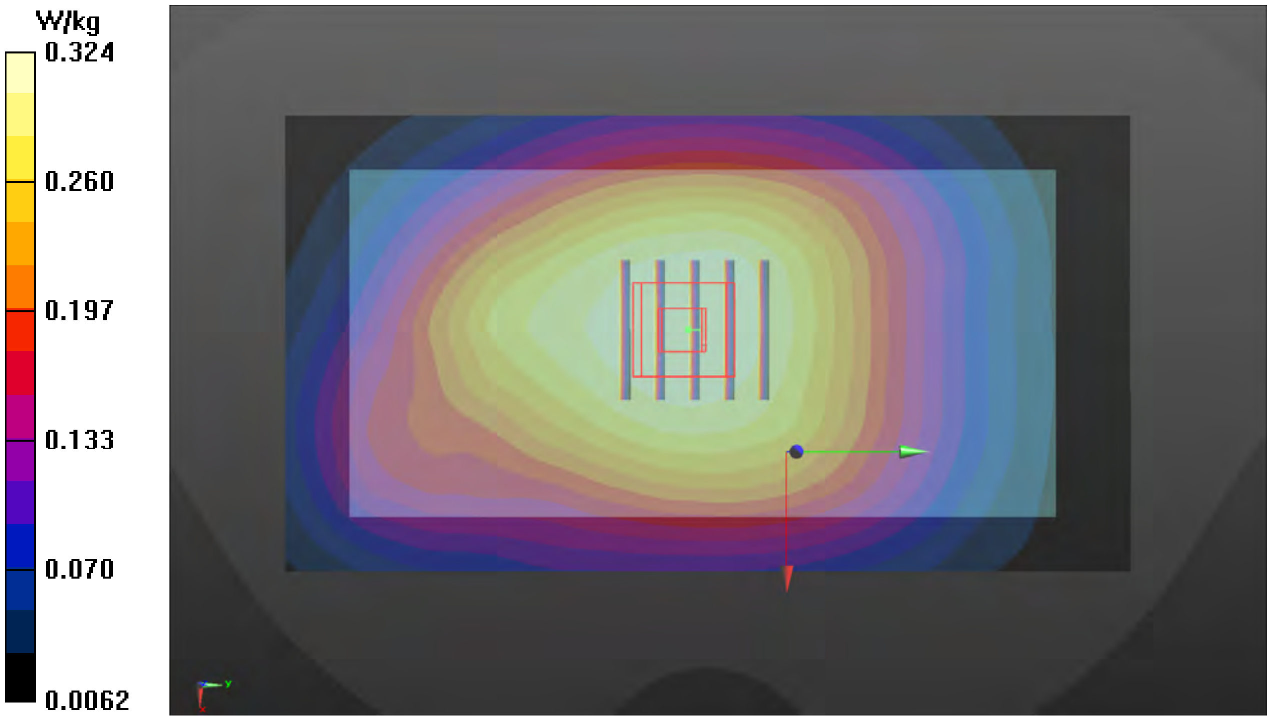
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 709 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 709 MHz; σ = 0.859 S/m; ε_r = 43.074; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 709 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.324 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.78 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.347 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.233 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 = 82%
Maximum value of SAR (measured) = 0.329 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/05/13

P28 LTE 25_QPSK20M_Rear Face_10mm_Ch26590_1RB_OS0

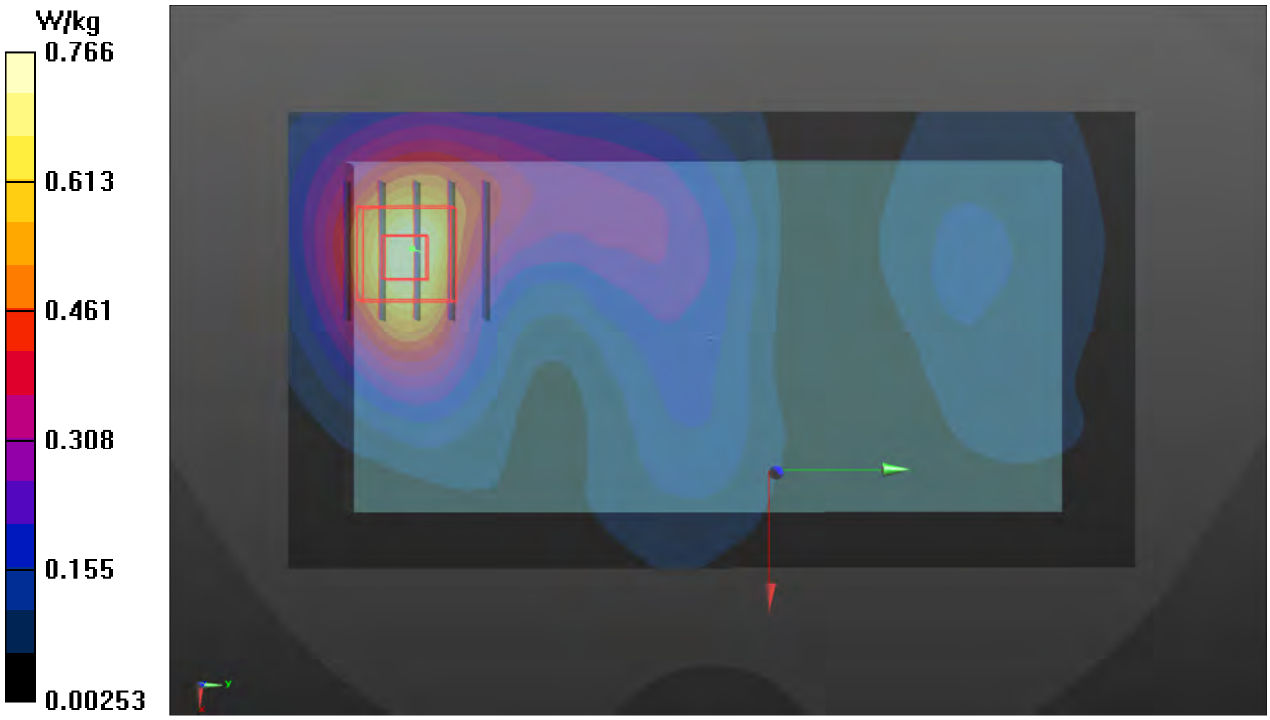
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1905 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used (interpolated): f = 1905 MHz; σ = 1.463 S/m; ε_r = 38.793; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃；Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1905 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.766 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.59 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.923 W/kg
SAR(1 g) = 0.556 W/kg; SAR(10 g) = 0.325 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 14.4 mm
Ratio of SAR at M2 to SAR at M1 = 63.3%
Maximum value of SAR (measured) = 0.793 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/9/24

P29 WLAN2.4G_802.11b_Rear Face_10mm_Ch6_Ant 0+1

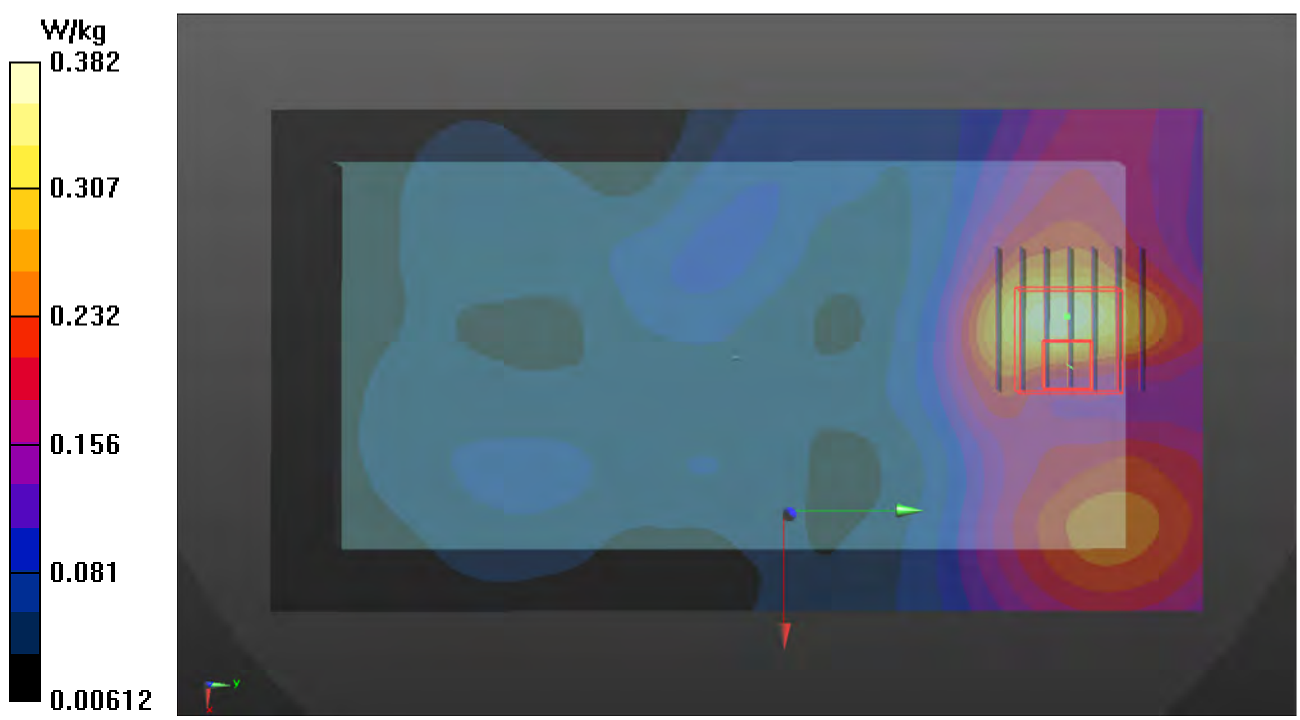
DUT: 200504C19

Communication System: UID 10012 - CAB, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2437 MHz;Duty Cycle: 1:1.01
Medium: H19T27N1_0924 Medium parameters used (interpolated): f = 2437 MHz; σ = 1.871 S/m; ε_r = 38.387; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8, 8, 8) @ 2437 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.382 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.93 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.516 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.167 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 = 58.2%
Maximum value of SAR (measured) = 0.435 W/kg



P30 WLAN5.2G_802.11n HT40_Rear Face_10mm_Ch46_Ant 1

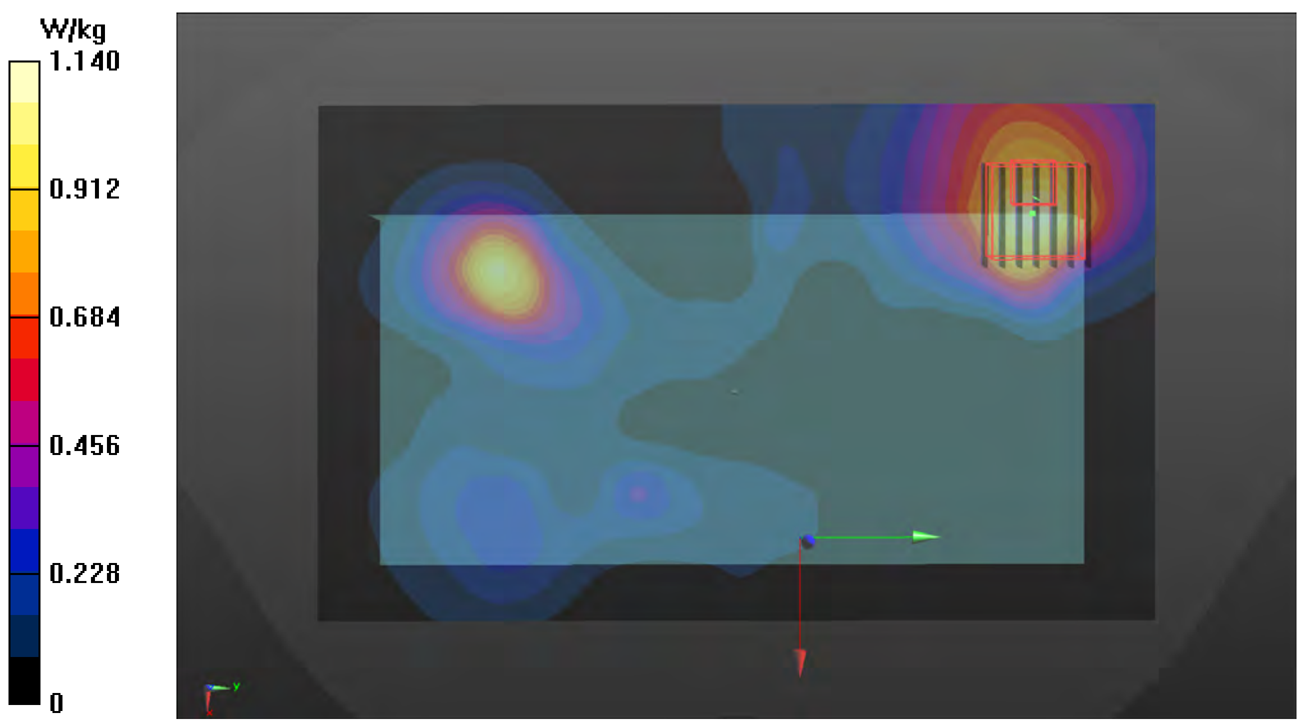
DUT: 200504C19

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0); Frequency: 5230 MHz;Duty Cycle: 1:1.1
Medium: H34T60N1_0924 Medium parameters used: f = 5230 MHz; $\sigma = 4.795$ S/m; $\varepsilon_r = 36.443$; $\rho = 1000$ kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.28, 5.28, 5.28) @ 5230 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (121x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 12.25 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.150 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 18.3 mm
Ratio of SAR at M2 to SAR at M1 = 68.3%
Maximum value of SAR (measured) = 0.688 W/kg



P31 WLAN5.6G_802.11ac VHT80_Rear Face_10mm_Ch138_Ant 0+1

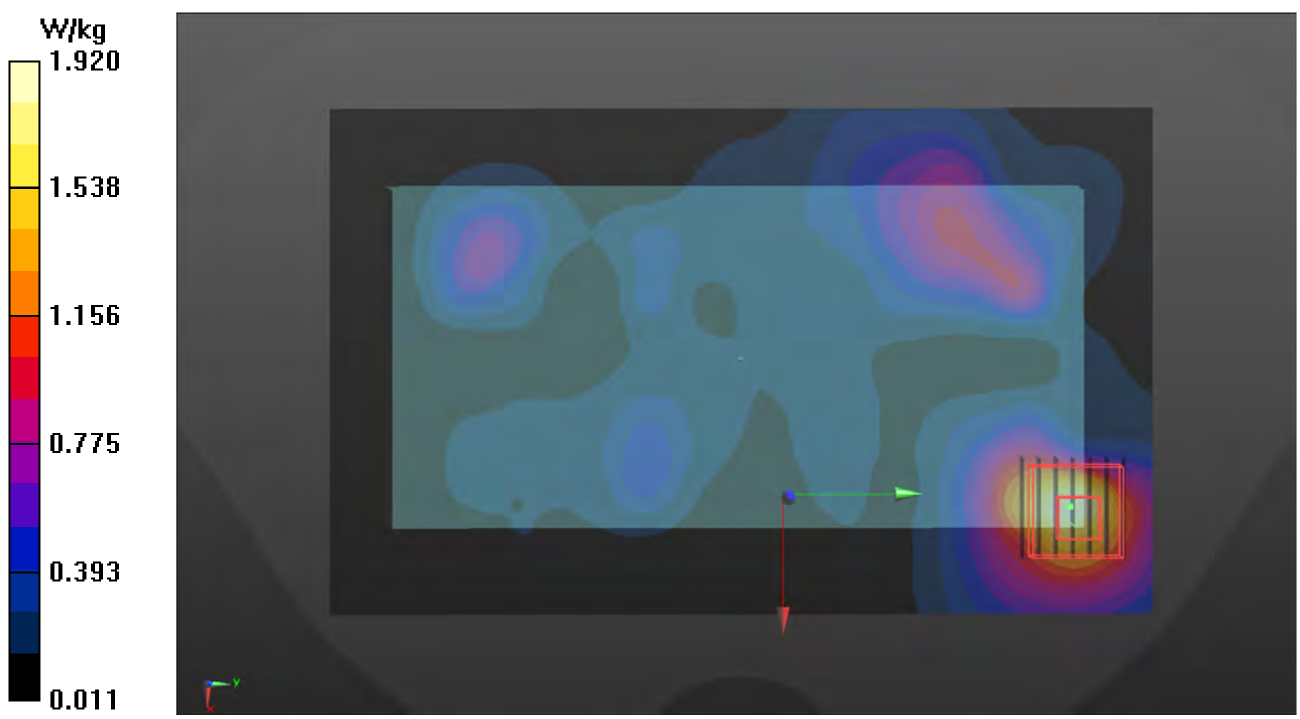
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5690 MHz;Duty Cycle: 1:1.19
Medium: H34T60N1_0924 Medium parameters used: f = 5690 MHz; σ = 5.278 S/m; ε_r = 35.739; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.05, 5.05, 5.05) @ 5690 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (121x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.92 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 14.45 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 0.492 W/kg; SAR(10 g) = 0.209 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 17.6 mm
Ratio of SAR at M2 to SAR at M1 = 65.5%
Maximum value of SAR (measured) = 1.02 W/kg



P32 WLAN5.8G_802.11ac VHT80_Rear Face_10mm_Ch155_Ant1

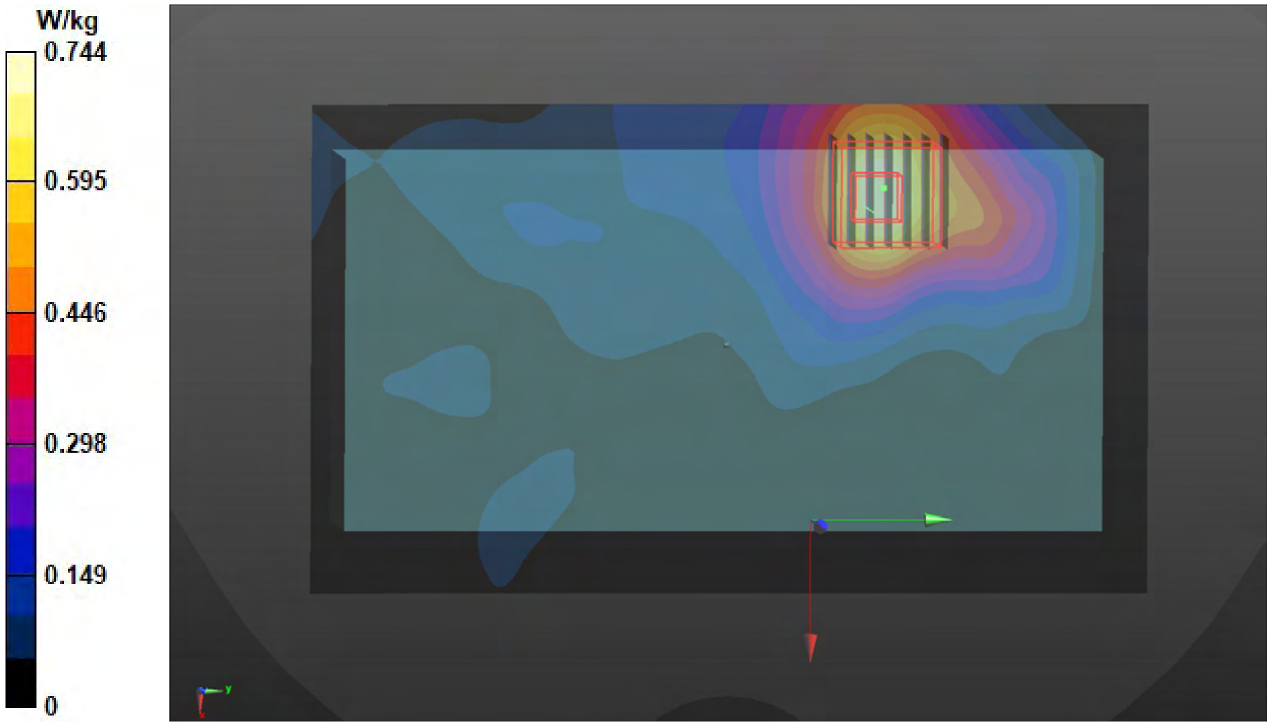
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5775 MHz;Duty Cycle: 1:1.19
Medium: H34T60N1_1012 Medium parameters used: f = 5775 MHz; σ = 5.354 S/m; ε_r = 34.336; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃; Liquid Temperature：23.1℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7537; ConvF(4.95, 4.95, 4.95) @ 5775 MHz; Calibrated: 2020/05/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin-SAM V8.0_1988; Type: QD 000 P41 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (111x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.744 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 12.97 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.150 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 9.8 mm
Ratio of SAR at M2 to SAR at M1 = 54.9%
Maximum value of SAR (measured) = 0.838 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/08

P33 GSM850_GPRS12_Front Face_10mm_Ch189

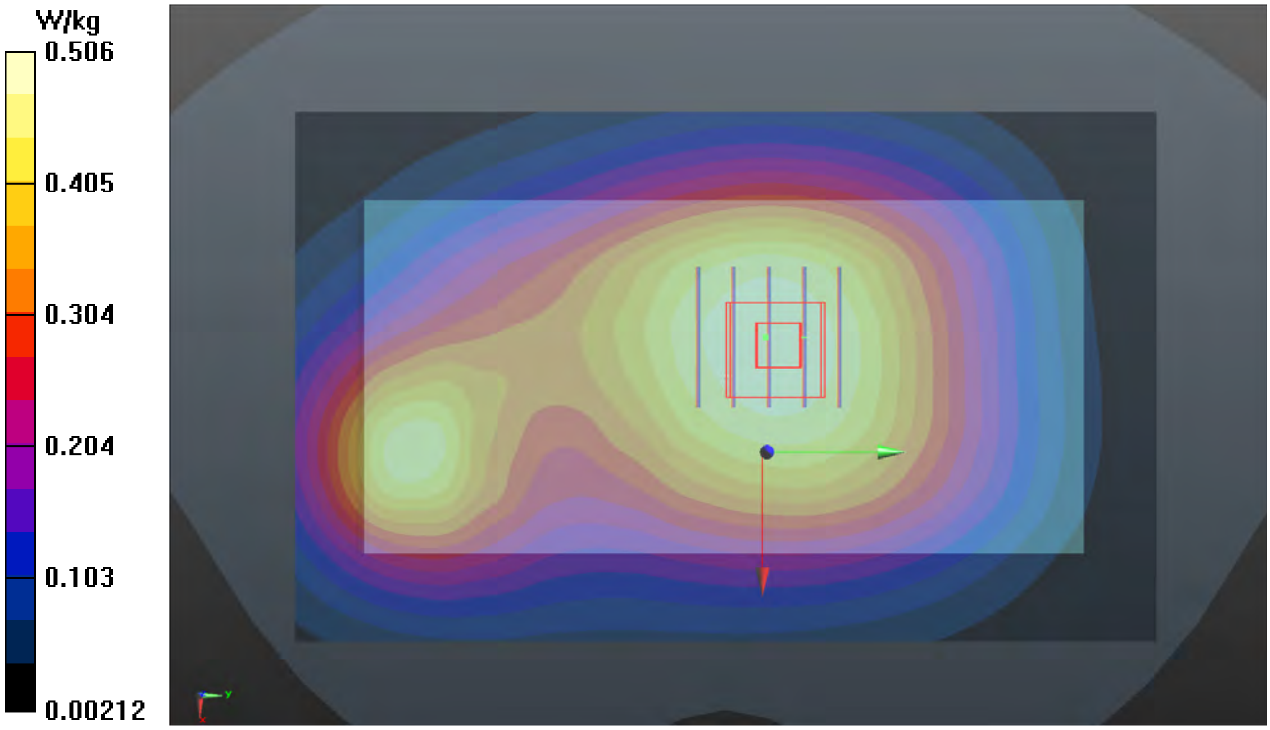
DUT: 200504C19

Communication System: UID 10028 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2-3); Frequency: 836.4 MHz;Duty Cycle: 1:2.27
Medium: H07T10N1_1008 Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.929 S/m; ε_r = 42.003; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3820; ConvF(9.01, 9.01, 9.01) @ 836.4 MHz; Calibrated: 2020/06/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn914; Calibrated: 2020/06/22
- Phantom: Twin SAM Phantom_1823; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.506 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.12 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.545 W/kg
SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.306 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 = 74.4%
Maximum value of SAR (measured) = 0.494 W/kg



P34 GSM1900_GPRS11_Bottom Side_10mm_Ch810

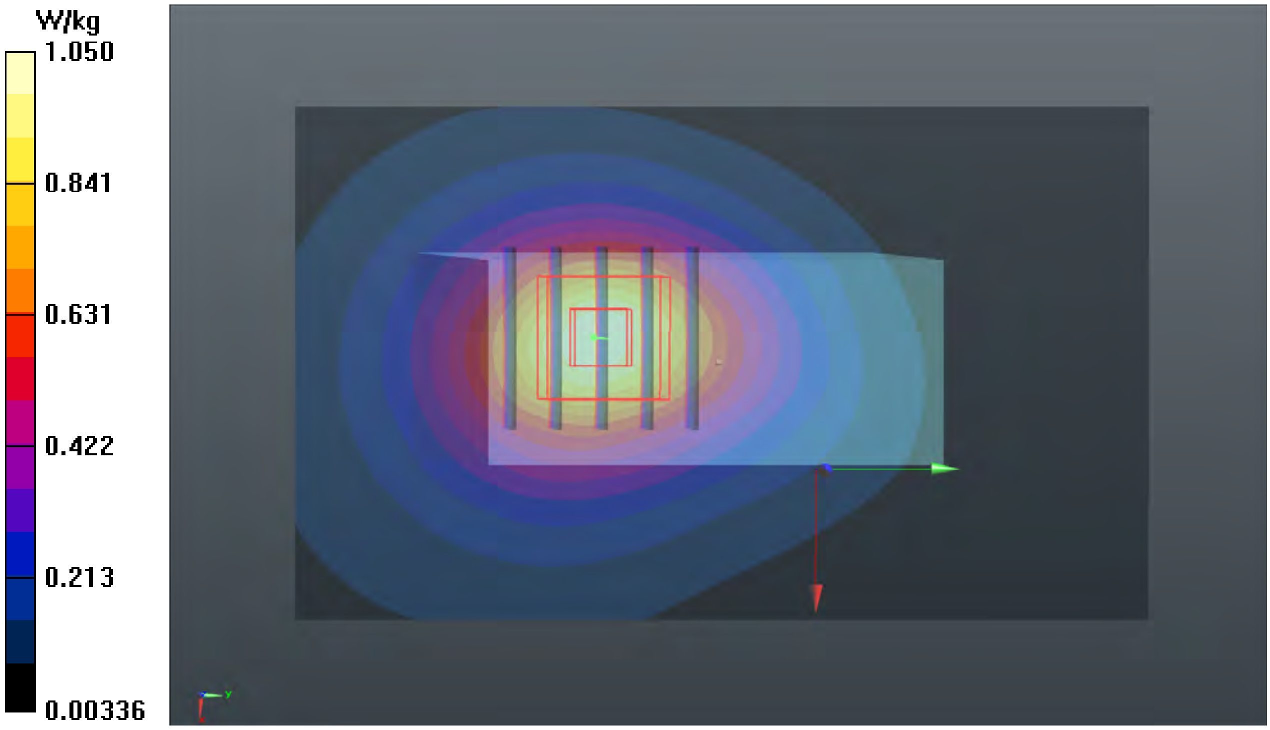
DUT: 200504C19

Communication System: UID 10027 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2); Frequency: 1909.8 MHz;Duty Cycle: 1:3.02
Medium: H16T20N1_1008 Medium parameters used: f = 1910 MHz; σ = 1.459 S/m; ε_r = 38.467; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3820; ConvF(7.4, 7.4, 7.4) @ 1909.8 MHz; Calibrated: 2020/06/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn914; Calibrated: 2020/06/22
- Phantom: Twin SAM Phantom_1823; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.05 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.704 W/kg; SAR(10 g) = 0.421 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.3 mm
Ratio of SAR at M2 to SAR at M1 = 59.1%
Maximum value of SAR (measured) = 1.05 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/28

P35 WCDMA II_RMC12.2K_Bottom Side_10mm_Ch9538_Battery 1

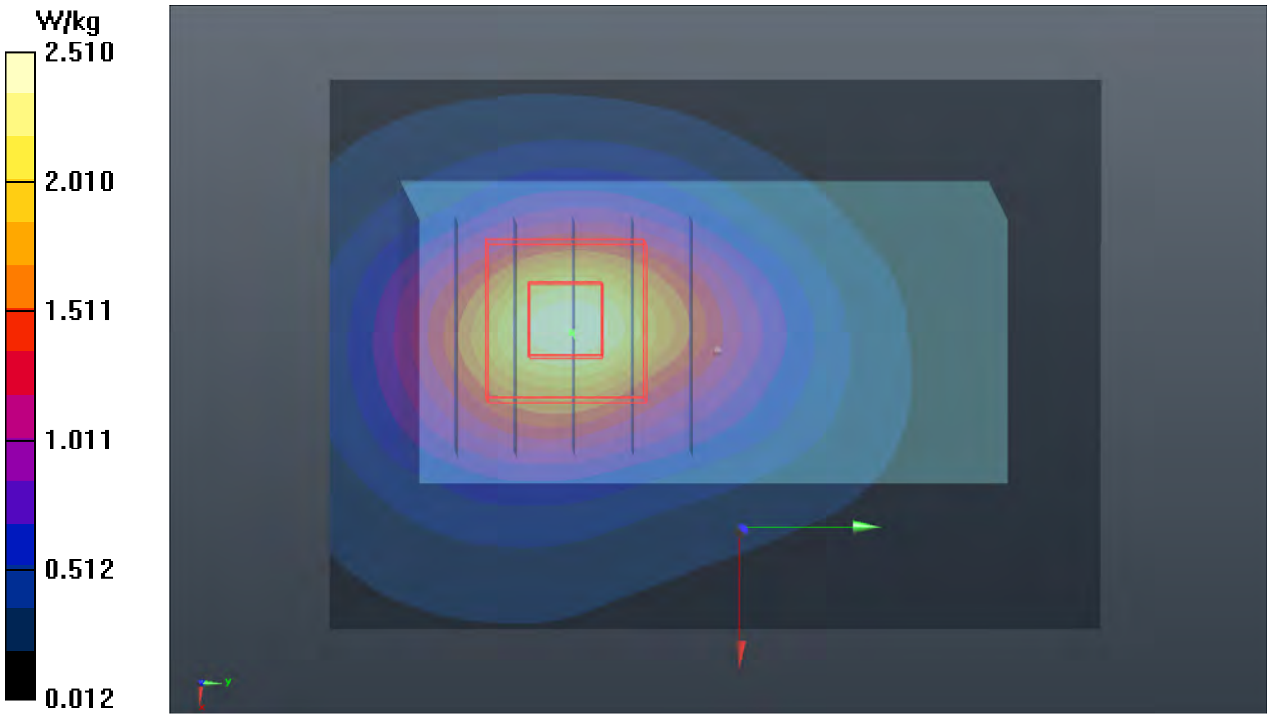
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz;Duty Cycle: 1:1.95
Medium: H16T20N1_1028 Medium parameters used: f = 1908 MHz; σ = 1.465 S/m; ε_r = 39.561; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1907.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: Twin SAM Phantom_1653; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (51x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.51 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 41.63 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.915 W/kg; SAR(10 g) = 0.573 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 17.3 mm
Ratio of SAR at M2 to SAR at M1 = 64.8%
Maximum value of SAR (measured) = 1.27 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/14

P36 WCDMA V_RMC12.2K_Front Face_10mm_Ch4233

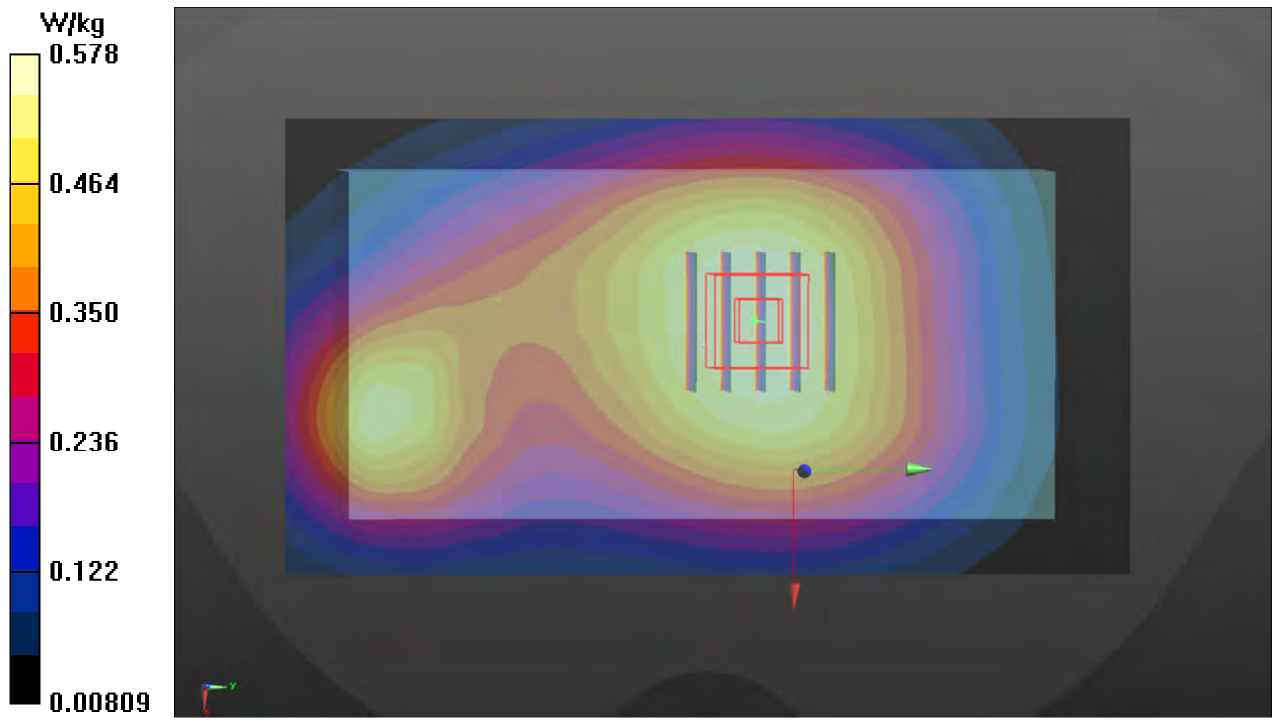
DUT: 200504C19

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 846.6 MHz;Duty Cycle: 1:1.95
Medium: H07T10N4_0514 Medium parameters used: f = 847 MHz; σ = 0.917 S/m; ε_r = 42.306; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 846.6 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.578 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.46 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.621 W/kg
SAR(1 g) = 0.498 W/kg; SAR(10 g) = 0.385 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 = 79.9%
Maximum value of SAR (measured) = 0.584 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P37 LTE 2_QPSK20M_Bottom Side_10mm_Ch19100_1RB_OS0

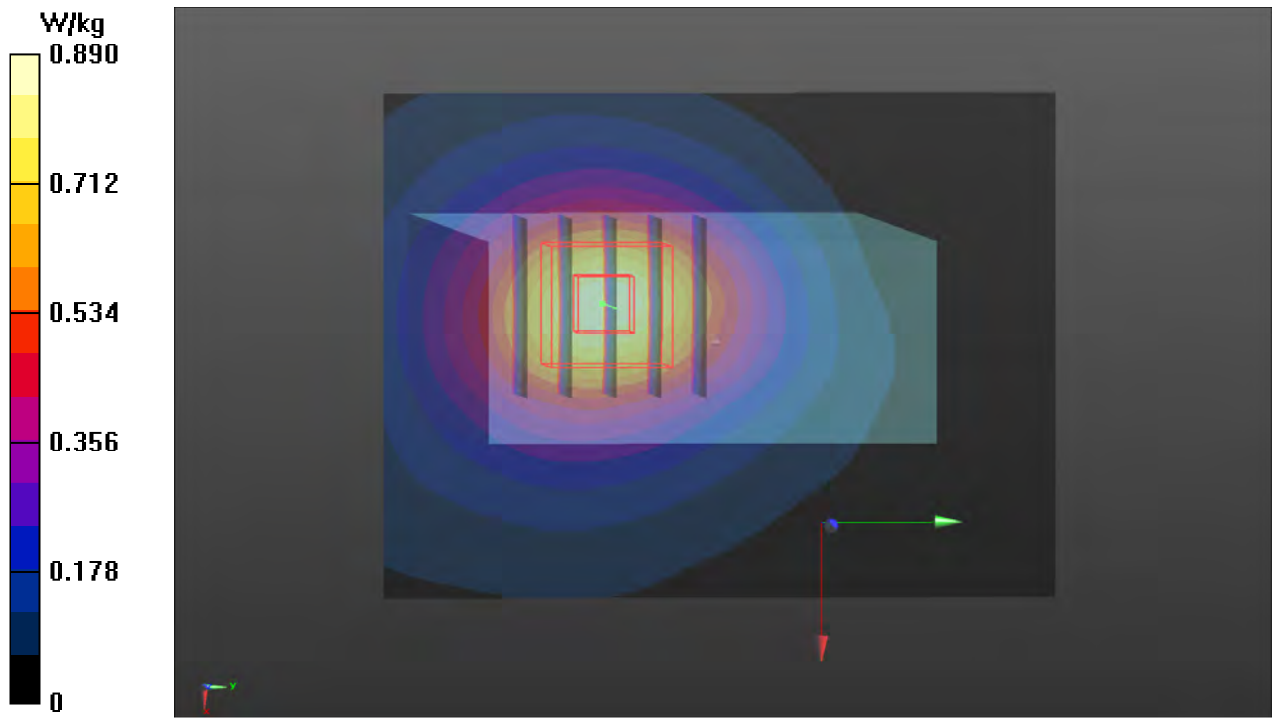
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1900 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used: f = 1900 MHz; σ = 1.459 S/m; ε_r = 38.812; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1900 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.890 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.26 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.605 W/kg; SAR(10 g) = 0.365 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.3 mm
Ratio of SAR at M2 to SAR at M1 = 61.4%
Maximum value of SAR (measured) = 0.881 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P38 LTE 4_QPSK20M_Bottom Side_10mm_Ch20300_1RB_OS0

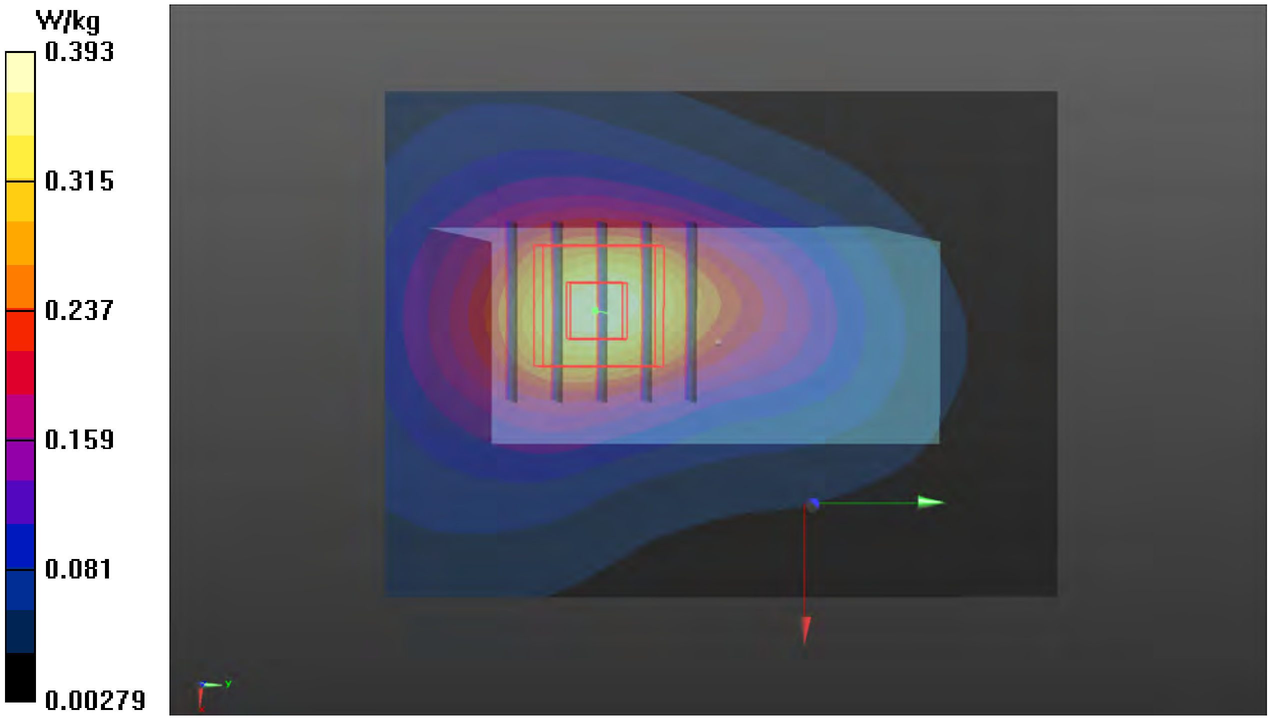
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1745 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used (interpolated): f = 1745 MHz; σ = 1.317 S/m; ε_r = 39.393; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.73, 8.73, 8.73) @ 1745 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.393 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.26 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.465 W/kg
SAR(1 g) = 0.293 W/kg; SAR(10 g) = 0.178 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16 mm
Ratio of SAR at M2 to SAR at M1 = 62.1%
Maximum value of SAR (measured) = 0.403 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P39 LTE 5_QPSK10M_Front Face_10mm_Ch20600_1RB_OS0

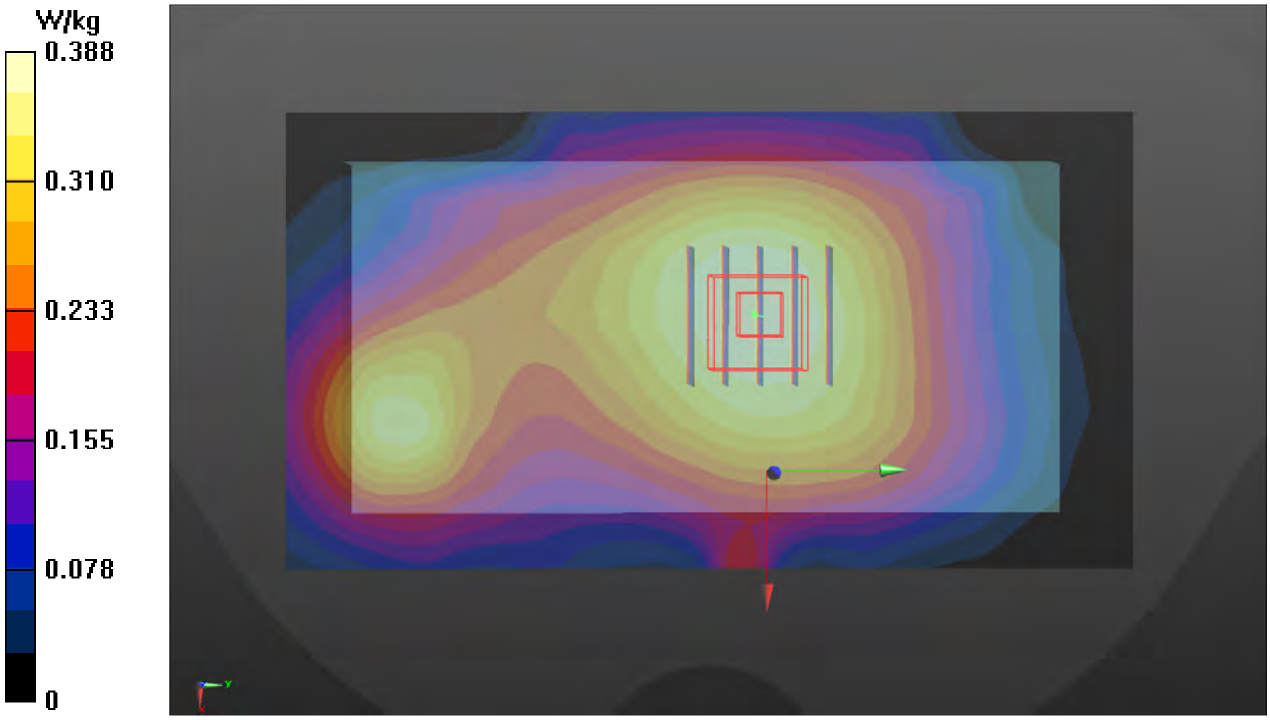
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 844 MHz;Duty Cycle: 1:3.74
Medium: H07T10N4_0513 Medium parameters used: f = 844 MHz; σ = 0.917 S/m; ε_r = 42.163; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.26, 10.26, 10.26) @ 844 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.388 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.77 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.420 W/kg
SAR(1 g) = 0.335 W/kg; SAR(10 g) = 0.259 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 = 79.2%
Maximum value of SAR (measured) = 0.394 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab   Date: 2020/05/13

P40 LTE 7_QPSK20M_Bottom Side_10mm_Ch21350_1RB_OS0

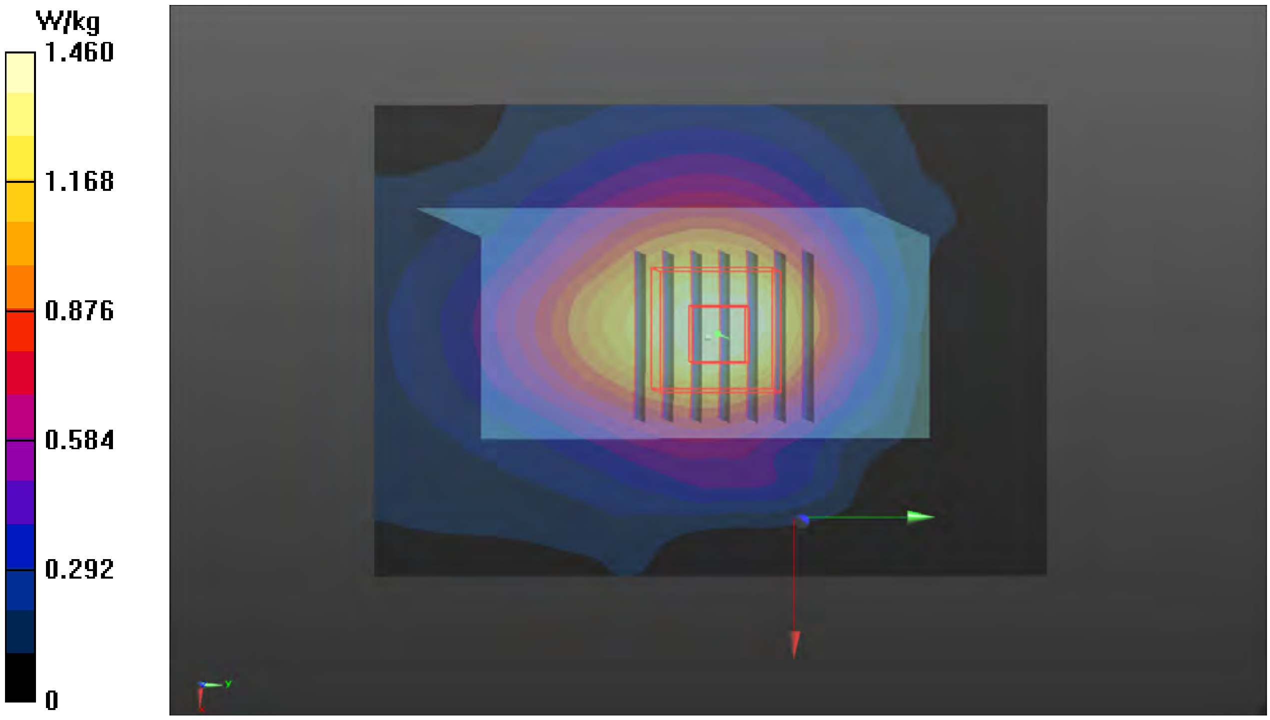
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2560 MHz;Duty Cycle: 1:3.74
Medium: H19T27N1_0513 Medium parameters used: f = 2560 MHz; σ = 1.983 S/m; ε_r = 38.724; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(7.71, 7.71, 7.71) @ 2560 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.46 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.75 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.606 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.1 mm
Ratio of SAR at M2 to SAR at M1 = 56%
Maximum value of SAR (measured) = 1.61 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/05/13

P41 LTE 12_QPSK10M_Front Face_10mm_Ch23130_1RB_OS0

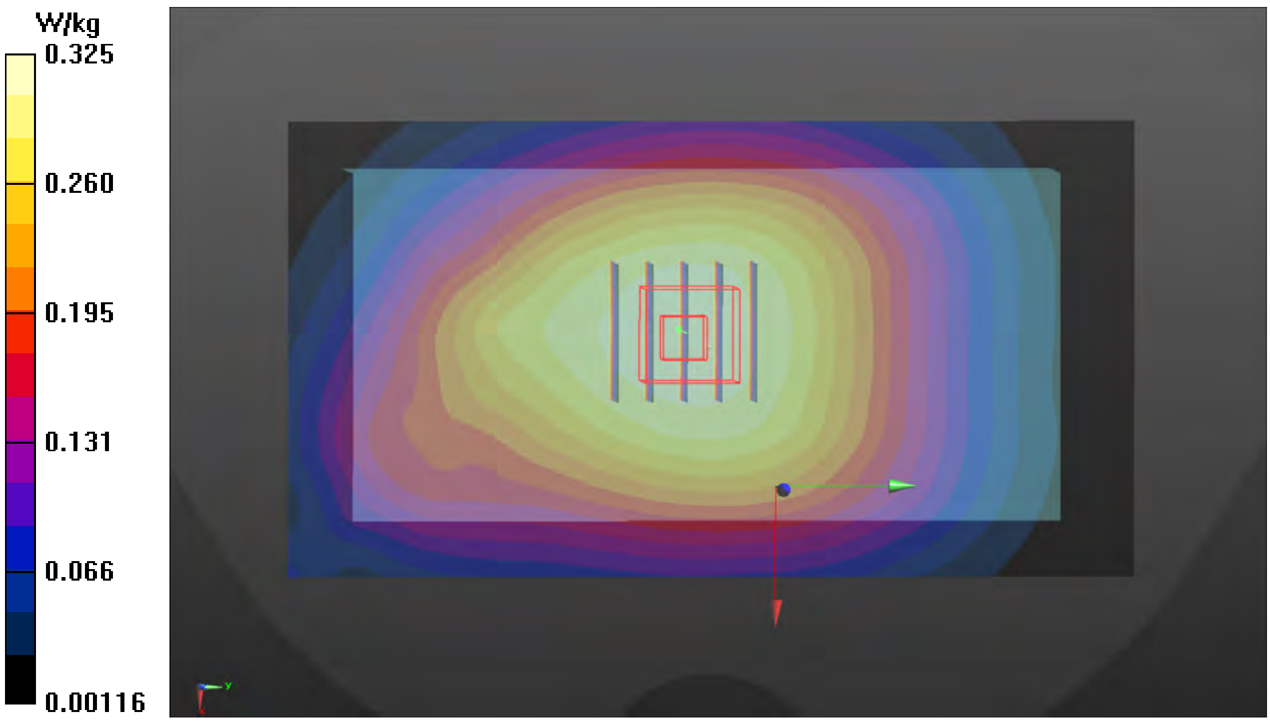
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 711 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 711 MHz; σ = 0.861 S/m; ε_r = 43.015; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 711 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.325 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.57 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.344 W/kg
SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.228 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 = 81.7%
Maximum value of SAR (measured) = 0.326 W/kg



P42 LTE 13_QPSK10M_Front Face_10mm_Ch23230_1RB_OS0

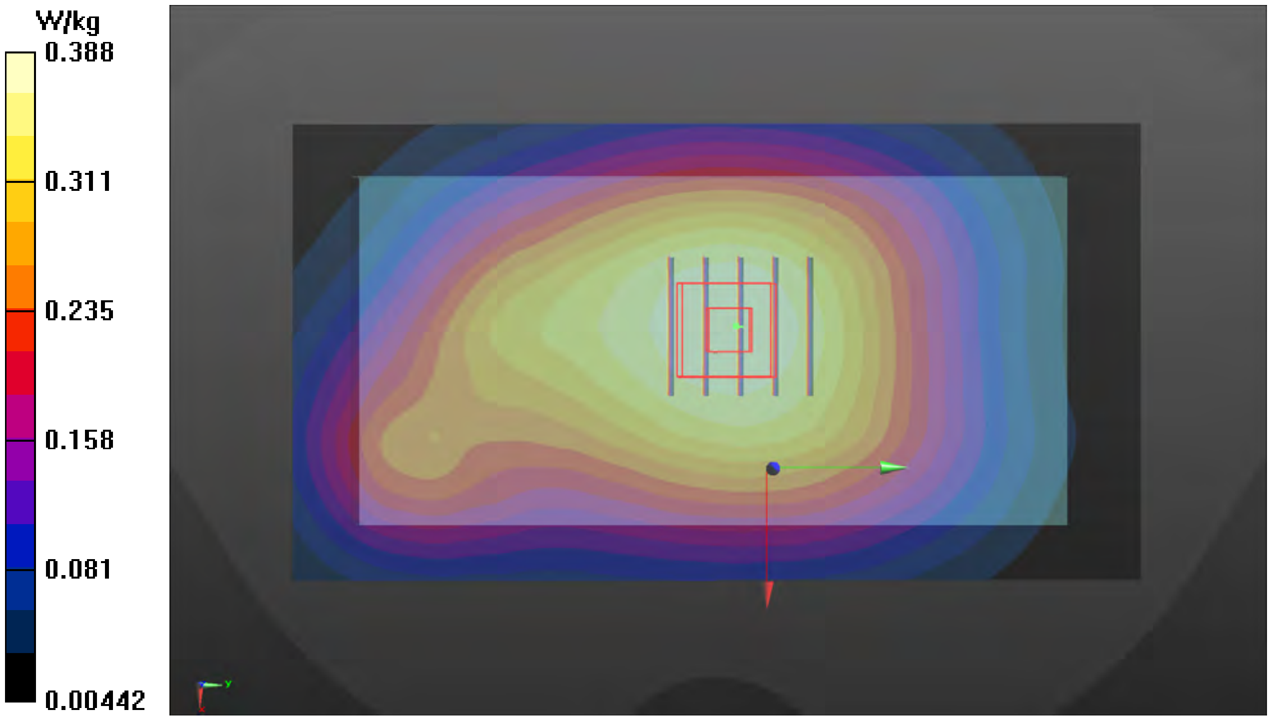
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 782 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 782 MHz; σ = 0.933 S/m; ε_r = 42.466; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 782 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.388 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.57 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.412 W/kg
SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.258 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 = 80.8%
Maximum value of SAR (measured) = 0.390 W/kg



P43 LTE 17_QPSK10M_Front Face_10mm_Ch23780_1RB_OS0

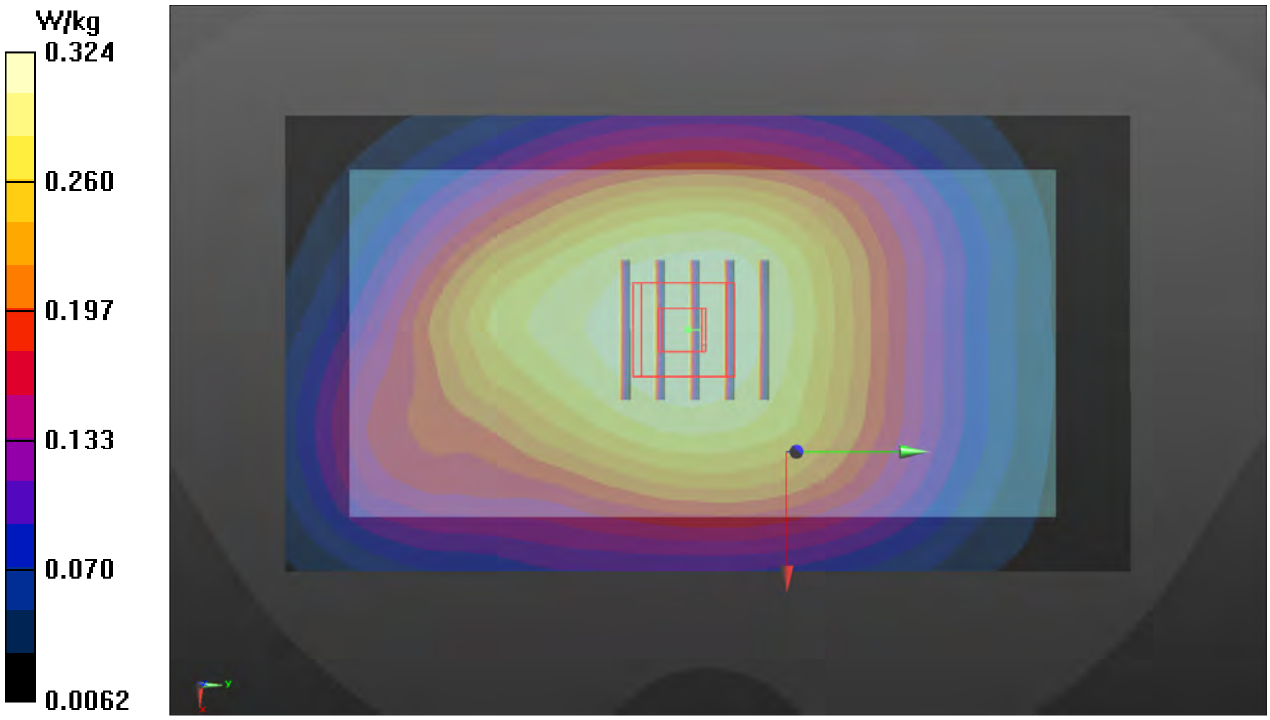
DUT: 200504C19

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK);
Frequency: 709 MHz;Duty Cycle: 1:3.74
Medium: H06T09N4_0513 Medium parameters used: f = 709 MHz; $\sigma = 0.859$ S/m; $\varepsilon_r = 43.074$; $\rho = 1000$ kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(10.6, 10.6, 10.6) @ 709 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.324 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.78 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.347 W/kg
SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.233 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 = 82%
Maximum value of SAR (measured) = 0.329 W/kg



P44 LTE 25_QPSK20M_Bottom Side_10mm_Ch26140_1RB_OS0

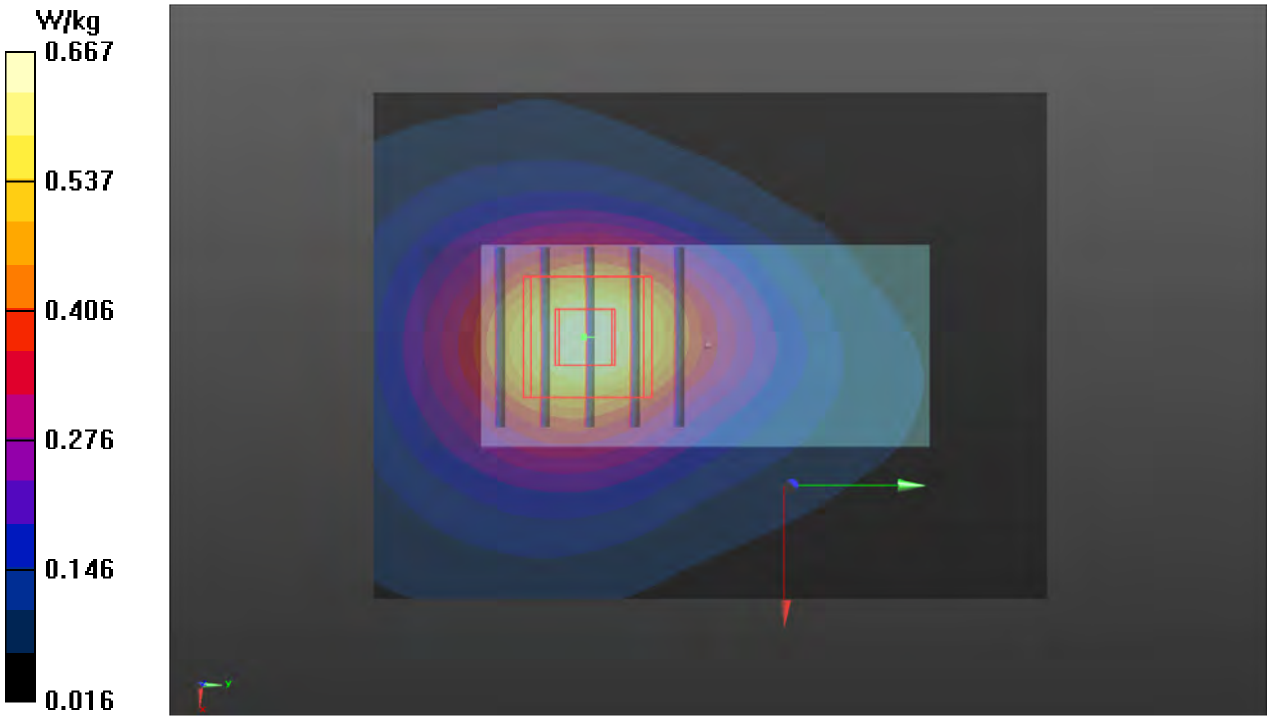
DUT: 200504C19

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 1860 MHz;Duty Cycle: 1:3.74
Medium: H16T20N4_0513 Medium parameters used: f = 1860 MHz; σ = 1.424 S/m; ε_r = 38.943; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：23.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8.54, 8.54, 8.54) @ 1860 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1277; Calibrated: 2020/01/24
- Phantom: Twin SAM Phantom_1823; Type: QD 000 P40 CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.667 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.29 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.762 W/kg
SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.287 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 16.3 mm
Ratio of SAR at M2 to SAR at M1 = 62.6%
Maximum value of SAR (measured) = 0.663 W/kg



P45 WLAN2.4G_802.11b_Right Side_10mm_Ch6_Ant 1

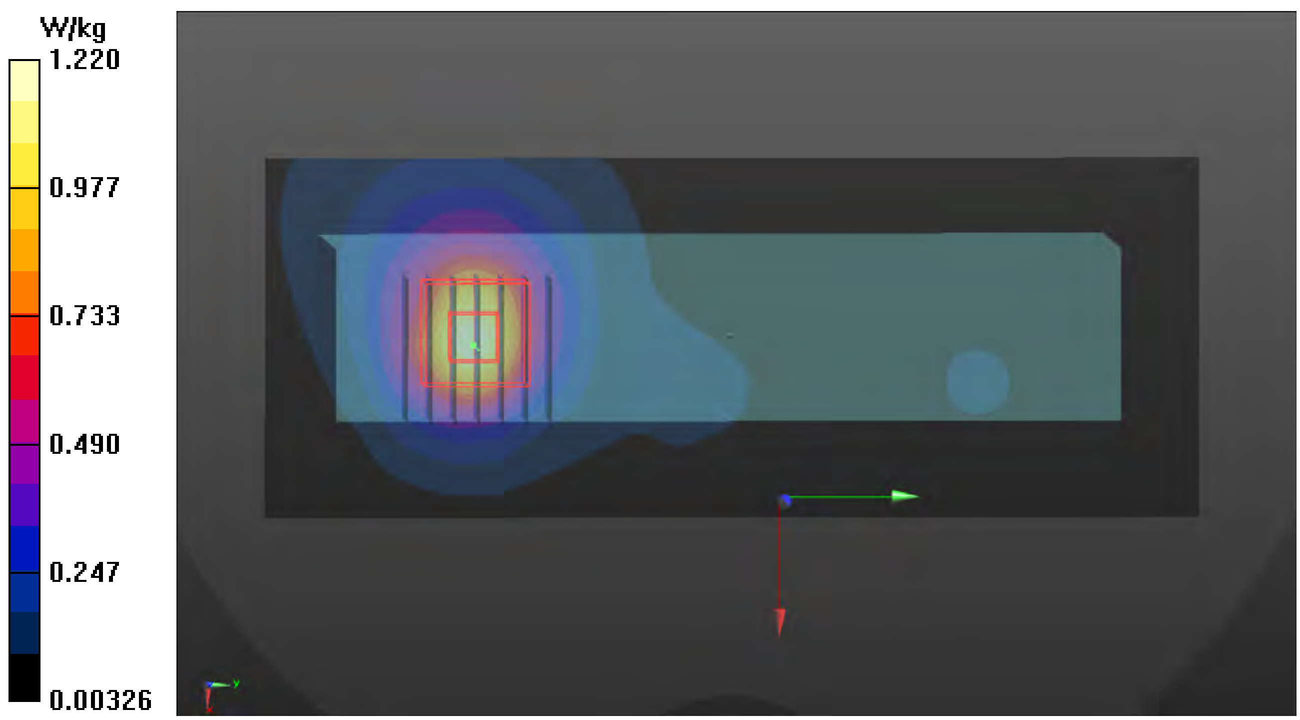
DUT: 200504C19

Communication System: UID 10012 - CAB, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2437 MHz;Duty Cycle: 1:1.01
Medium: H19T27N1_0924 Medium parameters used (interpolated): f = 2437 MHz; σ = 1.871 S/m; ε_r = 38.387; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(8, 8, 8) @ 2437 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.22 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.36 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.750 W/kg; SAR(10 g) = 0.383 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 12.6 mm
Ratio of SAR at M2 to SAR at M1 = 51.9%
Maximum value of SAR (measured) = 1.21 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/09/26

P46 WLAN5.2G_802.11n HT40_Right Side_10mm_Ch46_Ant 0+1

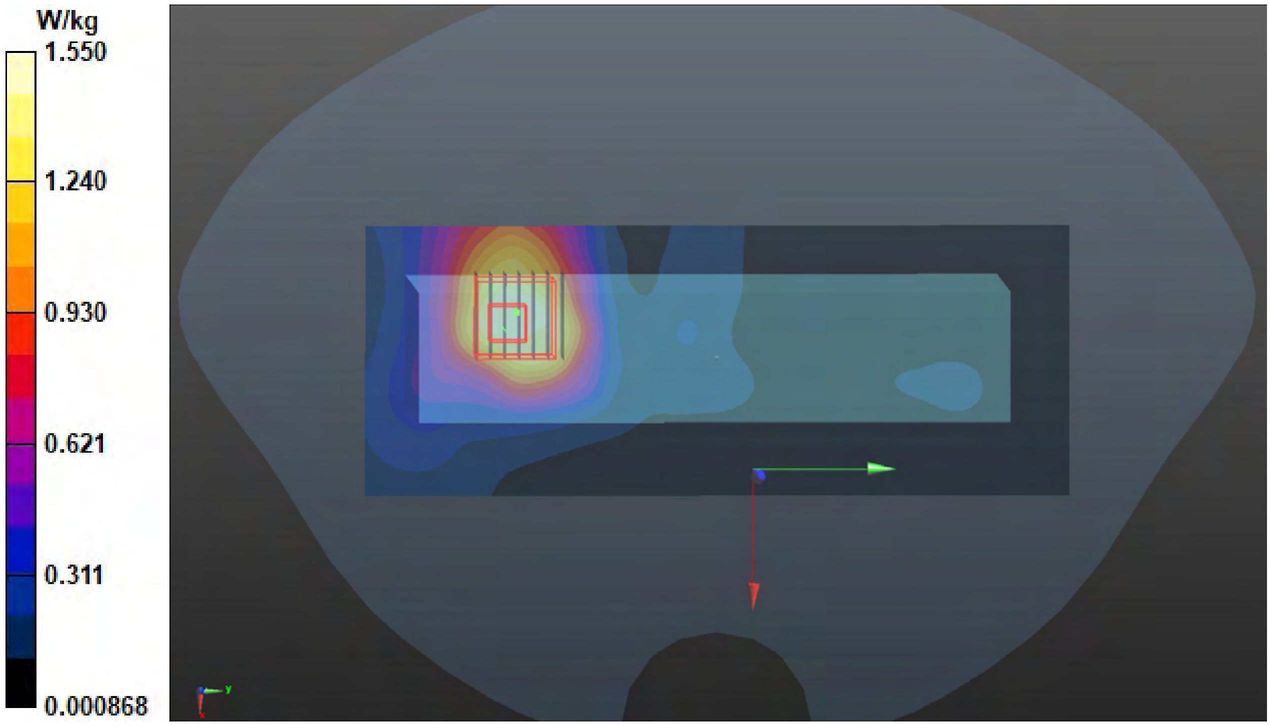
DUT: 200504C19

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0);
Frequency: 5230 MHz;Duty Cycle: 1:1.1
Medium: H34T60N1_0926 Medium parameters used: f = 5230 MHz; σ = 4.899 S/m; ε_r = 36.593; ρ = 1000 kg/m^3
Ambient Temperature：23.8℃; Liquid Temperature：23.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3650; ConvF(5.39, 5.39, 5.39) @ 5230 MHz; Calibrated: 2020/03/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn861; Calibrated: 2020/05/27
- Phantom: Twin SAM Phantom_1653; Type: QD000P40CD;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.63 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 19.08 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.20 W/kg
SAR(1 g) = 0.827 W/kg; SAR(10 g) = 0.386 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 = 71.8%
Maximum value of SAR (measured) = 1.55 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/08

P47 WLAN5.8G_802.11ac VHT80_Left Side_10mm_Ch155_Ant 0

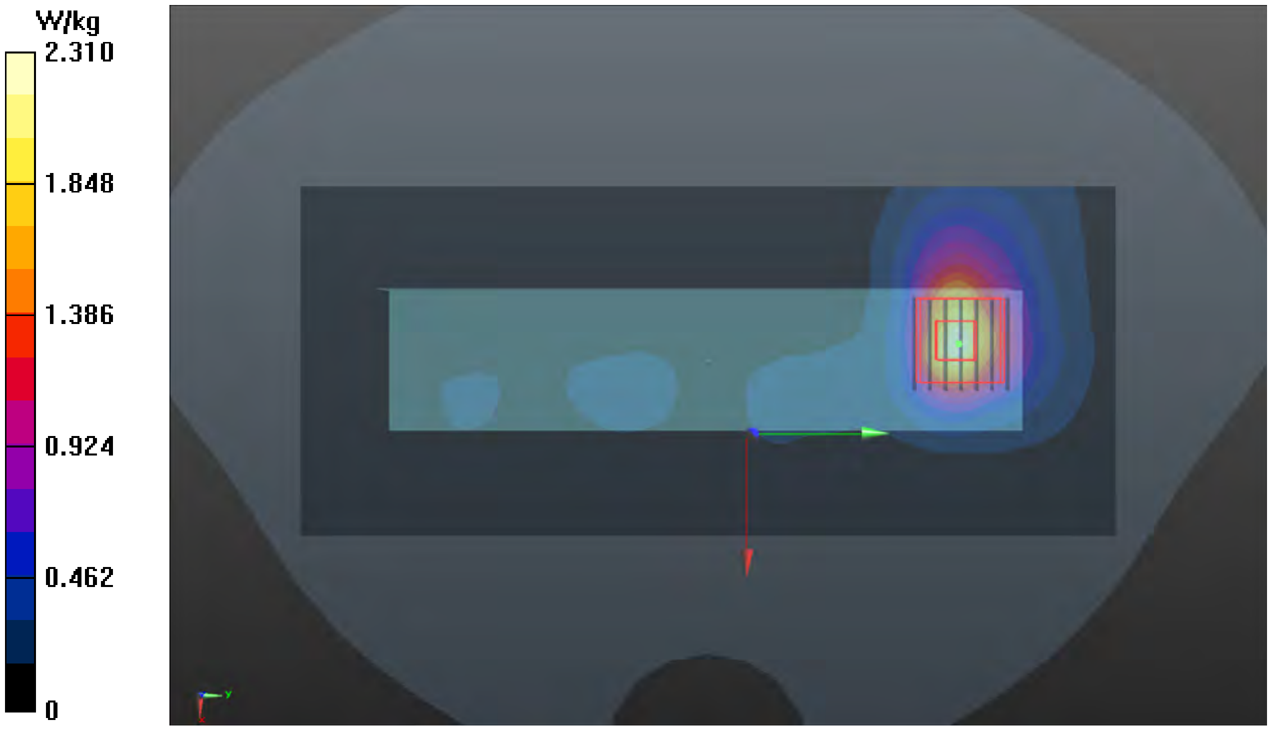
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0);
Frequency:5775 MHz;Duty Cycle: 1:1.19
Medium: H34T60N1_1008 Medium parameters used: f = 5775 MHz; σ = 5.198 S/m; ε_r = 35.748; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃ ; Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3820; ConvF(4.4, 4.4, 4.4) @ 5775 MHz; Calibrated: 2020/06/25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn914; Calibrated: 2020/06/22
- Phantom: Twin SAM Phantom_1823; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (91x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.31 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 21.23 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.75 W/kg
SAR(1 g) = 0.994 W/kg; SAR(10 g) = 0.389 W/kg (SAR corrected for target medium)
Smallest distance from peaks to all points 3 dB below = 10.5 mm
Ratio of SAR at M2 to SAR at M1 = 63.5%
Maximum value of SAR (measured) = 2.27 W/kg



P48 WLAN5.3G_802.11n HT40_Right Side_0mm_Ch54_Ant 0+1

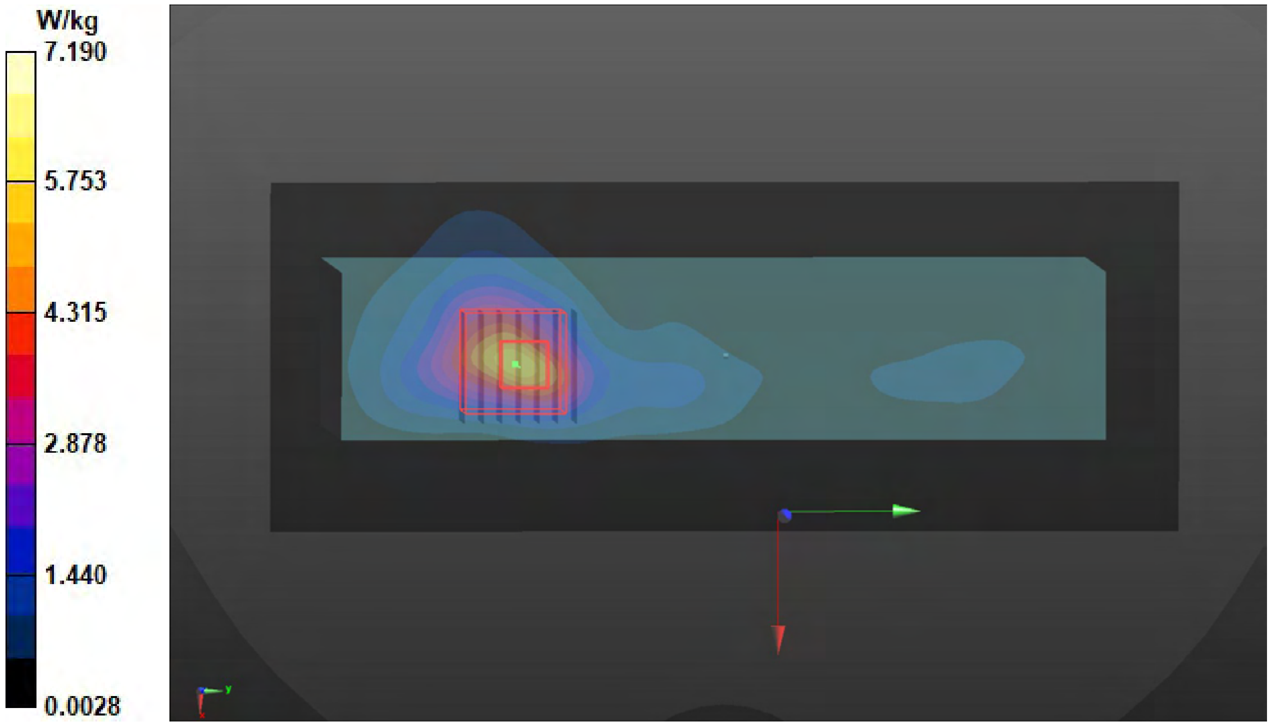
DUT: 200504C19

Communication System: UID 10599 - AAB, IEEE 802.11n (HT Mixed, 40MHz, MCS0);
Frequency: 5270 MHz;Duty Cycle: 1:1.1
Medium: H34T60N1_0924 Medium parameters used: f = 5270 MHz; σ = 4.888 S/m; ε_r = 36.551; ρ = 1000 kg/m^3
Ambient Temperature：23.7℃; Liquid Temperature：23.1℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.28, 5.28, 5.28) @ 5270 MHz; Calibrated: 2020/01/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 5.76 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 31.51 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 11.4 W/kg
SAR(1 g) = 2.99 W/kg; SAR(10 g) = 1.03 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 = 66%
Maximum value of SAR (measured) = 7.19 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/9/24

P49 WLAN5.6G_802.11ac VHT80_Left Side_0mm_Ch138_Ant 0

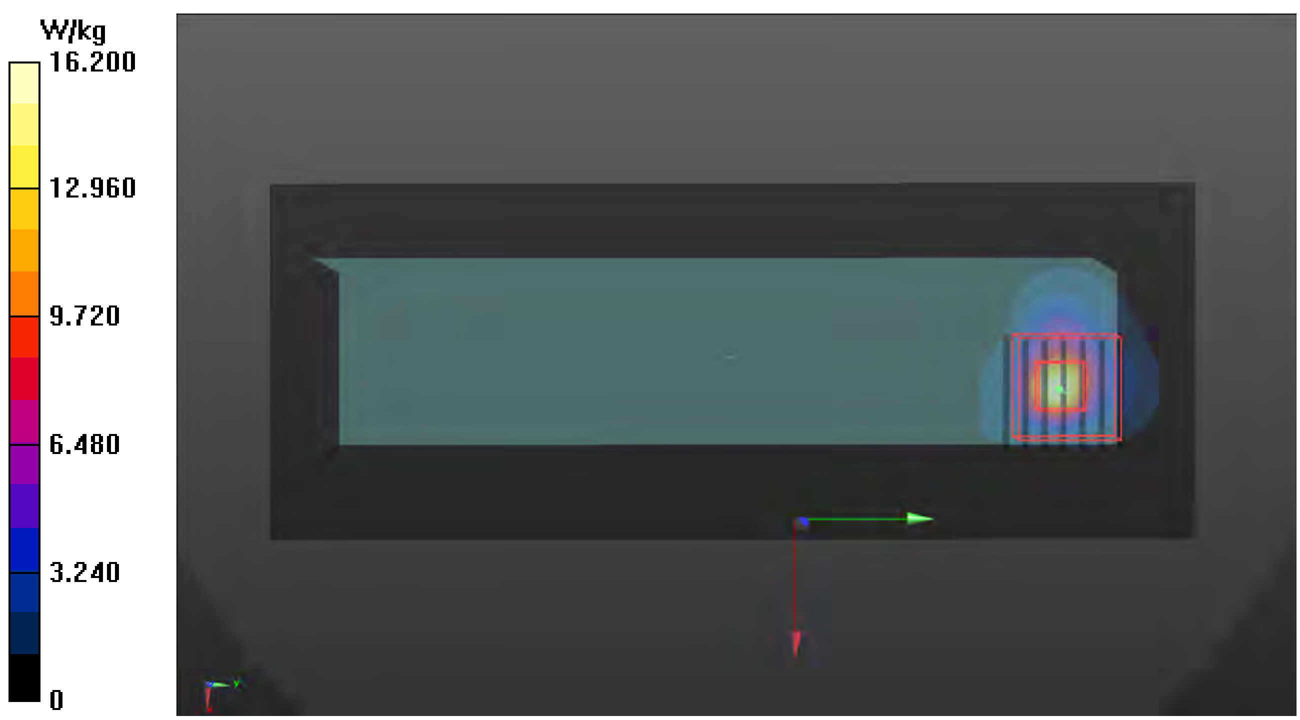
DUT: 200504C19

Communication System: UID 10544 - AAB, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5690 MHz;Duty Cycle: 1:1.04
Medium: H34T60N1_0924 Medium parameters used: f = 5690 MHz; σ = 5.278 S/m; ε_r = 35.739; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃； Liquid Temperature：23.1 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3971; ConvF(5.05, 5.05, 5.05) @ 5690 MHz; Calibrated: 2020/1/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2019/12/17
- Phantom: SAM Phantom_1982; Type: QD 000 P41 Ax;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.2 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 59.65 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(1 g) = 6.49 W/kg; SAR(10 g) = 1.79 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 = 64.4%
Maximum value of SAR (measured) = 17.0 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
Servizio svizzero di taratura
S Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **B.V. ADT (Auden)**

Certificate No: D750V3-1013_Aug19

CALIBRATION CERTIFICATE

Object	D750V3 - SN:1013
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	August 23, 2019

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

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

Issued: August 23, 2019

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

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

SAR result with Head TSL

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

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

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.034 ns

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

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

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 23.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

DASY52 Configuration:

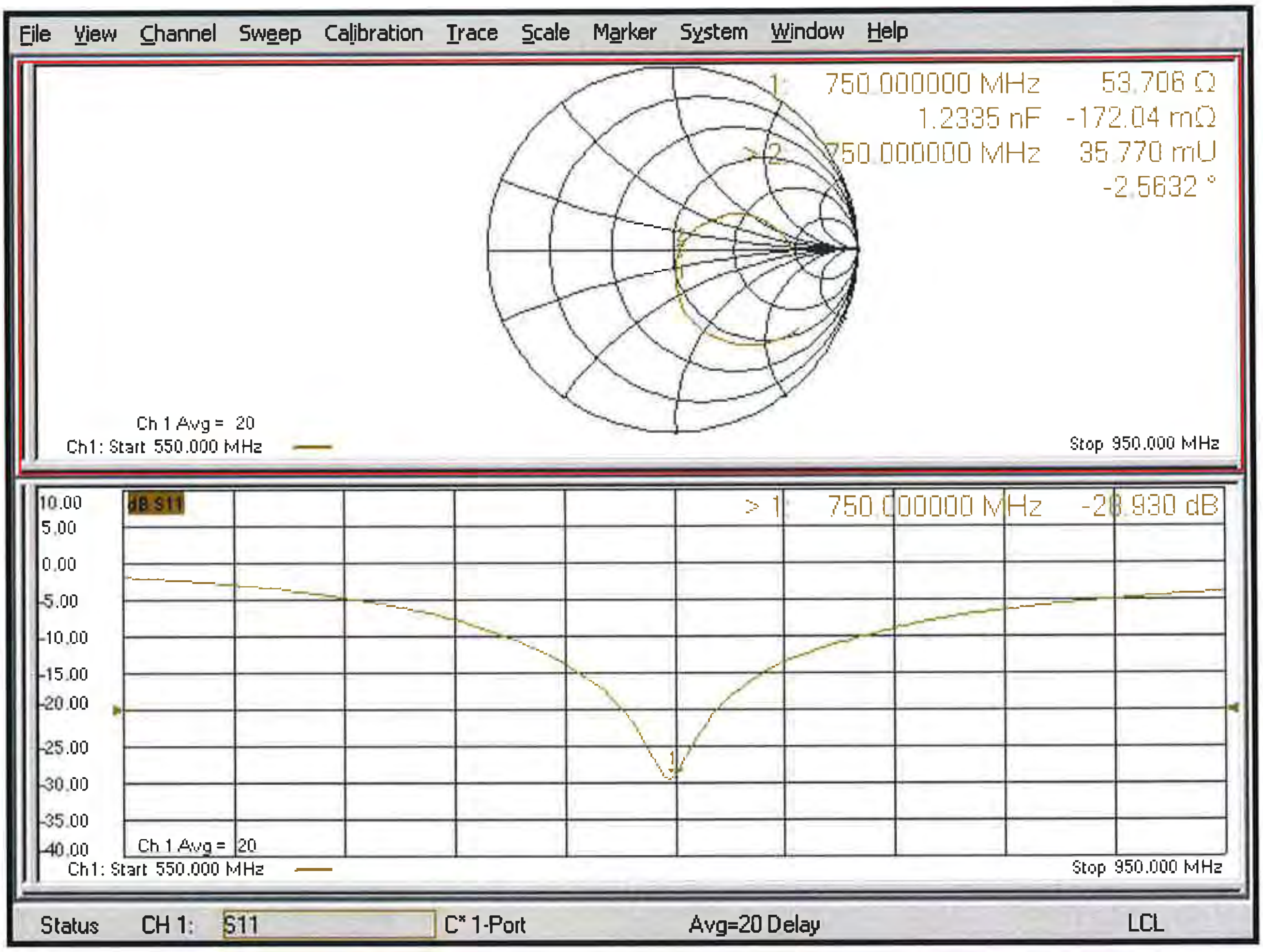
- Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07) @ 750 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

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

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

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

Impedance Measurement Plot for Head TSL



Calibration Laboratory of
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

Client **B.V. ADT (Auden)**

Certificate No: D750V3-1013_Aug20

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 13, 2020

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	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: BH9394 (20k)	31-Mar-20 (No. 217-03106)	Apr-21
Type-N mismatch combination	SN: 310982 / 06327	31-Mar-20 (No. 217-03104)	Apr-21
Reference Probe EX3DV4	SN: 7349	29-Jun-20 (No. EX3-7349_Jun20)	Jun-21
DAE4	SN: 601	27-Dec-19 (No. DAE4-601_Dec19)	Dec-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-19)	In house check: Oct-20

	Name	Function	Signature
Calibrated by:	Jeffrey Katzman	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 14, 2020

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.4 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.48 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.53 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.0 Ω - 0.8 jΩ
Return Loss	- 30.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.036 ns

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

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

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 13.08.2020

Test Laboratory: SPEAG, Zurich, Switzerland

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

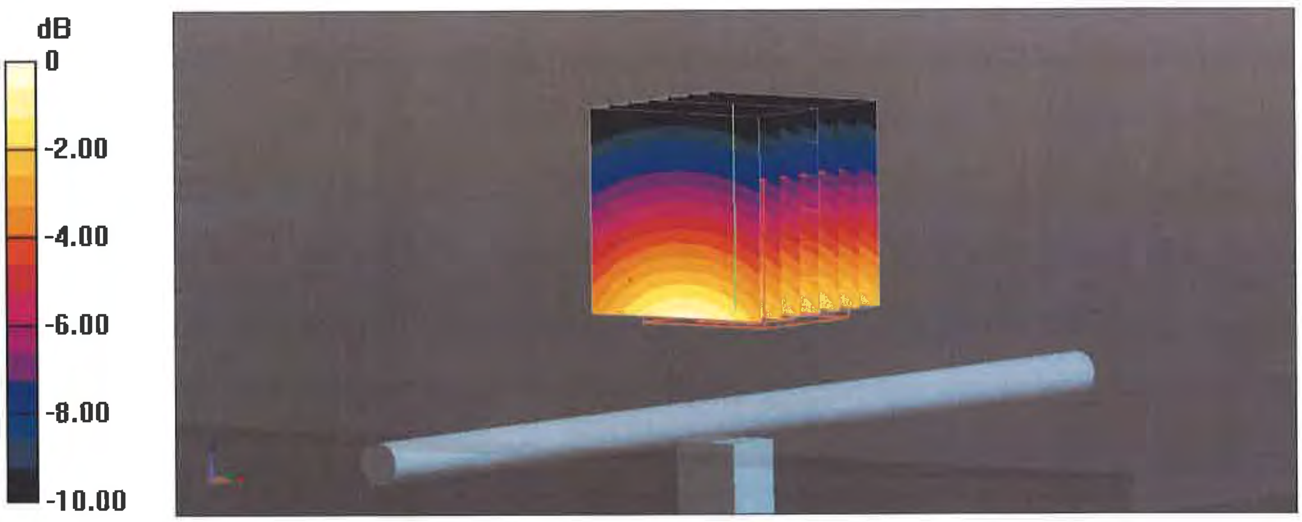
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; $\sigma = 0.91$ S/m; $\varepsilon_r = 42.4$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.97, 9.97, 9.97) @ 750 MHz; Calibrated: 29.06.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.12.2019
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.14 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.4 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 66.8%
Maximum value of SAR (measured) = 2.83 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

Impedance Measurement Plot for Head TSL