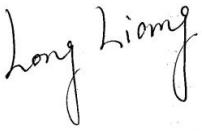
FCC SAR Test Report

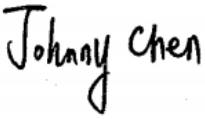
APPLICANT	:	Verifone, Inc.
EQUIPMENT	:	Point of Sale Terminal
BRAND NAME	:	Verifone
MODEL NAME	:	X990
FCC ID	:	B32X990
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

The product was received on Dec. 14, 2019 and testing was started from Jan. 01, 2020 and completed on Jan. 09, 2020. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.



Reviewed by: Long Liang / Supervisor



Approved by: Johnny Chen / Manager

Sporton International (ShenZhen) Inc.
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People's Republic of China

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History of this test report

Report No.	Version	Description	Issued Date
FA9D1403	01	Initial issue of report	Apr. 09, 2020

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Verifone, Inc., Point of Sale Terminal, X990,** are as follows.

Highest SAR Summary						
Equipment Class	Frequency Band		Highest SAR Summary		Highest Simultaneous Transmission 1g SAR (W/kg)	Highest Simultaneous Transmission 10g SAR (W/kg)
			Body (Separation 0mm)	Extremity (Separation 0mm)		
			1g SAR (W/kg)	10g SAR (W/kg)		
Licensed	GSM	GSM850	1.08	**1.36**	1.58	1.43
		GSM1900	0.55	0.64		
	WCDMA	Band II	0.77	1.12		
		Band IV	1.04	0.87		
		Band V	0.96	1.19		
	LTE	Band 5	0.78	1.25		
		Band 12	0.73	0.52		
		Band 13	0.58	0.52		
		Band 26	0.90	1.08		
		Band 4	1.01	0.99		
		Band 25	0.80	1.02		
		Band 2	0.86	1.27		
		Band 7	**1.15**	0.57		
DTS	WLAN	2.4GHz	<0.10	<0.10	1.23	1.41
NII		5GHz	0.43	0.14	1.58	1.43
Date of Testing:			2020/1/1~2020/1/9			

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Extremity 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CN1256	421272

Applicant	
Company Name	Verifone, Inc.
Address	Suite 200 1400 W Stanford Ranch Rd Rocklin CA 95765 USA

Manufacturer	
Company Name	Verifone Systems (China) Inc.
Address	Rm 318, south of Bld C18, Startup Headquarters Base, North of Fuyuan Road, Wuqing Development Area, Tianjin, China, 301700

3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Point of Sale Terminal
Brand Name	Verifone
Model Name	X990
FCC ID	B32X990
IMEI Code	SIM1: 869092034110574 SIM2: 869092034110582
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GPRS/EGPRS RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not supported) LTE: QPSK, 16QAM WLAN 2.4GHz : 802.11b/g/n HT20/HT40 WLAN 5GHz : 802.11a/n HT20/HT40 Bluetooth BR/EDR/LE NFC:ASK
HW Version	PVT
SW Version	V.2.0.0
EUT Stage	Identical Prototype

Remark:

1. This device does not support voice function.
2. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 33.
3. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
4. There are four types of EUT, the difference between them is different suppliers for the LCD Panel. We only choose the sample 1 to perform full SAR testing.

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	B32X990
Equipment Name	Point of Sale Terminal
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz\ LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
Uplink Modulations Used	QPSK / 16QAM
LTE Voice / Data requirements	Data only
LTE Category Version	R8 ,Cat 4
CA Support	Not Supported
LTE MPR permanently built-in by design	**Table 6.2.3E-1: Maximum Power Reduction (MPR) for Power Class 3** Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) | MPR (dB) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz QPSK: >2 | >2 | >1 | >4 | - | - | ≤ 1 QPSK: >5 | >5 | - | - | - | - | ≤ 2 16 QAM: ≤ 2 | ≤ 2 | >1 | >3 | - | - | ≤ 1 16QAM: >2 | >2 | >3 | >5 | - | - | ≤ 2
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 13								
	Bandwidth 5 MHz				Bandwidth 10 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782	
M	23230		782					
H	23255		784.5					
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

6. Specific Absorption Rate (SAR)

6.1 Introduction

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.

6.2 SAR Definition

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

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

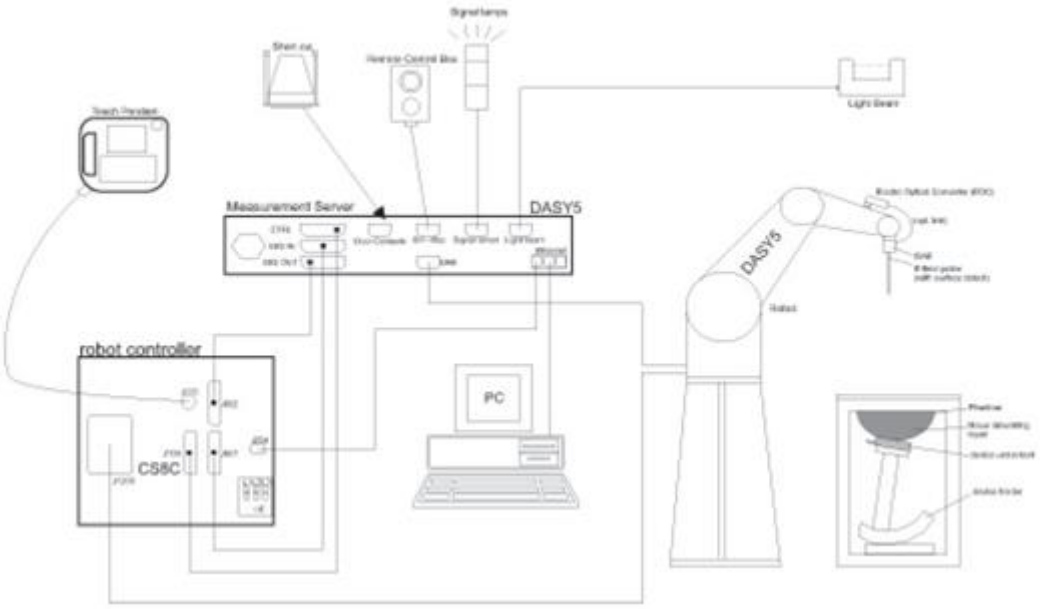
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

7.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).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. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g – >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

7.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

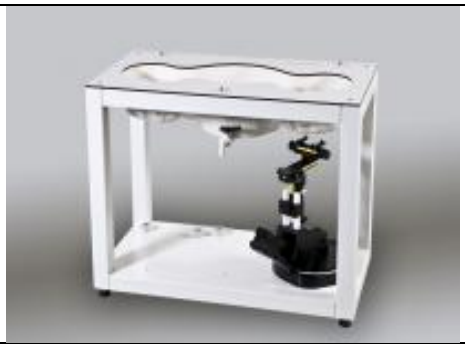
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

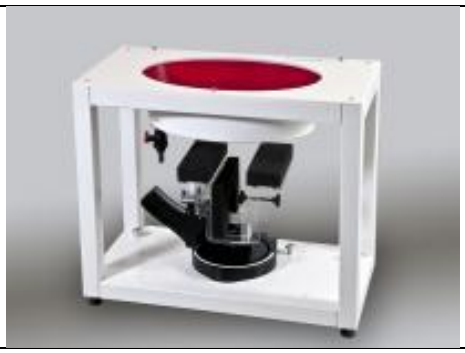
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c 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). And 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.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the 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

8.1 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

8.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

8.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
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
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 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 grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

8.5 Volume Scan Procedures

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.

8.6 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 drifts more than 5%, the SAR will be retested.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 06, 2018	Dec. 05, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 05, 2018	Dec. 04, 2021
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Jul. 30, 2018	Jul. 29, 2021
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 07, 2018	Dec. 06, 2021
SPEAG	2450MHz System Validation Kit	D2450V2	924	Apr. 15, 2019	Apr. 14, 2020
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 07, 2018	Dec. 06, 2021
SPEAG	5000MHz System Validation Kit	D5GHzV2	1167	Aug. 03, 2018	Aug. 02, 2021
SPEAG	Data Acquisition Electronics	DAE4	1437	Nov. 19, 2019	Nov. 18, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3975	Apr. 30, 2019	Apr. 29, 2020
SPEAG	SAM Twin Phantom	QD 000 P40 CD	TP-1113	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Radio communication analyzer	MT8821C	6201588572	Dec. 26, 2019	Dec. 25, 2020
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 22, 2019	Jul. 21, 2020
Agilent	Network Analyzer	E5071C	MY46523671	Oct. 17, 2019	Oct. 16, 2020
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Oct. 28, 2019	Oct. 27, 2020
Agilent	Signal Generator	N5181A	MY50145381	Dec. 26, 2019	Dec. 25, 2020
Anritsu	Power Senor	MA2411B	1306099	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Power Meter	ML2495A	1349001	Jul. 22, 2019	Jul. 21, 2020
Anritsu	Power Sensor	MA2411B	1207253	Dec. 26, 2019	Dec. 25, 2020
Anritsu	Power Meter	ML2495A	1218010	Dec. 26, 2019	Dec. 25, 2020
R&S	Spectrum Analyzer	FSP7	100818	Jul. 22, 2019	Jul. 21, 2020
LKM electronic	Hygrometer	DTM3000	3241	Jul. 25, 2019	Jul. 24, 2020
Anymetre	Thermo-Hygrometer	JR593	2015030904	Apr. 22, 2019	Apr. 21, 2020
ARRA	Power Divider	A3200-2	N/A	Note 1	
PASTERNACK	Dual Directional Coupler	PE2214-10	N/A	Note 1	
Agilent	Dual Directional Coupler	778D	50422	Note 1	
MCL	Attenuation1	BW-S10W5	N/A	Note 1	
Weinschel	Attenuation2	3M-20	N/A	Note 1	
Zhongjilianhe	Attenuation3	MVE2214-03	N/A	Note 1	
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

10. System Verification

10.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1.

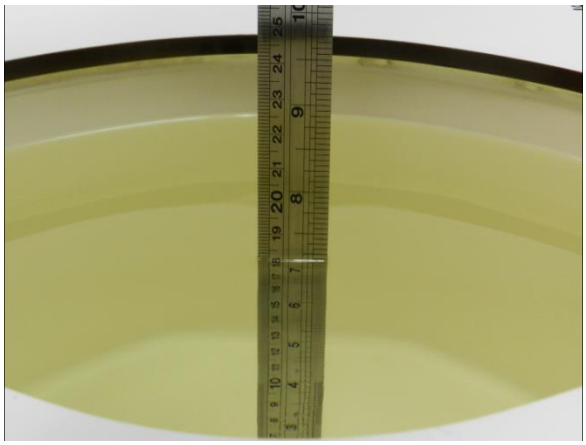


Fig 10.1 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.5	0.883	40.810	0.89	41.90	-0.79	-2.60	±5	2020/1/1
835	Head	22.5	0.910	42.910	0.90	41.50	1.11	3.40	±5	2020/1/2
1750	Head	22.7	1.355	38.395	1.37	40.10	-1.09	-4.25	±5	2020/1/4
1900	Head	22.7	1.385	39.053	1.40	40.00	-1.07	-2.37	±5	2020/1/5
2450	Head	22.6	1.856	38.095	1.80	39.20	3.11	-2.82	±5	2020/1/6
2600	Head	22.7	1.922	39.818	1.96	39.00	-1.94	2.10	±5	2020/1/6
5250	Head	22.4	4.526	37.282	4.71	35.95	-3.91	3.71	±5	2020/1/7
5600	Head	22.5	4.876	36.810	5.07	35.50	-3.83	3.69	±5	2020/1/8
5750	Head	22.5	5.014	36.603	5.22	35.35	-3.95	3.54	±5	2020/1/9

10.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

<1g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2020/1/1	750	Head	250	1099	3975	1437	2.18	8.52	8.72	2.35
2020/1/2	835	Head	250	4d162	3975	1437	2.53	9.61	10.12	5.31
2020/1/4	1750	Head	250	1137	3975	1437	9.03	36.50	36.12	-1.04
2020/1/5	1900	Head	250	5d182	3975	1437	9.87	39.60	39.48	-0.30
2020/1/6	2450	Head	250	924	3975	1437	12.90	52.10	51.6	-0.96
2020/1/6	2600	Head	250	1070	3975	1437	15.20	58.10	60.8	4.65
2020/1/7	5250	Head	100	1167	3975	1437	7.40	77.00	74	-3.90
2020/1/8	5600	Head	100	1167	3975	1437	8.28	80.80	82.8	2.48
2020/1/9	5750	Head	100	1167	3975	1437	7.65	76.90	76.5	-0.52

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2020/1/1	750	Head	250	1099	3975	1437	1.45	5.64	5.8	2.84
2020/1/2	835	Head	250	4d162	3975	1437	1.65	6.35	6.6	3.94
2020/1/4	1750	Head	250	1137	3975	1437	4.85	19.50	19.4	-0.51
2020/1/5	1900	Head	250	5d182	3975	1437	5.08	20.70	20.32	-1.84
2020/1/6	2450	Head	250	924	3975	1437	5.87	23.90	23.48	-1.76
2020/1/6	2600	Head	250	1070	3975	1437	6.54	26.10	26.16	0.23
2020/1/7	5250	Head	100	1167	3975	1437	2.04	22.00	20.4	-7.27
2020/1/8	5600	Head	100	1167	3975	1437	2.25	23.20	22.5	-3.02
2020/1/9	5750	Head	100	1167	3975	1437	2.09	21.60	20.9	-3.24

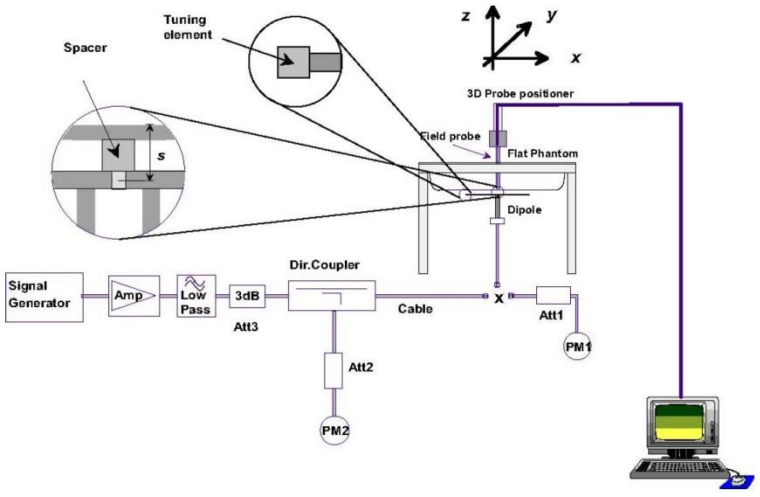


Fig 10.3.1 System Performance Check Setup

Fig 10.3.2 Setup Photo

11. RF Exposure Positions

11.1 SAR Testing for Device

(a) To position the device parallel to the phantom surface with either keypad up or down.

(b) To adjust the device parallel to the flat phantom.

(c) To adjust the distance between the device surface and the flat phantom to 0 cm.

Please refer to Appendix D for the test setup photos.

12. GSM/UMTS/LTE Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The 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. Therefore, the GPRS (2Tx slots) for GSM850 /GSM1900 is considered as the primary mode.
3. Other configurations of GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 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.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 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.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

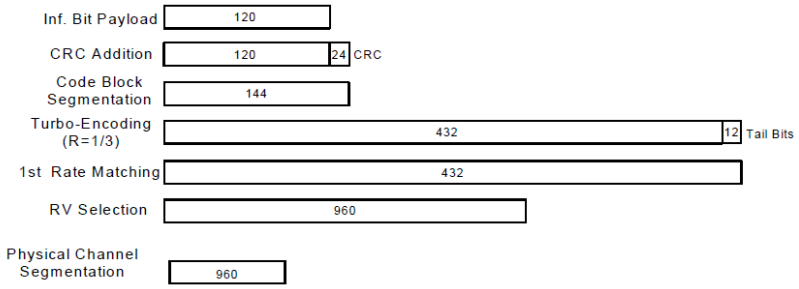


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for 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.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / 5 / B12 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

13. WiFi/Bluetooth Output Power (Unit: dBm)

General Note:

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, 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 for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

14. Bluetooth Exclusions Applied

Mode Band	Max Average power(dBm)	
	BR/EDR	LE
2.4GHz Bluetooth	6.0	2.0

Note:

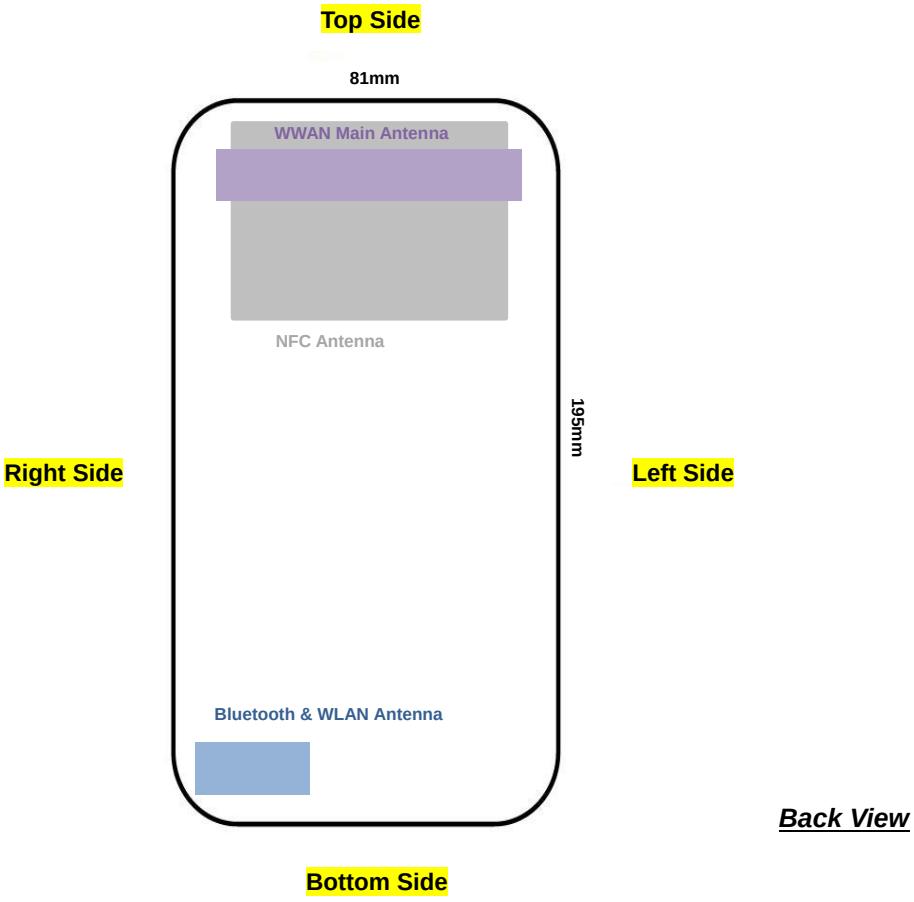
1. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	exclusion thresholds
6.0	< 5	2.48	1.3

Note:

Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. The test exclusion threshold is 1.3 which is <= 3, SAR testing is not required.

15. Antenna Location



16. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   · ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   · ≤ 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
   · ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is not required when the measured SAR is ≤0.8W/kg.
4. The following table“n/a”means the measured SAR is too small to find the 10g cube SAR.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The 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. Therefore, the GPRS (2Tx slots) for GSM850/GSM1900 is considered as the primary mode.
2. Other configurations of GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For 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.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

16.1 Body SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Front	0mm	189	836.4	30.93	31.5	1.140	0.03	0.907	1.034
	GSM850	GPRS (2 Tx slots)	Back	0mm	189	836.4	30.93	31.5	1.140	-0.12	0.586	0.668
01	GSM850	GPRS (2 Tx slots)	Front	0mm	128	824.2	30.79	31.5	1.178	-0.14	0.914	**1.076**
	GSM850	GPRS (2 Tx slots)	Front	0mm	251	848.8	30.89	31.5	1.151	0.1	0.840	0.967
	GSM1900	GPRS (2 Tx slots)	Front	0mm	661	1880	29.15	30.0	1.216	0.06	0.143	0.174
	GSM1900	GPRS (2 Tx slots)	Back	0mm	661	1880	29.15	30.0	1.216	0.05	0.279	0.339
	GSM1900	GPRS (2 Tx slots)	Back	0mm	512	1850.2	28.94	30.0	1.276	0.04	0.241	0.308
02	GSM1900	GPRS (2 Tx slots)	Back	0mm	810	1909.8	28.94	30.0	1.276	-0.15	0.429	**0.548**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	9400	1880	23.32	24.5	1.312	0.19	0.236	0.310
	WCDMA II	RMC 12.2Kbps	Back	0mm	9400	1880	23.32	24.5	1.312	0.05	0.547	0.718
	WCDMA II	RMC 12.2Kbps	Back	0mm	9262	1852.4	23.31	24.5	1.315	0.02	0.539	0.709
03	WCDMA II	RMC 12.2Kbps	Back	0mm	9538	1907.6	23.17	24.5	1.358	-0.09	0.566	**0.769**
	WCDMA IV	RMC 12.2Kbps	Front	0mm	1413	1732.6	23.25	24.5	1.334	0.04	0.229	0.305
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1413	1732.6	23.25	24.5	1.334	0.07	0.582	0.776
04	WCDMA IV	RMC 12.2Kbps	Back	0mm	1312	1712.4	23.21	24.5	1.346	0.03	0.776	**1.044**
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1513	1752.6	23.09	24.5	1.384	0.13	0.621	0.859
	WCDMA V	RMC 12.2Kbps	Front	0mm	4182	836.4	23.34	24.5	1.306	0.14	0.696	0.909
	WCDMA V	RMC 12.2Kbps	Back	0mm	4182	836.4	23.34	24.5	1.306	-0.16	0.553	0.722
05	WCDMA V	RMC 12.2Kbps	Front	0mm	4132	826.4	23.16	24.5	1.361	-0.04	0.703	**0.957**
	WCDMA V	RMC 12.2Kbps	Front	0mm	4233	846.6	23.21	24.5	1.346	0.03	0.651	0.876

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 5	10M	QPSK	1	0	Front	0mm	20525	836.5	23.93	25.0	1.279	0.05	0.611	**0.782**
	LTE Band 5	10M	QPSK	1	0	Back	0mm	20525	836.5	23.93	25.0	1.279	0.04	0.574	0.734
	LTE Band 5	10M	QPSK	25	0	Front	0mm	20525	836.5	22.84	24.0	1.306	0.15	0.577	0.754
	LTE Band 5	10M	QPSK	25	0	Back	0mm	20525	836.5	22.84	24.0	1.306	0.17	0.456	0.596
	LTE Band 12	10M	QPSK	1	25	Front	0mm	23095	707.5	24.09	25.0	1.233	-0.18	0.215	0.265
07	LTE Band 12	10M	QPSK	1	25	Back	0mm	23095	707.5	24.09	25.0	1.233	-0.08	0.594	**0.732**
	LTE Band 12	10M	QPSK	25	12	Front	0mm	23095	707.5	22.89	24.0	1.291	0.11	0.165	0.213
	LTE Band 12	10M	QPSK	25	12	Back	0mm	23095	707.5	22.89	24.0	1.291	0.05	0.445	0.575
	LTE Band 13	10M	QPSK	1	0	Front	0mm	23230	782	23.19	24.5	1.352	0.08	0.335	0.453
08	LTE Band 13	10M	QPSK	1	0	Back	0mm	23230	782	23.19	24.5	1.352	-0.03	0.428	**0.579**
	LTE Band 13	10M	QPSK	25	0	Front	0mm	23230	782	22.04	23.5	1.400	-0.17	0.251	0.351
	LTE Band 13	10M	QPSK	25	0	Back	0mm	23230	782	22.04	23.5	1.400	-0.12	0.352	0.493
	LTE Band 26	15M	QPSK	1	0	Front	0mm	26965	841.5	23.41	24.5	1.285	0.14	0.620	0.797
	LTE Band 26	15M	QPSK	1	0	Back	0mm	26965	841.5	23.41	24.5	1.285	0.16	0.490	0.630
	LTE Band 26	15M	QPSK	1	0	Front	0mm	26765	821.5	23.11	24.5	1.377	-0.15	0.638	0.879
09	LTE Band 26	15M	QPSK	1	0	Front	0mm	26865	831.5	23.24	24.5	1.337	-0.05	0.670	**0.896**
	LTE Band 26	15M	QPSK	36	0	Front	0mm	26965	841.5	22.28	23.5	1.324	0.02	0.453	0.600
	LTE Band 26	15M	QPSK	36	0	Back	0mm	26965	841.5	22.28	23.5	1.324	0.05	0.394	0.522
	LTE Band 26	15M	QPSK	75	0	Front	0mm	26965	841.5	22.20	23.5	1.349	-0.09	0.460	0.621
	LTE Band 4	20M	QPSK	1	0	Front	0mm	20175	1732.5	23.94	25.0	1.276	0.06	0.259	0.331
10	LTE Band 4	20M	QPSK	1	0	Back	0mm	20175	1732.5	23.94	25.0	1.276	-0.08	0.787	**1.005**
	LTE Band 4	20M	QPSK	50	0	Front	0mm	20175	1732.5	22.78	24.0	1.324	0.08	0.147	0.195
	LTE Band 4	20M	QPSK	50	0	Back	0mm	20175	1732.5	22.78	24.0	1.324	0.08	0.536	0.710
	LTE Band 4	20M	QPSK	100	0	Back	0mm	20175	1732.5	22.73	24.0	1.340	-0.04	0.561	0.752
	LTE Band 25	20M	QPSK	1	49	Front	0mm	26340	1880	23.36	24.5	1.300	0.03	0.236	0.307
	LTE Band 25	20M	QPSK	1	49	Back	0mm	26340	1880	23.36	24.5	1.300	0.07	0.545	0.709
	LTE Band 25	20M	QPSK	1	49	Back	0mm	26140	1860	23.01	24.5	1.409	0.1	0.511	0.720
11	LTE Band 25	20M	QPSK	1	49	Back	0mm	26590	1905	22.97	24.5	1.422	-0.01	0.560	**0.797**
	LTE Band 25	20M	QPSK	50	0	Front	0mm	26340	1880	22.28	23.5	1.324	0.13	0.189	0.250
	LTE Band 25	20M	QPSK	50	0	Back	0mm	26340	1880	22.28	23.5	1.324	0.09	0.414	0.548
	LTE Band 2	20M	QPSK	1	0	Front	0mm	18900	1880	23.74	25.0	1.337	-0.01	0.271	0.362
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18900	1880	23.74	25.0	1.337	0.06	0.624	0.834
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18700	1860	23.70	25.0	1.349	0.03	0.540	0.728
12	LTE Band 2	20M	QPSK	1	0	Back	0mm	19100	1900	23.68	25.0	1.355	-0.19	0.633	**0.858**
	LTE Band 2	20M	QPSK	50	0	Front	0mm	18900	1880	22.71	24.0	1.346	0.09	0.217	0.292
	LTE Band 2	20M	QPSK	50	0	Back	0mm	18900	1880	22.71	24.0	1.346	0.05	0.494	0.665
	LTE Band 2	20M	QPSK	100	0	Back	0mm	18900	1880	22.71	24.0	1.346	-0.09	0.509	0.685
	LTE Band 7	20M	QPSK	1	0	Front	0mm	21100	2535	19.79	20.0	1.050	0.07	0.126	0.132
	LTE Band 7	20M	QPSK	1	0	Back	0mm	21100	2535	19.79	20.0	1.050	-0.01	0.825	0.866
	LTE Band 7	20M	QPSK	1	0	Back	0mm	20850	2510	19.72	20.0	1.067	0.03	0.651	0.694
13	LTE Band 7	20M	QPSK	1	0	Back	0mm	21350	2560	19.78	20.0	1.052	0.14	1.095	**1.152**
	LTE Band 7	20M	QPSK	50	0	Front	0mm	21100	2535	18.75	19.0	1.059	-0.01	0.124	0.131
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21100	2535	18.75	19.0	1.059	0.09	0.673	0.713
	LTE Band 7	20M	QPSK	50	0	Back	0mm	20850	2510	18.69	19.0	1.074	0.02	0.560	0.601
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21350	2560	18.74	19.0	1.062	0.05	0.794	0.843
	LTE Band 7	20M	QPSK	100	0	Back	0mm	21100	2535	18.69	19.0	1.074	0.02	0.658	0.707

<WLAN2.4GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	0.04	0.025	0.030
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	-0.13	0.047	0.057
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	1	2412	15.20	16.0	1.202	97.6	1.025	0.03	0.019	0.024
14	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	11	2462	15.00	16.0	1.259	97.6	1.025	0.02	0.058	**0.074**

<WLAN 5GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	-0.09	0.004	0.006
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	0.09	0.202	0.289
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	52	5260	12.35	13.5	1.302	87.44	1.144	0.08	0.201	0.299
15	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	56	5280	12.44	13.5	1.276	87.44	1.144	0.01	0.213	**0.311**
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	64	5320	12.21	13.5	1.345	87.44	1.144	0.12	0.062	0.095
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	0.1	0.011	0.014
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	-0.14	0.310	0.394
16	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	100	5500	12.74	14.0	1.336	87.44	1.144	0.01	0.278	**0.425**
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	132	5660	12.95	14.0	1.274	87.44	1.144	0.03	0.260	0.379
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	140	5700	12.96	14.0	1.270	87.44	1.144	0.12	0.220	0.320
	WLAN5.8GHz	802.11a 6Mbps	Front	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.08	0.011	0.015
	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.15	0.233	0.320
17	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	157	5785	12.36	13.5	1.299	87.44	1.144	0.05	0.270	**0.401**
	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	165	5825	12.46	13.5	1.270	87.44	1.144	0.03	0.261	0.379

16.2 Extremity SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Front	0mm	189	836.4	30.93	31.5	1.140	0.03	0.495	0.564
	GSM850	GPRS (2 Tx slots)	Back	0mm	189	836.4	30.93	31.5	1.140	-0.12	0.361	0.412
	GSM850	GPRS (2 Tx slots)	Right Side	0mm	189	836.4	30.93	31.5	1.140	0.04	1.120	1.277
	GSM850	GPRS (2 Tx slots)	Left Side	0mm	189	836.4	30.93	31.5	1.140	0.03	0.215	0.245
	GSM850	GPRS (2 Tx slots)	Top Side	0mm	189	836.4	30.93	31.5	1.140	0.05	0.283	0.323
	GSM850	GPRS (2 Tx slots)	Bottom Side	0mm	189	836.4	30.93	31.5	1.140	0.07	0.040	0.046
	GSM850	GPRS (2 Tx slots)	Front	0mm	128	824.2	30.79	31.5	1.178	-0.14	0.510	0.601
	GSM850	GPRS (2 Tx slots)	Front	0mm	251	848.8	30.89	31.5	1.151	0.1	0.463	0.533
	GSM850	GPRS (2 Tx slots)	Right Side	0mm	128	824.2	30.79	31.5	1.178	-0.1	0.950	1.119
18	GSM850	GPRS (2 Tx slots)	Right Side	0mm	251	848.8	30.89	31.5	1.151	-0.01	1.180	**1.358**
	GSM1900	GPRS (2 Tx slots)	Front	0mm	661	1880	29.15	30.0	1.216	0.06	0.082	0.100
	GSM1900	GPRS (2 Tx slots)	Back	0mm	661	1880	29.15	30.0	1.216	0.05	0.154	0.187
	GSM1900	GPRS (2 Tx slots)	Right Side	0mm	661	1880	29.15	30.0	1.216	0.13	0.347	0.422
	GSM1900	GPRS (2 Tx slots)	Left Side	0mm	661	1880	29.15	30.0	1.216	-0.13	0.233	0.283
	GSM1900	GPRS (2 Tx slots)	Top Side	0mm	661	1880	29.15	30.0	1.216	-0.08	0.090	0.110
	GSM1900	GPRS (2 Tx slots)	Bottom Side	0mm	661	1880	29.15	30.0	1.216	0.11	0.066	0.080
	GSM1900	GPRS (2 Tx slots)	Back	0mm	512	1850.2	28.94	30.0	1.276	0.04	0.124	0.158
	GSM1900	GPRS (2 Tx slots)	Back	0mm	810	1909.8	28.94	30.0	1.276	-0.15	0.248	0.317
	GSM1900	GPRS (2 Tx slots)	Right Side	0mm	512	1850.2	28.94	30.0	1.276	0.07	0.322	0.411
19	GSM1900	GPRS (2 Tx slots)	Right Side	0mm	810	1909.8	28.94	30.0	1.276	0.02	0.503	**0.642**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	9400	1880	23.32	24.5	1.312	0.19	0.133	0.175
	WCDMA II	RMC 12.2Kbps	Back	0mm	9400	1880	23.32	24.5	1.312	0.05	0.321	0.421
	WCDMA II	RMC 12.2Kbps	Right Side	0mm	9400	1880	23.32	24.5	1.312	0.09	0.705	0.925
	WCDMA II	RMC 12.2Kbps	Left Side	0mm	9400	1880	23.32	24.5	1.312	0.13	0.533	0.699
	WCDMA II	RMC 12.2Kbps	Top Side	0mm	9400	1880	23.32	24.5	1.312	0.03	0.156	0.205
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9400	1880	23.32	24.5	1.312	0.14	0.116	0.152
	WCDMA II	RMC 12.2Kbps	Back	0mm	9262	1852.4	23.31	24.5	1.315	0.02	0.276	0.363
	WCDMA II	RMC 12.2Kbps	Back	0mm	9538	1907.6	23.17	24.5	1.358	-0.09	0.292	0.397
	WCDMA II	RMC 12.2Kbps	Right Side	0mm	9262	1852.4	23.31	24.5	1.315	0.07	0.678	0.892
20	WCDMA II	RMC 12.2Kbps	Right Side	0mm	9538	1907.6	23.17	24.5	1.358	0.06	0.823	**1.118**
	WCDMA IV	RMC 12.2Kbps	Front	0mm	1413	1732.6	23.25	24.5	1.334	0.04	0.138	0.184
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1413	1732.6	23.25	24.5	1.334	0.07	0.321	0.428
	WCDMA IV	RMC 12.2Kbps	Right Side	0mm	1413	1732.6	23.25	24.5	1.334	0.12	0.431	0.575
	WCDMA IV	RMC 12.2Kbps	Left Side	0mm	1413	1732.6	23.25	24.5	1.334	0.06	0.523	0.697
	WCDMA IV	RMC 12.2Kbps	Top Side	0mm	1413	1732.6	23.25	24.5	1.334	-0.12	0.107	0.143
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	1413	1732.6	23.25	24.5	1.334	0.17	0.077	0.102
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1312	1712.4	23.21	24.5	1.346	0.03	0.386	0.520
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1513	1752.6	23.09	24.5	1.384	0.13	0.310	0.429
21	WCDMA IV	RMC 12.2Kbps	Left Side	0mm	1312	1712.4	23.21	24.5	1.346	-0.17	0.644	**0.867**
	WCDMA IV	RMC 12.2Kbps	Left Side	0mm	1513	1752.6	23.09	24.5	1.384	0.08	0.581	0.804
	WCDMA V	RMC 12.2Kbps	Front	0mm	4182	836.4	23.34	24.5	1.306	0.14	0.377	0.492
	WCDMA V	RMC 12.2Kbps	Back	0mm	4182	836.4	23.34	24.5	1.306	-0.16	0.374	0.489
	WCDMA V	RMC 12.2Kbps	Right Side	0mm	4182	836.4	23.34	24.5	1.306	-0.15	0.211	0.276
	WCDMA V	RMC 12.2Kbps	Left Side	0mm	4182	836.4	23.34	24.5	1.306	-0.1	0.893	1.166
	WCDMA V	RMC 12.2Kbps	Top Side	0mm	4182	836.4	23.34	24.5	1.306	-0.19	0.246	0.321
	WCDMA V	RMC 12.2Kbps	Bottom Side	0mm	4182	836.4	23.34	24.5	1.306	0.02	0.038	0.049
	WCDMA V	RMC 12.2Kbps	Front	0mm	4132	826.4	23.16	24.5	1.361	-0.04	0.373	0.508
	WCDMA V	RMC 12.2Kbps	Front	0mm	4233	846.6	23.21	24.5	1.346	0.03	0.353	0.475
	WCDMA V	RMC 12.2Kbps	Left Side	0mm	4132	826.4	23.16	24.5	1.361	-0.13	0.749	1.020
22	WCDMA V	RMC 12.2Kbps	Left Side	0mm	4233	846.6	23.21	24.5	1.346	-0.15	0.883	**1.188**

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 5	10M	QPSK	1	0	Front	0mm	20525	836.5	23.93	25.0	1.279	0.05	0.340	0.435
	LTE Band 5	10M	QPSK	1	0	Back	0mm	20525	836.5	23.93	25.0	1.279	0.04	0.387	0.495
	LTE Band 5	10M	QPSK	1	0	Right Side	0mm	20525	836.5	23.93	25.0	1.279	0.07	0.197	0.252
23	LTE Band 5	10M	QPSK	1	0	Left Side	0mm	20525	836.5	23.93	25.0	1.279	-0.07	0.974	**1.246**
	LTE Band 5	10M	QPSK	1	0	Top Side	0mm	20525	836.5	23.93	25.0	1.279	0.16	0.318	0.407
	LTE Band 5	10M	QPSK	1	0	Bottom Side	0mm	20525	836.5	23.93	25.0	1.279	-0.17	0.035	0.045
	LTE Band 5	10M	QPSK	25	0	Front	0mm	20525	836.5	22.84	24.0	1.306	0.15	0.345	0.451
	LTE Band 5	10M	QPSK	25	0	Back	0mm	20525	836.5	22.84	24.0	1.306	0.17	0.306	0.400
	LTE Band 5	10M	QPSK	25	0	Right Side	0mm	20525	836.5	22.84	24.0	1.306	0.03	0.161	0.210
	LTE Band 5	10M	QPSK	25	0	Left Side	0mm	20525	836.5	22.84	24.0	1.306	0.12	0.792	1.034
	LTE Band 5	10M	QPSK	25	0	Top Side	0mm	20525	836.5	22.84	24.0	1.306	0.12	0.231	0.302
	LTE Band 5	10M	QPSK	25	0	Bottom Side	0mm	20525	836.5	22.84	24.0	1.306	0.18	0.025	0.033
	LTE Band 12	10M	QPSK	1	25	Front	0mm	23095	707.5	24.09	25.0	1.233	-0.18	0.142	0.175
	LTE Band 12	10M	QPSK	1	25	Back	0mm	23095	707.5	24.09	25.0	1.233	-0.08	0.412	0.508
24	LTE Band 12	10M	QPSK	1	25	Right Side	0mm	23095	707.5	24.09	25.0	1.233	0.02	0.418	**0.515**
	LTE Band 12	10M	QPSK	1	25	Left Side	0mm	23095	707.5	24.09	25.0	1.233	-0.15	0.395	0.487
	LTE Band 12	10M	QPSK	1	25	Top Side	0mm	23095	707.5	24.09	25.0	1.233	0.07	0.252	0.311
	LTE Band 12	10M	QPSK	1	25	Bottom Side	0mm	23095	707.5	24.09	25.0	1.233	0.17	0.018	0.022
	LTE Band 12	10M	QPSK	25	12	Front	0mm	23095	707.5	22.89	24.0	1.291	0.11	0.109	0.141
	LTE Band 12	10M	QPSK	25	12	Back	0mm	23095	707.5	22.89	24.0	1.291	0.05	0.305	0.394
	LTE Band 12	10M	QPSK	25	12	Right Side	0mm	23095	707.5	22.89	24.0	1.291	0.03	0.324	0.418
	LTE Band 12	10M	QPSK	25	12	Left Side	0mm	23095	707.5	22.89	24.0	1.291	0.05	0.316	0.408
	LTE Band 12	10M	QPSK	25	12	Top Side	0mm	23095	707.5	22.89	24.0	1.291	0.15	0.199	0.257
	LTE Band 12	10M	QPSK	25	12	Bottom Side	0mm	23095	707.5	22.89	24.0	1.291	0.06	0.014	0.018
	LTE Band 13	10M	QPSK	1	0	Front	0mm	23230	782	23.19	24.5	1.352	0.08	0.208	0.281
	LTE Band 13	10M	QPSK	1	0	Back	0mm	23230	782	23.19	24.5	1.352	-0.03	0.294	0.398
25	LTE Band 13	10M	QPSK	1	0	Right Side	0mm	23230	782	23.19	24.5	1.352	-0.01	0.387	**0.523**
	LTE Band 13	10M	QPSK	1	0	Left Side	0mm	23230	782	23.19	24.5	1.352	0.16	0.379	0.512
	LTE Band 13	10M	QPSK	1	0	Top Side	0mm	23230	782	23.19	24.5	1.352	0.09	0.135	0.183
	LTE Band 13	10M	QPSK	1	0	Bottom Side	0mm	23230	782	23.19	24.5	1.352	0.13	0.031	0.042
	LTE Band 13	10M	QPSK	25	0	Front	0mm	23230	782	22.04	23.5	1.400	-0.17	0.159	0.223
	LTE Band 13	10M	QPSK	25	0	Back	0mm	23230	782	22.04	23.5	1.400	-0.12	0.237	0.332
	LTE Band 13	10M	QPSK	25	0	Right Side	0mm	23230	782	22.04	23.5	1.400	0.05	0.319	0.446
	LTE Band 13	10M	QPSK	25	0	Left Side	0mm	23230	782	22.04	23.5	1.400	0.02	0.327	0.458
	LTE Band 13	10M	QPSK	25	0	Top Side	0mm	23230	782	22.04	23.5	1.400	0.17	0.121	0.169
	LTE Band 13	10M	QPSK	25	0	Bottom Side	0mm	23230	782	22.04	23.5	1.400	0.19	0.023	0.033

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 26	15M	QPSK	1	0	Front	0mm	26965	841.5	23.41	24.5	1.285	0.14	0.332	0.427
	LTE Band 26	15M	QPSK	1	0	Back	0mm	26965	841.5	23.41	24.5	1.285	0.16	0.327	0.420
	LTE Band 26	15M	QPSK	1	0	Right Side	0mm	26965	841.5	23.41	24.5	1.285	0.08	0.177	0.227
26	LTE Band 26	15M	QPSK	1	0	Left Side	0mm	26965	841.5	23.41	24.5	1.285	0.13	0.841	**1.081**
	LTE Band 26	15M	QPSK	1	0	Top Side	0mm	26965	841.5	23.41	24.5	1.285	-0.16	0.257	0.330
	LTE Band 26	15M	QPSK	1	0	Bottom Side	0mm	26965	841.5	23.41	24.5	1.285	0.08	0.034	0.043
	LTE Band 26	15M	QPSK	1	0	Left Side	0mm	26765	821.5	23.11	24.5	1.377	0.08	0.660	0.909
	LTE Band 26	15M	QPSK	1	0	Left Side	0mm	26865	831.5	23.24	24.5	1.337	0.16	0.750	1.002
	LTE Band 26	15M	QPSK	1	0	Front	0mm	26765	821.5	23.11	24.5	1.377	-0.15	0.350	0.482
	LTE Band 26	15M	QPSK	1	0	Front	0mm	26865	831.5	23.24	24.5	1.337	-0.05	0.354	0.473
	LTE Band 26	15M	QPSK	36	0	Front	0mm	26965	841.5	22.28	23.5	1.324	0.02	0.267	0.354
	LTE Band 26	15M	QPSK	36	0	Back	0mm	26965	841.5	22.28	23.5	1.324	0.05	0.263	0.348
	LTE Band 26	15M	QPSK	36	0	Right Side	0mm	26965	841.5	22.28	23.5	1.324	0.14	0.149	0.197
	LTE Band 26	15M	QPSK	36	0	Left Side	0mm	26965	841.5	22.28	23.5	1.324	-0.14	0.692	0.916
	LTE Band 26	15M	QPSK	36	0	Top Side	0mm	26965	841.5	22.28	23.5	1.324	0.09	0.179	0.237
	LTE Band 26	15M	QPSK	36	0	Bottom Side	0mm	26965	841.5	22.28	23.5	1.324	0.07	0.027	0.036
	LTE Band 4	20M	QPSK	1	0	Front	0mm	20175	1732.5	23.94	25.0	1.276	0.06	0.151	0.193
	LTE Band 4	20M	QPSK	1	0	Back	0mm	20175	1732.5	23.94	25.0	1.276	-0.08	0.395	0.504
	LTE Band 4	20M	QPSK	1	0	Right Side	0mm	20175	1732.5	23.94	25.0	1.276	-0.17	0.418	0.534
27	LTE Band 4	20M	QPSK	1	0	Left Side	0mm	20175	1732.5	23.94	25.0	1.276	0.01	0.772	**0.985**
	LTE Band 4	20M	QPSK	1	0	Top Side	0mm	20175	1732.5	23.94	25.0	1.276	0.03	0.118	0.151
	LTE Band 4	20M	QPSK	1	0	Bottom Side	0mm	20175	1732.5	23.94	25.0	1.276	0.05	0.078	0.099
	LTE Band 4	20M	QPSK	50	0	Front	0mm	20175	1732.5	22.78	24.0	1.324	0.08	0.090	0.119
	LTE Band 4	20M	QPSK	50	0	Back	0mm	20175	1732.5	22.78	24.0	1.324	0.08	0.269	0.356
	LTE Band 4	20M	QPSK	50	0	Right Side	0mm	20175	1732.5	22.78	24.0	1.324	0.06	0.353	0.467
	LTE Band 4	20M	QPSK	50	0	Left Side	0mm	20175	1732.5	22.78	24.0	1.324	0.07	0.468	0.620
	LTE Band 4	20M	QPSK	50	0	Top Side	0mm	20175	1732.5	22.78	24.0	1.324	0.05	0.089	0.118
	LTE Band 4	20M	QPSK	50	0	Bottom Side	0mm	20175	1732.5	22.78	24.0	1.324	0.03	0.057	0.076
	LTE Band 25	20M	QPSK	1	49	Front	0mm	26340	1880	23.36	24.5	1.300	0.03	0.139	0.181
	LTE Band 25	20M	QPSK	1	49	Back	0mm	26340	1880	23.36	24.5	1.300	0.07	0.309	0.402
	LTE Band 25	20M	QPSK	1	49	Right Side	0mm	26340	1880	23.36	24.5	1.300	-0.01	0.650	0.845
	LTE Band 25	20M	QPSK	1	49	Left Side	0mm	26340	1880	23.36	24.5	1.300	0.06	0.469	0.610
	LTE Band 25	20M	QPSK	1	49	Top Side	0mm	26340	1880	23.36	24.5	1.300	-0.12	0.156	0.203
	LTE Band 25	20M	QPSK	1	49	Bottom Side	0mm	26340	1880	23.36	24.5	1.300	0.07	0.103	0.134
	LTE Band 25	20M	QPSK	1	49	Back	0mm	26140	1860	23.01	24.5	1.409	0.1	0.260	0.366
	LTE Band 25	20M	QPSK	1	49	Back	0mm	26590	1905	22.97	24.5	1.422	-0.01	0.318	0.452
	LTE Band 25	20M	QPSK	1	49	Right Side	0mm	26140	1860	23.01	24.5	1.409	-0.1	0.653	0.920
28	LTE Band 25	20M	QPSK	1	49	Right Side	0mm	26590	1905	22.97	24.5	1.422	0.03	0.720	**1.024**
	LTE Band 25	20M	QPSK	50	0	Front	0mm	26340	1880	22.28	23.5	1.324	0.13	0.108	0.143
	LTE Band 25	20M	QPSK	50	0	Back	0mm	26340	1880	22.28	23.5	1.324	0.09	0.234	0.310
	LTE Band 25	20M	QPSK	50	0	Right Side	0mm	26340	1880	22.28	23.5	1.324	0.04	0.540	0.715
	LTE Band 25	20M	QPSK	50	0	Left Side	0mm	26340	1880	22.28	23.5	1.324	0.08	0.399	0.528
	LTE Band 25	20M	QPSK	50	0	Top Side	0mm	26340	1880	22.28	23.5	1.324	0.01	0.129	0.171
	LTE Band 25	20M	QPSK	50	0	Bottom Side	0mm	26340	1880	22.28	23.5	1.324	0.05	0.087	0.115

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	0mm	18900	1880	23.74	25.0	1.337	-0.01	0.150	0.200
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18900	1880	23.74	25.0	1.337	0.06	0.333	0.445
	LTE Band 2	20M	QPSK	1	0	Right Side	0mm	18900	1880	23.74	25.0	1.337	-0.12	0.723	0.966
	LTE Band 2	20M	QPSK	1	0	Left Side	0mm	18900	1880	23.74	25.0	1.337	0.07	0.602	0.805
	LTE Band 2	20M	QPSK	1	0	Top Side	0mm	18900	1880	23.74	25.0	1.337	0.09	0.167	0.223
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	18900	1880	23.74	25.0	1.337	-0.08	0.114	0.152
	LTE Band 2	20M	QPSK	1	0	Right Side	0mm	18700	1860	23.70	25.0	1.349	-0.01	0.668	0.901
29	LTE Band 2	20M	QPSK	1	0	Right Side	0mm	19100	1900	23.68	25.0	1.355	0.03	0.938	**1.271**
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18700	1860	23.70	25.0	1.349	0.03	0.276	0.372
	LTE Band 2	20M	QPSK	1	0	Back	0mm	19100	1900	23.68	25.0	1.355	-0.19	0.354	0.480
	LTE Band 2	20M	QPSK	50	0	Front	0mm	18900	1880	22.71	24.0	1.346	0.09	0.118	0.159
	LTE Band 2	20M	QPSK	50	0	Back	0mm	18900	1880	22.71	24.0	1.346	0.05	0.259	0.349
	LTE Band 2	20M	QPSK	50	0	Right Side	0mm	18900	1880	22.71	24.0	1.346	-0.13	0.575	0.774
	LTE Band 2	20M	QPSK	50	0	Left Side	0mm	18900	1880	22.71	24.0	1.346	0.12	0.476	0.641
	LTE Band 2	20M	QPSK	50	0	Top Side	0mm	18900	1880	22.71	24.0	1.346	0.13	0.150	0.202
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	18900	1880	22.71	24.0	1.346	0.08	0.099	0.133
	LTE Band 7	20M	QPSK	1	0	Front	0mm	21100	2535	19.79	20.0	1.050	0.07	0.066	0.070
	LTE Band 7	20M	QPSK	1	0	Back	0mm	21100	2535	19.79	20.0	1.050	-0.01	0.399	0.419
	LTE Band 7	20M	QPSK	1	0	Right Side	0mm	21100	2535	19.79	20.0	1.050	0.08	0.385	0.404
	LTE Band 7	20M	QPSK	1	0	Left Side	0mm	21100	2535	19.79	20.0	1.050	-0.12	0.104	0.109
	LTE Band 7	20M	QPSK	1	0	Top Side	0mm	21100	2535	19.79	20.0	1.050	0.07	0.126	0.132
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0mm	21100	2535	19.79	20.0	1.050	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	0	Back	0mm	20850	2510	19.72	20.0	1.067	0.03	0.317	0.338
30	LTE Band 7	20M	QPSK	1	0	Back	0mm	21350	2560	19.78	20.0	1.052	0.14	0.541	**0.569**
	LTE Band 7	20M	QPSK	1	0	Right Side	0mm	20850	2510	19.72	20.0	1.067	0.09	0.411	0.438
	LTE Band 7	20M	QPSK	1	0	Right Side	0mm	21350	2560	19.78	20.0	1.052	0.04	0.521	0.548
	LTE Band 7	20M	QPSK	50	0	Front	0mm	21100	2535	18.75	19.0	1.059	-0.01	0.055	0.058
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21100	2535	18.75	19.0	1.059	0.09	0.323	0.342
	LTE Band 7	20M	QPSK	50	0	Right Side	0mm	21100	2535	18.75	19.0	1.059	-0.08	0.378	0.400
	LTE Band 7	20M	QPSK	50	0	Left Side	0mm	21100	2535	18.75	19.0	1.059	-0.01	0.089	0.094
	LTE Band 7	20M	QPSK	50	0	Top Side	0mm	21100	2535	18.75	19.0	1.059	-0.06	0.084	0.089
	LTE Band 7	20M	QPSK	50	0	Bottom Side	0mm	21100	2535	18.75	19.0	1.059	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	Back	0mm	20850	2510	18.69	19.0	1.074	0.02	0.272	0.292
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21350	2560	18.74	19.0	1.062	0.05	0.377	0.400

<WLAN 2.4GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	0.04	0.014	0.016
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	-0.13	0.038	0.045
	WLAN2.4GHz	802.11b 1Mbps	Right Side	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	0.14	0.040	0.048
	WLAN2.4GHz	802.11b 1Mbps	Left Side	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	0.05	0.021	0.025
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	-	n/a	n/a
31	WLAN2.4GHz	802.11b 1Mbps	Bottom Side	0mm	6	2437	15.30	16.0	1.175	97.6	1.025	-0.06	0.058	**0.070**
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	1	2412	15.20	16.0	1.202	97.6	1.025	0.03	0.009	0.011
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	11	2462	15.00	16.0	1.259	97.6	1.025	0.02	0.028	0.036
	WLAN2.4GHz	802.11b 1Mbps	Bottom Side	0mm	1	2412	15.20	16.0	1.202	97.6	1.025	0.04	0.045	0.055
	WLAN2.4GHz	802.11b 1Mbps	Bottom Side	0mm	11	2462	15.00	16.0	1.259	97.6	1.025	-0.15	0.042	0.055

<WLAN 5GHz SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	-0.09	0.001	0.001
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	0.09	0.067	0.095
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	0.05	0.043	0.061
	WLAN5.3GHz	802.11a 6Mbps	Left Side	0mm	60	5300	12.53	13.5	1.250	87.44	1.144	-0.13	0.002	0.004
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	0.12	0.001	0.001
	WLAN5.3GHz	802.11a 6Mbps	Bottom Side	0mm	60	5300	12.53	13.5	1.249	87.44	1.144	0.13	0.025	0.036
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	52	5260	12.35	13.5	1.302	87.44	1.144	0.08	0.068	0.101
32	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	56	5280	12.44	13.5	1.276	87.44	1.144	0.01	0.074	**0.108**
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	64	5320	12.21	13.5	1.345	87.44	1.144	0.12	0.012	0.019
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	0.1	0.003	0.004
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	-0.14	0.110	0.140
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	-0.06	0.010	0.013
	WLAN5.5GHz	802.11a 6Mbps	Left Side	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	0.07	0.001	0.001
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	-0.12	0.001	0.001
	WLAN5.5GHz	802.11a 6Mbps	Bottom Side	0mm	116	5580	13.54	14.0	1.111	87.44	1.144	-0.06	0.052	0.066
33	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	100	5500	12.74	14.0	1.336	87.44	1.144	0.01	0.094	**0.143**
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	132	5660	12.95	14.0	1.274	87.44	1.144	0.03	0.090	0.132
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	140	5700	12.96	14.0	1.270	87.44	1.144	0.12	0.073	0.106
	WLAN5.8GHz	802.11a 6Mbps	Front	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.08	0.003	0.004
	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.15	0.076	0.104
	WLAN5.8GHz	802.11a 6Mbps	Right Side	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.11	0.052	0.072
	WLAN5.8GHz	802.11a 6Mbps	Left Side	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.04	0.004	0.005
	WLAN5.8GHz	802.11a 6Mbps	Top Side	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	0.03	0.002	0.002
	WLAN5.8GHz	802.11a 6Mbps	Bottom Side	0mm	149	5745	12.70	13.5	1.201	87.44	1.144	-0.07	0.049	0.067
34	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	157	5785	12.36	13.5	1.299	87.44	1.144	0.05	0.088	**0.131**
	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	165	5825	12.46	13.5	1.270	87.44	1.144	0.03	0.087	0.126

16.3 Repeated SAR Measurement

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	GSM850	-	-	-	-	GPRS (2 Tx slots)	Front	0	128	824.2	30.79	31.5	1.178	-0.14	0.914	1	1.076
2nd	GSM850	-	-	-	-	GPRS (2 Tx slots)	Front	0	128	824.2	30.79	31.5	1.178	-0.1	0.906	1.009	1.067
1st	LTE Band 7	20M	QPSK	1	0	-	Back	0	21350	2560	19.78	20.0	1.052	0.14	1.095	1	1.152
2nd	LTE Band 7	20M	QPSK	1	0	-	Back	0	21350	2560	19.78	20.0	1.052	0.02	1.090	1.005	1.147

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

17. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body	Extremity
1.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes
2.	GPRS/EDGE + Bluetooth	Yes	Yes
3.	GPRS/EDGE + WLAN5GHz	Yes	Yes
4.	WCDMA + WLAN2.4GHz	Yes	Yes
5.	WCDMA + Bluetooth	Yes	Yes
6.	WCDMA + WLAN5GHz	Yes	Yes
7.	LTE + WLAN2.4GHz	Yes	Yes
8.	LTE + WLAN5GHz	Yes	Yes
9.	LTE + Bluetooth	Yes	Yes

General Note:

1. EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
2. WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. According to the character of the EUT, WLAN 5GHz and Bluetooth cannot transmit simultaneously.
4. The reported SAR summation is calculated based on the same configuration and test position.
5. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg for 1g SAR and Scalar SAR summation < 4.0W/kg for 10g SAR.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04 for 1g and 1.0 for 10g,, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
6. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v06 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

Bluetooth Max Power	Exposure Position	Body 1g	Extremity 10g
	Test separation	0mm	0 mm
6.0 dBm	Estimated SAR (W/kg)	0.167 W/kg	0.067 W/kg

17.1 Body Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	4 5GHz WLAN 1g SAR (W/kg)	6 Bluetooth Estimated 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)
GSM	GSM850	Front	1.076	0.030	0.015	0.167	1.11	1.09	1.24
		Back	0.668	0.074	0.425	0.167	0.74	1.09	0.84
	GSM1900	Front	0.174	0.030	0.015	0.167	0.20	0.19	0.34
		Back	0.548	0.074	0.425	0.167	0.62	0.97	0.72
WCDMA	WCDMA II	Front	0.310	0.030	0.015	0.167	0.34	0.33	0.48
		Back	0.769	0.074	0.425	0.167	0.84	1.19	0.94
	WCDMA IV	Front	0.305	0.030	0.015	0.167	0.34	0.32	0.47
		Back	1.044	0.074	0.425	0.167	1.12	1.47	1.21
	WCDMA V	Front	0.957	0.030	0.015	0.167	0.99	0.97	1.12
		Back	0.722	0.074	0.425	0.167	0.80	1.15	0.89
LTE	LTE Band 2	Front	0.362	0.030	0.015	0.167	0.39	0.38	0.53
		Back	0.858	0.074	0.425	0.167	0.93	1.28	1.03
	LTE Band 4	Front	0.331	0.030	0.015	0.167	0.36	0.35	0.50
		Back	1.005	0.074	0.425	0.167	1.08	1.43	1.17
	LTE Band 5	Front	0.782	0.030	0.015	0.167	0.81	0.80	0.95
		Back	0.734	0.074	0.425	0.167	0.81	1.16	0.90
	LTE Band 7	Front	0.132	0.030	0.015	0.167	0.16	0.15	0.30
		Back	1.152	0.074	0.425	0.167	**1.23**	**1.58**	1.32
	LTE Band 12	Front	0.265	0.030	0.015	0.167	0.30	0.28	0.43
		Back	0.732	0.074	0.425	0.167	0.81	1.16	0.90
	LTE Band 13	Front	0.453	0.030	0.015	0.167	0.48	0.47	0.62
		Back	0.579	0.074	0.425	0.167	0.65	1.00	0.75
	LTE Band 25	Front	0.307	0.030	0.015	0.167	0.34	0.32	0.47
		Back	0.797	0.074	0.425	0.167	0.87	1.22	0.96
	LTE Band 26	Front	0.896	0.030	0.015	0.167	0.93	0.91	1.06
		Back	0.630	0.074	0.425	0.167	0.70	1.06	0.80

17.2 Extremity Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	2 2.4GHz WLAN 10g SAR (W/kg)	4 5GHz WLAN 10g SAR (W/kg)	6 Bluetooth Estimated 10g SAR (W/kg)	1+2 Summed 10g SAR (W/kg)	1+4 Summed 10g SAR (W/kg)	1+6 Summed 10g SAR (W/kg)
GSM	GSM850	Front	0.601	0.016	0.004	0.067	0.62	0.61	0.67
		Back	0.412	0.045	0.143	0.067	0.46	0.56	0.48
		Left side	0.245	0.025	0.005	0.067	0.27	0.25	0.31
		Right side	1.358	0.048	0.072	0.067	**1.41**	**1.43**	1.43
		Top side	0.323		0.002	0.067	0.32	0.33	0.39
		Bottom side	0.046	0.070	0.067	0.067	0.12	0.11	0.11
	GSM1900	Front	0.100	0.016	0.004	0.067	0.12	0.10	0.17
		Back	0.317	0.045	0.143	0.067	0.36	0.46	0.38
		Left side	0.283	0.025	0.005	0.067	0.31	0.29	0.35
		Right side	0.642	0.048	0.072	0.067	0.69	0.71	0.71
		Top side	0.110		0.002	0.067	0.11	0.11	0.18
		Bottom side	0.080	0.070	0.067	0.067	0.15	0.15	0.15
WCDMA	WCDMA II	Front	0.175	0.016	0.004	0.067	0.19	0.18	0.24
		Back	0.421	0.045	0.143	0.067	0.47	0.56	0.49
		Left side	0.699	0.025	0.005	0.067	0.72	0.70	0.77
		Right side	1.118	0.048	0.072	0.067	1.17	1.19	1.19
		Top side	0.205		0.002	0.067	0.21	0.21	0.27
		Bottom side	0.152	0.070	0.067	0.067	0.22	0.22	0.22
	WCDMA IV	Front	0.184	0.016	0.004	0.067	0.20	0.19	0.25
		Back	0.520	0.045	0.143	0.067	0.57	0.66	0.59
		Left side	0.867	0.025	0.005	0.067	0.89	0.87	0.93
		Right side	0.575	0.048	0.072	0.067	0.62	0.65	0.64
		Top side	0.143		0.002	0.067	0.14	0.15	0.21
		Bottom side	0.102	0.070	0.067	0.067	0.17	0.17	0.17
	WCDMA V	Front	0.508	0.016	0.004	0.067	0.52	0.51	0.58
		Back	0.489	0.045	0.143	0.067	0.53	0.63	0.56
		Left side	1.188	0.025	0.005	0.067	1.21	1.19	1.26
		Right side	0.276	0.048	0.072	0.067	0.32	0.35	0.34
		Top side	0.321		0.002	0.067	0.32	0.32	0.39
		Bottom side	0.049	0.070	0.067	0.067	0.12	0.12	0.12
LTE	LTE Band 2	Front	0.200	0.016	0.004	0.067	0.22	0.20	0.27
		Back	0.480	0.045	0.143	0.067	0.53	0.62	0.55
		Left side	0.805	0.025	0.005	0.067	0.83	0.81	0.87
		Right side	1.271	0.048	0.072	0.067	1.32	1.34	1.34
		Top side	0.223		0.002	0.067	0.22	0.23	0.29
		Bottom side	0.152	0.070	0.067	0.067	0.22	0.22	0.22
	LTE Band 4	Front	0.193	0.016	0.004	0.067	0.21	0.20	0.26
		Back	0.504	0.045	0.143	0.067	0.55	0.65	0.57
		Left side	0.985	0.025	0.005	0.067	1.01	0.99	1.05
		Right side	0.534	0.048	0.072	0.067	0.58	0.61	0.60
		Top side	0.151		0.002	0.067	0.15	0.15	0.22
		Bottom side	0.099	0.070	0.067	0.067	0.17	0.17	0.17

WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	2 2.4GHz WLAN 10g SAR (W/kg)	4 5GHz WLAN 10g SAR (W/kg)	6 Bluetooth Estimated 10g SAR (W/kg)	1+2 Summed 10g SAR (W/kg)	1+4 Summed 10g SAR (W/kg)	1+6 Summed 10g SAR (W/kg)
LTE	LTE Band 5	Front	0.451	0.016	0.004	0.067	0.47	0.46	0.52
		Back	0.495	0.045	0.143	0.067	0.54	0.64	0.56
		Left side	1.246	0.025	0.005	0.067	1.27	1.25	1.31
		Right side	0.252	0.048	0.072	0.067	0.30	0.32	0.32
		Top side	0.407		0.002	0.067	0.41	0.41	0.47
		Bottom side	0.045	0.070	0.067	0.067	0.12	0.11	0.11
	LTE Band 7	Front	0.070	0.016	0.004	0.067	0.09	0.07	0.14
		Back	0.569	0.045	0.143	0.067	0.61	0.71	0.64
		Left side	0.109	0.025	0.005	0.067	0.13	0.11	0.18
		Right side	0.548	0.048	0.072	0.067	0.60	0.62	0.62
		Top side	0.132		0.002	0.067	0.13	0.13	0.20
		Bottom side		0.070	0.067	0.067	0.07	0.07	0.07
	LTE Band 12	Front	0.175	0.016	0.004	0.067	0.19	0.18	0.24
		Back	0.508	0.045	0.143	0.067	0.55	0.65	0.58
		Left side	0.487	0.025	0.005	0.067	0.51	0.49	0.55
		Right side	0.515	0.048	0.072	0.067	0.56	0.59	0.58
		Top side	0.311		0.002	0.067	0.31	0.31	0.38
		Bottom side	0.022	0.070	0.067	0.067	0.09	0.09	0.09
	LTE Band 13	Front	0.281	0.016	0.004	0.067	0.30	0.29	0.35
		Back	0.398	0.045	0.143	0.067	0.44	0.54	0.47
		Left side	0.512	0.025	0.005	0.067	0.54	0.52	0.58
		Right side	0.523	0.048	0.072	0.067	0.57	0.60	0.59
		Top side	0.183		0.002	0.067	0.18	0.19	0.25
		Bottom side	0.042	0.070	0.067	0.067	0.11	0.11	0.11
	LTE Band 25	Front	0.181	0.016	0.004	0.067	0.20	0.19	0.25
		Back	0.452	0.045	0.143	0.067	0.50	0.60	0.52
		Left side	0.610	0.025	0.005	0.067	0.64	0.62	0.68
		Right side	1.024	0.048	0.072	0.067	1.07	1.10	1.09
		Top side	0.203		0.002	0.067	0.20	0.21	0.27
		Bottom side	0.134	0.070	0.067	0.067	0.20	0.20	0.20
	LTE Band 26	Front	0.482	0.016	0.004	0.067	0.50	0.49	0.55
		Back	0.420	0.045	0.143	0.067	0.47	0.56	0.49
		Left side	1.081	0.025	0.005	0.067	1.11	1.09	1.15
		Right side	0.227	0.048	0.072	0.067	0.28	0.30	0.29
		Top side	0.330		0.002	0.067	0.33	0.33	0.40
		Bottom side	0.043	0.070	0.067	0.067	0.11	0.11	0.11

Test Engineer : Changlin Huang, Bin He, Mengming Dai

18. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

19. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[6] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[7] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[8] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[9] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[10] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/1

System Check_Head_750MHz

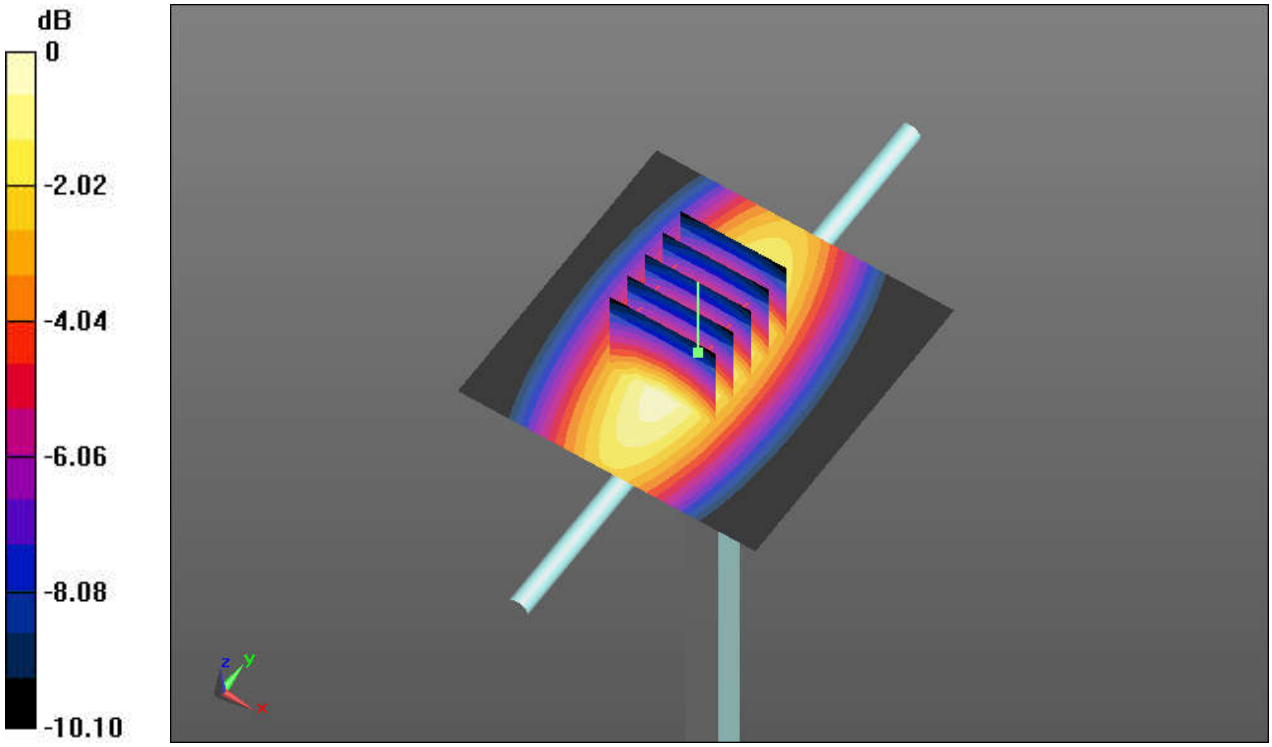
DUT: D750V3-SN:1099

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_200101 Medium parameters used: f = 750 MHz; σ = 0.883 S/m; ε_r = 40.81; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.94, 9.94, 9.94) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.75 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.31 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.24 W/kg
SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.45 W/kg
Maximum value of SAR (measured) = 2.75 W/kg



0 dB = 2.75 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/2

System Check_Head_835MHz

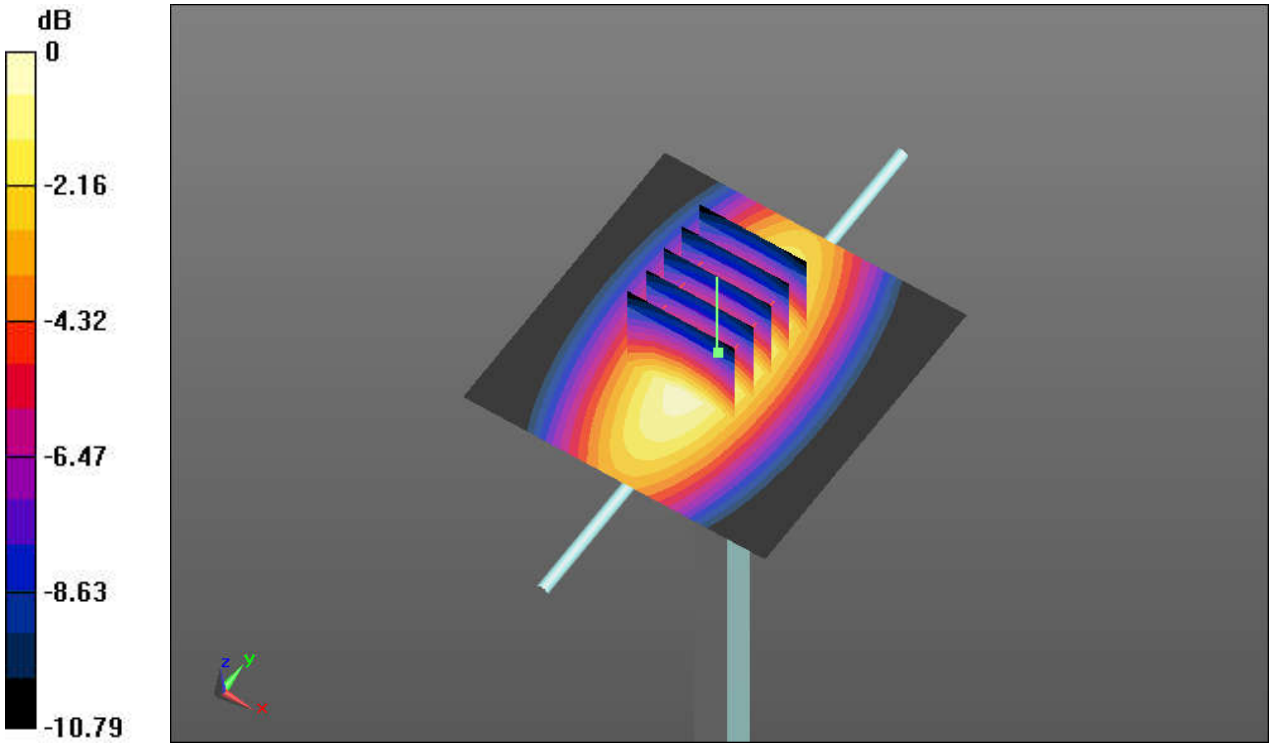
DUT: D835V2-SN:4d162

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_200102 Medium parameters used: f = 835 MHz; σ = 0.91 S/m; ε_r = 42.91; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.21 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 60.39 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.80 W/kg
SAR(1 g) = 2.53 W/kg; SAR(10 g) = 1.65 W/kg
Maximum value of SAR (measured) = 3.22 W/kg



0 dB = 3.22 W/kg

System Check_Head_1750MHz

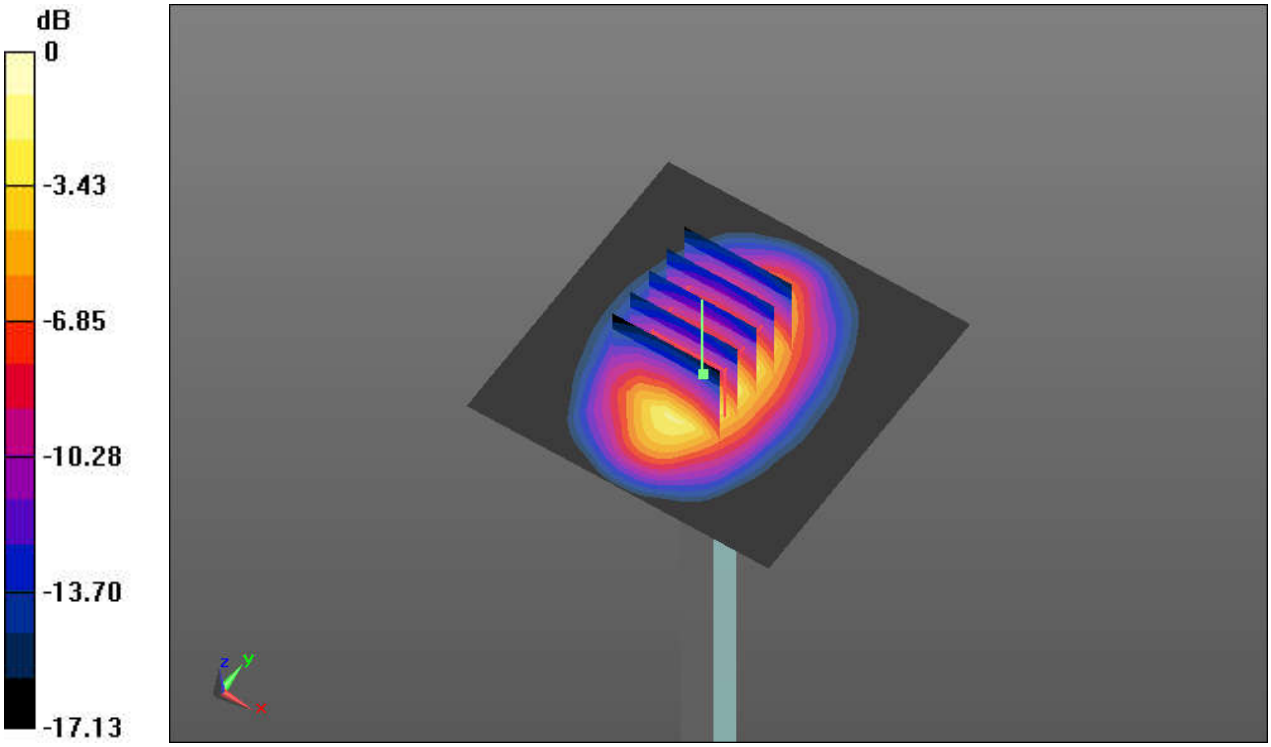
DUT: D1750V2-SN:1137

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200104 Medium parameters used: f = 1750 MHz; σ = 1.355 S/m; ε_r = 38.395; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(8.34, 8.34, 8.34) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.11 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 15.9 W/kg
SAR(1 g) = 9.03 W/kg; SAR(10 g) = 4.85 W/kg
Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg

System Check_Head_1900MHz

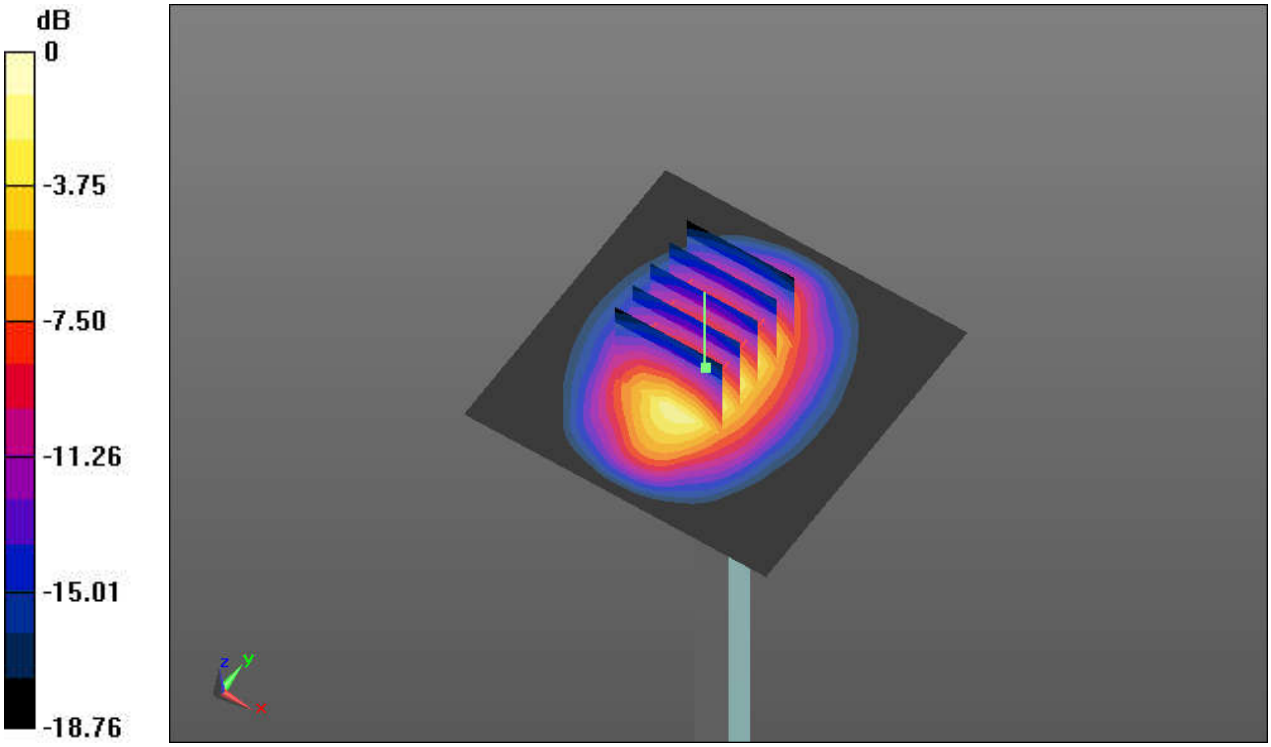
DUT: D1900V2-SN:5d182

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200105 Medium parameters used: f = 1900 MHz; σ = 1.385 S/m; ε_r = 39.053; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.1 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 100.9 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 18.3 W/kg
SAR(1 g) = 9.87 W/kg; SAR(10 g) = 5.08 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/6

System Check_Head_2450MHz

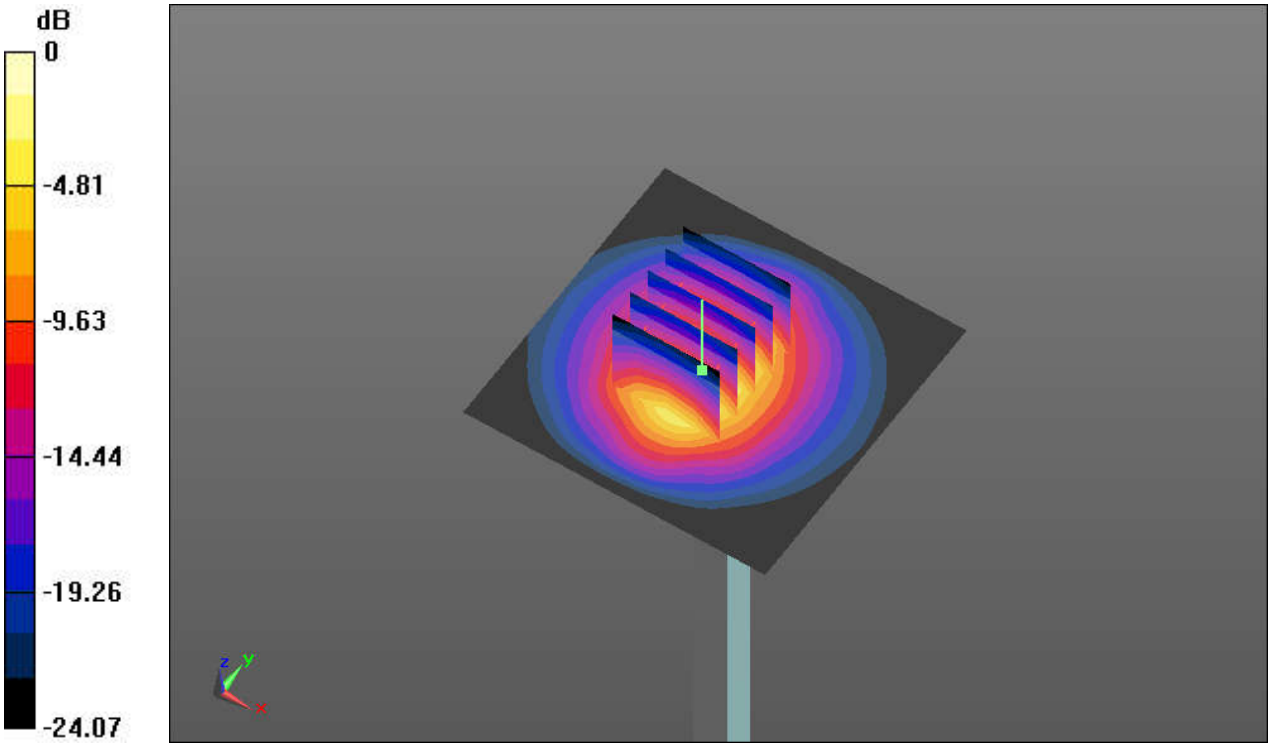
DUT: D2450V2-SN:924

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_200106 Medium parameters used: f = 2450 MHz; σ = 1.856 S/m; ε_r = 38.095; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.4, 7.4, 7.4) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 19.6 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.73 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 27.4 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.87 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg

System Check_Head_2600MHz

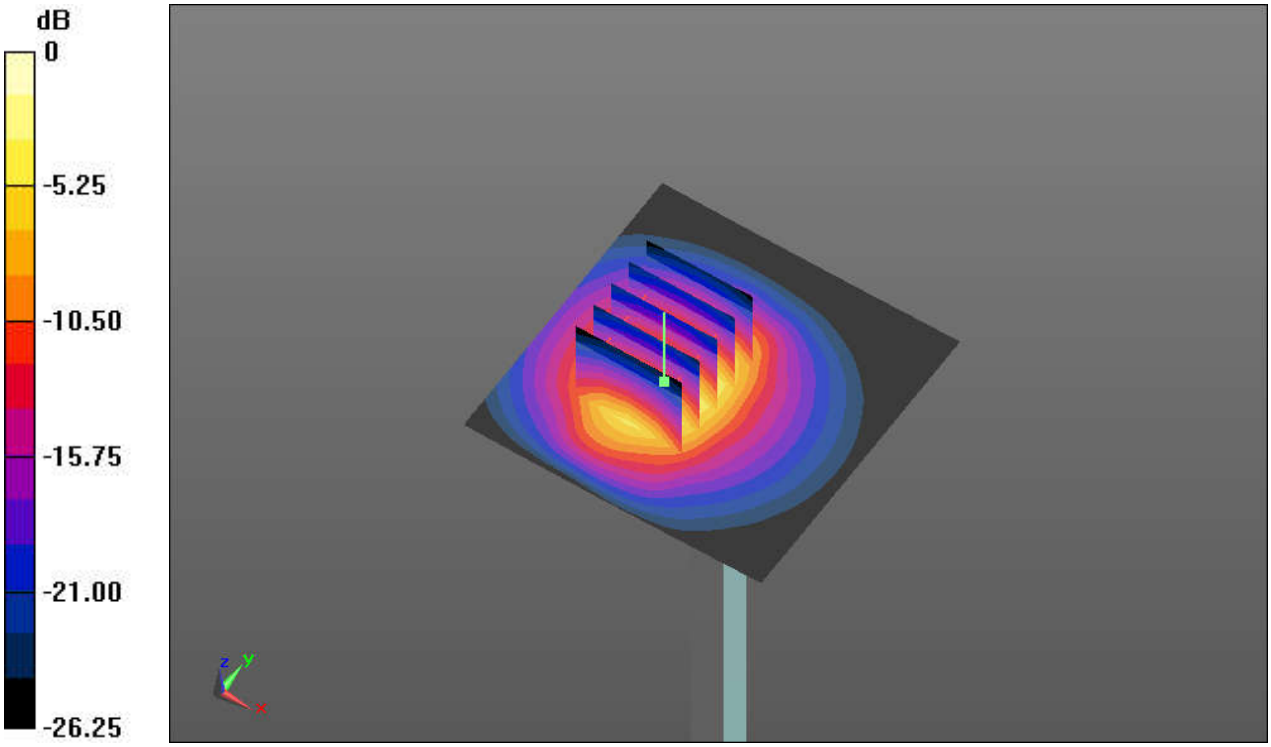
DUT: D2600V2-SN:1070

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200106 Medium parameters used: f = 2600 MHz; σ = 1.922 S/m; ε_r = 39.818; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.25, 7.25, 7.25) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 23.9 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 74.45 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 34.5 W/kg
SAR(1 g) = 15.2 W/kg; SAR(10 g) = 6.54 W/kg
Maximum value of SAR (measured) = 24.4 W/kg



0 dB = 24.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/7

System Check_Head_5250MHz

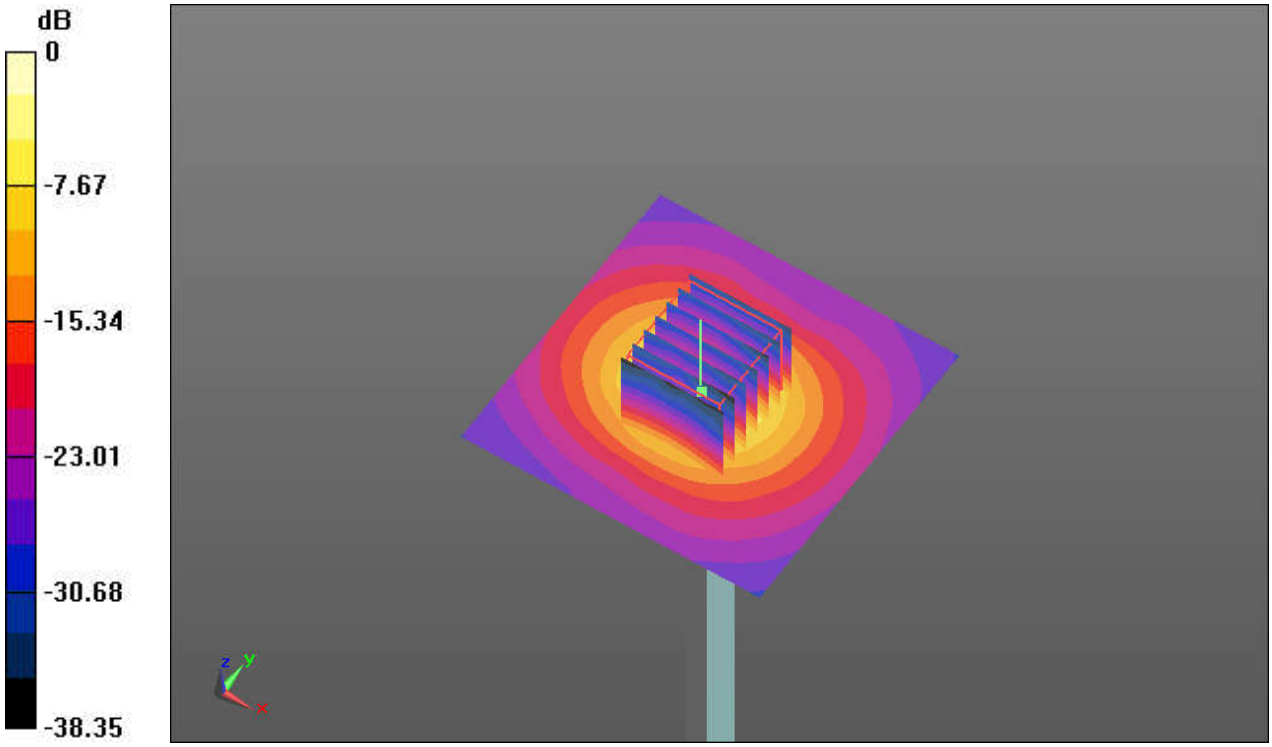
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL_5250_200107 Medium parameters used: f = 5250 MHz; σ = 4.526 S/m; ε_r = 37.282; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(5.27, 5.27, 5.27) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 17.9 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.59 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 29.8 W/kg
SAR(1 g) = 7.4 W/kg; SAR(10 g) = 2.04 W/kg
Maximum value of SAR (measured) = 18.4 W/kg



0 dB = 18.4 W/kg

System Check_Head_5600MHz

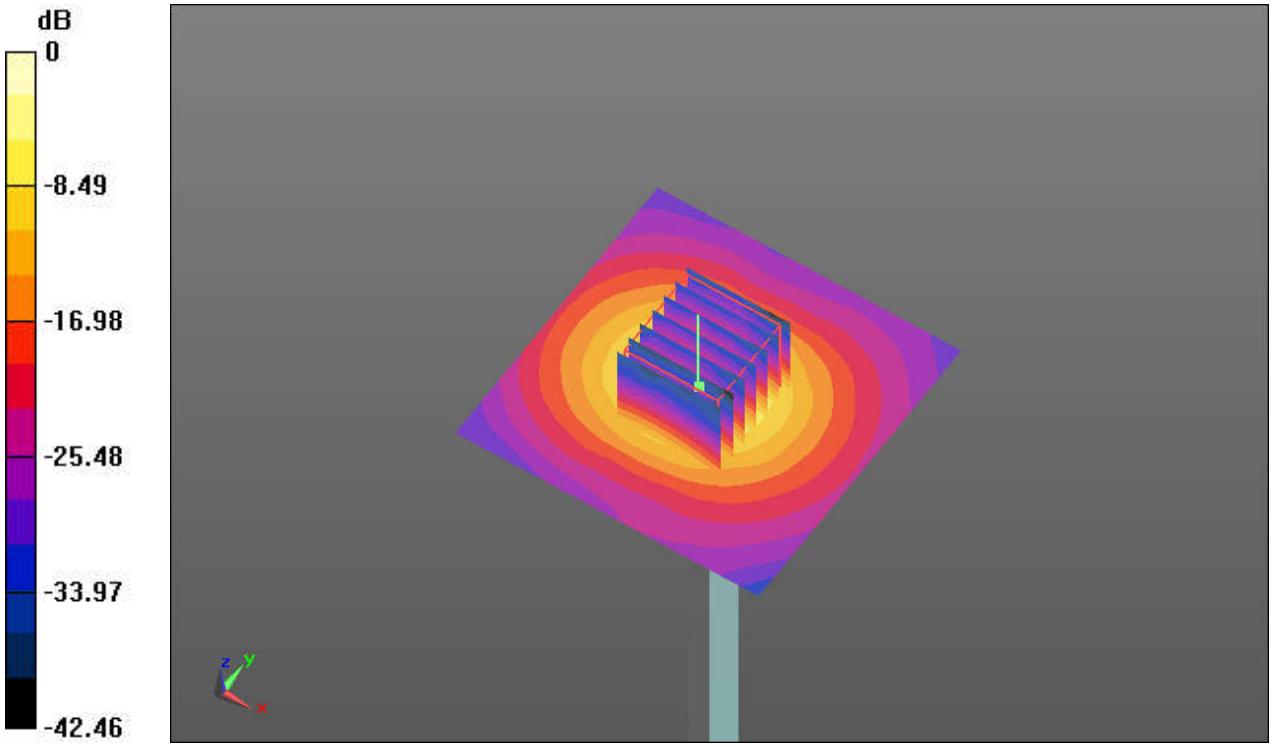
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5600_200108 Medium parameters used: f = 5600 MHz; σ = 4.876 S/m; ε_r = 36.81; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(4.7, 4.7, 4.7) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 20.3 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.62 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 35.9 W/kg
SAR(1 g) = 8.28 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 21.4 W/kg



0 dB = 21.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/9

System Check_Head_5750MHz

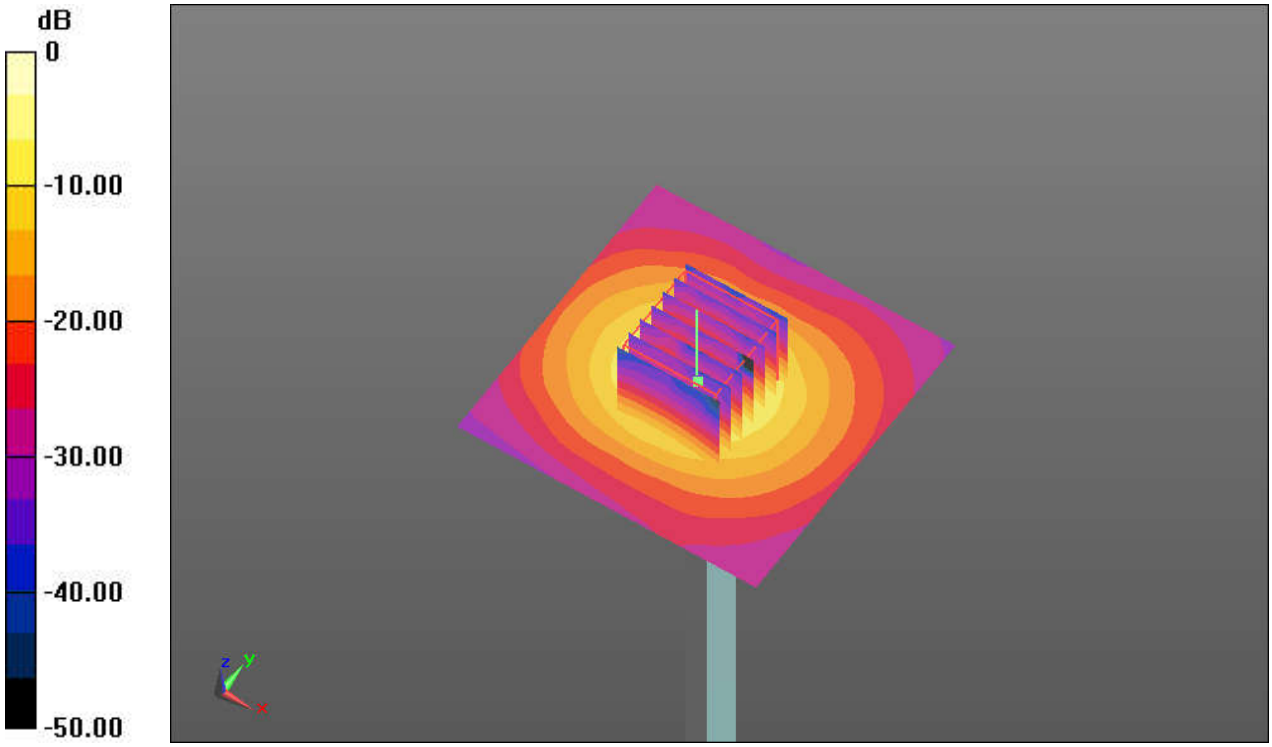
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: HSL_5750_200109 Medium parameters used: f = 5750 MHz; σ = 5.014 S/m; ε_r = 36.603; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(4.75, 4.75, 4.75) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.1 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.64 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.65 W/kg; SAR(10 g) = 2.09 W/kg
Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.6 W/kg

Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

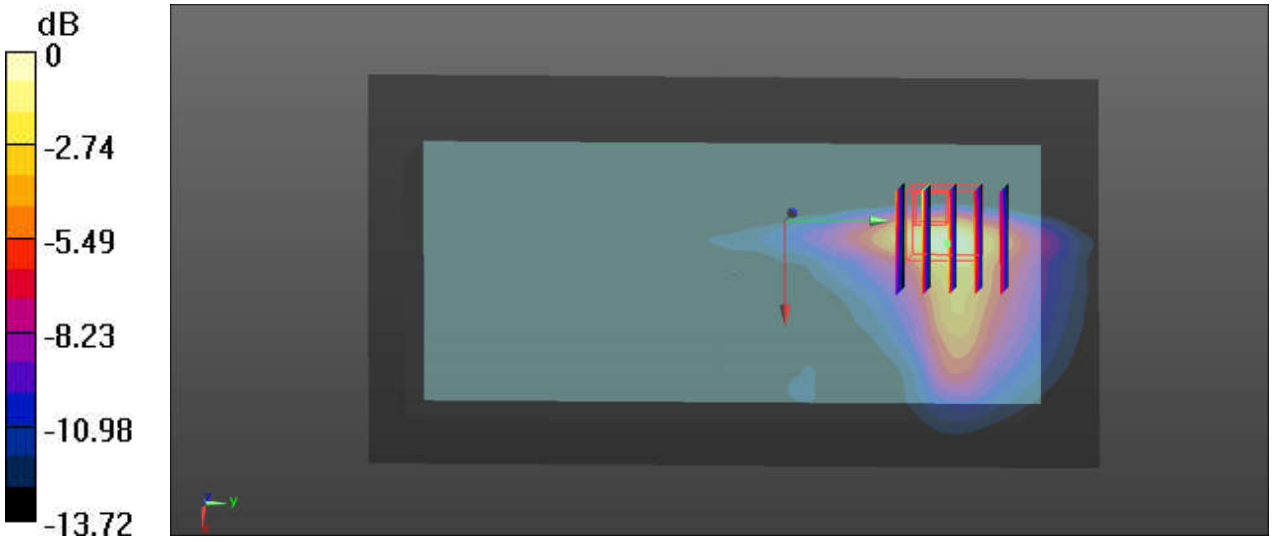
01_GSM850_GPRS (2 Tx slots)_Front_0mm_Ch128

Communication System: UID 0, GPRS/EDGE10 (0); Frequency: 824.2 MHz;Duty Cycle: 1:4.15
Medium: HSL_835_200102 Medium parameters used: f = 824.2 MHz; σ = 0.906 S/m; ε_r = 41.145; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch128/Area Scan (81x151x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.95 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.861 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 0.914 W/kg; SAR(10 g) = 0.510 W/kg
Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.95 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/5

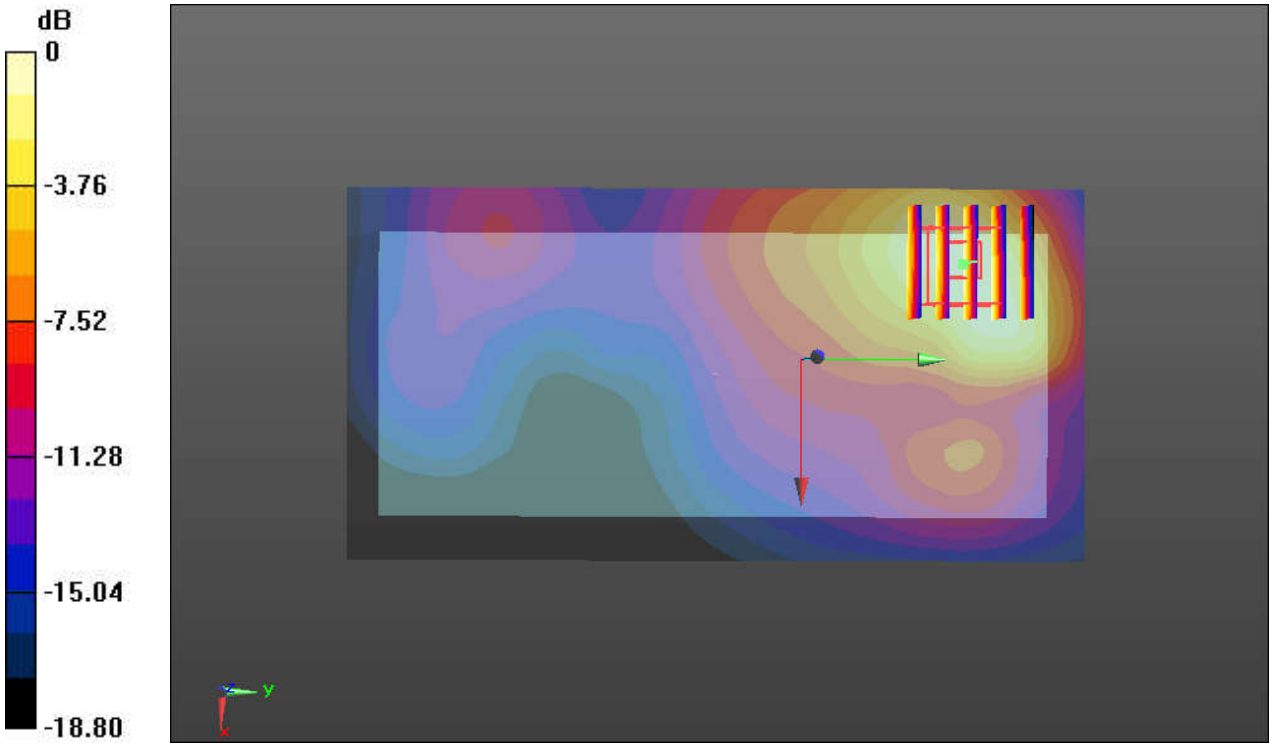
02_GSM1900_GPRS (2 Tx slots)_Back_0mm_Ch810

Communication System: UID 0, GPRS/EDGE10 (0); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900_200105 Medium parameters used: f = 1910 MHz; σ = 1.394 S/m; ε_r = 39.016; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch810/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.586 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.496 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.717 W/kg
SAR(1 g) = 0.429 W/kg; SAR(10 g) = 0.248 W/kg
Maximum value of SAR (measured) = 0.583 W/kg



0 dB = 0.583 W/kg

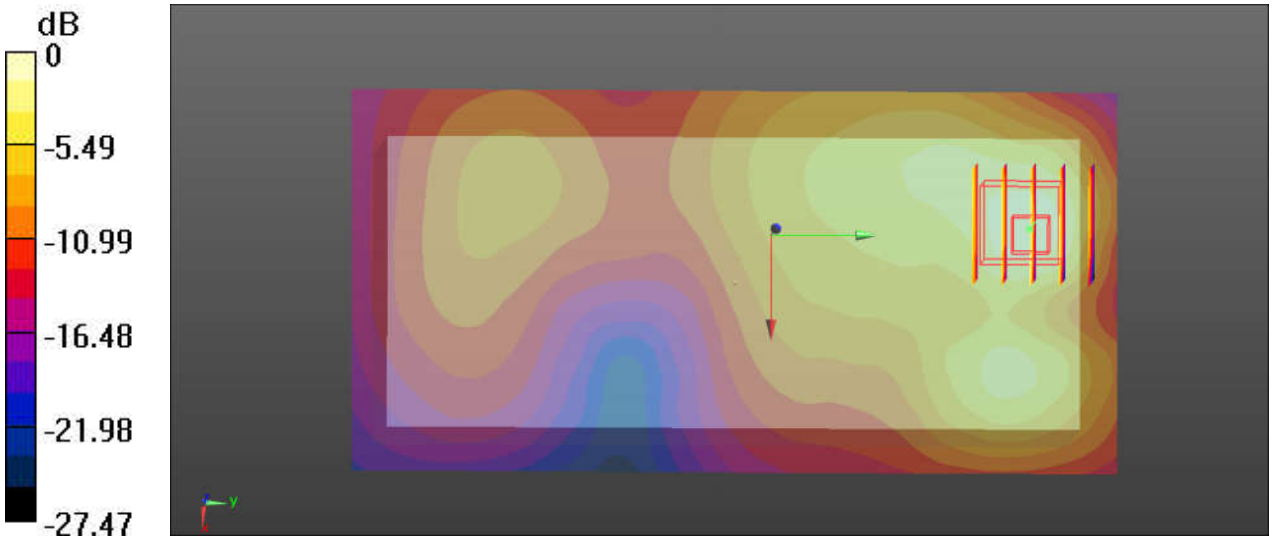
03_WCDMA II_RMC 12.2Kbps_Back_0mm_Ch9538

Communication System: UID 0, Generic WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200105 Medium parameters used: f = 1908 MHz; σ = 1.392 S/m; ε_r = 39.023; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.753 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.529 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.566 W/kg; SAR(10 g) = 0.292 W/kg
Maximum value of SAR (measured) = 0.848 W/kg



0 dB = 0.848 W/kg

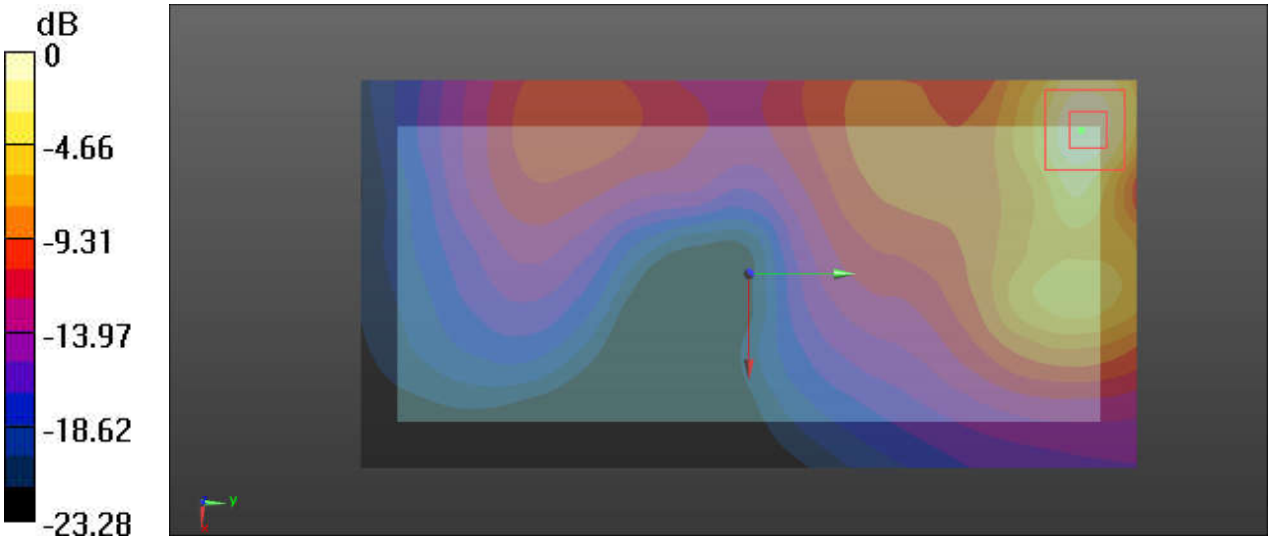
04_WCDMA IV_RMC 12.2Kbps_Back_0mm_Ch1312

Communication System: UID 0, Generic WCDMA (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200104 Medium parameters used: f = 1712.4 MHz; σ = 1.315 S/m; ε_r = 38.557; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(8.34, 8.34, 8.34); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch1312/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.08 W/kg

Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.056 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.776 W/kg; SAR(10 g) = 0.386 W/kg
Maximum value of SAR (measured) = 1.11 W/kg



0 dB = 1.08 W/kg

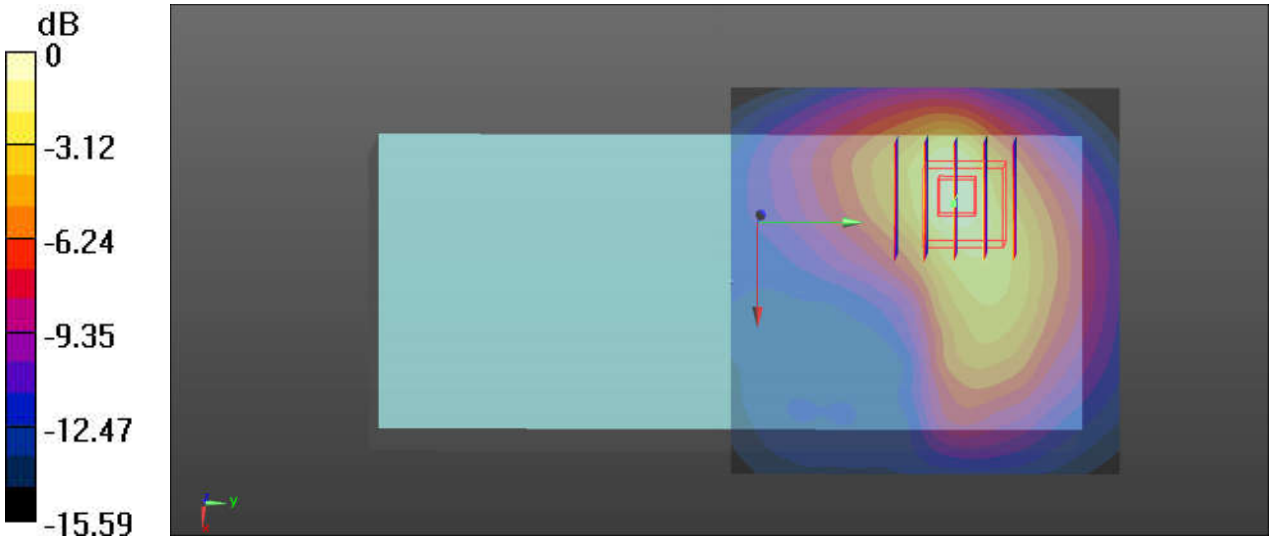
05_WCDMA V_RMC 12.2Kbps_Front_0mm_Ch4132

Communication System: UID 0, Generic WCDMA (0); Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_200102 Medium parameters used: f = 826.4 MHz; σ = 0.901 S/m; ε_r = 43.016; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch4132/Area Scan (71x71x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.535 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.703 W/kg; SAR(10 g) = 0.373 W/kg
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.10 W/kg

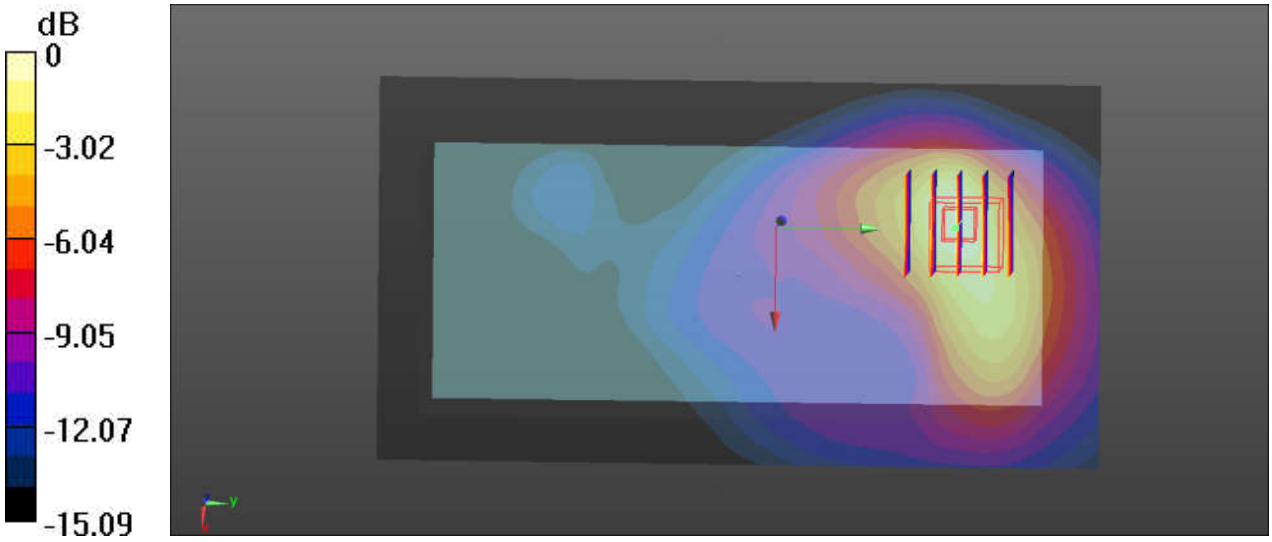
06_LTE Band 5_10M_QPSK_1RB_0Offset_Front_0mm_Ch20525

Communication System: UID 0, Generic LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835_200102 Medium parameters used: f = 836.5 MHz; σ = 0.912 S/m; ε_r = 42.892; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch20525/Area Scan (81x151x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.886 W/kg

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.518 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.611 W/kg; SAR(10 g) = 0.340 W/kg
Maximum value of SAR (measured) = 0.892 W/kg



0 dB = 0.886 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/1

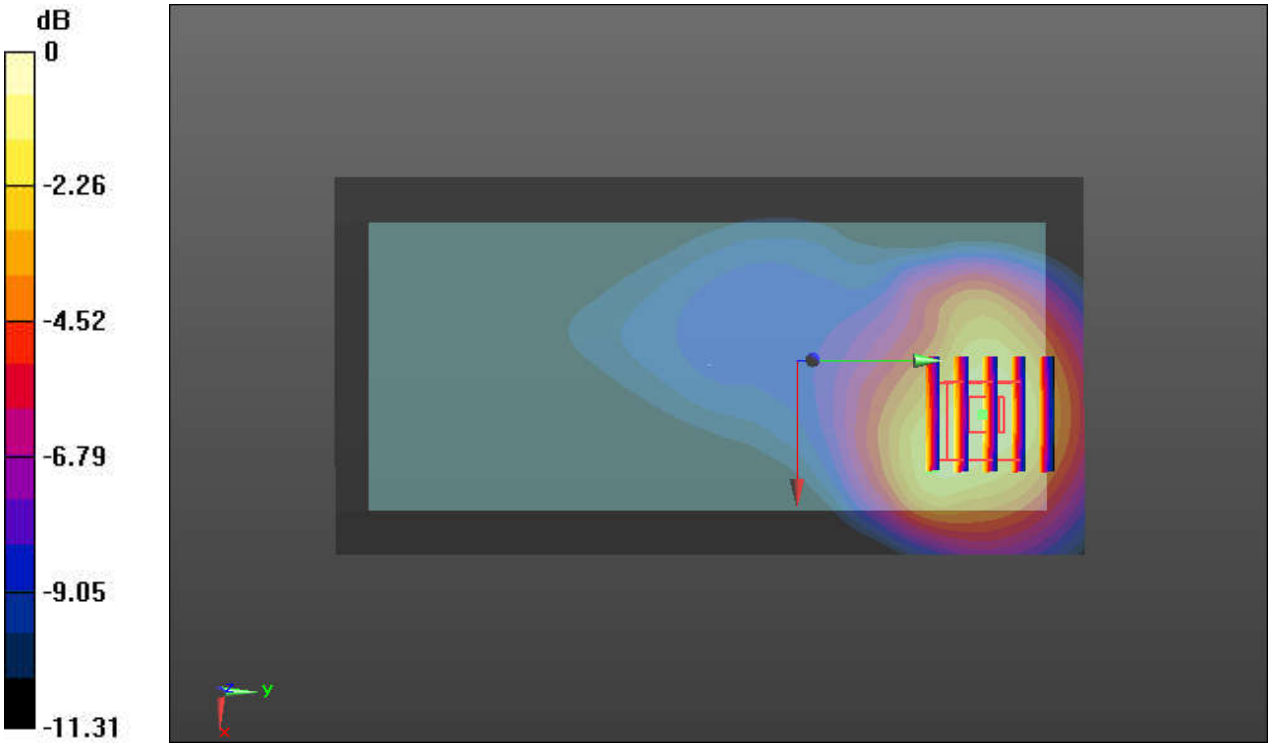
07_LTE Band 12_10M_QPSK_1RB_25Offset_Back_0mm_Ch23095

Communication System: UID 0, Generic LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: HSL_750_200101 Medium parameters used: f = 707.5 MHz; σ = 0.86 S/m; ε_r = 41.73; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.94, 9.94, 9.94) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch23095/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.751 W/kg

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.92 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.594 W/kg; SAR(10 g) = 0.412 W/kg
Maximum value of SAR (measured) = 0.895 W/kg



0 dB = 0.895 W/kg

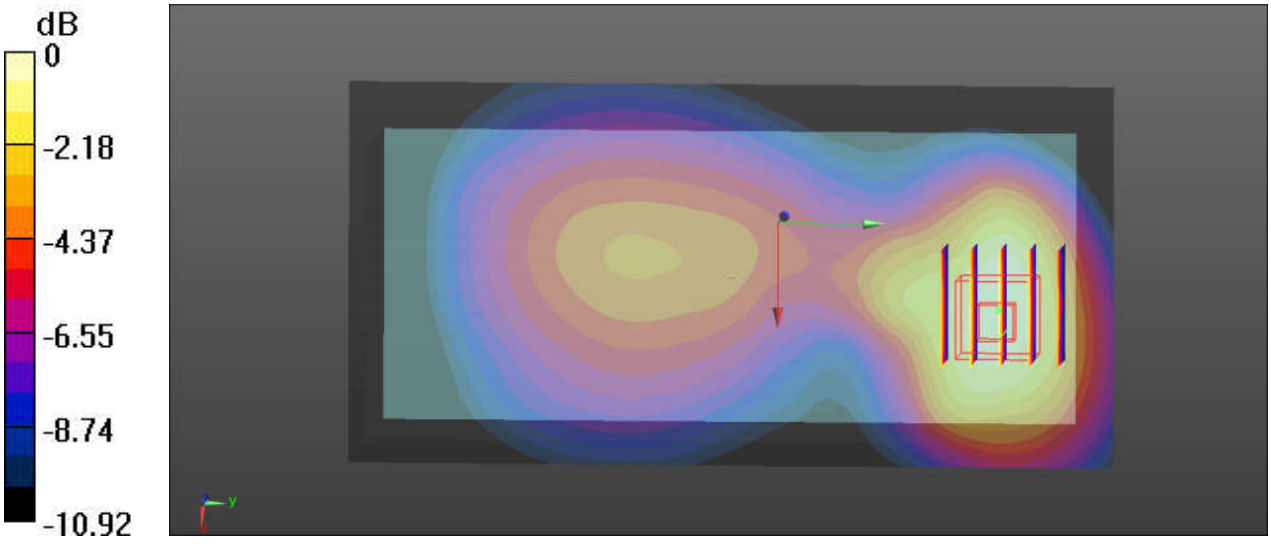
08_LTE Band 13_10M_QPSK_1RB_0Offset_Back_0mm_Ch23230

Communication System: UID 0, Generic LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium: HSL_750_200101 Medium parameters used: f = 782 MHz; σ = 0.902 S/m; ε_r = 40.073; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.94, 9.94, 9.94); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch23230/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.529 W/kg

Ch23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.52 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.607 W/kg
SAR(1 g) = 0.428 W/kg; SAR(10 g) = 0.294 W/kg
Maximum value of SAR (measured) = 0.525 W/kg



0 dB = 0.529 W/kg

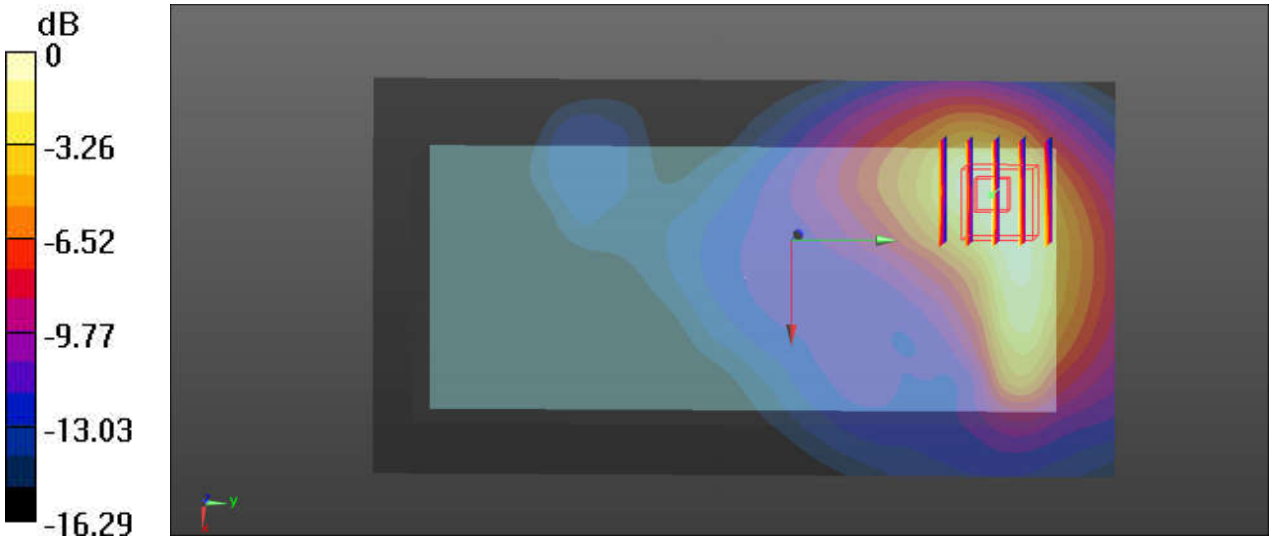
09_1_LTE Band 26_15M_QPSK_1RB_0Offset_Front_0mm_Ch26865

Communication System: UID 0, Generic LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_835_200102 Medium parameters used: f = 831.5 MHz; σ = 0.906 S/m; ε_r = 42.952; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch26865/Area Scan (81x151x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.816 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.093 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.670 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 0.816 W/kg

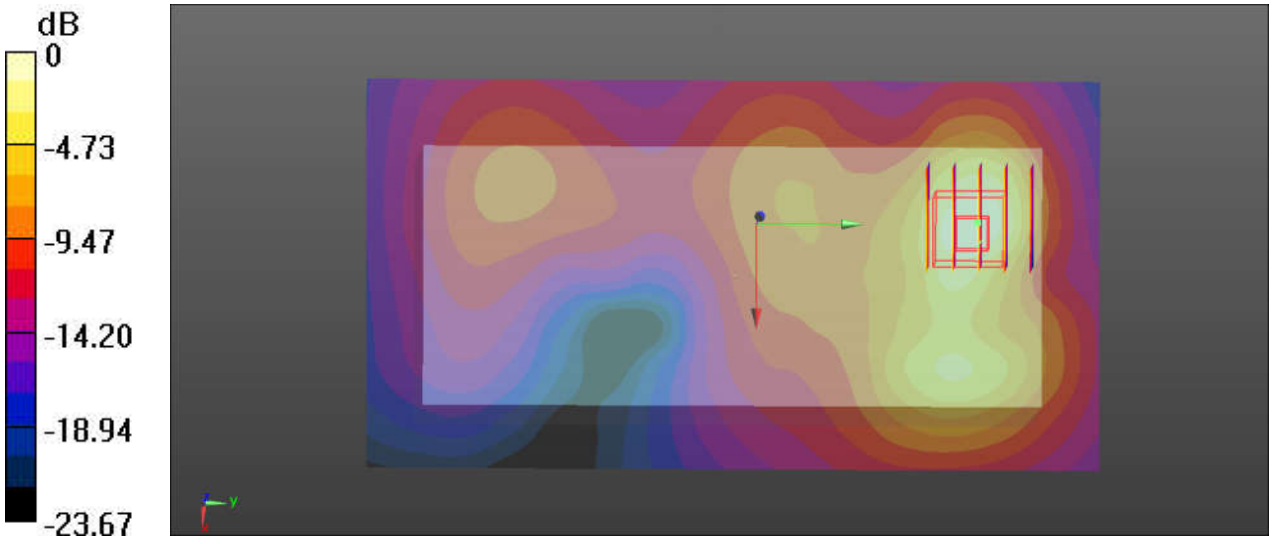
10_LTE Band 4_20M_QPSK_1RB_0Offset_Back_0mm_Ch20175

Communication System: UID 0, Generic LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200104 Medium parameters used: f = 1732.5 MHz; σ = 1.338 S/m; ε_r = 38.477; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(8.34, 8.34, 8.34); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (81x151x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.508 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.787 W/kg; SAR(10 g) = 0.395 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.07 W/kg

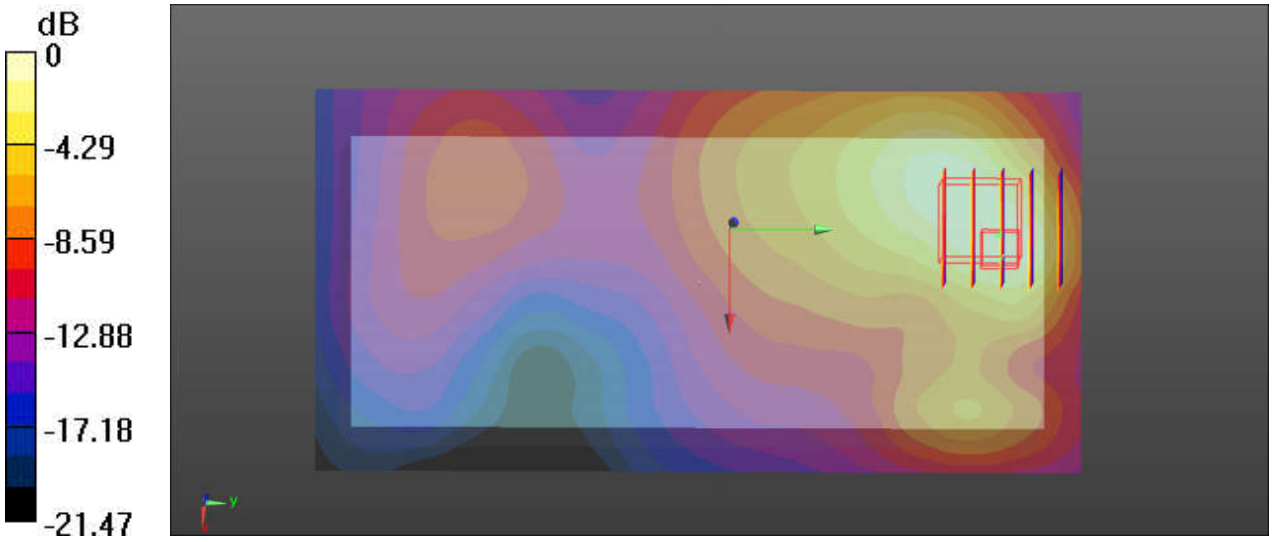
11_LTE Band 25_20M_QPSK_1RB_49Offset_Back_0mm_Ch26590

Communication System: UID 0, Generic LTE (0); Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200105 Medium parameters used: f = 1905 MHz; σ = 1.348 S/m; ε_r = 39.192; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch26590/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.810 W/kg

Ch26590/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.736 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.560 W/kg; SAR(10 g) = 0.318 W/kg
Maximum value of SAR (measured) = 0.816 W/kg



0 dB = 0.810 W/kg

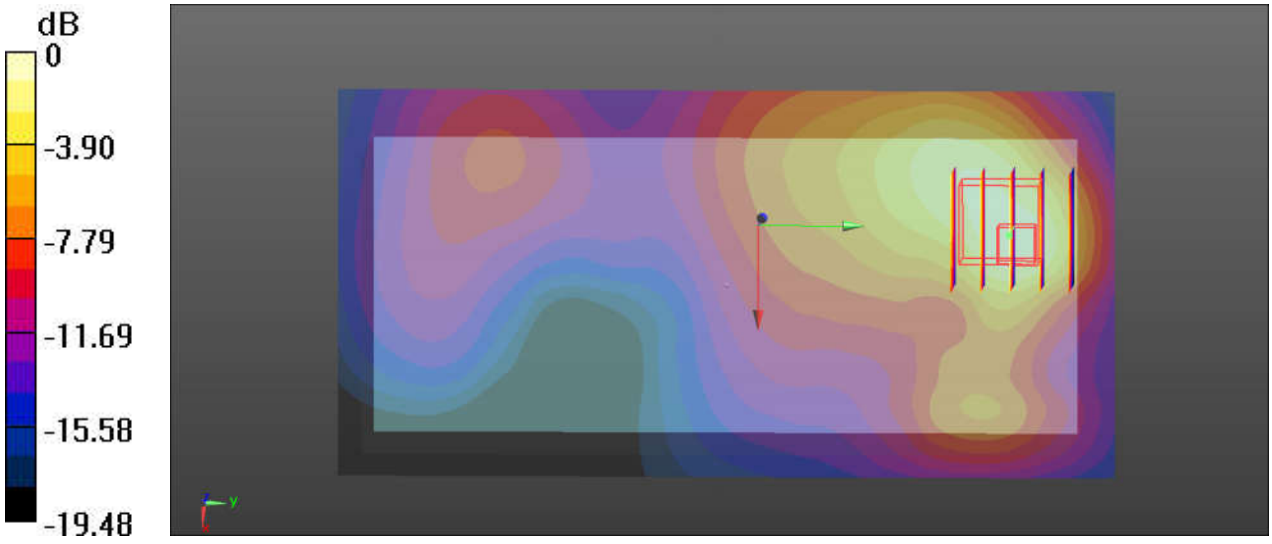
12_LTE Band 2_20M_QPSK_1RB_0Offset_Back_0mm_Ch19100

Communication System: UID 0, LTE (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200105 Medium parameters used: f = 1900 MHz; σ = 1.385 S/m; ε_r = 39.053; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch19100/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.908 W/kg

Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.604 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.633 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 0.864 W/kg



0 dB = 0.908 W/kg

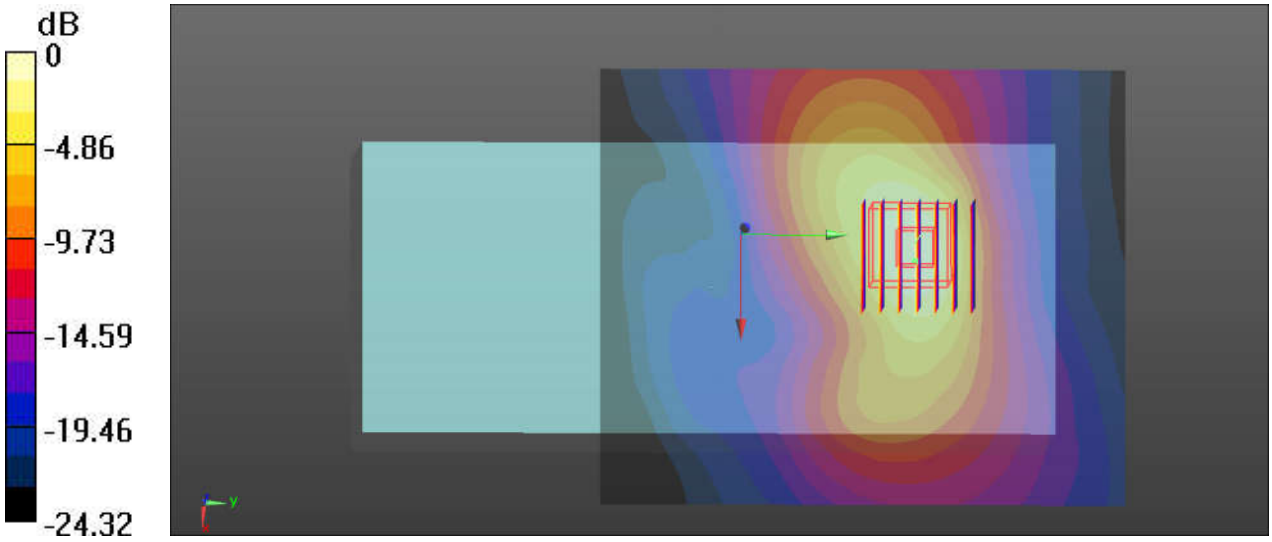
13_LTE Band 7_20M_QPSK_1RB_0Offset_Back_0mm_Ch21350

Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600_200106 Medium parameters used: f = 2560 MHz; σ = 1.937 S/m; ε_r = 38.429; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.25, 7.25, 7.25) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch21350/Area Scan (101x121x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 1.77 W/kg

Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.131 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 2.39 W/kg
SAR(1 g) = 1.095 W/kg; SAR(10 g) = 0.541 W/kg
Maximum value of SAR (measured) = 1.73 W/kg



0 dB = 1.77 W/kg

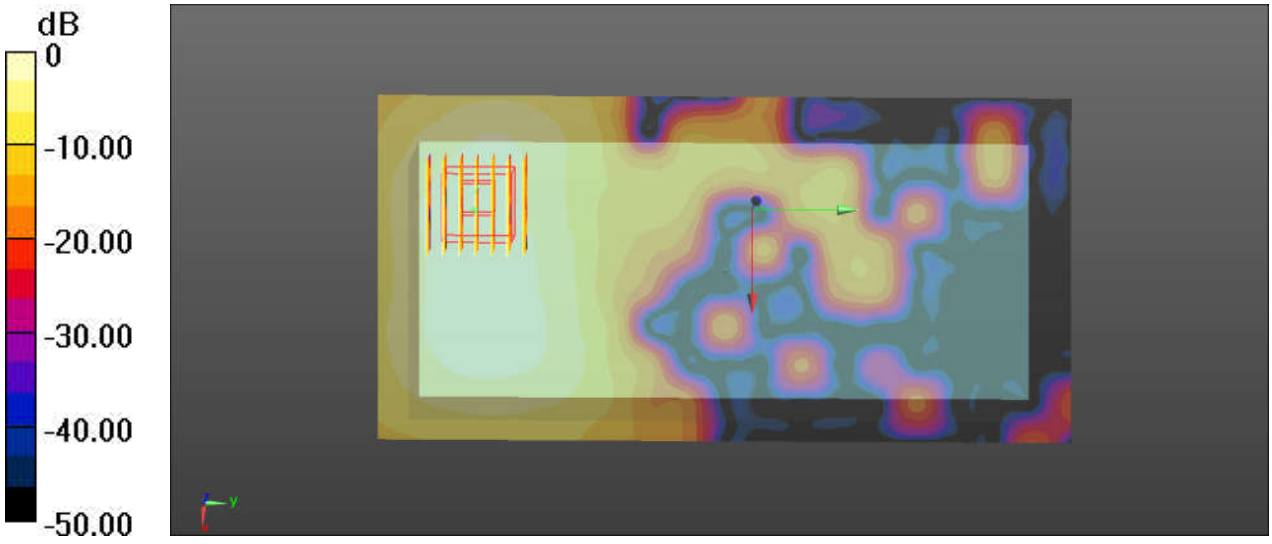
14_WLAN2.4GHz_802.11b_1Mbps_Back_0mm_Ch11

Communication System: UID 0, WIFI (0); Frequency: 2462 MHz;Duty Cycle: 1:1.025
Medium: HSL_2450_200106 Medium parameters used: f = 2462 MHz; σ = 1.87 S/m; ε_r = 38.038; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.4, 7.4, 7.4); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch11/Area Scan (91x181x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.0848 W/kg

Ch11/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.2710 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.130 W/kg
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.028 W/kg
Maximum value of SAR (measured) = 0.0887 W/kg



0 dB = 0.0848 W/kg

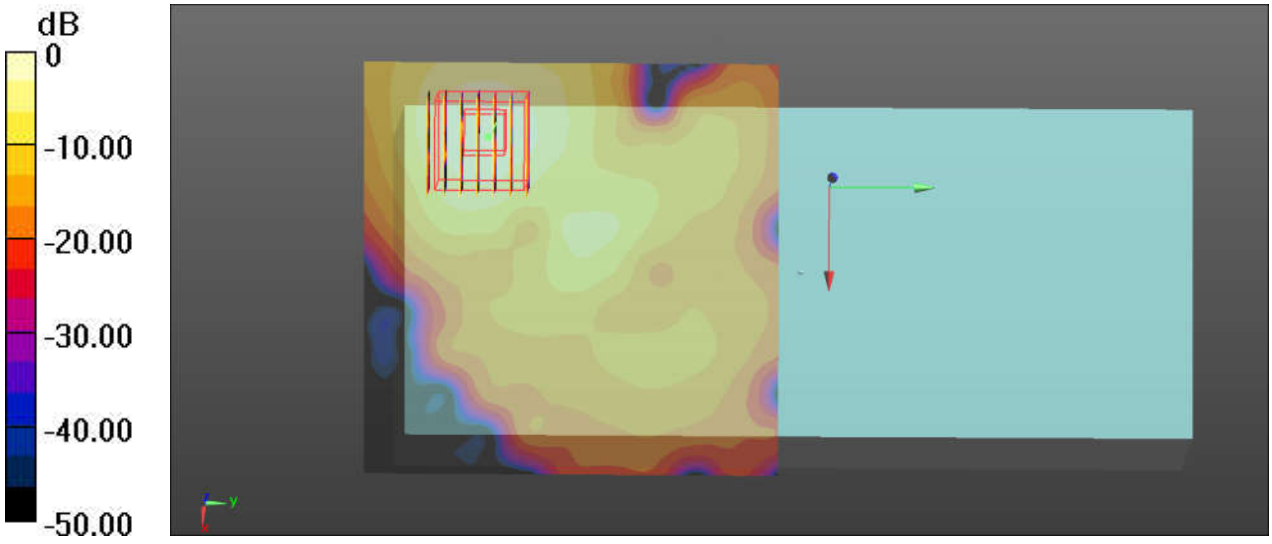
15_WLAN5GHz_802.11a_6Mbps_Back_0mm_Ch56

Communication System: UID 0, WIFI (0); Frequency: 5280 MHz;Duty Cycle: 1:1.144
Medium: HSL_5250_200107 Medium parameters used: f = 5280 MHz; σ = 4.556 S/m; ε_r = 37.242; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(5.27, 5.27, 5.27); Calibrated: 2019.04.30;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch56/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.500 W/kg

Ch56/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.834 W/kg
SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.074 W/kg
Maximum value of SAR (measured) = 0.487 W/kg



0 dB = 0.500 W/kg

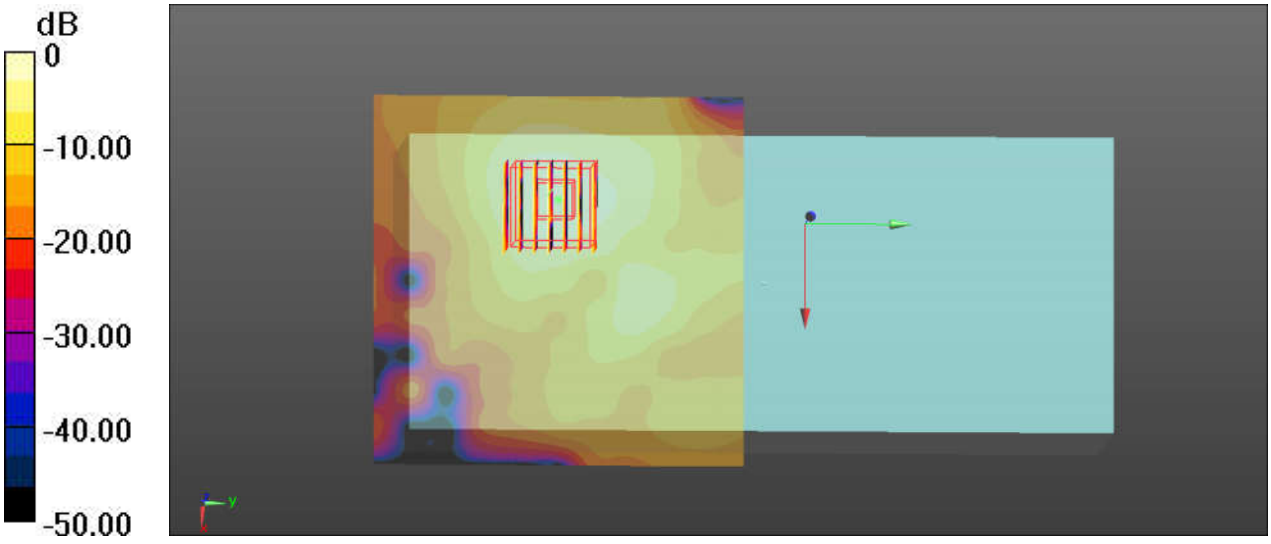
16_WLAN5GHz_802.11a_6Mbps_Back_0mm_Ch100

Communication System: UID 0, WIFI (0); Frequency: 5500 MHz;Duty Cycle: 1:1.144
Medium: HSL_5600_200108 Medium parameters used: f = 5500 MHz; σ = 4.933 S/m; ε_r = 36.712; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(4.7, 4.7, 4.7); Calibrated: 2019.04.30;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch100/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.641 W/kg

Ch100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.014 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.278 W/kg; SAR(10 g) = 0.094 W/kg
Maximum value of SAR (measured) = 0.652 W/kg



0 dB = 0.641 W/kg

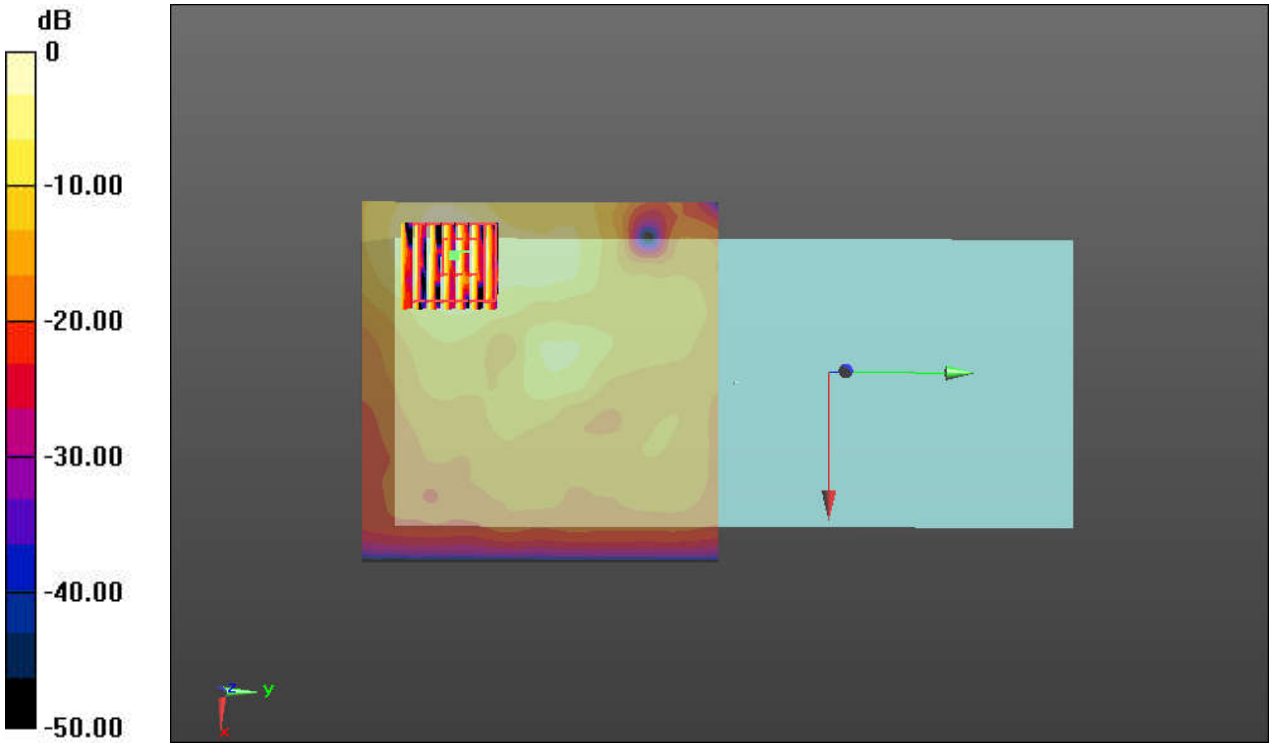
17_WLAN5GHz_802.11a_6Mbps_Back_0mm_Ch157

Communication System: UID 0, WIFI (0); Frequency: 5785 MHz;Duty Cycle: 1:1.144
Medium: HSL_5750_200109 Medium parameters used: f = 5785 MHz; σ = 5.051 S/m; ε_r = 36.529; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(4.75, 4.75, 4.75) ; Calibrated: 2019/4/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch157/Area Scan (101x101x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.639 W/kg

Ch157/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.088 W/kg
Maximum value of SAR (measured) = 0.668 W/kg



0 dB = 0.668 W/kg

18_GSM850_GPRS (2 Tx slots)_Right Side_0mm_Ch251

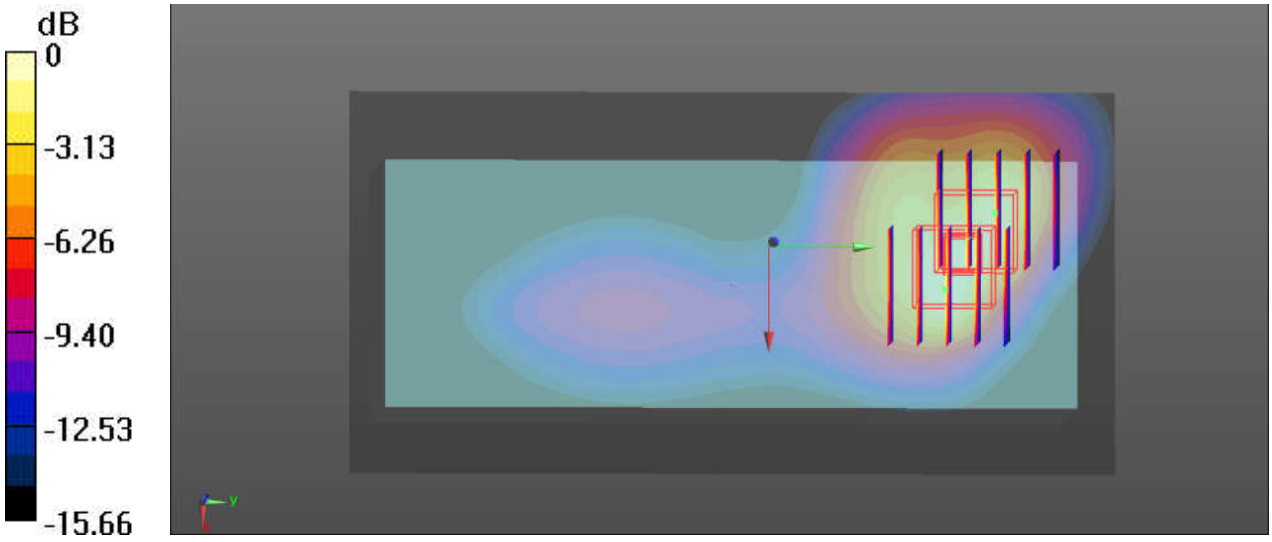
Communication System: UID 0, GPRS/EDGE10 (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_835_200102 Medium parameters used: f = 849 MHz; σ = 0.928 S/m; ε_r = 40.874; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.04 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.67 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.23 W/kg
Maximum value of SAR (measured) = 2.82 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.67 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.70 W/kg
SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.18 W/kg
Maximum value of SAR (measured) = 2.87 W/kg



0 dB = 3.04 W/kg

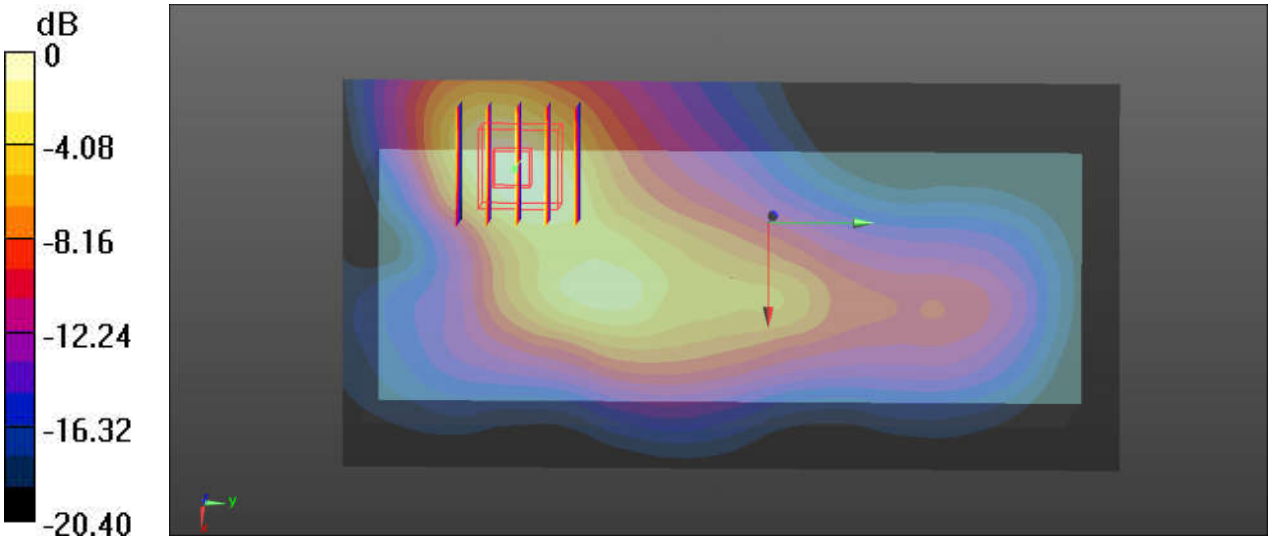
19_GSM1900_GPRS (2 Tx slots)_Right Side_0mm_Ch810

Communication System: UID 0, GPRS/EDGE10 (0); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900_200105 Medium parameters used: f = 1910 MHz; σ = 1.394 S/m; ε_r = 39.016; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch810/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.37 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.83 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.74 W/kg
SAR(1 g) = 0.959 W/kg; SAR(10 g) = 0.503 W/kg
Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg

20_WCDMA II_RMC 12.2Kbps_Right Side_0mm_Ch9538

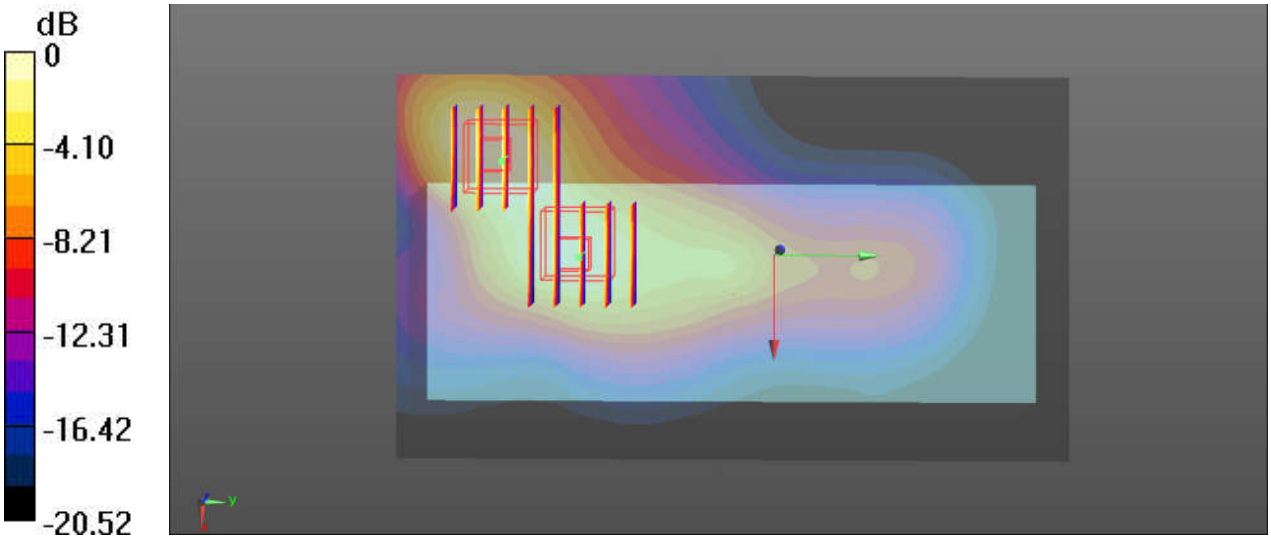
Communication System: UID 0, Generic WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: HSL_1900_200105 Medium parameters used: f = 1908 MHz; σ = 1.392 S/m; ε_r = 39.023; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(7.88, 7.88, 7.88); Calibrated: 2019.04.30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019.11.19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (81x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.24 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.21 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.87 W/kg
SAR(1 g) = 1.58 W/kg; SAR(10 g) = 0.823 W/kg
Maximum value of SAR (measured) = 2.22 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.21 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.18 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.576 W/kg
Maximum value of SAR (measured) = 1.62 W/kg



0 dB = 1.62 W/kg

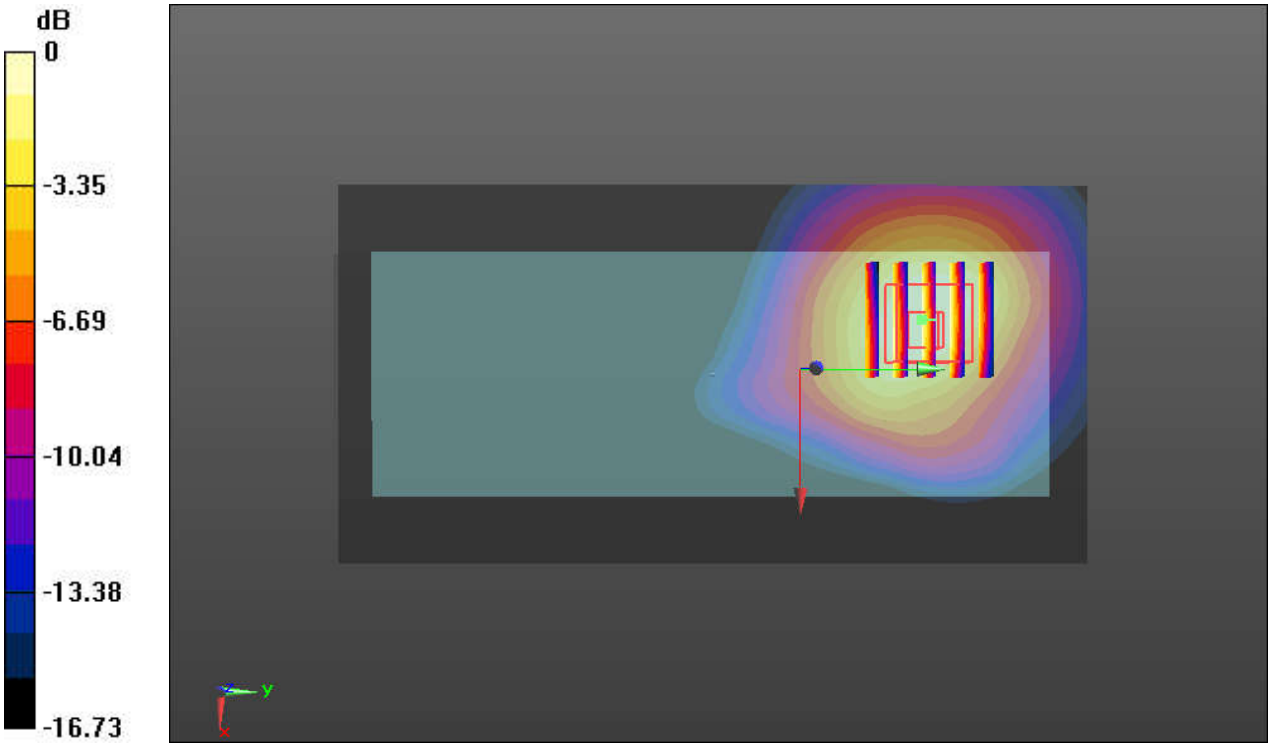
21_WCDMA IV_RMC 12.2Kbps_Left Side_0mm_Ch1312

Communication System: UID 0, Generic WCDMA (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: HSL_1750_200104 Medium parameters used: f = 1712.4 MHz; σ = 1.315 S/m; ε_r = 38.557; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(8.34, 8.34, 8.34) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch1312/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.51 W/kg

Ch1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.530 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.644 W/kg
Maximum value of SAR (measured) = 1.35 W/kg



0 dB = 1.35 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2020/1/2

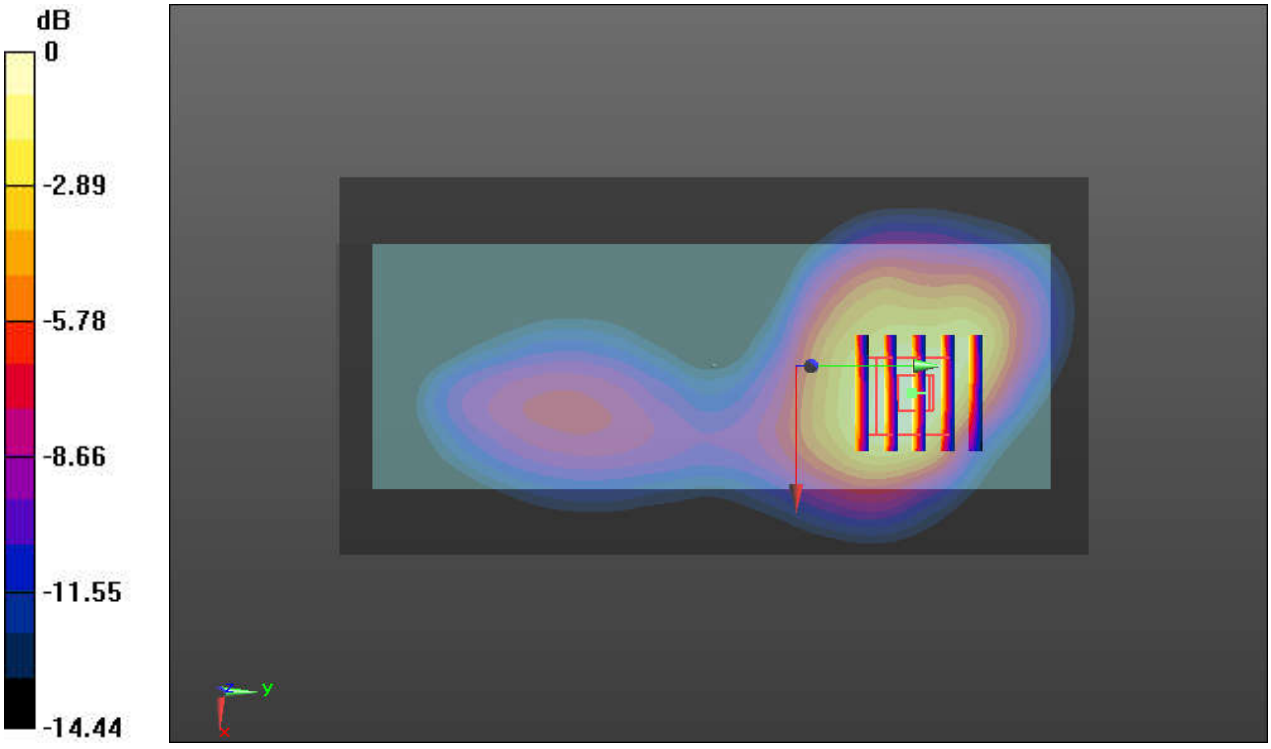
22_WCDMA V_RMC 12.2Kbps _Left Side_0mm_Ch4233

Communication System: UID 0, Generic WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835_200102 Medium parameters used: f = 847 MHz; σ = 0.923 S/m; ε_r = 42.747; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3975; ConvF(9.57, 9.57, 9.57) ; Calibrated: 2019/4/30
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2019/11/19
- Phantom: ELI v4.0 (30deg probe tilt); Type: QDOVA001BB; Serial: TP:1113
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

Ch4233/Area Scan (71x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.13 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.08 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 2.61 W/kg
SAR(1 g) = 1.51 W/kg; SAR(10 g) = 0.883 W/kg
Maximum value of SAR (measured) = 2.03 W/kg



0 dB = 2.03 W/kg