FCC SAR Test Report

APPLICANT	**: ZTE CORPORATION**
EQUIPMENT	**: LTE/CDMA/GSM Multi-Mode Digital Mobile Phone**
BRAND NAME	**: ZTE**
MODEL NAME	**: Z3351S**
FCC ID	**: SRQ-Z3351S**
STANDARD	**: FCC 47 CFR PART 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2013**

The product was received on Feb. 21, 2019 and testing was started from Mar. 05, 2019 and completed on Mar. 19, 2019. We, Sporton International (Kunshan) 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 report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Mark Qu

TESTING
NVLAP LAB CODE 600155-0

Approved by: Mark Qu / Manager

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone,
Jiangsu Province 215335, China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA922103	Rev. 01	Initial issue of report	Apr. 04, 2019

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **ZTE CORPORATION, LTE/CDMA/GSM Multi-Mode Digital Mobile Phone, Z3351S,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 15mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.77	1.14	**0.99**	1.59
		GSM1900	0.98	**1.18**	0.73	
	CDMA2000	BC10	0.49	0.70	0.68	
		BC0	0.41	0.50	0.45	
		BC1	**1.19**	0.53	0.67	
	LTE	Band 12	0.35	0.57	0.37	
		Band 13	0.39	0.69	0.55	
		Band 26/Band 5	0.53	0.75	0.59	
		Band 4	0.53	0.57	0.82	
		Band 25/Band 2	1.19	0.66	0.97	
		Band 41	0.97	0.99	0.52	
DTS	WLAN	2.4GHz WLAN	1.06	0.14	<0.10	1.59
Date of Testing:		2019/3/5~2019/3/19				

Remark :
This device supports both LTE B26 / B25 and B5 / B2.Since the supported frequency span for LTE B5 / B2 falls completely within the supports frequency span for LTE B26 / B25, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B26 / B25.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) 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

Testing Laboratory	
Test Site	Sporton International (Kunshan) Inc.
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958

Applicant	
Company Name	ZTE CORPORATION
Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. China

Manufacturer	
Company Name	ZTE CORPORATION
Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. China

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 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- 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
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	LTE/CDMA/GSM Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	Z3351S
FCC ID	SRQ-Z3351S
IMEI Code	990010440004597
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 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 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 LTE Band 41: 2498.5 MHz ~ 2687.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GSM/GPRS/EGPRS CDMA2000 : 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) LTE: QPSK, 16QAM WLAN 2.4GHz : 802.11b/g/n HT20 Bluetooth BR/EDR/LE
HW Version	Z3351SHW1.0
SW Version	Z3351SV1.0.0B01
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, CDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 12.
3. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
4. This device supports HPUE for LTE band 41 with class 2 power level, so HPUE SAR has been performed.
5. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at LTE Band 41 and LTE Band 41 HPUE.
6. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of CDMA2000 BC1, LTE Band 2/4/25.

4.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>SRQ-Z3351S</td></tr>
<tr><td>Equipment Name</td><td>LTE/CDMA/GSM Multi-Mode Digital Mobile Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>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 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
LTE Band 41: 2498.5 MHz ~ 2687.5 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>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 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
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>Uplink Modulations used</td><td>QPSK / 16QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R11, Cat 5</td></tr>
<tr><td>CA Support</td><td>Not Supported</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>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)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>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.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, When hotspot mode is enabled, power reduction will be activated to limit the maximum power of LTE band 2/4/25</td></tr>
</table>

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 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
LTE Band 41								
	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	39675	2498.5	39700	2501	39725	2503.5	39750	2506
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

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:

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

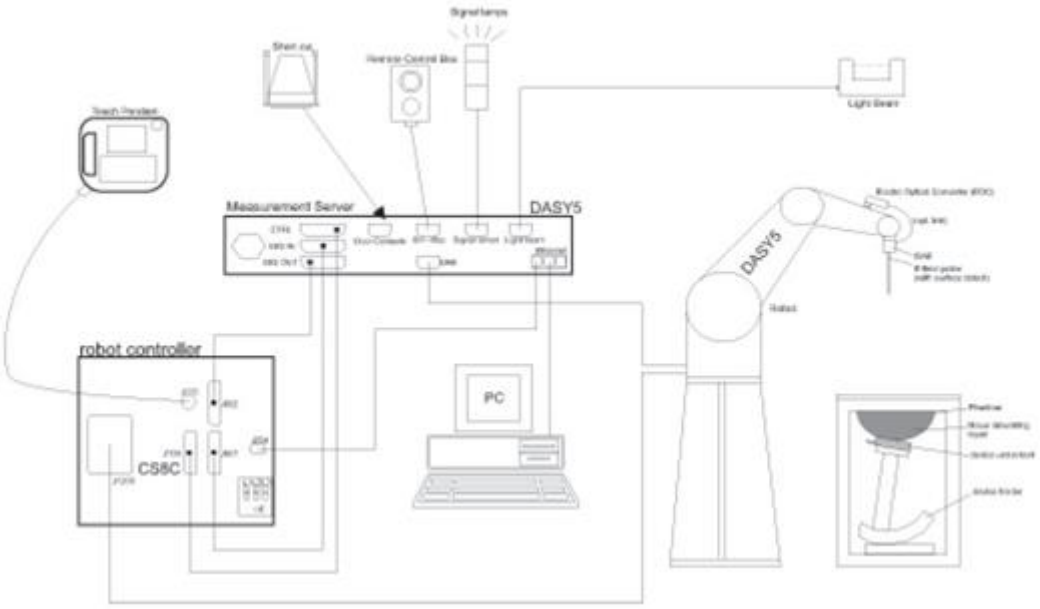
SAR is expressed in units of Watts per kilogram (W/kg)

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

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.

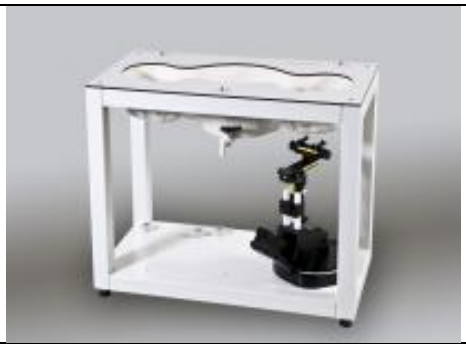
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

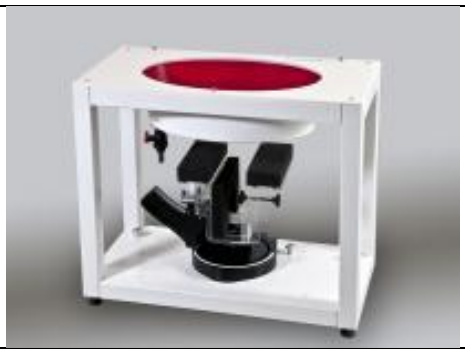
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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	$\frac{1}{2}\cdot\delta\cdot\ln(2) \pm 0.5$ 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	1087	2018/3/21	2019/3/20
SPEAG	835MHz System Validation Kit	D835V2	4d151	2018/3/26	2019/3/25
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2018/3/23	2019/3/22
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2018/3/25	2019/3/24
SPEAG	2450MHz System Validation Kit	D2450V2	908	2018/3/22	2019/3/21
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2018/12/7	2019/12/6
SPEAG	Data Acquisition Electronics	DAE4	1338	2018/12/3	2019/12/2
SPEAG	Dosimetric E-Field Probe	EX3DV4	3843	2018/9/27	2019/9/26
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1839	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1503	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201274349	2018/8/16	2019/8/15
Agilent	Wireless Communication Test Set	E5515C	MY52102706	2018/4/17	2019/4/16
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	2018/4/17	2019/4/16
SPEAG	Dielectric Probe Kit	DAK-3.5	1138	2018/11/20	2019/11/19
Anritsu	Vector Signal Generator	MG3710A	6201682672	2019/1/14	2020/1/13
R&S	CBT BLUETOOTH TESTER	CBT	101641	2019/1/14	2020/1/13
Rohde & Schwarz	Power Meter	NRVD	102081	2018/8/20	2019/8/19
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2018/8/20	2019/8/19
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2018/8/20	2019/8/19
EXA	Spectrum Analyzer	FSV7	101631	2019/1/14	2020/1/13
Testo	Hygrometer	608-H1	1241332126	2018/8/21	2019/8/20
FLUKE	DIGITAC THERMOMETER	51II	97240029	2018/8/8	2019/8/7
ARRA	Power Divider	A3200-2	N/A	Note	
Agilent	Dual Directional Coupler	778D	20500	Note	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note	
MCL	Attenuation1	BW-S10W5+	N/A	Note	
MCL	Attenuation2	BW-S10W5+	N/A	Note	
MCL	Attenuation3	BW-S10W5+	N/A	Note	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note	

Note: 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.

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 head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1. 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. 10.2.

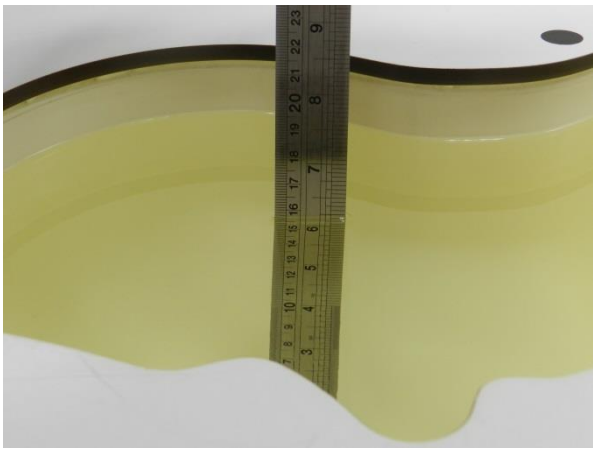


Fig 10.1Photo of Liquid Height for Head SAR

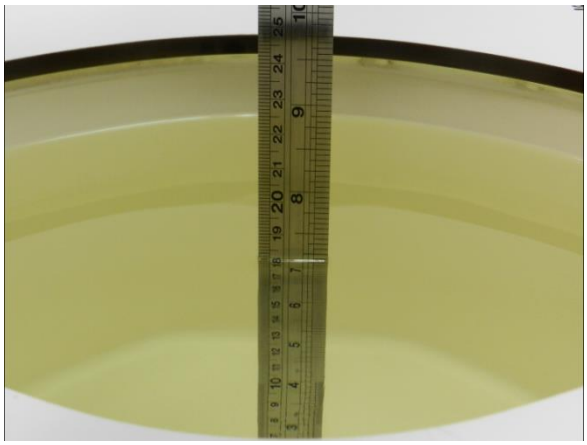


Fig 10.2 Photo of Liquid Height for Body SAR

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
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

<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	22.6	0.903	42.105	0.89	41.90	1.46	0.49	±5	2019/3/6
835	Head	22.9	0.908	42.255	0.90	41.50	0.89	1.82	±5	2019/3/6
1750	Head	22.8	1.345	41.143	1.37	40.10	-1.82	2.60	±5	2019/3/7
1900	Head	22.3	1.424	39.918	1.40	40.00	1.71	-0.21	±5	2019/3/10
2450	Head	22.8	1.863	38.471	1.80	39.20	3.50	-1.86	±5	2019/3/19
2600	Head	22.7	2.040	37.884	1.96	39.00	4.08	-2.86	±5	2019/3/13
750	Body	22.6	0.962	55.691	0.96	55.50	0.21	0.34	±5	2019/3/7
835	Body	22.5	0.976	55.067	0.97	55.20	0.62	-0.24	±5	2019/3/7
1750	Body	22.6	1.476	53.352	1.49	53.40	-0.94	-0.09	±5	2019/3/5
1900	Body	22.9	1.516	52.596	1.52	53.30	-0.26	-1.32	±5	2019/3/5
2450	Body	22.7	1.996	52.882	1.95	52.70	2.36	0.35	±5	2019/3/19
2600	Body	22.6	2.203	52.369	2.16	52.50	1.99	-0.25	±5	2019/3/13

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.

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 (%)
2019/3/6	750	Head	250	1087	3843	1338	1.98	8.25	7.92	-4.00
2019/3/6	835	Head	250	4d151	3843	1338	2.57	9.66	10.28	6.42
2019/3/7	1750	Head	250	1090	3843	1338	8.98	37.40	35.92	-3.96
2019/3/10	1900	Head	250	5d170	3843	1338	9.47	39.90	37.88	-5.06
2019/3/19	2450	Head	250	908	3843	1338	12.00	51.80	48.00	-7.34
2019/3/13	2600	Head	250	1061	3843	1338	14.30	57.70	57.20	-0.87
2019/3/7	750	Body	250	1087	3843	1338	2.24	8.57	8.96	4.55
2019/3/7	835	Body	250	4d151	3843	1338	2.28	9.58	9.12	-4.80
2019/3/5	1750	Body	250	1090	3843	1338	9.27	37.50	37.08	-1.12
2019/3/5	1900	Body	250	5d170	3843	1338	9.73	40.70	38.92	-4.37
2019/3/19	2450	Body	250	908	3843	1338	13.30	50.70	53.20	4.93
2019/3/13	2600	Body	250	1061	3843	1338	13.80	54.20	55.20	1.85

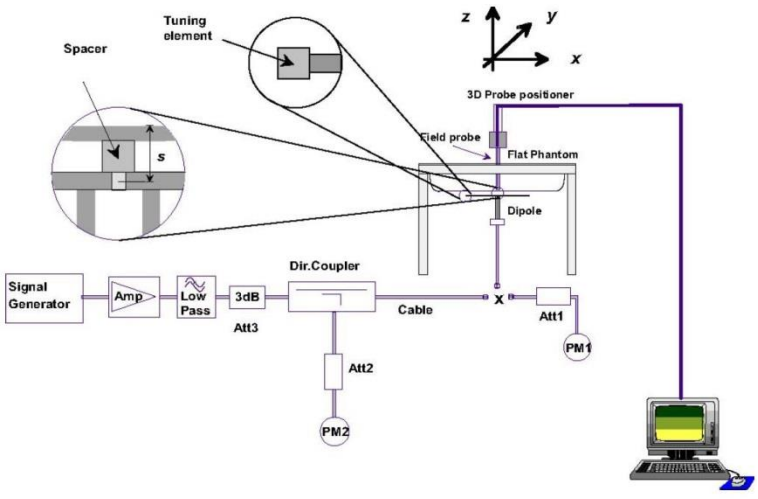


Fig 10.3.1 System Performance Check Setup

Fig 10.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 11.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 11.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 11.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 11.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

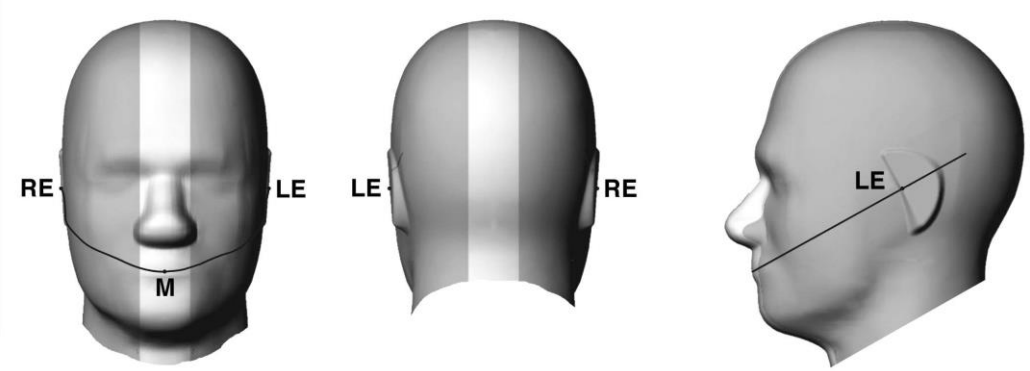


Fig 11.1.1 Front, back, and side views of SAM twin phantom

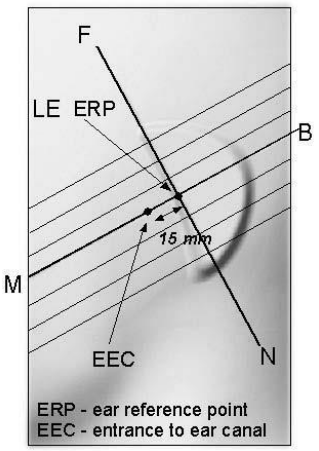


Fig 11.1.2 Close-up side view of phantom showing the ear region.

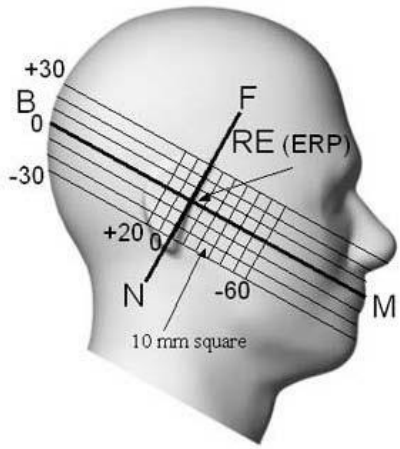


Fig 11.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 11.2.1 and Figure 11.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 11.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 11.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 11.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 11.2.3. The actual rotation angles should be documented in the test report.

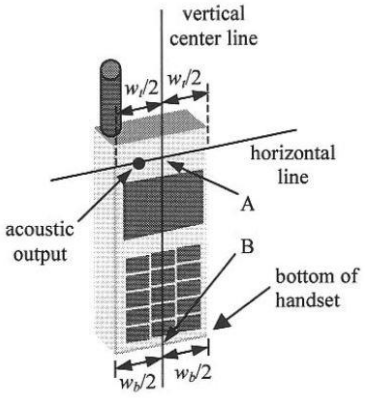


Fig 11.2.1 Handset vertical and horizontal reference lines—"fixed case

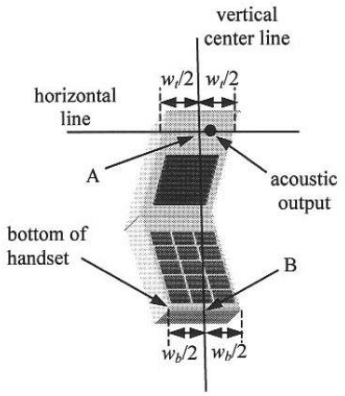


Fig 11.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

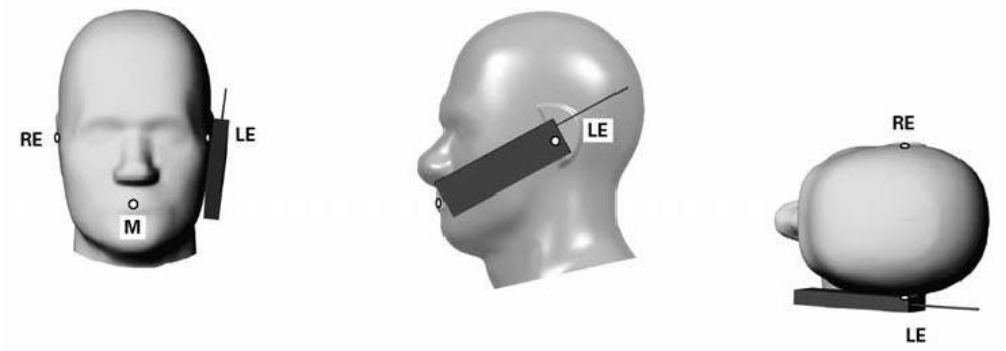


Fig 11.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 11.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

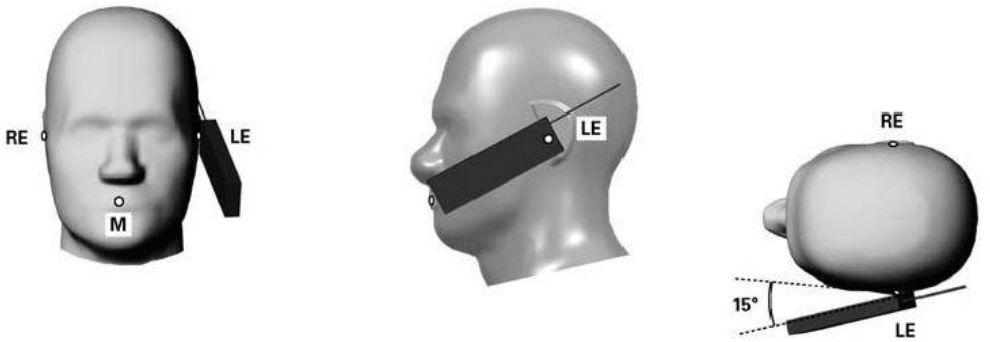


Fig 11.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

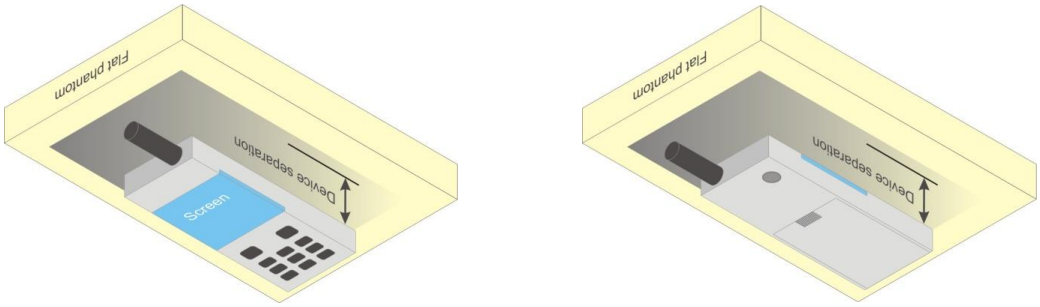


Fig 11.4 Body Worn Position

11.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

12. Conducted RF Output Power (Unit: dBm)

<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 GSM / 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 (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
3. Other configurations of GSM / 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.

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
Tx Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.33	32.41	32.32	33.00	23.33	23.41	23.32	24.00
GPRS 1 Tx slot	32.31	32.40	32.31	33.00	23.31	23.40	23.31	24.00
GPRS 2 Tx slots	31.72	31.81	31.72	32.00	25.72	25.81	25.72	26.00
GPRS 3 Tx slots	30.11	30.20	30.11	30.50	25.85	25.94	25.85	26.24
GPRS 4 Tx slots	29.02	29.12	29.02	29.50	26.02	26.12	26.02	**26.50**
EDGE 1 Tx slot	27.19	27.25	27.20	28.00	18.19	18.25	18.20	19.00
EDGE 2 Tx slots	25.99	26.08	25.96	27.00	19.99	20.08	19.96	21.00
EDGE 3 Tx slots	23.82	23.88	23.79	25.00	19.56	19.62	19.53	20.74
EDGE 4 Tx slots	22.51	22.54	22.54	24.00	19.51	19.54	19.54	21.00
GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
Tx Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.35	29.10	29.06	30.00	20.35	20.10	20.06	21.00
GPRS 1 Tx slot	29.34	29.09	29.04	30.00	20.34	20.09	20.04	21.00
GPRS 2 Tx slots	28.60	28.36	28.29	29.00	22.60	22.36	22.29	23.00
GPRS 3 Tx slots	26.86	26.60	26.53	27.00	22.60	22.34	22.27	22.74
GPRS 4 Tx slots	25.76	25.49	25.44	26.00	22.76	22.49	22.44	**23.00**
EDGE 1 Tx slot	27.15	26.86	27.01	28.00	18.15	17.86	18.01	19.00
EDGE 2 Tx slots	25.87	25.76	25.79	27.00	19.87	19.76	19.79	21.00
EDGE 3 Tx slots	23.88	23.72	23.75	25.00	19.62	19.46	19.49	20.74
EDGE 4 Tx slots	22.77	22.60	22.69	24.00	19.77	19.60	19.69	21.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

<CDMA2000 Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, SAR for head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

<Full Power Mode>

Band	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)	CDMA2000 BC10			Tune-up Limit (dBm)
Tx Channel	1013	384	777		25	600	1175		476	580	684	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	823.1	
RC1 SO55	24.03	24.09	24.03	25.00	24.23	24.22	24.41	25.00	24.10	24.13	24.11	25.00
RC3 SO55	24.00	24.02	24.31	25.00	24.24	24.30	24.65	25.00	24.03	24.10	24.16	25.00
RC3 SO32 (F+SCH)	23.99	23.96	24.30	25.00	24.21	24.22	24.60	25.00	24.04	24.08	24.14	25.00
RC3 SO32 (+SCH)	24.04	24.06	24.30	25.00	24.18	24.12	24.56	25.00	23.95	24.00	24.05	25.00
RTAP 153.6Kbps	24.13	24.03	24.19	25.00	23.89	23.96	24.48	25.00	24.03	24.07	24.14	25.00
RETAP 4096Bits	23.93	23.84	24.29	25.00	23.77	23.83	24.21	25.00	24.07	24.15	24.15	25.00

<Reduced Power Mode for Hotspot On>

Band	CDMA2000 BC1			Tune-up Limit (dBm)
Tx Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	19.73	19.81	20.20	21.00
RC3 SO55	19.79	19.85	20.20	21.00
RC3 SO32 (F+SCH)	19.79	19.84	20.22	21.00
RC3 SO32 (+SCH)	19.85	19.91	20.19	21.00
RTAP 153.6Kbps	19.73	19.84	20.37	21.00
RETAP 4096Bits	19.76	19.85	20.36	21.00

<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 4 / B5 / B12 / B26 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.
9. LTE band 2 / 5 SAR test was covered by Band 25 / 26; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
    a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
    b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

<Full Power Mode>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.69	22.82	22.87	24	0
20	QPSK	1	49	23.06	23.13	23.25		
20	QPSK	1	99	22.64	22.73	22.82		
20	QPSK	50	0	22.01	22.11	22.11	23	1
20	QPSK	50	24	22.03	22.14	22.15		
20	QPSK	50	50	22.01	22.04	22.09		
20	QPSK	100	0	21.99	22.07	22.08		
20	16QAM	1	0	22.04	22.05	22.15	23	1
20	16QAM	1	49	22.40	22.42	22.42		
20	16QAM	1	99	21.95	22.00	22.18		
20	16QAM	50	0	21.02	21.15	21.11	22	2
20	16QAM	50	24	21.02	21.10	21.13		
20	16QAM	50	50	21.01	21.02	21.06		
20	16QAM	100	0	20.94	21.06	21.05		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.75	22.87	22.90	24	0
15	QPSK	1	37	23.05	23.13	23.07		
15	QPSK	1	74	22.75	22.82	22.90		
15	QPSK	36	0	21.88	21.98	22.04	23	1
15	QPSK	36	20	21.87	22.00	22.08		
15	QPSK	36	39	21.90	21.95	22.07		
15	QPSK	75	0	21.90	21.99	22.05		
15	16QAM	1	0	22.12	22.21	22.21	23	1
15	16QAM	1	37	22.34	22.45	22.41		
15	16QAM	1	74	22.07	22.22	22.29		
15	16QAM	36	0	20.84	20.98	21.01	22	2
15	16QAM	36	20	20.84	20.95	21.04		
15	16QAM	36	39	20.85	20.92	21.05		
15	16QAM	75	0	20.88	20.97	21.02		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.82	22.92	22.90	24	0
10	QPSK	1	25	22.94	23.03	23.06		
10	QPSK	1	49	22.79	22.86	22.98		
10	QPSK	25	0	21.87	22.00	22.14	23	1
10	QPSK	25	12	21.89	21.97	22.11		
10	QPSK	25	25	21.84	21.94	22.07		
10	QPSK	50	0	21.87	21.96	22.11		
10	16QAM	1	0	22.13	22.20	22.23	23	1
10	16QAM	1	25	22.25	22.33	22.38		
10	16QAM	1	49	22.08	22.23	22.31		
10	16QAM	25	0	20.86	20.97	21.11	22	2
10	16QAM	25	12	20.89	20.97	21.12		
10	16QAM	25	25	20.85	20.94	21.04		
10	16QAM	50	0	20.88	20.97	21.10		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.74	22.83	22.88	24	0
5	QPSK	1	12	23.00	23.08	23.21		
5	QPSK	1	24	22.70	22.78	22.92		
5	QPSK	12	0	21.85	21.99	22.13	23	1
5	QPSK	12	7	21.91	21.99	22.16		
5	QPSK	12	13	21.91	21.96	22.16		
5	QPSK	25	0	21.84	21.99	22.11		
5	16QAM	1	0	22.02	22.12	22.19	23	1
5	16QAM	1	12	22.33	22.44	22.54		
5	16QAM	1	24	22.01	22.17	22.27		
5	16QAM	12	0	20.86	21.00	21.10	22	2
5	16QAM	12	7	20.88	20.99	21.14		
5	16QAM	12	13	20.86	20.93	21.12		
5	16QAM	25	0	20.86	21.00	21.11		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.80	22.94	23.00	24	0
3	QPSK	1	8	22.85	22.95	23.07		
3	QPSK	1	14	22.81	22.91	23.05		
3	QPSK	8	0	21.84	21.97	22.08	23	1
3	QPSK	8	4	21.90	21.99	22.15		
3	QPSK	8	7	21.83	21.94	22.13		
3	QPSK	15	0	21.83	21.98	22.12		
3	16QAM	1	0	22.01	22.19	22.32	23	1
3	16QAM	1	8	22.04	22.20	22.36		
3	16QAM	1	14	22.02	22.17	22.26		
3	16QAM	8	0	20.90	21.01	21.15	22	2
3	16QAM	8	4	20.95	21.02	21.19		
3	16QAM	8	7	20.92	21.02	21.17		
3	16QAM	15	0	20.86	20.95	21.11		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.73	22.83	22.99	24	0
1.4	QPSK	1	3	22.82	22.96	23.11		
1.4	QPSK	1	5	22.74	22.84	23.01		
1.4	QPSK	3	0	22.82	22.97	23.12		
1.4	QPSK	3	1	22.89	23.00	23.17		
1.4	QPSK	3	3	22.82	22.96	23.12		
1.4	QPSK	6	0	21.90	22.02	22.19	23	1
1.4	16QAM	1	0	22.03	22.21	22.30	23	1
1.4	16QAM	1	3	22.16	22.31	22.42		
1.4	16QAM	1	5	22.01	22.15	22.29		
1.4	16QAM	3	0	21.86	21.98	22.09		
1.4	16QAM	3	1	21.92	22.07	22.17		
1.4	16QAM	3	3	21.89	22.03	22.16		
1.4	16QAM	6	0	20.95	21.08	21.23	22	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.77	22.75	22.72	24	0
20	QPSK	1	49	23.09	23.00	22.96		
20	QPSK	1	99	22.59	22.59	22.53		
20	QPSK	50	0	22.06	22.11	22.07	23	1
20	QPSK	50	24	22.05	22.05	22.02		
20	QPSK	50	50	22.00	21.91	21.97		
20	QPSK	100	0	22.02	22.04	22.02		
20	16QAM	1	0	22.20	22.14	22.12	23	1
20	16QAM	1	49	22.43	22.44	22.42		
20	16QAM	1	99	21.97	21.98	21.94		
20	16QAM	50	0	21.04	21.10	21.11	22	2
20	16QAM	50	24	21.08	21.06	21.04		
20	16QAM	50	50	21.03	20.94	20.95		
20	16QAM	100	0	21.01	21.02	20.99		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.56	22.67	22.65	24	0
15	QPSK	1	37	22.68	22.75	22.72		
15	QPSK	1	74	22.56	22.27	22.29		
15	QPSK	36	0	21.62	21.68	21.61	23	1
15	QPSK	36	20	21.74	21.64	21.61		
15	QPSK	36	39	21.69	21.74	21.69		
15	QPSK	75	0	21.58	21.61	21.54		
15	16QAM	1	0	21.93	22.01	21.83	23	1
15	16QAM	1	37	22.16	22.10	22.09		
15	16QAM	1	74	21.74	21.72	21.64		
15	16QAM	36	0	20.66	20.70	20.65	22	2
15	16QAM	36	20	20.68	20.64	20.72		
15	16QAM	36	39	20.79	20.54	20.65		
15	16QAM	75	0	20.65	20.87	20.68		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.59	22.49	22.58	24	0
10	QPSK	1	25	22.69	22.66	22.75		
10	QPSK	1	49	22.52	22.46	22.49		
10	QPSK	25	0	21.62	21.70	21.69	23	1
10	QPSK	25	12	21.65	21.65	21.59		
10	QPSK	25	25	21.64	21.55	21.55		
10	QPSK	50	0	21.62	21.64	21.55		
10	16QAM	1	0	22.03	22.17	21.97	23	1
10	16QAM	1	25	22.12	22.00	22.05		
10	16QAM	1	49	21.92	21.90	21.76		
10	16QAM	25	0	20.62	20.72	20.64	22	2
10	16QAM	25	12	20.68	20.64	20.70		
10	16QAM	25	25	20.70	20.78	20.70		
10	16QAM	50	0	20.73	20.79	20.62		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.50	22.53	22.56	24	0
5	QPSK	1	12	22.78	22.75	22.80		
5	QPSK	1	24	22.43	22.49	22.42		
5	QPSK	12	0	21.58	21.62	21.67	23	1
5	QPSK	12	7	21.70	21.67	21.55		
5	QPSK	12	13	21.66	21.64	21.65		
5	QPSK	25	0	21.58	21.62	21.63		
5	16QAM	1	0	21.87	21.88	21.77	23	1
5	16QAM	1	12	22.11	22.18	22.13		
5	16QAM	1	24	21.86	21.72	21.82		
5	16QAM	12	0	20.58	20.61	20.63	22	2
5	16QAM	12	7	20.65	20.70	20.60		
5	16QAM	12	13	20.67	20.73	20.53		
5	16QAM	25	0	20.60	20.57	20.74		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.78	22.61	22.86	24	0
3	QPSK	1	8	22.71	22.67	22.68		
3	QPSK	1	14	22.60	22.58	22.65		
3	QPSK	8	0	21.68	21.68	21.72	23	1
3	QPSK	8	4	21.66	21.58	21.80		
3	QPSK	8	7	21.57	21.63	21.68		
3	QPSK	15	0	21.63	21.63	21.59		
3	16QAM	1	0	21.86	22.01	22.01	23	1
3	16QAM	1	8	21.89	22.05	21.93		
3	16QAM	1	14	21.90	21.99	21.96		
3	16QAM	8	0	20.66	20.92	20.80	22	2
3	16QAM	8	4	20.69	20.70	20.69		
3	16QAM	8	7	20.65	20.65	20.73		
3	16QAM	15	0	20.59	20.94	20.71		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.57	22.46	22.80	24	0
1.4	QPSK	1	3	22.59	22.62	22.64		
1.4	QPSK	1	5	22.45	22.46	22.50		
1.4	QPSK	3	0	22.55	22.66	22.66		
1.4	QPSK	3	1	22.60	22.59	22.63		
1.4	QPSK	3	3	22.58	22.63	22.73		
1.4	QPSK	6	0	21.53	21.57	21.62	23	1
1.4	16QAM	1	0	21.83	21.77	21.95	23	1
1.4	16QAM	1	3	21.94	21.98	22.13		
1.4	16QAM	1	5	21.81	21.77	21.71		
1.4	16QAM	3	0	21.60	21.62	21.73		
1.4	16QAM	3	1	21.65	21.79	21.92		
1.4	16QAM	3	3	21.59	21.78	21.77		
1.4	16QAM	6	0	20.65	20.87	20.77	22	2

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.08	23.10	23.00	24	0
10	QPSK	1	25	23.24	23.25	23.02		
10	QPSK	1	49	23.07	22.99	22.61		
10	QPSK	25	0	22.29	22.26	21.92	23	1
10	QPSK	25	12	22.22	22.22	21.91		
10	QPSK	25	25	22.23	22.24	21.63		
10	QPSK	50	0	22.16	22.27	21.87		
10	16QAM	1	0	22.53	22.45	22.19	23	1
10	16QAM	1	25	22.65	22.60	22.27		
10	16QAM	1	49	22.50	22.37	22.05		
10	16QAM	25	0	21.28	21.15	20.88	22	2
10	16QAM	25	12	21.20	21.20	20.94		
10	16QAM	25	25	21.25	21.26	20.66		
10	16QAM	50	0	21.27	21.18	21.03		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.56	22.52	22.44	24	0
5	QPSK	1	12	22.77	22.75	22.72		
5	QPSK	1	24	22.50	22.47	22.49		
5	QPSK	12	0	21.72	21.70	21.72	23	1
5	QPSK	12	7	21.77	21.80	21.74		
5	QPSK	12	13	21.74	21.74	21.68		
5	QPSK	25	0	21.72	21.72	21.65		
5	16QAM	1	0	21.89	21.89	21.89	23	1
5	16QAM	1	12	22.11	22.21	22.18		
5	16QAM	1	24	21.93	21.89	21.85		
5	16QAM	12	0	20.74	20.65	20.71	22	2
5	16QAM	12	7	20.77	20.77	20.70		
5	16QAM	12	13	20.72	20.73	20.68		
5	16QAM	25	0	20.71	20.72	20.63		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.72	22.59	22.58	24	0
3	QPSK	1	8	22.62	22.57	22.59		
3	QPSK	1	14	22.58	22.61	22.61		
3	QPSK	8	0	21.73	21.71	21.76	23	1
3	QPSK	8	4	21.74	21.76	21.78		
3	QPSK	8	7	21.74	21.72	21.72		
3	QPSK	15	0	21.67	21.70	21.72		
3	16QAM	1	0	22.04	22.02	21.99	23	1
3	16QAM	1	8	21.96	22.03	21.99		
3	16QAM	1	14	21.99	22.04	21.98		
3	16QAM	8	0	20.75	20.76	20.79	22	2
3	16QAM	8	4	20.82	20.81	20.80		
3	16QAM	8	7	20.75	20.79	20.77		
3	16QAM	15	0	20.69	20.71	20.71		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.64	22.51	22.51	24	0
1.4	QPSK	1	3	22.74	22.65	22.66		
1.4	QPSK	1	5	22.53	22.53	22.52		
1.4	QPSK	3	0	22.69	22.63	22.64		
1.4	QPSK	3	1	22.77	22.70	22.70		
1.4	QPSK	3	3	22.72	22.64	22.62		
1.4	QPSK	6	0	21.68	21.68	21.71	23	1
1.4	16QAM	1	0	21.91	21.92	21.86	23	1
1.4	16QAM	1	3	22.05	22.00	21.99		
1.4	16QAM	1	5	21.92	21.91	21.92		
1.4	16QAM	3	0	21.69	21.69	21.76		
1.4	16QAM	3	1	21.74	21.75	21.73		
1.4	16QAM	3	3	21.75	21.76	21.72		
1.4	16QAM	6	0	20.73	20.74	20.80	22	2

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.74	22.67	22.67	24	0
10	QPSK	1	25	22.84	22.94	22.85		
10	QPSK	1	49	22.76	22.77	22.75		
10	QPSK	25	0	21.73	21.75	21.71	23	1
10	QPSK	25	12	21.86	21.89	21.80		
10	QPSK	25	25	21.82	21.81	21.72		
10	QPSK	50	0	21.79	21.86	22.07		
10	16QAM	1	0	21.97	21.95	21.98	23	1
10	16QAM	1	25	22.14	22.14	22.19		
10	16QAM	1	49	22.09	22.03	22.02		
10	16QAM	25	0	20.83	20.82	20.80	22	2
10	16QAM	25	12	20.89	20.88	20.90		
10	16QAM	25	25	20.99	20.96	20.96		
10	16QAM	50	0	20.86	21.09	20.94		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.58	22.58	22.66	24	0
5	QPSK	1	12	22.93	22.93	22.87		
5	QPSK	1	24	22.66	22.62	22.59		
5	QPSK	12	0	21.66	21.68	21.75	23	1
5	QPSK	12	7	21.73	21.75	21.88		
5	QPSK	12	13	21.75	21.90	21.83		
5	QPSK	25	0	21.72	21.79	21.77		
5	16QAM	1	0	21.84	21.88	21.91	23	1
5	16QAM	1	12	22.20	22.11	22.16		
5	16QAM	1	24	21.97	21.96	21.86		
5	16QAM	12	0	20.72	20.75	20.77	22	2
5	16QAM	12	7	20.80	20.82	20.97		
5	16QAM	12	13	20.84	20.82	21.03		
5	16QAM	25	0	20.84	20.84	20.99		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.73	22.74	22.68	24	0
3	QPSK	1	8	22.72	22.71	22.70		
3	QPSK	1	14	22.75	22.69	22.69		
3	QPSK	8	0	21.74	21.70	21.76	23	1
3	QPSK	8	4	21.79	21.76	21.77		
3	QPSK	8	7	21.74	21.76	21.73		
3	QPSK	15	0	21.69	21.72	21.75		
3	16QAM	1	0	21.93	21.94	21.87	23	1
3	16QAM	1	8	22.00	21.96	21.93		
3	16QAM	1	14	21.96	21.95	21.93		
3	16QAM	8	0	20.85	20.83	20.87	22	2
3	16QAM	8	4	20.89	20.90	20.91		
3	16QAM	8	7	20.85	20.86	20.85		
3	16QAM	15	0	20.81	20.82	20.85		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.68	22.64	22.64	24	0
1.4	QPSK	1	3	22.82	22.76	22.80		
1.4	QPSK	1	5	22.68	22.65	22.63		
1.4	QPSK	3	0	22.76	22.76	22.74		
1.4	QPSK	3	1	22.82	22.85	22.80		
1.4	QPSK	3	3	22.79	22.77	22.74		
1.4	QPSK	6	0	21.76	21.72	21.74	23	1
1.4	16QAM	1	0	22.02	21.98	21.88	23	1
1.4	16QAM	1	3	22.11	22.04	21.97		
1.4	16QAM	1	5	21.91	21.95	21.88		
1.4	16QAM	3	0	21.76	21.75	21.70		
1.4	16QAM	3	1	21.82	21.82	21.75		
1.4	16QAM	3	3	21.78	21.75	21.74		
1.4	16QAM	6	0	20.90	20.87	20.87	22	2

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel					23230			
Frequency (MHz)					782			
10	QPSK	1	0		22.99		24	0
10	QPSK	1	25		23.14			
10	QPSK	1	49		23.02			
10	QPSK	25	0		21.97		23	1
10	QPSK	25	12		22.04			
10	QPSK	25	25		22.00			
10	QPSK	50	0	-	22.02	-		
10	16QAM	1	0		22.24		23	1
10	16QAM	1	25		22.35			
10	16QAM	1	49		22.31			
10	16QAM	25	0		20.95		22	2
10	16QAM	25	12		21.05			
10	16QAM	25	25		21.01			
10	16QAM	50	0		21.00			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.90	22.86	22.84	24	0
5	QPSK	1	12	23.06	23.12	23.11		
5	QPSK	1	24	22.90	22.87	22.88		
5	QPSK	12	0	21.94	21.95	21.99	23	1
5	QPSK	12	7	22.02	22.02	22.03		
5	QPSK	12	13	22.02	21.99	22.04		
5	QPSK	25	0	21.96	21.97	21.98		
5	16QAM	1	0	22.22	22.15	22.16	23	1
5	16QAM	1	12	22.36	22.41	22.48		
5	16QAM	1	24	22.16	22.19	22.23		
5	16QAM	12	0	20.92	20.93	20.94	22	2
5	16QAM	12	7	21.04	21.03	21.02		
5	16QAM	12	13	21.03	20.98	21.03		
5	16QAM	25	0	20.95	20.95	20.99		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.62	22.70	22.73	24	0
20	QPSK	1	49	23.02	23.06	23.21		
20	QPSK	1	99	22.54	22.59	22.74		
20	QPSK	50	0	21.97	22.09	22.18	23	1
20	QPSK	50	24	21.94	22.05	22.17		
20	QPSK	50	50	21.93	21.99	22.14		
20	QPSK	100	0	21.92	22.00	22.15		
20	16QAM	1	0	21.98	22.09	22.10	23	1
20	16QAM	1	49	22.30	22.37	22.42		
20	16QAM	1	99	21.88	21.95	22.00		
20	16QAM	50	0	20.94	21.08	21.18	22	2
20	16QAM	50	24	20.96	21.04	21.15		
20	16QAM	50	50	20.94	20.94	21.12		
20	16QAM	100	0	20.92	20.98	21.15		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.80	22.89	22.94	24	0
15	QPSK	1	37	22.98	23.13	23.20		
15	QPSK	1	74	22.76	22.79	22.95		
15	QPSK	36	0	21.97	22.10	22.22	23	1
15	QPSK	36	20	21.99	22.10	22.21		
15	QPSK	36	39	21.96	21.99	22.21		
15	QPSK	75	0	21.95	22.06	22.21		
15	16QAM	1	0	22.18	22.24	22.31	23	1
15	16QAM	1	37	22.41	22.48	22.53		
15	16QAM	1	74	22.21	22.22	22.14		
15	16QAM	36	0	20.96	21.06	21.19	22	2
15	16QAM	36	20	20.95	21.07	21.15		
15	16QAM	36	39	20.92	21.00	21.16		
15	16QAM	75	0	20.95	21.07	21.16		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.44	22.64	22.57	24	0
10	QPSK	1	25	22.56	22.75	22.72		
10	QPSK	1	49	22.49	22.46	22.55		
10	QPSK	25	0	21.54	21.62	21.72	23	1
10	QPSK	25	12	21.55	21.60	21.75		
10	QPSK	25	25	21.48	21.62	21.69		
10	QPSK	50	0	21.50	21.60	21.75		
10	16QAM	1	0	21.71	21.86	21.89	23	1
10	16QAM	1	25	21.92	22.02	22.06		
10	16QAM	1	49	21.79	21.77	21.80		
10	16QAM	25	0	20.49	20.65	20.72	22	2
10	16QAM	25	12	20.63	20.62	20.74		
10	16QAM	25	25	20.54	20.70	20.67		
10	16QAM	50	0	20.51	20.73	20.71		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.36	22.46	22.53	24	0
5	QPSK	1	12	22.64	22.71	22.79		
5	QPSK	1	24	22.30	22.44	22.50		
5	QPSK	12	0	21.48	21.61	21.73	23	1
5	QPSK	12	7	21.53	21.64	21.79		
5	QPSK	12	13	21.50	21.60	21.75		
5	QPSK	25	0	21.49	21.59	21.72		
5	16QAM	1	0	21.67	21.74	21.86	23	1
5	16QAM	1	12	21.86	22.00	22.09		
5	16QAM	1	24	21.61	21.71	21.74		
5	16QAM	12	0	20.46	20.60	20.72	22	2
5	16QAM	12	7	20.51	20.63	20.78		
5	16QAM	12	13	20.47	20.59	20.71		
5	16QAM	25	0	20.48	20.59	20.72		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	22.47	22.60	22.62	24	0
3	QPSK	1	8	22.43	22.57	22.62		
3	QPSK	1	14	22.45	22.55	22.62		
3	QPSK	8	0	21.51	21.60	21.75	23	1
3	QPSK	8	4	21.53	21.62	21.75		
3	QPSK	8	7	21.47	21.60	21.69		
3	QPSK	15	0	21.48	21.57	21.74		
3	16QAM	1	0	21.74	21.85	21.88	23	1
3	16QAM	1	8	21.75	21.89	21.86		
3	16QAM	1	14	21.72	21.82	21.83		
3	16QAM	8	0	20.54	20.65	20.76	22	2
3	16QAM	8	4	20.55	20.67	20.78		
3	16QAM	8	7	20.52	20.63	20.71		
3	16QAM	15	0	20.48	20.57	20.73		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	22.43	22.53	22.61	24	0
1.4	QPSK	1	3	22.56	22.71	22.71		
1.4	QPSK	1	5	22.42	22.53	22.61		
1.4	QPSK	3	0	22.54	22.64	22.71		
1.4	QPSK	3	1	22.59	22.70	22.78		
1.4	QPSK	3	3	22.52	22.64	22.71		
1.4	QPSK	6	0	21.53	21.62	21.77	23	1
1.4	16QAM	1	0	21.73	21.86	21.85	23	1
1.4	16QAM	1	3	21.82	21.97	21.92		
1.4	16QAM	1	5	21.72	21.80	21.82		
1.4	16QAM	3	0	21.52	21.63	21.69		
1.4	16QAM	3	1	21.60	21.68	21.76		
1.4	16QAM	3	3	21.53	21.64	21.68		
1.4	16QAM	6	0	20.60	20.70	20.80	22	2

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.56	22.45	22.44	24	0
15	QPSK	1	37	22.91	22.79	22.69		
15	QPSK	1	74	22.48	22.43	22.46		
15	QPSK	36	0	21.63	21.68	21.65	23	1
15	QPSK	36	20	21.69	21.68	21.69		
15	QPSK	36	39	21.65	21.67	21.56		
15	QPSK	75	0	21.67	21.66	21.60		
15	16QAM	1	0	21.94	21.87	21.82	23	1
15	16QAM	1	37	22.22	22.14	22.10		
15	16QAM	1	74	21.90	21.83	21.81		
15	16QAM	36	0	20.60	20.63	20.66	22	2
15	16QAM	36	20	20.68	20.67	20.66		
15	16QAM	36	39	20.62	20.64	20.55		
15	16QAM	75	0	20.69	20.69	20.60		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.68	22.52	22.51	24	0
10	QPSK	1	25	22.79	22.63	22.58		
10	QPSK	1	49	22.57	22.56	22.53		
10	QPSK	25	0	21.64	21.70	21.71	23	1
10	QPSK	25	12	21.67	21.66	21.65		
10	QPSK	25	25	21.70	21.70	21.55		
10	QPSK	50	0	21.67	21.73	21.64		
10	16QAM	1	0	21.97	21.92	21.94	23	1
10	16QAM	1	25	22.03	22.04	22.01		
10	16QAM	1	49	22.00	21.95	21.93		
10	16QAM	25	0	20.68	20.70	20.70	22	2
10	16QAM	25	12	20.69	20.68	20.64		
10	16QAM	25	25	20.70	20.70	20.55		
10	16QAM	50	0	20.69	20.72	20.63		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.57	22.44	22.41	24	0
5	QPSK	1	12	22.90	22.81	22.75		
5	QPSK	1	24	22.57	22.44	22.42		
5	QPSK	12	0	21.67	21.63	21.69	23	1
5	QPSK	12	7	21.73	21.74	21.71		
5	QPSK	12	13	21.73	21.72	21.62		
5	QPSK	25	0	21.66	21.68	21.67		
5	16QAM	1	0	21.87	21.82	21.80	23	1
5	16QAM	1	12	22.10	22.10	22.06		
5	16QAM	1	24	21.86	21.84	21.81		
5	16QAM	12	0	20.65	20.66	20.67	22	2
5	16QAM	12	7	20.74	20.72	20.69		
5	16QAM	12	13	20.74	20.72	20.61		
5	16QAM	25	0	20.68	20.70	20.65		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.73	22.57	22.54	24	0
3	QPSK	1	8	22.76	22.58	22.56		
3	QPSK	1	14	22.67	22.57	22.55		
3	QPSK	8	0	21.71	21.70	21.69	23	1
3	QPSK	8	4	21.75	21.73	21.72		
3	QPSK	8	7	21.73	21.70	21.70		
3	QPSK	15	0	21.68	21.68	21.66		
3	16QAM	1	0	22.05	22.01	21.89	23	1
3	16QAM	1	8	22.03	22.01	21.99		
3	16QAM	1	14	21.95	22.00	21.91		
3	16QAM	8	0	20.78	20.80	20.78	22	2
3	16QAM	8	4	20.82	20.79	20.77		
3	16QAM	8	7	20.79	20.77	20.76		
3	16QAM	15	0	20.71	20.70	20.65		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.65	22.56	22.49	24	0
1.4	QPSK	1	3	22.81	22.65	22.66		
1.4	QPSK	1	5	22.67	22.53	22.53		
1.4	QPSK	3	0	22.77	22.63	22.63		
1.4	QPSK	3	1	22.82	22.72	22.71		
1.4	QPSK	3	3	22.79	22.65	22.65		
1.4	QPSK	6	0	21.76	21.74	21.73	23	1
1.4	16QAM	1	0	22.03	21.97	21.81	23	1
1.4	16QAM	1	3	22.20	22.05	21.98		
1.4	16QAM	1	5	22.03	21.88	21.87		
1.4	16QAM	3	0	21.82	21.78	21.76		
1.4	16QAM	3	1	21.83	21.85	21.81		
1.4	16QAM	3	3	21.79	21.74	21.74		
1.4	16QAM	6	0	20.83	20.79	20.83	22	2

<Reduced Power Mode for Hotspot On>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	19.61	19.50	19.51	21	0
20	QPSK	1	49	19.66	19.69	19.99		
20	QPSK	1	99	19.64	19.65	19.54		
20	QPSK	50	0	19.56	19.73	19.77	21	0
20	QPSK	50	24	19.59	19.68	19.78		
20	QPSK	50	50	19.59	19.63	19.69		
20	QPSK	100	0	19.55	19.66	19.68		
20	16QAM	1	0	19.57	19.66	19.74	21	0
20	16QAM	1	49	19.91	19.97	19.98		
20	16QAM	1	99	19.47	19.56	19.72		
20	16QAM	50	0	19.60	19.75	19.74	21	0
20	16QAM	50	24	19.61	19.69	19.75		
20	16QAM	50	50	19.58	19.63	19.68		
20	16QAM	100	0	19.54	19.65	19.64		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.48	19.60	19.59	21	0
15	QPSK	1	37	19.72	19.81	19.91		
15	QPSK	1	74	19.45	19.52	19.67		
15	QPSK	36	0	19.62	19.73	19.79	21	0
15	QPSK	36	20	19.62	19.72	19.82		
15	QPSK	36	39	19.62	19.67	19.80		
15	QPSK	75	0	19.63	19.70	19.78		
15	16QAM	1	0	19.73	19.84	19.83	21	0
15	16QAM	1	37	19.97	19.95	19.90		
15	16QAM	1	74	19.70	19.80	19.91		
15	16QAM	36	0	19.56	19.68	19.75	21	0
15	16QAM	36	20	19.59	19.69	19.77		
15	16QAM	36	39	19.58	19.63	19.75		
15	16QAM	75	0	19.62	19.69	19.75		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.57	19.64	19.71	21	0
10	QPSK	1	25	19.57	19.71	19.86		
10	QPSK	1	49	19.54	19.61	19.79		
10	QPSK	25	0	19.59	19.70	19.86	21	0
10	QPSK	25	12	19.64	19.73	19.87		
10	QPSK	25	25	19.60	19.69	19.79		
10	QPSK	50	0	19.63	19.70	19.87		
10	16QAM	1	0	19.83	19.88	19.92	21	0
10	16QAM	1	25	19.90	19.97	19.92		
10	16QAM	1	49	19.80	19.88	19.91		
10	16QAM	25	0	19.58	19.69	19.81	21	0
10	16QAM	25	12	19.64	19.71	19.81		
10	16QAM	25	25	19.60	19.66	19.76		
10	16QAM	50	0	19.63	19.70	19.83		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.45	19.55	19.64	21	0
5	QPSK	1	12	19.77	19.83	19.97		
5	QPSK	1	24	19.45	19.55	19.68		
5	QPSK	12	0	19.60	19.73	19.85	21	0
5	QPSK	12	7	19.64	19.75	19.90		
5	QPSK	12	13	19.59	19.68	19.83		
5	QPSK	25	0	19.58	19.74	19.84		
5	16QAM	1	0	19.67	19.80	19.86	21	0
5	16QAM	1	12	19.95	19.96	19.91		
5	16QAM	1	24	19.83	19.82	19.87		
5	16QAM	12	0	19.73	19.85	19.81	21	0
5	16QAM	12	7	19.54	19.65	19.88		
5	16QAM	12	13	19.55	19.65	19.79		
5	16QAM	25	0	19.56	19.73	19.83		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.54	19.61	19.77	21	0
3	QPSK	1	8	19.57	19.63	19.85		
3	QPSK	1	14	19.55	19.63	19.78		
3	QPSK	8	0	19.59	19.68	19.82	21	0
3	QPSK	8	4	19.62	19.70	19.90		
3	QPSK	8	7	19.57	19.68	19.85		
3	QPSK	15	0	19.59	19.68	19.88		
3	16QAM	1	0	19.80	19.89	19.95	21	0
3	16QAM	1	8	19.77	19.92	19.92		
3	16QAM	1	14	19.83	19.85	19.95		
3	16QAM	8	0	19.61	19.72	19.68	21	0
3	16QAM	8	4	19.64	19.75	19.68		
3	16QAM	8	7	19.61	19.71	19.80		
3	16QAM	15	0	19.58	19.68	19.84		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.51	19.59	19.76	21	0
1.4	QPSK	1	3	19.61	19.70	19.84		
1.4	QPSK	1	5	19.48	19.61	19.75		
1.4	QPSK	3	0	19.59	19.68	19.84		
1.4	QPSK	3	1	19.64	19.74	19.88		
1.4	QPSK	3	3	19.57	19.66	19.83		
1.4	QPSK	6	0	19.58	19.69	19.85	21	0
1.4	16QAM	1	0	19.72	19.87	19.91	21	0
1.4	16QAM	1	3	19.86	19.94	19.95		
1.4	16QAM	1	5	19.73	19.85	19.95		
1.4	16QAM	3	0	19.56	19.67	19.73		
1.4	16QAM	3	1	19.61	19.73	19.74		
1.4	16QAM	3	3	19.55	19.66	19.85		
1.4	16QAM	6	0	19.63	19.74	19.90	21	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	19.50	19.51	19.48	21	0
20	QPSK	1	49	20.01	19.78	19.77		
20	QPSK	1	99	19.57	19.52	19.51		
20	QPSK	50	0	19.86	19.85	19.78	21	0
20	QPSK	50	24	19.76	19.79	19.73		
20	QPSK	50	50	19.72	19.65	19.67		
20	QPSK	100	0	19.75	19.74	19.71		
20	16QAM	1	0	19.85	19.79	19.78	21	0
20	16QAM	1	49	19.91	19.96	19.96		
20	16QAM	1	99	19.65	19.66	19.57		
20	16QAM	50	0	19.78	19.86	19.79	21	0
20	16QAM	50	24	19.80	19.77	19.74		
20	16QAM	50	50	19.74	19.67	19.66		
20	16QAM	100	0	19.74	19.73	19.71		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	19.69	19.69	19.63	21	0
15	QPSK	1	37	19.91	19.86	19.78		
15	QPSK	1	74	19.57	19.54	19.45		
15	QPSK	36	0	19.77	19.79	19.73	21	0
15	QPSK	36	20	19.79	19.78	19.73		
15	QPSK	36	39	19.77	19.70	19.68		
15	QPSK	75	0	19.75	19.75	19.71		
15	16QAM	1	0	19.99	19.97	19.94	21	0
15	16QAM	1	37	19.96	19.98	19.91		
15	16QAM	1	74	19.81	19.89	19.72		
15	16QAM	36	0	19.75	19.76	19.74	21	0
15	16QAM	36	20	19.76	19.76	19.73		
15	16QAM	36	39	19.73	19.68	19.65		
15	16QAM	75	0	19.74	19.74	19.71		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	19.75	19.73	19.69	21	0
10	QPSK	1	25	19.83	19.81	19.75		
10	QPSK	1	49	19.67	19.66	19.57		
10	QPSK	25	0	19.76	19.80	19.71	21	0
10	QPSK	25	12	19.80	19.79	19.73		
10	QPSK	25	25	19.76	19.71	19.66		
10	QPSK	50	0	19.78	19.79	19.70		
10	16QAM	1	0	19.92	19.99	19.97	21	0
10	16QAM	1	25	19.96	19.91	19.92		
10	16QAM	1	49	19.96	19.93	19.86		
10	16QAM	25	0	19.78	19.80	19.72	21	0
10	16QAM	25	12	19.80	19.80	19.73		
10	16QAM	25	25	19.75	19.70	19.67		
10	16QAM	50	0	19.79	19.76	19.71		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.63	19.63	19.57	21	0
5	QPSK	1	12	19.94	19.92	19.82		
5	QPSK	1	24	19.60	19.60	19.50		
5	QPSK	12	0	19.74	19.77	19.67	21	0
5	QPSK	12	7	19.77	19.79	19.73		
5	QPSK	12	13	19.75	19.72	19.65		
5	QPSK	25	0	19.76	19.75	19.66		
5	16QAM	1	0	19.97	19.89	19.87	21	0
5	16QAM	1	12	19.96	19.95	19.97		
5	16QAM	1	24	19.93	19.86	19.80		
5	16QAM	12	0	19.75	19.75	19.66	21	0
5	16QAM	12	7	19.79	19.75	19.67		
5	16QAM	12	13	19.75	19.67	19.62		
5	16QAM	25	0	19.79	19.76	19.65		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.74	19.74	19.65	21	0
3	QPSK	1	8	19.69	19.70	19.64		
3	QPSK	1	14	19.63	19.69	19.62		
3	QPSK	8	0	19.63	19.74	19.67	21	0
3	QPSK	8	4	19.60	19.76	19.71		
3	QPSK	8	7	19.54	19.71	19.66		
3	QPSK	15	0	19.39	19.73	19.65		
3	16QAM	1	0	19.72	19.97	19.95	21	0
3	16QAM	1	8	19.87	19.96	19.90		
3	16QAM	1	14	19.67	19.94	19.91		
3	16QAM	8	0	19.45	19.77	19.73	21	0
3	16QAM	8	4	19.43	19.78	19.76		
3	16QAM	8	7	19.42	19.77	19.70		
3	16QAM	15	0	19.36	19.73	19.68		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.63	19.55	19.40	21	0
1.4	QPSK	1	3	19.77	19.65	19.47		
1.4	QPSK	1	5	19.67	19.47	19.31		
1.4	QPSK	3	0	19.70	19.65	19.37		
1.4	QPSK	3	1	19.75	19.74	19.44		
1.4	QPSK	3	3	19.67	19.51	19.42		
1.4	QPSK	6	0	19.66	19.43	19.37	21	0
1.4	16QAM	1	0	19.88	19.86	19.59	21	0
1.4	16QAM	1	3	19.92	19.91	19.69		
1.4	16QAM	1	5	19.88	19.87	19.69		
1.4	16QAM	3	0	19.63	19.60	19.45		
1.4	16QAM	3	1	19.71	19.54	19.48		
1.4	16QAM	3	3	19.68	19.50	19.41		
1.4	16QAM	6	0	19.68	19.63	19.44	21	0

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	19.51	19.64	19.54	21	0
20	QPSK	1	49	19.68	19.71	20.04		
20	QPSK	1	99	19.52	19.66	19.64		
20	QPSK	50	0	19.67	19.68	19.81	21	0
20	QPSK	50	24	19.67	19.57	19.78		
20	QPSK	50	50	19.64	19.57	19.68		
20	QPSK	100	0	19.61	19.49	19.72		
20	16QAM	1	0	19.65	19.68	19.33	21	0
20	16QAM	1	49	19.96	20.03	19.71		
20	16QAM	1	99	19.53	19.61	19.26		
20	16QAM	50	0	19.66	19.79	19.50	21	0
20	16QAM	50	24	19.67	19.77	19.49		
20	16QAM	50	50	19.63	19.68	19.36		
20	16QAM	100	0	19.62	19.68	19.35		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	19.38	19.43	19.50	21	0
15	QPSK	1	37	19.53	19.63	19.75		
15	QPSK	1	74	19.30	19.34	19.52		
15	QPSK	36	0	19.45	19.56	19.72	21	0
15	QPSK	36	20	19.48	19.57	19.70		
15	QPSK	36	39	19.44	19.51	19.69		
15	QPSK	75	0	19.45	19.56	19.70		
15	16QAM	1	0	19.66	19.71	19.72	21	0
15	16QAM	1	37	19.81	19.92	19.98		
15	16QAM	1	74	19.58	19.64	19.66		
15	16QAM	36	0	19.44	19.54	19.66	21	0
15	16QAM	36	20	19.44	19.54	19.65		
15	16QAM	36	39	19.43	19.49	19.64		
15	16QAM	75	0	19.45	19.54	19.65		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	19.40	19.50	19.57	21	0
10	QPSK	1	25	19.48	19.59	19.76		
10	QPSK	1	49	19.35	19.42	19.59		
10	QPSK	25	0	19.43	19.56	19.71	21	0
10	QPSK	25	12	19.45	19.57	19.72		
10	QPSK	25	25	19.42	19.47	19.68		
10	QPSK	50	0	19.46	19.55	19.72		
10	16QAM	1	0	19.65	19.77	19.82	21	0
10	16QAM	1	25	19.77	19.89	20.00		
10	16QAM	1	49	19.63	19.76	19.69		
10	16QAM	25	0	19.43	19.56	19.69	21	0
10	16QAM	25	12	19.46	19.57	19.71		
10	16QAM	25	25	19.44	19.49	19.63		
10	16QAM	50	0	19.46	19.55	19.69		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	19.23	19.34	19.48	21	0
5	QPSK	1	12	19.50	19.62	19.76		
5	QPSK	1	24	19.17	19.30	19.44		
5	QPSK	12	0	19.37	19.50	19.64	21	0
5	QPSK	12	7	19.41	19.54	19.66		
5	QPSK	12	13	19.33	19.45	19.58		
5	QPSK	25	0	19.36	19.47	19.63		
5	16QAM	1	0	19.49	19.64	19.71	21	0
5	16QAM	1	12	19.78	19.95	19.91		
5	16QAM	1	24	19.49	19.56	19.56		
5	16QAM	12	0	19.33	19.46	19.56	21	0
5	16QAM	12	7	19.38	19.48	19.60		
5	16QAM	12	13	19.32	19.41	19.50		
5	16QAM	25	0	19.36	19.47	19.58		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	19.34	19.44	19.64	21	0
3	QPSK	1	8	19.33	19.44	19.66		
3	QPSK	1	14	19.29	19.42	19.58		
3	QPSK	8	0	19.36	19.50	19.63	21	0
3	QPSK	8	4	19.40	19.50	19.71		
3	QPSK	8	7	19.36	19.47	19.91		
3	QPSK	15	0	19.36	19.45	19.56		
3	16QAM	1	0	19.60	19.76	19.56	21	0
3	16QAM	1	8	19.59	19.67	19.60		
3	16QAM	1	14	19.57	19.68	20.00		
3	16QAM	8	0	19.40	19.53	19.80	21	0
3	16QAM	8	4	19.44	19.54	19.87		
3	16QAM	8	7	19.40	19.51	19.75		
3	16QAM	15	0	19.37	19.46	19.85		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	19.27	19.39	19.52	21	0
1.4	QPSK	1	3	19.42	19.53	19.66		
1.4	QPSK	1	5	19.26	19.38	19.52		
1.4	QPSK	3	0	19.39	19.50	19.62		
1.4	QPSK	3	1	19.44	19.53	19.68		
1.4	QPSK	3	3	19.38	19.50	19.62		
1.4	QPSK	6	0	19.39	19.50	19.66	21	0
1.4	16QAM	1	0	19.55	19.70	19.68	21	0
1.4	16QAM	1	3	19.71	19.80	19.75		
1.4	16QAM	1	5	19.55	19.63	19.61		
1.4	16QAM	3	0	19.38	19.46	19.52		
1.4	16QAM	3	1	19.43	19.53	19.62		
1.4	16QAM	3	3	19.38	19.48	19.52		
1.4	16QAM	6	0	19.47	19.56	19.63	21	0

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations

b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS

c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

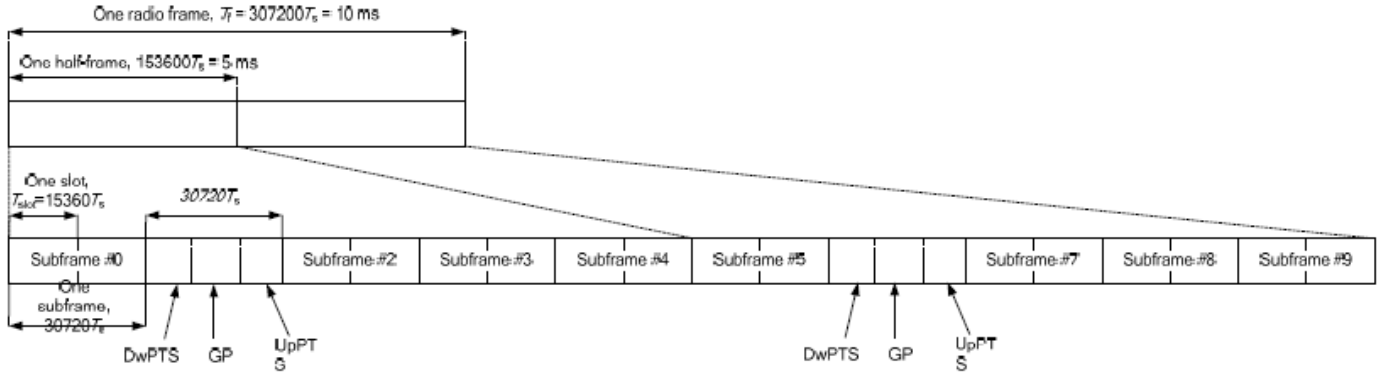


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~4**	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~3**	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

<Full Power Mode>

<LTE Band 41 Power Class 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	27.14	27.09	27.26	27.33	27.53	28	0
20	QPSK	1	49	27.38	27.50	27.60	27.61	27.76		
20	QPSK	1	99	27.03	27.18	27.22	27.16	27.43		
20	QPSK	50	0	26.57	26.61	26.66	26.75	26.98	27	1
20	QPSK	50	24	26.56	26.63	26.81	26.74	26.98		
20	QPSK	50	50	26.54	26.55	26.74	26.70	26.90		
20	QPSK	100	0	26.63	26.59	26.75	26.73	26.96		
20	16QAM	1	0	26.49	26.50	26.59	26.66	26.80	27	1
20	16QAM	1	49	26.68	26.78	26.97	26.93	26.97		
20	16QAM	1	99	26.39	26.41	26.47	26.54	26.31		
20	16QAM	50	0	25.56	25.62	25.73	25.72	25.90	26	2
20	16QAM	50	24	25.60	25.57	25.75	25.67	25.92		
20	16QAM	50	50	25.63	25.51	25.66	25.65	25.80		
20	16QAM	100	0	25.63	25.54	25.73	25.67	25.91		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	27.49	27.01	27.10	27.15	27.38	28	0
15	QPSK	1	37	27.12	27.09	27.22	27.21	27.46		
15	QPSK	1	74	26.85	26.93	27.03	27.05	27.24		
15	QPSK	36	0	26.13	26.11	26.37	26.22	26.48	27	1
15	QPSK	36	20	26.10	26.17	26.36	26.31	26.53		
15	QPSK	36	39	26.10	26.11	26.24	26.29	26.43		
15	QPSK	75	0	26.05	26.16	26.22	26.26	26.43		
15	16QAM	1	0	26.19	26.18	26.37	26.42	26.52	27	1
15	16QAM	1	37	26.32	26.30	26.53	26.51	26.67		
15	16QAM	1	74	26.04	26.17	26.24	26.29	26.41		
15	16QAM	36	0	25.13	25.10	25.20	25.22	25.39	26	2
15	16QAM	36	20	25.09	25.07	25.20	25.16	25.46		
15	16QAM	36	39	25.01	25.05	25.17	25.16	25.35		
15	16QAM	75	0	25.14	25.48	25.22	25.24	25.40		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	27.04	27.00	27.18	27.15	27.37	28	0
10	QPSK	1	25	27.01	27.15	27.22	27.26	27.43		
10	QPSK	1	49	26.95	26.97	27.12	27.17	27.29		
10	QPSK	25	0	26.16	26.17	26.35	26.33	26.59	27	1
10	QPSK	25	12	26.16	26.20	26.35	26.32	26.50		
10	QPSK	25	25	26.13	26.22	26.28	26.27	26.52		
10	QPSK	50	0	26.23	26.28	26.39	26.32	26.61		
10	16QAM	1	0	26.26	26.30	26.57	26.52	26.75	27	1
10	16QAM	1	25	26.30	26.44	26.55	26.49	26.68		
10	16QAM	1	49	26.20	26.32	26.43	26.44	26.65		
10	16QAM	25	0	25.22	25.19	25.28	25.29	25.54	26	2
10	16QAM	25	12	25.16	25.18	25.29	25.19	25.47		
10	16QAM	25	25	25.19	25.11	25.27	25.26	25.38		
10	16QAM	50	0	25.23	25.20	25.36	25.29	25.54		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	26.91	26.93	27.07	27.47	27.22	28	0
5	QPSK	1	12	27.07	27.09	27.20	27.65	27.36		
5	QPSK	1	24	26.95	26.89	27.01	27.51	27.25		
5	QPSK	12	0	26.19	26.17	26.38	26.77	26.50	27	1
5	QPSK	12	7	26.28	26.23	26.41	26.79	26.60		
5	QPSK	12	13	26.19	26.25	26.34	26.82	26.53		
5	QPSK	25	0	26.16	26.11	26.28	26.66	26.60		
5	16QAM	1	0	26.21	26.20	26.42	26.84	26.58	27	1
5	16QAM	1	12	26.28	26.33	26.47	26.91	26.56		
5	16QAM	1	24	26.21	26.21	26.33	26.39	26.49		
5	16QAM	12	0	25.14	25.09	25.22	25.62	25.37	26	2
5	16QAM	12	7	25.25	25.14	25.30	25.35	25.33		
5	16QAM	12	13	25.18	25.15	25.21	25.19	25.38		
5	16QAM	25	0	25.15	25.10	25.24	25.14	25.32		

<LTE Band 41 Power Class 3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	24.21	24.34	24.29	24.29	24.35	25	0
20	QPSK	1	49	24.21	24.23	24.34	24.34	24.85		
20	QPSK	1	99	24.21	24.14	24.38	24.37	24.32		
20	QPSK	50	0	23.14	23.17	23.67	23.68	23.69	24	1
20	QPSK	50	24	23.14	23.23	23.26	23.27	23.50		
20	QPSK	50	50	23.16	23.14	23.36	23.27	23.44		
20	QPSK	100	0	23.10	23.18	23.24	23.31	23.47		
20	16QAM	1	0	22.98	22.96	23.29	23.29	23.38	24	1
20	16QAM	1	49	23.31	23.44	23.21	23.18	23.75		
20	16QAM	1	99	22.85	22.96	23.56	23.47	23.30		
20	16QAM	50	0	22.35	22.25	22.98	22.87	22.56	23	2
20	16QAM	50	24	22.32	22.31	22.38	22.39	22.56		
20	16QAM	50	50	22.31	22.26	22.39	22.36	22.49		
20	16QAM	100	0	22.30	22.29	22.36	22.38	22.56		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	24.08	24.11	24.22	24.29	24.53	25	0
15	QPSK	1	37	24.21	24.22	24.34	24.37	24.69		
15	QPSK	1	74	24.04	24.05	24.13	24.18	24.36		
15	QPSK	36	0	23.21	23.24	23.39	23.39	23.60	24	1
15	QPSK	36	20	23.18	23.28	23.50	23.40	23.63		
15	QPSK	36	39	23.21	23.23	23.31	23.41	23.54		
15	QPSK	75	0	23.23	23.21	23.31	23.36	23.51		
15	16QAM	1	0	23.18	23.14	23.30	23.38	23.51	24	1
15	16QAM	1	37	23.28	23.37	23.50	23.46	23.72		
15	16QAM	1	74	23.13	23.18	23.22	23.26	23.39		
15	16QAM	36	0	22.17	22.29	22.33	22.37	22.50	23	2
15	16QAM	36	20	22.22	22.20	22.40	22.30	22.54		
15	16QAM	36	39	22.18	22.21	22.23	22.26	22.51		
15	16QAM	75	0	22.28	22.19	22.32	22.33	22.53		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	24.17	24.62	24.78	24.43	24.62	25	0
10	QPSK	1	25	24.30	24.72	24.82	24.50	24.69		
10	QPSK	1	49	24.17	24.62	24.80	24.37	24.60		
10	QPSK	25	0	23.32	23.65	23.45	23.43	23.64	24	1
10	QPSK	25	12	23.22	23.70	23.47	23.45	23.63		
10	QPSK	25	25	23.30	23.68	23.39	23.39	23.66		
10	QPSK	50	0	23.20	23.59	23.35	23.34	23.61		
10	16QAM	1	0	23.34	23.71	23.45	23.52	23.72	24	1
10	16QAM	1	25	23.32	23.77	23.53	23.43	23.69		
10	16QAM	1	49	23.25	23.66	23.42	23.37	23.62		
10	16QAM	25	0	22.36	22.79	22.48	22.44	22.68	23	2
10	16QAM	25	12	22.32	22.70	22.44	22.36	22.63		
10	16QAM	25	25	22.36	22.76	22.42	22.39	22.65		
10	16QAM	50	0	22.41	22.82	22.44	22.45	22.68		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	24.13	24.01	24.63	24.05	24.47	25	0
5	QPSK	1	12	24.28	24.19	24.67	24.42	24.63		
5	QPSK	1	24	24.16	24.06	24.59	24.30	24.38		
5	QPSK	12	0	23.30	23.25	23.78	23.38	23.55	24	1
5	QPSK	12	7	23.35	23.38	23.67	23.78	24.00		
5	QPSK	12	13	23.31	23.35	23.96	23.90	23.56		
5	QPSK	25	0	23.27	23.45	23.85	23.92	23.58		
5	16QAM	1	0	23.22	23.58	23.87	23.39	23.52	24	1
5	16QAM	1	12	23.38	23.68	23.34	23.48	23.65		
5	16QAM	1	24	23.16	23.50	23.81	23.34	23.51		
5	16QAM	12	0	22.28	22.54	22.75	22.23	22.53	23	2
5	16QAM	12	7	22.40	22.67	22.81	22.84	22.55		
5	16QAM	12	13	22.32	22.60	22.87	22.27	22.50		
5	16QAM	25	0	22.35	22.69	22.91	22.39	22.54		

<Reduced Power Mode for Receiver On>

<LTE Band 41 Power Class 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	24.79	24.45	24.56	24.56	24.56	26	0
20	QPSK	1	49	24.50	24.53	24.64	24.50	25.20		
20	QPSK	1	99	24.56	24.45	24.45	24.56	24.54		
20	QPSK	50	0	24.61	24.62	24.79	24.70	24.87	26	0
20	QPSK	50	24	24.59	24.65	24.79	25.07	25.12		
20	QPSK	50	50	24.56	24.52	24.68	24.87	24.88		
20	QPSK	100	0	24.56	24.65	24.76	24.68	24.90		
20	16QAM	1	0	24.61	24.49	24.63	24.68	24.74	26	0
20	16QAM	1	49	24.81	24.78	24.91	24.82	25.04		
20	16QAM	1	99	24.42	24.47	24.47	24.50	24.65		
20	16QAM	50	0	24.62	24.65	24.72	24.75	24.94	26	0
20	16QAM	50	24	24.62	24.65	24.79	24.72	24.96		
20	16QAM	50	50	24.60	24.56	25.13	24.66	24.93		
20	16QAM	100	0	24.66	24.57	24.76	24.75	24.91		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	24.57	24.51	24.69	24.56	24.76	26	0
15	QPSK	1	37	24.64	24.58	24.79	24.65	24.96		
15	QPSK	1	74	24.47	24.52	24.58	24.50	24.76		
15	QPSK	36	0	24.68	24.60	24.76	24.79	24.96	26	0
15	QPSK	36	20	24.59	24.63	24.82	24.82	24.98		
15	QPSK	36	39	24.64	24.56	24.72	24.77	24.99		
15	QPSK	75	0	24.59	24.60	24.73	24.75	25.04		
15	16QAM	1	0	24.66	24.56	24.80	24.71	24.89	26	0
15	16QAM	1	37	24.84	24.77	24.96	24.85	25.17		
15	16QAM	1	74	24.56	24.54	24.64	24.58	24.92		
15	16QAM	36	0	24.54	24.60	24.71	24.68	24.95	26	0
15	16QAM	36	20	24.62	24.54	24.72	24.66	24.99		
15	16QAM	36	39	24.56	24.53	24.70	24.60	24.93		
15	16QAM	75	0	24.58	24.59	24.73	24.73	25.02		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	24.51	24.46	24.63	24.60	24.84	26	0
10	QPSK	1	25	24.60	24.56	24.72	24.64	24.99		
10	QPSK	1	49	24.43	24.47	24.56	24.53	24.87		
10	QPSK	25	0	24.72	24.63	24.82	24.71	25.11	26	0
10	QPSK	25	12	24.67	24.69	24.80	24.70	25.07		
10	QPSK	25	25	24.68	24.66	24.72	24.72	25.03		
10	QPSK	50	0	24.72	24.69	24.79	24.83	25.10		
10	16QAM	1	0	24.77	24.69	24.93	24.79	25.08	26	0
10	16QAM	1	25	24.83	24.78	24.96	24.88	24.89		
10	16QAM	1	49	24.75	24.78	24.81	24.80	25.04		
10	16QAM	25	0	24.66	24.69	24.85	24.85	25.10	26	0
10	16QAM	25	12	24.73	24.70	24.80	24.71	25.06		
10	16QAM	25	25	24.74	24.63	24.77	24.69	24.95		
10	16QAM	50	0	24.76	24.69	24.88	24.85	25.04		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	24.37	24.35	24.45	24.55	24.86	26	0
5	QPSK	1	12	24.58	24.53	24.87	24.66	24.88		
5	QPSK	1	24	24.36	24.34	24.87	24.55	24.79		
5	QPSK	12	0	24.64	24.65	24.67	24.66	25.05	26	0
5	QPSK	12	7	24.68	24.69	24.67	24.77	25.11		
5	QPSK	12	13	24.67	24.65	24.87	24.83	25.06		
5	QPSK	25	0	24.68	24.60	24.45	24.66	25.02		
5	16QAM	1	0	24.63	24.54	24.87	24.70	25.01	26	0
5	16QAM	1	12	24.73	24.65	24.85	24.82	25.11		
5	16QAM	1	24	24.64	24.54	24.70	24.72	24.99		
5	16QAM	12	0	24.68	24.61	24.81	24.62	24.95	26	0
5	16QAM	12	7	24.68	24.61	24.87	24.67	25.06		
5	16QAM	12	13	24.64	24.61	24.77	24.72	24.93		
5	16QAM	25	0	24.64	24.62	24.79	24.71	25.03		

<LTE Band 41 Power Class 3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	21.67	21.67	21.56	21.67	21.76	23	0
20	QPSK	1	49	21.79	21.81	21.93	21.87	22.34		
20	QPSK	1	99	21.65	21.77	21.65	21.86	21.72		
20	QPSK	50	0	21.75	21.69	21.84	21.76	22.10	23	0
20	QPSK	50	24	21.73	21.67	21.92	21.79	22.01		
20	QPSK	50	50	21.74	21.67	21.78	21.75	22.01		
20	QPSK	100	0	21.74	21.67	21.74	21.76	21.99		
20	16QAM	1	0	21.62	21.57	21.69	21.70	21.86	23	0
20	16QAM	1	49	21.84	21.95	21.78	21.99	21.87		
20	16QAM	1	99	21.46	21.59	21.60	21.57	21.84		
20	16QAM	50	0	21.77	21.76	21.93	21.90	22.07	23	0
20	16QAM	50	24	21.80	21.74	21.92	21.89	22.08		
20	16QAM	50	50	21.73	21.71	21.83	21.82	22.09		
20	16QAM	100	0	21.76	21.72	21.90	21.86	22.07		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	21.69	21.65	21.75	21.78	22.04	23	0
15	QPSK	1	37	21.71	21.76	21.95	21.81	22.21		
15	QPSK	1	74	21.62	21.59	21.71	21.67	21.99		
15	QPSK	36	0	21.75	21.80	21.92	21.84	22.13	23	0
15	QPSK	36	20	21.75	21.72	21.89	21.80	22.14		
15	QPSK	36	39	21.74	21.73	21.81	21.81	22.12		
15	QPSK	75	0	21.79	21.72	21.86	21.82	22.06		
15	16QAM	1	0	21.74	21.76	21.88	21.85	22.11	23	0
15	16QAM	1	37	21.94	21.90	22.07	21.99	22.28		
15	16QAM	1	74	21.68	21.67	21.81	21.79	22.05		
15	16QAM	36	0	21.78	21.68	21.89	21.80	22.10	23	0
15	16QAM	36	20	21.78	21.69	21.90	21.81	22.09		
15	16QAM	36	39	21.70	21.68	21.80	21.78	22.05		
15	16QAM	75	0	21.82	21.72	21.87	21.90	22.14		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	21.86	21.75	21.92	21.85	22.14	23	0
10	QPSK	1	25	21.92	21.89	22.07	22.01	22.27		
10	QPSK	1	49	21.71	21.75	21.90	21.83	22.09		
10	QPSK	25	0	21.85	21.76	21.95	21.97	22.26	23	0
10	QPSK	25	12	21.82	21.77	22.00	21.88	22.19		
10	QPSK	25	25	21.78	21.82	21.96	21.89	22.20		
10	QPSK	50	0	21.87	21.82	21.95	21.89	22.21		
10	16QAM	1	0	21.92	21.85	22.03	21.93	22.22	23	0
10	16QAM	1	25	21.99	21.89	22.08	22.02	22.33		
10	16QAM	1	49	21.83	21.85	22.00	21.93	22.23		
10	16QAM	25	0	21.93	21.79	21.98	21.89	22.26	23	0
10	16QAM	25	12	21.86	21.78	21.97	21.82	22.18		
10	16QAM	25	25	21.85	21.74	21.92	21.95	22.26		
10	16QAM	50	0	21.93	21.84	22.02	22.02	22.33		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	21.69	21.61	21.77	21.74	22.09	23	0
5	QPSK	1	12	21.95	21.79	22.07	21.92	22.23		
5	QPSK	1	24	21.67	21.68	21.79	21.84	22.01		
5	QPSK	12	0	21.81	21.76	21.96	21.81	22.14	23	0
5	QPSK	12	7	21.89	21.82	21.97	21.95	22.15		
5	QPSK	12	13	21.86	21.82	21.91	21.80	22.09		
5	QPSK	25	0	21.80	21.68	21.96	21.84	22.21		
5	16QAM	1	0	21.82	21.76	21.95	21.95	22.22	23	0
5	16QAM	1	12	21.99	21.90	22.09	21.96	22.31		
5	16QAM	1	24	21.80	21.76	21.89	21.89	22.13		
5	16QAM	12	0	21.74	21.68	21.87	21.82	22.12	23	0
5	16QAM	12	7	21.80	21.77	21.93	21.89	22.16		
5	16QAM	12	13	21.74	21.76	21.90	21.80	22.14		
5	16QAM	25	0	21.88	21.76	21.98	21.89	22.20		

<WLAN Conducted Power>

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.

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.71	17.00	100.00
		6	2437	16.15	17.00	
		11	2462	16.25	17.00	
	802.11g 6Mbps	1	2412	12.75	14.50	97.46
		6	2437	14.17	14.50	
		11	2462	14.30	14.50	
	802.11n-HT20 MCS0	1	2412	11.56	13.00	97.30
		6	2437	11.90	13.00	
		11	2462	11.98	13.00	

13. Bluetooth Exclusions Applied

Mode Band	Max Average power(dBm)	
	BR/EDR	LE
2.4GHz Bluetooth	8.00	8.00

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

Head SAR			
Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion thresholds
8.00	< 5	2.48	2.0

Note: Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm for head SAR is applied to determine SAR test exclusion. The test exclusion threshold is 2.0 which is <= 3, head SAR testing is not required.

Hotspot SAR			
Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion thresholds
8.00	10	2.48	1.0

Note: Per KDB 447498 D01v06, a distance of 10 mm is applied to determine SAR test exclusion. The test exclusion threshold is 1.0 which is <= 3, hotspot SAR testing is not required.

Body Worn SAR			
Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion thresholds
8.00	15	2.48	0.7

Note: Per KDB 447498 D01v06, a distance of 15 mm is applied to determine 1g SAR test exclusion. The test exclusion threshold is 0.7 which is <= 3, Body-worn SAR testing is not required.

14. Antenna Location

Detail information please refer to Appendix D.

15. 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: 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 required only when the measured SAR is ≥0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at LTE Band 41 and LTE Band 41 HPUE.
6. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of CDMA2000 BC1, LTE Band 2/4/25.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / 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 (4Tx slots) for GSM850/GSM1900 are considered as the primary mode.
2. Other configurations of GSM / 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.

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. This device supports HPUE for LTE band 41 with class 2 level, so HPUE SAR has been performed.
7. 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.
8. LTE B 2 / 5 SAR test was covered by LTE B25 / 26; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

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. 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.
3. 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.
4. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Power Mode	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 4 Tx slots	Right Cheek	Full	189	836.4	29.12	29.50	1.091	-0.07	0.655	0.715
	GSM850	GPRS 4 Tx slots	Right Tilted	Full	189	836.4	29.12	29.50	1.091	0.02	0.396	0.432
01	GSM850	GPRS 4 Tx slots	Left Cheek	Full	189	836.4	29.12	29.50	1.091	-0.19	0.707	**0.772**
	GSM850	GPRS 4 Tx slots	Left Tilted	Full	189	836.4	29.12	29.50	1.091	0.03	0.475	0.518
	GSM1900	GPRS 4 Tx slots	Right Cheek	Full	512	1850.2	25.76	26.00	1.057	0.04	0.425	0.449
	GSM1900	GPRS 4 Tx slots	Right Tilted	Full	512	1850.2	25.76	26.00	1.057	-0.02	0.109	0.115
	GSM1900	GPRS 4 Tx slots	Left Cheek	Full	512	1850.2	25.76	26.00	1.057	0.03	0.824	0.871
	GSM1900	GPRS 4 Tx slots	Left Tilted	Full	512	1850.2	25.76	26.00	1.057	0.06	0.148	0.156
	GSM1900	GPRS 4 Tx slots	Left Cheek	Full	661	1880	25.49	26.00	1.125	0.06	0.846	0.951
02	GSM1900	GPRS 4 Tx slots	Left Cheek	Full	810	1909.8	25.44	26.00	1.138	-0.02	0.859	**0.977**

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Power Mode	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)
	CDMA2000 BC10	RC3 SO55	Right Cheek	Full	684	823.1	24.16	25.00	1.213	-0.07	0.361	0.438
	CDMA2000 BC10	RC3 SO55	Right Tilted	Full	684	823.1	24.16	25.00	1.213	-0.06	0.237	0.288
03	CDMA2000 BC10	RC3 SO55	Left Cheek	Full	684	823.1	24.16	25.00	1.213	-0.12	0.406	**0.493**
	CDMA2000 BC10	RC3 SO55	Left Tilted	Full	684	823.1	24.16	25.00	1.213	-0.04	0.276	0.335
	CDMA2000 BC0	RC3 SO55	Right Cheek	Full	777	848.31	24.31	25.00	1.172	-0.05	0.326	0.382
	CDMA2000 BC0	RC3 SO55	Right Tilted	Full	777	848.31	24.31	25.00	1.172	0.01	0.168	0.197
04	CDMA2000 BC0	RC3 SO55	Left Cheek	Full	777	848.31	24.31	25.00	1.172	0.01	0.352	**0.413**
	CDMA2000 BC0	RC3 SO55	Left Tilted	Full	777	848.31	24.31	25.00	1.172	0.05	0.214	0.251
	CDMA2000 BC1	RC3 SO55	Right Cheek	Full	1175	1908.75	24.65	25.00	1.084	-0.02	0.685	0.742
	CDMA2000 BC1	RC3 SO55	Right Tilted	Full	1175	1908.75	24.65	25.00	1.084	0.01	0.211	0.229
05	CDMA2000 BC1	RC3 SO55	Left Cheek	Full	1175	1908.75	24.65	25.00	1.084	0.19	1.100	**1.192**
	CDMA2000 BC1	RC3 SO55	Left Tilted	Full	1175	1908.75	24.65	25.00	1.084	0.03	0.176	0.191
	CDMA2000 BC1	RC3 SO55	Left Cheek	Full	25	1851.25	24.24	25.00	1.191	-0.02	0.853	1.016
	CDMA2000 BC1	RC3 SO55	Left Cheek	Full	600	1880	24.30	25.00	1.175	-0.15	1.010	1.187

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Power Mode	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)
	LTE Band 12	10M	QPSK	1	25	Right Cheek	Full	23095	707.5	22.94	24.00	1.276	0.05	0.235	0.300
	LTE Band 12	10M	QPSK	25	12	Right Cheek	Full	23095	707.5	21.89	23.00	1.291	-0.02	0.183	0.236
	LTE Band 12	10M	QPSK	1	25	Right Tilted	Full	23095	707.5	22.94	24.00	1.276	-0.05	0.150	0.191
	LTE Band 12	10M	QPSK	25	12	Right Tilted	Full	23095	707.5	21.89	23.00	1.291	-0.03	0.115	0.148
06	LTE Band 12	10M	QPSK	1	25	Left Cheek	Full	23095	707.5	22.94	24.00	1.276	-0.07	0.273	**0.348**
	LTE Band 12	10M	QPSK	25	12	Left Cheek	Full	23095	707.5	21.89	23.00	1.291	0.01	0.196	0.253
	LTE Band 12	10M	QPSK	1	25	Left Tilted	Full	23095	707.5	22.94	24.00	1.276	-0.11	0.164	0.209
	LTE Band 12	10M	QPSK	25	12	Left Tilted	Full	23095	707.5	21.89	23.00	1.291	-0.13	0.127	0.164
	LTE Band 13	10M	QPSK	1	25	Right Cheek	Full	23230	782	23.14	24.00	1.219	0.03	0.255	0.311
	LTE Band 13	10M	QPSK	25	12	Right Cheek	Full	23230	782	22.04	23.00	1.247	0.03	0.207	0.258
	LTE Band 13	10M	QPSK	1	25	Right Tilted	Full	23230	782	23.14	24.00	1.219	0.02	0.181	0.221
	LTE Band 13	10M	QPSK	25	12	Right Tilted	Full	23230	782	22.04	23.00	1.247	-0.02	0.144	0.180
07	LTE Band 13	10M	QPSK	1	25	Left Cheek	Full	23230	782	23.14	24.00	1.219	-0.11	0.318	**0.388**
	LTE Band 13	10M	QPSK	25	12	Left Cheek	Full	23230	782	22.04	23.00	1.247	0.03	0.220	0.274
	LTE Band 13	10M	QPSK	1	25	Left Tilted	Full	23230	782	23.14	24.00	1.219	0.04	0.200	0.244
	LTE Band 13	10M	QPSK	25	12	Left Tilted	Full	23230	782	22.04	23.00	1.247	-0.05	0.160	0.200
	LTE Band 26	15M	QPSK	1	37	Right Cheek	Full	26865	831.5	22.79	24.00	1.321	-0.04	0.345	0.456
	LTE Band 26	15M	QPSK	36	20	Right Cheek	Full	26865	831.5	21.68	23.00	1.355	-0.08	0.276	0.374
	LTE Band 26	15M	QPSK	1	37	Right Tilted	Full	26865	831.5	22.79	24.00	1.321	0.03	0.342	0.452
	LTE Band 26	15M	QPSK	36	20	Right Tilted	Full	26865	831.5	21.68	23.00	1.355	-0.02	0.182	0.247
08	LTE Band 26	15M	QPSK	1	37	Left Cheek	Full	26865	831.5	22.79	24.00	1.321	-0.03	0.401	**0.530**
	LTE Band 26	15M	QPSK	36	20	Left Cheek	Full	26865	831.5	21.68	23.00	1.355	-0.05	0.321	0.435
	LTE Band 26	15M	QPSK	1	37	Left Tilted	Full	26865	831.5	22.79	24.00	1.321	-0.06	0.281	0.371
	LTE Band 26	15M	QPSK	36	20	Left Tilted	Full	26865	831.5	21.68	23.00	1.355	0.02	0.214	0.290
	LTE Band 4	20M	QPSK	1	49	Right Cheek	Full	20175	1732.5	23.00	24.00	1.259	0.01	0.182	0.229
	LTE Band 4	20M	QPSK	50	0	Right Cheek	Full	20175	1732.5	22.11	23.00	1.227	0.07	0.151	0.185
	LTE Band 4	20M	QPSK	1	49	Right Tilted	Full	20175	1732.5	23.00	24.00	1.259	-0.03	0.098	0.123
	LTE Band 4	20M	QPSK	50	0	Right Tilted	Full	20175	1732.5	22.11	23.00	1.227	0.01	0.076	0.093
09	LTE Band 4	20M	QPSK	1	49	Left Cheek	Full	20175	1732.5	23.00	24.00	1.259	-0.06	0.421	**0.530**
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Full	20175	1732.5	22.11	23.00	1.227	0.03	0.372	0.457
	LTE Band 4	20M	QPSK	1	49	Left Tilted	Full	20175	1732.5	23.00	24.00	1.259	0.03	0.085	0.106
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Full	20175	1732.5	22.11	23.00	1.227	-0.03	0.083	0.102
	LTE Band 25	20M	QPSK	1	49	Right Cheek	Full	26590	1905	23.21	24.00	1.199	0.03	0.602	0.722
	LTE Band 25	20M	QPSK	50	0	Right Cheek	Full	26590	1905	22.18	23.00	1.208	-0.02	0.438	0.529
	LTE Band 25	20M	QPSK	1	49	Right Tilted	Full	26590	1905	23.21	24.00	1.199	0.09	0.201	0.241
	LTE Band 25	20M	QPSK	50	0	Right Tilted	Full	26590	1905	22.18	23.00	1.208	0.04	0.159	0.192
	LTE Band 25	20M	QPSK	1	49	Left Cheek	Full	26590	1905	23.21	24.00	1.199	0.04	0.974	1.168
	LTE Band 25	20M	QPSK	1	49	Left Cheek	Full	26140	1860	23.02	24.00	1.253	0.04	0.938	1.175
10	LTE Band 25	20M	QPSK	1	49	Left Cheek	Full	26340	1880	23.06	24.00	1.242	0.02	0.960	**1.192**
	LTE Band 25	20M	QPSK	50	0	Left Cheek	Full	26590	1905	22.18	23.00	1.208	0.03	0.806	0.973
	LTE Band 25	20M	QPSK	50	0	Left Cheek	Full	26140	1860	21.97	23.00	1.268	0.03	0.756	0.958
	LTE Band 25	20M	QPSK	50	0	Left Cheek	Full	26340	1880	22.09	23.00	1.233	0.08	0.859	1.059
	LTE Band 25	20M	QPSK	100	0	Left Cheek	Full	26590	1905	22.15	23.00	1.216	0.04	0.783	0.952
	LTE Band 25	20M	QPSK	1	49	Left Tilted	Full	26590	1905	23.21	24.00	1.199	0.09	0.168	0.202
	LTE Band 25	20M	QPSK	50	0	Left Tilted	Full	26590	1905	22.18	23.00	1.208	-0.02	0.131	0.158

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Receiver on	3	41490	2680	22.34	23.00	1.164	62.9	1.006	0.1	0.605	0.709
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Receiver on	3	39750	2506	21.79	23.00	1.321	62.9	1.006	-0.08	0.372	0.494
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Receiver on	3	40185	2549.5	21.81	23.00	1.315	62.9	1.006	0.02	0.301	0.398
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Receiver on	3	40620	2593	21.93	23.00	1.279	62.9	1.006	0.15	0.299	0.385
	LTE Band 41	20M	QPSK	1	49	Right Cheek	Receiver on	3	41055	2636.5	21.87	23.00	1.297	62.9	1.006	0.03	0.433	0.565
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	3	41490	2680	22.10	23.00	1.230	62.9	1.006	0.09	0.601	0.744
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	3	39750	2506	21.75	23.00	1.334	62.9	1.006	0.06	0.420	0.563
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	3	40185	2549.5	21.69	23.00	1.352	62.9	1.006	-0.03	0.337	0.458
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	3	40620	2593	21.84	23.00	1.306	62.9	1.006	0.07	0.312	0.410
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	3	41055	2636.5	21.76	23.00	1.330	62.9	1.006	0.01	0.455	0.609
	LTE Band 41	20M	QPSK	100	0	Right Cheek	Receiver on	3	41490	2680	21.99	23.00	1.262	62.9	1.006	0.09	0.583	0.740
	LTE Band 41	20M	QPSK	1	49	Right Tilted	Receiver on	3	41490	2680	22.34	23.00	1.164	62.9	1.006	0.06	0.122	0.143
	LTE Band 41	20M	QPSK	50	0	Right Tilted	Receiver on	3	41490	2680	22.10	23.00	1.230	62.9	1.006	0.01	0.119	0.147
	LTE Band 41	20M	QPSK	1	49	Left Cheek	Receiver on	3	41490	2680	22.34	23.00	1.164	62.9	1.006	0.1	0.397	0.465
	LTE Band 41	20M	QPSK	50	0	Left Cheek	Receiver on	3	41490	2680	22.10	23.00	1.230	62.9	1.006	0.02	0.396	0.490
	LTE Band 41	20M	QPSK	1	49	Left Tilted	Receiver on	3	41490	2680	22.34	23.00	1.164	62.9	1.006	0.09	0.176	0.206
	LTE Band 41	20M	QPSK	50	0	Left Tilted	Receiver on	3	41490	2680	22.10	23.00	1.230	62.9	1.006	-0.03	0.177	0.219
11	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	2	41490	2680	24.87	26.00	1.297	42.9	1.009	-0.09	0.742	**0.971**
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	2	39750	2506	24.61	26.00	1.377	42.9	1.009	0.03	0.525	0.730
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	2	40185	2549.5	24.62	26.00	1.374	42.9	1.009	0.07	0.422	0.585
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	2	40620	2593	24.79	26.00	1.321	42.9	1.009	0.05	0.391	0.521
	LTE Band 41	20M	QPSK	50	0	Right Cheek	Receiver on	2	41055	2636.5	24.70	26.00	1.349	42.9	1.009	-0.06	0.622	0.847

<WLAN SAR>

Plot No.	Band	Mode	Test Position	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	Right Cheek	11	2462	16.25	17.00	1.189	100	1.000	0.01	0.332	0.395
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	11	2462	16.25	17.00	1.189	100	1.000	0.01	0.313	0.372
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	11	2462	16.25	17.00	1.189	100	1.000	0.03	0.866	1.029
12	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	6	2437	16.15	17.00	1.216	100	1.000	0.11	0.868	**1.056**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	11	2462	16.25	17.00	1.189	100	1.000	0.01	0.552	0.656

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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 4 Tx slots	Front	10	Full	189	836.4	29.12	29.50	1.091	-0.13	0.909	0.992
	GSM850	GPRS 4 Tx slots	Front	10	Full	128	824.2	29.02	29.50	1.117	0.01	0.843	0.942
	GSM850	GPRS 4 Tx slots	Front	10	Full	251	848.8	29.02	29.50	1.117	-0.02	0.701	0.783
	GSM850	GPRS 4 Tx slots	Back	10	Full	189	836.4	29.12	29.50	1.091	0.02	1.010	1.102
13	GSM850	GPRS 4 Tx slots	Back	10	Full	128	824.2	29.02	29.50	1.117	-0.01	1.020	**1.139**
	GSM850	GPRS 4 Tx slots	Back	10	Full	251	848.8	29.02	29.50	1.117	-0.04	0.843	0.942
	GSM850	GPRS 4 Tx slots	Left Side	10	Full	189	836.4	29.12	29.50	1.091	-0.04	0.824	0.899
	GSM850	GPRS 4 Tx slots	Left Side	10	Full	128	824.2	29.02	29.50	1.117	-0.02	0.797	0.890
	GSM850	GPRS 4 Tx slots	Left Side	10	Full	251	848.8	29.02	29.50	1.117	0.03	0.695	0.776
	GSM850	GPRS 4 Tx slots	Right Side	10	Full	189	836.4	29.12	29.50	1.091	-0.02	0.877	0.957
	GSM850	GPRS 4 Tx slots	Right Side	10	Full	128	824.2	29.02	29.50	1.117	0.02	0.808	0.902
	GSM850	GPRS 4 Tx slots	Right Side	10	Full	251	848.8	29.02	29.50	1.117	0.03	0.799	0.892
	GSM850	GPRS 4 Tx slots	Bottom Side	10	Full	189	836.4	29.12	29.50	1.091	0.01	0.198	0.216
	GSM1900	GPRS 4 Tx slots	Front	10	Full	512	1850.2	25.76	26.00	1.057	0.01	0.986	1.042
14	GSM1900	GPRS 4 Tx slots	Front	10	Full	661	1880	25.49	26.00	1.125	-0.01	1.050	**1.181**
	GSM1900	GPRS 4 Tx slots	Front	10	Full	810	1909.8	25.44	26.00	1.138	0.08	0.965	1.098
	GSM1900	GPRS 4 Tx slots	Back	10	Full	512	1850.2	25.76	26.00	1.057	0.02	0.657	0.694
	GSM1900	GPRS 4 Tx slots	Left Side	10	Full	512	1850.2	25.76	26.00	1.057	0.03	0.256	0.271
	GSM1900	GPRS 4 Tx slots	Right Side	10	Full	512	1850.2	25.76	26.00	1.057	0.07	0.072	0.076
	GSM1900	GPRS 4 Tx slots	Bottom Side	10	Full	512	1850.2	25.76	26.00	1.057	-0.05	0.628	0.664

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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)
	CDMA2000 BC10	RTAP 153.6Kbps	Front	10	Full	684	823.1	24.14	25.00	1.219	-0.04	0.545	0.664
15	CDMA2000 BC10	RTAP 153.6Kbps	Back	10	Full	684	823.1	24.14	25.00	1.219	-0.08	0.575	**0.701**
	CDMA2000 BC10	RTAP 153.6Kbps	Left Side	10	Full	684	823.1	24.14	25.00	1.219	0.02	0.464	0.566
	CDMA2000 BC10	RTAP 153.6Kbps	Right Side	10	Full	684	823.1	24.14	25.00	1.219	0.09	0.439	0.535
	CDMA2000 BC10	RTAP 153.6Kbps	Bottom Side	10	Full	684	823.1	24.14	25.00	1.219	0.03	0.151	0.184
	CDMA2000 BC0	RTAP 153.6Kbps	Front	10	Full	777	848.31	24.19	25.00	1.205	-0.12	0.360	0.434
16	CDMA2000 BC0	RTAP 153.6Kbps	Back	10	Full	777	848.31	24.19	25.00	1.205	-0.07	0.412	**0.496**
	CDMA2000 BC0	RTAP 153.6Kbps	Left Side	10	Full	777	848.31	24.19	25.00	1.205	0.03	0.245	0.295
	CDMA2000 BC0	RTAP 153.6Kbps	Right Side	10	Full	777	848.31	24.19	25.00	1.205	0.04	0.333	0.401
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Side	10	Full	777	848.31	24.19	25.00	1.205	0.12	0.230	0.277
17	CDMA2000 BC1	RTAP 153.6Kbps	Front	10	Hotspot On	1175	1908.75	20.37	21.00	1.156	0.01	0.454	**0.525**
	CDMA2000 BC1	RTAP 153.6Kbps	Back	10	Hotspot On	1175	1908.75	20.37	21.00	1.156	-0.02	0.394	0.456
	CDMA2000 BC1	RTAP 153.6Kbps	Left Side	10	Hotspot On	1175	1908.75	20.37	21.00	1.156	0.05	0.141	0.163
	CDMA2000 BC1	RTAP 153.6Kbps	Right Side	10	Hotspot On	1175	1908.75	20.37	21.00	1.156	-0.1	0.038	0.044
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Side	10	Hotspot On	1175	1908.75	20.37	21.00	1.156	0.07	0.347	0.401

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	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)
	LTE Band 12	10M	QPSK	1	25	Front	10	Full	23095	707.5	22.94	24.00	1.276	-0.07	0.317	0.405
	LTE Band 12	10M	QPSK	25	12	Front	10	Full	23095	707.5	21.89	23.00	1.291	-0.19	0.244	0.315
18	LTE Band 12	10M	QPSK	1	25	Back	10	Full	23095	707.5	22.94	24.00	1.276	0	0.449	**0.573**
	LTE Band 12	10M	QPSK	25	12	Back	10	Full	23095	707.5	21.89	23.00	1.291	-0.1	0.333	0.430
	LTE Band 12	10M	QPSK	1	25	Left Side	10	Full	23095	707.5	22.94	24.00	1.276	0.02	0.263	0.336
	LTE Band 12	10M	QPSK	25	12	Left Side	10	Full	23095	707.5	21.89	23.00	1.291	0.02	0.206	0.266
	LTE Band 12	10M	QPSK	1	25	Right Side	10	Full	23095	707.5	22.94	24.00	1.276	0.02	0.214	0.273
	LTE Band 12	10M	QPSK	25	12	Right Side	10	Full	23095	707.5	21.89	23.00	1.291	0.03	0.169	0.218
	LTE Band 12	10M	QPSK	1	25	Bottom Side	10	Full	23095	707.5	22.94	24.00	1.276	0.02	0.082	0.105
	LTE Band 12	10M	QPSK	25	12	Bottom Side	10	Full	23095	707.5	21.89	23.00	1.291	0.09	0.066	0.085
	LTE Band 13	10M	QPSK	1	25	Front	10	Full	23230	782	23.14	24.00	1.219	0.07	0.406	0.495
	LTE Band 13	10M	QPSK	25	12	Front	10	Full	23230	782	22.04	23.00	1.247	0.07	0.321	0.400
19	LTE Band 13	10M	QPSK	1	25	Back	10	Full	23230	782	23.14	24.00	1.219	-0.08	0.567	**0.691**
	LTE Band 13	10M	QPSK	25	12	Back	10	Full	23230	782	22.04	23.00	1.247	-0.03	0.400	0.499
	LTE Band 13	10M	QPSK	1	25	Left Side	10	Full	23230	782	23.14	24.00	1.219	-0.02	0.452	0.551
	LTE Band 13	10M	QPSK	25	12	Left Side	10	Full	23230	782	22.04	23.00	1.247	-0.08	0.360	0.449
	LTE Band 13	10M	QPSK	1	25	Right Side	10	Full	23230	782	23.14	24.00	1.219	0.02	0.423	0.516
	LTE Band 13	10M	QPSK	25	12	Right Side	10	Full	23230	782	22.04	23.00	1.247	0.01	0.338	0.422
	LTE Band 13	10M	QPSK	1	25	Bottom Side	10	Full	23230	782	23.14	24.00	1.219	-0.03	0.086	0.105
	LTE Band 13	10M	QPSK	25	12	Bottom Side	10	Full	23230	782	22.04	23.00	1.247	0.03	0.066	0.083
	LTE Band 26	15M	QPSK	1	37	Front	10	Full	26865	831.5	22.79	24.00	1.321	0.06	0.468	0.618
	LTE Band 26	15M	QPSK	36	20	Front	10	Full	26865	831.5	21.68	23.00	1.355	0.01	0.357	0.484
20	LTE Band 26	15M	QPSK	1	37	Back	10	Full	26865	831.5	22.79	24.00	1.321	-0.02	0.565	**0.747**
	LTE Band 26	15M	QPSK	36	20	Back	10	Full	26865	831.5	21.68	23.00	1.355	0.01	0.411	0.557
	LTE Band 26	15M	QPSK	1	37	Left Side	10	Full	26865	831.5	22.79	24.00	1.321	0.01	0.435	0.575
	LTE Band 26	15M	QPSK	36	20	Left Side	10	Full	26865	831.5	21.68	23.00	1.355	0.01	0.334	0.453
	LTE Band 26	15M	QPSK	1	37	Right Side	10	Full	26865	831.5	22.79	24.00	1.321	0.08	0.443	0.585
	LTE Band 26	15M	QPSK	36	20	Right Side	10	Full	26865	831.5	21.68	23.00	1.355	0.01	0.349	0.473
	LTE Band 26	15M	QPSK	1	37	Bottom Side	10	Full	26865	831.5	22.79	24.00	1.321	0.08	0.168	0.222
	LTE Band 26	15M	QPSK	36	20	Bottom Side	10	Full	26865	831.5	21.68	23.00	1.355	-0.11	0.132	0.179
	LTE Band 4	20M	QPSK	1	49	Front	10	Hotspot On	20175	1732.5	19.78	21.00	1.324	-0.03	0.312	0.413
	LTE Band 4	20M	QPSK	50	0	Front	10	Hotspot On	20175	1732.5	19.85	21.00	1.303	-0.11	0.320	0.417
	LTE Band 4	20M	QPSK	1	49	Back	10	Hotspot On	20175	1732.5	19.78	21.00	1.324	-0.03	0.424	0.562
21	LTE Band 4	20M	QPSK	50	0	Back	10	Hotspot On	20175	1732.5	19.85	21.00	1.303	-0.04	0.434	**0.566**
	LTE Band 4	20M	QPSK	1	49	Left Side	10	Hotspot On	20175	1732.5	19.78	21.00	1.324	0.05	0.194	0.257
	LTE Band 4	20M	QPSK	50	0	Left Side	10	Hotspot On	20175	1732.5	19.85	21.00	1.303	0.09	0.187	0.244
	LTE Band 4	20M	QPSK	1	49	Right Side	10	Hotspot On	20175	1732.5	19.78	21.00	1.324	0.03	0.025	0.032
	LTE Band 4	20M	QPSK	50	0	Right Side	10	Hotspot On	20175	1732.5	19.85	21.00	1.303	-0.11	0.026	0.034
	LTE Band 4	20M	QPSK	1	49	Bottom Side	10	Hotspot On	20175	1732.5	19.78	21.00	1.324	-0.02	0.188	0.249
	LTE Band 4	20M	QPSK	50	0	Bottom Side	10	Hotspot On	20175	1732.5	19.85	21.00	1.303	-0.08	0.187	0.244

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	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)
	LTE Band 25	20M	QPSK	1	49	Front	10	Hotspot On	26590	1905	20.04	21.00	1.247	-0.03	0.496	0.619
22	LTE Band 25	20M	QPSK	50	0	Front	10	Hotspot On	26590	1905	19.81	21.00	1.315	-0.04	0.502	**0.660**
	LTE Band 25	20M	QPSK	1	49	Back	10	Hotspot On	26590	1905	20.04	21.00	1.247	-0.01	0.415	0.518
	LTE Band 25	20M	QPSK	50	0	Back	10	Hotspot On	26590	1905	19.81	21.00	1.315	-0.09	0.394	0.518
	LTE Band 25	20M	QPSK	1	49	Left Side	10	Hotspot On	26590	1905	20.04	21.00	1.247	0.01	0.136	0.170
	LTE Band 25	20M	QPSK	50	0	Left Side	10	Hotspot On	26590	1905	19.81	21.00	1.315	0.08	0.147	0.193
	LTE Band 25	20M	QPSK	1	49	Right Side	10	Hotspot On	26590	1905	20.04	21.00	1.247	0.03	0.022	0.028
	LTE Band 25	20M	QPSK	50	0	Right Side	10	Hotspot On	26590	1905	19.81	21.00	1.315	-0.02	0.039	0.051
	LTE Band 25	20M	QPSK	1	49	Bottom Side	10	Hotspot On	26590	1905	20.04	21.00	1.247	-0.02	0.389	0.485
	LTE Band 25	20M	QPSK	50	0	Bottom Side	10	Hotspot On	26590	1905	19.81	21.00	1.315	-0.04	0.371	0.488

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	-0.07	0.698	0.727
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	3	39750	2506	24.21	25.00	1.199	62.9	1.006	-0.07	0.471	0.568
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	3	40185	2549.5	24.23	25.00	1.194	62.9	1.006	-0.06	0.521	0.626
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	3	40620	2593	24.34	25.00	1.164	62.9	1.006	-0.06	0.526	0.616
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	3	41055	2636.5	24.34	25.00	1.164	62.9	1.006	-0.06	0.545	0.638
	LTE Band 41	20M	QPSK	50	0	Front	10	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	-0.07	0.490	0.529
	LTE Band 41	20M	QPSK	100	0	Front	10	Full	3	41490	2680	23.47	24.00	1.130	62.9	1.006	-0.01	0.520	0.591
	LTE Band 41	20M	QPSK	1	49	Back	10	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	-0.1	0.416	0.433
	LTE Band 41	20M	QPSK	50	0	Back	10	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	-0.09	0.371	0.401
	LTE Band 41	20M	QPSK	1	49	Left Side	10	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	0.01	0.056	0.059
	LTE Band 41	20M	QPSK	50	0	Left Side	10	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	0.02	0.067	0.073
	LTE Band 41	20M	QPSK	1	49	Right Side	10	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	-0.05	0.528	0.550
	LTE Band 41	20M	QPSK	50	0	Right Side	10	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	-0.06	0.406	0.439
	LTE Band 41	20M	QPSK	1	49	Bottom Side	10	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	0.05	0.312	0.325
	LTE Band 41	20M	QPSK	50	0	Bottom Side	10	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	0.01	0.220	0.238
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	2	41490	2680	27.76	28.00	1.057	42.9	1.009	-0.04	0.924	0.985
23	LTE Band 41	20M	QPSK	1	49	Front	10	Full	2	39750	2506	27.38	28.00	1.153	42.9	1.009	-0.02	0.853	**0.993**
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	2	40185	2549.5	27.50	28.00	1.122	42.9	1.009	0.07	0.774	0.876
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	2	40620	2593	27.60	28.00	1.096	42.9	1.009	0.08	0.750	0.830
	LTE Band 41	20M	QPSK	1	49	Front	10	Full	2	41055	2636.5	27.61	28.00	1.094	42.9	1.009	0.02	0.785	0.866

<WLAN 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)	Max Area Scan SAR	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	10	11	2462	16.25	17.00	1.189	100	1.000		0.166		
24	WLAN2.4GHz	802.11b 1Mbps	Back	10	11	2462	16.25	17.00	1.189	100	1.000	0.06	0.183	0.114	**0.135**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10	11	2462	16.25	17.00	1.189	100	1.000		0.139		
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10	11	2462	16.25	17.00	1.189	100	1.000		0.105		

15.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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 4 Tx slots	Front	15	Full	189	836.4	29.12	29.50	1.091	-0.13	0.853	0.931
	GSM850	GPRS 4 Tx slots	Front	15	Full	128	824.2	29.02	29.50	1.117	-0.03	0.792	0.885
	GSM850	GPRS 4 Tx slots	Front	15	Full	251	848.8	29.02	29.50	1.117	-0.03	0.698	0.780
	GSM850	GPRS 4 Tx slots	Back	15	Full	189	836.4	29.12	29.50	1.091	0.05	0.899	0.981
25	GSM850	GPRS 4 Tx slots	Back	15	Full	128	824.2	29.02	29.50	1.117	0.06	0.889	**0.993**
	GSM850	GPRS 4 Tx slots	Back	15	Full	251	848.8	29.02	29.50	1.117	0.06	0.780	0.871
26	GSM1900	GPRS 4 Tx slots	Front	15	Full	512	1850.2	25.76	26.00	1.057	-0.08	0.688	**0.727**
	GSM1900	GPRS 4 Tx slots	Back	15	Full	512	1850.2	25.76	26.00	1.057	0.03	0.315	0.333

<CDMA2000 SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Mode	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)
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Front	15	Full	684	823.1	24.14	25.00	1.219	-0.03	0.488	0.595
27	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	15	Full	684	823.1	24.14	25.00	1.219	-0.12	0.561	**0.684**
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Front	15	Full	777	848.31	24.30	25.00	1.175	-0.05	0.329	0.387
28	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	15	Full	777	848.31	24.30	25.00	1.175	0.01	0.383	**0.450**
29	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	15	Full	1175	1908.75	24.60	25.00	1.096	0.02	0.607	**0.666**
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	15	Full	1175	1908.75	24.60	25.00	1.096	0.02	0.366	0.401

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	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)
	LTE Band 12	10M	QPSK	1	25	Front	15	Full	23095	707.5	22.94	24.00	1.276	-0.03	0.240	0.306
	LTE Band 12	10M	QPSK	25	12	Front	15	Full	23095	707.5	21.89	23.00	1.291	0.06	0.181	0.234
30	LTE Band 12	10M	QPSK	1	25	Back	15	Full	23095	707.5	22.94	24.00	1.276	-0.08	0.293	**0.374**
	LTE Band 12	10M	QPSK	25	12	Back	15	Full	23095	707.5	21.89	23.00	1.291	0.07	0.231	0.298
	LTE Band 13	10M	QPSK	1	25	Front	15	Full	23230	782	23.14	24.00	1.219	0.09	0.367	0.447
	LTE Band 13	10M	QPSK	25	12	Front	15	Full	23230	782	22.04	23.00	1.247	0.06	0.291	0.363
31	LTE Band 13	10M	QPSK	1	25	Back	15	Full	23230	782	23.14	24.00	1.219	0.02	0.448	**0.546**
	LTE Band 13	10M	QPSK	25	12	Back	15	Full	23230	782	22.04	23.00	1.247	-0.05	0.341	0.425
	LTE Band 26	15M	QPSK	1	37	Front	15	Full	26865	831.5	22.79	24.00	1.321	-0.02	0.419	0.554
	LTE Band 26	15M	QPSK	36	20	Front	15	Full	26865	831.5	21.68	23.00	1.355	0.08	0.329	0.446
32	LTE Band 26	15M	QPSK	1	37	Back	15	Full	26865	831.5	22.79	24.00	1.321	-0.07	0.448	**0.592**
	LTE Band 26	15M	QPSK	36	20	Back	15	Full	26865	831.5	21.68	23.00	1.355	0.02	0.341	0.462

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	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)
	LTE Band 4	20M	QPSK	1	49	Front	15	Full	20175	1732.5	23.00	24.00	1.259	-0.07	0.455	0.573
	LTE Band 4	20M	QPSK	50	0	Front	15	Full	20175	1732.5	22.11	23.00	1.227	-0.07	0.374	0.459
33	LTE Band 4	20M	QPSK	1	49	Back	15	Full	20175	1732.5	23.00	24.00	1.259	-0.04	0.652	**0.821**
	LTE Band 4	20M	QPSK	50	0	Back	15	Full	20175	1732.5	22.11	23.00	1.227	-0.05	0.536	0.658
	LTE Band 4	20M	QPSK	100	0	Back	15	Full	20175	1732.5	22.04	23.00	1.247	-0.06	0.512	0.639
34	LTE Band 25	20M	QPSK	1	49	Front	15	Full	26590	1905	23.21	24.00	1.199	0.14	0.808	**0.969**
	LTE Band 25	20M	QPSK	1	49	Front	15	Full	26140	1860	23.02	24.00	1.253	0.03	0.733	0.919
	LTE Band 25	20M	QPSK	1	49	Front	15	Full	26340	1880	23.06	24.00	1.242	-0.07	0.770	0.956
	LTE Band 25	20M	QPSK	50	0	Front	15	Full	26590	1905	22.18	23.00	1.208	-0.03	0.661	0.798
	LTE Band 25	20M	QPSK	100	0	Front	15	Full	26590	1905	22.15	23.00	1.216	0.02	0.632	0.769
	LTE Band 25	20M	QPSK	1	49	Back	15	Full	26590	1905	23.21	24.00	1.199	-0.13	0.656	0.787
	LTE Band 25	20M	QPSK	50	0	Back	15	Full	26590	1905	22.18	23.00	1.208	-0.08	0.479	0.579

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Mode	Power Class	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)
	LTE Band 41	20M	QPSK	1	49	Front	15	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	-0.03	0.334	0.348
	LTE Band 41	20M	QPSK	50	0	Front	15	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	0.01	0.258	0.279
	LTE Band 41	20M	QPSK	1	49	Back	15	Full	3	41490	2680	24.85	25.00	1.035	62.9	1.006	-0.02	0.208	0.217
	LTE Band 41	20M	QPSK	50	0	Back	15	Full	3	41490	2680	23.69	24.00	1.074	62.9	1.006	-0.06	0.190	0.205
35	LTE Band 41	20M	QPSK	1	49	Front	15	Full	2	41490	2680	27.76	28.00	1.057	42.9	1.009	-0.01	0.486	**0.518**

<WLAN 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)	Max Area Scan SAR	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	15	11	2462	16.25	17.00	1.189	100	1.000		0.080		
36	WLAN2.4GHz	802.11b 1Mbps	Back	15	11	2462	16.25	17.00	1.189	100	1.000	0.09	0.083	0.056	**0.067**

15.4 TDD LTE Band 41(HPUE) Linearity Data Analysis

LTE Band 41(HPUE)-Linearity Data for Head		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	23.00	26.00
Reported 1g SAR (W/kg)	0.744	0.971
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	126.30	172.38
Linearity SAR (W/kg)	1.015	
% deviation from expected linearity		-4.38%

LTE Band 41(HPUE)-Linearity Data for Hotspot		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	28.00
Reported 1g SAR (W/kg)	0.727	0.993
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	200.17	273.20
Linearity SAR (W/kg)	0.992	
% deviation from expected linearity		0.08%

LTE Band 41(HPUE)-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	28.00
Reported 1g SAR (W/kg)	0.348	0.518
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	200.17	273.20
Linearity SAR (W/kg)	0.475	
% deviation from expected linearity		9.06%

General Note:

1. The device can adjust uplink/downlink configuration automatically according to the transmitting power class level for LTE band 41.
2. According to TCB Workshop May 2017, Rel. 14 has introduced HPUE Power Class 2 for Band 41. HPUE Power Class 2 does not support uplink downlink configurations 0 and 6.
3. Power class 3 is expected to be the dominant use configuration; therefore, SAR should be tested as normally required.
4. Power class 2 is tested using the highest SAR test configuration in power class 3 of each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in power class 2.
5. Separate SAR testing for Power Class 2 is not required when
   – the reported SAR vs. output power can be linearly scaled with < 10%
   – discrepancy between power classes and all *reported* 1g SAR are < 1.4 W/kg (The same procedures should be adapted for measurements according to extremity limits by applying a factor of 2.5 for extremity exposure.)

15.5 Repeated SAR Measurement

No.	Band	Mode	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Class	Power Mode	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)	Ratio	Reported 1g SAR (W/kg)
1st	CDMA 2000 BC1	RC3 SO55	-	-	-	-	Left Cheek	0	-	Full	1175	1908.75	24.65	25.00	1.084	-	-	0.19	1.100	1	1.192
2nd	CDMA 2000 BC1	RC3 SO55	-	-	-	-	Left Cheek	0	-	Full	1175	1908.75	24.65	25.00	1.084	-	-	0.03	1.080	1.018	1.171
1st	WLAN 2.4GHz	802.11b 1Mbps	-	-	-	-	Left Cheek	0	-	Full	6	2437	16.15	17.00	1.216	100	1.000	0.11	0.868	1	1.056
2nd	WLAN 2.4GHz	802.11b 1Mbps	-	-	-	-	Left Cheek	0	-	Full	6	2437	16.15	17.00	1.216	100	1.000	0.06	0.859	1.011	1.045
1st	GSM850	GPRS 4 Tx slots	-	-	-	-	Back	10	-	Full	128	824.2	29.02	29.50	1.117	-	-	-0.01	1.020	1	1.139
2nd	GSM850	GPRS 4 Tx slots	-	-	-	-	Back	10	-	Full	128	824.2	29.02	29.50	1.117	-	-	0.03	1.010	1.010	1.128
1st	LTE Band 41	-	20M	QPSK	1	49	Front	10	2	Full	41490	2680	27.76	28.00	1.057	42.9	1.009	-0.04	0.924	1	0.985
2nd	LTE Band 41	-	20M	QPSK	1	49	Front	10	2	Full	41490	2680	27.76	28.00	1.057	42.9	1.009	0.01	0.918	1.006	0.979

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.

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset		
		Head	Body-worn	Hotspot
1.	GSM Voice + WLAN2.4GHz	Yes	Yes	
2.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes	Yes
3.	CDMA + WLAN2.4GHz	Yes	Yes	Yes
4.	LTE + WLAN2.4GHz	Yes	Yes	Yes
5.	GSM Voice + Bluetooth	Yes	Yes	
6.	GPRS/EDGE + Bluetooth	Yes	Yes	Yes
4.	CDMA+ Bluetooth	Yes	Yes	Yes
7.	LTE + Bluetooth	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, CDMA and LTE (e.g. for 3rd-party VoIP), and LTE supports VoLTE function.
2. EUT will choose each GSM, CDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. WLAN and Bluetooth share the same antenna so can't transmit simultaneously.
4. This device WLAN 2.4GHz supports hotspot operation and Bluetooth support tethering applications.
5. Chose the worse zoom scan SAR of WLAN2.4GHz SAR respectively for co-located with WWAN analysis.
6. All licensed modes share the same antenna part and cannot transmit simultaneously.
7. The reported SAR summation is calculated based on the same configuration and test position
8. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   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, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
9. 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 (dBm)	Exposure Position	Head	Hotspot	Body worn
	Test separation	0 mm	10 mm	15 mm
8.00	Estimated 1g SAR (W/kg)	0.265	0.132	0.088

16.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	1+2			1+3 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
GSM	GSM850	Right Cheek	0.715	0.395	0.265	1.11			0.98
		Right Tilted	0.432	0.372	0.265	0.80			0.70
		Left Cheek	0.772	1.056	0.265	**1.83**	**0.04**	**#01**	1.04
		Left Tilted	0.518	0.656	0.265	1.17			0.78
	GSM1900	Right Cheek	0.449	0.395	0.265	0.84			0.71
		Right Tilted	0.115	0.372	0.265	0.49			0.38
		Left Cheek	0.977	1.056	0.265	**2.03**	**0.03**	**#02**	1.24
		Left Tilted	0.156	0.656	0.265	0.81			0.42
CDMA2000	BC10	Right Cheek	0.438	0.395	0.265	0.83			0.70
		Right Tilted	0.288	0.372	0.265	0.66			0.55
		Left Cheek	0.493	1.056	0.265	1.55			0.76
		Left Tilted	0.335	0.656	0.265	0.99			0.60
	BC0	Right Cheek	0.382	0.395	0.265	0.78			0.65
		Right Tilted	0.197	0.372	0.265	0.57			0.46
		Left Cheek	0.413	1.056	0.265	1.47			0.68
		Left Tilted	0.251	0.656	0.265	0.91			0.52
	BC1	Right Cheek	0.742	0.395	0.265	1.14			1.01
		Right Tilted	0.229	0.372	0.265	0.60			0.49
		Left Cheek	1.192	1.056	0.265	**2.25**	**0.04**	**#03**	1.46
		Left Tilted	0.191	0.656	0.265	0.85			0.46
LTE	LTE Band 12	Right Cheek	0.300	0.395	0.265	0.70			0.57
		Right Tilted	0.191	0.372	0.265	0.56			0.46
		Left Cheek	0.348	1.056	0.265	1.40			0.61
		Left Tilted	0.209	0.656	0.265	0.87			0.47
	LTE Band 13	Right Cheek	0.311	0.395	0.265	0.71			0.58
		Right Tilted	0.221	0.372	0.265	0.59			0.49
		Left Cheek	0.388	1.056	0.265	1.44			0.65
		Left Tilted	0.244	0.656	0.265	0.90			0.51
	LTE Band 26	Right Cheek	0.456	0.395	0.265	0.85			0.72
		Right Tilted	0.452	0.372	0.265	0.82			0.72
		Left Cheek	0.530	1.056	0.265	**1.59**			0.80
		Left Tilted	0.371	0.656	0.265	1.03			0.64
	LTE Band 4	Right Cheek	0.229	0.395	0.265	0.62			0.49
		Right Tilted	0.123	0.372	0.265	0.50			0.39
		Left Cheek	0.530	1.056	0.265	1.59			0.80
		Left Tilted	0.106	0.656	0.265	0.76			0.37
	LTE Band 25	Right Cheek	0.722	0.395	0.265	1.12			0.99
		Right Tilted	0.241	0.372	0.265	0.61			0.51
		Left Cheek	1.192	1.056	0.265	**2.25**	**0.04**	**#04**	1.46
		Left Tilted	0.202	0.656	0.265	0.86			0.47
	LTE Band 41	Right Cheek	0.971	0.395	0.265	1.37			1.24
		Right Tilted	0.147	0.372	0.265	0.52			0.41
		Left Cheek	0.490	1.056	0.265	1.55			0.76
		Left Tilted	0.219	0.656	0.265	0.88			0.48

16.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
GSM	GSM850	Front	0.992	0.135	0.132	1.13	1.12
		Back	1.139	0.135	0.132	1.27	1.27
		Left Side	0.899			0.90	0.90
		Right Side	0.957	0.135	0.132	1.09	1.09
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.216			0.22	0.22
	GSM1900	Front	1.181	0.135	0.132	1.32	1.31
		Back	0.694	0.135	0.132	0.83	0.83
		Left Side	0.271			0.27	0.27
		Right Side	0.076	0.135	0.132	0.21	0.21
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.664			0.66	0.66
CDMA2000	BC10	Front	0.664	0.135	0.132	0.80	0.80
		Back	0.701	0.135	0.132	0.84	0.83
		Left Side	0.566			0.57	0.57
		Right Side	0.535	0.135	0.132	0.67	0.67
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.184			0.18	0.18
	BC0	Front	0.434	0.135	0.132	0.57	0.57
		Back	0.496	0.135	0.132	0.63	0.63
		Left Side	0.295			0.30	0.30
		Right Side	0.401	0.135	0.132	0.54	0.53
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.277			0.28	0.28
	BC1	Front	0.525	0.135	0.132	0.66	0.66
		Back	0.456	0.135	0.132	0.59	0.59
		Left Side	0.163			0.16	0.16
		Right Side	0.044	0.135	0.132	0.18	0.18
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.401			0.40	0.40

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
LTE	Band 12	Front	0.405	0.135	0.132	0.54	0.54
		Back	0.573	0.135	0.132	0.71	0.71
		Left Side	0.336			0.34	0.34
		Right Side	0.273	0.135	0.132	0.41	0.41
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.105			0.11	0.11
	Band 13	Front	0.495	0.135	0.132	0.63	0.63
		Back	0.691	0.135	0.132	0.83	0.82
		Left Side	0.551			0.55	0.55
		Right Side	0.516	0.135	0.132	0.65	0.65
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.105			0.11	0.11
	Band 26	Front	0.618	0.135	0.132	0.75	0.75
		Back	0.747	0.135	0.132	0.88	0.88
		Left Side	0.575			0.58	0.58
		Right Side	0.585	0.135	0.132	0.72	0.72
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.222			0.22	0.22
	Band 4	Front	0.417	0.135	0.132	0.55	0.55
		Back	0.566	0.135	0.132	0.70	0.70
		Left Side	0.257			0.26	0.26
		Right Side	0.034	0.135	0.132	0.17	0.17
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.249			0.25	0.25
	Band 25	Front	0.660	0.135	0.132	0.80	0.79
		Back	0.518	0.135	0.132	0.65	0.65
		Left Side	0.193			0.19	0.19
		Right Side	0.051	0.135	0.132	0.19	0.18
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.488			0.49	0.49
	Band 41	Front	0.993	0.135	0.132	1.13	1.13
		Back	0.433	0.135	0.132	0.57	0.57
		Left Side	0.073			0.07	0.07
		Right Side	0.550	0.135	0.132	0.69	0.68
		Top Side		0.135	0.132	0.14	0.13
		Bottom Side	0.325			0.33	0.33

16.3 Body-Worn Accessory Exposure Conditions

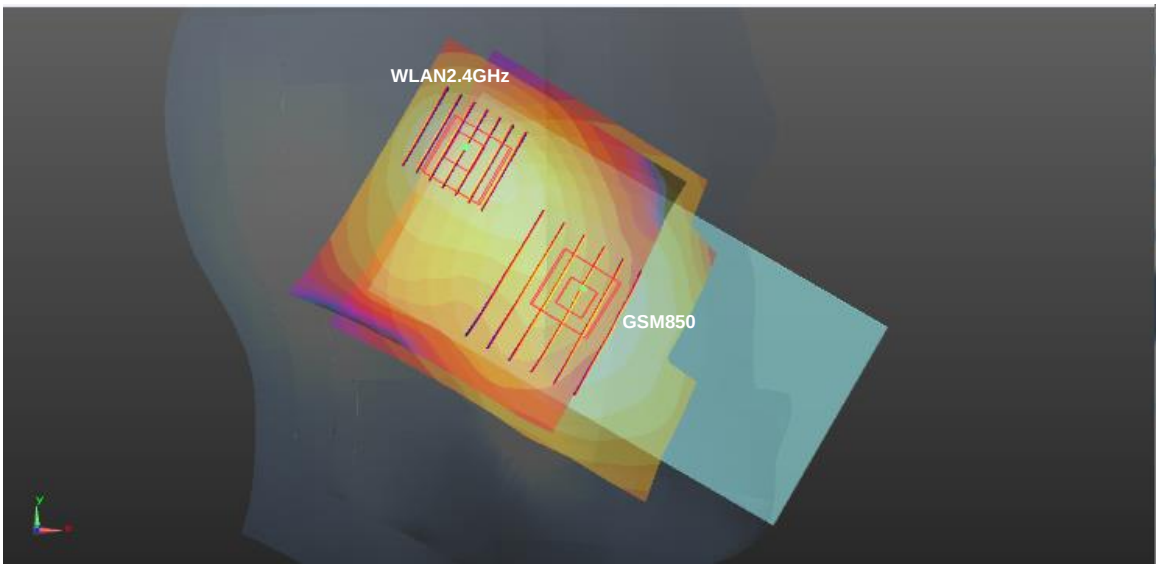
WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
GSM	GSM850	Front	0.931	0.067	0.088	1.00	1.02
		Back	0.993	0.067	0.088	1.06	1.08
	GSM1900	Front	0.727	0.067	0.088	0.79	0.82
		Back	0.333	0.067	0.088	0.40	0.42
CDMA2000	BC10	Front	0.595	0.067	0.088	0.66	0.68
		Back	0.684	0.067	0.088	0.75	0.77
	BC0	Front	0.387	0.067	0.088	0.45	0.48
		Back	0.450	0.067	0.088	0.52	0.54
	BC1	Front	0.666	0.067	0.088	0.73	0.75
		Back	0.401	0.067	0.088	0.47	0.49
LTE	LTE Band 12	Front	0.306	0.067	0.088	0.37	0.39
		Back	0.374	0.067	0.088	0.44	0.46
	LTE Band 13	Front	0.447	0.067	0.088	0.51	0.54
		Back	0.546	0.067	0.088	0.61	0.63
	LTE Band 26	Front	0.554	0.067	0.088	0.62	0.64
		Back	0.592	0.067	0.088	0.66	0.68
	LTE Band 4	Front	0.573	0.067	0.088	0.64	0.66
		Back	0.821	0.067	0.088	0.89	0.91
	LTE Band 25	Front	0.969	0.067	0.088	1.04	1.06
		Back	0.787	0.067	0.088	0.85	0.88
	LTE Band 41	Front	0.518	0.067	0.088	0.59	0.61
		Back	0.217	0.067	0.088	0.28	0.31

16.4 SPLSR Evaluation and Analysis

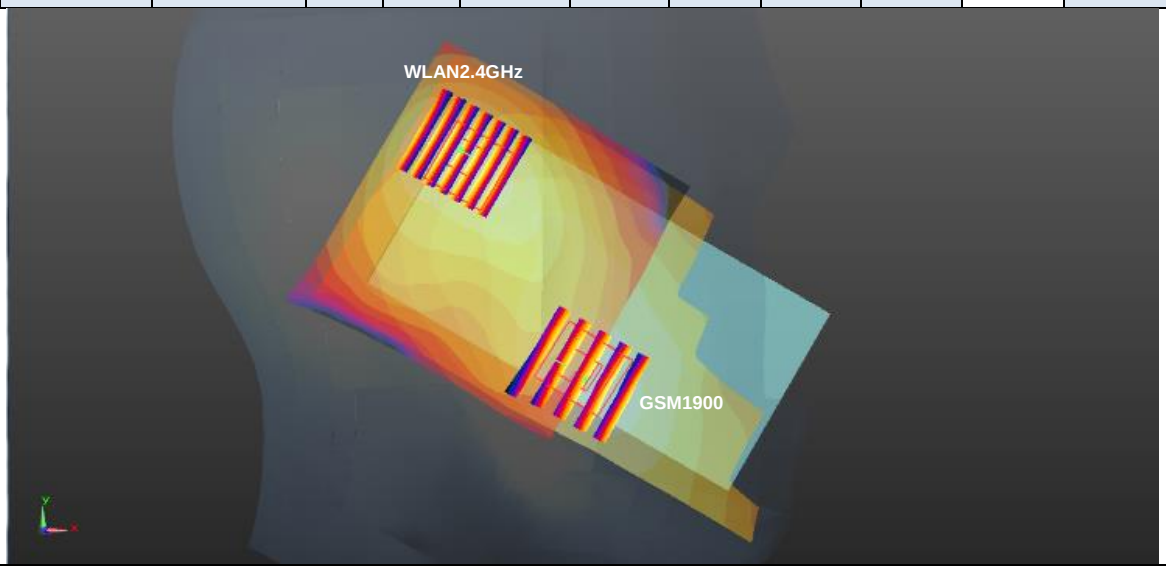
General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ≤ 0.04 for 1g SAR, simultaneously transmission SAR measurement is not necessary.

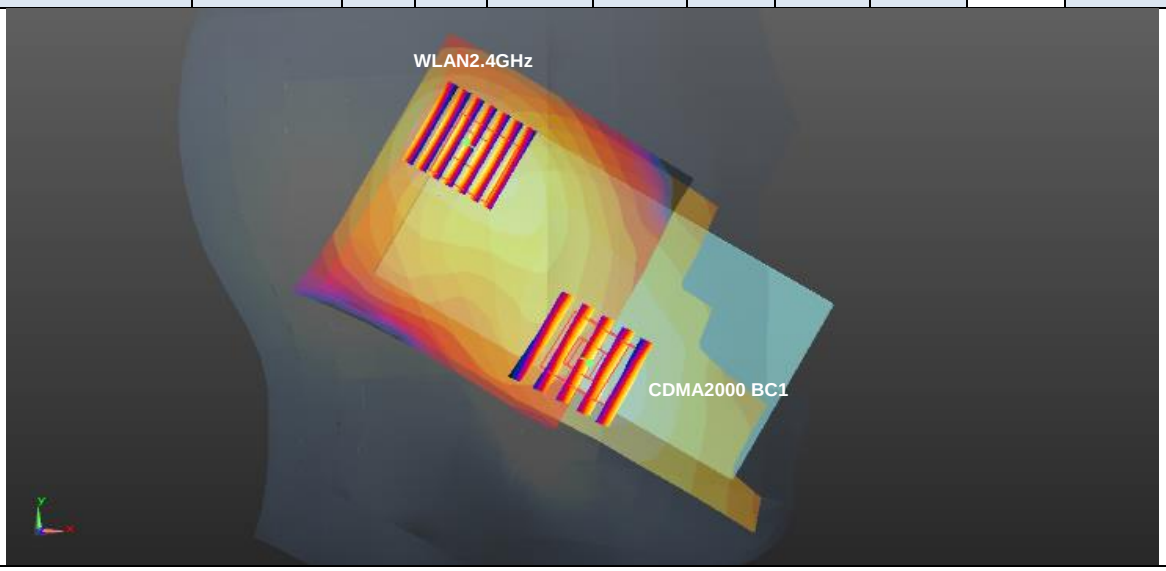
Case #01	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Left Cheek	0.772	0	44.41	-34.86	-3.14	67.0	1.83	0.04	Not required
	WLAN2.4GHz		1.056	0	4.91	19.27	-2.16				



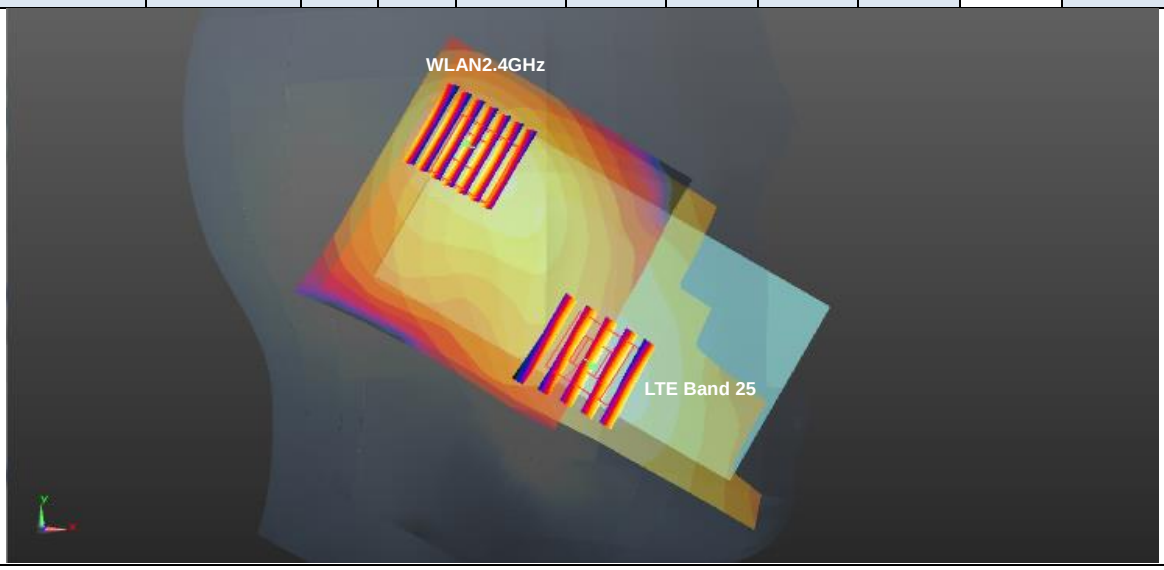
Case #02	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Left Cheek	0.977	0	44.95	-54.35	-1.98	83.8	2.03	0.03	Not required
	WLAN2.4GHz		1.056	0	4.91	19.27	-2.16				



Case #03	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA2000 BC1	Left Cheek	1.192	0	45.76	-53.06	-1.77	83.1	2.25	0.04	Not required
	WLAN2.4GHz		1.056	0	4.91	19.27	-2.16				



Case #04	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Left Cheek	1.192	0	47.07	-53.81	-1.47	84.4	2.25	0.04	Not required
	WLAN2.4GHz		1.056	0	4.91	19.27	-2.16				



Test Engineer：Nick Hu

17. 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. 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. Therefore, the measurement uncertainty table is not required in this report.

18. 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 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

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

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

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

[9] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

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

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

[12] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", 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: 2019.3.6

System Check_Head_750MHz

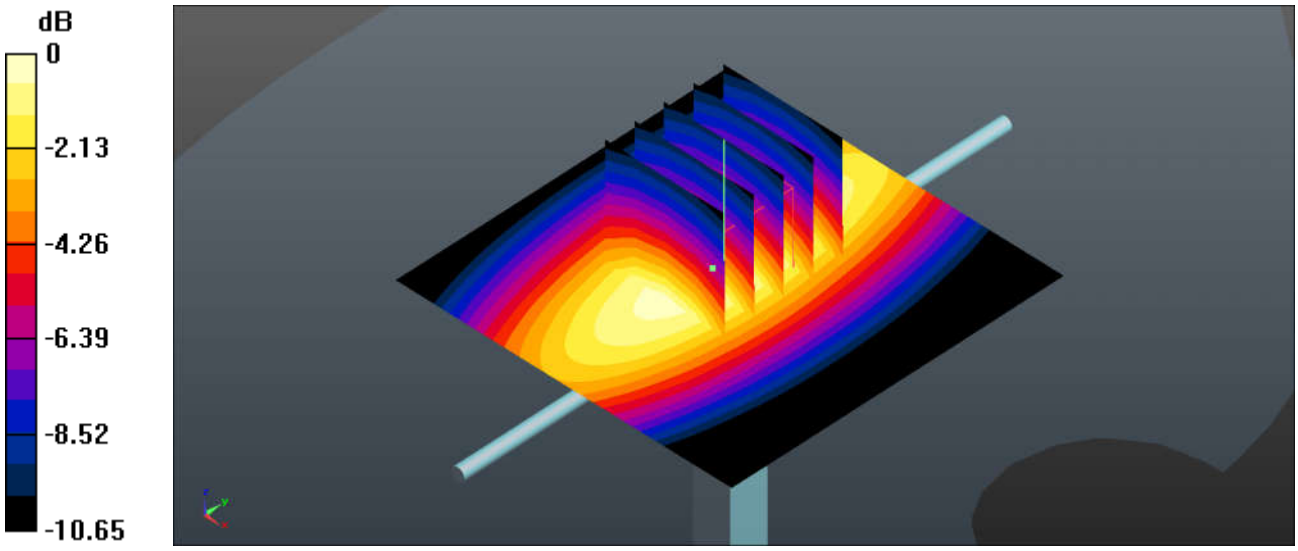
DUT: D750V3 - SN:1087

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: f = 750 MHz; σ = 0.903 S/m; ε_r = 42.105; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.27, 9.27, 9.27); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.36 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.60 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.86 W/kg
SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.34 W/kg
Maximum value of SAR (measured) = 2.38 W/kg



0 dB = 2.38 W/kg = 3.77 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.6

System Check_Head_835MHz

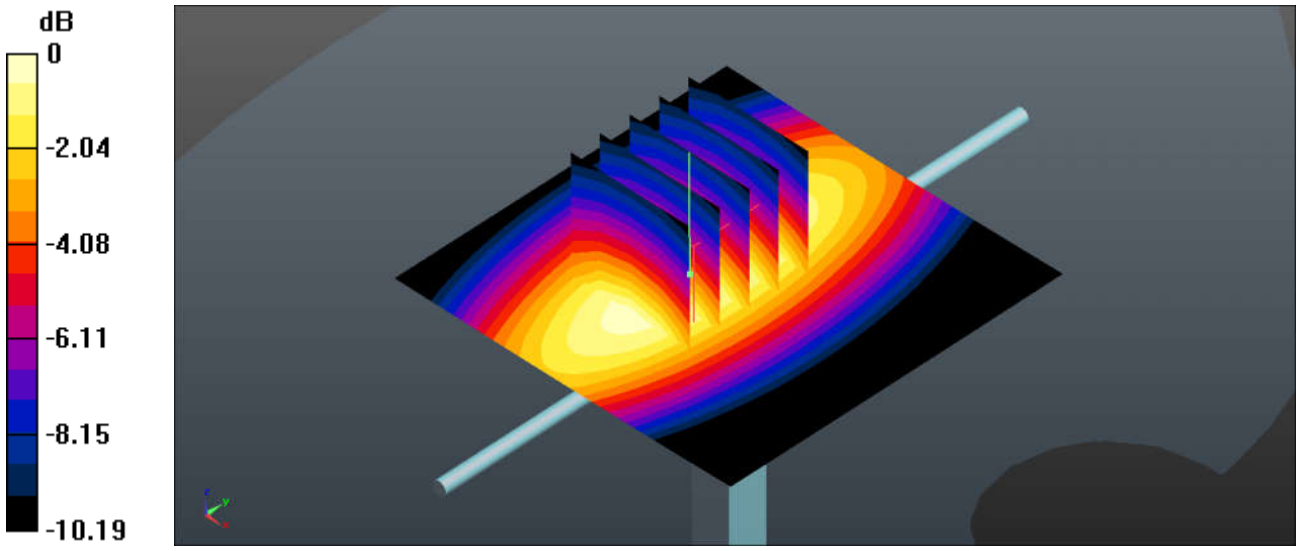
DUT: D835V2 - SN:4d151

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 835 MHz; σ = 0.908 S/m; ε_r = 42.255; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.01, 9.01, 9.01); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.18 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.05 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.79 W/kg
SAR(1 g) = 2.57 W/kg; SAR(10 g) = 1.64 W/kg
Maximum value of SAR (measured) = 3.21 W/kg



0 dB = 3.21 W/kg = 5.07 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.7

System Check_Head_1750MHz

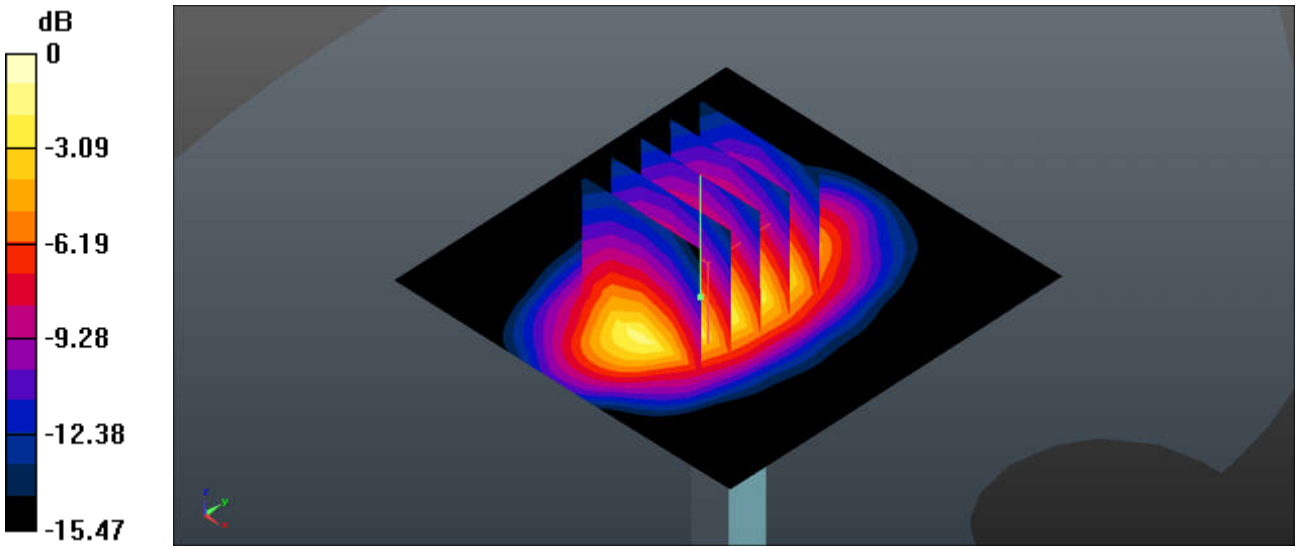
DUT: D1750V2 - SN:1090

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1750 MHz; σ = 1.345 S/m; ε_r = 41.143; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.79, 7.79, 7.79); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 12.7 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 85.93 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 8.98 W/kg; SAR(10 g) = 4.78 W/kg
Maximum value of SAR (measured) = 12.8 W/kg



0 dB = 12.8 W/kg = 11.07 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.10

System Check_Head_1900MHz

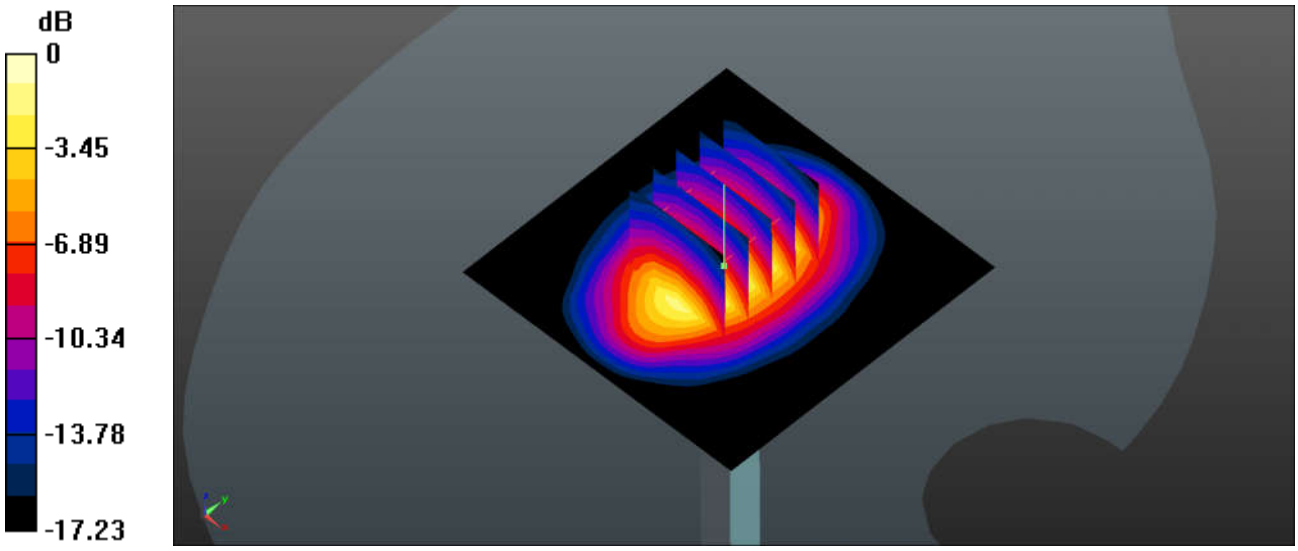
DUT: D1900V2 - SN:5d170

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.424 S/m; ε_r = 39.918; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.4, 7.4, 7.4); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

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

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 85.47 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 9.47 W/kg; SAR(10 g) = 5 W/kg
Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 13.5 W/kg = 11.30 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.19

System Check_Head_2450MHz

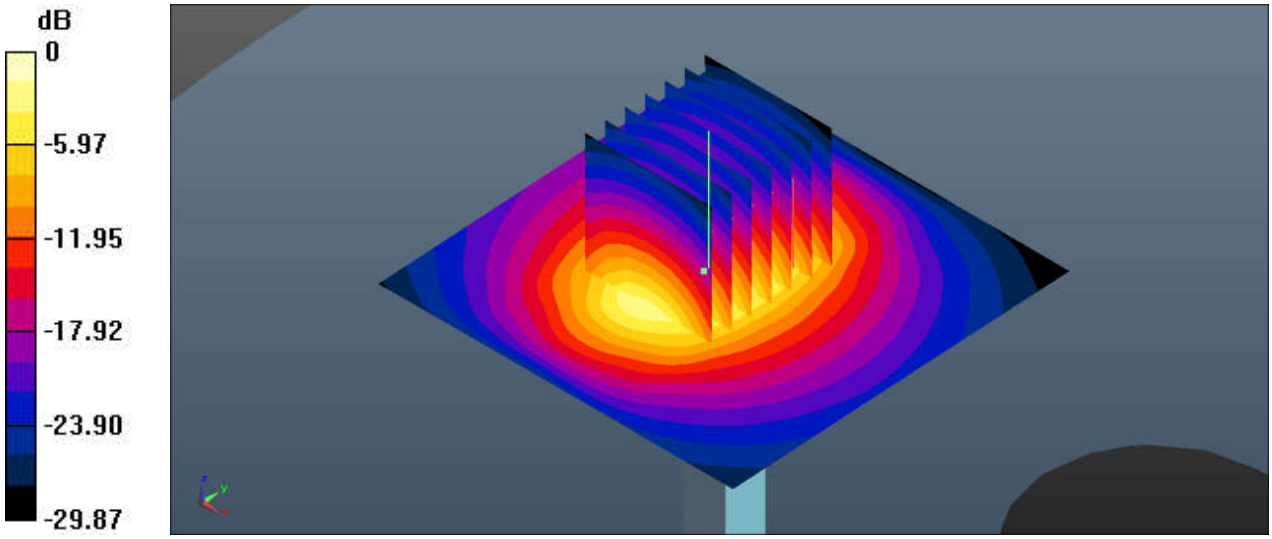
DUT: D2450V2 - SN:908

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2450 MHz; σ = 1.863 S/m; ε_r = 38.471; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.08, 7.08, 7.08); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.1 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 81.15 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 25.9 W/kg
SAR(1 g) = 12 W/kg; SAR(10 g) = 5.81 W/kg
Maximum value of SAR (measured) = 18.7 W/kg



0 dB = 19.1 W/kg = 12.81 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.13

System Check_Head_2600MHz

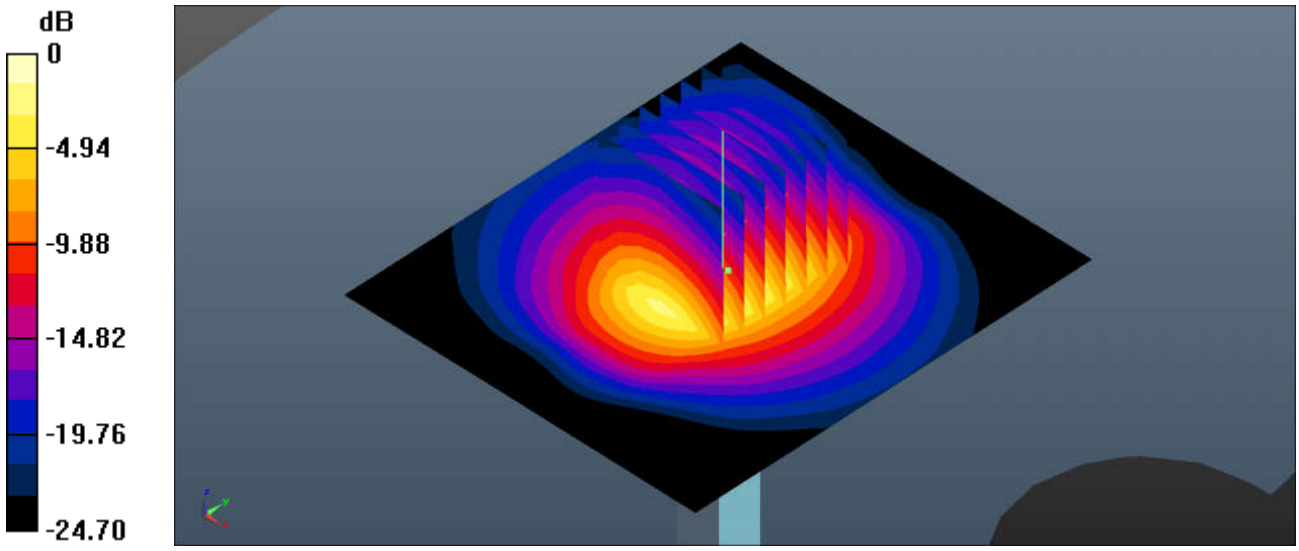
DUT: D2600V2 - SN:1061

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600 Medium parameters used: f = 2600 MHz; σ = 2.04 S/m; ε_r = 37.884; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(6.86, 6.86, 6.86); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 22.1 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.49 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 31.8 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.17 W/kg
Maximum value of SAR (measured) = 22.6 W/kg



0 dB = 22.6 W/kg = 13.54 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.7

System Check_Body_750MHz

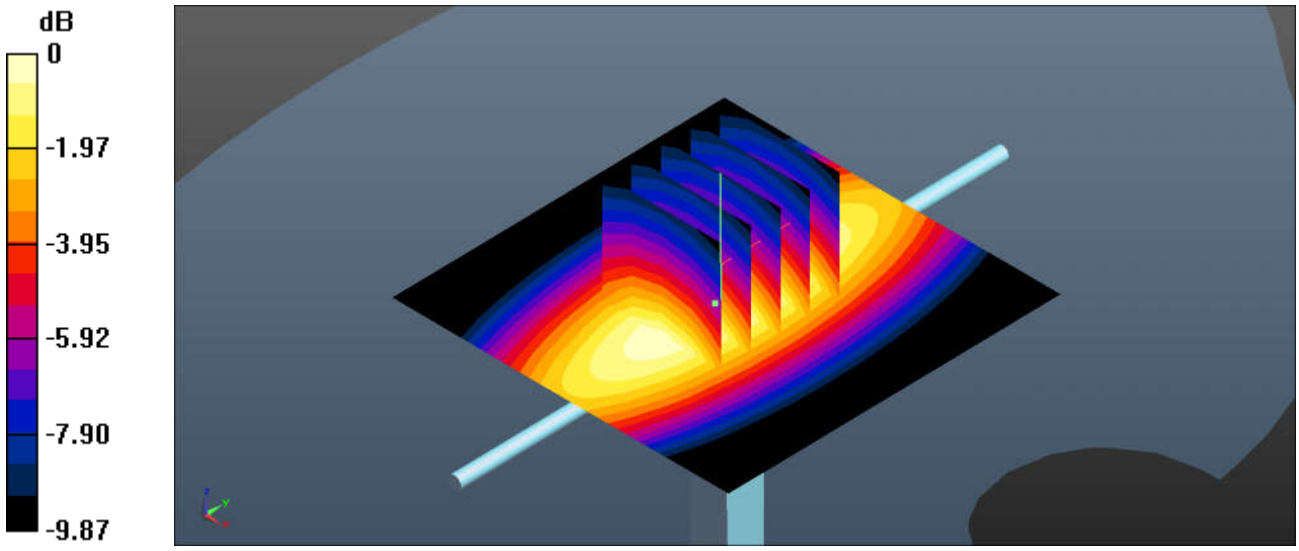
DUT: D750V3 - SN:1087

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750 Medium parameters used: f = 750 MHz; σ = 0.962 S/m; ε_r = 55.691; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.31, 9.31, 9.31); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.87 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.85 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 3.34 W/kg
SAR(1 g) = 2.24 W/kg; SAR(10 g) = 1.49 W/kg
Maximum value of SAR (measured) = 2.84 W/kg



0 dB = 2.84 W/kg = 4.53 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.7

System Check_Body_835MHz

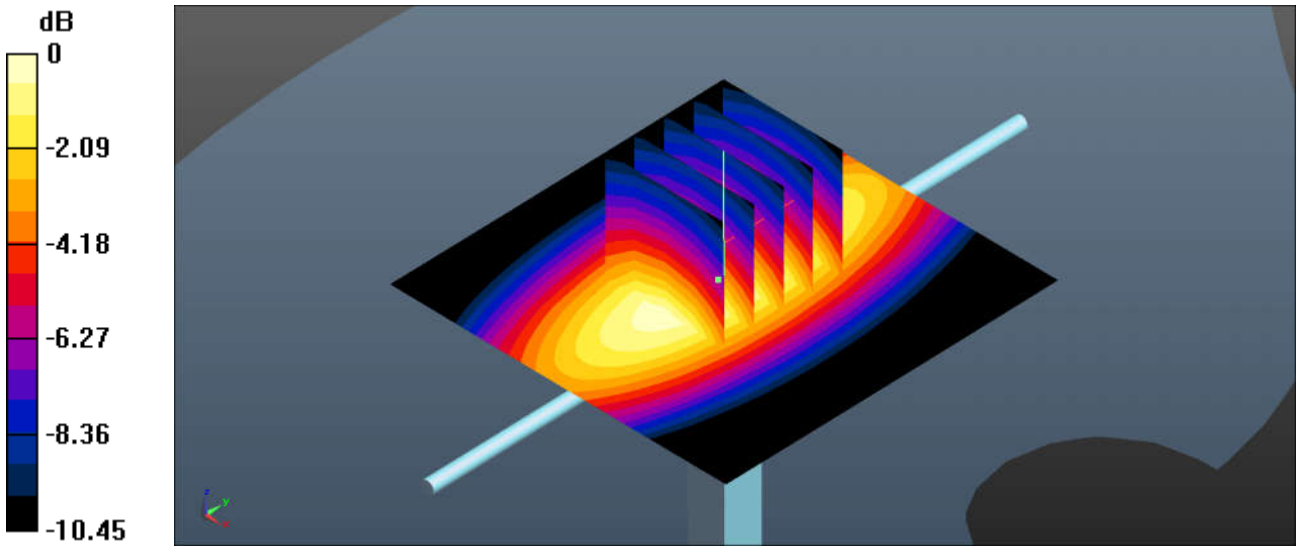
DUT: D835V2 - SN:4d151

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 835 MHz; σ = 0.976 S/m; ε_r = 55.067; ρ = 1000 kg/m^3
Ambient Temperature：23.1 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.03, 9.03, 9.03); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.89 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.10 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.38 W/kg
SAR(1 g) = 2.28 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (measured) = 2.88 W/kg



0 dB = 2.88 W/kg = 4.59 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.5

System Check_Body_1750MHz

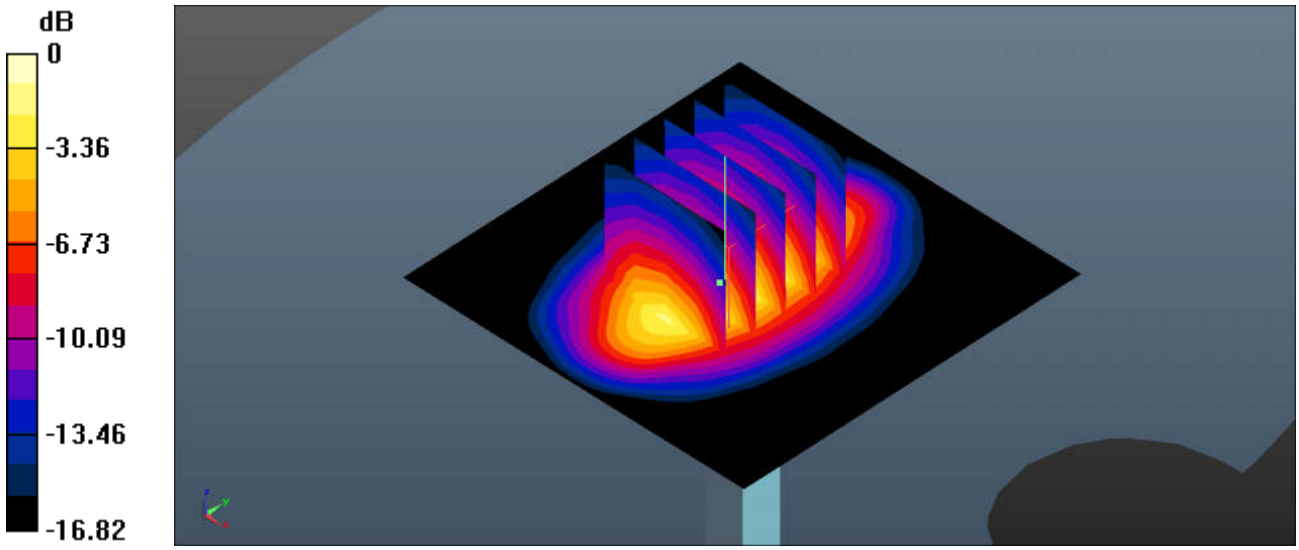
DUT: D1750V2 - SN:1090

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750 Medium parameters used: f = 1750 MHz; σ = 1.476 S/m; ε_r = 53.352; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.41, 7.41, 7.41); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.4 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 81.53 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.27 W/kg; SAR(10 g) = 5.02 W/kg
Maximum value of SAR (measured) = 12.9 W/kg



0 dB = 12.9 W/kg = 11.11 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.5

System Check_Body_1900MHz

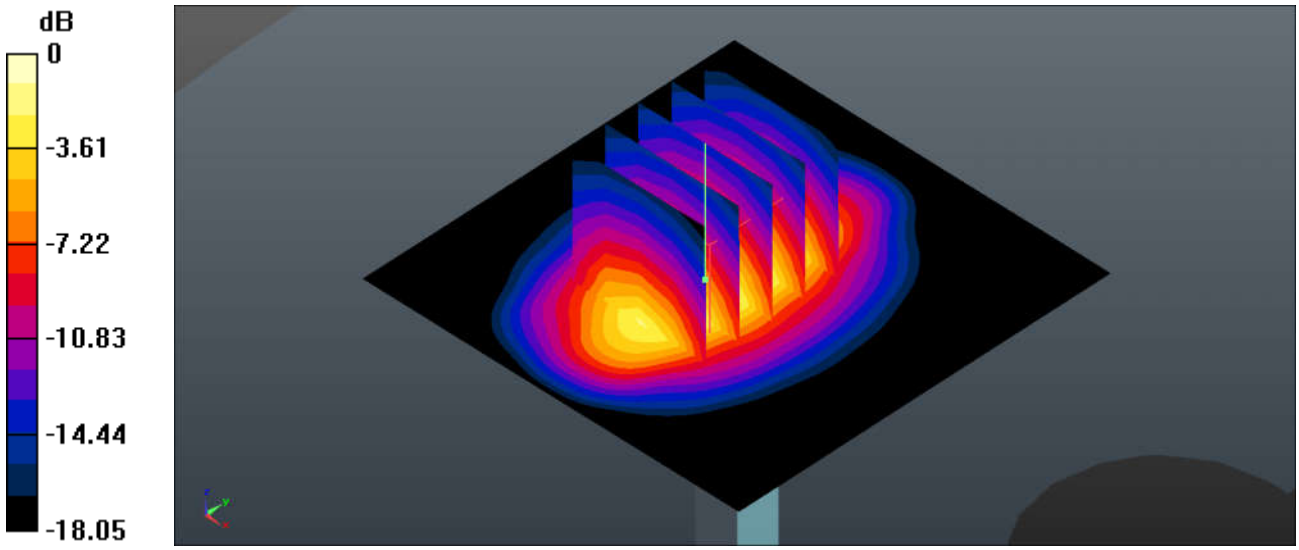
DUT: D1900V2 - SN:5d170

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900 Medium parameters used: f = 1900 MHz; σ = 1.516 S/m; ε_r = 52.596; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.07, 7.07, 7.07); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.8 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 85.30 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 9.73 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 13.9 W/kg



0 dB = 13.9 W/kg = 11.43 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.19

System Check_Body_2450MHz

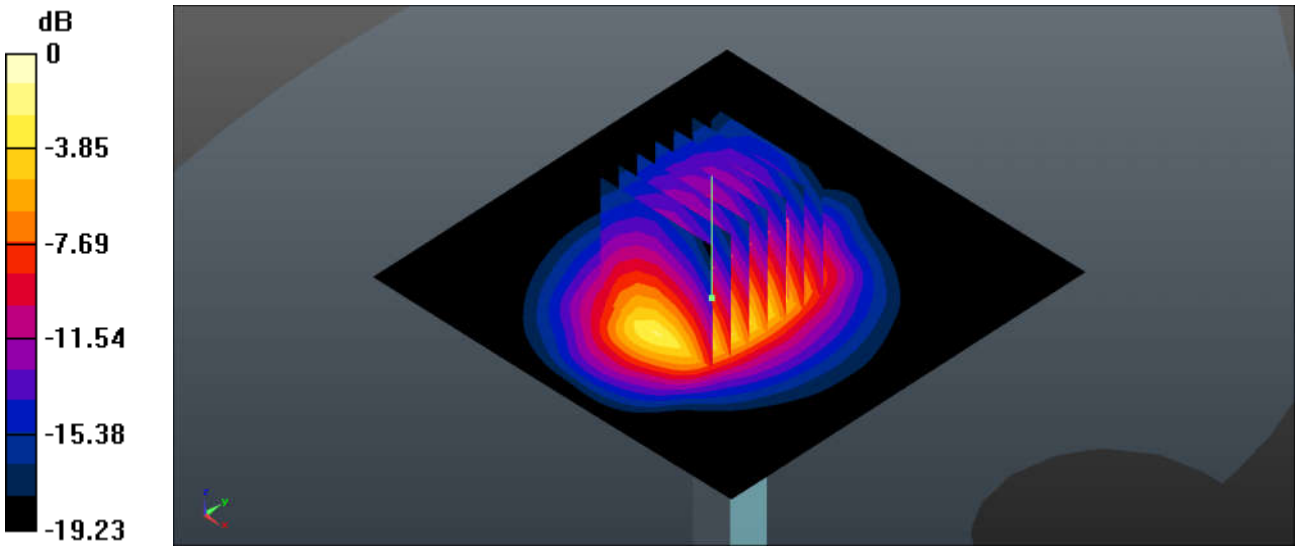
DUT: D2450V2 - SN:908

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2450 MHz; σ = 1.996 S/m; ε_r = 52.882; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.02, 7.02, 7.02); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 20.9 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.92 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 29.6 W/kg
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.14 W/kg
Maximum value of SAR (measured) = 21.2 W/kg



0 dB = 21.2 W/kg = 13.26 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.13

System Check_Body_2600MHz

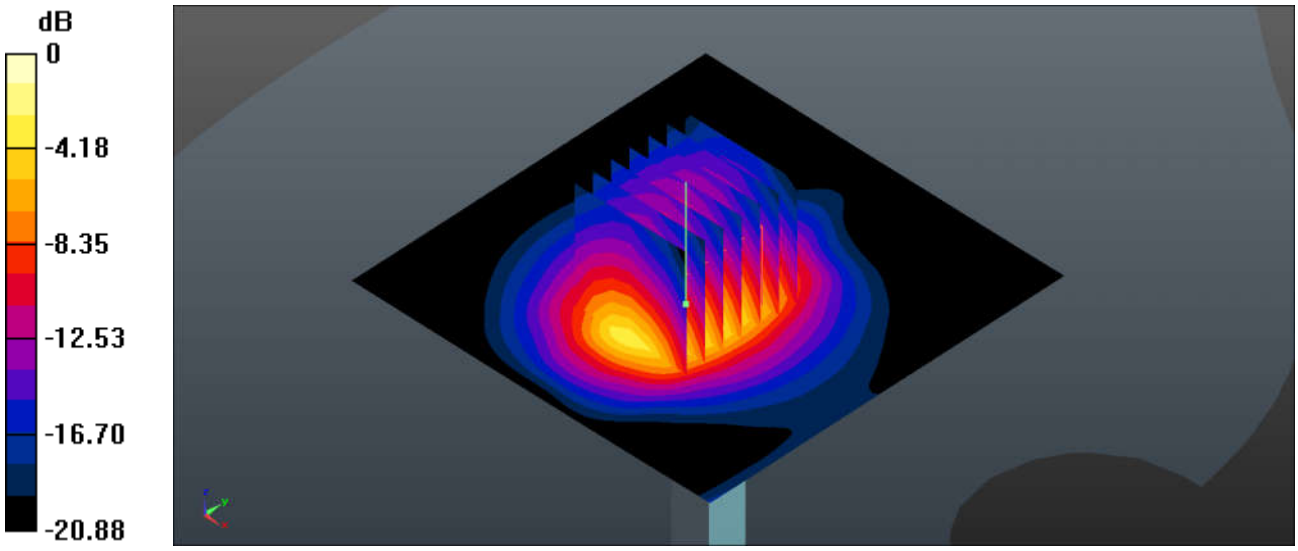
DUT: D2600V2 - SN:1061

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600 Medium parameters used: f = 2600 MHz; σ = 2.203 S/m; ε_r = 52.369; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(6.7, 6.7, 6.7); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 21.8 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 71.33 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 30.3 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.16 W/kg
Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.6

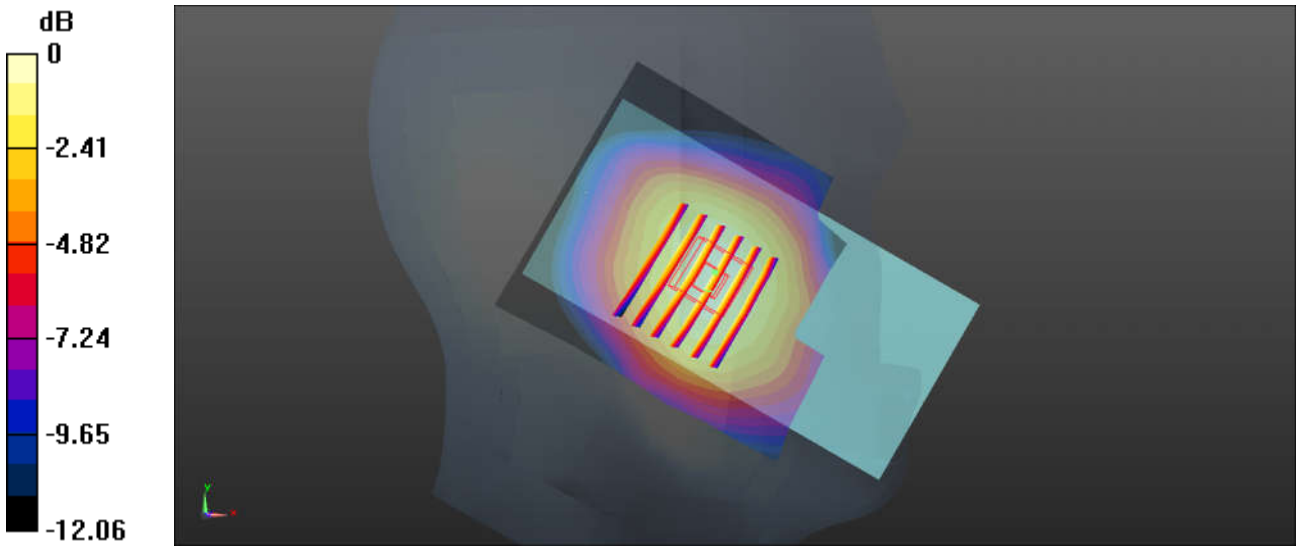
01_GSM850_GPRS 4 Tx slot_Left Cheek_0mm_Ch189

Communication System: UID 0, GSM850-4UP (0); Frequency: 836.4 MHz;Duty Cycle: 1:2.08
Medium: HSL_850 Medium parameters used: f = 836.4 MHz; σ = 0.909 S/m; ε_r = 42.242; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.01, 9.01, 9.01); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch189/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.849 W/kg

Ch189/Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.85 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.997 W/kg
SAR(1 g) = 0.707 W/kg; SAR(10 g) = 0.532 W/kg
Maximum value of SAR (measured) = 0.902 W/kg



0 dB = 0.902 W/kg = -0.45 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.10

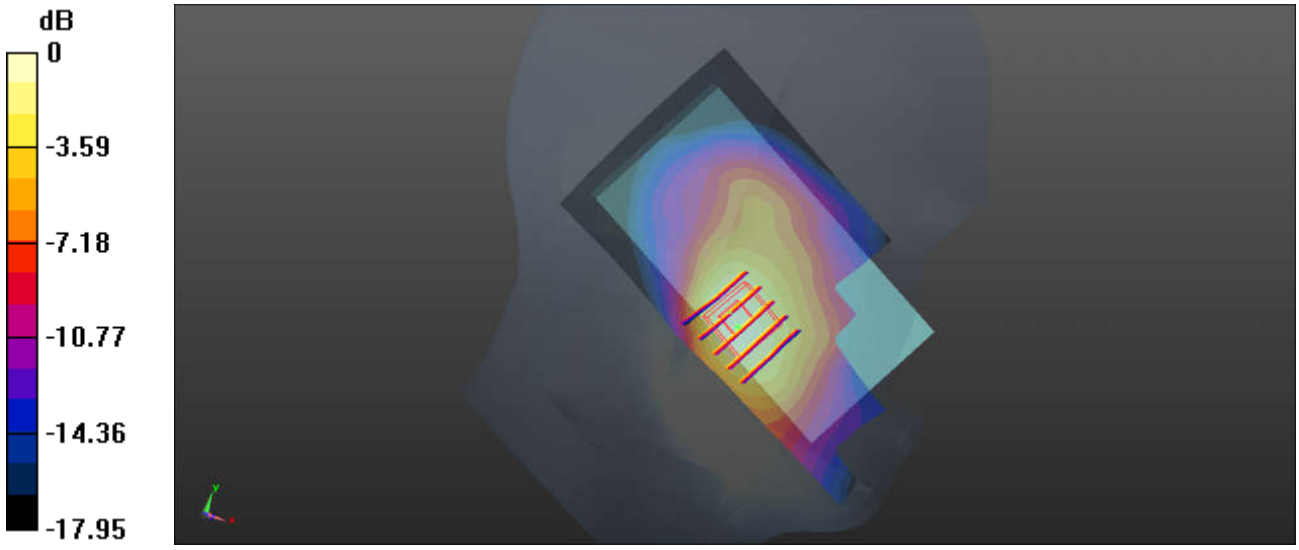
02_GSM1900_GPRS 4 Tx slot_Left Cheek_0mm_Ch810

Communication System: UID 0, PCS-4UP (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900 Medium parameters used: f = 1909.8 MHz; σ = 1.435 S/m; ε_r = 39.875; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.4, 7.4, 7.4); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch810/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.24 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.088 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.859 W/kg; SAR(10 g) = 0.511 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

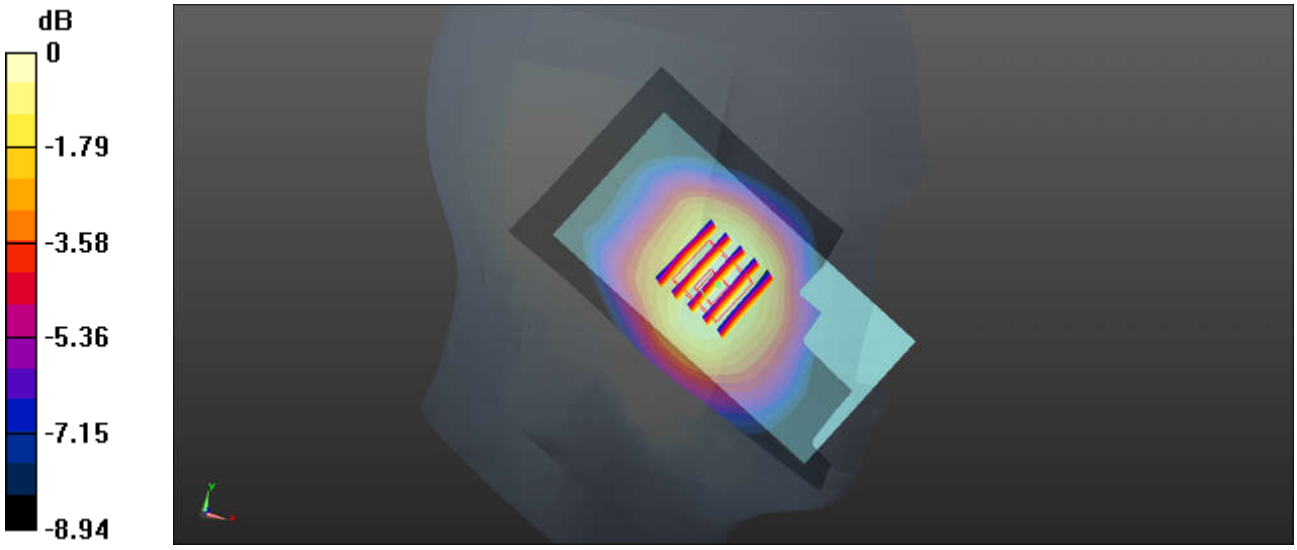
03_CDMA2000 BC10_RC3 SO55_Left Cheek_0mm_Ch684

Communication System: UID 0, CDMA (0); Frequency: 823.1 MHz;Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 823.1 MHz; σ = 0.897 S/m; ε_r = 42.42; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.01, 9.01, 9.01); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch684/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.482 W/kg

Ch684/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.458 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.563 W/kg
SAR(1 g) = 0.406 W/kg; SAR(10 g) = 0.309 W/kg
Maximum value of SAR (measured) = 0.508 W/kg



0 dB = 0.508 W/kg = -2.94 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.6

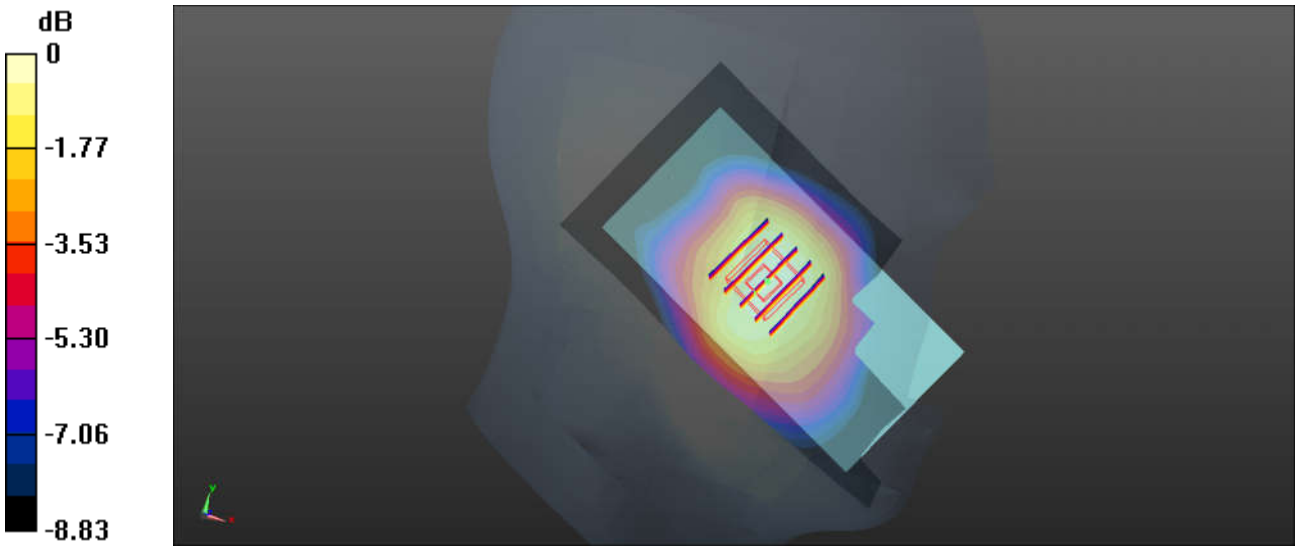
04_CDMA2000 BC0_RC3 SO55_Left Cheek_0mm_Ch777

Communication System: UID 0, CDMA (0); Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 848.31 MHz; σ = 0.92 S/m; ε_r = 42.082; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.01, 9.01, 9.01); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch777/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.420 W/kg

Ch777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.210 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.352 W/kg; SAR(10 g) = 0.265 W/kg
Maximum value of SAR (measured) = 0.440 W/kg



0 dB = 0.440 W/kg = -3.57 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.10

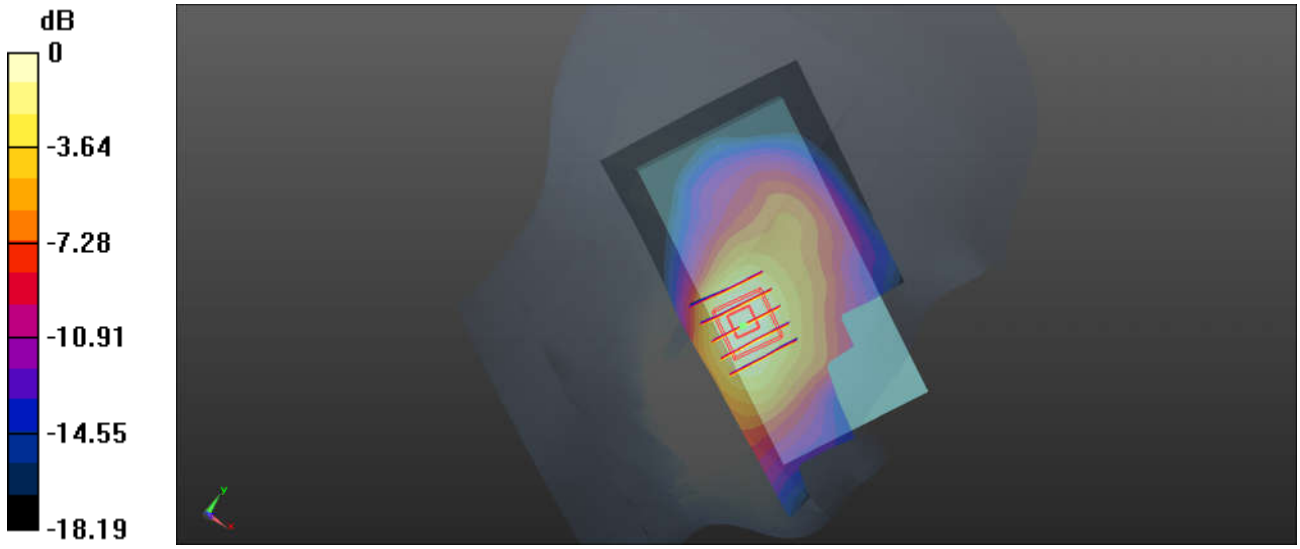
05_CDMA2000 BC1_RC3 SO55_Left Cheek_0mm_Ch1175

Communication System: UID 0, CDMA (0); Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1908.75 MHz; σ = 1.434 S/m; ε_r = 39.876; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.4, 7.4, 7.4); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1175/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.60 W/kg

Ch1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.579 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.81 W/kg
SAR(1 g) = 1.100 W/kg; SAR(10 g) = 0.654 W/kg
Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.6

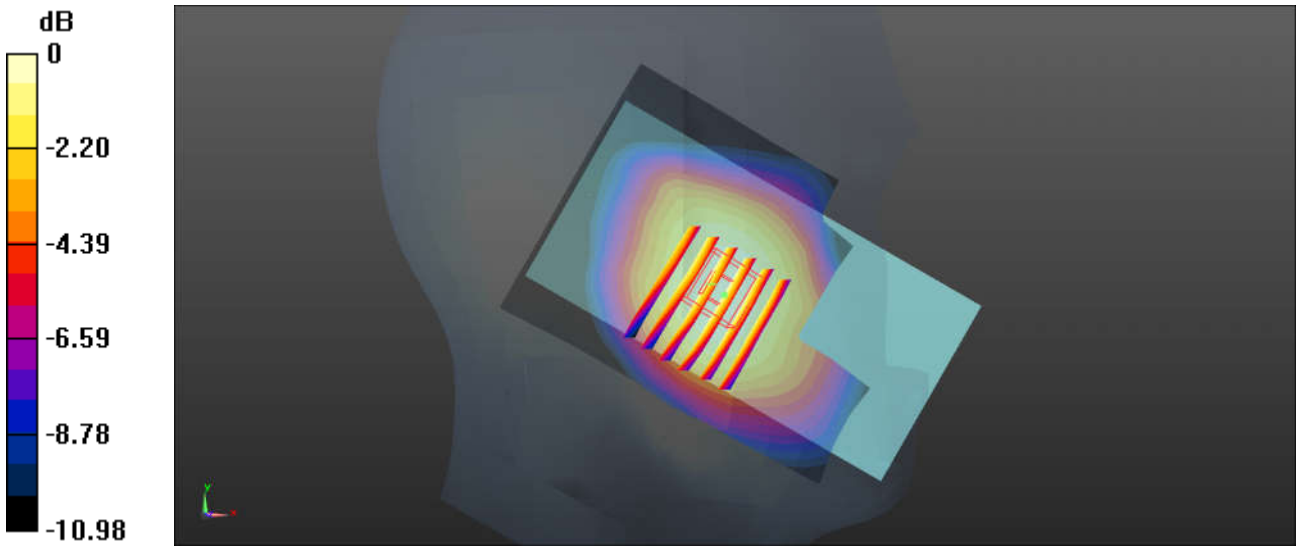
06_LTE Band 12_10M_QPSK_1RB_25Offset_Left Cheek_0mm_Ch23095

Communication System: UID 0, LTE-FDD (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: f = 707.5 MHz; σ = 0.864 S/m; ε_r = 42.662; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.27, 9.27, 9.27); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch23095/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.315 W/kg

Ch23095/Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.039 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.345 W/kg
SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.214 W/kg
Maximum value of SAR (measured) = 0.319 W/kg



0 dB = 0.319 W/kg = -4.96 dBW/kg

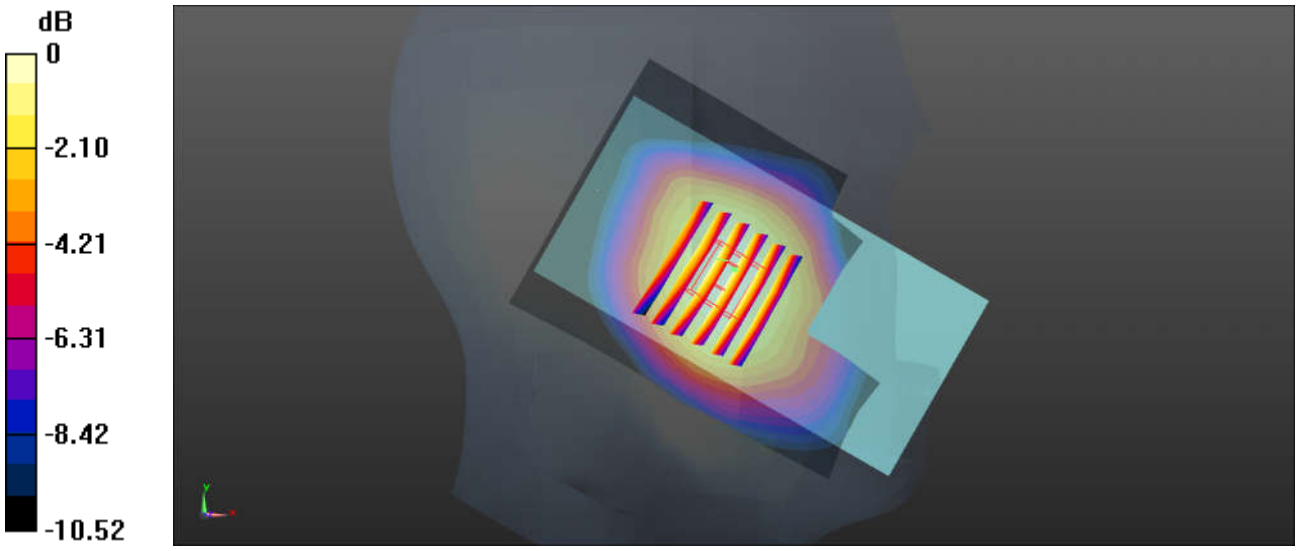
07_LTE Band 13_10M_QPSK_1RB_25Offset_Left Cheek_0mm_Ch23230

Communication System: UID 0, LTE-FDD (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.682; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.27, 9.27, 9.27); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch23230/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.373 W/kg

Ch23230/Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.999 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.318 W/kg; SAR(10 g) = 0.245 W/kg
Maximum value of SAR (measured) = 0.379 W/kg



0 dB = 0.379 W/kg = -4.21 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.6

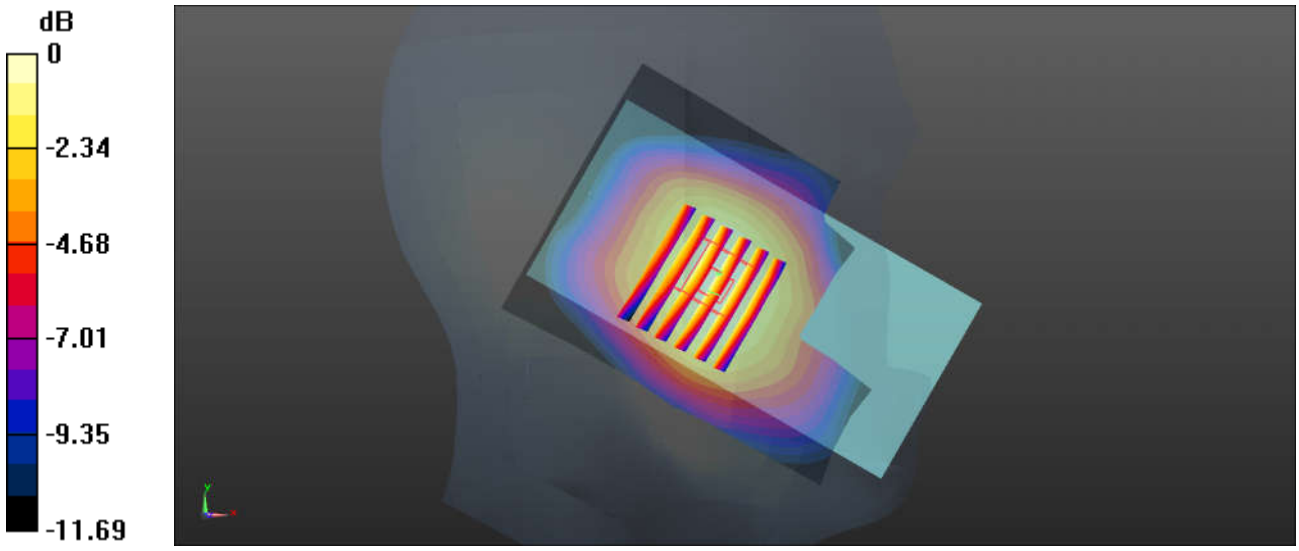
08_LTE Band 26_15M_QPSK_1RB_37Offset_Left Cheek_0mm_Ch26865

Communication System: UID 0, LTE-FDD (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 831.5 MHz; σ = 0.905 S/m; ε_r = 42.305; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.01, 9.01, 9.01); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26865/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.495 W/kg

Ch26865/Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.648 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.579 W/kg
SAR(1 g) = 0.401 W/kg; SAR(10 g) = 0.307 W/kg
Maximum value of SAR (measured) = 0.524 W/kg



0 dB = 0.524 W/kg = -2.81 dBW/kg

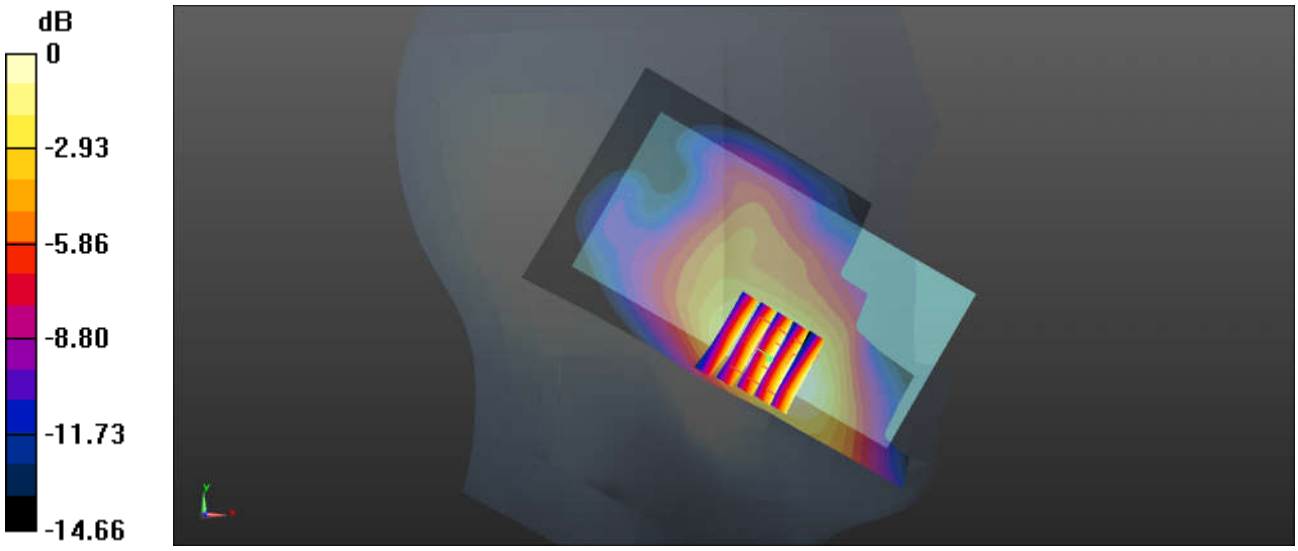
09_LTE Band 4_20M_QPSK_1RB_49Offset_Left Cheek_0mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: f = 1732.5 MHz; σ = 1.327 S/m; ε_r = 41.211; ρ = 1000 kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.79, 7.79, 7.79); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.622 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.011 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.641 W/kg
SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 0.559 W/kg



0 dB = 0.559 W/kg = -2.53 dBW/kg

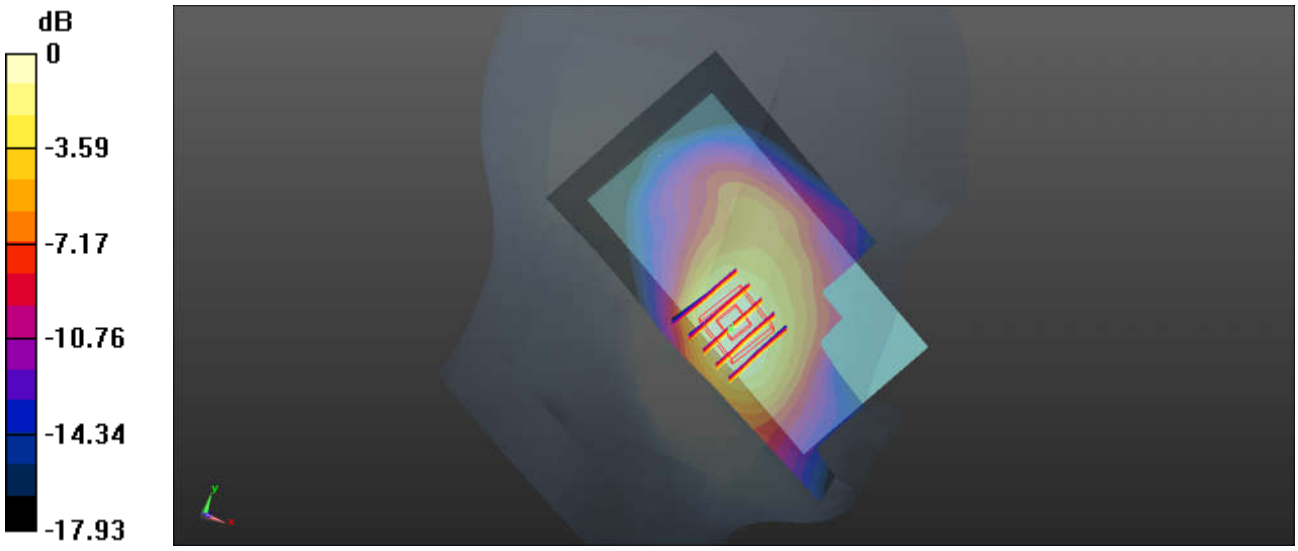
10_LTE Band 25_20M_QPSK_1RB_49Offset_Left Cheek_0mm_Ch26340

Communication System: UID 0, LTE-FDD (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.401 S/m; ε_r = 40.021; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.4, 7.4, 7.4); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26340/Area Scan (61x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.51 W/kg

Ch26340/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.777 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.96 W/kg; SAR(10 g) = 0.601 W/kg
Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

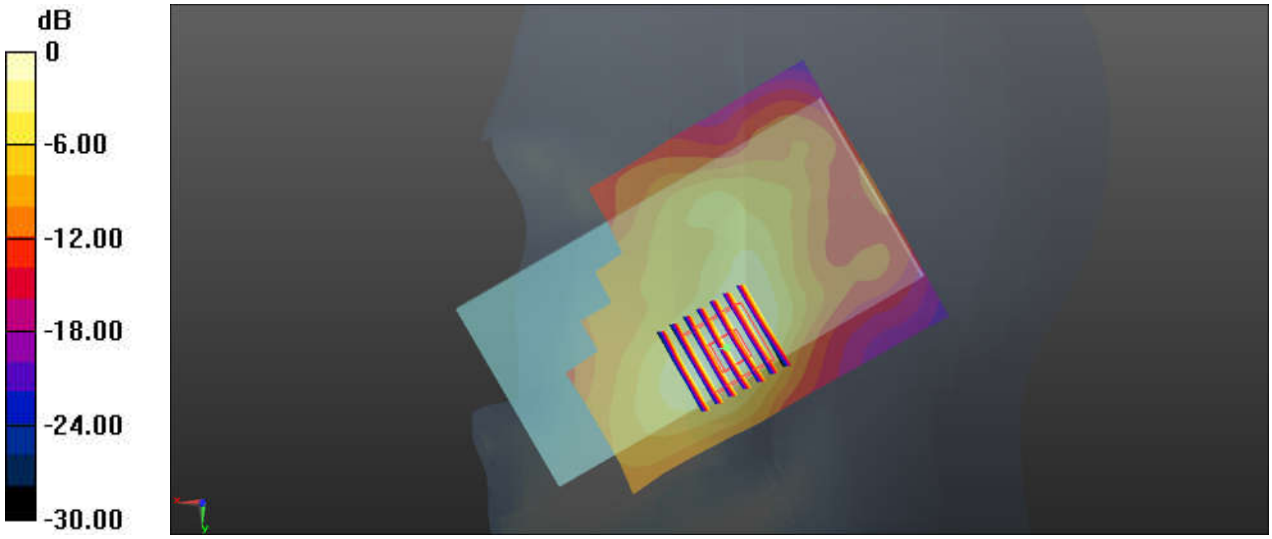
11_LTE Band 41_Power Class2_20M_QPSK_50RB_0Offset_Right Cheek_0mm_Ch41490

Communication System: UID 0, TDD_LTE (0); Frequency: 2680 MHz;Duty Cycle: 1:2.33
Medium: HSL_2600 Medium parameters used: f = 2680 MHz; σ = 2.133 S/m; ε_r = 37.561; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4-SN3843; ConvF(6.86, 6.86, 6.86); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch41490/Area Scan (81x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Ch41490/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.121 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.363 W/kg
Maximum value of SAR (measured) = 0.949 W/kg



0 dB = 1.01 W/kg = 0.04 dBW/kg

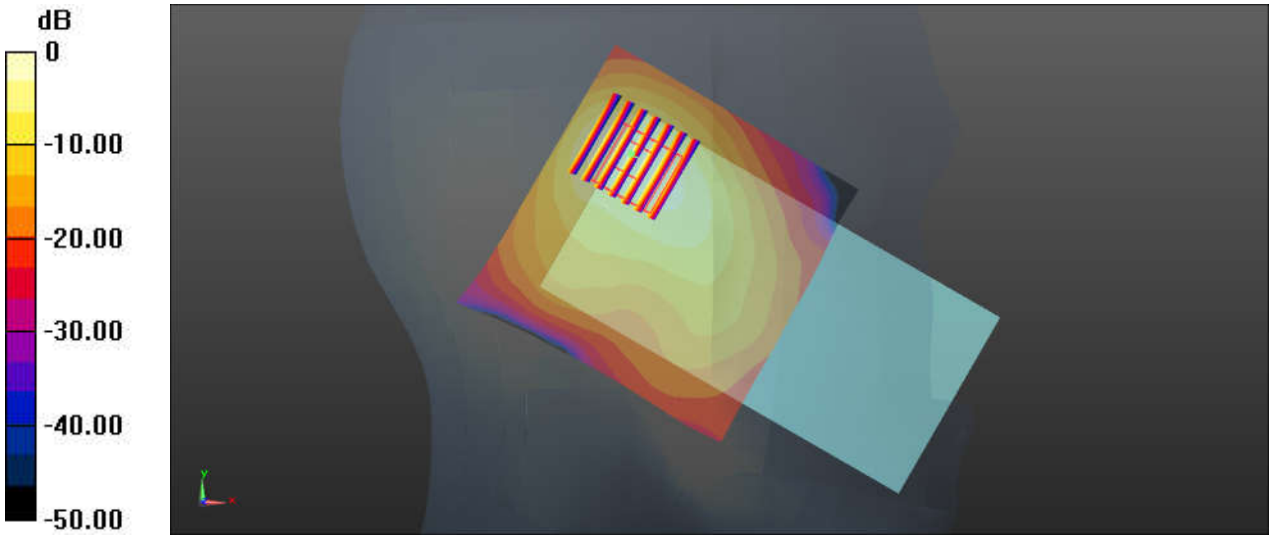
12_WLAN2.4GHz_802.11b 1Mbps_Left Cheek_0mm_Ch6

Communication System: UID 0, WIFI (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2437 MHz; σ = 1.856 S/m; ε_r = 38.129; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.08, 7.08, 7.08); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM2; Type: SAM; Serial: TP-1503
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch6/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.11 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 0.868 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 1.60 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.7

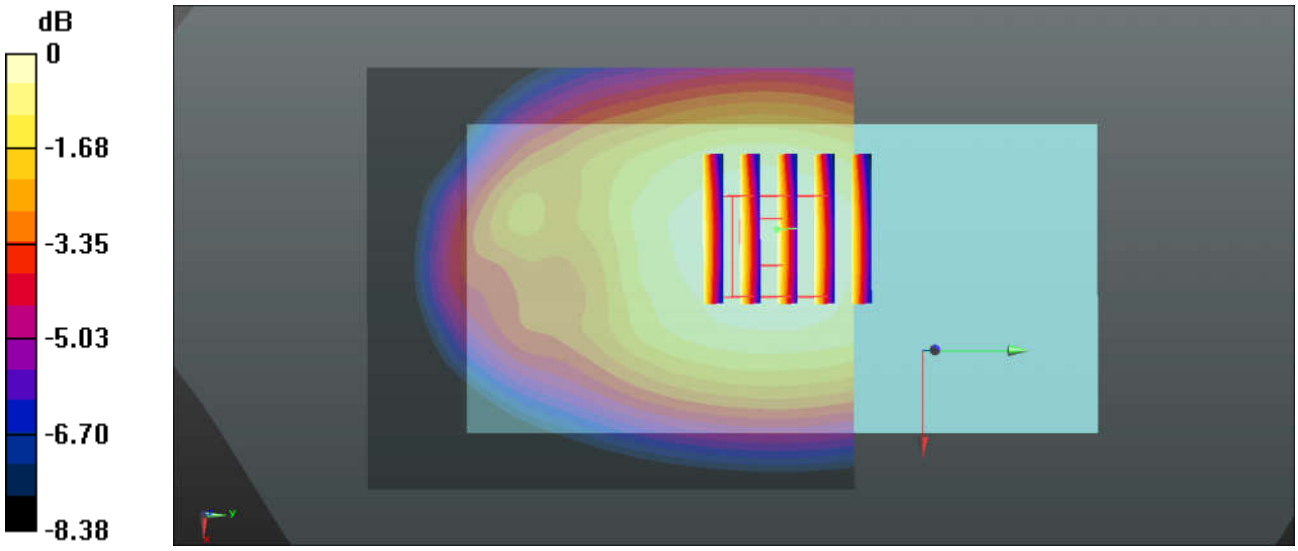
13_GSM850_GPRS 4 Tx slots_Back_10mm_Ch128

Communication System: UID 0, GSM850-4UP (0); Frequency: 824.2 MHz;Duty Cycle: 1:2.08
Medium: MSL_850 Medium parameters used: f = 824.2 MHz; σ = 0.965 S/m; ε_r = 55.178; ρ = 1000 kg/m^3
Ambient Temperature：23.1 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.03, 9.03, 9.03); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch128/Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.23 W/kg

Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.41 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.783 W/kg
Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.5

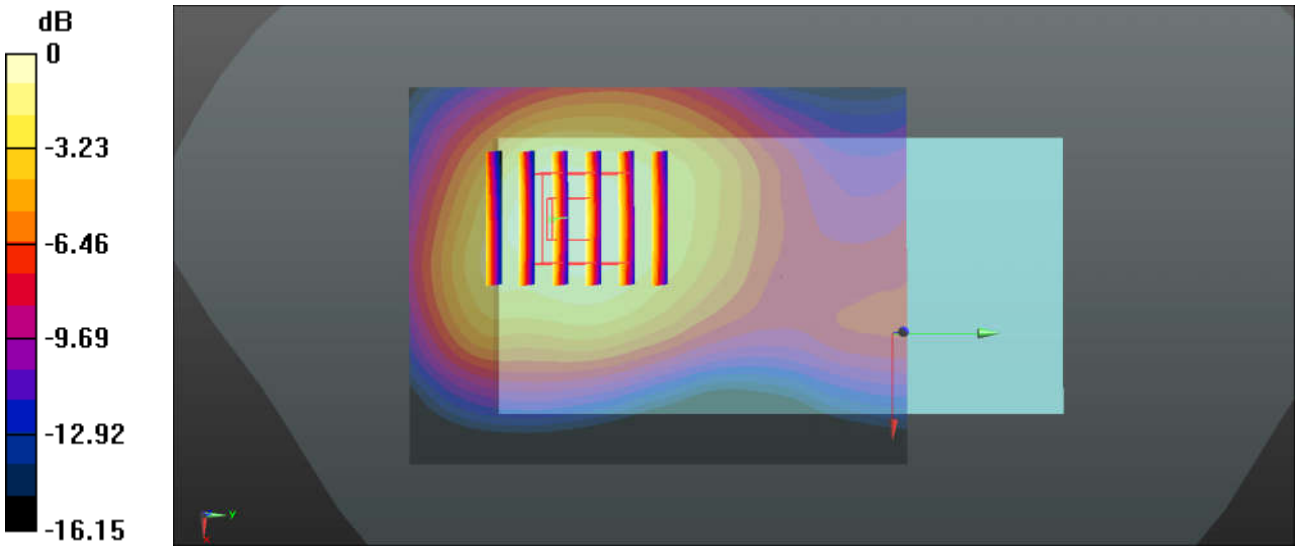
14_GSM1900_GPRS 4 Tx slots_Front_10mm_Ch661

Communication System: UID 0, PCS-4UP (0); Frequency: 1880 MHz;Duty Cycle: 1:2.08
Medium: MSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.494 S/m; ε_r = 52.661; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.07, 7.07, 7.07); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
-Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch661/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

Ch661/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.184 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.652 W/kg
Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg = 1.64 dBW/kg

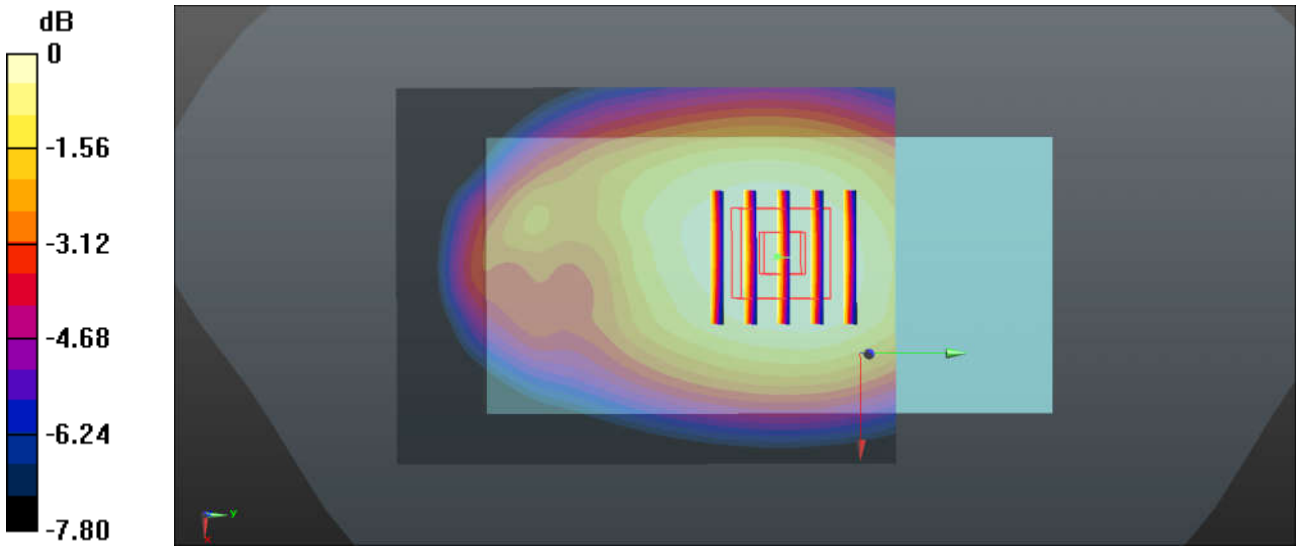
15_CDMA2000 BC10_RTAP 153.6Kbps_Back_10mm_Ch684

Communication System: UID 0, CDMA (0); Frequency: 823.1 MHz;Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 823.1 MHz; σ = 0.964 S/m; ε_r = 55.189; ρ = 1000 kg/m^3
Ambient Temperature：23.1 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.03, 9.03, 9.03); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch684/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.705 W/kg

Ch684/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.89 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.769 W/kg
SAR(1 g) = 0.575 W/kg; SAR(10 g) = 0.443 W/kg
Maximum value of SAR (measured) = 0.698 W/kg



0 dB = 0.698 W/kg = -1.56 dBW/kg

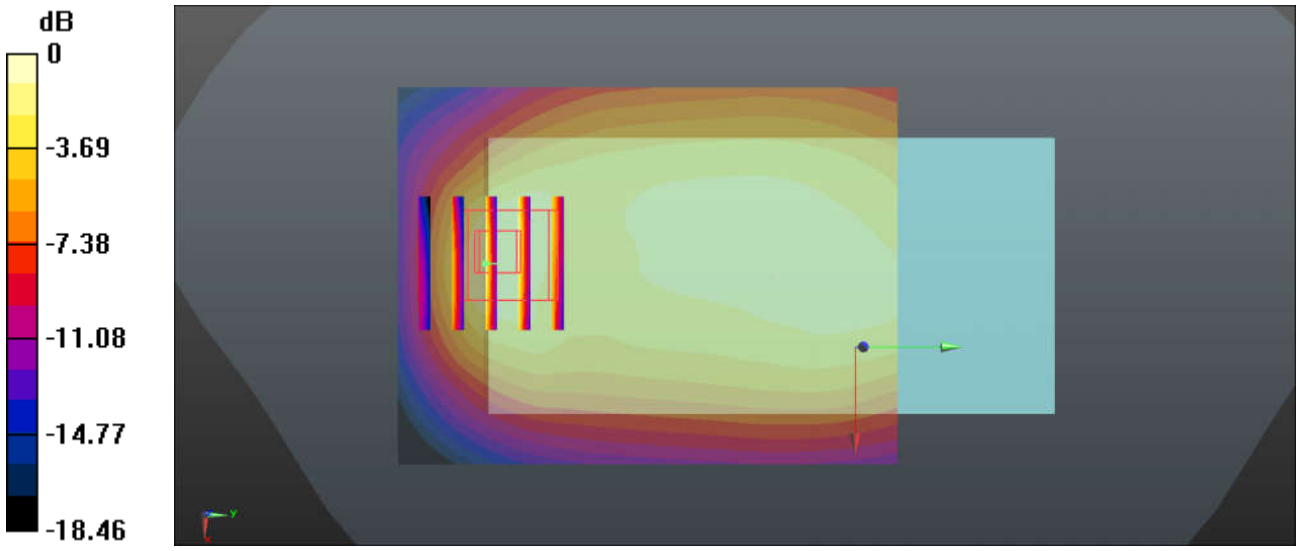
16_CDMA2000 BC0_RTAP 153.6Kbps_Back_10mm_Ch777

Communication System: UID 0, CDMA (0); Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 848.31 MHz; σ = 0.99 S/m; ε_r = 54.936; ρ = 1000 kg/m^3
Ambient Temperature：23.1 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.03, 9.03, 9.03); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch777/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.487 W/kg

Ch777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.86 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.853 W/kg
SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.219 W/kg
Maximum value of SAR (measured) = 0.647 W/kg



0 dB = 0.647 W/kg = -1.89 dBW/kg

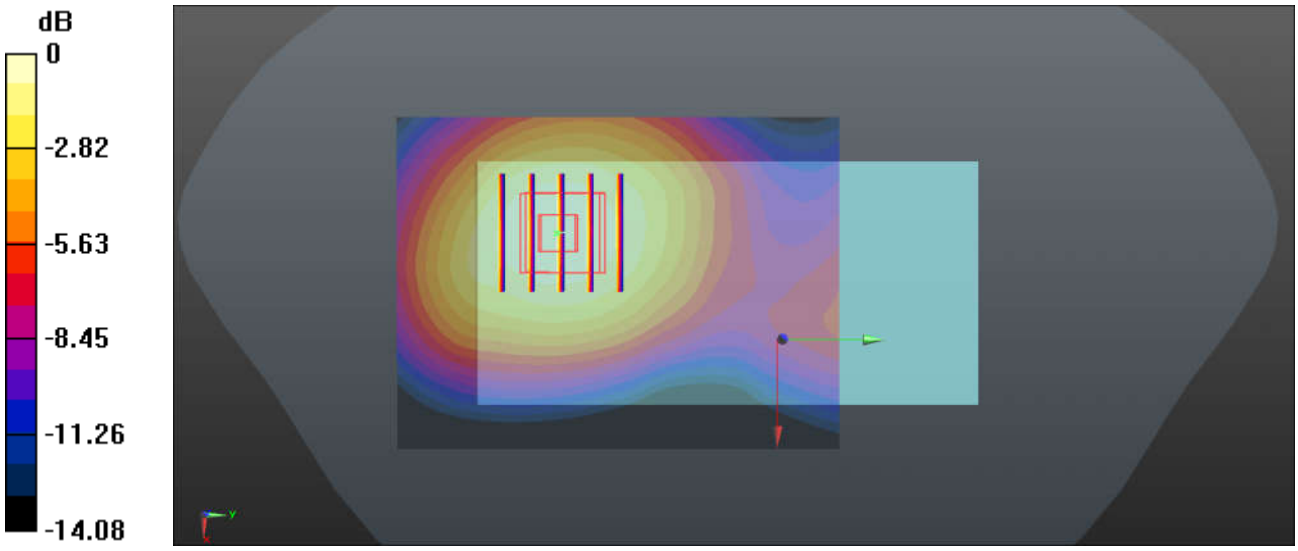
17_CDMA2000 BC1_RTAP 153.6Kbps_Front_10mm_Ch1175

Communication System: UID 0, CDMA (0); Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: MSL_1900 Medium parameters used: f = 1908.75 MHz; σ = 1.525 S/m; ε_r = 52.579; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.07, 7.07, 7.07); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch1175/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.752 W/kg

Ch1175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.86 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.454 W/kg; SAR(10 g) = 0.227 W/kg
Maximum value of SAR (measured) = 0.604 W/kg



0 dB = 0.752 W/kg = -1.24 dBW/kg

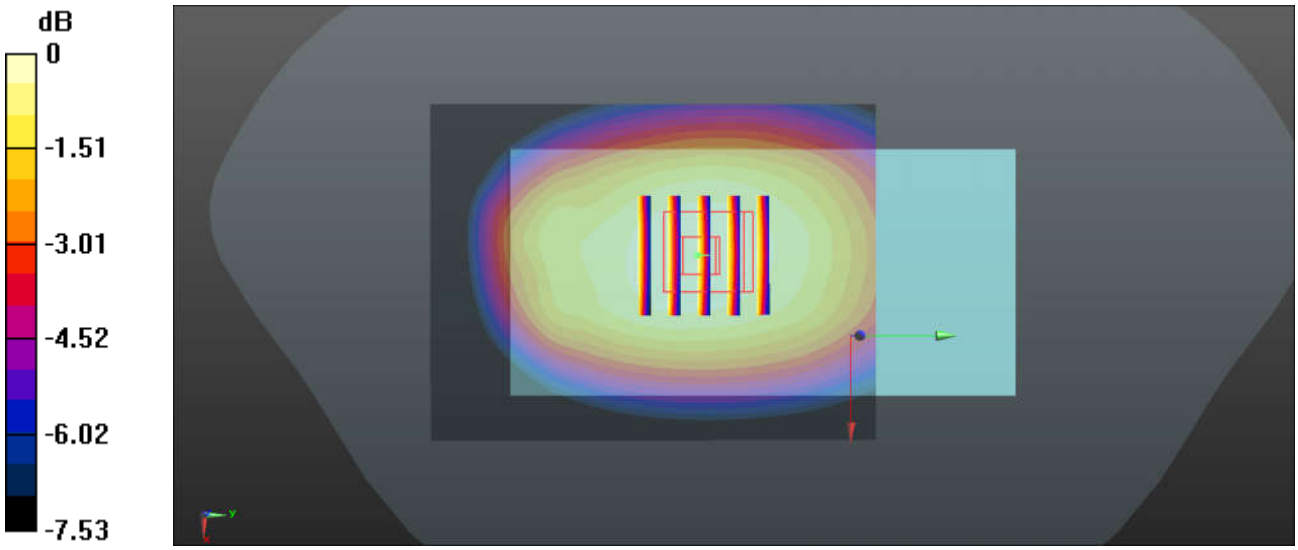
18_LTE Band 12_10M_QPSK_1RB_25Offset_Back_10mm_Ch23095

Communication System: UID 0, LTE-FDD (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: MSL_750 Medium parameters used: f = 707.5 MHz; σ = 0.921 S/m; ε_r = 56.061; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.31, 9.31, 9.31); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch23095/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.534 W/kg

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.75 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.585 W/kg
SAR(1 g) = 0.449 W/kg; SAR(10 g) = 0.351 W/kg
Maximum value of SAR (measured) = 0.535 W/kg



0 dB = 0.535 W/kg = -2.72 dBW/kg

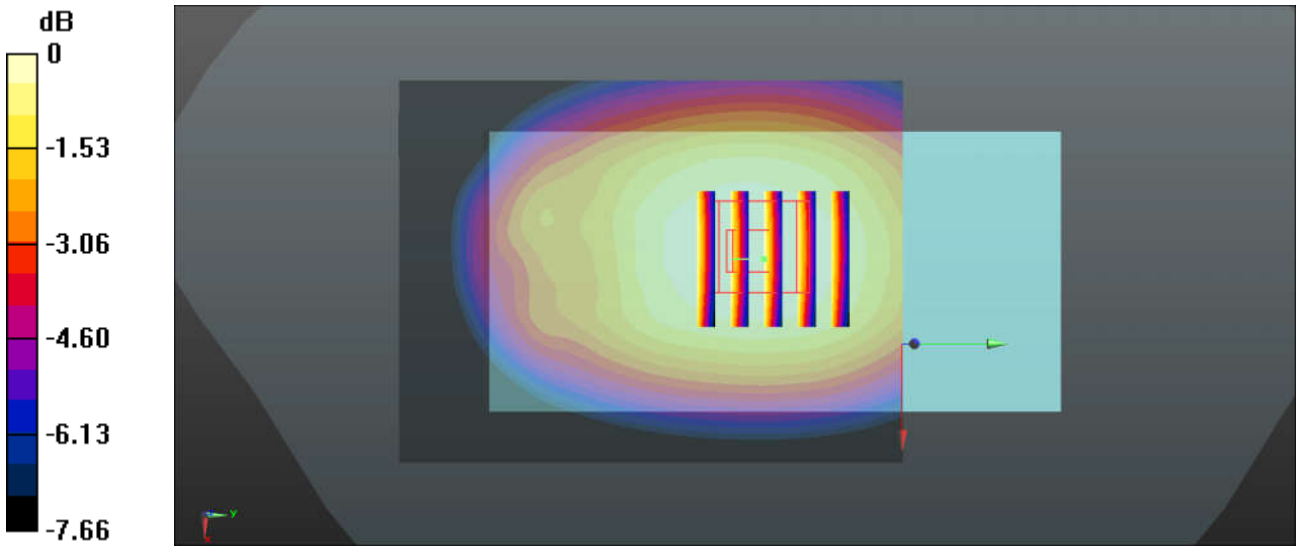
19_LTE Band 13_10M_QPSK_1RB_25Offset_Back_10mm_Ch23230

Communication System: UID 0, LTE-FDD (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium: MSL_750 Medium parameters used: f = 782 MHz; σ = 0.991 S/m; ε_r = 55.361; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.31, 9.31, 9.31); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch23230/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.681 W/kg

Ch23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.92 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.746 W/kg
SAR(1 g) = 0.567 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 0.679 W/kg



0 dB = 0.679 W/kg = -1.68 dBW/kg

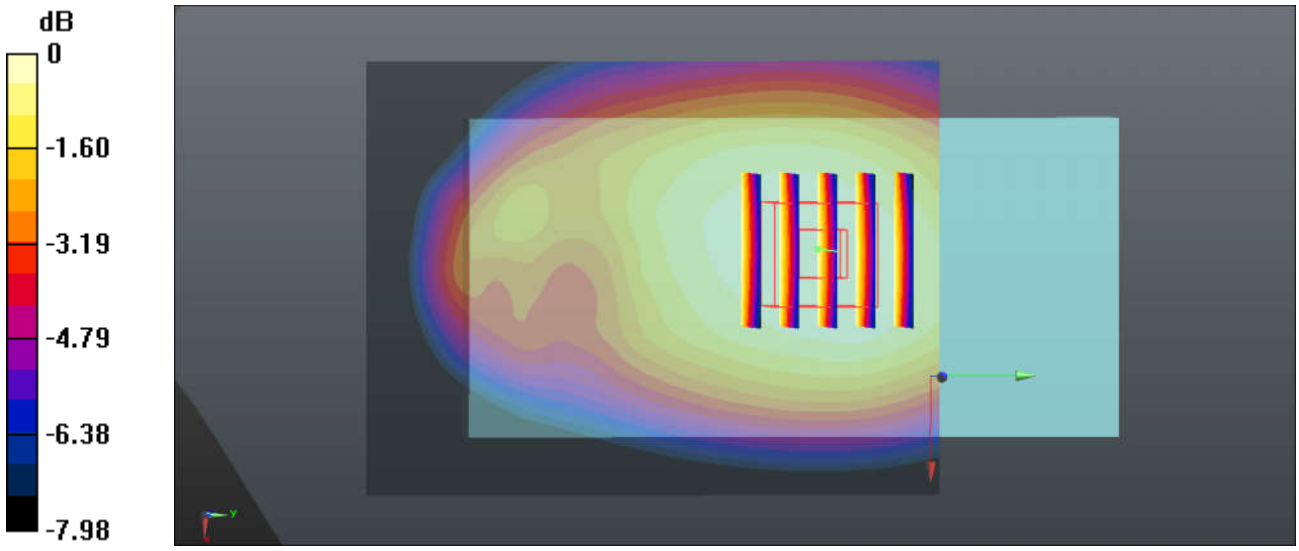
20_LTE Band 26_15M_QPSK_1RB_37Offset_Back_10mm_Ch26865

Communication System: UID 0, LTE-FDD (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 831.5 MHz; σ = 0.973 S/m; ε_r = 55.104; ρ = 1000 kg/m^3
Ambient Temperature：23.1 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(9.03, 9.03, 9.03); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch26865/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.680 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.29 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.756 W/kg
SAR(1 g) = 0.565 W/kg; SAR(10 g) = 0.435 W/kg
Maximum value of SAR (measured) = 0.686 W/kg



0 dB = 0.686 W/kg = -1.64 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2019.3.5

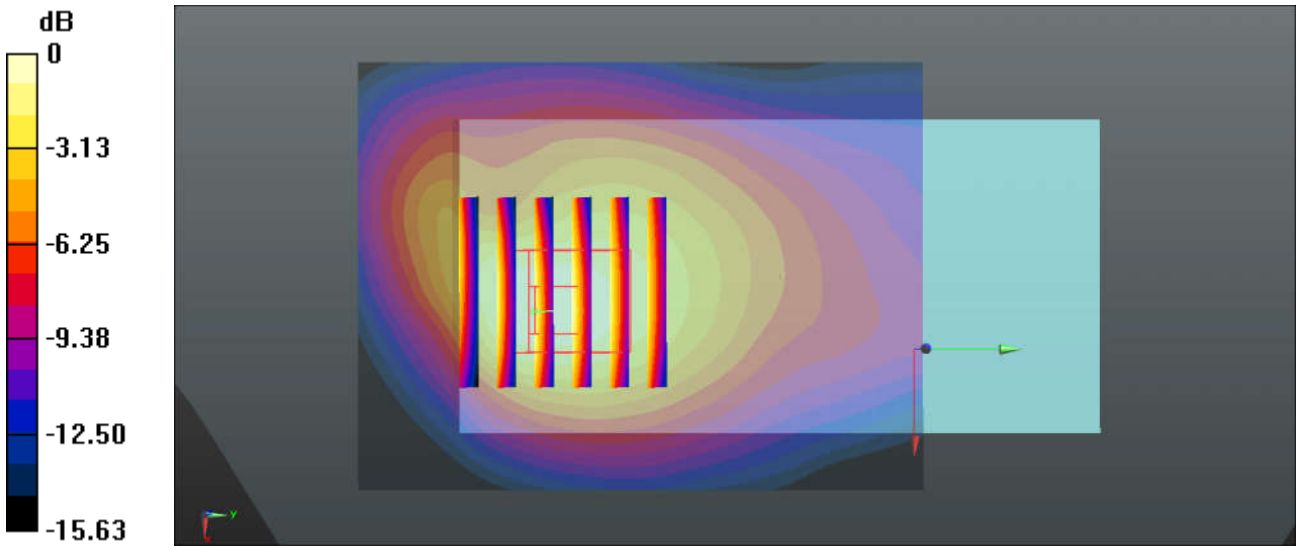
21_LTE Band 4_20M_QPSK_50RB_0Offset_Back_10mm_Ch20175

Communication System: UID 0, LTE-FDD (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: MSL_1750 Medium parameters used: f = 1732.5 MHz; σ = 1.457 S/m; ε_r = 53.417; ρ = 1000kg/m^3
Ambient Temperature：23.3 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3843; ConvF(7.41, 7.41, 7.41); Calibrated: 2018.9.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1338; Calibrated: 2018.12.3
- Phantom: SAM1; Type: SAM; Serial: TP-1839
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Ch20175/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.613 W/kg

Ch20175/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.203 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.705 W/kg
SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.271 W/kg
Maximum value of SAR (measured) = 0.599 W/kg



0 dB = 0.599 W/kg = -2.23 dBW/kg