FCC SAR Test Report

APPLICANT	: TCL Communication Ltd
EQUIPMENT	: GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone
BRAND NAME	: ALCATEL ONETOUCH
MODEL NAME	: 6045I
MARKETING NAME	: ALCATEL ONETOUCH IDOL 3 (5.5)
FCC ID	: 2ACCJN002
STANDARD	: FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had 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.

Prepared by: Mark Qu / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA511301-30	Rev. 01	This is a variant product of 6045I which added a new battery, and only the worst cases from original test report (Sporton Report Number FA511301-03) were verified for the differences and the original test data were remain representative.	Mar. 07, 2016

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **TCL Communication Ltd, GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone, 6045I** are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				
		Head 1g SAR (W/kg)	Wireless Router (Separation 1cm) 1g SAR (W/kg)	Body-worn (Separation 1cm) 1g SAR (W/kg)	Extremity (Separation 0cm) 10g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
PCE	GSM850	0.97	0.72	0.72		1.59
	GSM1900	1.10	0.99	0.97		
	WCDMA Band V	0.98	0.51	0.51		
	WCDMA Band IV	1.07	0.89	0.89		
	WCDMA Band II	1.32	1.18	1.16		
	LTE Band 12	1.00	0.19	0.19		
	LTE Band 17	1.02	0.21	0.21		
	LTE Band 5	1.19	0.52	0.52		
	LTE Band 4	1.02	1.03	1.03		
	LTE Band 2	1.12	1.32	1.35	2.63	
	LTE Band 7	1.31	**1.42**	**1.40**	**3.78**	
DTS	2.4GHz WLAN	**1.39**	0.51	0.51		1.58
NII	5.2GHz WLAN	0.66		< 0.10		1.59
	5.8GHz WLAN	1.26	0.28	0.16		
Date of Testing:		Mar. 25, 2015 ~ Feb. 26, 2016				

Note:

1. The SAR value list above are all rounded to two decimal digits.
2. a. According to section 17.2, the maximum simultaneous SAR for WWAN+DTS is 1.91W/kg.
   b. Per KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by $(SAR1 + SAR2)^{1.5}/Ri$, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. For all configurations SPLSR is ≤ 0.04 and qualify for 1-g SAR test exclusion.

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. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958

Applicant	
Company Name	TCL Communication Ltd
Address	FLAT/RM 1910-12A BLOCK 3 19/F CHINA HONG KONG CITY 33 CANTON ROAD TSIMSHATSUI KL

Manufacturer	
Company Name	TCL Communication Ltd
Address	FLAT/RM 1910-12A BLOCK 3 19/F CHINA HONG KONG CITY 33 CANTON ROAD TSIMSHATSUI KL

3. Guidance Standard

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	GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone
Brand Name	ALCATEL ONETOUCH
Model Name	6045I
Marketing Name	ALCATEL ONETOUCH IDOL 3 (5.5)
FCC ID	2ACCJN002
IMEI Code	014366000002518
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	•GSM/GPRS/EGPRS •RMC/AMR 12.2Kbps •HSDPA •HSUPA •DC-HSDPA •HSPA+ (16QAM uplink is not supported) •LTE •WLAN 2.4GHz 802.11b/g/n HT20 •WLAN 5GHz 802.11a/n HT20/HT40 •Bluetooth v3.0+EDR, Bluetooth v4.1 LE •NFC
HW Version	PIO
SW Version	7S25
GSM / (E)GPRS Dual Transfer mode	Class A – EUT can support Packet Switched and Circuit Switched Network simultaneously.
EUT Stage	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP), LTE supports VoLTE operation and 802.11n-HT40 is not supported in 2.4GHz WLAN.
2. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).
3. This device supports GRPS/EGPRS mode up to multi-slot class12 and supports DTM up to multi-slot class11.
4. This device has two sets of receivers and microphone, 1 receiver is located at the top and another one is located at the bottom of the phone. For the next-to-ear voice call the product allows the end user to use the device in the typical calling positions and in the reversed calling position. When the User Interface is in reversed portrait orientation, power reduction is implemented for the scenario that the bottom receiver is placed next-to-ear during the voice call except LTE Band 12/17, and SAR compliance was accessed for both orientations. The details of the power reduction mechanism for the reverse call are illustrated in the operational description.

4.2 Accessories and Support Equipment

Specification of Accessory				
AC Adapter	Brand Name	ALCATEL ONETOUCH	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AG0C1		
Original Battery	Brand Name	ALCATEL ONETOUCH	Model Name	TLp029A2-S
	Power Rating	3.8Vdc, 2910mAh		
	S/N	C2910002C2Y0042G		
Added Battery	Brand Name	ALCATEL ONETOUCH	Model Name	TLp029AJ
	Power Rating	3.8Vdc, 2910mAh		
	S/N	C2910003CJY9411D		
USB Cable	Brand Name	ALCATEL ONETOUCH	Model Name	CDA0000043C2
	Signal Line Type	1.10m shielded without core		
Earphone 1	Brand Name	ALCATEL ONETOUCH	Model Name	CCA0001A10C9
	Signal Line Type	1.16m non-shielded without core		
Earphone 2	Brand Name	JBL	Model Name	CCB0029A10CC
	Signal Line Type	1.38m non-shielded without core		

4.3 Maximum Tune-up Limit

Mode		Burst Average Power(dBm)			
		GSM850		GSM1900	
		Full power mode	Reduced power mode	Full power mode	Reduced power mode
GSM (GMSK, 1 Tx slot)		33.0	31.0	30.0	25.5
GPRS (GMSK, 1 Tx slot)		33.0	31.0	30.0	25.5
GPRS (GMSK, 2 Tx slots)		31.5	28.0	28.0	22.5
GPRS (GMSK, 3 Tx slots)		30.0	26.0	26.5	21.0
GPRS (GMSK, 4 Tx slots)		29.0	25.0	25.5	20.0
EDGE (8PSK, 1 Tx slot)		27.0	27.0	27.0	25.5
EDGE (8PSK, 2 Tx slots)		26.0	26.0	25.0	22.5
EDGE (8PSK, 3 Tx slots)		24.5	24.5	23.5	21.0
EDGE (8PSK, 4 Tx slots)		23.0	23.0	22.0	19.5
DTM 5	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
	GPRS (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
DTM 9	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
	GPRS (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
DTM11	GSM (GMSK, 1 Tx slot)	30.0	26.0	26.5	21.0
	GPRS (GMSK, 2 Tx slots)	30.0	26.0	26.5	21.0
DTM 5	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
	EDGE (8PSK, 1 Tx slot)	26.0	26.0	25.0	22.5
DTM 9	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.0	22.5
	EDGE (8PSK, 1 Tx slot)	26.0	26.0	25.0	22.5
DTM 11	GSM (GMSK, 1 Tx slot)	30.0	26.0	26.5	21.0
	EDGE (8PSK, 2 Tx slots)	24.5	24.5	23.5	21.0

Band / Mode				Average Power (dBm)
WCDMA	Band V	Full Power Mode	RMC / AMR12.2Kbps	24.0
			HSDPA	22.5
			DC-HSDPA	22.5
			HSUPA	22.5
		Reduced Power Mode	RMC / AMR12.2Kbps	22.5
			HSDPA	21.0
			DC-HSDPA	21.0
			HSUPA	21.0
	Band IV	Full Power Mode	RMC / AMR12.2Kbps	23.5
			HSDPA	22.0
			DC-HSDPA	22.0
			HSUPA	22.0
		Reduced Power Mode	RMC / AMR12.2Kbps	17.5
			HSDPA	16.0
			DC-HSDPA	16.0
			HSUPA	16.0
	Band II	Full Power Mode	RMC / AMR12.2Kbps	23.5
			HSDPA	22.0
			DC-HSDPA	22.0
			HSUPA	22.0
		Reduced Power Mode	RMC / AMR12.2Kbps	17.5
			HSDPA	16.0
			DC-HSDPA	16.0
			HSUPA	16.0

Band / Mode			Average Power (dBm)
LTE	Band 12	Full Power Mode	24.0
	Band 17	Full Power Mode	24.0
	Band 5	Full Power Mode	24.0
		Reduced Power Mode	23.0
	Band 4	Full Power Mode	24.0
		Reduced Power Mode	18.0
	Band 2	Full Power Mode	23.5
		Reduced Power Mode	17.0
	Band 7	Full Power Mode	21.5
		Reduced Power Mode	18.5
2.4GHz WLAN	802.11b		18.5
	802.11g		14.0
	802.11n HT20		12.5
5.2GHz WLAN	802.11a		15.0
	802.11n HT20		12.0
	802.11n HT40		12.0
5.8GHz WLAN	802.11a		14.3
	802.11n HT20		12.0
	802.11n HT40		12.0
Bluetooth v3.0 + EDR			6.0
Bluetooth v4.1 LE			1.0

Remark:

This device employs a “reverse calling” feature based on the orientation of the device such that a call can be made or taken in either portrait orientation (“Normal” and “Upside Down”). When a user answer a voice call or initiate a voice call, the dialer UI orientation is locked and the power reduction mechanison will be activated if it’s locked in the reverse portrait mode. The maximum output power is reduced for a number of wireless technologies, as specified above, for the reverse calling mode. The details of the implementation is illustrated in the operational description for reverse call.
The device has been tested in voice mode for head SAR exposure compliance except LTE Band 12/17 in both normal and reduced power mode according to the maximum output power specified in this document. Body-worn accessory and hotspot mode SAR compliance are tested at normal mode maximum output power without power reduction.

4.4 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	2ACCJN002
Equipment Name	GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone
Operating Frequency Range of each LTE transmission band	LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
Channel Bandwidth	1.4MHz, 3MHz, 5MHz, 10MHz (LTE Band 5/12) 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 2/4) 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 7) 5MHz, 10MHz (LTE Band 17)
uplink modulations used	QPSK, and 16QAM
LTE Voice / Data requirements	VoLTE is supported
LTE MPR permanently built-in by design	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
LTE Release Version	R9
Power reduction applied to satisfy SAR compliance	Yes, Power reduction is enabled when the User Interface is in the reversed portrait orientation.

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

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

1. 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:

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

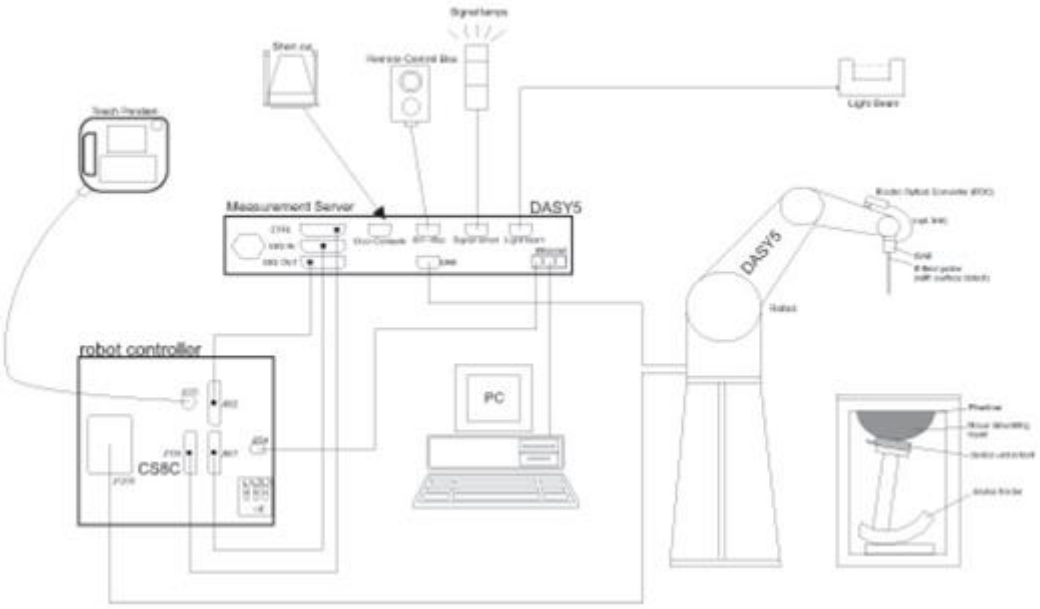
SAR is expressed in units of Watts per kilogram (W/kg)

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

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.

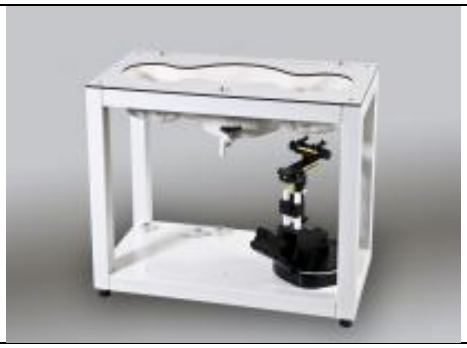
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

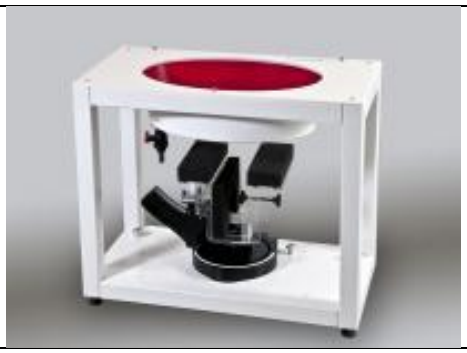
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



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

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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	1065	Nov. 19, 2014	Nov. 18, 2015
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 21, 2014	Nov. 20, 2015
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 24, 2015	Nov. 23, 2016
SPEAG	1750MHz System Validation Kit	D1750V2	1069	Nov. 21, 2014	Nov. 20, 2015
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	Nov. 21, 2014	Nov. 20, 2015
SPEAG	2450MHz System Validation Kit	D2450V2	840	Nov. 19, 2014	Nov. 18, 2015
SPEAG	2450MHz System Validation Kit	D2450V2	840	Nov. 25, 2015	Nov. 24, 2016
SPEAG	2600MHz System Validation Kit	D2600V2	1061	Nov. 19, 2014	Nov. 18, 2015
SPEAG	2600MHz System Validation Kit	D2600V2	1061	Nov. 25, 2015	Nov. 24, 2016
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	Nov. 24, 2014	Nov. 23, 2015
SPEAG	Data Acquisition Electronics	DAE4	1210	May 19, 2014	May 18, 2015
SPEAG	Data Acquisition Electronics	DAE4	1210	May 21, 2015	May 20, 2016
SPEAG	Data Acquisition Electronics	DAE4	1279	Jul. 21, 2015	Jul. 20, 2016
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	May 23, 2014	May 22, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	May 28, 2015	May 27, 2016
SPEAG	Dosimetric E-Field Probe	EX3DV4	3954	Nov. 27, 2015	Nov. 26, 2016
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1477	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1479	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1644	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201091028	Jul. 10, 2014	Jul. 09, 2015
Anritsu	Radio communication analyzer	MT8820C	6201300654	Aug. 10, 2015	Aug. 09, 2016
Agilent	Wireless Communication Test Set	E5515C	MY52102706	May 03, 2014	May 02, 2015
Agilent	Wireless Communication Test Set	E5515C	MY52102706	May 02, 2015	May 01, 2016
Agilent	Wireless Communication Test Set	E5515E	MY53211040	Jun. 12, 2014	Jun. 11, 2015
Agilent	Wireless Communication Test Set	E5515E	MY53211040	Jun. 11, 2015	Jun. 10, 2016
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	May 04, 2014	May 03, 2015
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	May 04, 2015	May 03, 2016
R&S	Signal Generator	SMBV100A	258305	Jan. 23, 2015	Jan. 22, 2016
R&S	Signal Generator	SMBV100A	258305	Jan. 20, 2016	Jan. 19, 2017
SPEAG	DAK Kit	DAK3.5	1144	Nov. 24, 2015	Nov. 23, 2016
R&S	Bluetooth Tester	CBT	100783	Aug. 11, 2014	Aug. 10, 2015
R&S	Bluetooth Tester	CBT	100783	Aug. 10, 2015	Aug. 09, 2016
Agilent	Dielectric Probe Kit	85070E	MY44300475	NCR	NCR
Anritsu	Power Senor	MA2411B	0917070	Jan. 23, 2015	Jan. 22, 2016
Anritsu	Power Senor	MA2411B	0917070	Jan. 20, 2016	Jan. 19, 2017
Anritsu	Power Meter	ML2495A	1005002	Jan. 23, 2015	Jan. 22, 2016
Anritsu	Power Meter	ML2495A	1005002	Jan. 20, 2016	Jan. 19, 2017
Anritsu	Power Senor	MA2411B	1339163	Jan. 20, 2016	Jan. 19, 2017
Anritsu	Power Meter	ML2495A	1435004	Jan. 20, 2016	Jan. 19, 2017
ARRA	Power Divider	A3200-2	N/A	NA	NA
R&S	Spectrum Analyzer	FSP40	100319	Oct. 28, 2014	Oct. 27, 2015
R&S	Spectrum Analyzer	FSP40	100319	Oct. 10, 2015	Oct. 09, 2016
Agilent	Dual Directional Coupler	778D	50422	Note1	
AR	Amplifier	5S1G4	333096	Note1	
mini-circuits	Amplifier	ZVE-3W-83+	162601250	Note1	
Agilent	Dual Directional Coupler	778D	50422	Note1	
PASTERNACK	Dual Directional Coupler	PE2214-10	N/A	Note1	
Woken	Attenuator 1	WK0602-XX	N/A	Note1	
PE	Attenuator 2	PE7005-10	N/A	Note1	
PE	Attenuator 3	PE7005-3	N/A	Note1	
AR	Power Amplifier	5S1G4M2	0328767	Note1	

Mini-Circuits	Power Amplifier	ZVE-3W	162601250	Note1
Mini-Circuits	Power Amplifier	ZHL-42W+	13440021344	Note1

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

10. System Verification

10.1 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
1750	55.2	0	0	0.3	0	44.5	1.37	40.1
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
1750	70.2	0	0	0.4	0	29.4	1.49	53.4
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

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.9	0.881	40.783	0.89	41.9	-1.01	-2.67	±5	Mar. 30, 2015
835	Head	22.8	0.885	41.073	0.9	41.5	-1.67	-1.03	±5	Mar. 30, 2015
1750	Head	22.6	1.383	41.3	1.37	40.1	0.95	2.99	±5	Apr. 05, 2015
1900	Head	22.6	1.424	39.075	1.4	40	1.71	-2.31	±5	Apr. 05, 2015
2450	Head	22.9	1.82	39.202	1.8	39.2	1.11	0.01	±5	Apr. 10, 2015
2600	Head	22.5	1.974	38.204	1.96	39	0.71	-2.04	±5	Apr. 07, 2015
5200	Head	22.9	4.803	35.472	4.66	36	3.07	-1.47	±5	Apr. 04, 2015
5800	Head	22.9	5.406	34.362	5.27	35.3	2.58	-2.66	±5	Apr. 04, 2015
750	Body	22.8	0.961	53.913	0.96	55.5	0.10	-2.86	±5	Mar. 25, 2015
835	Body	22.6	0.98	54.477	0.97	55.2	1.03	-1.31	±5	Mar. 25, 2015
1750	Body	22.8	1.522	54.439	1.49	53.4	2.15	1.95	±5	Mar. 25, 2015
1900	Body	22.6	1.544	53.236	1.52	53.3	1.58	-0.12	±5	Mar. 25, 2015
2450	Body	22.6	1.943	50.96	1.95	52.7	-0.36	-3.30	±5	Apr. 04, 2015
2600	Body	22.6	2.201	52.823	2.16	52.5	1.90	0.62	±5	Mar. 28, 2015
5200	Body	22.6	5.363	48.689	5.3	49	1.19	-0.63	±5	Apr. 13, 2015
5800	Body	22.6	6.228	47.321	6	48.2	3.80	-1.82	±5	Apr. 13, 2015

<Spot Check 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
835	Head	22.8	0.884	41.043	0.90	41.50	-1.78	-1.10	±5	Feb. 26, 2016
2450	Head	22.5	1.820	39.753	1.80	39.20	1.11	1.41	±5	Feb. 25, 2016
2450	Body	22.5	1.993	51.414	1.95	52.70	2.21	-2.44	±5	Feb. 26, 2016
2600	Body	22.5	2.131	52.892	2.16	52.50	-1.34	0.75	±5	Feb. 26, 2016

10.2 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.

<System Verification 1g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Mar. 30, 2015	750	Head	250	1065	3857	1210	2.19	8.14	8.76	7.62
Mar. 30, 2015	835	Head	250	4d091	3857	1210	2.23	9.11	8.92	-2.09
Apr. 05, 2015	1750	Head	250	1069	3857	1210	8.73	37.10	34.92	-5.88
Apr. 05, 2015	1900	Head	250	5d118	3857	1210	9.52	40.10	38.08	-5.04
Apr. 10, 2015	2450	Head	250	840	3857	1210	12.90	52.30	51.60	-1.34
Apr. 07, 2015	2600	Head	250	1061	3857	1210	13.90	56.90	55.60	-2.28
Apr. 04, 2015	5200	Head	100	1113	3857	1210	8.01	80.00	80.10	0.12
Apr. 04, 2015	5800	Head	100	1113	3857	1210	8.32	78.50	83.20	5.99
Mar. 25, 2015	750	Body	250	1065	3857	1210	2.09	8.64	8.36	-3.24
Mar. 25, 2015	835	Body	250	4d091	3857	1210	2.26	9.60	9.04	-5.83
Mar. 25, 2015	1750	Body	250	1069	3857	1210	9.24	38.10	36.96	-2.99
Mar. 25, 2015	1900	Body	250	5d118	3857	1210	10.30	40.00	41.20	3.00
Apr. 04, 2015	2450	Body	250	840	3857	1210	12.30	51.00	49.20	-3.53
Mar. 28, 2015	2600	Body	250	1061	3857	1210	13.70	54.90	54.80	-0.18
Apr. 13, 2015	5200	Body	100	1113	3857	1210	7.34	74.90	73.40	-2.00
Apr. 13, 2015	5800	Body	100	1113	3857	1210	7.18	75.40	71.80	-4.77

<System Verification 10g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Mar. 25, 2015	1900	Body	250	5d118	3857	1210	5.39	21.4	21.56	0.75
Mar. 28, 2015	2600	Body	250	1061	3857	1210	6.32	24.4	25.28	3.61

<Spot Check System Verification 1g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Feb. 26, 2016	835	Head	250	4d091	3954	1279	2.34	9.14	9.36	2.41
Feb. 25, 2016	2450	Head	250	840	3857	1210	12.80	50.40	51.2	1.59
Feb. 26, 2016	2450	Body	250	840	3857	1210	12.60	51.10	50.4	-1.37
Feb. 26, 2016	2600	Body	250	1061	3857	1210	12.90	54.60	51.6	-5.49

<Spot Check System Verification 10g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Feb. 26, 2016	2600	Body	250	1061	3857	1210	5.93	24.4	23.72	-2.79

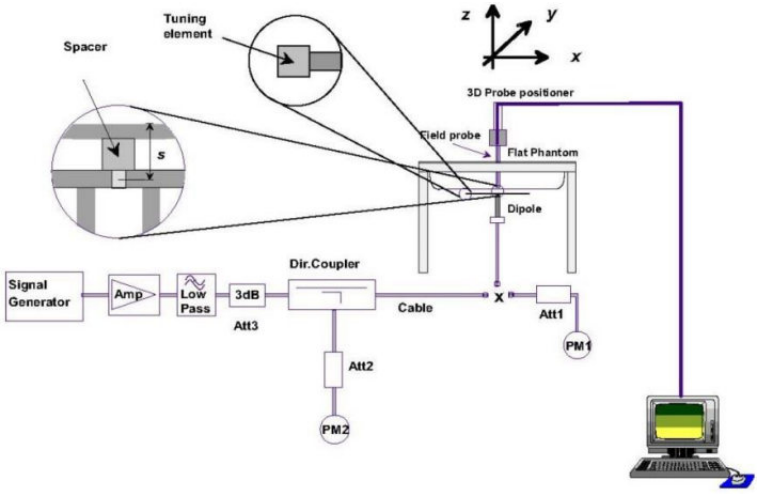


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 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 9.1.2 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 9.1.3). 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 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

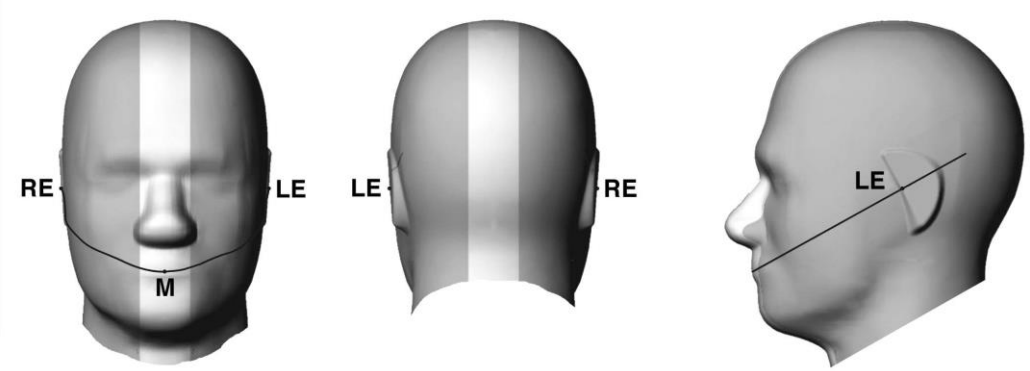


Fig 9.1.1 Front, back, and side views of SAM twin phantom

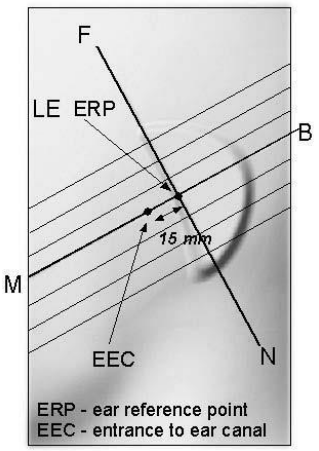


Fig 9.1.2 Close-up side view of phantom showing the ear region.

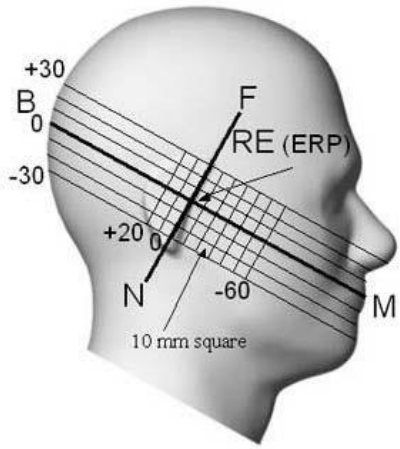


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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 9.2.1 and Figure 9.2.2), 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 9.2.1). 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 9.2.2), 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 9.2.3), 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 9.2.3. The actual rotation angles should be documented in the test report.

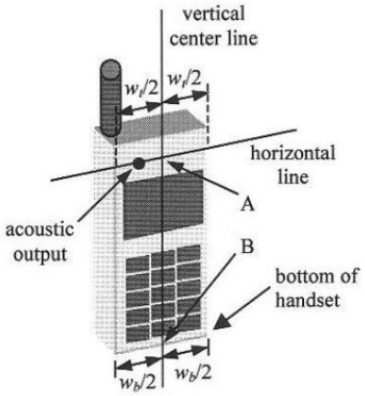


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

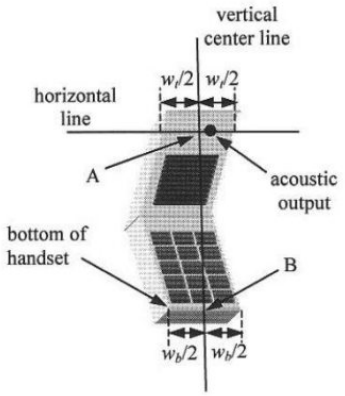


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

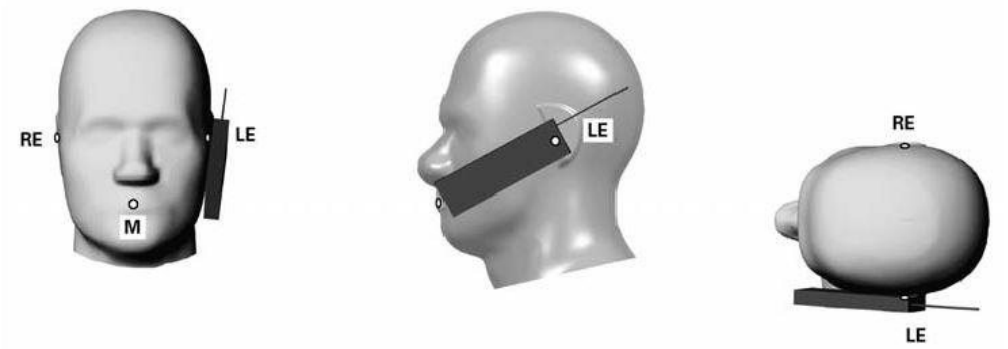


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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 9.3.1. 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

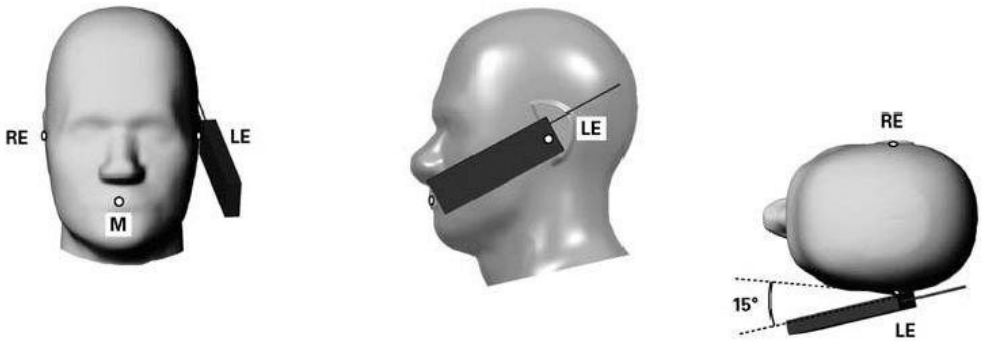


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

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 9.4). 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.

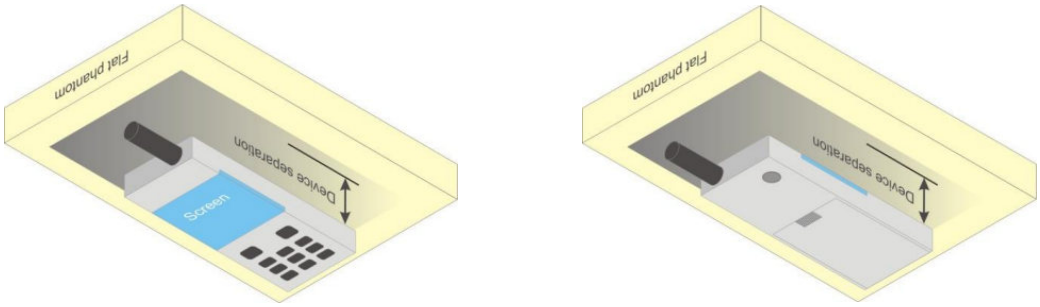


Fig 9.4 Body Worn Position

11.5 Extremity Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

11.6 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>

1. For DTM multi-slot class mode, the device was linked with base station simulator (Agilent E5515C) and transmit maximum power on maximum number of TX slots, i.e. one CS timeslot, and additional PS timeslots (1 for DTM class 5 and 9, 2 for DTM class 11) in one TDMA frame.
2. Agilent E5515C was used to setup the device operated under DTM mode for power measurement and SAR testing. For conducted power, the power of the burst for voice and the power of the bursts for data was reported separately in the table above, and the frame-average power is derived below to determine SAR testing.

   *DTM frame average power (dBm) = 10*log [∑(power of each slot, in mW)/8]*
3. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
4. Per KDB 941225 D01v03r01, considering the possibility of e.g. 3rd party VoIP operation for Head and body-worn SAR test reduction for GSM, GPRS, EDGE and DTM 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 EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.
5. Per KDB 941225 D01v03r01, for hotspot SAR test reduction for GPRS,EDGE and DTM modes are determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.

<Full Power Mode>:

Band 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 (GMSK, 1 Tx slot)		32.89	32.62	32.83	33.00	23.89	23.62	23.83	24.00
GPRS (GMSK, 1 Tx slot)		32.87	32.6	32.82	33.00	23.87	23.6	23.82	24.00
GPRS (GMSK, 2 Tx slots)		30.96	31.07	30.54	31.50	24.96	25.07	24.54	25.50
GPRS (GMSK, 3 Tx slots)		29.10	29.21	29.38	30.00	24.84	24.95	25.12	25.74
GPRS (GMSK, 4 Tx slots)		28.03	28.22	28.36	29.00	25.03	25.22	25.36	26.00
EDGE (8PSK, 1 Tx slot)		26.61	26.63	26.56	27.00	17.61	17.63	17.56	18.00
EDGE (8PSK, 2 Tx slots)		25.53	25.55	25.56	26.00	19.53	19.55	19.56	20.00
EDGE (8PSK, 3 Tx slots)		23.98	24.01	24.01	24.50	19.72	19.75	19.75	20.24
EDGE (8PSK, 4 Tx slots)		22.45	22.43	22.38	23.00	19.45	19.43	19.38	20.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	30.93	31.07	31.17	31.50	24.88	25.02	25.12	25.48
	GPRS (GMSK, 1 Tx slot)	30.88	31.02	31.11	31.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	30.95	31.03	31.15	31.50	24.90	24.98	25.10	25.48
	GPRS (GMSK, 1 Tx slot)	30.90	30.97	31.09	31.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	29.38	29.39	29.42	30.00	25.06	25.07	25.11	25.74
	GPRS (GMSK, 2 Tx slots)	29.29	29.30	29.35	30.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	30.89	30.95	31.15	31.50	22.96	22.98	23.16	23.55
	EDGE (8PSK, 1 Tx slot)	25.47	25.36	25.48	26.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	30.93	30.94	31.16	31.50	22.97	22.98	23.18	23.55
	EDGE (8PSK, 1 Tx slot)	25.38	25.41	25.54	26.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	29.36	29.41	29.57	30.00	22.28	22.31	22.45	22.91
	EDGE (8PSK, 2 Tx slots)	23.88	23.89	23.99	24.50				

Band 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 (GMSK, 1 Tx slot)		29.37	29.32	29.69	30.00	20.37	20.32	20.69	21.00
GPRS (GMSK, 1 Tx slot)		29.35	29.31	29.68	30.00	20.35	20.31	20.68	21.00
GPRS (GMSK, 2 Tx slots)		27.86	27.67	27.66	28.00	21.86	21.67	21.66	22.00
GPRS (GMSK, 3 Tx slots)		26.01	25.77	25.73	26.50	21.75	21.51	21.47	22.24
GPRS (GMSK, 4 Tx slots)		24.91	24.80	24.70	25.50	21.91	21.80	21.70	22.50
EDGE (8PSK, 1 Tx slot)		26.16	26.66	26.09	27.00	17.16	17.66	17.09	18.00
EDGE (8PSK, 2 Tx slots)		24.63	24.55	24.60	25.00	18.63	18.55	18.60	19.00
EDGE (8PSK, 3 Tx slots)		23.10	23.00	23.06	23.50	18.84	18.74	18.80	19.24
EDGE (8PSK, 4 Tx slots)		21.58	21.49	21.59	22.00	18.58	18.49	18.59	19.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.32	27.62	27.71	28.00	21.29	21.58	21.66	21.98
	GPRS (GMSK, 1 Tx slot)	27.30	27.58	27.66	28.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.31	27.67	27.68	28.00	21.28	21.63	21.64	21.98
	GPRS (GMSK, 1 Tx slot)	27.29	27.63	27.64	28.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.65	25.89	25.92	26.50	21.36	21.60	21.65	22.24
	GPRS (GMSK, 2 Tx slots)	25.60	25.85	25.90	26.50				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.35	27.66	27.68	28.00	20.07	20.31	20.34	20.73
	EDGE (8PSK, 1 Tx slot)	24.32	24.42	24.47	25.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.36	27.67	27.70	28.00	20.10	20.34	20.37	20.73
	EDGE (8PSK, 1 Tx slot)	24.39	24.49	24.52	25.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.69	25.92	25.97	26.50	19.77	19.93	19.98	20.48
	EDGE (8PSK, 2 Tx slots)	22.87	22.98	23.02	23.50				

<Reduced Power Mode>:

Band 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 (GMSK, 1 Tx slot)		30.26	30.34	30.57	31.00	21.26	21.34	21.57	22.00
GPRS (GMSK, 1 Tx slot)		30.24	30.33	30.56	31.00	21.24	21.33	21.56	22.00
GPRS (GMSK, 2 Tx slots)		27.18	27.32	27.46	28.00	21.18	21.32	21.46	22.00
GPRS (GMSK, 3 Tx slots)		25.69	25.49	25.57	26.00	21.43	21.23	21.31	21.74
GPRS (GMSK, 4 Tx slots)		24.23	24.41	24.65	25.00	21.23	21.41	21.65	22.00
EDGE (8PSK, 1 Tx slot)		26.57	26.59	26.62	27.00	17.57	17.59	17.62	18.00
EDGE (8PSK, 2 Tx slots)		25.57	25.51	25.54	26.00	19.57	19.51	19.54	20.00
EDGE (8PSK, 3 Tx slots)		23.94	23.97	23.97	24.50	19.68	19.71	19.71	20.24
EDGE (8PSK, 4 Tx slots)		22.40	22.40	22.44	23.00	19.40	19.40	19.44	20.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.16	27.35	27.43	28.00	21.13	21.32	21.38	21.98
	GPRS (GMSK, 1 Tx slot)	27.15	27.33	27.38	28.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.15	27.36	27.41	28.00	21.12	18.74	21.38	21.98
	GPRS (GMSK, 1 Tx slot)	27.13	17.32	27.40	28.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.65	25.61	25.66	26.00	21.38	21.33	21.37	21.74
	GPRS (GMSK, 2 Tx slots)	25.63	25.58	25.61	26.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.12	27.28	27.42	28.00	20.34	20.40	20.51	21.09
	EDGE (8PSK, 1 Tx slot)	25.45	25.35	25.42	26.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.16	27.29	27.38	28.00	20.33	20.42	20.52	21.09
	EDGE (8PSK, 1 Tx slot)	25.36	25.38	25.51	26.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.63	25.60	25.61	26.00	20.27	20.26	20.26	20.80
	EDGE (8PSK, 2 Tx slots)	23.85	23.85	23.85	24.50				

Band 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 (GMSK, 1 Tx slot)		25.13	25.11	24.97	25.50	16.13	16.11	15.97	16.50
GPRS (GMSK, 1 Tx slot)		25.12	25.09	24.95	25.50	16.12	16.09	15.95	16.50
GPRS (GMSK, 2 Tx slots)		22.08	22.00	21.92	22.50	16.08	16.00	15.92	16.50
GPRS (GMSK, 3 Tx slots)		20.53	20.43	20.43	21.00	16.27	16.17	16.17	16.74
GPRS (GMSK, 4 Tx slots)		19.26	19.20	19.11	20.00	16.26	16.20	16.11	17.00
EDGE (8PSK, 1 Tx slot)		25.11	25.09	24.94	25.50	16.11	16.09	15.94	16.50
EDGE (8PSK, 2 Tx slots)		22.04	22.00	21.9	22.50	16.04	16.00	15.90	16.50
EDGE (8PSK, 3 Tx slots)		20.50	20.41	20.41	21.00	16.24	16.15	16.15	16.74
EDGE (8PSK, 4 Tx slots)		19.18	19.15	19.07	19.50	16.18	16.15	16.07	16.50
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	21.85	22.00	22.08	22.50	15.82	15.97	16.04	16.48
	GPRS (GMSK, 1 Tx slot)	21.84	21.98	22.05	22.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	21.85	22.02	22.06	22.50	15.78	15.99	16.04	16.48
	GPRS (GMSK, 1 Tx slot)	21.75	22.01	22.07	22.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	20.34	20.26	20.29	21.00	16.04	16.00	16.02	16.74
	GPRS (GMSK, 2 Tx slots)	20.28	20.26	20.27	21.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	21.98	21.95	21.87	22.50	15.91	15.88	15.83	16.48
	EDGE (8PSK, 1 Tx slot)	21.88	21.85	21.83	22.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	21.96	21.87	21.85	22.50	15.90	15.89	15.85	16.48
	EDGE (8PSK, 1 Tx slot)	21.89	21.96	21.90	22.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	20.38	20.35	20.36	21.00	16.07	16.06	16.06	16.74
	EDGE (8PSK, 2 Tx slots)	20.31	20.31	20.30	21.00				

<WCDMA Conducted Power>

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

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	**CM** (dB) *(Note 3)*	**MPR** (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

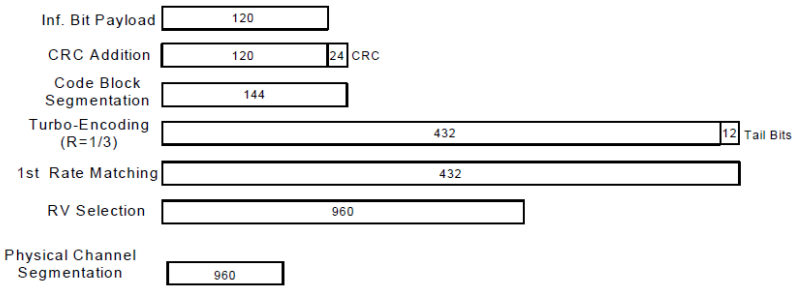


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<Full Power Mode>:

Band			WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Tx Channel			4132	4182	4233	9262	9400	9538	1312	1413	1513
Rx Channel			4357	4407	4458	9662	9800	9938	1537	1638	1738
Frequency (MHz)			826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	23.65	23.67	23.75	23.1	23.13	23.18	23.11	23.05	23.05
	3GPP Rel 99	RMC 12.2Kbps	23.68	23.69	23.76	23.11	23.14	23.19	23.13	23.06	23.07
0	3GPP Rel 6	HSDPA Subtest-1	22.07	22.13	22.27	21.53	21.72	21.92	21.52	21.48	21.46
0	3GPP Rel 6	HSDPA Subtest-2	22.06	22.11	22.25	21.55	21.84	21.95	21.51	21.48	21.47
0.5	3GPP Rel 6	HSDPA Subtest-3	22.07	22.15	22.26	21.58	21.78	21.91	21.50	21.57	21.45
0.5	3GPP Rel 6	HSDPA Subtest-4	22.05	22.13	22.24	21.55	21.75	21.84	21.48	21.56	21.44
0	3GPP Rel 8	DC-HSDPA Subtest-1	22.04	22.07	22.24	21.50	21.69	21.88	21.49	21.45	21.41
0	3GPP Rel 8	DC-HSDPA Subtest-2	22.05	22.09	22.16	21.53	21.74	21.92	21.50	21.46	21.44
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	22.01	22.12	22.20	21.54	21.76	21.90	21.46	21.52	21.42
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	22.03	22.10	22.15	21.49	21.71	21.80	21.45	21.53	21.43
0	3GPP Rel 6	HSUPA Subtest-1	21.71	22.03	21.75	21.96	21.97	21.83	21.77	21.65	21.65
2	3GPP Rel 6	HSUPA Subtest-2	21.05	21.33	21.06	20.9	21.32	21.41	20.97	21.04	21.04
1	3GPP Rel 6	HSUPA Subtest-3	20.71	20.99	20.74	21.43	21.20	21.57	20.59	20.60	20.60
2	3GPP Rel 6	HSUPA Subtest-4	22.00	21.59	21.40	21.88	21.60	21.32	21.17	21.23	21.23
0	3GPP Rel 6	HSUPA Subtest-5	21.76	21.90	21.93	21.85	21.99	21.94	21.56	21.55	21.55

<Reduced Power Mode>:

Band			WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Tx Channel			4132	4182	4233	9262	9400	9538	1312	1413	1513
Rx Channel			4357	4407	4458	9662	9800	9938	1537	1638	1738
Frequency (MHz)			826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	21.96	22.01	22.07	16.78	16.85	16.92	16.94	16.85	16.87
	3GPP Rel 99	RMC 12.2Kbps	21.97	22.02	22.09	16.80	16.86	16.93	16.96	16.85	16.88
0	3GPP Rel 6	HSDPA Subtest-1	20.52	20.59	20.63	15.66	15.59	15.77	15.52	15.63	15.43
0	3GPP Rel 6	HSDPA Subtest-2	20.51	20.57	20.60	15.68	15.61	15.79	15.50	15.62	15.43
0.5	3GPP Rel 6	HSDPA Subtest-3	20.07	20.36	20.04	15.65	15.66	15.77	15.53	15.61	15.40
0.5	3GPP Rel 6	HSDPA Subtest-4	19.92	20.25	19.96	15.62	15.57	15.76	15.50	15.58	15.38
0	3GPP Rel 8	DC-HSDPA Subtest-1	20.45	20.41	20.56	15.54	15.53	15.74	15.51	15.59	15.42
0	3GPP Rel 8	DC-HSDPA Subtest-2	20.39	20.48	20.53	15.65	15.54	15.73	15.48	15.60	15.41
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	20.05	20.34	20.02	15.60	15.62	15.75	15.50	15.57	15.34
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	19.90	20.23	19.93	15.59	15.48	15.67	15.43	15.54	15.29
0	3GPP Rel 6	HSUPA Subtest-1	20.09	20.38	20.09	15.79	15.93	15.86	15.46	15.80	15.43
2	3GPP Rel 6	HSUPA Subtest-2	19.44	19.67	19.40	15.19	14.83	15.33	15.01	14.99	14.96
1	3GPP Rel 6	HSUPA Subtest-3	19.10	19.27	19.12	14.82	14.53	14.89	14.56	14.63	15.12
2	3GPP Rel 6	HSUPA Subtest-4	19.83	19.90	19.72	15.51	15.91	15.53	15.22	15.25	15.19
0	3GPP Rel 6	HSUPA Subtest-5	20.05	20.18	20.29	15.74	15.82	15.05	15.50	15.44	15.62

<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 B12 / B5 / B4 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 17 SAR test was covered by Band 12; according to 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 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	23.51	23.68	23.57	24.0	0
10	QPSK	1	24	23.27	23.21	23.35		
10	QPSK	1	49	23.22	23.39	23.48		
10	QPSK	25	0	22.35	22.61	22.51	23.0	1
10	QPSK	25	12	22.45	22.47	22.40		
10	QPSK	25	24	22.33	22.28	22.60		
10	QPSK	50	0	22.35	22.48	22.41		
10	16QAM	1	0	23.03	22.95	22.93	23.5	0.5
10	16QAM	1	24	22.68	22.58	22.63		
10	16QAM	1	49	22.71	22.55	22.86		
10	16QAM	25	0	21.53	21.41	21.61	22.0	2
10	16QAM	25	12	21.54	21.57	21.56		
10	16QAM	25	24	21.53	21.70	21.69		
10	16QAM	50	0	21.23	21.19	21.26		
Channel				23035	23095	23155	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.24	23.54	23.24	24.0	0
5	QPSK	1	12	23.37	23.42	23.52		
5	QPSK	1	24	23.23	23.16	23.34		
5	QPSK	12	0	22.30	22.49	22.43	23.0	1
5	QPSK	12	6	22.42	22.56	22.46		
5	QPSK	12	11	22.42	22.48	22.50		
5	QPSK	25	0	22.48	22.40	22.40		
5	16QAM	1	0	22.19	23.21	23.07	23.5	0.5
5	16QAM	1	12	22.24	23.36	23.46		
5	16QAM	1	24	22.21	23.06	22.42		
5	16QAM	12	0	21.09	21.46	21.41	22.0	2
5	16QAM	12	6	21.11	21.44	21.46		
5	16QAM	12	11	21.10	21.27	21.40		
5	16QAM	25	0	21.27	21.48	21.29		
Channel				23025	23095	23165	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.23	23.46	23.40	24.0	0
3	QPSK	1	7	23.28	23.55	23.44		
3	QPSK	1	14	23.23	23.35	23.67		
3	QPSK	8	0	22.40	22.54	22.48	23.0	1
3	QPSK	8	4	22.32	22.55	22.53		
3	QPSK	8	7	22.36	22.53	22.50		
3	QPSK	15	0	22.42	22.54	22.40		
3	16QAM	1	0	23.08	23.26	22.78	23.5	0.5
3	16QAM	1	7	23.17	23.39	22.84		
3	16QAM	1	14	23.10	23.14	22.93		
3	16QAM	8	0	21.63	21.77	21.71	22.0	2
3	16QAM	8	4	21.59	21.78	21.76		
3	16QAM	8	7	21.68	21.76	21.74		
3	16QAM	15	0	21.43	21.54	21.53		

Channel				23017	23095	23173	Tune up Limit (dBm)	Target MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.39	23.42	23.32	24.0	0
1.4	QPSK	1	2	23.34	23.31	23.52		
1.4	QPSK	1	5	23.17	23.46	23.30		
1.4	QPSK	3	0	23.30	23.43	23.46		
1.4	QPSK	3	1	23.28	23.48	23.54		
1.4	QPSK	3	2	23.30	23.53	23.56		
1.4	QPSK	6	0	22.39	22.64	22.55	23.0	1
1.4	16QAM	1	0	23.17	23.15	22.62	23.5	0.5
1.4	16QAM	1	2	23.12	23.15	22.69		
1.4	16QAM	1	5	23.03	23.18	22.62		
1.4	16QAM	3	0	22.92	23.13	22.66		
1.4	16QAM	3	1	23.15	23.39	22.95		
1.4	16QAM	3	2	23.08	23.33	22.98		
1.4	16QAM	6	0	21.24	21.49	21.23	22.0	2

<LTE Band 17>

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.39	23.60	23.50	24.0	0
10	QPSK	1	24	23.24	23.37	23.43		
10	QPSK	1	49	23.34	23.50	23.44		
10	QPSK	25	0	22.59	22.62	22.45	23.0	1
10	QPSK	25	12	22.53	22.45	22.54		
10	QPSK	25	24	22.57	22.53	22.50		
10	QPSK	50	0	22.44	22.55	22.51		
10	16QAM	1	0	22.69	22.85	22.95	23.5	0.5
10	16QAM	1	24	22.60	22.76	22.73		
10	16QAM	1	49	22.72	22.89	23.27		
10	16QAM	25	0	21.51	21.56	21.52	22.0	2
10	16QAM	25	12	21.35	21.50	21.52		
10	16QAM	25	24	21.58	21.54	21.49		
10	16QAM	50	0	21.37	21.52	21.42		
Channel				23755	23790	23825	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.52	23.48	23.28	24.0	0
5	QPSK	1	12	23.50	23.51	23.44		
5	QPSK	1	24	23.35	23.31	23.29		
5	QPSK	12	0	22.36	22.50	22.47	23.0	1
5	QPSK	12	6	22.45	22.54	22.50		
5	QPSK	12	11	22.52	22.56	22.54		
5	QPSK	25	0	22.48	22.50	22.44		
5	16QAM	1	0	22.76	23.35	23.19	23.5	0.5
5	16QAM	1	12	22.91	23.27	23.30		
5	16QAM	1	24	23.03	23.16	23.20		
5	16QAM	12	0	21.34	21.38	21.36	22.0	2
5	16QAM	12	6	21.33	21.39	21.33		
5	16QAM	12	11	21.37	21.44	21.41		
5	16QAM	25	0	21.47	21.49	21.35		

<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	23.64	23.33	23.45	24.0	0
10	QPSK	1	24	23.68	23.74	23.47		
10	QPSK	1	49	23.57	23.22	23.39		
10	QPSK	25	0	22.27	22.60	22.51	23.0	1
10	QPSK	25	12	22.58	22.53	22.45		
10	QPSK	25	24	22.46	22.41	22.41		
10	QPSK	50	0	22.42	22.58	22.41		
10	16QAM	1	0	22.85	23.21	23.37	23.5	0.5
10	16QAM	1	24	22.68	23.19	23.26		
10	16QAM	1	49	22.68	23.14	23.35		
10	16QAM	25	0	21.69	21.50	21.48	22.0	2
10	16QAM	25	12	21.68	21.47	21.41		
10	16QAM	25	24	21.56	21.41	21.39		
10	16QAM	50	0	21.62	21.44	21.40		
Channel				20425	20525	20625	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.36	23.27	23.33	24.0	0
5	QPSK	1	12	23.53	23.49	23.48		
5	QPSK	1	24	23.17	23.35	23.22		
5	QPSK	12	0	22.56	22.51	22.50	23.0	1
5	QPSK	12	6	22.59	22.45	22.46		
5	QPSK	12	11	22.53	22.47	22.37		
5	QPSK	25	0	22.58	22.46	22.37		
5	16QAM	1	0	22.33	22.82	23.18	23.5	0.5
5	16QAM	1	12	22.79	22.92	23.31		
5	16QAM	1	24	22.44	23.49	23.12		
5	16QAM	12	0	21.54	21.53	21.37	22.0	2
5	16QAM	12	6	21.56	21.25	21.26		
5	16QAM	12	11	21.43	21.19	21.25		
5	16QAM	25	0	21.80	21.32	21.46		
Channel				20415	20525	20635	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.54	23.36	23.54	24.0	0
3	QPSK	1	7	23.36	23.64	23.60		
3	QPSK	1	14	23.33	23.32	23.58		
3	QPSK	8	0	22.68	22.50	22.51	23.0	1
3	QPSK	8	4	22.60	22.49	22.50		
3	QPSK	8	7	22.59	22.42	22.56		
3	QPSK	15	0	22.60	22.43	22.45		
3	16QAM	1	0	23.29	23.13	23.35	23.5	0.5
3	16QAM	1	7	23.35	23.26	22.68		
3	16QAM	1	14	23.23	23.24	22.71		
3	16QAM	8	0	21.85	21.76	21.34	22.0	2
3	16QAM	8	4	21.86	21.76	21.57		
3	16QAM	8	7	21.87	21.70	21.68		
3	16QAM	15	0	21.70	21.57	21.59		

Channel				20407	20525	20643	Tune up Limit (dBm)	Target MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.64	23.45	23.29	24.0	0
1.4	QPSK	1	2	23.45	23.32	23.32		
1.4	QPSK	1	5	23.33	23.21	23.31		
1.4	QPSK	3	0	23.52	23.47	23.58		
1.4	QPSK	3	1	23.67	23.61	23.73		
1.4	QPSK	3	2	23.66	23.46	23.47		
1.4	QPSK	6	0	22.59	22.61	22.49	23.0	1
1.4	16QAM	1	0	23.30	23.23	23.18	23.5	0.5
1.4	16QAM	1	2	23.39	23.21	23.24		
1.4	16QAM	1	5	23.36	23.13	23.19		
1.4	16QAM	3	0	22.64	23.25	23.30		
1.4	16QAM	3	1	22.78	23.39	23.48		
1.4	16QAM	3	2	22.68	23.34	23.43		
1.4	16QAM	6	0	21.26	21.49	21.43	22.0	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	23.36	23.65	23.29	24.0	0
20	QPSK	1	49	23.31	23.60	23.23		
20	QPSK	1	99	23.12	23.48	23.22		
20	QPSK	50	0	22.31	22.42	22.40	23.0	1
20	QPSK	50	24	22.26	22.28	22.33		
20	QPSK	50	49	22.19	22.29	22.10		
20	QPSK	100	0	22.36	22.38	22.21		
20	16QAM	1	0	22.84	22.54	22.17	23.5	0.5
20	16QAM	1	49	22.54	22.51	22.16		
20	16QAM	1	99	22.52	22.49	22.11		
20	16QAM	50	0	21.45	21.34	21.52	22.0	2
20	16QAM	50	24	21.36	21.32	21.45		
20	16QAM	50	49	21.20	21.31	21.42		
20	16QAM	100	0	21.25	21.24	21.42		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.43	23.26	23.59	24.0	0
15	QPSK	1	37	23.22	23.22	23.51		
15	QPSK	1	74	23.05	23.25	23.25		
15	QPSK	36	0	22.37	22.27	22.42	23.0	1
15	QPSK	36	18	22.23	22.37	22.29		
15	QPSK	36	37	22.23	22.28	22.17		
15	QPSK	75	0	22.30	22.38	22.38		
15	16QAM	1	0	23.00	22.68	23.08	23.5	0.5
15	16QAM	1	37	23.06	22.65	22.82		
15	16QAM	1	74	22.82	22.67	22.71		
15	16QAM	36	0	21.46	21.41	21.45	22.0	2
15	16QAM	36	18	21.32	21.36	21.34		
15	16QAM	36	37	21.30	21.26	21.21		
15	16QAM	75	0	21.27	21.28	21.29		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.20	23.23	23.46	24.0	0
10	QPSK	1	24	22.94	23.37	22.93		
10	QPSK	1	49	22.97	23.35	22.93		
10	QPSK	25	0	22.39	22.30	22.35	23.0	1
10	QPSK	25	12	22.21	22.17	22.16		
10	QPSK	25	24	22.14	22.22	22.16		
10	QPSK	50	0	22.25	22.31	22.26		
10	16QAM	1	0	22.61	22.57	23.24	23.5	0.5
10	16QAM	1	24	22.32	22.31	23.14		
10	16QAM	1	49	22.12	22.45	23.09		
10	16QAM	25	0	21.53	21.48	21.32	22.0	2
10	16QAM	25	12	21.30	21.47	21.33		
10	16QAM	25	24	21.16	21.05	21.31		
10	16QAM	50	0	21.13	21.30	21.33		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.94	23.23	23.02	24.0	0
5	QPSK	1	12	23.26	22.95	23.27		
5	QPSK	1	24	23.13	23.06	22.88		
5	QPSK	12	0	22.31	22.14	22.21	23.0	1
5	QPSK	12	6	22.30	22.22	22.17		
5	QPSK	12	11	22.24	22.24	22.10		
5	QPSK	25	0	22.21	22.24	22.24		
5	16QAM	1	0	22.33	22.48	22.56	23.5	0.5
5	16QAM	1	12	22.66	22.28	22.54		
5	16QAM	1	24	22.37	22.19	22.49		
5	16QAM	12	0	21.18	21.20	21.17	22.0	2
5	16QAM	12	6	21.16	21.23	21.32		
5	16QAM	12	11	21.23	21.21	21.08		
5	16QAM	25	0	21.47	21.07	21.19		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.23	23.06	23.05	24.0	0
3	QPSK	1	7	23.54	23.64	23.29		
3	QPSK	1	14	23.09	22.98	23.14		
3	QPSK	8	0	22.38	22.31	22.25	23.0	1
3	QPSK	8	4	22.30	22.24	22.25		
3	QPSK	8	7	22.23	22.25	22.28		
3	QPSK	15	0	22.23	22.22	22.17		
3	16QAM	1	0	22.96	22.59	22.14	23.5	0.5
3	16QAM	1	7	23.07	22.54	22.48		
3	16QAM	1	14	22.99	22.56	22.26		
3	16QAM	8	0	21.40	21.45	21.46	22.0	2
3	16QAM	8	4	21.22	21.57	21.54		
3	16QAM	8	7	21.14	21.50	21.54		
3	16QAM	15	0	21.25	21.32	21.24		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.49	23.24	23.40	24.0	0
1.4	QPSK	1	2	23.50	23.47	23.39		
1.4	QPSK	1	5	23.55	23.42	23.24		
1.4	QPSK	3	0	23.57	23.57	23.33		
1.4	QPSK	3	1	23.59	23.54	23.38		
1.4	QPSK	3	2	23.56	23.40	23.39		
1.4	QPSK	6	0	22.51	22.37	22.53	23.0	1
1.4	16QAM	1	0	23.22	23.30	22.42	23.5	0.5
1.4	16QAM	1	2	23.12	23.31	22.31		
1.4	16QAM	1	5	22.50	23.03	22.59		
1.4	16QAM	3	0	22.65	22.63	22.43		
1.4	16QAM	3	1	22.71	22.67	22.64		
1.4	16QAM	3	2	22.60	22.54	22.59		
1.4	16QAM	6	0	20.90	21.16	20.91	22.0	2

<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	22.77	22.98	22.85	23.5	0
20	QPSK	1	49	22.62	22.70	22.82		
20	QPSK	1	99	22.53	22.59	22.63		
20	QPSK	50	0	20.77	20.84	20.74	22.5	1
20	QPSK	50	24	20.62	20.83	20.73		
20	QPSK	50	49	20.51	20.81	20.71		
20	QPSK	100	0	20.70	20.81	20.70		
20	16QAM	1	0	22.11	22.33	21.95	22.5	1
20	16QAM	1	49	22.19	22.25	21.93		
20	16QAM	1	99	21.91	21.95	21.90		
20	16QAM	50	0	19.76	19.84	19.69	21.5	2
20	16QAM	50	24	19.63	19.78	19.67		
20	16QAM	50	49	19.51	19.77	19.60		
20	16QAM	100	0	19.69	19.82	19.78		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.74	22.64	22.78	23.5	0
15	QPSK	1	37	22.80	22.67	22.76		
15	QPSK	1	74	22.51	22.57	22.60		
15	QPSK	36	0	20.65	20.74	20.76	22.5	1
15	QPSK	36	18	20.57	20.76	20.73		
15	QPSK	36	37	20.57	20.77	20.64		
15	QPSK	75	0	20.59	20.66	20.63		
15	16QAM	1	0	21.99	22.26	22.37	22.5	1
15	16QAM	1	37	21.94	22.39	22.46		
15	16QAM	1	74	21.68	22.42	22.33		
15	16QAM	36	0	19.65	19.66	19.73	21.5	2
15	16QAM	36	18	19.67	19.63	19.70		
15	16QAM	36	37	19.72	19.62	19.73		
15	16QAM	75	0	19.59	19.78	19.61		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.66	22.83	22.58	23.5	0
10	QPSK	1	24	22.94	22.94	22.95		
10	QPSK	1	49	22.82	22.63	22.72		
10	QPSK	25	0	20.64	20.69	20.83	22.5	1
10	QPSK	25	12	20.62	20.72	20.68		
10	QPSK	25	24	20.58	20.76	20.66		
10	QPSK	50	0	20.66	20.73	20.72		
10	16QAM	1	0	21.62	22.04	22.23	22.5	1
10	16QAM	1	24	22.06	21.92	22.29		
10	16QAM	1	49	21.72	22.03	22.06		
10	16QAM	25	0	19.85	19.70	19.91	21.5	2
10	16QAM	25	12	19.83	19.87	19.70		
10	16QAM	25	24	19.58	19.78	19.71		
10	16QAM	50	0	19.68	19.63	19.73		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.49	22.78	22.62	23.5	0
5	QPSK	1	12	22.89	22.88	22.79		
5	QPSK	1	24	22.49	22.85	22.72		
5	QPSK	12	0	20.75	20.70	20.72	22.5	1
5	QPSK	12	6	20.71	20.72	20.76		
5	QPSK	12	11	20.64	20.72	20.77		
5	QPSK	25	0	20.72	20.77	20.74		
5	16QAM	1	0	21.77	21.61	22.04	22.5	1
5	16QAM	1	12	21.56	21.77	22.16		
5	16QAM	1	24	21.84	21.80	21.87		
5	16QAM	12	0	19.65	19.93	19.70	21.5	2
5	16QAM	12	6	19.55	19.95	19.76		
5	16QAM	12	11	19.73	20.03	19.75		
5	16QAM	25	0	19.57	19.75	19.65		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.72	22.66	22.80	23.5	0
3	QPSK	1	7	22.87	22.78	22.84		
3	QPSK	1	14	22.78	22.61	22.47		
3	QPSK	8	0	20.74	20.78	20.74	22.5	1
3	QPSK	8	4	20.67	20.66	20.73		
3	QPSK	8	7	20.68	20.73	20.69		
3	QPSK	15	0	20.67	20.76	20.73		
3	16QAM	1	0	21.93	21.92	21.38	22.5	1
3	16QAM	1	7	22.13	22.45	21.69		
3	16QAM	1	14	21.96	21.91	21.89		
3	16QAM	8	0	19.81	19.92	19.65	21.5	2
3	16QAM	8	4	19.74	19.86	19.99		
3	16QAM	8	7	19.75	19.86	19.96		
3	16QAM	15	0	19.74	19.81	19.78		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.59	22.59	22.53	23.5	0
1.4	QPSK	1	2	22.80	22.77	22.67		
1.4	QPSK	1	5	22.57	22.62	22.57		
1.4	QPSK	3	0	22.76	22.64	22.62		
1.4	QPSK	3	1	22.62	22.66	22.83		
1.4	QPSK	3	2	22.72	22.65	22.81		
1.4	QPSK	6	0	20.72	20.66	20.68	22.5	1
1.4	16QAM	1	0	21.86	22.29	21.93	22.5	1
1.4	16QAM	1	2	22.26	21.94	22.09		
1.4	16QAM	1	5	21.95	21.98	21.95		
1.4	16QAM	3	0	21.91	21.82	22.41		
1.4	16QAM	3	1	21.80	21.94	22.44		
1.4	16QAM	3	2	21.78	21.83	22.40		
1.4	16QAM	6	0	19.56	19.61	19.67	21.5	2

<LTE Band 7>

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				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	21.02	21.28	21.08	21.5	0
20	QPSK	1	49	20.82	21.23	21.06		
20	QPSK	1	99	20.80	21.03	20.91		
20	QPSK	50	0	20.00	20.10	20.08	20.5	1
20	QPSK	50	24	19.92	19.97	19.93		
20	QPSK	50	49	19.89	19.90	19.90		
20	QPSK	100	0	19.96	20.02	19.97		
20	16QAM	1	0	20.57	19.70	20.24	21.0	0.5
20	16QAM	1	49	20.59	19.77	20.30		
20	16QAM	1	99	19.83	19.72	20.29		
20	16QAM	50	0	19.05	19.00	19.24	19.5	2
20	16QAM	50	24	18.97	18.92	19.05		
20	16QAM	50	49	18.91	18.78	19.14		
20	16QAM	100	0	18.95	18.99	19.01		
Channel				20825	21100	21375	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.03	20.99	20.88	21.5	0
15	QPSK	1	37	20.79	20.90	21.14		
15	QPSK	1	74	20.79	20.71	20.99		
15	QPSK	36	0	19.95	19.98	19.80	20.5	1
15	QPSK	36	18	19.83	19.95	19.81		
15	QPSK	36	37	19.84	19.89	19.77		
15	QPSK	75	0	19.86	19.92	19.87		
15	16QAM	1	0	20.57	20.67	20.04	21.0	0.5
15	16QAM	1	37	20.87	20.76	19.65		
15	16QAM	1	74	20.75	20.81	19.61		
15	16QAM	36	0	18.90	19.03	18.91	19.5	2
15	16QAM	36	18	18.71	18.77	18.82		
15	16QAM	36	37	18.70	18.74	18.92		
15	16QAM	75	0	18.87	19.00	18.74		
Channel				20800	21100	21400	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	20.95	20.79	20.73	21.5	0
10	QPSK	1	24	21.10	20.78	20.83		
10	QPSK	1	49	20.94	20.68	20.54		
10	QPSK	25	0	19.84	19.93	19.90	20.5	1
10	QPSK	25	12	19.80	19.95	19.84		
10	QPSK	25	24	19.79	19.85	19.80		
10	QPSK	50	0	19.87	19.89	19.88		
10	16QAM	1	0	20.26	19.46	19.54	21.0	0.5
10	16QAM	1	24	20.24	19.46	19.41		
10	16QAM	1	49	19.54	19.65	20.04		
10	16QAM	25	0	19.12	19.03	19.11	19.5	2
10	16QAM	25	12	18.98	18.83	19.19		
10	16QAM	25	24	18.86	18.87	19.14		
10	16QAM	50	0	18.64	18.67	18.81		

Channel				20775	21100	21425	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	20.71	20.97	20.76	21.5	0
5	QPSK	1	12	20.64	20.91	20.83		
5	QPSK	1	24	20.67	20.78	20.80		
5	QPSK	12	0	19.90	19.91	19.90	20.5	1
5	QPSK	12	6	19.92	19.88	19.91		
5	QPSK	12	11	19.76	19.80	19.75		
5	QPSK	25	0	19.79	19.89	19.82		
5	16QAM	1	0	20.68	20.19	20.40	21.0	0.5
5	16QAM	1	12	20.72	20.02	20.19		
5	16QAM	1	24	20.70	19.67	19.65		
5	16QAM	12	0	19.16	19.01	18.93	19.5	2
5	16QAM	12	6	19.03	18.89	18.98		
5	16QAM	12	11	19.11	18.87	18.87		
5	16QAM	25	0	18.66	18.86	19.07		

<Reduced Power Mode>

<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	22.35	22.39	22.42	23.0	0
10	QPSK	1	24	22.32	22.19	22.24		
10	QPSK	1	49	22.29	22.08	21.99		
10	QPSK	25	0	22.08	22.00	22.10	23.0	0
10	QPSK	25	12	22.02	21.99	21.98		
10	QPSK	25	24	21.88	21.92	21.93		
10	QPSK	50	0	22.01	22.02	21.97		
10	16QAM	1	0	22.25	22.03	22.29	23.0	0
10	16QAM	1	24	22.10	22.01	22.33		
10	16QAM	1	49	22.07	21.73	22.30		
10	16QAM	25	0	21.58	21.43	21.78	23.0	0
10	16QAM	25	12	21.66	21.62	21.79		
10	16QAM	25	24	21.45	21.75	21.53		
10	16QAM	50	0	21.56	21.48	21.28		
Channel				20425	20525	20625	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.19	21.85	22.26	23.0	0
5	QPSK	1	12	22.14	21.84	22.14		
5	QPSK	1	24	21.85	21.75	22.17		
5	QPSK	12	0	22.02	21.92	21.99	23.0	0
5	QPSK	12	6	21.98	21.96	21.97		
5	QPSK	12	11	21.99	21.97	21.90		
5	QPSK	25	0	22.04	21.90	21.97		
5	16QAM	1	0	21.97	22.15	21.81	23.0	0
5	16QAM	1	12	21.95	22.25	21.87		
5	16QAM	1	24	21.90	22.19	22.21		
5	16QAM	12	0	21.51	21.31	21.42	23.0	0
5	16QAM	12	6	21.51	21.40	21.37		
5	16QAM	12	11	21.61	21.31	21.34		
5	16QAM	25	0	21.58	21.49	21.67		
Channel				20415	20525	20635	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.25	22.08	21.90	23.0	0
3	QPSK	1	7	22.15	22.23	22.26		
3	QPSK	1	14	21.84	21.95	22.18		
3	QPSK	8	0	22.21	21.96	22.02	23.0	0
3	QPSK	8	4	22.05	22.03	22.03		
3	QPSK	8	7	22.03	22.07	22.08		
3	QPSK	15	0	22.05	21.95	21.96		
3	16QAM	1	0	22.13	22.01	22.21	23.0	0
3	16QAM	1	7	22.21	21.61	22.23		
3	16QAM	1	14	22.08	21.95	21.58		
3	16QAM	8	0	21.70	21.78	21.74	23.0	0
3	16QAM	8	4	21.53	21.83	21.61		
3	16QAM	8	7	21.57	21.80	21.54		
3	16QAM	15	0	21.74	21.39	21.74		

Channel				20407	20525	20643	Tune up Limit (dBm)	Target MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.03	21.87	21.97	23.0	0
1.4	QPSK	1	2	22.15	21.88	22.09		
1.4	QPSK	1	5	22.00	21.85	21.93		
1.4	QPSK	3	0	22.20	21.84	22.11		
1.4	QPSK	3	1	22.21	21.96	22.29		
1.4	QPSK	3	2	22.14	21.94	22.17		
1.4	QPSK	6	0	22.06	21.85	22.15	23.0	0
1.4	16QAM	1	0	22.04	22.19	22.18	23.0	0
1.4	16QAM	1	2	22.21	22.14	22.10		
1.4	16QAM	1	5	22.12	22.11	22.12		
1.4	16QAM	3	0	22.08	22.17	22.10		
1.4	16QAM	3	1	22.17	21.88	22.02		
1.4	16QAM	3	2	22.09	22.02	22.03		
1.4	16QAM	6	0	21.41	21.68	21.55	23.0	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	17.55	17.66	17.55	18.0	0
20	QPSK	1	49	17.54	17.54	17.49		
20	QPSK	1	99	17.29	17.44	17.16		
20	QPSK	50	0	17.50	17.57	17.50	18.0	0
20	QPSK	50	24	17.48	17.36	17.47		
20	QPSK	50	49	17.29	17.33	17.46		
20	QPSK	100	0	17.40	17.44	17.39		
20	16QAM	1	0	17.52	17.58	17.54	18.0	0
20	16QAM	1	49	17.42	17.55	17.46		
20	16QAM	1	99	17.38	17.46	17.38		
20	16QAM	50	0	17.51	17.39	17.52	18.0	0
20	16QAM	50	24	17.45	17.36	17.44		
20	16QAM	50	49	17.32	17.34	17.39		
20	16QAM	100	0	17.47	17.30	17.32		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	17.28	17.54	17.48	18.0	0
15	QPSK	1	37	17.40	17.30	17.30		
15	QPSK	1	74	17.19	17.49	17.25		
15	QPSK	36	0	17.55	17.38	17.50	18.0	0
15	QPSK	36	18	17.39	17.32	17.41		
15	QPSK	36	37	17.35	17.29	17.32		
15	QPSK	75	0	17.37	17.33	17.49		
15	16QAM	1	0	17.52	17.53	17.49	18.0	0
15	16QAM	1	37	17.48	17.41	17.41		
15	16QAM	1	74	17.32	17.34	17.35		
15	16QAM	36	0	17.41	17.42	17.38	18.0	0
15	16QAM	36	18	17.24	17.34	17.50		
15	16QAM	36	37	17.13	17.36	17.47		
15	16QAM	75	0	17.45	17.30	17.36		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	17.66	17.50	17.42	18.0	0
10	QPSK	1	24	17.53	17.63	17.33		
10	QPSK	1	49	17.52	17.22	17.23		
10	QPSK	25	0	17.61	17.38	17.50	18.0	0
10	QPSK	25	12	17.45	17.32	17.40		
10	QPSK	25	24	17.39	17.26	17.25		
10	QPSK	50	0	17.46	17.34	17.41		
10	16QAM	1	0	17.53	17.68	17.52	18.0	0
10	16QAM	1	24	17.48	17.45	17.45		
10	16QAM	1	49	17.49	17.48	17.38		
10	16QAM	25	0	17.49	17.34	17.58	18.0	0
10	16QAM	25	12	17.40	17.12	17.39		
10	16QAM	25	24	17.30	17.23	17.57		
10	16QAM	50	0	17.37	17.23	17.56		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	17.36	17.27	17.06	18.0	0
5	QPSK	1	12	17.47	17.25	17.31		
5	QPSK	1	24	17.02	17.05	17.22		
5	QPSK	12	0	17.50	17.31	17.35	18.0	0
5	QPSK	12	6	17.42	17.34	17.28		
5	QPSK	12	11	17.49	17.31	17.25		
5	QPSK	25	0	17.26	17.45	17.34		
5	16QAM	1	0	17.65	17.18	17.55	18.0	0
5	16QAM	1	12	17.55	17.11	17.52		
5	16QAM	1	24	17.48	17.20	17.48		
5	16QAM	12	0	17.45	17.45	17.32	18.0	0
5	16QAM	12	6	17.36	17.48	17.28		
5	16QAM	12	11	17.34	17.42	17.23		
5	16QAM	25	0	17.48	17.27	17.24		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	17.40	17.23	17.37	18.0	0
3	QPSK	1	7	17.60	17.39	17.21		
3	QPSK	1	14	17.13	17.44	17.15		
3	QPSK	8	0	17.29	17.18	17.40	18.0	0
3	QPSK	8	4	17.21	17.27	17.32		
3	QPSK	8	7	17.57	17.32	17.27		
3	QPSK	15	0	17.52	17.35	17.25		
3	16QAM	1	0	17.46	17.48	17.53	18.0	0
3	16QAM	1	7	17.54	17.42	17.51		
3	16QAM	1	14	17.46	17.36	17.46		
3	16QAM	8	0	17.53	17.57	17.38	18.0	0
3	16QAM	8	4	17.48	17.54	17.41		
3	16QAM	8	7	17.47	17.50	17.52		
3	16QAM	15	0	17.42	17.42	17.51		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	17.59	17.20	17.38	18.0	0
1.4	QPSK	1	2	17.26	17.30	17.37		
1.4	QPSK	1	5	17.13	17.32	17.31		
1.4	QPSK	3	0	17.23	17.24	17.28		
1.4	QPSK	3	1	17.27	17.32	17.33		
1.4	QPSK	3	2	17.24	17.27	17.35		
1.4	QPSK	6	0	17.22	17.43	17.30	18.0	0
1.4	16QAM	1	0	17.48	17.21	17.48	18.0	0
1.4	16QAM	1	2	17.46	17.17	17.32		
1.4	16QAM	1	5	17.42	17.28	17.29		
1.4	16QAM	3	0	17.56	17.30	17.19		
1.4	16QAM	3	1	17.58	17.21	17.20		
1.4	16QAM	3	2	17.57	17.20	17.18		
1.4	16QAM	6	0	17.10	17.28	17.24	18.0	0

<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	16.50	16.56	16.45	17.0	0
20	QPSK	1	49	16.49	16.46	16.43		
20	QPSK	1	99	16.15	16.21	16.04		
20	QPSK	50	0	16.15	16.22	16.17	17.0	0
20	QPSK	50	24	16.00	16.07	16.06		
20	QPSK	50	49	15.87	16.08	16.00		
20	QPSK	100	0	16.07	16.14	16.12		
20	16QAM	1	0	16.55	16.34	16.41	17.0	0
20	16QAM	1	49	16.48	15.95	16.06		
20	16QAM	1	99	16.49	16.00	16.03		
20	16QAM	50	0	16.17	16.08	15.98	17.0	0
20	16QAM	50	24	16.11	15.97	16.07		
20	16QAM	50	49	15.94	15.93	16.07		
20	16QAM	100	0	16.10	16.03	16.03		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.17	16.17	16.48	17.0	0
15	QPSK	1	37	16.05	16.08	16.32		
15	QPSK	1	74	15.80	16.13	16.01		
15	QPSK	36	0	16.08	16.08	16.10	17.0	0
15	QPSK	36	18	15.96	16.11	16.13		
15	QPSK	36	37	15.94	16.06	16.03		
15	QPSK	75	0	15.98	16.10	16.04		
15	16QAM	1	0	16.53	16.12	15.93	17.0	0
15	16QAM	1	37	16.46	16.07	15.83		
15	16QAM	1	74	16.39	16.16	16.05		
15	16QAM	36	0	16.03	15.87	16.11	17.0	0
15	16QAM	36	18	15.86	15.81	16.06		
15	16QAM	36	37	15.85	15.83	16.09		
15	16QAM	75	0	16.03	16.07	15.84		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.92	15.99	16.03	17.0	0
10	QPSK	1	24	16.24	16.49	16.17		
10	QPSK	1	49	16.03	16.21	15.91		
10	QPSK	25	0	16.07	16.10	16.08	17.0	0
10	QPSK	25	12	16.01	16.05	16.01		
10	QPSK	25	24	16.05	16.10	16.02		
10	QPSK	50	0	16.06	16.04	16.08		
10	16QAM	1	0	16.55	16.65	16.58	17.0	0
10	16QAM	1	24	16.51	16.52	16.56		
10	16QAM	1	49	16.40	16.32	16.14		
10	16QAM	25	0	16.38	16.18	16.11	17.0	0
10	16QAM	25	12	16.45	16.21	16.00		
10	16QAM	25	24	15.95	16.37	15.88		
10	16QAM	50	0	16.00	16.00	15.95		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.72	15.78	16.04	17.0	0
5	QPSK	1	12	15.99	16.33	16.19		
5	QPSK	1	24	16.08	15.81	15.90		
5	QPSK	12	0	15.94	15.94	15.89	17.0	0
5	QPSK	12	6	15.86	15.96	15.88		
5	QPSK	12	11	15.87	15.96	15.84		
5	QPSK	25	0	15.92	16.02	15.89		
5	16QAM	1	0	16.42	16.14	15.91	17.0	0
5	16QAM	1	12	16.41	16.21	16.59		
5	16QAM	1	24	16.07	15.87	15.85		
5	16QAM	12	0	16.00	15.99	15.97	17.0	0
5	16QAM	12	6	15.94	15.95	15.92		
5	16QAM	12	11	15.93	15.94	15.89		
5	16QAM	25	0	15.91	15.97	15.97		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	16.08	15.81	15.99	17.0	0
3	QPSK	1	7	15.89	16.41	16.22		
3	QPSK	1	14	15.75	15.80	15.74		
3	QPSK	8	0	16.03	16.00	15.97	17.0	0
3	QPSK	8	4	16.01	15.96	15.96		
3	QPSK	8	7	15.91	15.97	15.94		
3	QPSK	15	0	15.91	15.99	15.95		
3	16QAM	1	0	16.43	16.38	16.55	17.0	0
3	16QAM	1	7	16.54	16.28	16.51		
3	16QAM	1	14	15.89	16.23	16.56		
3	16QAM	8	0	15.98	16.22	16.18	17.0	0
3	16QAM	8	4	16.14	16.39	16.12		
3	16QAM	8	7	16.27	16.37	16.30		
3	16QAM	15	0	16.04	16.06	16.09		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.97	15.92	15.84	17.0	0
1.4	QPSK	1	2	15.87	15.85	16.27		
1.4	QPSK	1	5	15.78	15.83	15.79		
1.4	QPSK	3	0	15.87	15.92	15.90		
1.4	QPSK	3	1	15.88	16.05	15.95		
1.4	QPSK	3	2	15.91	15.97	15.92		
1.4	QPSK	6	0	15.89	16.00	16.07	17.0	0
1.4	16QAM	1	0	16.16	16.44	16.56	17.0	0
1.4	16QAM	1	2	16.44	16.49	16.54		
1.4	16QAM	1	5	16.18	16.31	16.53		
1.4	16QAM	3	0	16.23	16.14	16.51		
1.4	16QAM	3	1	16.23	15.70	16.52		
1.4	16QAM	3	2	16.42	16.06	16.52		
1.4	16QAM	6	0	16.09	15.45	15.90	17.0	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Measured Power			Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	18.25	18.27	18.05	18.5	0
20	QPSK	1	49	18.12	18.01	17.94		
20	QPSK	1	99	18.08	17.84	17.77		
20	QPSK	50	0	18.02	18.05	18.00	18.5	0
20	QPSK	50	24	17.91	17.87	17.91		
20	QPSK	50	49	17.80	17.83	17.94		
20	QPSK	100	0	17.84	17.99	17.94		
20	16QAM	1	0	18.45	18.30	18.15	18.5	0
20	16QAM	1	49	18.40	18.12	17.88		
20	16QAM	1	99	18.43	18.29	17.77		
20	16QAM	50	0	17.81	17.89	17.91	18.5	0
20	16QAM	50	24	17.89	17.88	17.78		
20	16QAM	50	49	17.73	17.83	17.85		
20	16QAM	100	0	17.88	18.01	17.87		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	18.09	17.90	17.94	18.5	0
15	QPSK	1	37	18.14	17.71	17.82		
15	QPSK	1	74	17.93	17.72	17.87		
15	QPSK	36	0	17.92	17.97	17.89	18.5	0
15	QPSK	36	18	17.88	17.85	17.83		
15	QPSK	36	37	17.73	17.80	17.83		
15	QPSK	75	0	17.90	17.94	17.81		
15	16QAM	1	0	18.24	18.11	18.04	18.5	0
15	16QAM	1	37	18.27	18.46	17.77		
15	16QAM	1	74	18.34	18.28	17.95		
15	16QAM	36	0	17.94	18.05	17.90	18.5	0
15	16QAM	36	18	17.95	17.97	17.79		
15	16QAM	36	37	17.87	17.87	17.79		
15	16QAM	75	0	17.91	17.92	17.80		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	17.96	17.85	17.94	18.5	0
10	QPSK	1	24	18.13	18.05	18.18		
10	QPSK	1	49	17.97	17.89	17.71		
10	QPSK	25	0	17.90	17.91	17.91	18.5	0
10	QPSK	25	12	17.84	17.95	17.87		
10	QPSK	25	24	17.83	17.96	17.83		
10	QPSK	50	0	17.81	17.87	17.91		
10	16QAM	1	0	18.13	17.49	17.99	18.5	0
10	16QAM	1	24	17.98	17.56	18.31		
10	16QAM	1	49	17.78	17.57	18.37		
10	16QAM	25	0	18.06	17.98	17.84	18.5	0
10	16QAM	25	12	17.75	17.91	17.83		
10	16QAM	25	24	17.71	17.82	18.19		
10	16QAM	50	0	17.86	17.85	17.85		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	17.67	17.72	17.67	18.5	0
5	QPSK	1	12	18.12	17.91	17.75		
5	QPSK	1	24	17.48	17.96	17.57		
5	QPSK	12	0	17.85	17.91	17.86	18.5	0
5	QPSK	12	6	17.86	17.87	17.94		
5	QPSK	12	11	17.82	17.82	17.83		
5	QPSK	25	0	17.83	17.89	17.80		
5	16QAM	1	0	18.38	18.04	18.26	18.5	0
5	16QAM	1	12	17.44	18.43	18.29		
5	16QAM	1	24	17.46	17.86	18.30		
5	16QAM	12	0	17.74	17.88	17.88	18.5	0
5	16QAM	12	6	17.81	17.81	17.89		
5	16QAM	12	11	17.77	17.88	17.76		
5	16QAM	25	0	17.85	17.96	18.21		

<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.

<WLAN 2.4GHz>

WLAN 2.4GHz 802.11b Average Power (dBm)						
Power vs. Channel			Power vs. Data Rate			
Channel	Frequency (MHz)	Data Rate 1Mbps	Channel	2Mbps	5.5Mbps	11Mbps
CH 01	2412	17.30	CH 11	17.97	18.09	18.12
CH 06	2437	17.44				
CH 11	2462	18.14				

WLAN 2.4GHz 802.11g Average Power (dBm)									
Power vs. Channel			Power vs. Data Rate						
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 01	2412	13.16	CH 11	13.78	13.77	13.81	13.85	13.94	13.89	13.88
CH 06	2437	13.47								
CH 11	2462	13.96								

WLAN 2.4GHz 802.11n HT20 Average Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412	11.42	CH 11	12.06	12.15	12.08	12.12	12.16	12.07	12.14
CH 06	2437	11.75								
CH 11	2462	12.20								

<WLAN 5GHz>

WLAN 5GHz 802.11a Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	13.15	CH 48	13.35	13.34	13.39	13.47	13.44	13.51	13.50
CH 40	5200	12.48								
CH 44	5220	12.73								
CH 48	5240	13.52								
CH 149	5745	13.05	CH 157	13.24	13.22	13.28	13.26	13.30	13.34	13.28
CH 153	5765	13.01								
CH 157	5785	13.35								
CH 161	5805	12.74								
CH 165	5825	12.80								

WLAN 5GHz 802.11n HT20 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	11.59	CH 48	11.84	11.81	11.72	11.80	11.83	11.84	11.83
CH 40	5200	10.97								
CH 44	5220	11.26								
CH 48	5240	11.86								
CH 149	5745	11.41	CH 157	11.77	11.73	11.59	11.66	11.72	11.74	11.77
CH 153	5765	11.49								
CH 157	5785	11.80								
CH 161	5805	11.56								
CH 165	5825	11.30								

WLAN 5GHz 802.11n HT40 Average Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	11.45	CH 46	11.40	11.42	11.55	11.53	11.45	11.53	11.54
CH 46	5230	11.63								
CH 151	5755	11.51	CH 159	11.69	11.64	11.77	11.76	11.74	11.77	11.74
CH 159	5795	11.79								

13. Bluetooth Exclusions Applied

Mode Band	Average power(dBm)	
	Bluetooth v3.0 + EDR	Bluetooth v4.1 LE
2.4GHz Bluetooth	6.0	1.0

Note:

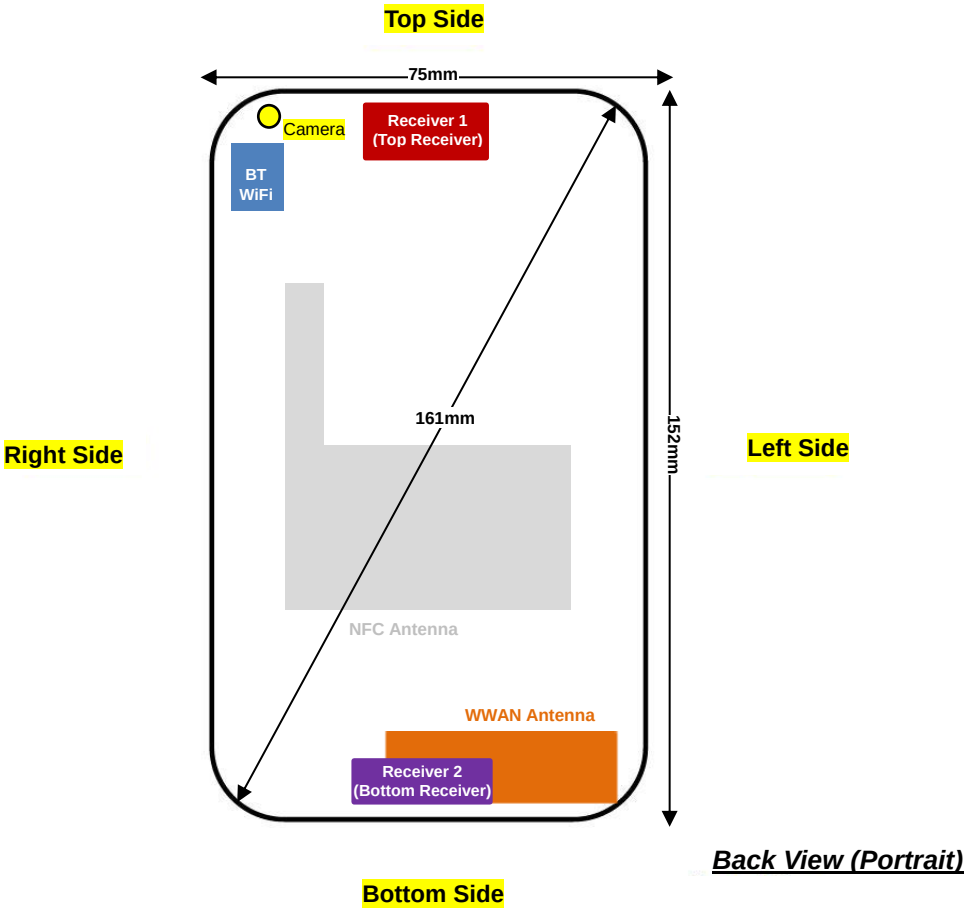
1. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW)*/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g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

Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	exclusion thresholds
6.0	0	2.48	1.3

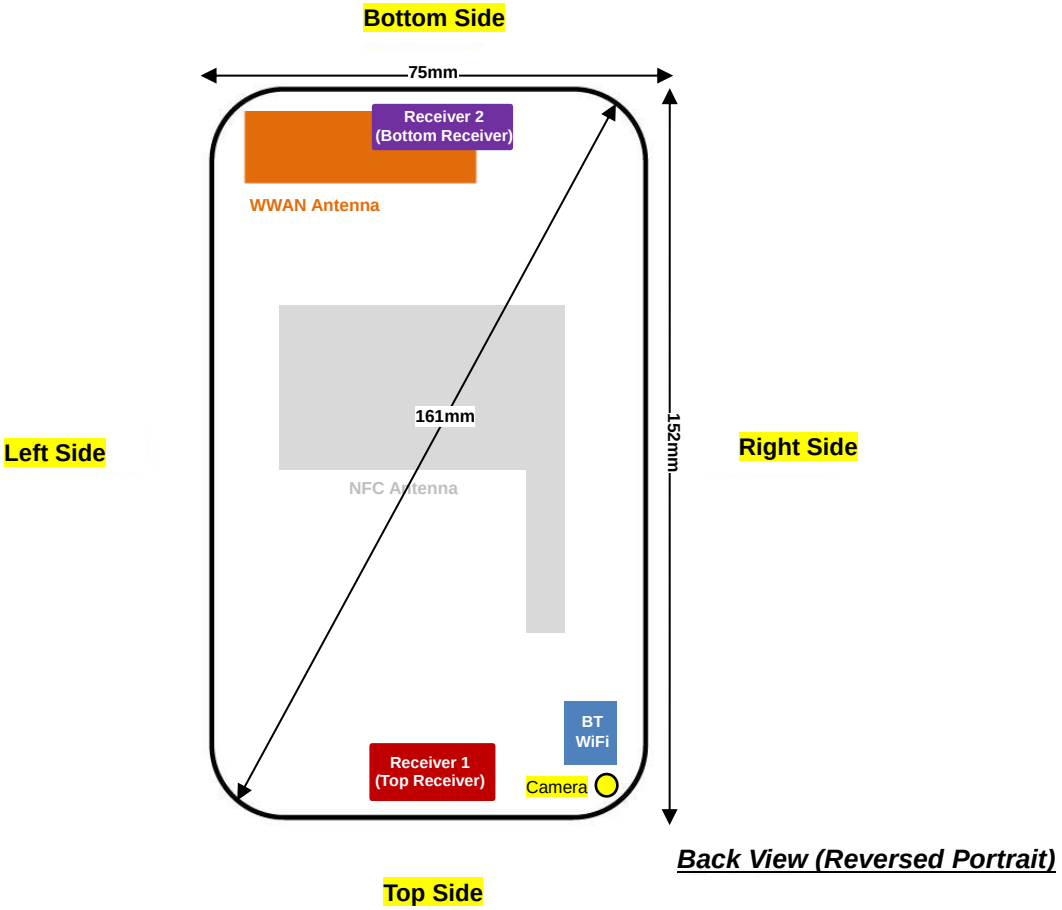
Note:

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

14. Antenna Location



Back View (Portrait)



Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	135mm	≤ 25mm	31mm	≤ 25mm
Bluetooth & WLAN	≤ 25mm	≤ 25mm	≤ 25mm	125mm	≤ 25mm	65mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	Yes	Yes	No	Yes	No	Yes
Bluetooth & WLAN	Yes	Yes	Yes	No	Yes	No

General Note:
Referring to KDB 941225 D06 v02, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

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. Pre KDB648474 D04v01r03, when the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.
4. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, therefore the LTE Band 2 and LTE Band 7 were perform.
5. This device has two sets of receivers and microphone, 1 receiver is located at the top and another one is located at the bottom of the phone. For the next-to-ear voice call the product allows the end user to use the device in the typical calling positions and in the reversed calling position. When the User Interface is in reversed portrait orientation, power reduction is implemented for the scenario that the bottom receiver is placed next-to-ear during the voice call except LTE Band 12/17, and SAR compliance was accessed for both orientations. The details of the power reduction mechanism for the reverse call are illustrated in the operational description.
6. Per KDB 648474 D04v01r03, for additional accessories (batteries, NFC and wireless charging battery covers or similar accessory), need repeat SAR testing at the worst position (head, and body-worn, and hotspot), for each wireless mode and each band. In addition, for test cases where the measured SAR for a handset without the accessory is greater than 1.2 W/kg, these tests should be repeated with the additional accessories.

GSM Note:

1. Per KDB 941225 D01v03r01, considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR test reduction for GSM, GPRS, EDGE and DTM 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 EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.
2. Per KDB 941225 D01v03r01, for hotspot SAR test reduction for GPRS, EDGE and DTM modes are determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.

UMTS Note:

1. Per KDB 941225 D01v03r01, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

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.

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.
5. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	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	Receiver 1	OFF	251	848.8	28.36	29	1.159	0.09	0.393	0.455
	GSM850	GPRS (4 Tx slots)	Right Tilted	Receiver 1	OFF	251	848.8	28.36	29	1.159	-0.05	0.202	0.234
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	251	848.8	28.36	29	1.159	0.12	0.415	0.481
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	128	824.2	28.03	29	1.250	0.041	0.257	0.321
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	189	836.4	28.22	29	1.197	0.03	0.292	0.349
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 1	OFF	251	848.8	28.36	29	1.159	0.16	0.241	0.279
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	251	848.8	24.65	25	1.084	0.03	0.607	0.658
	GSM850	GPRS (4 Tx slots)	Right Tilted	Receiver 2	ON	251	848.8	24.65	25	1.084	-0.03	0.468	0.507
#01	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	251	848.8	24.65	25	1.084	0.03	0.896	**0.971**
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	128	824.2	24.23	25	1.194	0.03	0.732	0.874
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	189	836.4	24.41	25	1.146	0.0011	0.841	0.963
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	251	848.8	24.65	25	1.084	0.02	0.695	0.753
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Receiver 1	OFF	512	1850.2	24.91	25.5	1.146	0.04	0.209	0.239
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Receiver 1	OFF	512	1850.2	24.91	25.5	1.146	0.07	0.111	0.127
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	512	1850.2	24.91	25.5	1.146	-0.02	0.236	0.270
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	661	1880	24.8	25.5	1.175	-0.12	0.206	0.242
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	810	1910	24.7	25.5	1.202	0.13	0.212	0.255
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 1	OFF	512	1850.2	24.91	25.5	1.146	0.07	0.172	0.197
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	512	1850.2	19.26	20	1.186	0.0071	0.445	0.528
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Receiver 2	ON	512	1850.2	19.26	20	1.186	0.03	0.466	0.553
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	512	1850.2	19.26	20	1.186	-0.04	0.749	0.888
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	661	1880	19.2	20	1.202	-0.08	0.774	0.931
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	810	1909.8	19.11	20	1.227	-0.1	0.811	0.995
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	512	1850.2	19.26	20	1.186	-0.01	0.819	0.971
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	661	1880	19.2	20	1.202	-0.04	0.857	1.030
#02	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	810	1909.8	19.11	20	1.227	-0.03	0.899	**1.103**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	4233	846.6	23.76	24	1.057	-0.06	0.260	0.275
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	4132	826.4	23.68	24	1.076	0.0022	0.289	0.311
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	4182	836.4	23.69	24	1.074	0.039	0.308	0.331
	WCDMA Band V	RMC12.2Kbps	Right Tilted	Receiver 1	OFF	4233	846.6	23.76	24	1.057	-0.0039	0.140	0.148
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	4233	846.6	23.76	24	1.057	-0.06	0.182	0.192
	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 1	OFF	4233	846.6	23.76	24	1.057	0.03	0.166	0.175
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 2	ON	4233	846.6	22.09	22.5	1.099	0.13	0.518	0.569
	WCDMA Band V	RMC12.2Kbps	Right Tilted	Receiver 2	ON	4233	846.6	22.09	22.5	1.099	-0.004	0.559	0.614
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	4233	846.6	22.09	22.5	1.099	-0.01	0.704	0.774
	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 2	ON	4233	846.6	22.09	22.5	1.099	0.12	0.764	0.840
#03	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 2	ON	4132	826.4	21.97	22.5	1.130	0.07	0.871	**0.984**
	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 2	ON	4182	836.4	22.02	22.5	1.117	0.06	0.814	0.909
	WCDMA Band IV	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	1312	1712.4	23.13	23.5	1.000	-0.11	0.278	0.278
	WCDMA Band IV	RMC12.2Kbps	Right Tilted	Receiver 1	OFF	1312	1712.4	23.13	23.5	1.089	0.04	0.144	0.157
	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	1312	1712.4	23.13	23.5	1.089	-0.08	0.321	0.350
	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	1413	1732.6	23.06	23.5	1.107	0.03	0.279	0.309
	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	1513	1752.6	23.07	23.5	1.104	0.02	0.322	0.356
	WCDMA Band IV	RMC12.2Kbps	Left Tilted	Receiver 1	OFF	1312	1712.4	23.13	23.5	1.089	0.03	0.213	0.232
	WCDMA Band IV	RMC12.2Kbps	Right Cheek	Receiver 2	ON	1312	1712.4	16.96	17.5	1.132	0.04	0.523	0.592
	WCDMA Band IV	RMC12.2Kbps	Right Tilted	Receiver 2	ON	1312	1712.4	16.96	17.5	1.132	-0.01	0.456	0.516
	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1312	1712.4	16.96	17.5	1.132	0.02	0.830	0.940
#04	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1413	1732.6	16.85	17.5	1.161	-0.02	0.922	**1.071**
	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1513	1752.6	16.88	17.5	1.153	-0.04	0.852	0.983
	WCDMA Band IV	RMC12.2Kbps	Left Tilted	Receiver 2	ON	1312	1712.4	16.96	17.5	1.132	0.002	0.667	0.755
	WCDMA Band II	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	9538	1907.6	23.19	23.5	1.000	0.03	0.251	0.251
	WCDMA Band II	RMC12.2Kbps	Right Tilted	Receiver 1	OFF	9538	1907.6	23.19	23.5	1.074	0.07	0.117	0.126
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	9538	1907.6	23.19	23.5	1.074	-0.07	0.283	0.304
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	9262	1852.4	23.11	23.5	1.094	-0.06	0.251	0.275
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	9400	1880	23.14	23.5	1.086	-0.12	0.248	0.269
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 1	OFF	9538	1907.6	23.19	23.5	1.074	0.05	0.170	0.183
	WCDMA Band II	RMC12.2Kbps	Right Cheek	Receiver 2	ON	9538	1907.6	16.93	17.5	1.000	-0.02	0.526	0.526
	WCDMA Band II	RMC12.2Kbps	Right Tilted	Receiver 2	ON	9538	1907.6	16.93	17.5	1.140	-0.03	0.511	0.583
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	9538	1907.6	16.93	17.5	1.140	-0.05	1.110	1.266
#05	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	9262	1852.4	16.8	17.5	1.175	-0.0045	1.120	**1.316**
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	9400	1880	16.86	17.5	1.159	-0.01	1.110	1.286
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	9538	1907.6	16.93	17.5	1.140	-0.03	1.010	1.152
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	9262	1852.4	16.8	17.5	1.175	-0.0006	0.971	1.141
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	9400	1880	16.86	17.5	1.159	-0.03	1.050	1.217

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	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	0	Right Cheek	Receiver 1	OFF	23095	707.5	23.68	24	1.076	0.07	0.062	0.067
	LTE Band 12	10M	QPSK	25	0	Right Cheek	Receiver 1	OFF	23095	707.5	22.61	23	1.094	0.06	0.055	0.060
	LTE Band 12	10M	QPSK	1	0	Right Tilted	Receiver 1	OFF	23095	707.5	23.68	24	1.076	0.099	0.037	0.040
	LTE Band 12	10M	QPSK	25	0	Right Tilted	Receiver 1	OFF	23095	707.5	22.61	23	1.094	0.032	0.032	0.035
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23095	707.5	23.68	24	1.076	-0.091	0.069	0.074
	LTE Band 12	10M	QPSK	25	0	Left Cheek	Receiver 1	OFF	23095	707.5	22.61	23	1.094	0.03	0.060	0.066
	LTE Band 12	10M	QPSK	1	0	Left Tilted	Receiver 1	OFF	23095	707.5	23.68	24	1.076	0.1	0.040	0.043
	LTE Band 12	10M	QPSK	25	0	Left Tilted	Receiver 1	OFF	23095	707.5	22.61	23	1.094	0.09	0.046	0.050
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23060	704	23.51	24	1.119	0.05	0.058	0.065
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23130	711	23.57	24	1.104	0.05	0.073	0.081
	LTE Band 12	10M	QPSK	1	0	Right Cheek	Receiver 2	OFF	23095	707.5	23.68	24	1.076	0.04	0.375	0.404
	LTE Band 12	10M	QPSK	25	0	Right Cheek	Receiver 2	OFF	23095	707.5	22.61	23	1.094	0.03	0.318	0.348
	LTE Band 12	10M	QPSK	1	0	Right Tilted	Receiver 2	OFF	23095	707.5	23.68	24	1.076	-0.02	0.346	0.372
	LTE Band 12	10M	QPSK	25	0	Right Tilted	Receiver 2	OFF	23095	707.5	22.61	23	1.094	-0.07	0.289	0.316
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23095	707.5	23.68	24	1.076	-0.01	0.643	0.692
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23060	704	23.51	24	1.119	0.023	0.736	0.824
#06	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23130	711	23.57	24	1.104	0.04	0.901	**0.995**
	LTE Band 12	10M	QPSK	25	0	Left Cheek	Receiver 2	OFF	23095	707.5	22.61	23	1.094	0.03	0.552	0.604
	LTE Band 12	10M	QPSK	50	0	Left Cheek	Receiver 2	OFF	23095	707.5	22.48	23	1.127	0.15	0.643	0.725
	LTE Band 12	10M	QPSK	1	0	Left Tilted	Receiver 2	OFF	23095	707.5	23.68	24	1.076	0.13	0.589	0.634
	LTE Band 12	10M	QPSK	25	0	Left Tilted	Receiver 2	OFF	23095	707.5	22.61	23	1.094	0.04	0.499	0.546
	LTE Band 17	10M	QPSK	1	0	Right Cheek	Receiver 1	OFF	23790	710	23.6	24	1.096	0.08	0.072	0.079
	LTE Band 17	10M	QPSK	25	0	Right Cheek	Receiver 1	OFF	23790	710	22.62	23	1.091	0.04	0.058	0.063
	LTE Band 17	10M	QPSK	1	0	Right Tilted	Receiver 1	OFF	23790	710	23.6	24	1.096	0.054	0.042	0.046
	LTE Band 17	10M	QPSK	25	0	Right Tilted	Receiver 1	OFF	23790	710	22.62	23	1.091	0.044	0.034	0.037
	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23790	710	23.6	24	1.096	0.07	0.079	0.087
	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23780	709	23.39	24	1.151	0.14	0.074	0.085
	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 1	OFF	23800	711	23.5	24	1.122	0.039	0.079	0.089
	LTE Band 17	10M	QPSK	25	0	Left Cheek	Receiver 1	OFF	23790	710	22.62	23	1.091	0.05	0.064	0.070
	LTE Band 17	10M	QPSK	1	0	Left Tilted	Receiver 1	OFF	23790	710	23.6	24	1.096	0.11	0.052	0.057
	LTE Band 17	10M	QPSK	25	0	Left Tilted	Receiver 1	OFF	23790	710	22.62	23	1.091	0.18	0.041	0.045
	LTE Band 17	10M	QPSK	1	0	Right Cheek	Receiver 2	OFF	23790	710	23.6	24	1.096	-0.03	0.404	0.443
	LTE Band 17	10M	QPSK	25	0	Right Cheek	Receiver 2	OFF	23790	710	22.62	23	1.091	0.0052	0.355	0.387
	LTE Band 17	10M	QPSK	1	0	Right Tilted	Receiver 2	OFF	23790	710	23.6	24	1.096	-0.09	0.407	0.446
	LTE Band 17	10M	QPSK	25	0	Right Tilted	Receiver 2	OFF	23790	710	22.62	23	1.091	0.04	0.324	0.354
	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23790	710	23.6	24	1.096	-0.021	0.716	0.785
#07	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23780	709	23.39	24	1.151	0.17	0.890	**1.024**
	LTE Band 17	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	23800	711	23.5	24	1.122	0.021	0.839	0.941
	LTE Band 17	10M	QPSK	25	0	Left Cheek	Receiver 2	OFF	23790	710	22.62	23	1.091	-0.02	0.596	0.650
	LTE Band 17	10M	QPSK	50	0	Left Cheek	Receiver 2	OFF	23790	710	22.55	23	1.109	0.02	0.622	0.690
	LTE Band 17	10M	QPSK	1	0	Left Tilted	Receiver 2	OFF	23790	710	23.6	24	1.096	-0.11	0.646	0.708
	LTE Band 17	10M	QPSK	25	0	Left Tilted	Receiver 2	OFF	23790	710	22.62	23	1.091	-0.07	0.527	0.575

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	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 5	10M	QPSK	1	24	Right Cheek	Receiver 1	OFF	20525	836.5	23.74	24	1.062	0.09	0.273	0.290
	LTE Band 5	10M	QPSK	1	24	Right Cheek	Receiver 1	OFF	20450	829	23.68	24	1.076	0.039	0.289	0.311
	LTE Band 5	10M	QPSK	1	24	Right Cheek	Receiver 1	OFF	20600	844	23.47	24	1.130	0.051	0.294	0.332
	LTE Band 5	10M	QPSK	25	0	Right Cheek	Receiver 1	OFF	20525	836.5	22.6	23	1.096	0.05	0.215	0.236
	LTE Band 5	10M	QPSK	1	24	Right Tilted	Receiver 1	OFF	20525	836.5	23.74	24	1.062	0.07	0.158	0.168
	LTE Band 5	10M	QPSK	25	0	Right Tilted	Receiver 1	OFF	20525	836.5	22.6	23	1.096	0.07	0.126	0.138
	LTE Band 5	10M	QPSK	1	24	Left Cheek	Receiver 1	OFF	20525	836.5	23.74	24	1.062	0.05	0.268	0.285
	LTE Band 5	10M	QPSK	25	0	Left Cheek	Receiver 1	OFF	20525	836.5	22.6	23	1.096	0.03	0.211	0.231
	LTE Band 5	10M	QPSK	1	24	Left Tilted	Receiver 1	OFF	20525	836.5	23.74	24	1.062	0.09	0.175	0.186
	LTE Band 5	10M	QPSK	25	0	Left Tilted	Receiver 1	OFF	20525	836.5	22.6	23	1.096	0.16	0.141	0.155
	LTE Band 5	10M	QPSK	1	0	Right Cheek	Receiver 2	ON	20600	844	22.42	23	1.143	0.04	0.876	1.001
	LTE Band 5	10M	QPSK	1	0	Right Cheek	Receiver 2	ON	20450	829	22.35	23	1.161	-0.08	0.948	1.101
	LTE Band 5	10M	QPSK	1	0	Right Cheek	Receiver 2	ON	20525	836.5	22.39	23	1.151	-0.02	0.848	0.976
	LTE Band 5	10M	QPSK	25	0	Right Cheek	Receiver 2	ON	20600	844	22.1	23	1.230	-0.16	0.782	0.962
	LTE Band 5	10M	QPSK	25	0	Right Cheek	Receiver 2	ON	20450	829	22.08	23	1.236	0.02	0.875	1.081
	LTE Band 5	10M	QPSK	25	0	Right Cheek	Receiver 2	ON	20525	836.5	22	23	1.259	0.01	0.836	1.052
	LTE Band 5	10M	QPSK	50	0	Right Cheek	Receiver 2	ON	20525	836.5	22.02	23	1.253	-0.01	0.861	1.079
	LTE Band 5	10M	QPSK	1	0	Right Tilted	Receiver 2	ON	20600	844	22.42	23	1.143	-0.09	0.631	0.721
	LTE Band 5	10M	QPSK	25	0	Right Tilted	Receiver 2	ON	20600	844	22.1	23	1.230	0.11	0.569	0.700
	LTE Band 5	10M	QPSK	1	0	Left Cheek	Receiver 2	ON	20600	844	22.42	23	1.143	0.07	0.729	0.833
	LTE Band 5	10M	QPSK	1	0	Left Cheek	Receiver 2	ON	20450	829	22.35	23	1.161	-0.04	0.831	0.965
	LTE Band 5	10M	QPSK	1	0	Left Cheek	Receiver 2	ON	20525	836.5	22.39	23	1.151	0.07	0.756	0.870
	LTE Band 5	10M	QPSK	25	0	Left Cheek	Receiver 2	ON	20600	844	22.1	23	1.230	0.04	0.679	0.835
	LTE Band 5	10M	QPSK	25	0	Left Cheek	Receiver 2	ON	20450	829	22.08	23	1.236	0.01	0.816	1.009
	LTE Band 5	10M	QPSK	25	0	Left Cheek	Receiver 2	ON	20525	836.5	22	23	1.259	0.03	0.757	0.953
#08	LTE Band 5	10M	QPSK	50	0	Left Cheek	Receiver 2	ON	20525	836.5	22.02	23	1.253	-0.0067	0.953	**1.194**
	LTE Band 5	10M	QPSK	1	0	Left Tilted	Receiver 2	ON	20600	844	22.42	23	1.143	-0.02	0.838	0.958
	LTE Band 5	10M	QPSK	1	0	Left Tilted	Receiver 2	ON	20450	829	22.35	23	1.161	-0.1	0.901	1.046
	LTE Band 5	10M	QPSK	1	0	Left Tilted	Receiver 2	ON	20525	836.5	22.39	23	1.151	-0.09	0.830	0.955
	LTE Band 5	10M	QPSK	25	0	Left Tilted	Receiver 2	ON	20600	844	22.1	23	1.230	-0.05	0.761	0.936
	LTE Band 5	10M	QPSK	25	0	Left Tilted	Receiver 2	ON	20450	829	22.08	23	1.236	0.05	0.826	1.021
	LTE Band 5	10M	QPSK	25	0	Left Tilted	Receiver 2	ON	20525	836.5	22	23	1.259	-0.05	0.795	1.001
	LTE Band 5	10M	QPSK	50	0	Left Tilted	Receiver 2	ON	20525	836.5	22.02	23	1.253	-0.06	0.779	0.976

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	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	0	Right Cheek	Receiver 1	OFF	20175	1732.5	23.65	24	1.084	-0.02	0.326	0.353
	LTE Band 4	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	20050	1720	23.36	24	1.159	0.09	0.267	0.309
	LTE Band 4	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	20300	1745	23.29	24	1.178	0.07	0.329	0.387
	LTE Band 4	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	20175	1732.5	22.42	23	1.143	0.04	0.245	0.280
	LTE Band 4	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	20175	1732.5	23.65	24	1.084	-0.01	0.173	0.188
	LTE Band 4	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	20175	1732.5	22.42	23	1.143	0.05	0.130	0.149
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	20175	1732.5	23.65	24	1.084	0.055	0.313	0.339
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	20175	1732.5	22.42	23	1.143	0.01	0.238	0.272
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	20175	1732.5	23.65	24	1.084	0.035	0.269	0.292
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	20175	1732.5	22.42	23	1.143	0.18	0.203	0.232
	LTE Band 4	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	20175	1732.5	17.66	18	1.081	-0.025	0.509	0.550
	LTE Band 4	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	20175	1732.5	17.57	18	1.104	0.02	0.510	0.563
	LTE Band 4	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	20175	1732.5	17.66	18	1.081	0.02	0.485	0.524
	LTE Band 4	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	20175	1732.5	17.57	18	1.104	-0.04	0.477	0.527
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	20175	1732.5	17.66	18	1.081	-0.03	0.795	0.860
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	20050	1720	17.55	18	1.109	-0.16	0.825	0.915
#09	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	20300	1745	17.55	18	1.109	0.09	0.919	**1.019**
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	20175	1732.5	17.57	18	1.104	0.01	0.833	0.920
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	20050	1720	17.5	18	1.122	0.02	0.767	0.861
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	20300	1745	17.5	18	1.122	0.04	0.886	0.994
	LTE Band 4	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	20175	1732.5	17.44	18	1.138	0.01	0.824	0.937
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	20175	1732.5	17.66	18	1.081	-0.023	0.827	0.894
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	20050	1720	17.55	18	1.109	0.031	0.698	0.774
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	20300	1745	17.55	18	1.109	0.02	0.861	0.955
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	20175	1732.5	17.57	18	1.104	-0.01	0.771	0.851
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	20050	1720	17.5	18	1.122	0.02	0.728	0.817
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	20300	1745	17.5	18	1.122	0.0017	0.852	0.956
	LTE Band 4	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	20175	1732.5	17.44	18	1.138	-0.0055	0.790	0.899

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	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 2	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	18900	1880	22.98	23.5	1.127	-0.09	0.289	0.326
	LTE Band 2	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	18900	1880	20.84	22.5	1.466	0.1	0.150	0.220
	LTE Band 2	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	18900	1880	22.98	23.5	1.127	-0.02	0.141	0.159
	LTE Band 2	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	18900	1880	20.84	22.5	1.466	0.02	0.073	0.107
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	18900	1880	22.98	23.5	1.127	0.07	0.296	0.334
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	18700	1860	22.77	23.5	1.183	-0.07	0.310	0.367
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	19100	1900	22.85	23.5	1.161	-0.05	0.284	0.330
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	18900	1880	20.84	22.5	1.466	0.02	0.200	0.293
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	18900	1880	22.98	23.5	1.127	0.16	0.243	0.274
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	18900	1880	20.84	22.5	1.466	0.16	0.129	0.189
	LTE Band 2	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	18900	1880	16.56	17	1.107	-0.024	0.543	0.601
	LTE Band 2	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	18900	1880	16.22	17	1.197	-0.03	0.474	0.567
	LTE Band 2	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	18900	1880	16.56	17	1.107	0.06	0.531	0.588
	LTE Band 2	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	18900	1880	16.22	17	1.197	-0.06	0.456	0.546
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	18900	1880	16.56	17	1.107	-0.09	0.983	1.088
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	18700	1860	16.5	17	1.122	-0.07	0.918	1.030
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	19100	1900	16.45	17	1.135	0.08	0.921	1.045
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	18900	1880	16.22	17	1.197	0.07	0.872	1.044
#10	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	18700	1860	16.15	17	1.216	0.05	0.922	**1.121**
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	19100	1900	16.17	17	1.211	-0.02	0.911	1.103
	LTE Band 2	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	18900	1880	16.14	17	1.219	0.07	0.905	1.103
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	18900	1880	16.56	17	1.107	-0.021	0.850	0.941
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	18700	1860	16.5	17	1.122	-0.007	0.871	0.977
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	19100	1900	16.45	17	1.135	-0.1	0.889	1.009
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	18900	1880	16.22	17	1.197	0.02	0.827	0.990
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	18700	1860	16.15	17	1.216	-0.02	0.814	0.990
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	19100	1900	16.17	17	1.211	-0.03	0.820	0.993
	LTE Band 2	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	18900	1880	16.14	17	1.219	0.03	0.811	0.989

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	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 7	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	21100	2535	21.28	21.5	1.052	0.1	0.012	0.013
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	21100	2535	20.1	20.5	1.096	0.11	0.013	0.014
	LTE Band 7	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	21100	2535	21.28	21.5	1.052	0.1	0.0066	0.007
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	21100	2535	20.1	20.5	1.096	0.1	0.00511	0.006
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	21100	2535	21.28	21.5	1.052	0.01	0.030	0.032
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	20850	2510	21.02	21.5	1.117	0.1	0.024	0.027
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	21350	2560	21.08	21.5	1.102	0.079	0.036	0.040
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	21100	2535	20.1	20.5	1.096	0.12	0.022	0.024
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	21100	2535	21.28	21.5	1.052	0.1	0.00385	0.004
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	21100	2535	20.1	20.5	1.096	0.085	0.00649	0.007
	LTE Band 7	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	21100	2535	18.27	18.5	1.054	0.033	0.543	0.573
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	21100	2535	18.05	18.5	1.109	-0.022	0.487	0.540
	LTE Band 7	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	21100	2535	18.27	18.5	1.054	-0.08	0.543	0.573
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	21100	2535	18.05	18.5	1.109	-0.16	0.520	0.577
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	21100	2535	18.27	18.5	1.054	0.02	0.927	0.977
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	20850	2510	18.25	18.5	1.059	-0.03	0.880	0.932
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	21350	2560	18.05	18.5	1.109	-0.028	1.150	1.276
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	21100	2535	18.05	18.5	1.109	0.19	0.902	1.000
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	20850	2510	18.02	18.5	1.117	0.04	0.790	0.882
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	21350	2560	18.00	18.5	1.122	0.08	1.030	1.156
	LTE Band 7	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	21100	2535	17.99	18.5	1.125	-0.12	0.915	1.029
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	21100	2535	18.27	18.5	1.054	-0.0085	0.911	0.961
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	20850	2510	18.25	18.5	1.059	-0.04	0.802	0.850
#11	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	21350	2560	18.05	18.5	1.109	0.14	1.180	**1.309**
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	21100	2535	18.05	18.5	1.109	0.02	0.915	1.015
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	20850	2510	18.02	18.5	1.117	0.1	0.798	0.891
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	21350	2560	18.00	18.5	1.122	0.09	1.070	1.201
	LTE Band 7	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	21100	2535	17.99	18.5	1.125	-0.02	0.931	1.047

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	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)
	WLAN 2.4GHz	802.11b_1Mbps	Right Cheek	Receiver 1	11	2462	18.14	18.5	1.086	97.64	1.024	0.02	0.292	0.325
	WLAN 2.4GHz	802.11b_1Mbps	Right Tilted	Receiver 1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.07	0.211	0.235
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.09	0.602	0.670
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	1	2412	17.3	18.5	1.318	97.64	1.024	-0.04	0.879	1.187
#12	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	6	2437	17.44	18.5	1.276	97.64	1.024	0.10	1.060	**1.385**
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 1	11	2462	18.14	18.5	1.086	97.64	1.024	0.05	0.490	0.545
	WLAN 2.4GHz	802.11b_1Mbps	Right Cheek	Receiver 2	11	2462	18.14	18.5	1.086	97.64	1.024	0.07	0.016	0.018
	WLAN 2.4GHz	802.11b_1Mbps	Right Tilted	Receiver 2	11	2462	18.14	18.5	1.086	97.64	1.024	-0.17	0.015	0.017
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 2	11	2462	18.14	18.5	1.086	97.64	1.024	-0.084	0.019	0.021
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 2	1	2412	17.3	18.5	1.318	97.64	1.024	0.05	0.0149	0.020
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 2	6	2437	17.44	18.5	1.276	97.64	1.024	0.01	0.038	0.050
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 2	11	2462	18.14	18.5	1.086	97.64	1.024	-0.13	0.0077	0.009
	WLAN 5.2GHz	802.11a_6Mbps	Right Cheek	Receiver 1	48	5240	13.52	15	1.406	87.26	1.146	0.06	0.014	0.023
	WLAN 5.2GHz	802.11a_6Mbps	Right Tilted	Receiver 1	48	5240	13.52	15	1.406	87.26	1.146	0.01	0.021	0.034
	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 1	48	5240	13.52	15	1.406	87.26	1.146	-0.08	0.21	0.338
#13	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 1	36	5180	13.15	15	1.531	87.26	1.146	0.09	0.378	**0.663**
	WLAN 5.2GHz	802.11a_6Mbps	Left Tilted	Receiver 1	48	5240	13.52	15	1.406	87.26	1.146	0.06	0.085	0.137
	WLAN 5.2GHz	802.11a_6Mbps	Right Cheek	Receiver 2	48	5240	13.52	15	1.406	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.2GHz	802.11a_6Mbps	Right Tilted	Receiver 2	48	5240	13.52	15	1.406	87.26	1.146	0.1	0.000683	0.001
	WLAN 5.2GHz	802.11a_6Mbps	Right Tilted	Receiver 2	36	5180	13.15	15	1.531	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 2	48	5240	13.52	15	1.406	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.2GHz	802.11a_6Mbps	Left Tilted	Receiver 2	48	5240	13.52	15	1.406	87.26	1.146	0.1	3.23E-06	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 1	157	5785	13.35	14.3	1.245	87.26	1.146	0.032	0.060	0.086
	WLAN 5.8GHz	802.11a_6Mbps	Right Tilted	Receiver 1	157	5785	13.35	14.3	1.245	87.26	1.146	0.044	0.088	0.126
#14	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	157	5785	13.35	14.3	1.245	87.26	1.146	0.024	0.880	**1.255**
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	149	5745	13.05	14.3	1.334	87.26	1.146	-0.1	0.664	1.015
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	165	5825	12.8	14.3	1.413	87.26	1.146	0.05	0.624	1.010
	WLAN 5.8GHz	802.11a_6Mbps	Left Tilted	Receiver 1	157	5785	13.35	14.3	1.245	87.26	1.146	0.1	0.337	0.481
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 2	157	5785	13.52	14.3	1.197	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 2	149	5745	13.05	14.3	1.334	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 2	165	5825	12.8	14.3	1.413	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Tilted	Receiver 2	157	5785	13.52	14.3	1.197	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 2	157	5785	13.52	14.3	1.197	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Left Tilted	Receiver 2	157	5785	13.52	14.3	1.197	87.26	1.146	0	< 0.001	< 0.001

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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	1	251	848.8	28.36	29	1.159	-0.06	0.500	0.579
#15	GSM850	GPRS (4 Tx slots)	Back	1	251	848.8	28.36	29	1.159	0.08	0.622	**0.721**
	GSM850	GPRS (4 Tx slots)	Back	1	128	824.2	28.03	29	1.250	0.09	0.551	0.689
	GSM850	GPRS (4 Tx slots)	Back	1	189	836.4	28.22	29	1.197	0.04	0.498	0.596
	GSM850	GPRS (4 Tx slots)	Left Side	1	251	848.8	28.36	29	1.159	0.0026	0.523	0.606
	GSM850	GPRS (4 Tx slots)	Bottom Side	1	251	848.8	28.36	29	1.159	-0.13	0.305	0.353
	GSM1900	GPRS (4 Tx slots)	Front	1	512	1850.2	24.91	25.5	1.146	-0.03	0.625	0.716
	GSM1900	GPRS (4 Tx slots)	Back	1	512	1850.2	24.91	25.5	1.146	-0.06	0.758	0.868
	GSM1900	GPRS (4 Tx slots)	Back	1	661	1880	24.8	25.5	1.175	-0.1	0.736	0.865
	GSM1900	GPRS (4 Tx slots)	Back	1	810	1909.8	24.7	25.5	1.202	-0.05	0.804	0.967
	GSM1900	GPRS (4 Tx slots)	Left Side	1	512	1850.2	24.91	25.5	1.146	-0.12	0.250	0.286
	GSM1900	GPRS (4 Tx slots)	Bottom Side	1	512	1850.2	24.91	25.5	1.146	0.08	0.783	0.897
	GSM1900	GPRS (4 Tx slots)	Bottom Side	1	661	1880	24.8	25.5	1.175	0.05	0.785	0.922
#16	GSM1900	GPRS (4 Tx slots)	Bottom Side	1	810	1909.8	24.7	25.5	1.202	0.06	0.821	**0.987**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	1	4233	846.6	23.76	24	1.057	-0.0036	0.313	0.331
	WCDMA Band V	RMC12.2Kbps	Back	1	4233	846.6	23.76	24	1.057	0.0073	0.375	0.396
#17	WCDMA Band V	RMC12.2Kbps	Back	1	4132	826.4	23.68	24	1.076	-0.0085	0.469	**0.505**
	WCDMA Band V	RMC12.2Kbps	Back	1	4182	836.4	23.69	24	1.074	0.0015	0.458	0.492
	WCDMA Band V	RMC12.2Kbps	Left Side	1	4233	846.6	23.76	24	1.057	0.1	0.370	0.391
	WCDMA Band V	RMC12.2Kbps	Bottom Side	1	4233	846.6	23.76	24	1.057	-0.04	0.187	0.198
	WCDMA Band IV	RMC12.2Kbps	Front	1	1312	1712.4	23.13	23.5	1.089	-0.02	0.708	0.771
	WCDMA Band IV	RMC12.2Kbps	Back	1	1312	1712.4	23.13	23.5	1.089	-0.08	0.716	0.780
	WCDMA Band IV	RMC12.2Kbps	Back	1	1413	1732.6	23.06	23.5	1.107	-0.13	0.754	0.834
#18	WCDMA Band IV	RMC12.2Kbps	Back	1	1513	1752.6	23.07	23.5	1.104	-0.12	0.803	**0.887**
	WCDMA Band IV	RMC12.2Kbps	Left Side	1	1312	1712.4	23.13	23.5	1.089	-0.11	0.263	0.286
	WCDMA Band IV	RMC12.2Kbps	Bottom Side	1	1312	1712.4	23.13	23.5	1.089	0.04	0.596	0.649
	WCDMA Band II	RMC12.2Kbps	Front	1	9538	1907.6	23.19	23.5	1.074	0.03	1.060	1.138
	WCDMA Band II	RMC12.2Kbps	Front	1	9262	1852.4	23.11	23.5	1.094	-0.02	0.873	0.955
	WCDMA Band II	RMC12.2Kbps	Front	1	9400	1880	23.14	23.5	1.086	0.03	0.933	1.014
	WCDMA Band II	RMC12.2Kbps	Back	1	9538	1907.6	23.19	23.5	1.074	-0.14	1.080	1.160
	WCDMA Band II	RMC12.2Kbps	Back	1	9262	1852.4	23.11	23.5	1.094	-0.18	1.030	1.127
	WCDMA Band II	RMC12.2Kbps	Back	1	9400	1880	23.14	23.5	1.086	-0.09	1.060	1.152
	WCDMA Band II	RMC12.2Kbps	Left Side	1	9538	1907.6	23.19	23.5	1.074	-0.11	0.316	0.339
#19	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	9538	1907.6	23.19	23.5	1.074	0.12	1.100	**1.181**
	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	9262	1852.4	23.11	23.5	1.094	0.03	1.020	1.116
	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	9400	1880	23.14	23.5	1.086	0.13	1.040	1.130

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	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	0	Front	1	23095	707.5	23.68	24	1.076	0.024	0.113	0.122
	LTE Band 12	10M	QPSK	25	0	Front	1	23095	707.5	22.61	23	1.094	-0.04	0.089	0.097
	LTE Band 12	10M	QPSK	1	0	Back	1	23095	707.5	23.68	24	1.076	-0.06	0.17	0.183
	LTE Band 12	10M	QPSK	1	0	Back	1	23060	704	23.51	24	1.119	-0.12	0.136	0.152
#20	LTE Band 12	10M	QPSK	1	0	Back	1	23130	711	23.57	24	1.104	-0.10	0.168	**0.185**
	LTE Band 12	10M	QPSK	25	0	Back	1	23095	707.5	22.61	23	1.094	0.02	0.142	0.155
	LTE Band 12	10M	QPSK	1	0	Left Side	1	23095	707.5	23.68	24	1.076	0.1	0.137	0.147
	LTE Band 12	10M	QPSK	25	0	Left Side	1	23095	707.5	22.61	23	1.094	-0.07	0.115	0.126
	LTE Band 12	10M	QPSK	1	0	Bottom Side	1	23095	707.5	23.68	24	1.076	0.04	0.039	0.042
	LTE Band 12	10M	QPSK	25	0	Bottom Side	1	23095	707.5	22.61	23	1.094	0.1	0.033	0.036
	LTE Band 17	10M	QPSK	1	0	Front	1	23790	710	23.6	24	1.096	0.02	0.123	0.135
	LTE Band 17	10M	QPSK	25	0	Front	1	23790	710	22.62	23	1.091	0.06	0.102	0.111
#21	LTE Band 17	10M	QPSK	1	0	Back	1	23790	710	23.6	24	1.096	-0.05	0.190	**0.208**
	LTE Band 17	10M	QPSK	1	0	Back	1	23780	709	23.39	24	1.151	0.00052	0.135	0.155
	LTE Band 17	10M	QPSK	1	0	Back	1	23800	711	23.5	24	1.122	0.06	0.167	0.187
	LTE Band 17	10M	QPSK	25	0	Back	1	23790	710	22.62	23	1.091	0.06	0.152	0.166
	LTE Band 17	10M	QPSK	1	0	Left Side	1	23790	710	23.6	24	1.096	0.04	0.148	0.162
	LTE Band 17	10M	QPSK	25	0	Left Side	1	23790	710	22.62	23	1.091	0.04	0.123	0.134
	LTE Band 17	10M	QPSK	1	0	Bottom Side	1	23790	710	23.6	24	1.096	0.11	0.040	0.044
	LTE Band 17	10M	QPSK	25	0	Bottom Side	1	23790	710	22.62	23	1.091	-0.11	0.032	0.035
	LTE Band 5	10M	QPSK	1	24	Front	1	20525	836.5	23.74	24	1.062	0.1	0.359	0.381
	LTE Band 5	10M	QPSK	25	0	Front	1	20525	836.5	22.6	23	1.096	-0.0085	0.287	0.315
	LTE Band 5	10M	QPSK	1	24	Back	1	20525	836.5	23.74	24	1.062	-0.04	0.406	0.431
#22	LTE Band 5	10M	QPSK	1	24	Back	1	20450	829	23.68	24	1.076	0.031	0.485	**0.522**
	LTE Band 5	10M	QPSK	1	24	Back	1	20600	844	23.47	24	1.130	-0.18	0.442	0.499
	LTE Band 5	10M	QPSK	25	0	Back	1	20525	836.5	22.6	23	1.096	0.01	0.332	0.364
	LTE Band 5	10M	QPSK	1	24	Left Side	1	20525	836.5	23.74	24	1.062	0.03	0.393	0.417
	LTE Band 5	10M	QPSK	25	0	Left Side	1	20525	836.5	22.6	23	1.096	-0.07	0.330	0.362
	LTE Band 5	10M	QPSK	1	24	Bottom Side	1	20525	836.5	23.74	24	1.062	-0.14	0.190	0.202
	LTE Band 5	10M	QPSK	25	0	Bottom Side	1	20525	836.5	22.6	23	1.096	-0.1	0.154	0.169
	LTE Band 4	20M	QPSK	1	0	Front	1	20175	1732.5	23.65	24	1.084	-0.19	0.834	0.904
	LTE Band 4	20M	QPSK	1	0	Front	1	20050	1720	23.36	24	1.159	-0.14	0.751	0.870
#23	LTE Band 4	20M	QPSK	1	0	Front	1	20300	1745	23.29	24	1.178	-0.09	0.872	**1.027**
	LTE Band 4	20M	QPSK	50	0	Front	1	20175	1732.5	22.42	23	1.143	-0.04	0.677	0.774
	LTE Band 4	20M	QPSK	100	0	Front	1	20175	1732.5	22.38	23	1.153	-0.01	0.694	0.800
	LTE Band 4	20M	QPSK	1	0	Back	1	20175	1732.5	23.65	24	1.084	-0.04	0.885	0.959
	LTE Band 4	20M	QPSK	1	0	Back	1	20050	1720	23.36	24	1.159	0.15	0.775	0.898
	LTE Band 4	20M	QPSK	1	0	Back	1	20300	1745	23.29	24	1.178	-0.0062	0.852	1.003
	LTE Band 4	20M	QPSK	50	0	Back	1	20175	1732.5	22.42	23	1.143	-0.19	0.626	0.715
	LTE Band 4	20M	QPSK	100	0	Back	1	20175	1732.5	22.38	23	1.153	-0.16	0.641	0.739
	LTE Band 4	20M	QPSK	1	0	Left Side	1	20175	1732.5	23.65	24	1.084	0.0092	0.294	0.319
	LTE Band 4	20M	QPSK	50	0	Left Side	1	20175	1732.5	22.42	23	1.143	0.02	0.249	0.285
	LTE Band 4	20M	QPSK	1	0	Bottom Side	1	20175	1732.5	23.65	24	1.084	0.1	0.743	0.805
	LTE Band 4	20M	QPSK	1	0	Bottom Side	1	20050	1720	23.36	24	1.159	0.1	0.682	0.790
	LTE Band 4	20M	QPSK	1	0	Bottom Side	1	20300	1745	23.29	24	1.178	0.02	0.766	0.902
	LTE Band 4	20M	QPSK	50	0	Bottom Side	1	20175	1732.5	22.42	23	1.143	0.1	0.599	0.685
	LTE Band 4	20M	QPSK	100	0	Bottom Side	1	20175	1732.5	22.38	23	1.153	0.09	0.591	0.682

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	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 2	20M	QPSK	1	0	Front	1	18900	1880	22.98	23.5	1.127	0.02	0.964	1.087
	LTE Band 2	20M	QPSK	1	0	Front	1	18700	1860	22.77	23.5	1.183	-0.07	0.960	1.136
	LTE Band 2	20M	QPSK	1	0	Front	1	19100	1900	22.85	23.5	1.161	0.01	0.928	1.078
	LTE Band 2	20M	QPSK	50	0	Front	1	18900	1880	20.84	22.5	1.466	0.05	0.583	0.854
	LTE Band 2	20M	QPSK	50	0	Front	1	18700	1860	20.77	22.5	1.489	0.0039	0.600	0.894
	LTE Band 2	20M	QPSK	50	0	Front	1	19100	1900	20.74	22.5	1.500	-0.05	0.597	0.895
	LTE Band 2	20M	QPSK	100	0	Front	1	18900	1880	20.81	22.5	1.476	-0.07	0.577	0.851
#24	LTE Band 2	20M	QPSK	1	0	Back	1	18900	1880	22.98	23.5	1.127	-0.13	1.170	**1.319**
	LTE Band 2	20M	QPSK	1	0	Back	1	18700	1860	22.77	23.5	1.183	-0.06	1.100	1.301
	LTE Band 2	20M	QPSK	1	0	Back	1	19100	1900	22.85	23.5	1.161	-0.07	1.130	1.312
	LTE Band 2	20M	QPSK	50	0	Back	1	18900	1880	20.84	22.5	1.466	-0.1	0.713	1.045
	LTE Band 2	20M	QPSK	50	0	Back	1	18700	1860	20.77	22.5	1.489	-0.13	0.677	1.008
	LTE Band 2	20M	QPSK	50	0	Back	1	19100	1900	20.74	22.5	1.500	-0.02	0.699	1.048
	LTE Band 2	20M	QPSK	100	0	Back	1	18900	1880	20.81	22.5	1.476	-0.1	0.692	1.021
	LTE Band 2	20M	QPSK	1	0	Left Side	1	18900	1880	22.98	23.5	1.127	-0.03	0.305	0.344
	LTE Band 2	20M	QPSK	50	0	Left Side	1	18900	1880	20.84	22.5	1.466	-0.04	0.227	0.333
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	18900	1880	22.98	23.5	1.127	-0.06	0.977	1.101
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	18700	1860	22.77	23.5	1.183	0.02	0.971	1.149
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	19100	1900	22.85	23.5	1.161	0.04	1.040	1.208
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	18900	1880	20.84	22.5	1.466	0.04	0.670	0.982
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	18700	1860	20.77	22.5	1.489	0.0064	0.636	0.947
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	19100	1900	20.74	22.5	1.500	-0.02	0.684	1.026
	LTE Band 2	20M	QPSK	100	0	Bottom Side	1	18900	1880	20.81	22.5	1.476	-0.06	0.665	0.981
	LTE Band 7	20M	QPSK	1	0	Front	1	21100	2535	21.28	21.5	1.052	0.11	0.509	0.535
	LTE Band 7	20M	QPSK	50	0	Front	1	21100	2535	20.1	20.5	1.096	-0.1	0.392	0.430
	LTE Band 7	20M	QPSK	1	0	Back	1	21100	2535	21.28	21.5	1.052	-0.01	1.050	1.105
	LTE Band 7	20M	QPSK	1	0	Back	1	20850	2510	21.02	21.5	1.117	0.07	0.895	1.000
	LTE Band 7	20M	QPSK	1	0	Back	1	21350	2560	21.08	21.5	1.102	0.1	1.270	1.399
	LTE Band 7	20M	QPSK	50	0	Back	1	21100	2535	20.1	20.5	1.096	-0.03	0.845	0.927
	LTE Band 7	20M	QPSK	50	0	Back	1	20850	2510	20	20.5	1.122	0.06	0.785	0.881
	LTE Band 7	20M	QPSK	50	0	Back	1	21350	2560	20.08	20.5	1.102	0.01	1.060	1.168
	LTE Band 7	20M	QPSK	100	0	Back	1	21100	2535	20.02	20.5	1.117	0.18	0.896	1.001
	LTE Band 7	20M	QPSK	1	0	Left Side	1	21100	2535	21.28	21.5	1.052	-0.11	0.070	0.074
	LTE Band 7	20M	QPSK	50	0	Left Side	1	21100	2535	20.1	20.5	1.096	-0.08	0.054	0.059
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	21100	2535	21.28	21.5	1.052	0.01	1.050	1.105
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	20850	2510	21.02	21.5	1.117	0.09	0.859	0.959
#25	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	21350	2560	21.08	21.5	1.102	0.03	1.290	**1.421**
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	21100	2535	20.1	20.5	1.096	0.06	0.877	0.962
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	20850	2510	20	20.5	1.122	0.02	0.727	0.816
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	21350	2560	20.08	20.5	1.102	0.08	1.070	1.179
	LTE Band 7	20M	QPSK	100	0	Bottom Side	1	21100	2535	20.02	20.5	1.117	0.048	0.898	1.003

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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)
	WLAN 2.4GHz	802.11b_1Mbps	Front	1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.027	0.214	0.238
#26	WLAN 2.4GHz	802.11b_1Mbps	Back	1	11	2462	18.14	18.5	1.086	97.64	1.024	0.039	0.457	**0.508**
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	1	2412	17.3	18.5	1.318	97.64	1.024	0.1	0.223	0.301
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	6	2437	17.44	18.5	1.276	97.64	1.024	0.18	0.370	0.484
	WLAN 2.4GHz	802.11b_1Mbps	Right Side	1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.17	0.171	0.190
	WLAN 2.4GHz	802.11b_1Mbps	Top Side	1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.04	0.128	0.142
	WLAN 5.8GHz	802.11a_6Mbps	Front	1	157	5785	13.35	14.3	1.245	87.26	1.146	0.1	0.089	0.127
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	157	5785	13.35	14.3	1.245	87.26	1.146	-0.03	0.109	0.155
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	149	5745	13.05	14.3	1.334	87.26	1.146	0.17	0.096	0.147
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	165	5825	12.8	14.3	1.413	87.26	1.146	-0.16	0.081	0.131
#27	WLAN 5.8GHz	802.11a_6Mbps	Right Side	1	157	5785	13.35	14.3	1.245	87.26	1.146	-0.09	0.198	**0.282**
	WLAN 5.8GHz	802.11a_6Mbps	Right Side	1	149	5745	13.05	14.3	1.334	87.26	1.146	0.08	0.162	0.248
	WLAN 5.8GHz	802.11a_6Mbps	Right Side	1	165	5825	12.8	14.3	1.413	87.26	1.146	0.08	0.132	0.214
	WLAN 5.8GHz	802.11a_6Mbps	Top Side	1	157	5785	13.35	14.3	1.245	87.26	1.146	-0.09	0.066	0.094

15.3 Extremity SAR

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Back	0	18900	1880	22.98	23.5	1.127	-0.04	2.260	2.547
#28	LTE Band 2	20M	QPSK	1	0	Back	0	18700	1860	22.77	23.5	1.183	-0.06	2.220	**2.626**
	LTE Band 2	20M	QPSK	1	0	Back	0	19100	1900	22.85	23.5	1.161	-0.15	2.180	2.532
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	19100	1900	22.85	23.5	1.161	0.16	2.250	2.613
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18900	1880	22.98	23.5	1.127	0.07	2.290	2.581
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18700	1860	22.77	23.5	1.183	0.09	2.110	2.496
	LTE Band 7	20M	QPSK	1	0	Back	0	21350	2560	21.08	21.5	1.102	0.1	2.300	2.534
	LTE Band 7	20M	QPSK	1	0	Back	0	20850	2510	21.02	21.5	1.117	0.04	2.200	2.457
	LTE Band 7	20M	QPSK	1	0	Back	0	21100	2535	21.28	21.5	1.052	0.02	2.280	2.398
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	21100	2535	21.28	21.5	1.052	0.05	3.120	3.282
	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	20850	2510	21.02	21.5	1.117	0.01	2.770	3.094
#29	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	21350	2560	21.08	21.5	1.102	0.02	3.430	**3.778**

15.4 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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	1	251	848.8	28.36	29	1.159	-0.06	0.500	0.579
#30	GSM850	GPRS (4 Tx slots)	Back	1	251	848.8	28.36	29	1.159	0.08	0.622	**0.721**
	GSM850	GPRS (4 Tx slots)	Back	1	128	824.2	28.03	29	1.250	0.09	0.551	0.689
	GSM850	GPRS (4 Tx slots)	Back	1	189	836.4	28.22	29	1.197	0.04	0.498	0.596
	GSM1900	GPRS (4 Tx slots)	Front	1	512	1850.2	24.91	25.5	1.146	-0.03	0.625	0.716
	GSM1900	GPRS (4 Tx slots)	Back	1	512	1850.2	24.91	25.5	1.146	-0.06	0.758	0.868
	GSM1900	GPRS (4 Tx slots)	Back	1	661	1880	24.8	25.5	1.175	-0.1	0.736	0.865
#31	GSM1900	GPRS (4 Tx slots)	Back	1	810	1909.8	24.7	25.5	1.202	-0.05	0.804	**0.967**

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	1	4233	846.6	23.76	24	1.057	-0.0036	0.313	0.331
	WCDMA Band V	RMC12.2Kbps	Back	1	4233	846.6	23.76	24	1.057	0.0073	0.375	0.396
#32	WCDMA Band V	RMC12.2Kbps	Back	1	4132	826.4	23.68	24	1.076	-0.0085	0.469	**0.505**
	WCDMA Band V	RMC12.2Kbps	Back	1	4182	836.4	23.69	24	1.074	0.0015	0.458	0.492
	WCDMA Band IV	RMC12.2Kbps	Front	1	1312	1712.4	23.13	23.5	1.089	-0.02	0.708	0.771
	WCDMA Band IV	RMC12.2Kbps	Back	1	1312	1712.4	23.13	23.5	1.089	-0.08	0.716	0.780
	WCDMA Band IV	RMC12.2Kbps	Back	1	1413	1732.6	23.06	23.5	1.107	-0.13	0.754	0.834
#33	WCDMA Band IV	RMC12.2Kbps	Back	1	1513	1752.6	23.07	23.5	1.104	-0.12	0.803	**0.887**
	WCDMA Band II	RMC12.2Kbps	Front	1	9538	1907.6	23.19	23.5	1.074	0.03	1.060	1.138
	WCDMA Band II	RMC12.2Kbps	Front	1	9262	1852.4	23.11	23.5	1.094	-0.02	0.873	0.955
	WCDMA Band II	RMC12.2Kbps	Front	1	9400	1880	23.14	23.5	1.086	0.03	0.933	1.014
#34	WCDMA Band II	RMC12.2Kbps	Back	1	9538	1907.6	23.19	23.5	1.074	-0.14	1.080	**1.160**
	WCDMA Band II	RMC12.2Kbps	Back	1	9262	1852.4	23.11	23.5	1.094	-0.18	1.030	1.127
	WCDMA Band II	RMC12.2Kbps	Back	1	9400	1880	23.14	23.5	1.086	-0.09	1.060	1.152

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	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	0	Front	1	23095	707.5	23.68	24	1.076	0.024	0.113	0.122
	LTE Band 12	10M	QPSK	25	0	Front	1	23095	707.5	22.61	23	1.094	-0.04	0.089	0.097
	LTE Band 12	10M	QPSK	1	0	Back	1	23095	707.5	23.68	24	1.076	-0.06	0.17	0.183
	LTE Band 12	10M	QPSK	25	0	Back	1	23095	707.5	22.61	23	1.094	0.02	0.142	0.155
	LTE Band 12	10M	QPSK	1	0	Back	1	23060	704	23.51	24	1.119	-0.12	0.136	0.152
#35	LTE Band 12	10M	QPSK	1	0	Back	1	23130	711	23.57	24	1.104	-0.10	0.168	**0.185**
	LTE Band 17	10M	QPSK	1	0	Front	1	23790	710	23.6	24	1.096	0.02	0.123	0.135
	LTE Band 17	10M	QPSK	25	0	Front	1	23790	710	22.62	23	1.091	0.06	0.102	0.111
#36	LTE Band 17	10M	QPSK	1	0	Back	1	23790	710	23.6	24	1.096	-0.05	0.190	**0.208**
	LTE Band 17	10M	QPSK	25	0	Back	1	23790	710	22.62	23	1.091	0.06	0.152	0.166
	LTE Band 17	10M	QPSK	1	0	Back	1	23780	709	23.39	24	1.151	0.00052	0.135	0.155
	LTE Band 17	10M	QPSK	1	0	Back	1	23800	711	23.5	24	1.122	0.06	0.167	0.187
	LTE Band 5	10M	QPSK	1	24	Front	1	20525	836.5	23.74	24	1.062	0.1	0.359	0.381
	LTE Band 5	10M	QPSK	25	0	Front	1	20525	836.5	22.6	23	1.096	-0.0085	0.287	0.315
	LTE Band 5	10M	QPSK	1	24	Back	1	20525	836.5	23.74	24	1.062	-0.04	0.406	0.431
	LTE Band 5	10M	QPSK	25	0	Back	1	20525	836.5	22.6	23	1.096	0.01	0.332	0.364
#37	LTE Band 5	10M	QPSK	1	24	Back	1	20450	829	23.68	24	1.076	0.031	0.485	**0.522**
	LTE Band 5	10M	QPSK	1	24	Back	1	20600	844	23.47	24	1.130	-0.18	0.442	0.499
	LTE Band 4	20M	QPSK	1	0	Front	1	20175	1732.5	23.65	24	1.084	-0.19	0.834	0.904
	LTE Band 4	20M	QPSK	1	0	Front	1	20050	1720	23.36	24	1.159	-0.14	0.751	0.870
#38	LTE Band 4	20M	QPSK	1	0	Front	1	20300	1745	23.29	24	1.178	-0.09	0.872	**1.027**
	LTE Band 4	20M	QPSK	50	0	Front	1	20175	1732.5	22.42	23	1.143	-0.04	0.677	0.774
	LTE Band 4	20M	QPSK	100	0	Front	1	20175	1732.5	22.38	23	1.153	-0.01	0.694	0.800
	LTE Band 4	20M	QPSK	1	0	Back	1	20175	1732.5	23.65	24	1.084	-0.04	0.885	0.959
	LTE Band 4	20M	QPSK	1	0	Back	1	20050	1720	23.36	24	1.159	0.15	0.775	0.898
	LTE Band 4	20M	QPSK	1	0	Back	1	20300	1745	23.29	24	1.178	-0.0062	0.852	1.003
	LTE Band 4	20M	QPSK	50	0	Back	1	20175	1732.5	22.42	23	1.143	-0.19	0.626	0.715
	LTE Band 4	20M	QPSK	100	0	Back	1	20175	1732.5	22.38	23	1.153	-0.16	0.641	0.739

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Headset	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 2	20M	QPSK	1	0	Front	1	-	18900	1880	22.98	23.5	1.127	0.02	0.964	1.087
	LTE Band 2	20M	QPSK	1	0	Front	1	-	18700	1860	22.77	23.5	1.183	-0.07	0.960	1.136
	LTE Band 2	20M	QPSK	1	0	Front	1	-	19100	1900	22.85	23.5	1.161	0.01	0.928	1.078
	LTE Band 2	20M	QPSK	50	0	Front	1	-	18900	1880	20.84	22.5	1.466	0.05	0.583	0.854
	LTE Band 2	20M	QPSK	50	0	Front	1	-	18700	1860	20.77	22.5	1.489	0.0039	0.600	0.894
	LTE Band 2	20M	QPSK	50	0	Front	1	-	19100	1900	20.74	22.5	1.500	-0.05	0.597	0.895
	LTE Band 2	20M	QPSK	100	0	Front	1	-	18900	1880	20.81	22.5	1.476	-0.07	0.577	0.851
	LTE Band 2	20M	QPSK	1	0	Back	1	-	18900	1880	22.98	23.5	1.127	-0.13	1.170	1.319
	LTE Band 2	20M	QPSK	1	0	Back	1	-	18700	1860	22.77	23.5	1.183	-0.06	1.100	1.301
	LTE Band 2	20M	QPSK	1	0	Back	1	-	19100	1900	22.85	23.5	1.161	-0.07	1.130	1.312
	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 1	18900	1880	22.98	23.5	1.127	-0.04	1.120	1.262
	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 1	18700	1860	22.77	23.5	1.183	-0.14	1.060	1.254
#39	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 1	19100	1900	22.85	23.5	1.161	-0.13	1.160	**1.347**
	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 2	18900	1880	22.98	23.5	1.127	0.03	1.150	1.296
	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 2	18700	1860	22.77	23.5	1.183	-0.024	1.130	1.337
	LTE Band 2	20M	QPSK	1	0	Back	1	Headset 2	19100	1900	22.85	23.5	1.161	-0.19	1.150	1.336
	LTE Band 2	20M	QPSK	50	0	Back	1	-	18900	1880	20.84	22.5	1.466	-0.1	0.713	1.045
	LTE Band 2	20M	QPSK	50	0	Back	1	-	18700	1860	20.77	22.5	1.489	-0.13	0.677	1.008
	LTE Band 2	20M	QPSK	50	0	Back	1	-	19100	1900	20.74	22.5	1.500	-0.02	0.699	1.048
	LTE Band 2	20M	QPSK	100	0	Back	1	-	18900	1880	20.81	22.5	1.476	-0.1	0.692	1.021
	LTE Band 7	20M	QPSK	1	0	Front	1	-	21100	2535	21.28	21.5	1.052	0.11	0.509	0.535
	LTE Band 7	20M	QPSK	50	0	Front	1	-	21100	2535	20.1	20.5	1.096	-0.1	0.392	0.430
	LTE Band 7	20M	QPSK	1	0	Back	1	-	21100	2535	21.28	21.5	1.052	-0.01	1.050	1.105
	LTE Band 7	20M	QPSK	1	0	Back	1	-	20850	2510	21.02	21.5	1.117	0.07	0.895	1.000
#40	LTE Band 7	20M	QPSK	1	0	Back	1	-	21350	2560	21.08	21.5	1.102	0.10	1.270	**1.399**
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 1	21350	2560	21.08	21.5	1.102	0.06	1.260	1.388
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 1	20850	2510	21.02	21.5	1.117	0.09	0.928	1.036
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 1	21100	2535	21.28	21.5	1.052	-0.09	1.090	1.147
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 2	21350	2560	21.08	21.5	1.102	-0.035	1.170	1.289
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 2	20850	2510	21.02	21.5	1.117	-0.074	0.886	0.990
	LTE Band 7	20M	QPSK	1	0	Back	1	Headset 2	21100	2535	21.28	21.5	1.052	-0.041	0.994	1.046
	LTE Band 7	20M	QPSK	50	0	Back	1	-	21100	2535	20.1	20.5	1.096	-0.03	0.845	0.927
	LTE Band 7	20M	QPSK	50	0	Back	1	-	20850	2510	20	20.5	1.122	0.06	0.785	0.881
	LTE Band 7	20M	QPSK	50	0	Back	1	-	21350	2560	20.08	20.5	1.102	0.01	1.060	1.168
	LTE Band 7	20M	QPSK	100	0	Back	1	-	21100	2535	20.02	20.5	1.117	0.18	0.896	1.001

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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)
	WLAN 2.4GHz	802.11b_1Mbps	Front	1	11	2462	18.14	18.5	1.086	97.64	1.024	-0.027	0.214	0.238
#41	WLAN 2.4GHz	802.11b_1Mbps	Back	1	11	2462	18.14	18.5	1.086	97.64	1.024	0.039	0.457	**0.508**
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	1	2412	17.3	18.5	1.318	97.64	1.024	0.1	0.223	0.301
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	6	2437	17.44	18.5	1.276	97.64	1.024	0.18	0.370	0.484
	WLAN 5.2GHz	802.11a_6Mbps	Front	1	48	5240	13.52	15	1.406	87.26	1.146	-0.064	0.026	0.042
#42	WLAN 5.2GHz	802.11a_6Mbps	Back	1	48	5240	13.52	15	1.406	87.26	1.146	-0.042	0.040	**0.064**
	WLAN 5.2GHz	802.11a_6Mbps	Back	1	36	5180	13.15	15	1.531	87.26	1.146	0.08	0.035	0.061
	WLAN 5.8GHz	802.11a_6Mbps	Front	1	157	5785	13.35	14.3	1.245	87.26	1.146	0.1	0.089	0.127
#43	WLAN 5.8GHz	802.11a_6Mbps	Back	1	157	5785	13.35	14.3	1.245	87.26	1.146	-0.03	0.109	**0.155**
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	149	5745	13.05	14.3	1.334	87.26	1.146	0.17	0.096	0.147
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	165	5825	12.8	14.3	1.413	87.26	1.146	-0.16	0.081	0.131

15.5 Repeated SAR Measurement

<1g Repeated SAR>

No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	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	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1413	1732.6	16.85	17.5	1.161	-	-	-0.02	0.922	1	1.071
2nd	WCDMA Band IV	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1413	1732.6	16.85	17.5	1.161	-	-	-0.05	0.916	1.007	1.064
1st	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	Receiver 1	-	6	2437	17.44	18.5	1.276	97.64	1.024	0.1	1.060	1	1.385
2nd	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	Receiver 1	-	6	2437	17.44	18.5	1.276	97.64	1.024	-0.02	1.050	1.010	1.372
1st	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	Receiver 1	-	157	5785	13.35	14.3	1.245	87.26	1.146	0.024	0.880	1	1.255
2nd	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	Receiver 1	-	157	5785	13.35	14.3	1.245	87.26	1.146	0.013	0.878	1.002	1.252

No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	-	23130	711	23.57	24	1.104	0.04	0.901	1	0.995
2nd	LTE Band 12	10M	QPSK	1	0	Left Cheek	Receiver 2	OFF	-	23130	711	23.57	24	1.104	0.05	0.898	1.003	0.991
1st	LTE Band 5	10M	QPSK	50	0	Left Cheek	Receiver 2	ON	-	20525	836.5	22.02	23	1.253	-0.0067	0.953	1	1.194
2nd	LTE Band 5	10M	QPSK	50	0	Left Cheek	Receiver 2	ON	-	20525	836.5	22.02	23	1.253	-0.0025	0.951	1.002	1.192
1st	LTE Band 2	20M	QPSK	1	0	Back	-	-	1	18900	1880	22.98	23.5	1.127	-0.13	1.170	1	1.319
2nd	LTE Band 2	20M	QPSK	1	0	Back	-	-	1	18900	1880	22.98	23.5	1.127	-0.01	1.070	1.093	1.206
1st	LTE Band 7	20M	QPSK	1	0	Bottom Side	-	-	1	21350	2560	21.08	21.5	1.102	0.03	1.290	1	1.421
2nd	LTE Band 7	20M	QPSK	1	0	Bottom Side	-	-	1	21350	2560	21.08	21.5	1.102	0.11	1.270	1.016	1.399

<10g Repeated SAR>

No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18900	1880	22.98	23.5	1.127	0.07	2.290	1	2.581
2nd	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18900	1880	22.98	23.5	1.127	0.1	2.250	1.018	2.536
1st	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	21350	2560	21.08	21.5	1.102	0.02	3.430	1	3.778
2nd	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	21350	2560	21.08	21.5	1.102	0.02	3.380	1.015	3.723

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. Spot Check SAR Test Results

16.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	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)
1-1	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	251	848.8	28.36	29	1.159	0.03	0.357	**0.414**

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	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)
2-1	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	6	2437	17.44	18.5	1.276	97.64	1.024	0.09	1.030	**1.346**

16.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	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)
3-1	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	21350	2560	21.08	21.5	1.102	0.09	0.976	**1.075**

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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)
4-1	WLAN 2.4GHz	802.11b_1Mbps	Back	1	11	2462	18.14	18.5	1.086	97.64	1.024	0.017	0.229	**0.255**

16.3 Body-Worn SAR

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Headset	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)
5-1	LTE Band 7	20M	QPSK	1	0	Back	1	-	21350	2560	21.08	21.5	1.102	0.04	1.080	**1.190**

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	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)
4-1	WLAN 2.4GHz	802.11b_1Mbps	Back	1	11	2462	18.14	18.5	1.086	97.64	1.024	0.017	0.229	**0.255**

16.4 Extremity SAR

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
6-1	LTE Band 7	20M	QPSK	1	0	Bottom Side	0	21350	2560	21.08	21.5	1.102	0.08	2.84	**3.128**

17. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Note
1.	GSM(voice) + WLAN 2.4GHz(data)	Yes	Yes		
2.	WCDMA(voice) + WLAN 2.4GHz(data)	Yes	Yes		
3.	LTE(voice) + WLAN 2.4GHz(data)	Yes	Yes		
4.	GSM(voice) + WLAN 5GHz(data)	Yes	Yes		
5.	WCDMA(voice) + WLAN 5GHz(data)	Yes	Yes		
6.	LTE(voice) + WLAN 5GHz(data)	Yes	Yes		
7.	GSM(voice) + Bluetooth(data)	Yes	Yes		
8.	WCDMA((voice) + Bluetooth(data)	Yes	Yes		
9.	LTE(voice) + Bluetooth(data)	Yes	Yes		
10.	GPRS/EDGE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
11.	WCDMA(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
12.	LTE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
13.	GPRS/EDGE(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
14.	WCDMA(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
15.	LTE(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
16.	GPRS/EDGE(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
17.	WCDMA(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
18.	LTE(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
19.	GPRS/EDGE(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
20.	WCDMA(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
21.	LTE(Data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering

General Note:

1. This device supported VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP) and LTE Supports VoLTE operation.
2. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).
3. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
5. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
6. The Scaled SAR summation is calculated based on the same configuration and test position.
7. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*), and the peak separation distance is determined from the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the 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.
8. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v06 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

Bluetooth Max Power	Exposure Position	Head	Hotspot	Body worn
	Test separation (mm)	0	10	10
6.0 dBm	Estimated SAR (W/kg)	0.168	0.084	0.084

17.1 Head Exposure Conditions

<Receiver1 configuration>:

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.455	0.325	0.78		
		Right Tilted	0.234	0.235	0.47		
		Left Cheek	0.481	1.385	**1.87**	**0.04**	**#1**
		Left Tilted	0.279	0.545	0.82		
	GSM1900	Right Cheek	0.239	0.325	0.56		
		Right Tilted	0.127	0.235	0.36		
		Left Cheek	0.270	1.385	**1.66**	**0.03**	**#2**
		Left Tilted	0.197	0.545	0.74		
WCDMA	Band V	Right Cheek	0.331	0.325	0.66		
		Right Tilted	0.148	0.235	0.38		
		Left Cheek	0.192	1.385	**1.58**		
		Left Tilted	0.175	0.545	0.72		
	Band IV	Right Cheek	0.278	0.325	0.60		
		Right Tilted	0.157	0.235	0.39		
		Left Cheek	0.356	1.385	**1.74**	**0.03**	**#3**
		Left Tilted	0.232	0.545	0.78		
	Band II	Right Cheek	0.251	0.325	0.58		
		Right Tilted	0.126	0.235	0.36		
		Left Cheek	0.304	1.385	**1.69**	**0.03**	**#4**
		Left Tilted	0.183	0.545	0.73		
LTE	Band 12	Right Cheek	0.067	0.325	0.39		
		Right Tilted	0.040	0.235	0.28		
		Left Cheek	0.081	1.385	1.47		
		Left Tilted	0.050	0.545	0.60		
	Band 17	Right Cheek	0.079	0.325	0.40		
		Right Tilted	0.046	0.235	0.28		
		Left Cheek	0.089	1.385	1.47		
		Left Tilted	0.057	0.545	0.60		
	Band 5	Right Cheek	0.332	0.325	0.66		
		Right Tilted	0.168	0.235	0.40		
		Left Cheek	0.285	1.385	**1.67**	**0.04**	**#5**
		Left Tilted	0.186	0.545	0.73		
	Band 4	Right Cheek	0.387	0.325	0.71		
		Right Tilted	0.188	0.235	0.42		
		Left Cheek	0.339	1.385	**1.72**	**0.03**	**#6**
		Left Tilted	0.292	0.545	0.84		
	Band 2	Right Cheek	0.326	0.325	0.65		
		Right Tilted	0.159	0.235	0.39		
		Left Cheek	0.367	1.385	**1.75**	**0.03**	**#7**
		Left Tilted	0.274	0.545	0.82		
	Band 7	Right Cheek	0.014	0.325	0.34		
		Right Tilted	0.007	0.235	0.24		
		Left Cheek	0.040	1.385	1.43		
		Left Tilted	0.007	0.545	0.55		

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.455	0.086	0.54		
		Right Tilted	0.234	0.126	0.36		
		Left Cheek	0.481	1.255	**1.74**	**0.04**	**#8**
		Left Tilted	0.279	0.481	0.76		
	GSM1900	Right Cheek	0.239	0.086	0.33		
		Right Tilted	0.127	0.126	0.25		
		Left Cheek	0.270	1.255	1.53		
		Left Tilted	0.197	0.481	0.68		
WCDMA	Band V	Right Cheek	0.331	0.086	0.42		
		Right Tilted	0.148	0.126	0.27		
		Left Cheek	0.192	1.255	1.45		
		Left Tilted	0.175	0.481	0.66		
	Band IV	Right Cheek	0.278	0.086	0.36		
		Right Tilted	0.157	0.126	0.28		
		Left Cheek	0.356	1.255	**1.61**	**0.02**	**#9**
		Left Tilted	0.232	0.481	0.71		
	Band II	Right Cheek	0.251	0.086	0.34		
		Right Tilted	0.126	0.126	0.25		
		Left Cheek	0.304	1.255	1.56		
		Left Tilted	0.183	0.481	0.66		
LTE	Band 12	Right Cheek	0.067	0.086	0.15		
		Right Tilted	0.040	0.126	0.17		
		Left Cheek	0.081	1.255	1.34		
		Left Tilted	0.050	0.481	0.53		
	Band 17	Right Cheek	0.079	0.086	0.17		
		Right Tilted	0.046	0.126	0.17		
		Left Cheek	0.089	1.255	1.34		
		Left Tilted	0.057	0.481	0.54		
	Band 5	Right Cheek	0.332	0.086	0.42		
		Right Tilted	0.168	0.126	0.29		
		Left Cheek	0.285	1.255	1.54		
		Left Tilted	0.186	0.481	0.67		
	Band 4	Right Cheek	0.387	0.086	0.47		
		Right Tilted	0.188	0.126	0.31		
		Left Cheek	0.339	1.255	**1.59**		
		Left Tilted	0.292	0.481	0.77		
	Band 2	Right Cheek	0.326	0.086	0.41		
		Right Tilted	0.159	0.126	0.29		
		Left Cheek	0.367	1.255	**1.62**	**0.03**	**#10**
		Left Tilted	0.274	0.481	0.76		
	Band 7	Right Cheek	0.014	0.086	0.10		
		Right Tilted	0.007	0.126	0.13		
		Left Cheek	0.040	1.255	1.30		
		Left Tilted	0.007	0.481	0.49		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Right Cheek	0.455	0.168	0.62		
		Right Tilted	0.234	0.168	0.40		
		Left Cheek	0.481	0.168	0.65		
		Left Tilted	0.279	0.168	0.45		
	GSM1900	Right Cheek	0.239	0.168	0.41		
		Right Tilted	0.127	0.168	0.30		
		Left Cheek	0.270	0.168	0.44		
		Left Tilted	0.197	0.168	0.37		
WCDMA	Band V	Right Cheek	0.331	0.168	0.50		
		Right Tilted	0.148	0.168	0.32		
		Left Cheek	0.192	0.168	0.36		
		Left Tilted	0.175	0.168	0.34		
	Band IV	Right Cheek	0.278	0.168	0.45		
		Right Tilted	0.157	0.168	0.33		
		Left Cheek	0.356	0.168	0.52		
		Left Tilted	0.232	0.168	0.40		
	Band II	Right Cheek	0.251	0.168	0.42		
		Right Tilted	0.126	0.168	0.29		
		Left Cheek	0.304	0.168	0.47		
		Left Tilted	0.183	0.168	0.35		
LTE	Band 12	Right Cheek	0.067	0.168	0.24		
		Right Tilted	0.040	0.168	0.21		
		Left Cheek	0.081	0.168	0.25		
		Left Tilted	0.050	0.168	0.22		
	Band 17	Right Cheek	0.079	0.168	0.25		
		Right Tilted	0.046	0.168	0.21		
		Left Cheek	0.089	0.168	0.26		
		Left Tilted	0.057	0.168	0.23		
	Band 5	Right Cheek	0.332	0.168	0.50		
		Right Tilted	0.168	0.168	0.34		
		Left Cheek	0.285	0.168	0.45		
		Left Tilted	0.186	0.168	0.35		
	Band 4	Right Cheek	0.387	0.168	0.56		
		Right Tilted	0.188	0.168	0.36		
		Left Cheek	0.339	0.168	0.51		
		Left Tilted	0.292	0.168	0.46		
	Band 2	Right Cheek	0.326	0.168	0.49		
		Right Tilted	0.159	0.168	0.33		
		Left Cheek	0.367	0.168	0.54		
		Left Tilted	0.274	0.168	0.44		
	Band 7	Right Cheek	0.014	0.168	0.18		
		Right Tilted	0.007	0.168	0.18		
		Left Cheek	0.040	0.168	0.21		
		Left Tilted	0.007	0.168	0.18		

<Receiver2 configuration>:

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.658	0.018	0.68		
		Right Tilted	0.507	0.017	0.52		
		Left Cheek	0.971	0.050	1.02		
		Left Tilted	0.753	0.009	0.76		
	GSM1900	Right Cheek	0.528	0.018	0.55		
		Right Tilted	0.553	0.017	0.57		
		Left Cheek	0.995	0.050	1.05		
		Left Tilted	1.103	0.009	1.11		
WCDMA	Band V	Right Cheek	0.569	0.018	0.59		
		Right Tilted	0.614	0.017	0.63		
		Left Cheek	0.774	0.050	0.82		
		Left Tilted	0.984	0.009	0.99		
	Band IV	Right Cheek	0.592	0.018	0.61		
		Right Tilted	0.516	0.017	0.53		
		Left Cheek	1.071	0.050	1.12		
		Left Tilted	0.755	0.009	0.76		
	Band II	Right Cheek	0.526	0.018	0.54		
		Right Tilted	0.583	0.017	0.60		
		Left Cheek	1.316	0.050	1.37		
		Left Tilted	1.217	0.009	1.23		
LTE	Band 12	Right Cheek	0.404	0.018	0.42		
		Right Tilted	0.372	0.017	0.39		
		Left Cheek	0.995	0.050	1.05		
		Left Tilted	0.634	0.009	0.64		
	Band 17	Right Cheek	0.443	0.018	0.46		
		Right Tilted	0.446	0.017	0.46		
		Left Cheek	1.024	0.050	1.07		
		Left Tilted	0.708	0.009	0.72		
	Band 5	Right Cheek	1.101	0.018	1.12		
		Right Tilted	0.721	0.017	0.74		
		Left Cheek	1.194	0.050	1.24		
		Left Tilted	1.046	0.009	1.06		
	Band 4	Right Cheek	0.563	0.018	0.58		
		Right Tilted	0.527	0.017	0.54		
		Left Cheek	1.019	0.050	1.07		
		Left Tilted	0.956	0.009	0.97		
	Band 2	Right Cheek	0.601	0.018	0.62		
		Right Tilted	0.588	0.017	0.61		
		Left Cheek	1.121	0.050	1.17		
		Left Tilted	1.009	0.009	1.02		
	Band 7	Right Cheek	0.573	0.018	0.59		
		Right Tilted	0.577	0.017	0.59		
		Left Cheek	1.276	0.050	1.33		
		Left Tilted	1.309	0.009	1.32		

WWAN Band		Exposure Position	WWAN PCE	WLAN NII	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Max. WLAN SAR (W/kg)			
GSM	GSM850	Right Cheek	0.658	< 0.001	0.66		
		Right Tilted	0.507	0.001	0.51		
		Left Cheek	0.971	< 0.001	0.97		
		Left Tilted	0.753	< 0.001	0.75		
	GSM1900	Right Cheek	0.528	< 0.001	0.53		
		Right Tilted	0.553	0.001	0.55		
		Left Cheek	0.995	< 0.001	1.00		
		Left Tilted	1.103	< 0.001	1.10		
WCDMA	Band V	Right Cheek	0.569	< 0.001	0.57		
		Right Tilted	0.614	0.001	0.62		
		Left Cheek	0.774	< 0.001	0.77		
		Left Tilted	0.984	< 0.001	0.98		
	Band IV	Right Cheek	0.592	< 0.001	0.59		
		Right Tilted	0.516	0.001	0.52		
		Left Cheek	1.071	< 0.001	1.07		
		Left Tilted	0.755	< 0.001	0.76		
	Band II	Right Cheek	0.526	< 0.001	0.53		
		Right Tilted	0.583	0.001	0.58		
		Left Cheek	1.316	< 0.001	1.32		
		Left Tilted	1.217	< 0.001	1.22		
LTE	Band 12	Right Cheek	0.404	< 0.001	0.40		
		Right Tilted	0.372	0.001	0.37		
		Left Cheek	0.995	< 0.001	1.00		
		Left Tilted	0.634	< 0.001	0.63		
	Band 17	Right Cheek	0.443	< 0.001	0.44		
		Right Tilted	0.446	0.001	0.45		
		Left Cheek	1.024	< 0.001	1.02		
		Left Tilted	0.708	< 0.001	0.71		
	Band 5	Right Cheek	1.101	< 0.001	1.10		
		Right Tilted	0.721	0.001	0.72		
		Left Cheek	1.194	< 0.001	1.19		
		Left Tilted	1.046	< 0.001	1.05		
	Band 4	Right Cheek	0.563	< 0.001	0.56		
		Right Tilted	0.527	0.001	0.53		
		Left Cheek	1.019	< 0.001	1.02		
		Left Tilted	0.956	< 0.001	0.96		
	Band 2	Right Cheek	0.601	< 0.001	0.60		
		Right Tilted	0.588	0.001	0.59		
		Left Cheek	1.121	< 0.001	1.12		
		Left Tilted	1.009	< 0.001	1.01		
	Band 7	Right Cheek	0.573	< 0.001	0.57		
		Right Tilted	0.577	0.001	0.58		
		Left Cheek	1.276	< 0.001	1.28		
		Left Tilted	1.309	< 0.001	1.31		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Right Cheek	0.658	0.168	0.83		
		Right Tilted	0.507	0.168	0.68		
		Left Cheek	0.971	0.168	1.14		
		Left Tilted	0.753	0.168	0.92		
	GSM1900	Right Cheek	0.528	0.168	0.70		
		Right Tilted	0.553	0.168	0.72		
		Left Cheek	0.995	0.168	1.16		
		Left Tilted	1.103	0.168	1.27		
WCDMA	Band V	Right Cheek	0.569	0.168	0.74		
		Right Tilted	0.614	0.168	0.78		
		Left Cheek	0.774	0.168	0.94		
		Left Tilted	0.984	0.168	1.15		
	Band IV	Right Cheek	0.592	0.168	0.76		
		Right Tilted	0.516	0.168	0.68		
		Left Cheek	1.071	0.168	1.24		
		Left Tilted	0.755	0.168	0.92		
	Band II	Right Cheek	0.526	0.168	0.69		
		Right Tilted	0.583	0.168	0.75		
		Left Cheek	1.316	0.168	1.48		
		Left Tilted	1.217	0.168	1.39		
LTE	Band 12	Right Cheek	0.404	0.168	0.57		
		Right Tilted	0.372	0.168	0.54		
		Left Cheek	0.995	0.168	1.16		
		Left Tilted	0.634	0.168	0.80		
	Band 17	Right Cheek	0.443	0.168	0.61		
		Right Tilted	0.446	0.168	0.61		
		Left Cheek	1.024	0.168	1.19		
		Left Tilted	0.708	0.168	0.88		
	Band 5	Right Cheek	1.101	0.168	1.27		
		Right Tilted	0.721	0.168	0.89		
		Left Cheek	1.194	0.168	1.36		
		Left Tilted	1.046	0.168	1.21		
	Band 4	Right Cheek	0.563	0.168	0.73		
		Right Tilted	0.527	0.168	0.70		
		Left Cheek	1.019	0.168	1.19		
		Left Tilted	0.956	0.168	1.12		
	Band 2	Right Cheek	0.601	0.168	0.77		
		Right Tilted	0.588	0.168	0.76		
		Left Cheek	1.121	0.168	1.29		
		Left Tilted	1.009	0.168	1.18		
	Band 7	Right Cheek	0.573	0.168	0.74		
		Right Tilted	0.577	0.168	0.75		
		Left Cheek	1.276	0.168	1.44		
		Left Tilted	1.309	0.168	1.48		

17.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.579	0.238	0.82		
		Back	0.721	0.508	1.23		
		Left Side	0.606		0.61		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.353		0.35		
	GSM1900	Front	0.716	0.238	0.95		
		Back	0.967	0.508	1.48		
		Left Side	0.286		0.29		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.987		0.99		
WCDMA	Band V	Front	0.331	0.238	0.57		
		Back	0.505	0.508	1.01		
		Left Side	0.391		0.39		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.198		0.20		
	Band IV	Front	0.771	0.238	1.01		
		Back	0.887	0.508	1.40		
		Left Side	0.286		0.29		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.649		0.65		
	Band II	Front	1.138	0.238	1.38		
		Back	1.160	0.508	**1.67**	**0.02**	**#11**
		Left Side	0.339		0.34		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	1.181		1.18		

LTE	Band 12	Front	0.122	0.238	0.36		
		Back	0.185	0.508	0.69		
		Left Side	0.147		0.15		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.042		0.04		
	Band 17	Front	0.135	0.238	0.37		
		Back	0.208	0.508	0.72		
		Left Side	0.162		0.16		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.044		0.04		
	Band 5	Front	0.381	0.238	0.62		
		Back	0.522	0.508	1.03		
		Left Side	0.417		0.42		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.202		0.20		
	Band 4	Front	1.027	0.238	1.27		
		Back	1.003	0.508	1.51		
		Left Side	0.319		0.32		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	0.902		0.90		
	Band 2	Front	1.136	0.238	1.37		
		Back	1.319	0.508	**1.83**	**0.02**	**#12**
		Left Side	0.344		0.34		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	1.208		1.21		
	Band 7	Front	0.535	0.238	0.77		
		Back	1.399	0.508	**1.91**	**0.02**	**#13**
		Left Side	0.074		0.07		
		Right Side		0.190	0.19		
		Top Side		0.142	0.14		
		Bottom Side	1.421		1.42		

WWAN Band		Exposure Position	WWAN PCE	WLAN NII	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Max. WLAN SAR (W/kg)			
GSM	GSM850	Front	0.579	0.127	0.71		
		Back	0.721	0.155	0.88		
		Left Side	0.606		0.61		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.353		0.35		
	GSM1900	Front	0.716	0.127	0.84		
		Back	0.967	0.155	1.12		
		Left Side	0.286		0.29		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.987		0.99		
WCDMA	Band V	Front	0.331	0.127	0.46		
		Back	0.505	0.155	0.66		
		Left Side	0.391		0.39		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.198		0.20		
	Band IV	Front	0.771	0.127	0.90		
		Back	0.887	0.155	1.04		
		Left Side	0.286		0.29		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.649		0.65		
	Band II	Front	1.138	0.127	1.27		
		Back	1.160	0.155	1.32		
		Left Side	0.339		0.34		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	1.181		1.18		

LTE	Band 12	Front	0.122	0.127	0.25		
		Back	0.185	0.155	0.34		
		Left Side	0.147		0.15		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.042		0.04		
	Band 17	Front	0.135	0.127	0.26		
		Back	0.208	0.155	0.36		
		Left Side	0.162		0.16		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.044		0.04		
	Band 5	Front	0.381	0.127	0.51		
		Back	0.522	0.155	0.68		
		Left Side	0.417		0.42		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.202		0.20		
	Band 4	Front	1.027	0.127	1.15		
		Back	1.003	0.155	1.16		
		Left Side	0.319		0.32		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	0.902		0.90		
	Band 2	Front	1.136	0.127	1.26		
		Back	1.319	0.155	1.47		
		Left Side	0.344		0.34		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	1.208		1.21		
	Band 7	Front	0.535	0.127	0.66		
		Back	1.399	0.155	1.55		
		Left Side	0.074		0.07		
		Right Side		0.282	0.28		
		Top Side		0.094	0.09		
		Bottom Side	1.421		1.42		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Front	0.579	0.084	0.66		
		Back	0.721	0.084	0.81		
		Left Side	0.606		0.61		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.353		0.35		
	GSM1900	Front	0.716	0.084	0.80		
		Back	0.967	0.084	1.05		
		Left Side	0.286		0.29		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.987		0.99		
WCDMA	Band V	Front	0.331	0.084	0.42		
		Back	0.505	0.084	0.59		
		Left Side	0.391		0.39		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.198		0.20		
	Band IV	Front	0.771	0.084	0.86		
		Back	0.887	0.084	0.97		
		Left Side	0.286		0.29		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.649		0.65		
	Band II	Front	1.138	0.084	1.22		
		Back	1.160	0.084	1.24		
		Left Side	0.339		0.34		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.181		1.18		

LTE	Band 12	Front	0.122	0.084	0.21		
		Back	0.185	0.084	0.27		
		Left Side	0.147		0.15		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.042		0.04		
	Band 17	Front	0.135	0.084	0.22		
		Back	0.208	0.084	0.29		
		Left Side	0.162		0.16		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.044		0.04		
	Band 5	Front	0.381	0.084	0.47		
		Back	0.522	0.084	0.61		
		Left Side	0.417		0.42		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.202		0.20		
	Band 4	Front	1.027	0.084	1.11		
		Back	1.003	0.084	1.09		
		Left Side	0.319		0.32		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.902		0.90		
	Band 2	Front	1.136	0.084	1.22		
		Back	1.319	0.084	1.40		
		Left Side	0.344		0.34		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.208		1.21		
	Band 7	Front	0.535	0.084	0.62		
		Back	1.399	0.084	1.48		
		Left Side	0.074		0.07		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.421		1.42		

17.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.579	0.238	0.82		
		Back	0.721	0.508	1.23		
	GSM1900	Front	0.716	0.238	0.95		
		Back	0.967	0.508	1.48		
WCDMA	Band V	Front	0.331	0.238	0.57		
		Back	0.505	0.508	1.01		
	Band IV	Front	0.771	0.238	1.01		
		Back	0.887	0.508	1.40		
	Band II	Front	1.138	0.238	1.38		
		Back	1.16	0.508	**1.67**	**0.02**	**#11**
LTE	Band 12	Front	0.122	0.238	0.36		
		Back	0.185	0.508	0.69		
	Band 17	Front	0.135	0.238	0.37		
		Back	0.208	0.508	0.72		
	Band 5	Front	0.381	0.238	0.62		
		Back	0.522	0.508	1.03		
	Band 4	Front	1.027	0.238	1.27		
		Back	1.003	0.508	1.51		
	Band 2	Front	1.136	0.238	1.37		
		Back	1.319	0.508	**1.83**	**0.02**	**#12**
		Back with headset	1.347		1.35		
	Band 7	Front	0.535	0.238	0.77		
		Back	1.399	0.508	**1.91**	**0.02**	**#13**
		Back with headset	1.388		1.39		

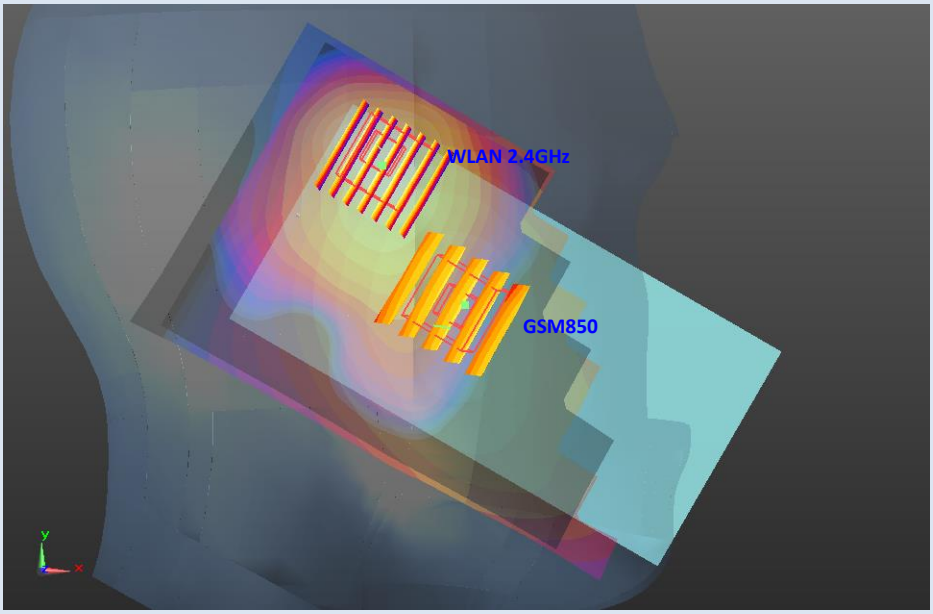
WWAN Band		Exposure Position	WWAN PCE	WLAN NII	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Max. WLAN SAR (W/kg)			
GSM	GSM850	Front	0.579	0.127	0.71		
		Back	0.721	0.155	0.88		
	GSM1900	Front	0.716	0.127	0.84		
		Back	0.967	0.155	1.12		
WCDMA	Band V	Front	0.331	0.127	0.46		
		Back	0.505	0.155	0.66		
	Band IV	Front	0.771	0.127	0.90		
		Back	0.887	0.155	1.04		
	Band II	Front	1.138	0.127	1.27		
		Back	1.16	0.155	1.32		
LTE	Band 12	Front	0.122	0.127	0.25		
		Back	0.185	0.155	0.34		
	Band 17	Front	0.135	0.127	0.26		
		Back	0.208	0.155	0.36		
	Band 5	Front	0.381	0.127	0.51		
		Back	0.522	0.155	0.68		
	Band 4	Front	1.027	0.127	1.15		
		Back	1.003	0.155	1.16		
	Band 2	Front	1.136	0.127	1.26		
		Back	1.319	0.155	1.47		
		Back with headset	1.347		1.35		
	Band 7	Front	0.535	0.127	0.66		
		Back	1.399	0.155	1.55		
		Back with headset	1.388		1.39		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Front	0.579	0.084	0.66		
		Back	0.721	0.084	0.81		
	GSM1900	Front	0.716	0.084	0.80		
		Back	0.967	0.084	1.05		
WCDMA	Band V	Front	0.331	0.084	0.42		
		Back	0.505	0.084	0.59		
	Band IV	Front	0.771	0.084	0.86		
		Back	0.887	0.084	0.97		
	Band II	Front	1.138	0.084	1.22		
		Back	1.16	0.084	1.24		
LTE	Band 12	Front	0.122	0.084	0.21		
		Back	0.185	0.084	0.27		
	Band 17	Front	0.135	0.084	0.22		
		Back	0.208	0.084	0.29		
	Band 5	Front	0.381	0.084	0.47		
		Back	0.522	0.084	0.61		
	Band 4	Front	1.027	0.084	1.11		
		Back	1.003	0.084	1.09		
	Band 2	Front	1.136	0.084	1.22		
		Back	1.319	0.084	1.40		
		Back with headset	1.347		1.35		
	Band 7	Front	0.535	0.084	0.62		
		Back	1.399	0.084	1.48		
		Back with headset	1.388		1.39		

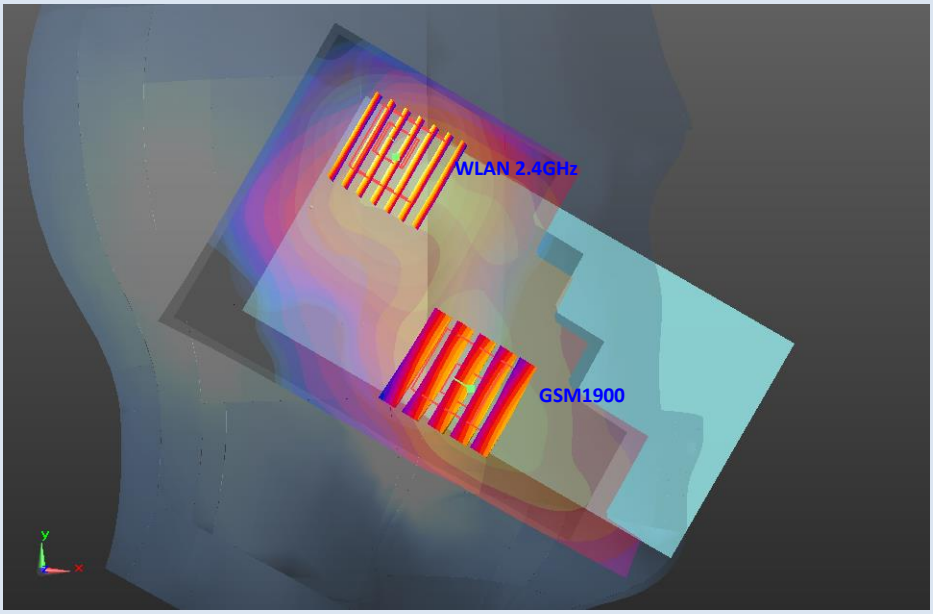
17.4 SPLSR Evaluation and Analysis

General Note:
SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

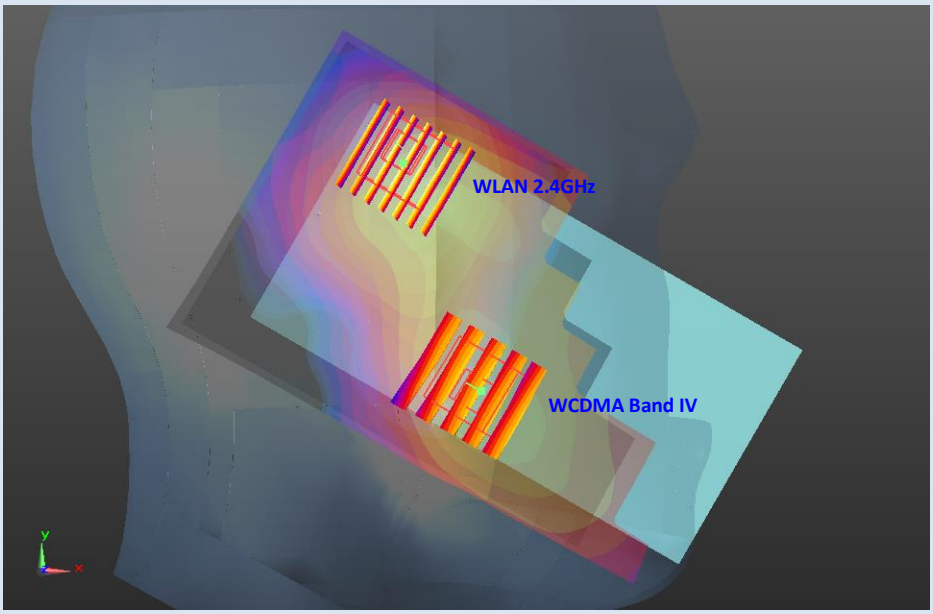
Case No #1 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Left Cheek	GSM850	0.481	0	0.0611	0.275	-0.174	60.46	1.87	0.04	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



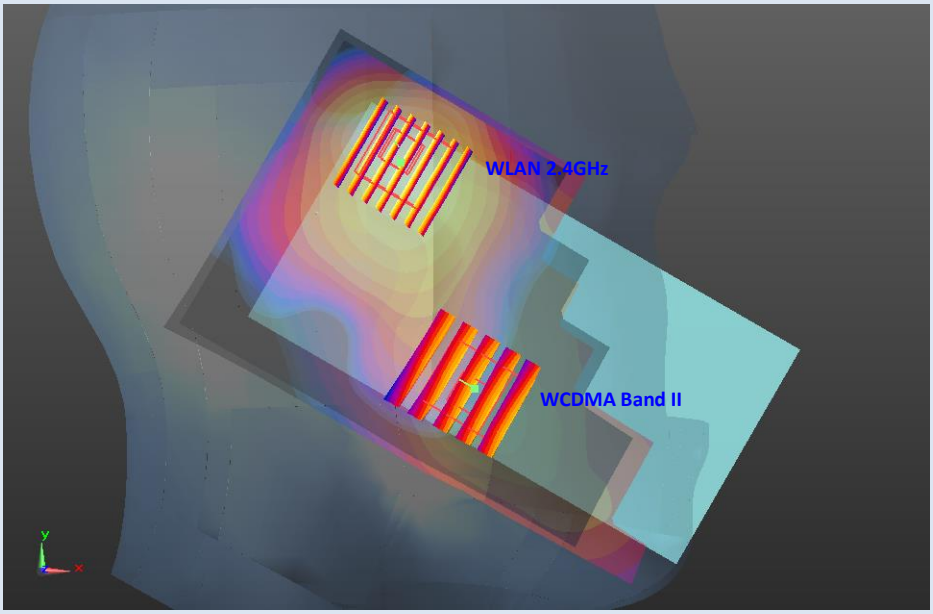
Case No #2 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Left Cheek	GSM1900	0.270	0	0.0631	0.253	-0.172	81.87	1.66	0.03	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



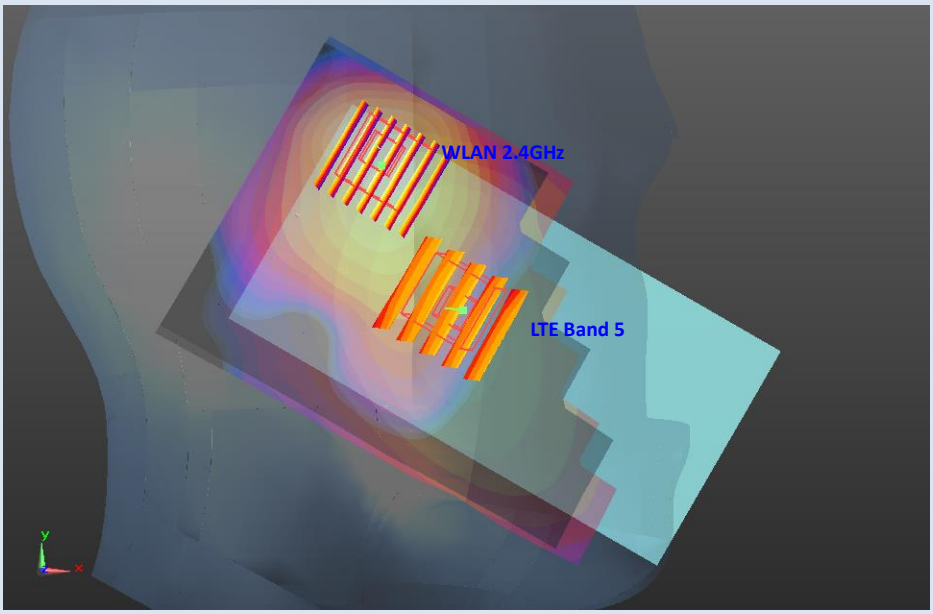
Case No #3 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band IV	0.356	0	0.0639	0.255	-0.172	80.22	1.74	0.03	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



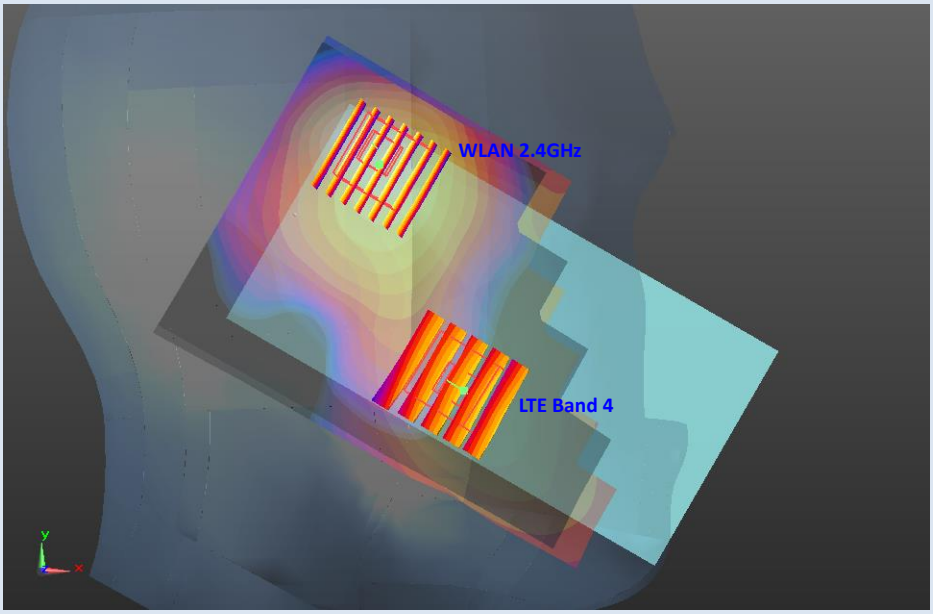
Case No #4 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band II	0.304	0	0.0627	0.255	-0.172	79.85	1.69	0.03	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



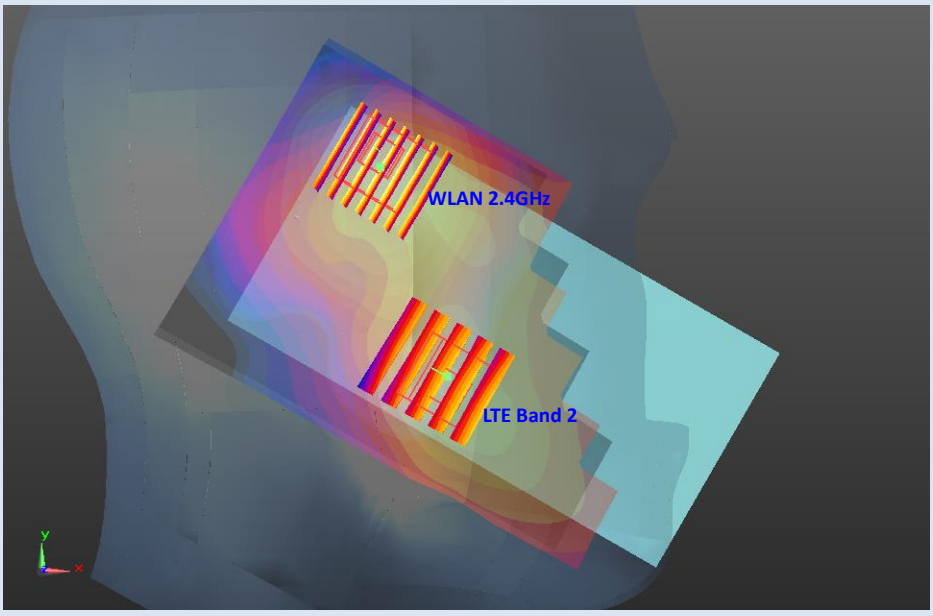
Case No #5 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 5	0.285	0	0.0648	0.28	-0.174	57.47	1.67	0.04	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



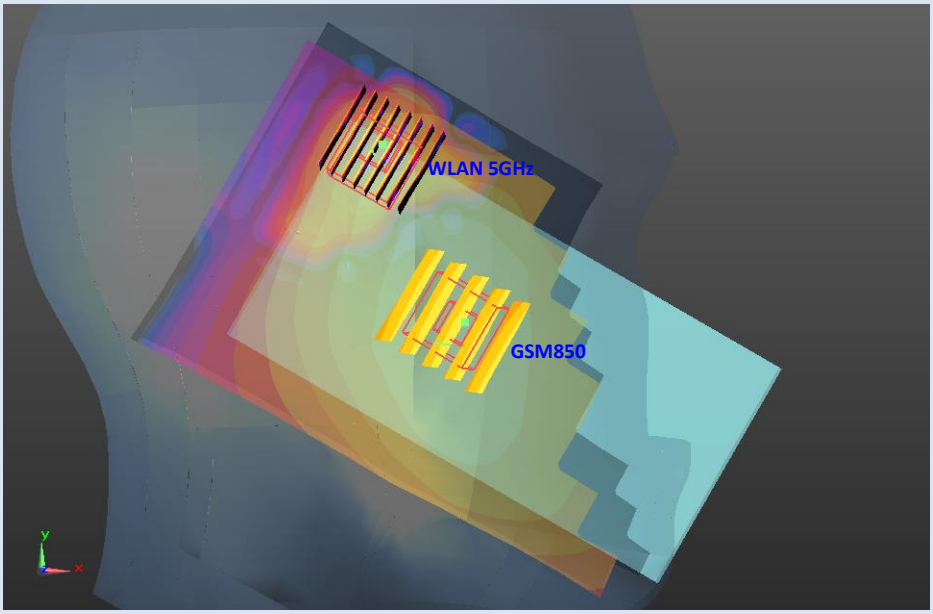
Case No #6 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 4	0.339	0	0.0659	0.255	-0.172	80.88	1.72	0.03	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



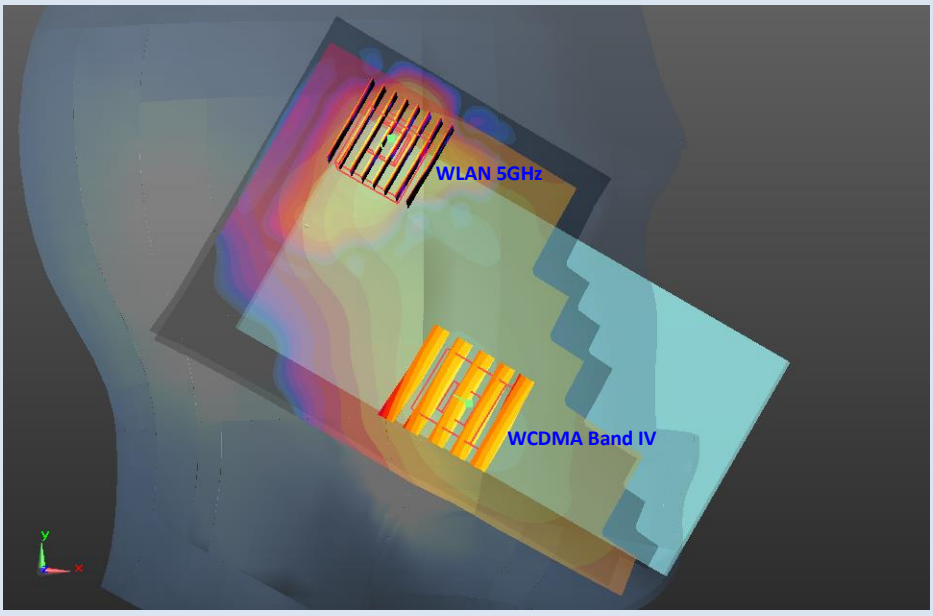
Case No #7 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 2	0.367	0	0.0603	0.26	-0.173	74.34	1.75	0.03	Not required
	WLAN 2.4GHz	1.385	0	0.0383	0.331	-0.174				



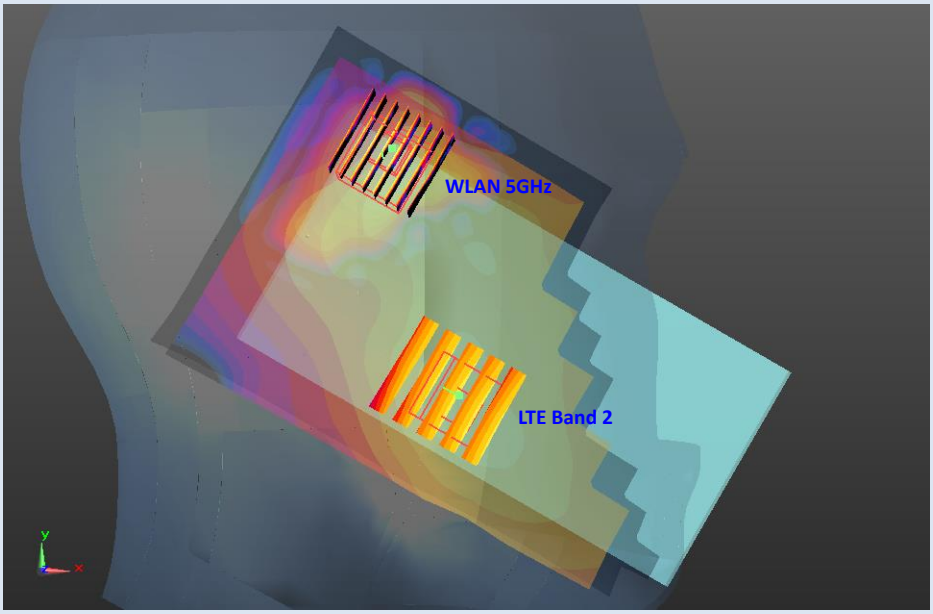
Case No #8 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	GSM850	0.481	0	0.0611	0.275	-0.174	64.63	1.74	0.04	Not required
	WLAN 5GHz	1.255	0	0.0371	0.335	-0.175				



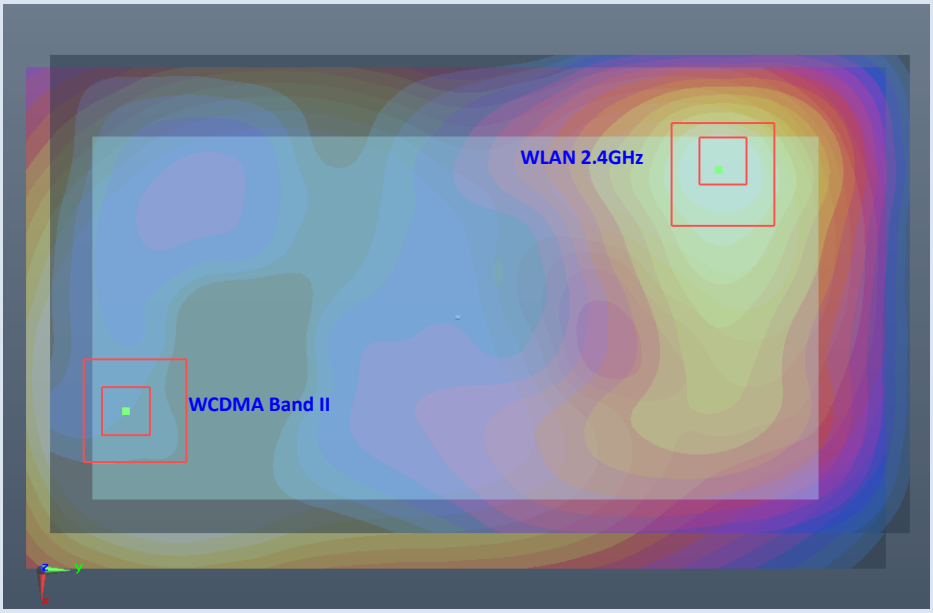
Case No #9 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band IV	0.356	0	0.0639	0.255	-0.172	84.42	1.61	0.02	Not required
	WLAN 5GHz	1.255	0	0.0371	0.335	-0.175				



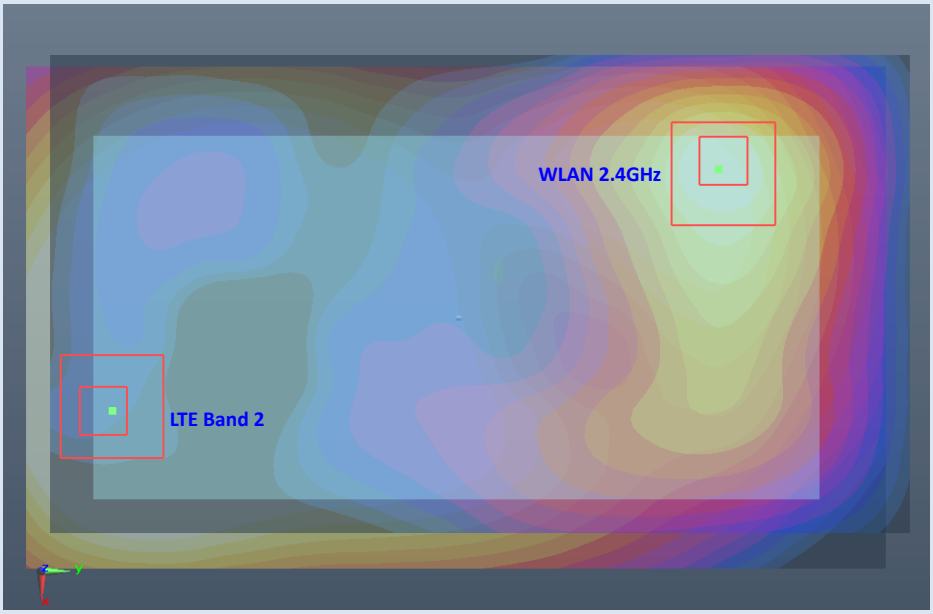
Case No #10 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 2	0.367	0	0.0603	0.26	-0.173	78.53	1.62	0.03	Not required
	WLAN 5GHz	1.255	0	0.0371	0.335	-0.175				



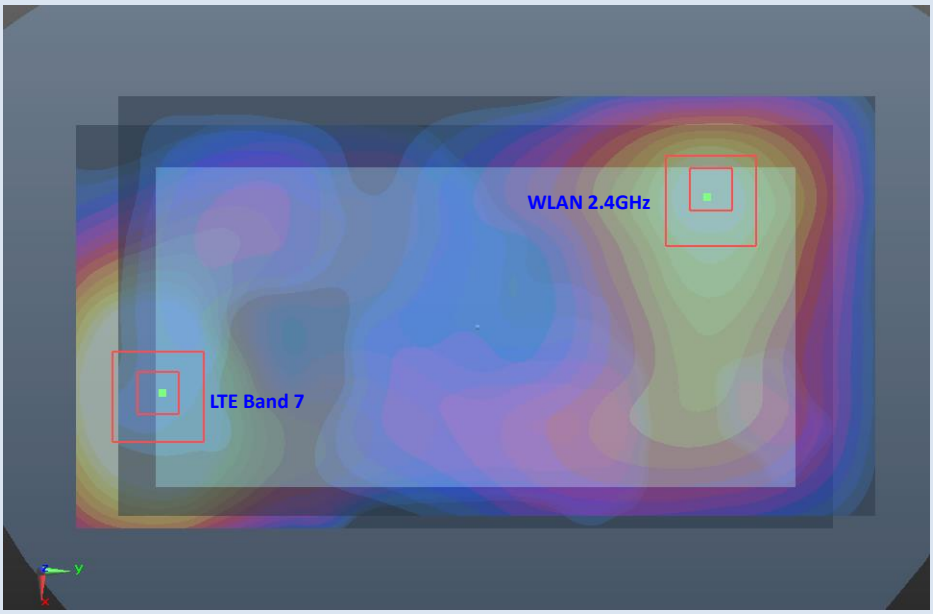
Case No #11 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band II	1.160	1	0.0025	-0.069	-0.205	133.89	1.67	0.02	Not required
	WLAN 2.4GHz	0.508	1	-0.048	0.055	-0.206				



Case No #12 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 2	1.319	1	0.0025	-0.072	-0.206	136.67	1.83	0.02	Not required
	WLAN 2.4GHz	0.508	1	-0.048	0.055	-0.206				



Case No #13 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 7	1.399	1	-0.0014	-0.0746	-0.205	137.73	1.91	0.02	Not required
	WLAN 2.4GHz	0.508	1	-0.048	0.055	-0.206				



Test Engineer：Frank Qiao

18. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[a]	1/k[b]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 18.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	1.0	R	1.732	1	1	0.6	0.6
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	2.9	R	1.732	1	1	1.7	1.7
Max. SAR Eval.	2.0	R	1.732	1	1	1.2	1.2
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	3.6	3.6
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.1	R	1.732	1	1	3.5	3.5
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						11.4%	11.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						22.9%	22.7%

Table 18.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.55	N	1	1	1	6.6	6.6
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	2.0	R	1.732	1	1	1.2	1.2
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	6.7	R	1.732	1	1	3.9	3.9
Max. SAR Eval.	4.0	R	1.732	1	1	2.3	2.3
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	3.6	3.6
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.6	R	1.732	1	1	3.8	3.8
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						12.5%	12.5%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						25.0%	24.9%

Table 18.3. Uncertainty Budget for frequency range 3 GHz to 6 GHz

19. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

[10] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

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

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

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.30

System Check_Head_750MHz_150330

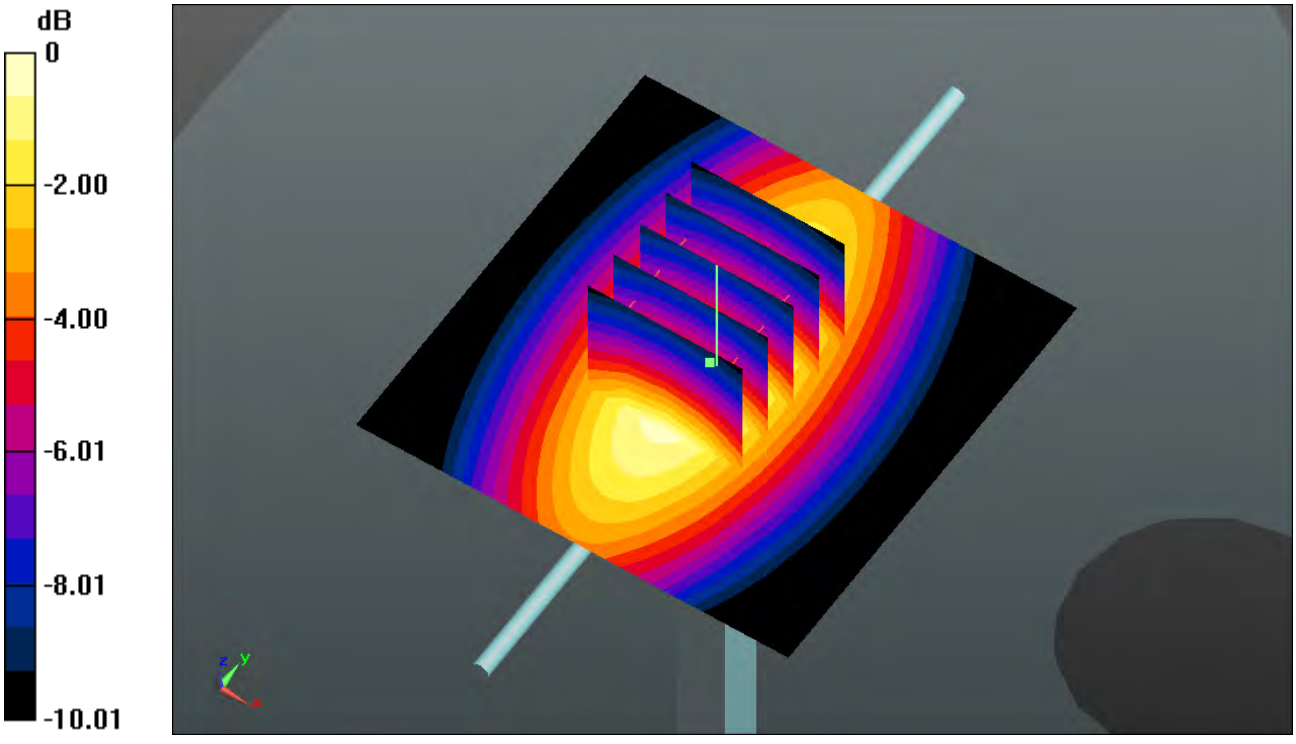
DUT: D750V3 - SN:1065

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_150330 Medium parameters used: f = 750 MHz; σ = 0.881 mho/m; ε_r = 40.783; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.92, 9.92, 9.92); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.58 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.97 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.00 W/kg
SAR(1 g) = 2.19 mW/g; SAR(10 g) = 1.37 mW/g
Maximum value of SAR (measured) = 2.58 mW/g



0 dB = 2.580mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.30

System Check_Head_835MHz_150330

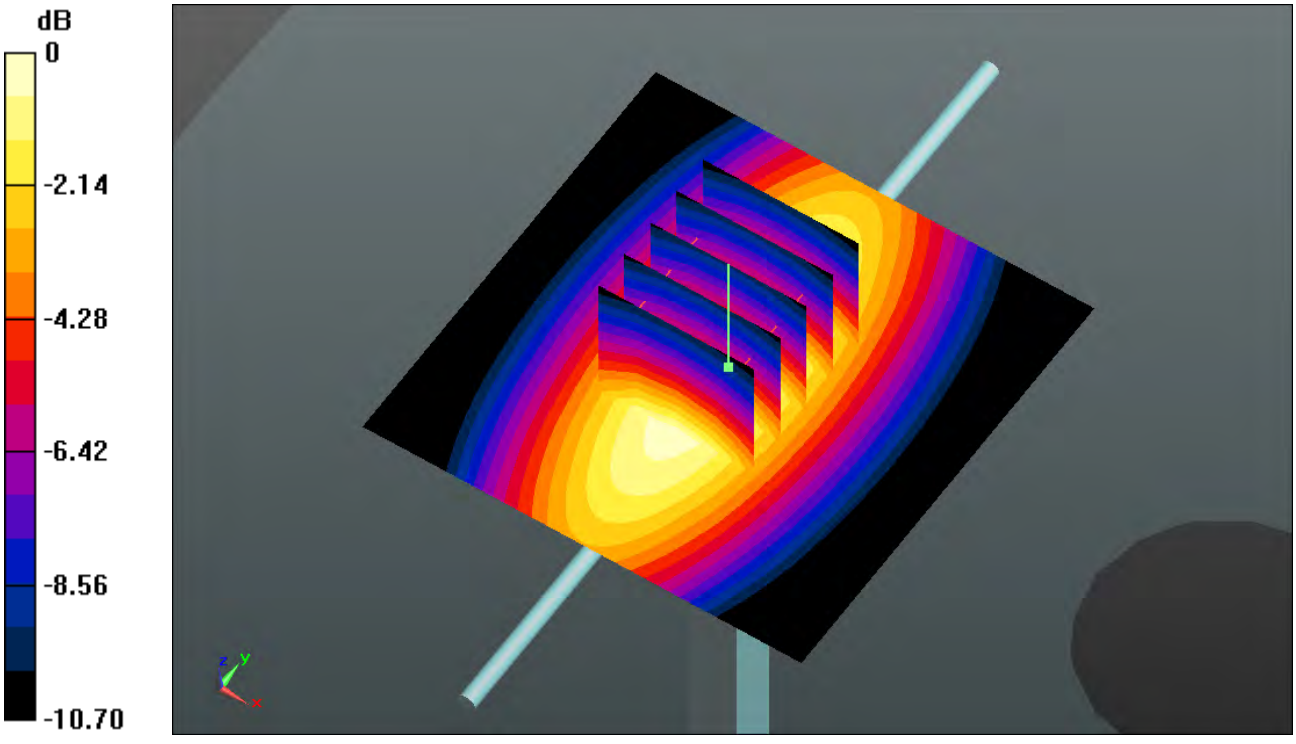
DUT: D835V2 - SN:4d091

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_150330 Medium parameters used: f = 835 MHz; σ = 0.885 mho/m; ε_r = 41.073; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.41, 9.41, 9.41); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.828 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.090 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.308 W/kg
SAR(1 g) = 2.23 mW/g; SAR(10 g) = 1.46 mW/g
Maximum value of SAR (measured) = 2.829 mW/g



0 dB = 2.830mW/g

System Check_Head_1750MHz_150405

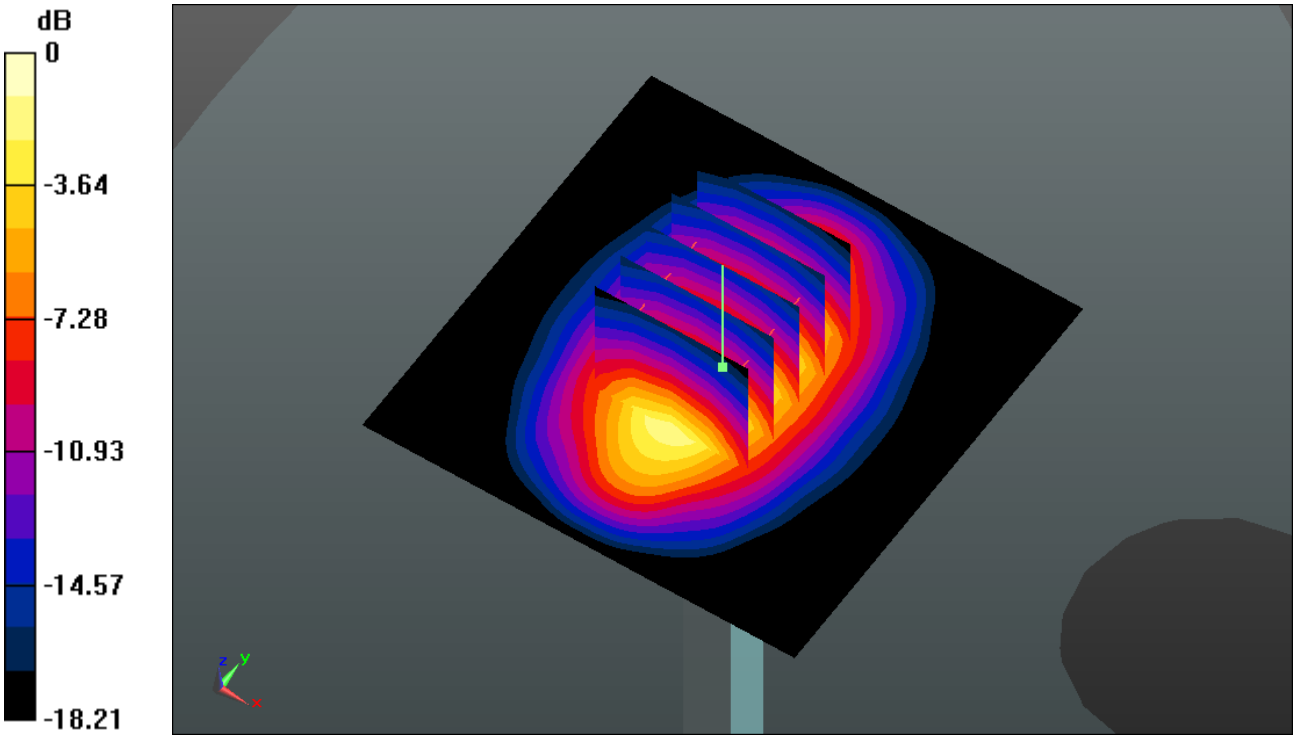
DUT: D1750V2 - SN:1069

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_150405 Medium parameters used: f = 1750 MHz; σ = 1.383 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.55, 8.55, 8.55); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.769 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 84.727 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 16.255 W/kg
SAR(1 g) = 8.73 mW/g; SAR(10 g) = 4.52 mW/g
Maximum value of SAR (measured) = 12.676 mW/g



0 dB = 12.680mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.05

System Check_Head_1900MHz_150405

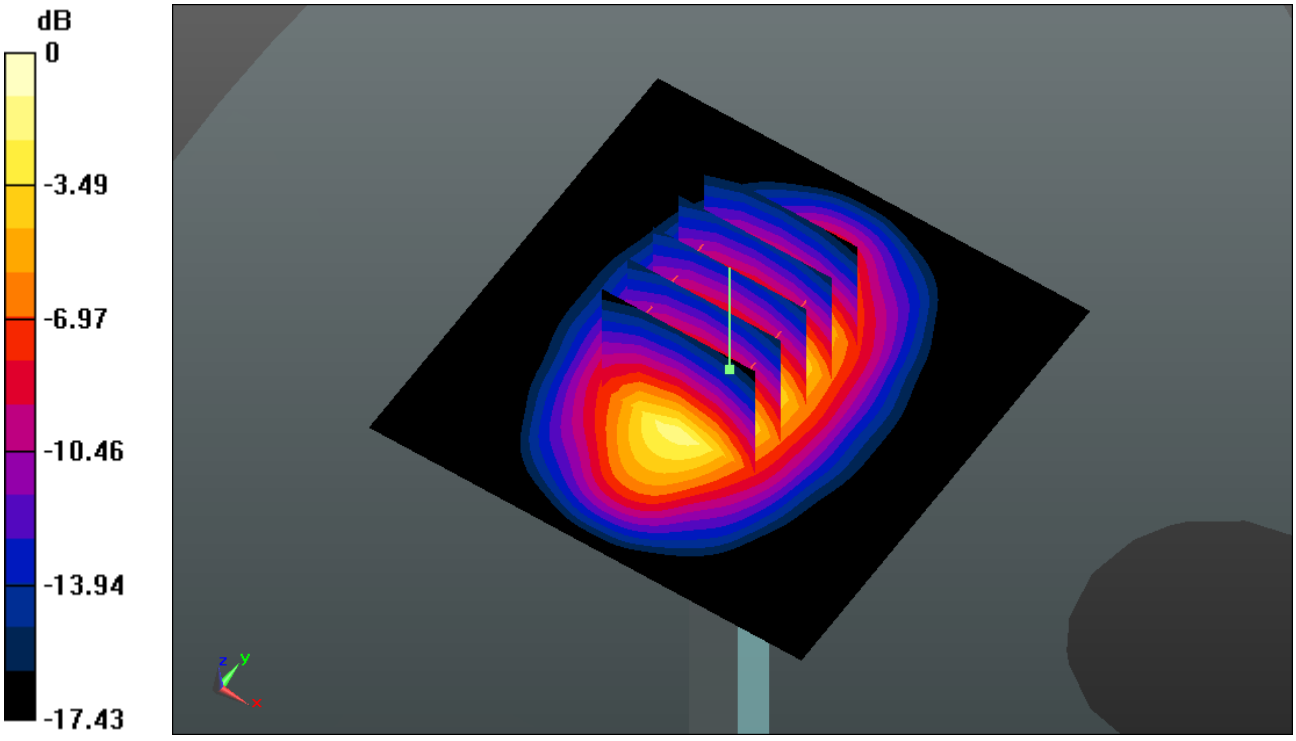
DUT: D1900V2 - SN:5d118

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_150405 Medium parameters used: f = 1900 MHz; σ = 1.424 mho/m; ε_r = 39.075; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.4, 8.4, 8.4); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.700 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.939 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 17.251 W/kg
SAR(1 g) = 9.52 mW/g; SAR(10 g) = 4.99 mW/g
Maximum value of SAR (measured) = 13.670 mW/g



0 dB = 13.670mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.10

System Check_Head_2450MHz_150410

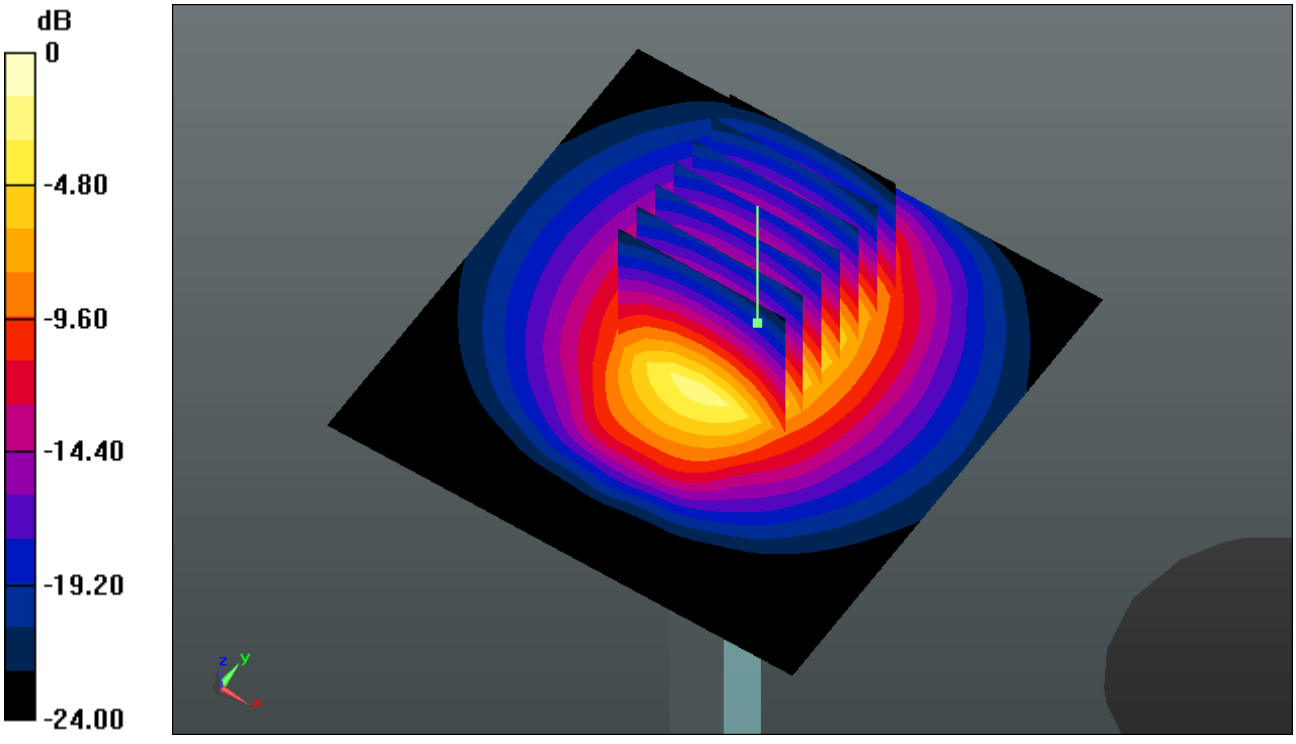
DUT: D2450V2 - SN:840

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_150410 Medium parameters used: f = 2450 MHz; σ = 1.82 mho/m; ε_r = 39.202; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.48, 7.48, 7.48); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 20.030 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 83.334 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 28.341 W/kg
SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.76 mW/g
Maximum value of SAR (measured) = 20.156 mW/g



0 dB = 20.160mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.07

System Check_Head_2600MHz_150407

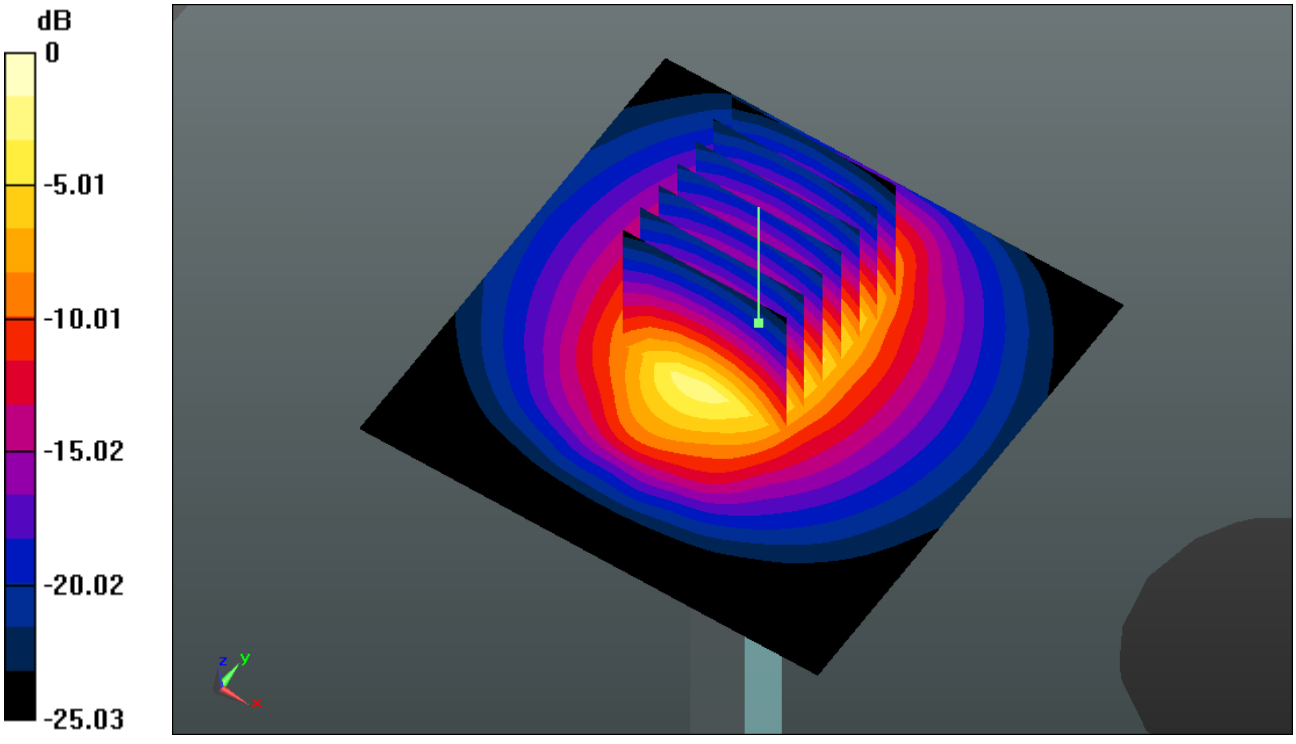
DUT: D2600V2 - SN:1061

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_150407 Medium parameters used: f = 2600 MHz; σ = 1.974 mho/m; ε_r = 38.204; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.3, 7.3, 7.3); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 21.917 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.020 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 31.145 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.15 mW/g
Maximum value of SAR (measured) = 22.149 mW/g



0 dB = 22.150mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.04

System Check_Head_5200MHz_150404

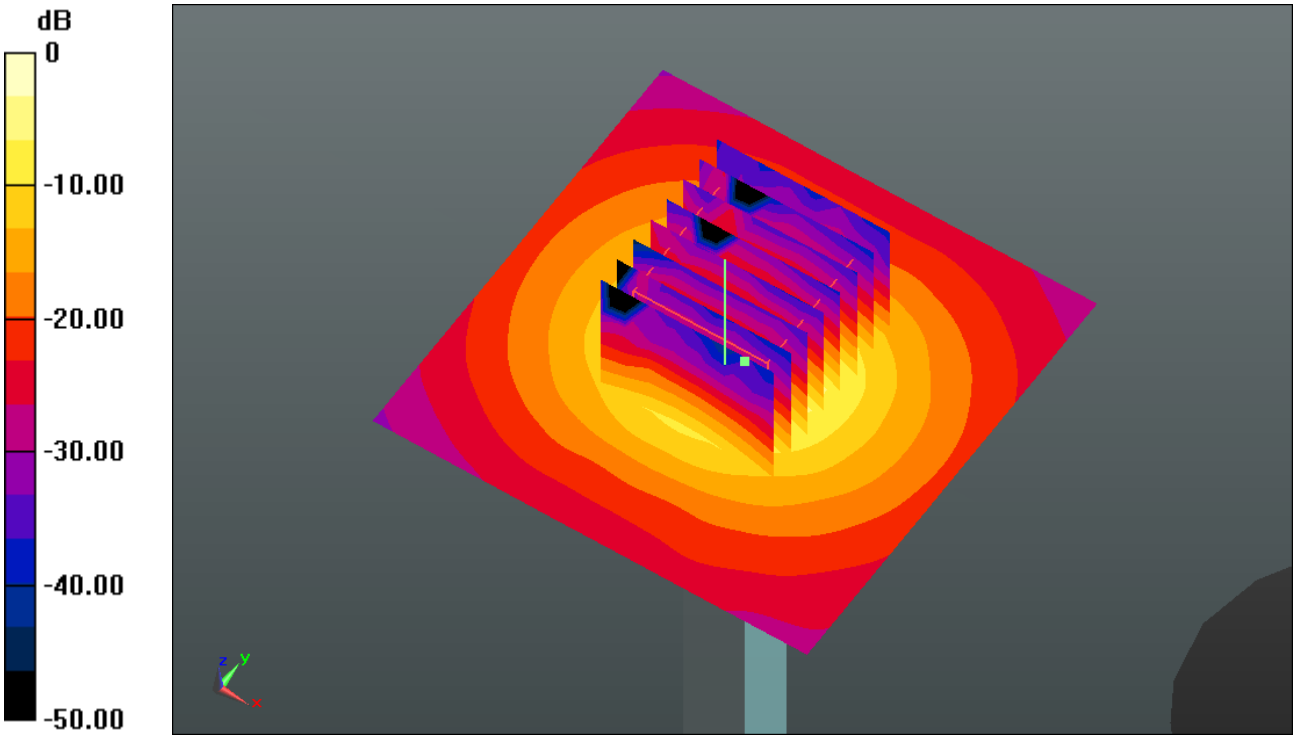
DUT: D5GHzV2-SN:1113

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: HSL_5000_150404 Medium parameters used: f = 5200 MHz; σ = 4.803 mho/m; ε_r = 35.472; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(5.35, 5.35, 5.35); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.099 mW/g

Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 43.463 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 33.776 W/kg
SAR(1 g) = 8.01 mW/g; SAR(10 g) = 2.29 mW/g
Maximum value of SAR (measured) = 18.853 mW/g



0 dB = 18.850mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.04

System Check_Head_5800MHz_150404

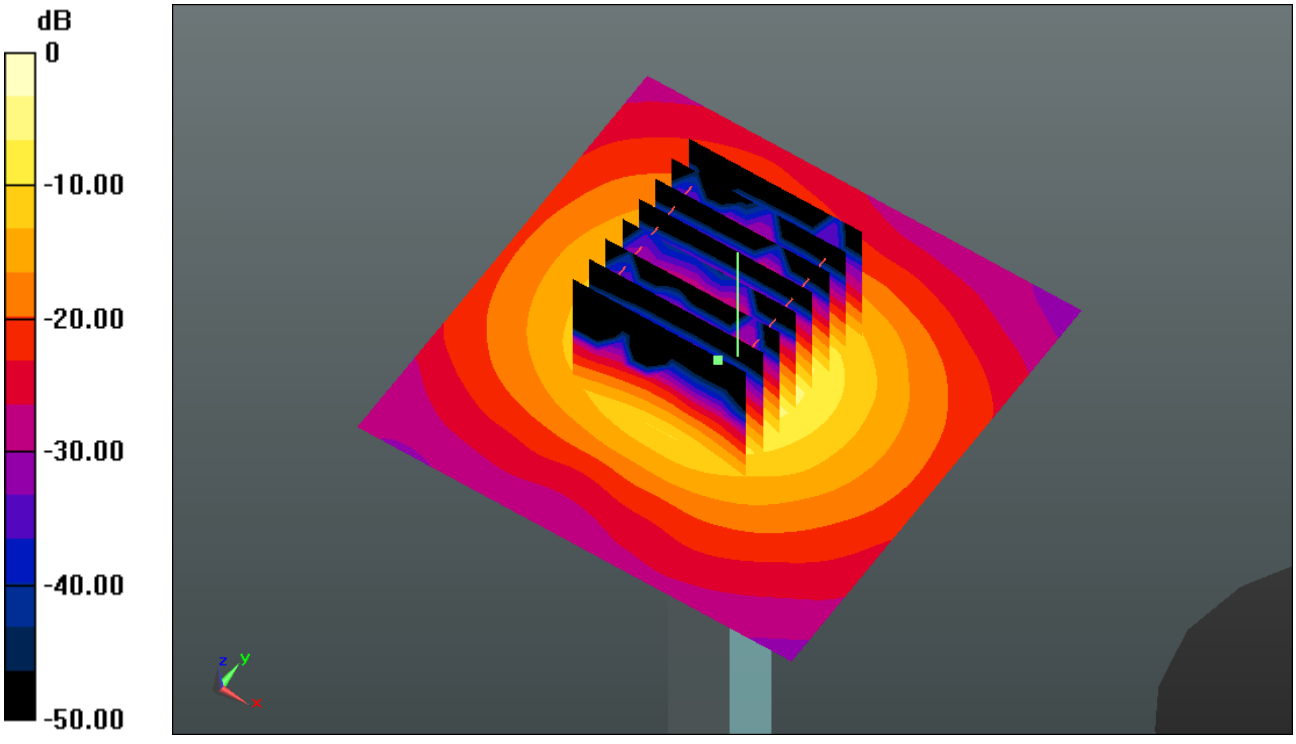
DUT: D5GHzV2-SN:1113

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL_5000_150404 Medium parameters used: f = 5800 MHz; σ = 5.406 mho/m; ε_r = 34.362; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(4.79, 4.79, 4.79); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.900 mW/g

Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 42.849 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 37.974 W/kg
SAR(1 g) = 8.32 mW/g; SAR(10 g) = 2.5 mW/g
Maximum value of SAR (measured) = 21.517 mW/g



0 dB = 21.520mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

System Check_Body_750MHz_150325

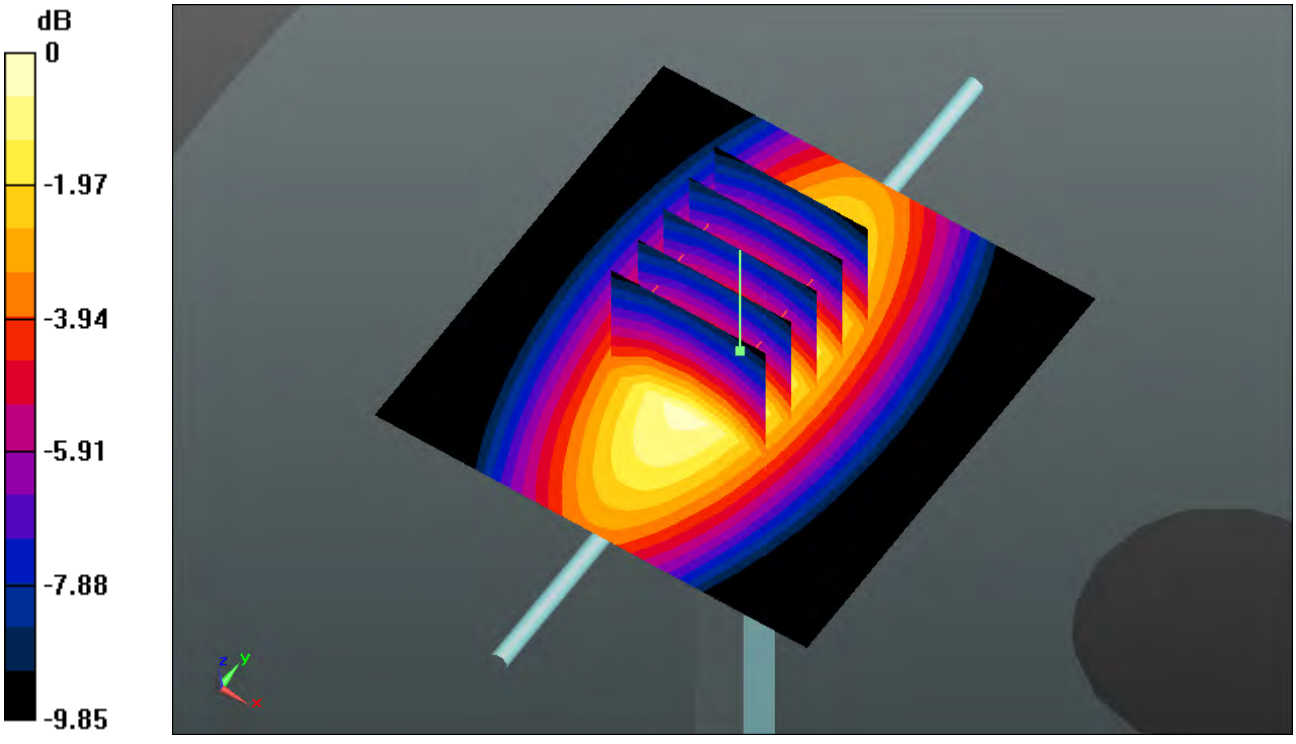
DUT: D750V2 - SN:1065

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_150325 Medium parameters used: f = 750 MHz; σ = 0.961 mho/m; ε_r = 53.913; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.46, 9.46, 9.46); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.605 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.545 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.000 W/kg
SAR(1 g) = 2.09 mW/g; SAR(10 g) = 1.41 mW/g
Maximum value of SAR (measured) = 2.603 mW/g



0 dB = 2.600mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

System Check_Body_835MHz_150325

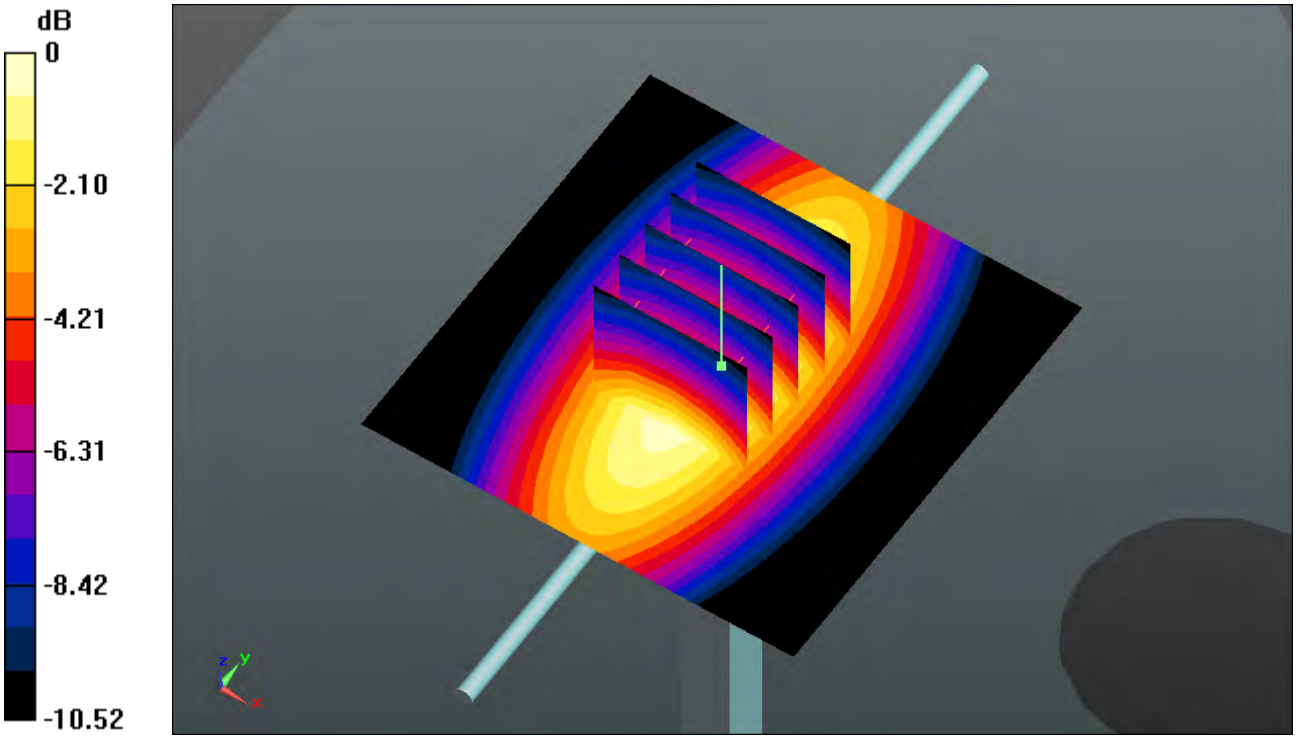
DUT: D835V2 - SN:4d091

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_150325 Medium parameters used: f = 835 MHz; σ = 0.98 mho/m; ε_r = 54.477; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.31, 9.31, 9.31); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.850 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.056 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.322 W/kg
SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.49 mW/g
Maximum value of SAR (measured) = 2.854 mW/g



0 dB = 2.850mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

System Check_Body_1750MHz_150325

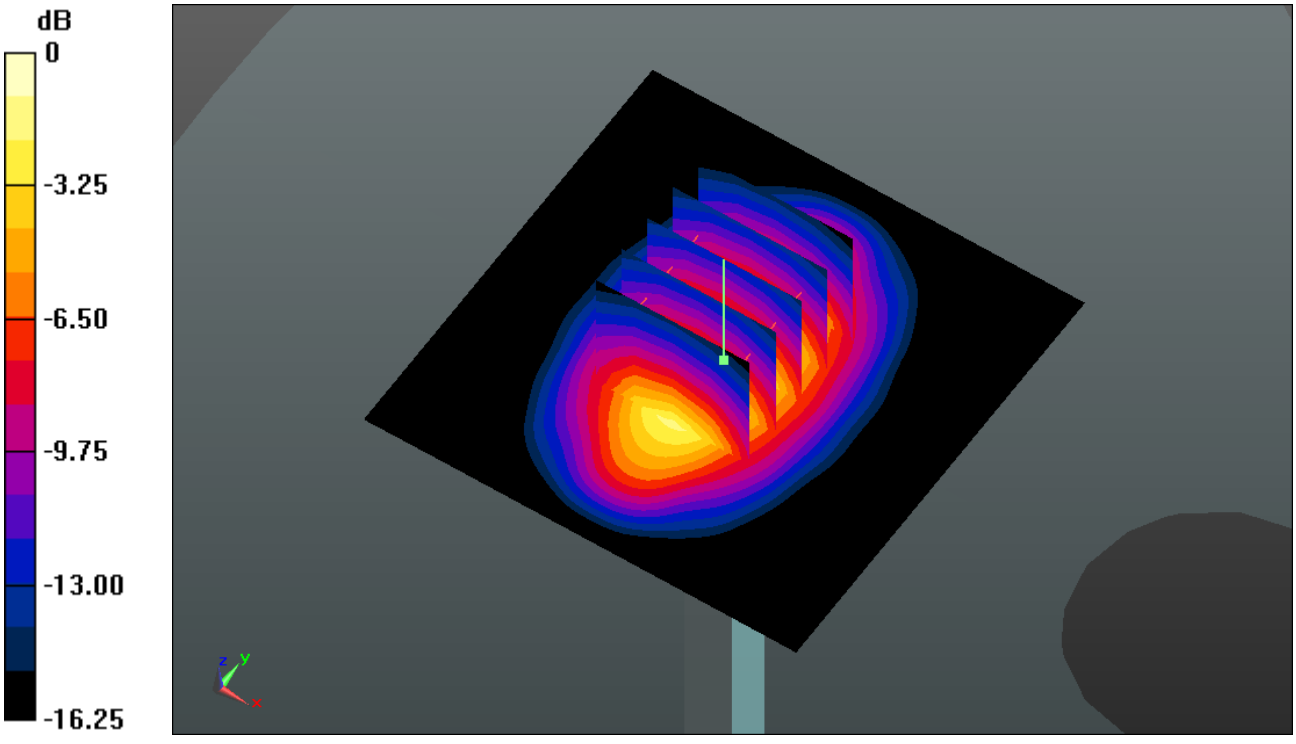
DUT: D1750V2 - SN:1069

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_150325 Medium parameters used: f = 1750 MHz; σ = 1.522 mho/m; ε_r = 54.439; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.89, 7.89, 7.89); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.940 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.257 V/m; Power Drift = 0.0051 dB
Peak SAR (extrapolated) = 16.170 W/kg
SAR(1 g) = 9.24 mW/g; SAR(10 g) = 4.95 mW/g
Maximum value of SAR (measured) = 13.013 mW/g



0 dB = 13.010mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

System Check_Body_1900MHz_150325

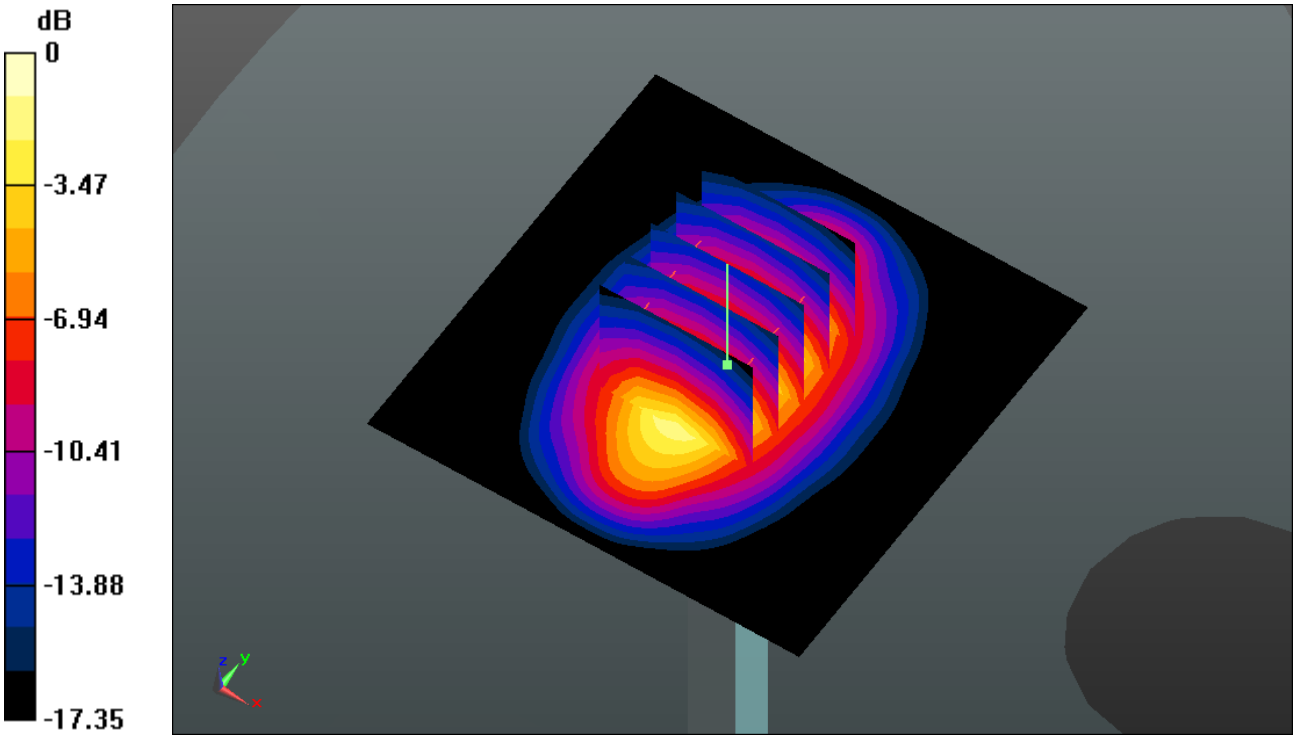
DUT: D1900V2 - SN:5d118

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_150325 Medium parameters used: f = 1900 MHz; σ = 1.544 mho/m; ε_r = 53.236; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.56, 7.56, 7.56); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.711 mW/g

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 87.098 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 18.450 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.39 mW/g
Maximum value of SAR (measured) = 14.714 mW/g



0 dB = 14.710mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.04

System Check_Body_2450MHz_150404

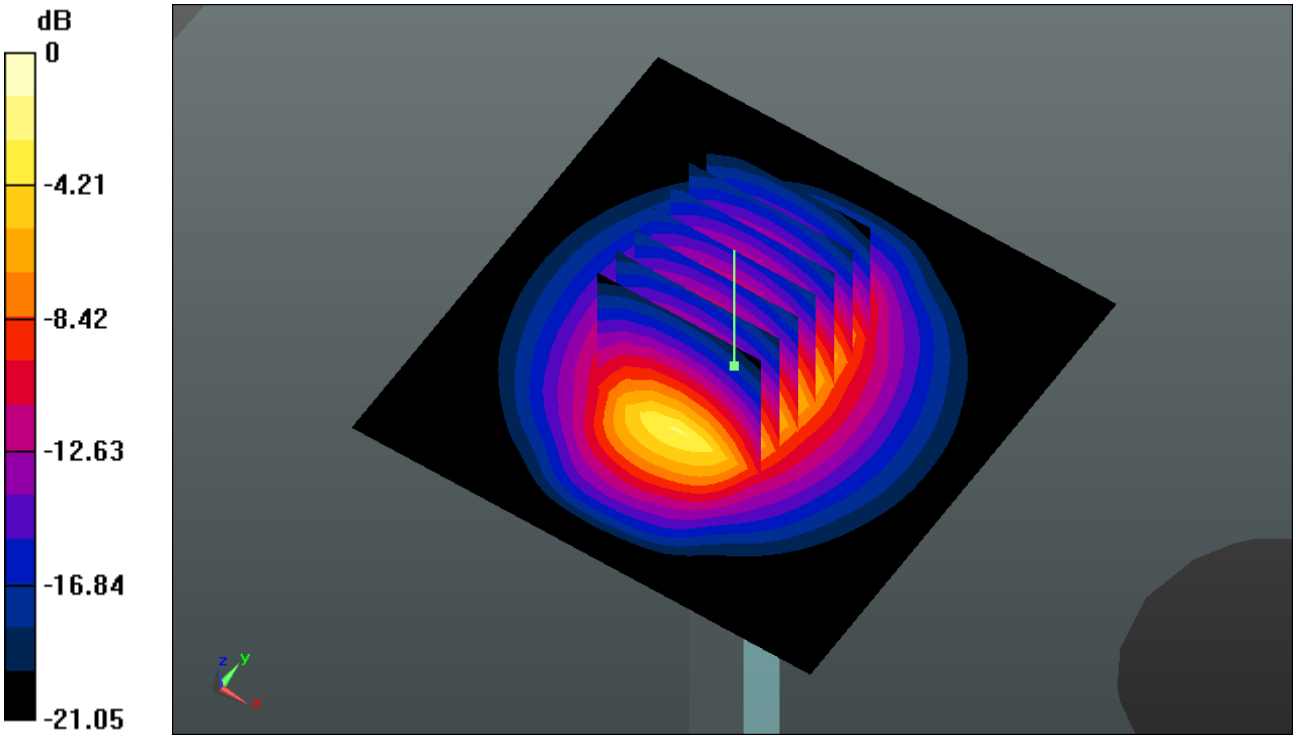
DUT: D2450V2 - SN:840

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_150404 Medium parameters used: f = 2450 MHz; σ = 1.943 mho/m; ε_r = 50.96; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.14, 7.14, 7.14); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 19.131 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.638 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 24.867 W/kg
SAR(1 g) = 12.3 mW/g; SAR(10 g) = 5.72 mW/g
Maximum value of SAR (measured) = 18.674 mW/g



0 dB = 18.670mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.28

System Check_Body_2600MHz_150328

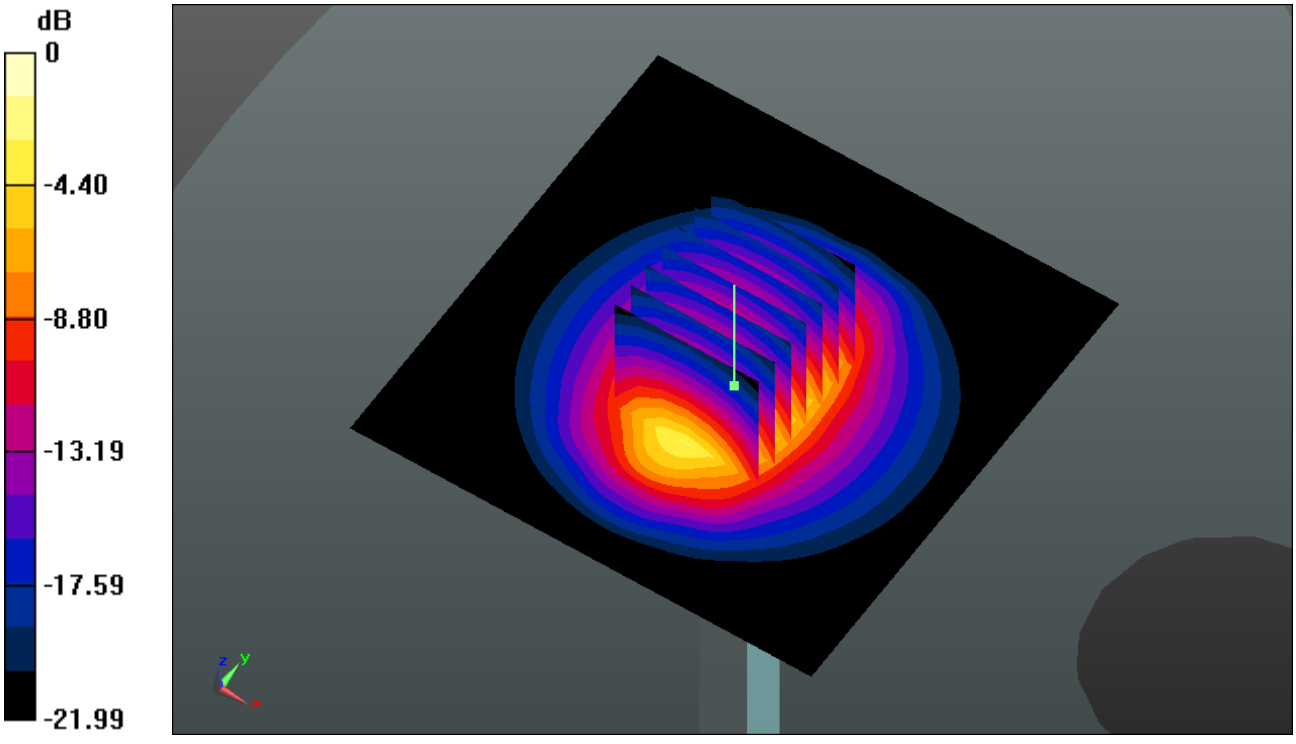
DUT: D2600V2 - SN:1061

Communication System: CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_150328 Medium parameters used: f = 2600 MHz; σ = 2.201 mho/m; ε_r = 52.823; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(6.82, 6.82, 6.82); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 21.185 mW/g

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.755 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 28.629 W/kg
SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.32 mW/g
Maximum value of SAR (measured) = 21.173 mW/g



0 dB = 21.170mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.13

System Check_Body_5200MHz_150413

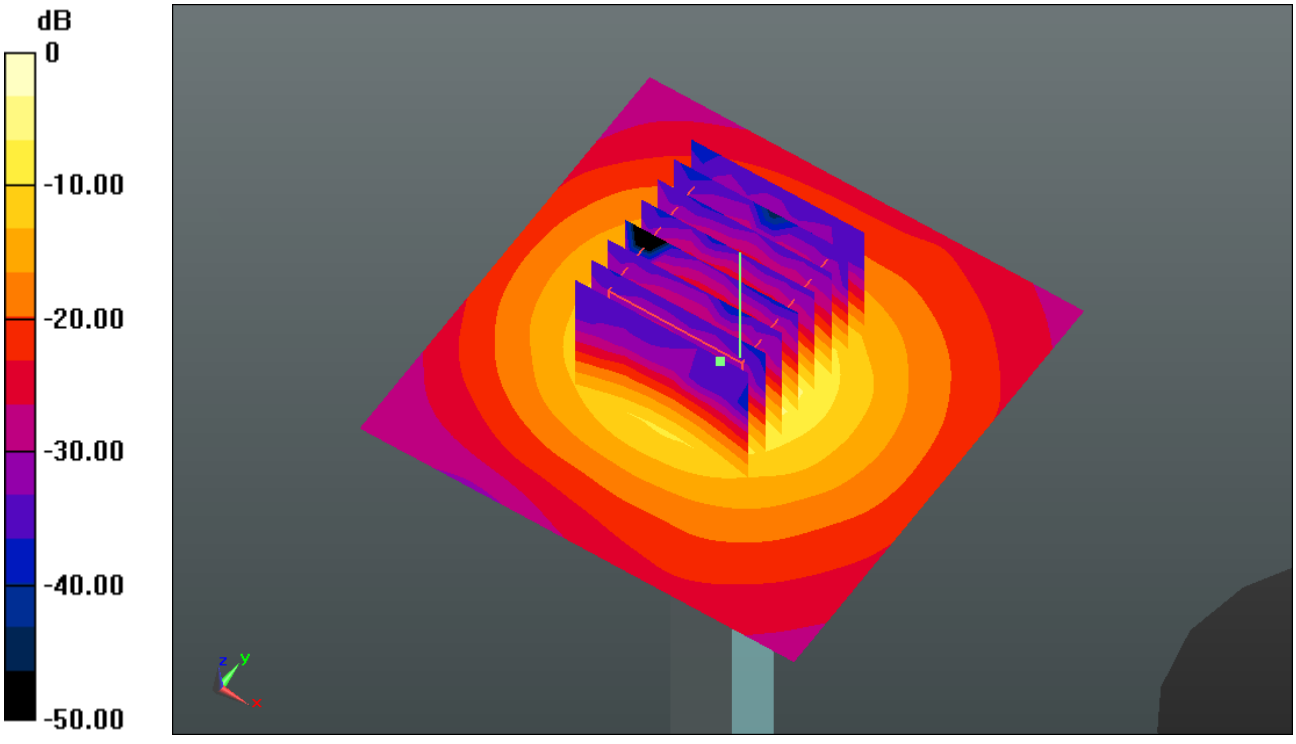
DUT: D5GHzV2-SN:1113

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: MSL_5000_150413 Medium parameters used: f = 5200 MHz; σ = 5.363 mho/m; ε_r = 48.689; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(4.54, 4.54, 4.54); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 17.248 mW/g

Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 40.385 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 30.295 W/kg
SAR(1 g) = 7.34 mW/g; SAR(10 g) = 2.06 mW/g
Maximum value of SAR (measured) = 17.010 mW/g



0 dB = 17.010mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.13

System Check_Body_5800MHz_150413

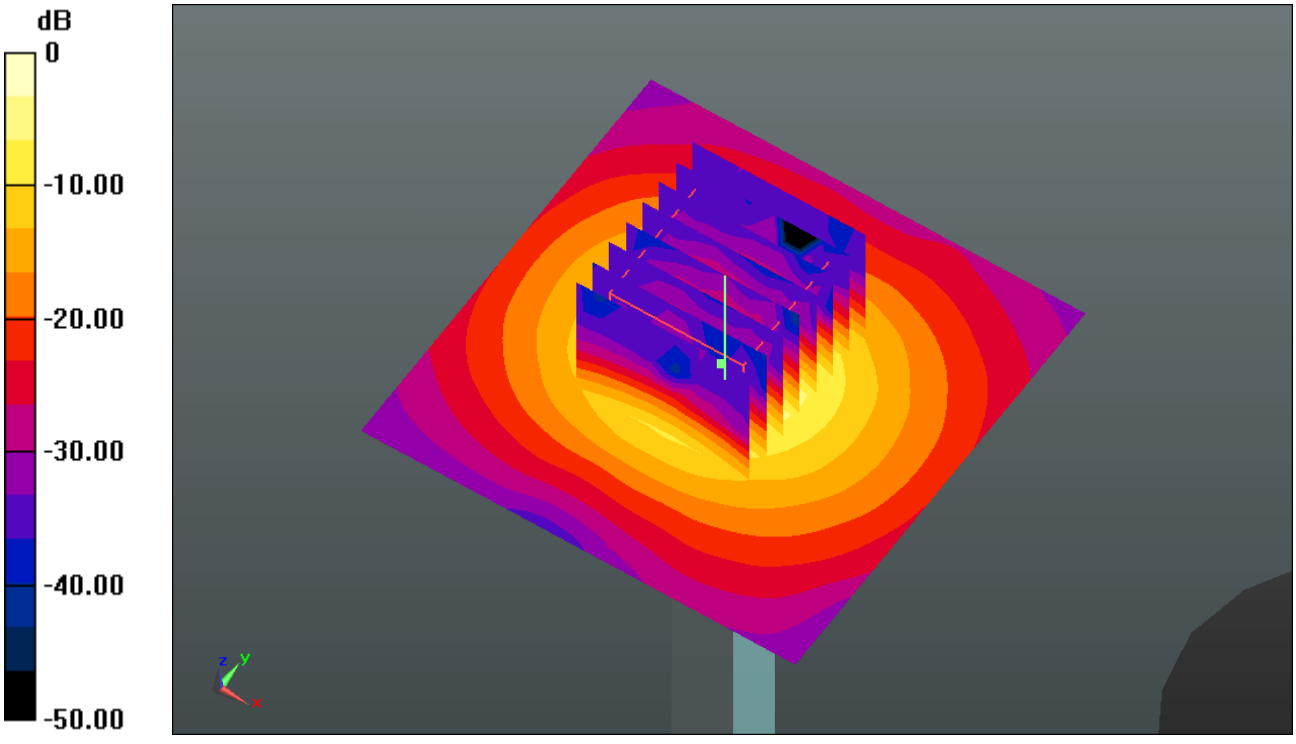
DUT: D5GHzV2-SN:1113

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: MSL_5000_150413 Medium parameters used: f = 5800 MHz; σ = 6.228 mho/m; ε_r = 47.321; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(4.21, 4.21, 4.21); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 17.941 mW/g

Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 36.555 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 32.558 W/kg
SAR(1 g) = 7.18 mW/g; SAR(10 g) = 1.99 mW/g
Maximum value of SAR (measured) = 17.567 mW/g



0 dB = 17.570mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016.2.26

System Check_Head_835MHz_160226

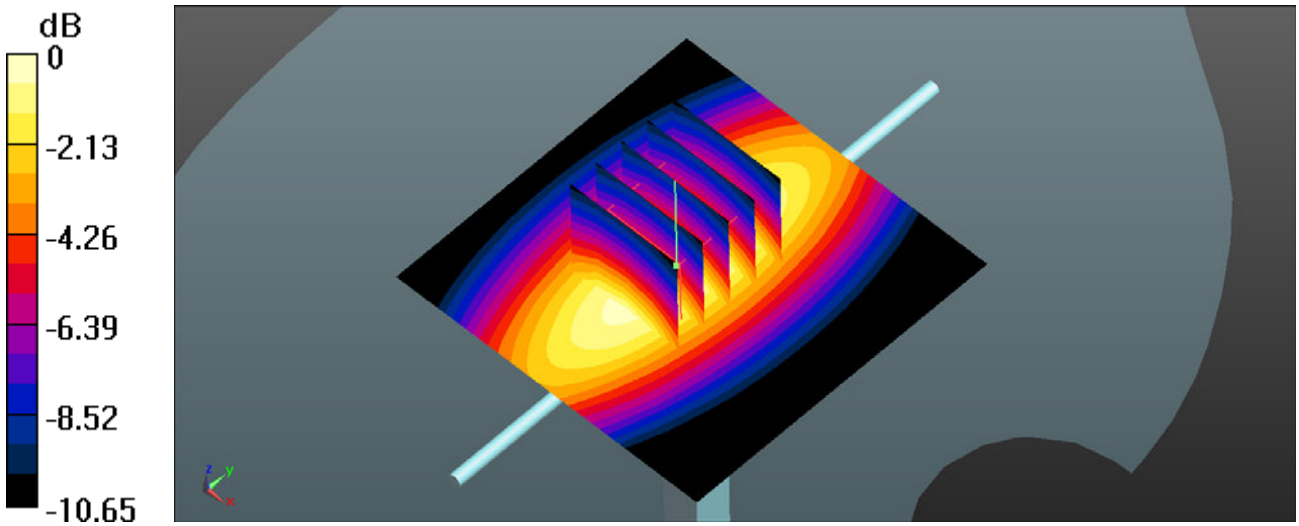
DUT: D835V2 - SN:4d091

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_160226 Medium parameters used: f = 835 MHz; σ = 0.884 S/m; ε_r = 41.043; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3954; ConvF(10.1, 10.1, 10.1); Calibrated: 2015.11.27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1279; Calibrated: 2015.7.21
- Phantom: SAM1; Type: SAM; Serial: TP-1644
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.95 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.00 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (measured) = 2.97 W/kg



0 dB = 2.97 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016.2.25

System Check_Head_2450MHz_160225

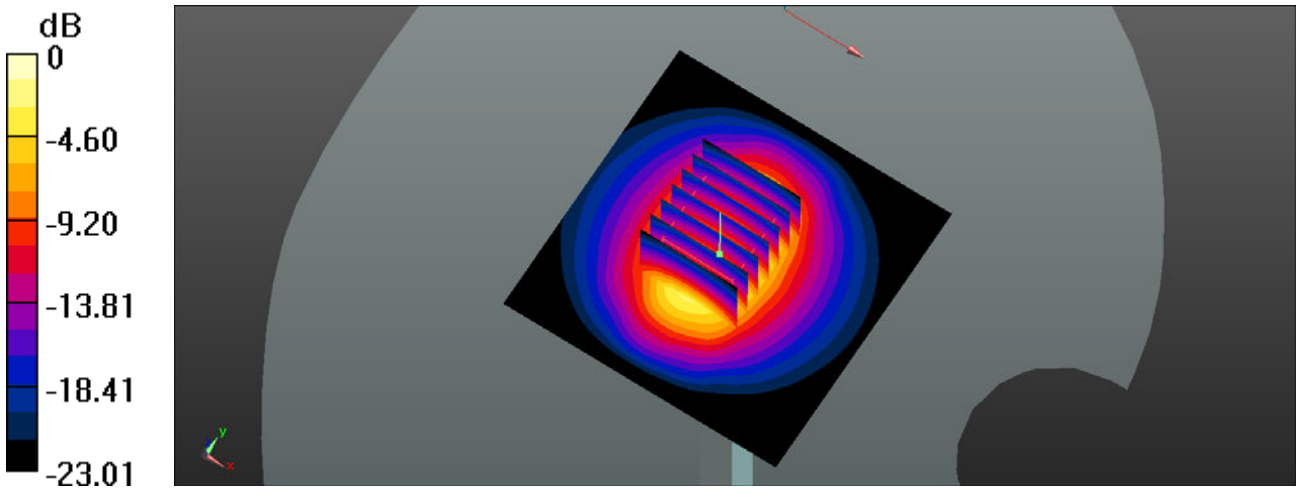
DUT: D2450V2 - SN:840

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_160225 Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 39.753; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.08, 7.08, 7.08); Calibrated: 2015.5.28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2015.5.21
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 20.4 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.68 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 26.8 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.81 W/kg
Maximum value of SAR (measured) = 19.8 W/kg



0 dB = 19.8 W/kg = 12.97 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016.2.26

System Check_Body_2450MHz_160226

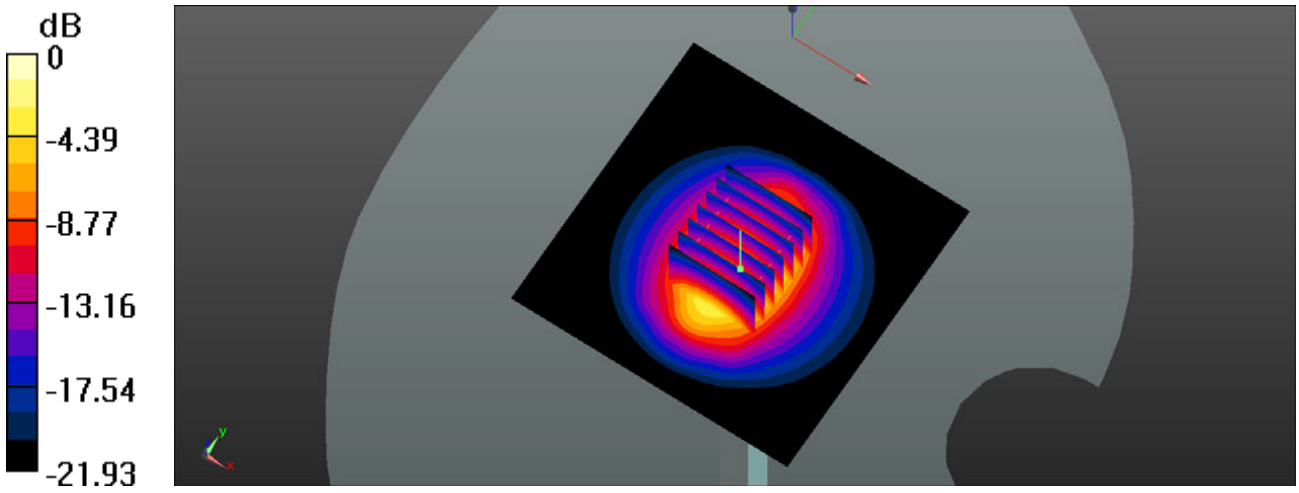
DUT: D2450V2 - SN:840

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_160226 Medium parameters used: f = 2450 MHz; σ = 1.993 S/m; ε_r = 51.414; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.29, 7.29, 7.29); Calibrated: 2015.5.28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2015.5.21
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.3 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.30 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 26.0 W/kg
SAR(1 g) = 12.6 W/kg; SAR(10 g) = 5.79 W/kg
Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.3 W/kg = 12.86 dBW/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016.2.26

System Check_Body_2600MHz_160226

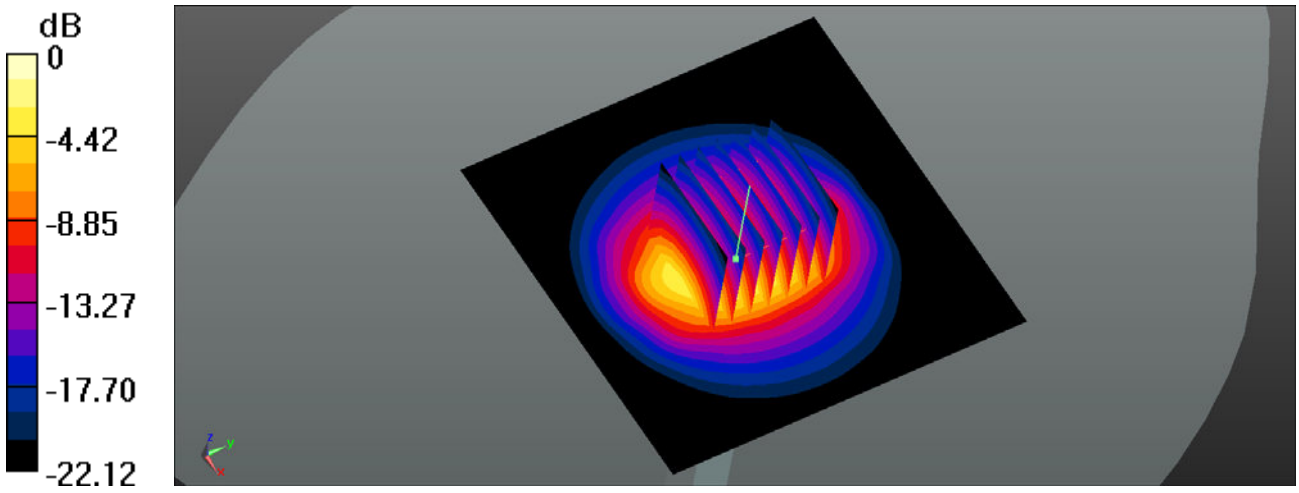
DUT: D2600V2 - SN:1061

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_160226 Medium parameters used: f = 2600 MHz; σ = 2.131 S/m; ε_r = 52.892; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.17, 7.17, 7.17); Calibrated: 2015.5.28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2015.5.21
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.9 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 83.27 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.93 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg

Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.30

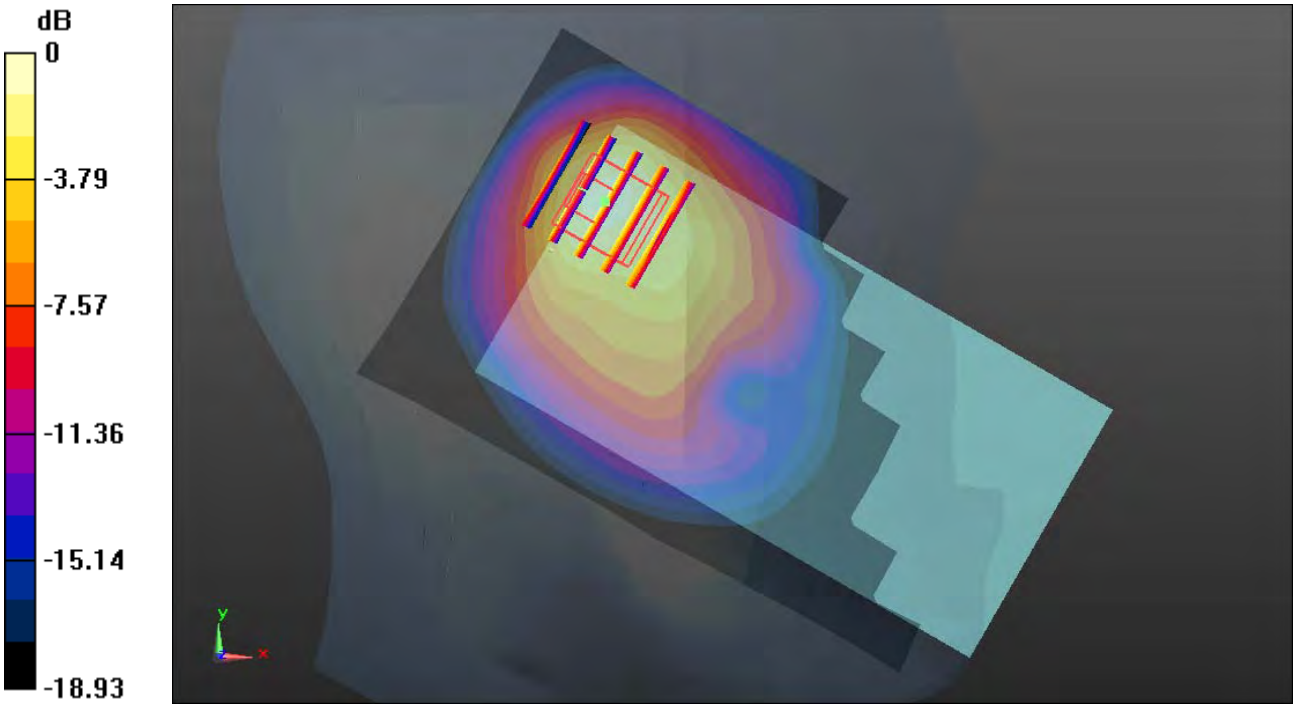
#01_GSM850_GPRS (4 Tx slots)_Left Cheek_Ch251

Communication System: GPRS/EDGE (4 Tx slots) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_835_150330 Medium parameters used: f = 848.8 MHz; σ = 0.897 mho/m; ε_r = 40.886; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.41, 9.41, 9.41); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch251/Area Scan (71x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.257 mW/g

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.146 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.997 W/kg
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.514 mW/g
Maximum value of SAR (measured) = 1.386 mW/g



0 dB = 1.390mW/g

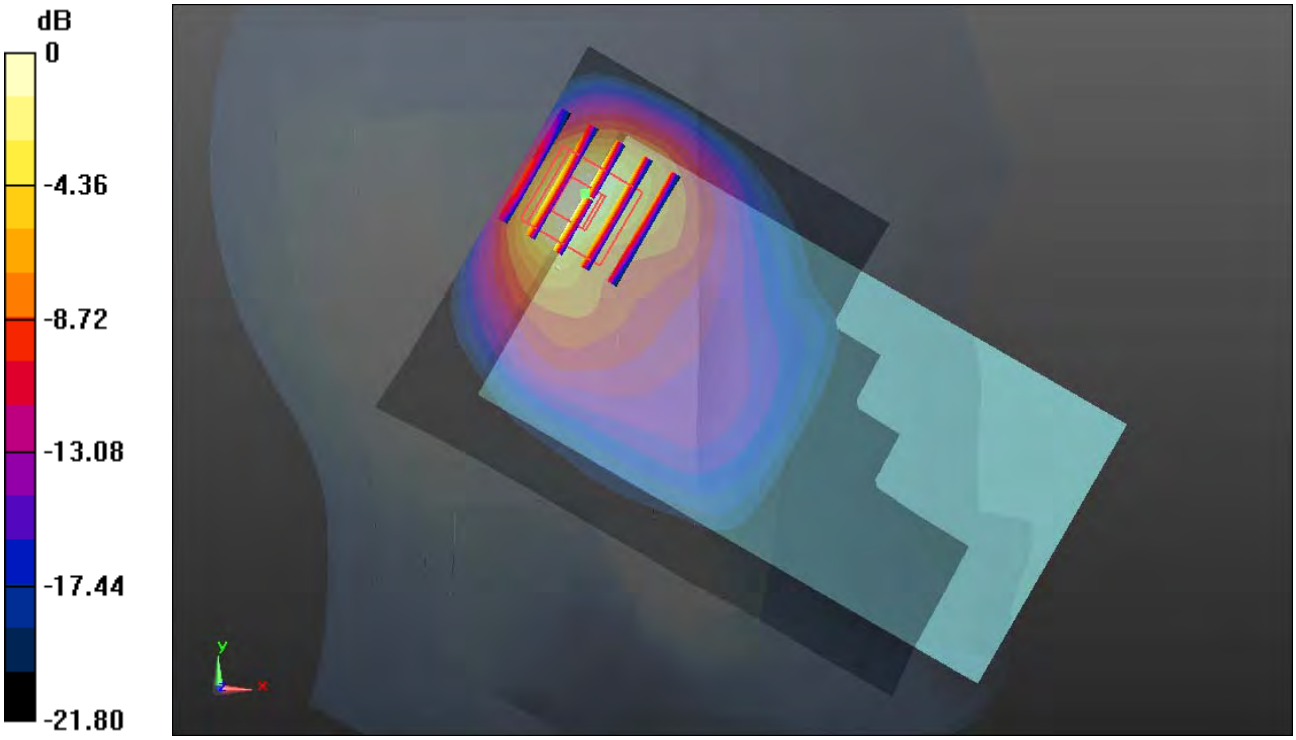
#02_GSM1900_GPRS(4 Tx slots)_Left Tilted_Ch810

Communication System: GPRS/EDGE (4 Tx slots) (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_1900_150405 Medium parameters used: f = 1909.8 MHz; σ = 1.435 mho/m; ε_r = 39.029; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.4, 8.4, 8.4); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch810/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.299 mW/g

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.076 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.821 W/kg
SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.405 mW/g
Maximum value of SAR (measured) = 1.407 mW/g



0 dB = 1.410mW/g

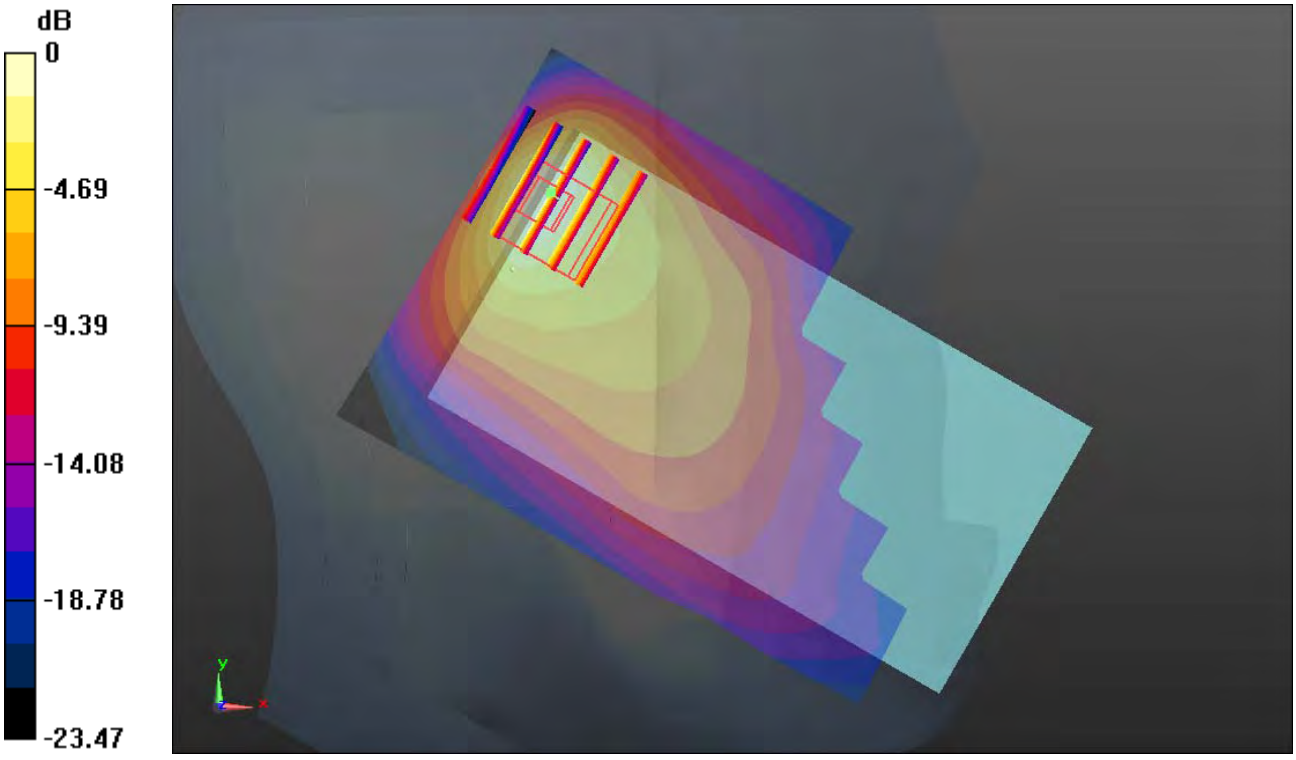
#03_WCDMA Band V_RMC12.2Kbps_Left Tilted_Ch4132

Communication System: UMTS (0); Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL_835_150330 Medium parameters used: f = 826.4 MHz; σ = 0.877 mho/m; ε_r = 41.175; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.41, 9.41, 9.41); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch4132/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.620 mW/g

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.991 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.134 W/kg
SAR(1 g) = 0.871 mW/g; SAR(10 g) = 0.432 mW/g
Maximum value of SAR (measured) = 1.393 mW/g



0 dB = 1.390mW/g

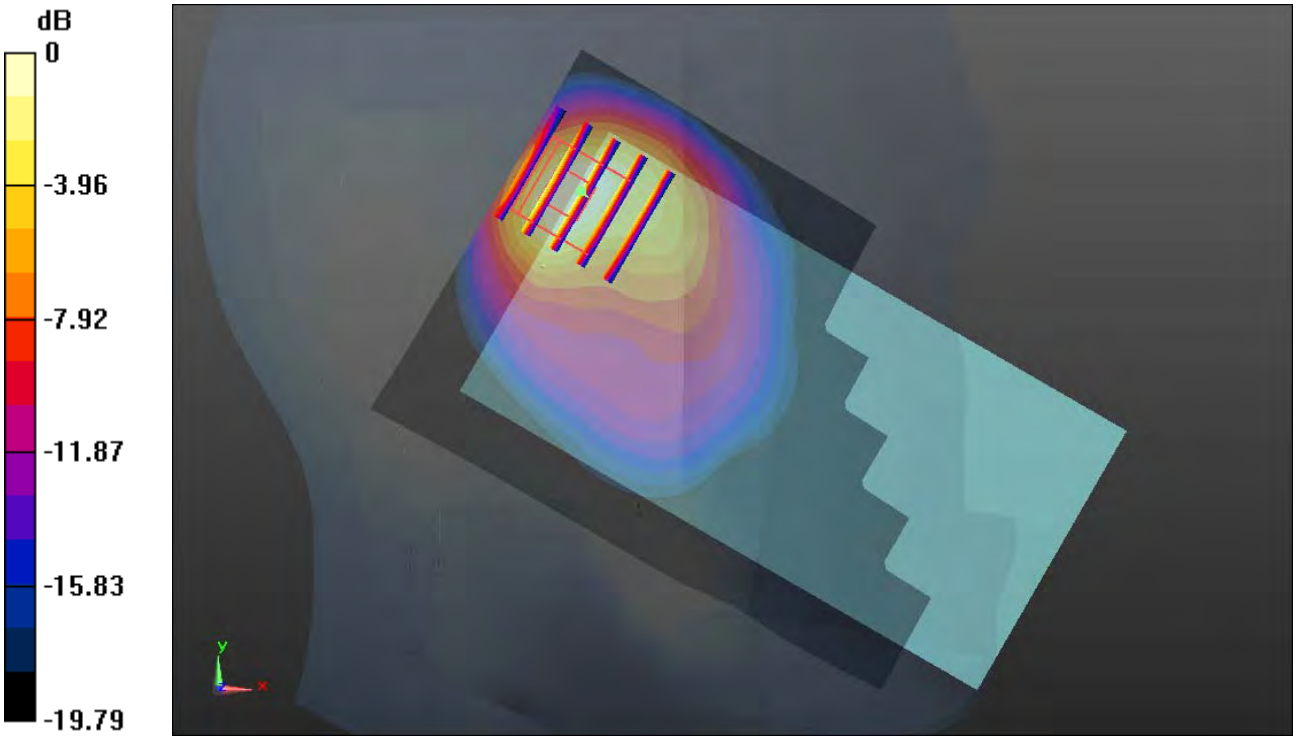
#04_WCDMA Band IV_RMC12.2Kbps_Left Cheek_Ch1413

Communication System: UMTS (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium: HSL_1750_150405 Medium parameters used: f = 1732.6 MHz; σ = 1.365 mho/m; ε_r = 41.384; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.55, 8.55, 8.55); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch1413/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.566 mW/g

Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.822 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.857 W/kg
SAR(1 g) = 0.922 mW/g; SAR(10 g) = 0.441 mW/g
Maximum value of SAR (measured) = 1.354 mW/g



0 dB = 1.350mW/g

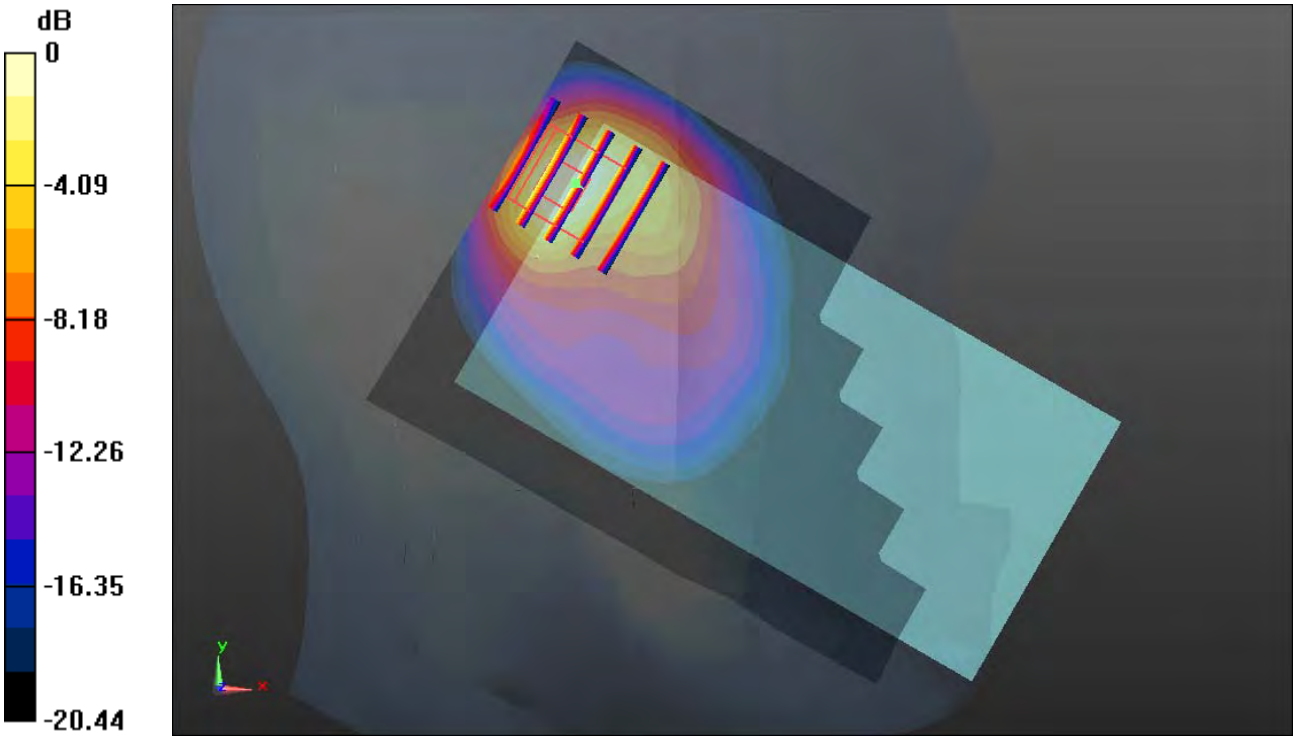
#05_WCDMA Band II_RMC12.2Kbps_Left Cheek_Ch9262

Communication System: UMTS (0); Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL_1900_150405 Medium parameters used: f = 1852.4 MHz; σ = 1.377 mho/m; ε_r = 39.257; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.4, 8.4, 8.4); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch9262/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.888 mW/g

Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.865 V/m; Power Drift = -0.0045 dB
Peak SAR (extrapolated) = 2.319 W/kg
SAR(1 g) = 1.120 mW/g; SAR(10 g) = 0.510 mW/g
Maximum value of SAR (measured) = 1.667 mW/g



0 dB = 1.670mW/g

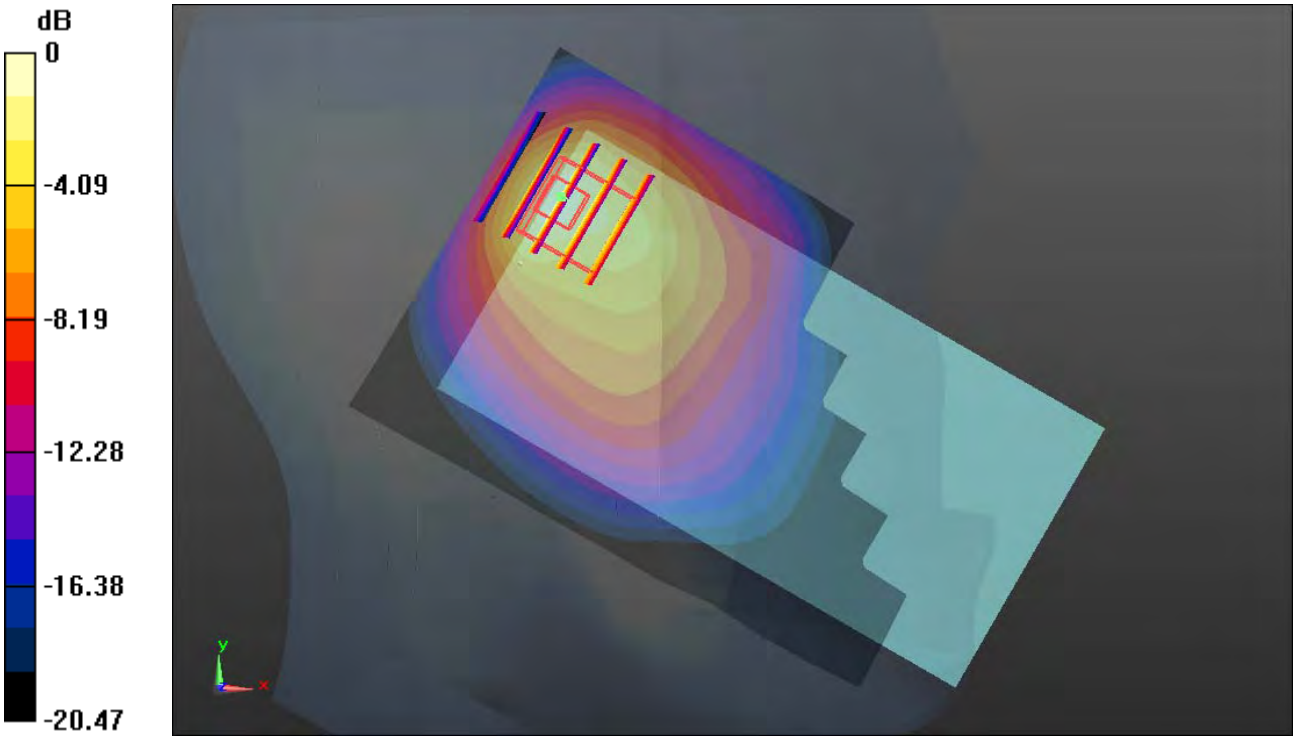
#06_LTE Band 12_10M_QPSK(1,0)_Left Cheek_Ch23130

Communication System: FDD_LTE (0); Frequency: 711 MHz;Duty Cycle: 1:1
Medium: HSL_750_150330 Medium parameters used: f = 711 MHz; σ = 0.862 mho/m; ε_r = 41.688; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.92, 9.92, 9.92); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch23130/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.373 mW/g

Ch23130/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.800 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.182 W/kg
SAR(1 g) = 0.901 mW/g; SAR(10 g) = 0.481 mW/g
Maximum value of SAR (measured) = 1.497 mW/g



0 dB = 1.500mW/g

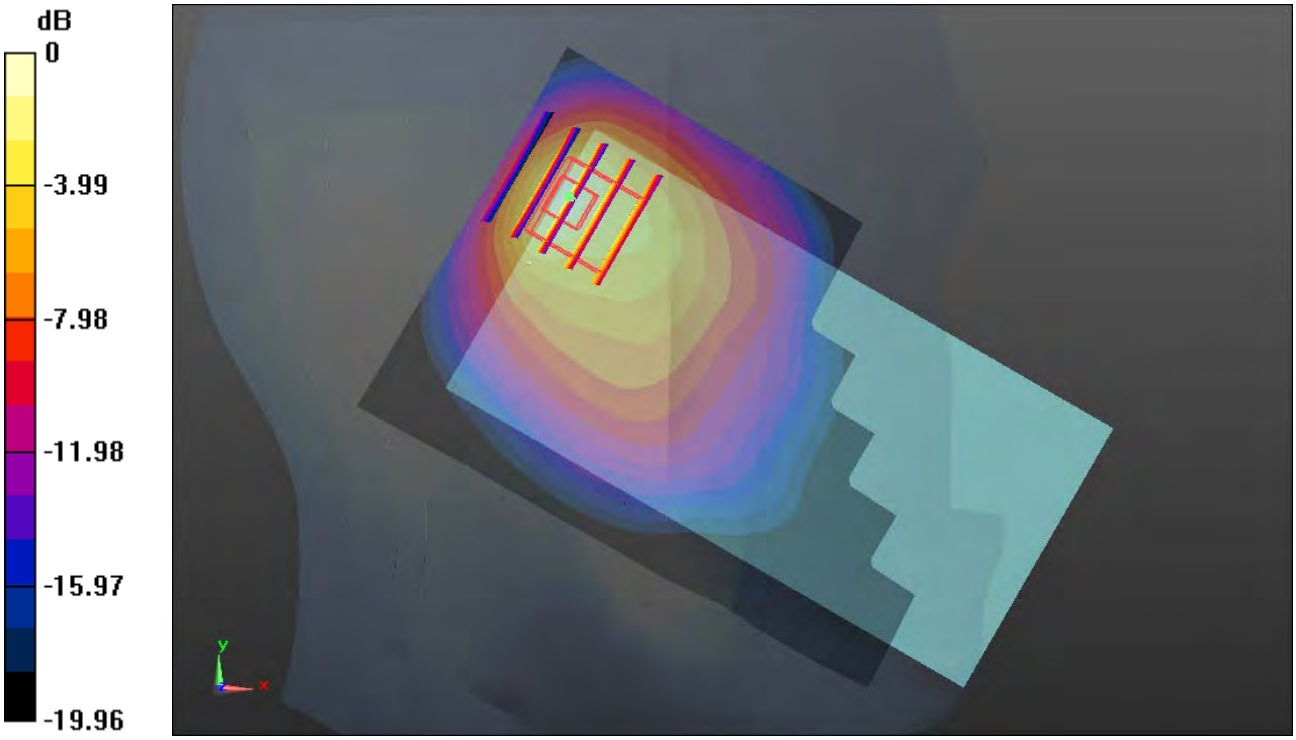
#07_LTE Band 17_10M_QPSK(1,0)_Left Cheek_Ch23780

Communication System: FDD_LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium: HSL_750_150330 Medium parameters used: f = 709 MHz; σ = 0.86 mho/m; ε_r = 41.698; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.92, 9.92, 9.92); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch23780/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.309 mW/g

Ch23780/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.429 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 2.173 W/kg
SAR(1 g) = 0.890 mW/g; SAR(10 g) = 0.469 mW/g
Maximum value of SAR (measured) = 1.471 mW/g



0 dB = 1.470mW/g

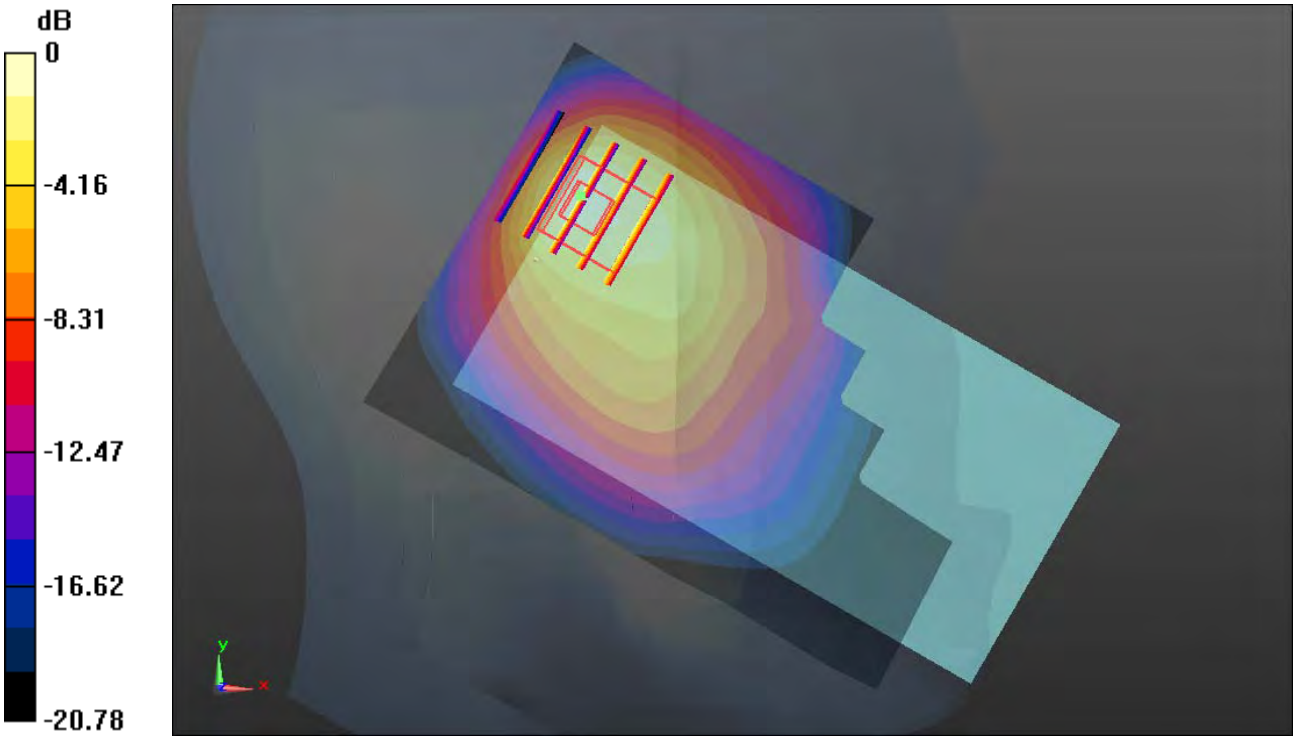
#08_LTE Band 5_10M_QPSK(50,0)_Left Cheek_Ch20525

Communication System: FDD_LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL_835_150330 Medium parameters used: f = 836.5 MHz; σ = 0.886 mho/m; ε_r = 41.055; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.41, 9.41, 9.41); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch20525/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.356 mW/g

Ch20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.082 V/m; Power Drift = -0.0067 dB
Peak SAR (extrapolated) = 2.024 W/kg
SAR(1 g) = 0.953 mW/g; SAR(10 g) = 0.540 mW/g
Maximum value of SAR (measured) = 1.442 mW/g



0 dB = 1.440mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.05

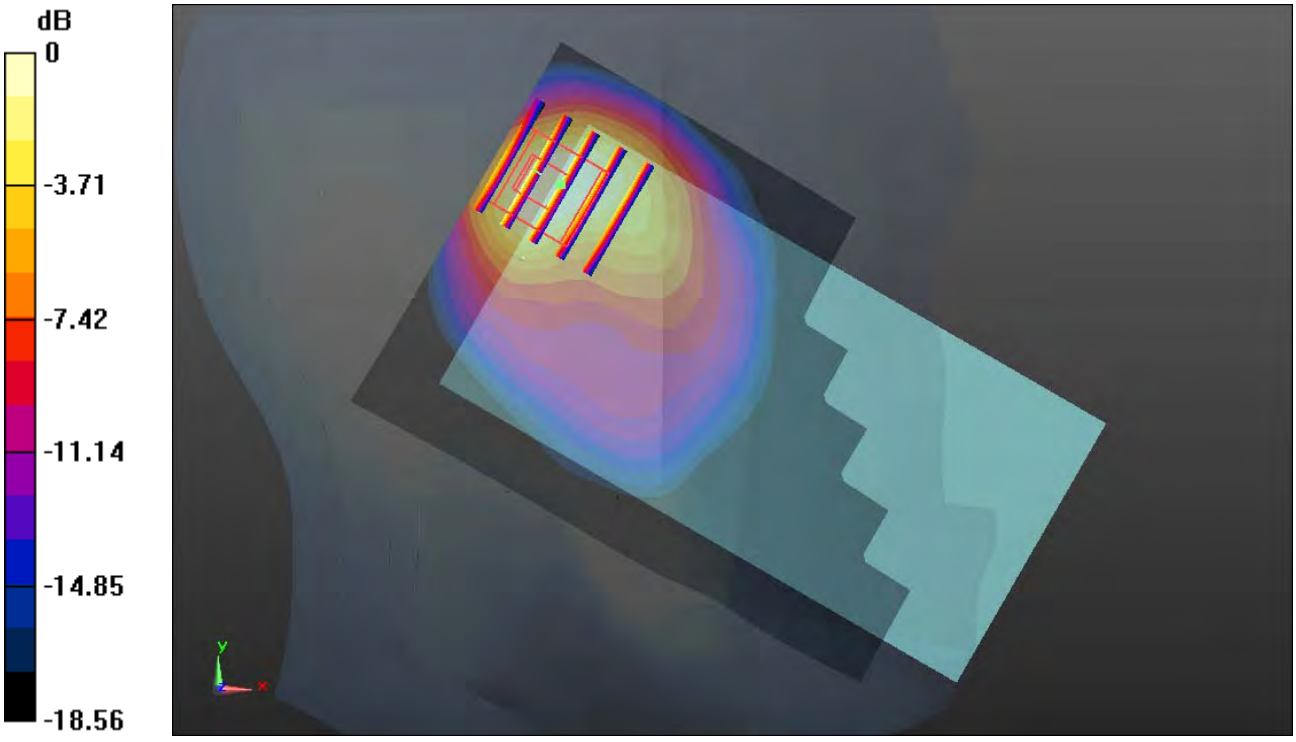
#09_LTE Band 4_20M_QPSK(1,0)_Left Cheek_Ch20300

Communication System: FDD_LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: HSL_1750_150405 Medium parameters used: f = 1745 MHz; σ = 1.377 mho/m; ε_r = 41.328; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.55, 8.55, 8.55); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch20300/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.476 mW/g

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.812 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.797 W/kg
SAR(1 g) = 0.919 mW/g; SAR(10 g) = 0.457 mW/g
Maximum value of SAR (measured) = 1.223 mW/g



0 dB = 1.220mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.05

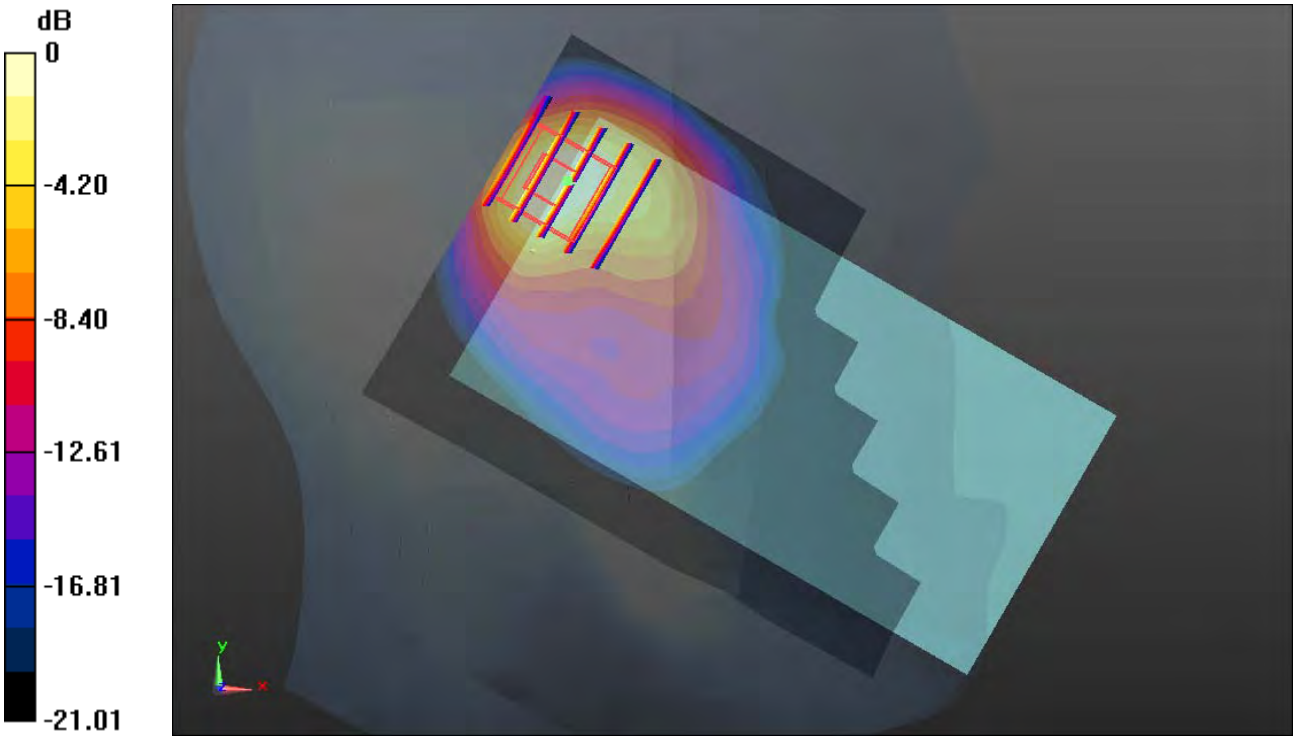
#10_LTE Band 2_20M_QPSK(50,0)_Left Cheek_Ch18700

Communication System: FDD_LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: HSL_1900_150405 Medium parameters used: f = 1860 MHz; σ = 1.384 mho/m; ε_r = 39.233; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(8.4, 8.4, 8.4); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch18700/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.574 mW/g

Ch18700/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.301 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.910 W/kg
SAR(1 g) = 0.922 mW/g; SAR(10 g) = 0.426 mW/g
Maximum value of SAR (measured) = 1.294 mW/g



0 dB = 1.290mW/g

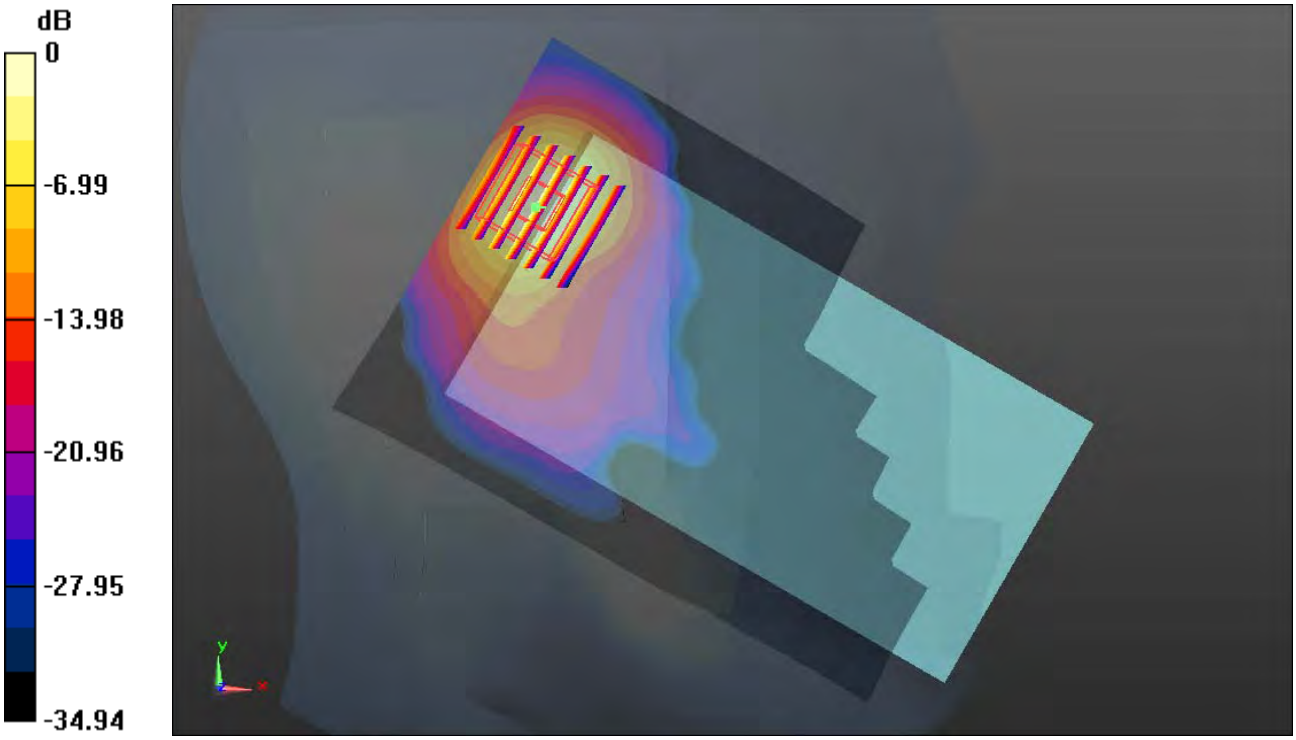
#11_LTE Band 7_20M_QPSK(1,0)_Left Tilted_Ch21350

Communication System: FDD_LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: HSL_2600_150407 Medium parameters used: f = 2560 MHz; σ = 1.937 mho/m; ε_r = 38.429; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.3, 7.3, 7.3); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch21350/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 1.793 mW/g

Ch21350/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.996 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 3.042 W/kg
SAR(1 g) = 1.180 mW/g; SAR(10 g) = 0.436 mW/g
Maximum value of SAR (measured) = 2.030 mW/g



0 dB = 2.030mW/g

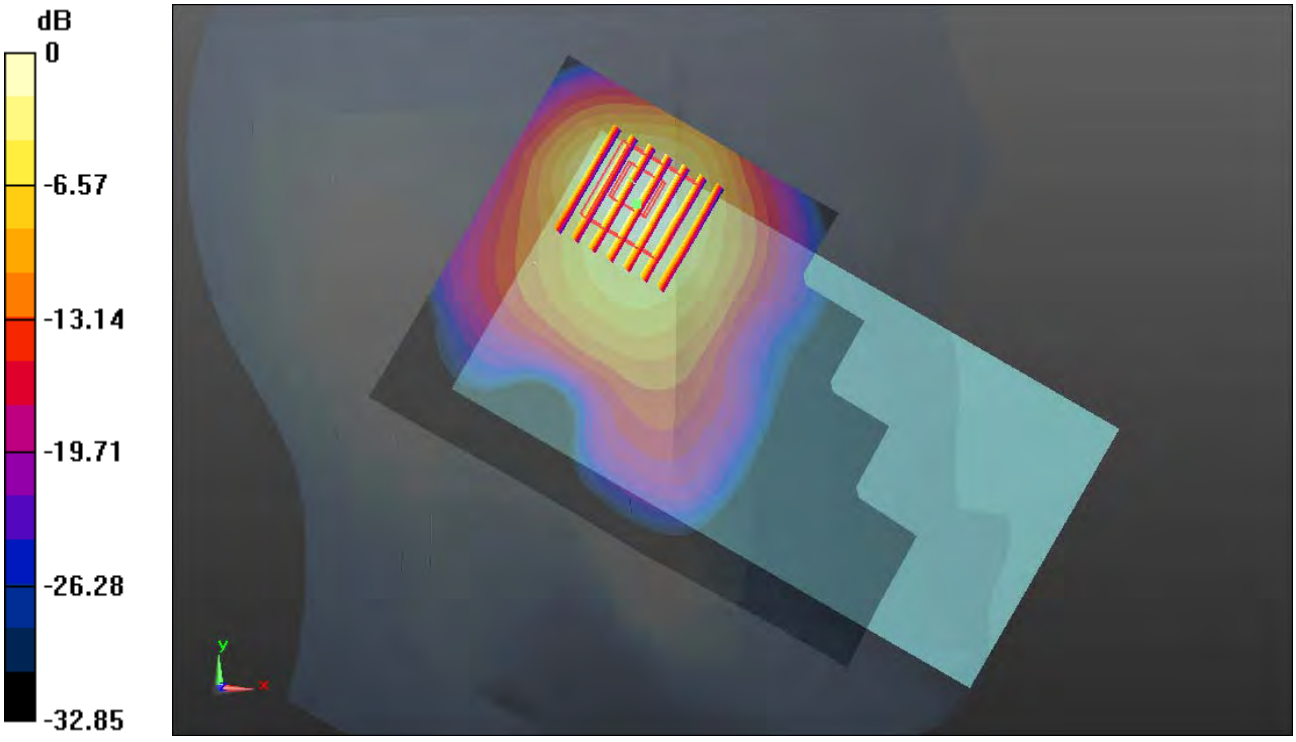
#12_WLAN 2.4GHz_802.11b_1Mbps_Left Cheek_Ch6

Communication System: WIFI (0); Frequency: 2437 MHz;Duty Cycle: 1:1.024
Medium: HSL_2450_150410 Medium parameters used: f = 2437 MHz; σ = 1.805 mho/m; ε_r = 39.259; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.48, 7.48, 7.48); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch6/Area Scan (91x151x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 1.538 mW/g

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.903 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.765 W/kg
SAR(1 g) = 1.060 mW/g; SAR(10 g) = 0.508 mW/g
Maximum value of SAR (measured) = 1.645 mW/g



0 dB = 1.650mW/g

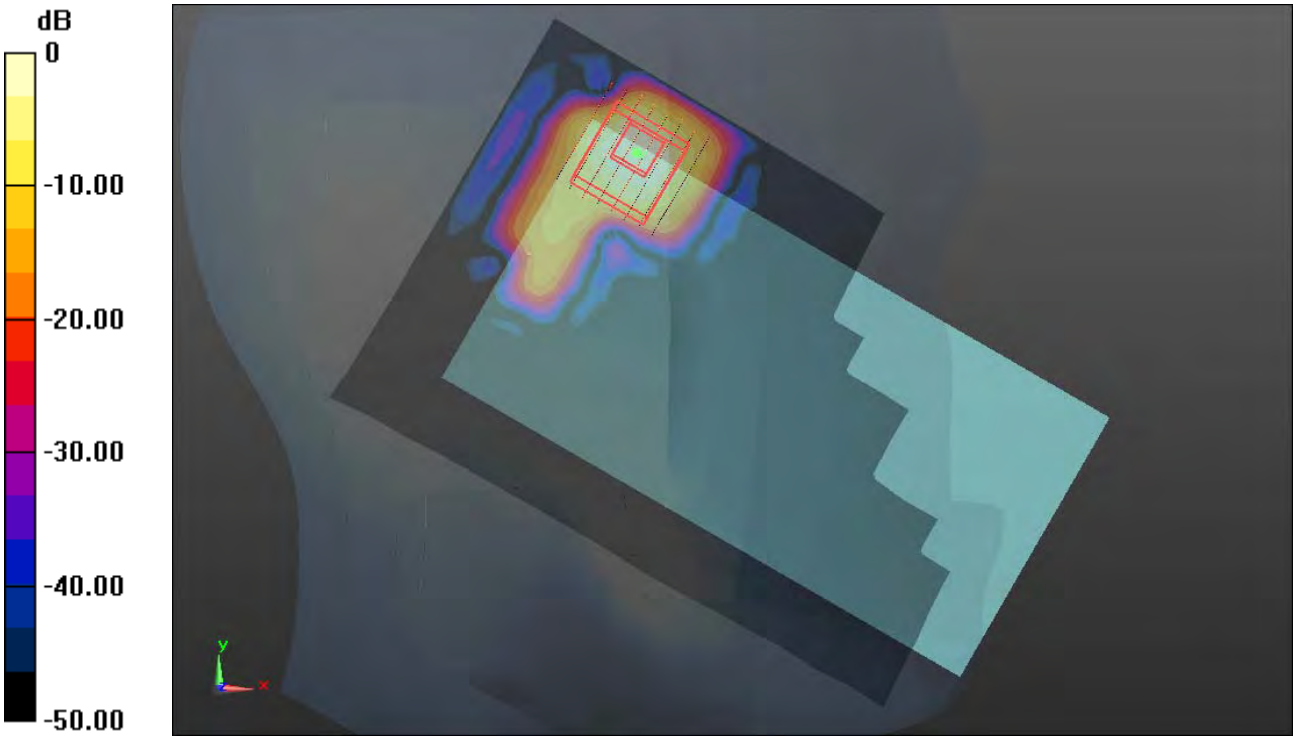
#13_WLAN 5.2GHz_802.11a_6Mbps_Left Cheek_Ch36

Communication System: WIFI (0); Frequency: 5180 MHz;Duty Cycle: 1:1.146
Medium: HSL_5000_150404 Medium parameters used: f = 5180 MHz; σ = 4.782 mho/m; ε_r = 35.518; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(5.35, 5.35, 5.35); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch36/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.276 mW/g

Ch36/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 2.136 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.059 W/kg
SAR(1 g) = 0.378 mW/g; SAR(10 g) = 0.106 mW/g
Maximum value of SAR (measured) = 1.119 mW/g



0 dB = 1.120mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.04.04

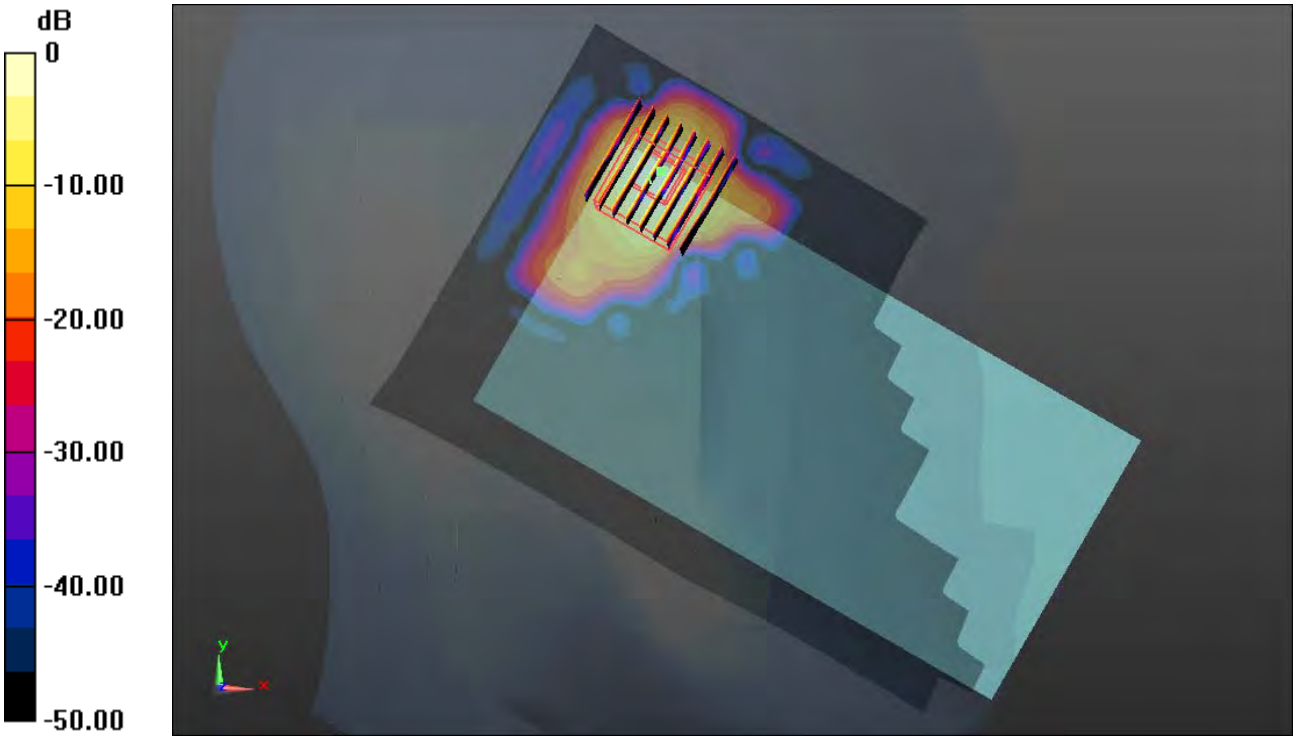
#14_WLAN 5.8GHz_802.11a_6Mbps_Left Cheek_Ch157

Communication System: WIFI (0); Frequency: 5785 MHz;Duty Cycle: 1:1.146
Medium: HSL_5000_150404 Medium parameters used: f = 5785 MHz; σ = 5.397 mho/m; ε_r = 34.405; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(4.79, 4.79, 4.79); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch157/Area Scan (111x191x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.428 mW/g

Ch157/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.595 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 4.933 W/kg
SAR(1 g) = 0.880 mW/g; SAR(10 g) = 0.227 mW/g
Maximum value of SAR (measured) = 2.358 mW/g



0 dB = 2.360mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

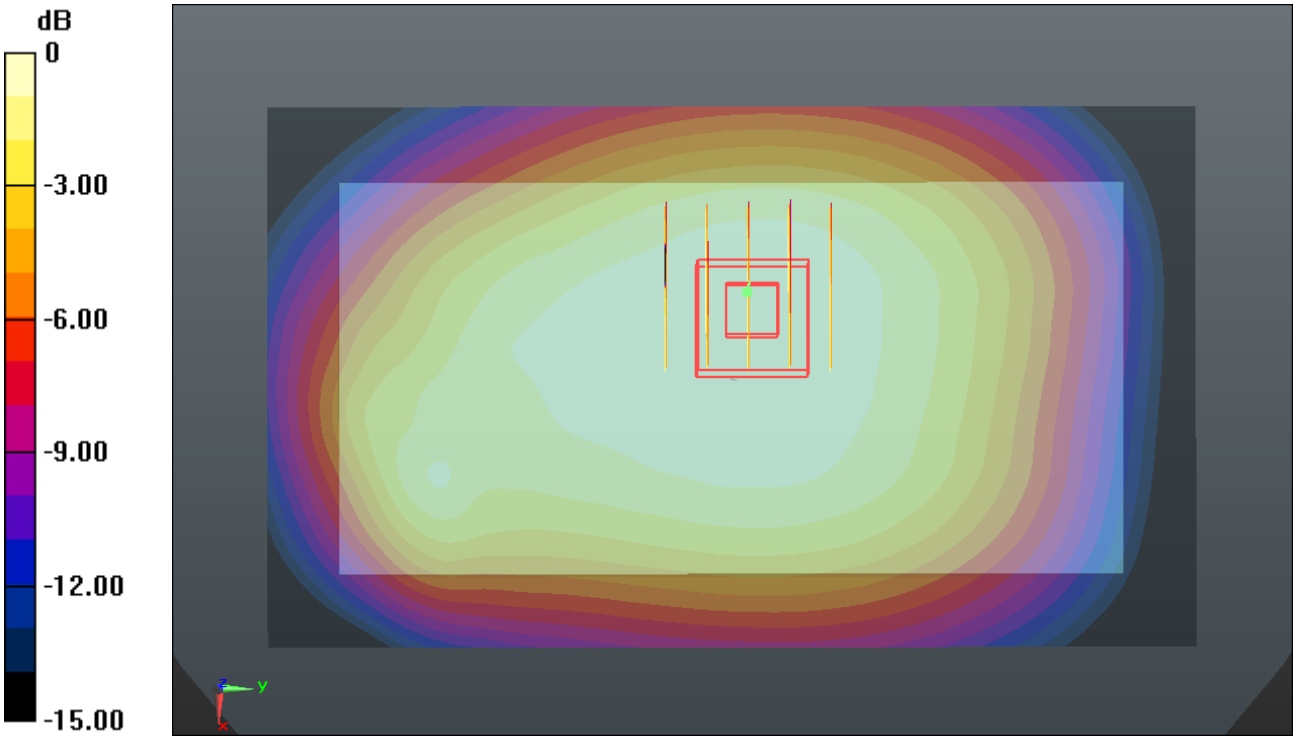
#15_GSM850_GPRS (4 Tx slots)_Back 1cm_Ch251

Communication System: GPRS/EDGE (4 Tx slots) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium: MSL_835_150325 Medium parameters used: f = 849 MHz; σ = 0.994 mho/m; ε_r = 54.329; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.31, 9.31, 9.31); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch251/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.709 mW/g

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.928 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.100 W/kg
SAR(1 g) = 0.622 mW/g; SAR(10 g) = 0.476 mW/g
Maximum value of SAR (measured) = 0.717 mW/g



0 dB = 0.720mW/g

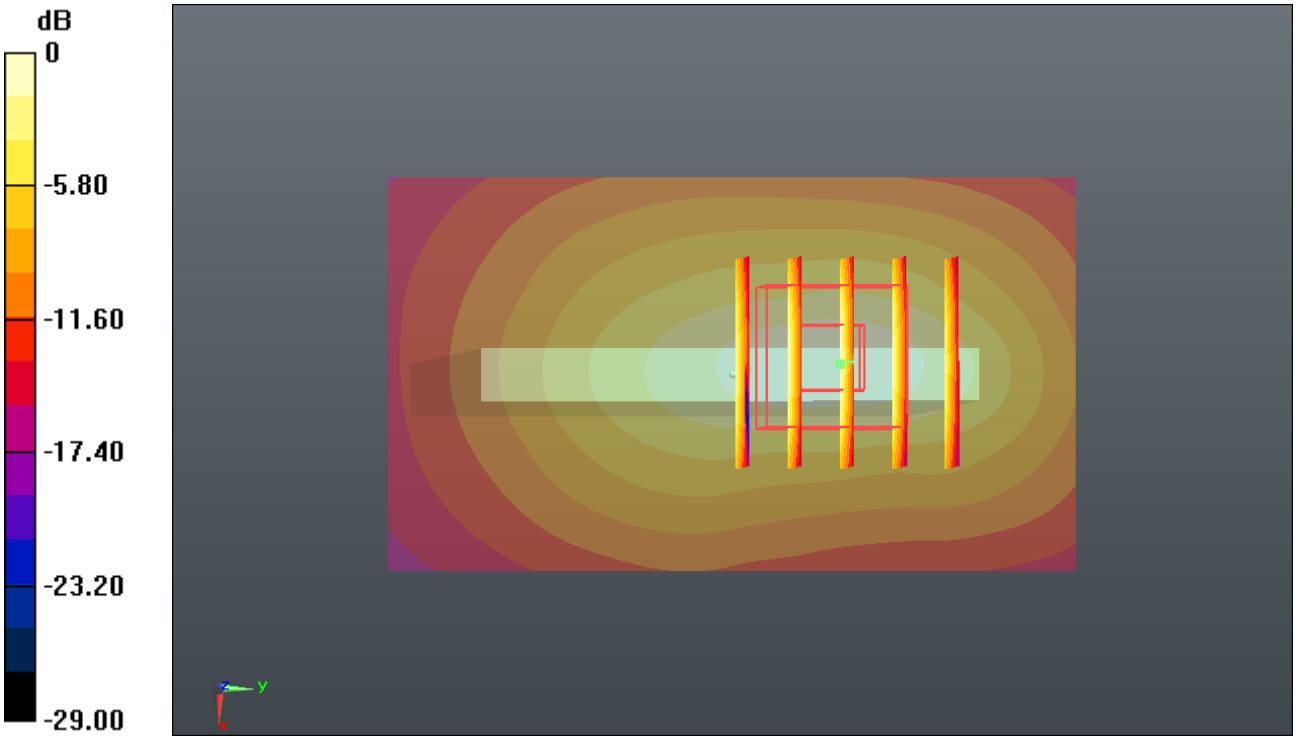
#16_GSM1900_GPRS (4 Tx slots)_Bottom Side 1cm_Ch810

Communication System: GPRS/EDGE (4 Tx slots) (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium: MSL_1900_150325 Medium parameters used: f = 1909.8 MHz; σ = 1.555 mho/m; ε_r = 53.206; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.56, 7.56, 7.56); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch810/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.100 mW/g

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.697 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.374 W/kg
SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.446 mW/g
Maximum value of SAR (measured) = 1.135 mW/g



0 dB = 1.140mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

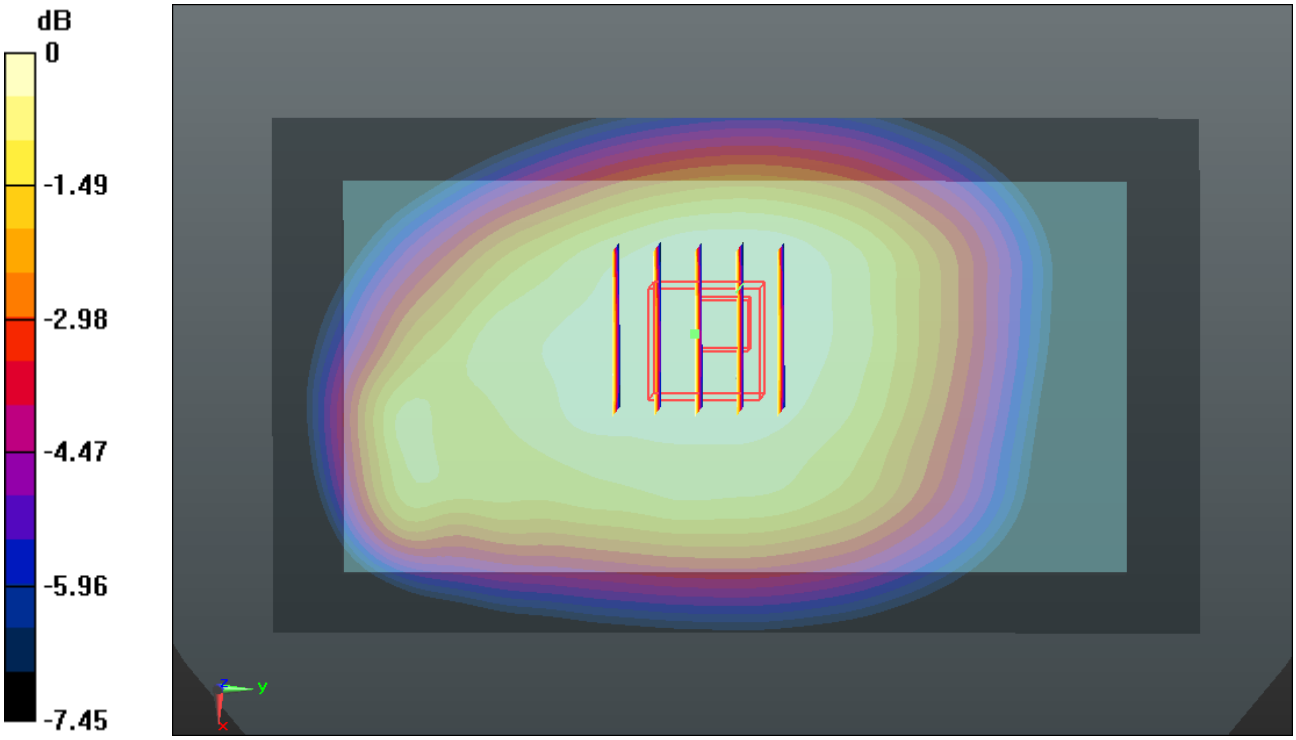
#17_WCDMA Band V_RMC12.2Kbps_Back 1cm_Ch4132

Communication System: UMTS (0); Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: MSL_835_150325 Medium parameters used: f = 826.4 MHz; σ = 0.971 mho/m; ε_r = 54.557; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.31, 9.31, 9.31); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch4132/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.538 mW/g

Ch4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.225 V/m; Power Drift = -0.0085 dB
Peak SAR (extrapolated) = 0.589 W/kg
SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.367 mW/g
Maximum value of SAR (measured) = 0.535 mW/g



0 dB = 0.530mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

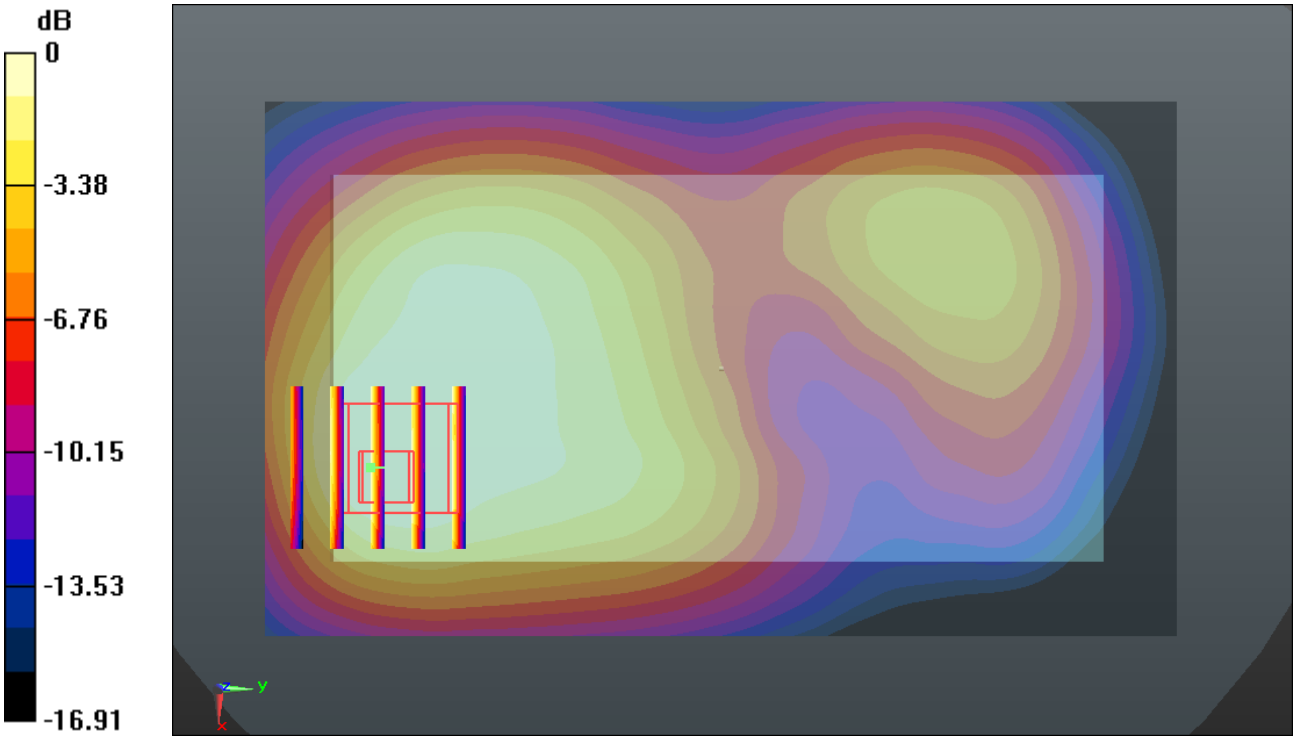
#18_WCDMA Band IV_RMC12.2Kbps_Back 1cm_Ch1513

Communication System: UMTS (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: MSL_1750_150325 Medium parameters used: f = 1752.6 MHz; σ = 1.525 mho/m; ε_r = 54.433; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.89, 7.89, 7.89); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch1513/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.104 mW/g

Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.539 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.321 W/kg
SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.493 mW/g
Maximum value of SAR (measured) = 1.055 mW/g



0 dB = 1.060mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

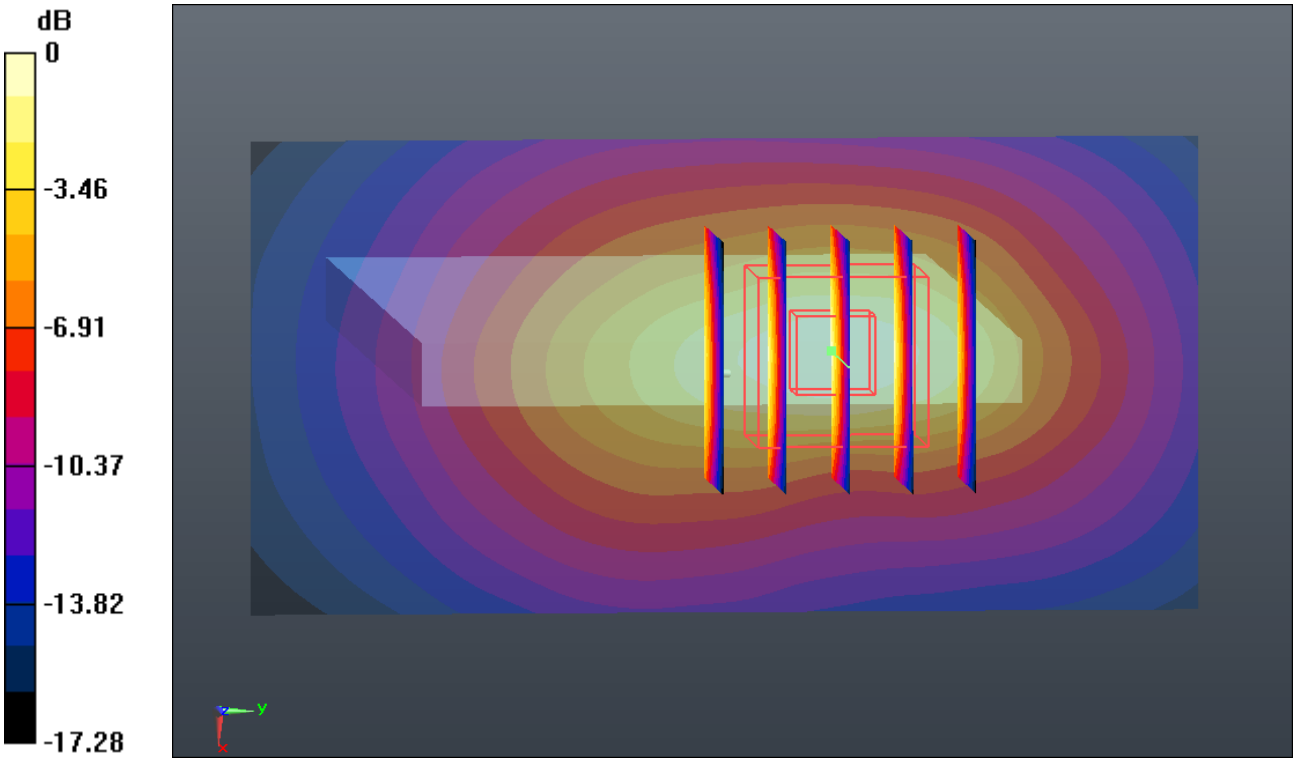
#19_WCDMA Band II_RMC12.2Kbps_Bottom Side 1cm_Ch9538

Communication System: UMTS (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_150325 Medium parameters used: f = 1907.6 MHz; σ = 1.553 mho/m; ε_r = 53.214; ρ = 1000 kg/m^3
Ambient Temperature：23.8 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.56, 7.56, 7.56); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch9538/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.491 mW/g

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.368 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.862 W/kg
SAR(1 g) = 1.100 mW/g; SAR(10 g) = 0.586 mW/g
Maximum value of SAR (measured) = 1.531 mW/g



0 dB = 1.530mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

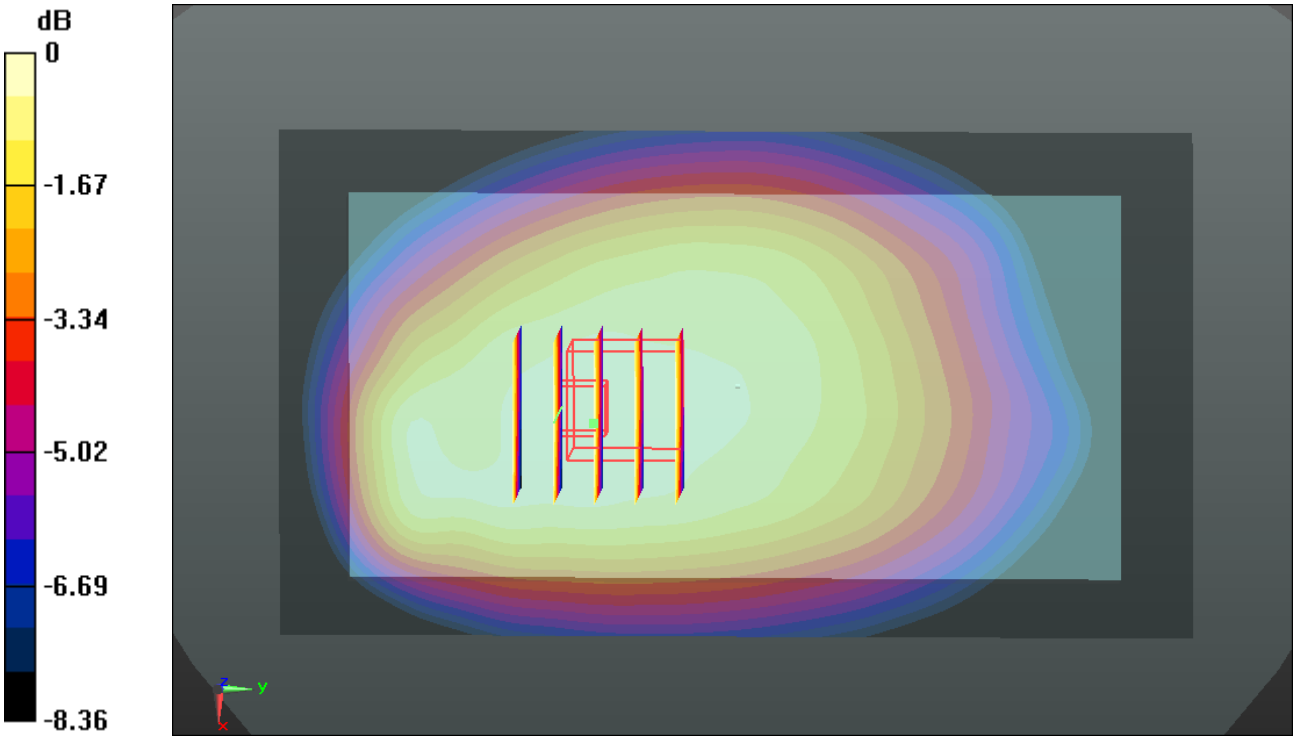
#20_LTE Band 12_10M_QPSK(1,0)_Back 1cm_Ch23130

Communication System: FDD_LTE (0); Frequency: 711 MHz;Duty Cycle: 1:1
Medium: MSL_750_150325 Medium parameters used: f = 711 MHz; σ = 0.934 mho/m; ε_r = 54.838; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.46, 9.46, 9.46); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch23130/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.189 mW/g

Ch23130/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.164 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.211 W/kg
SAR(1 g) = 0.168 mW/g; SAR(10 g) = 0.133 mW/g
Maximum value of SAR (measured) = 0.193 mW/g



0 dB = 0.190mW/g

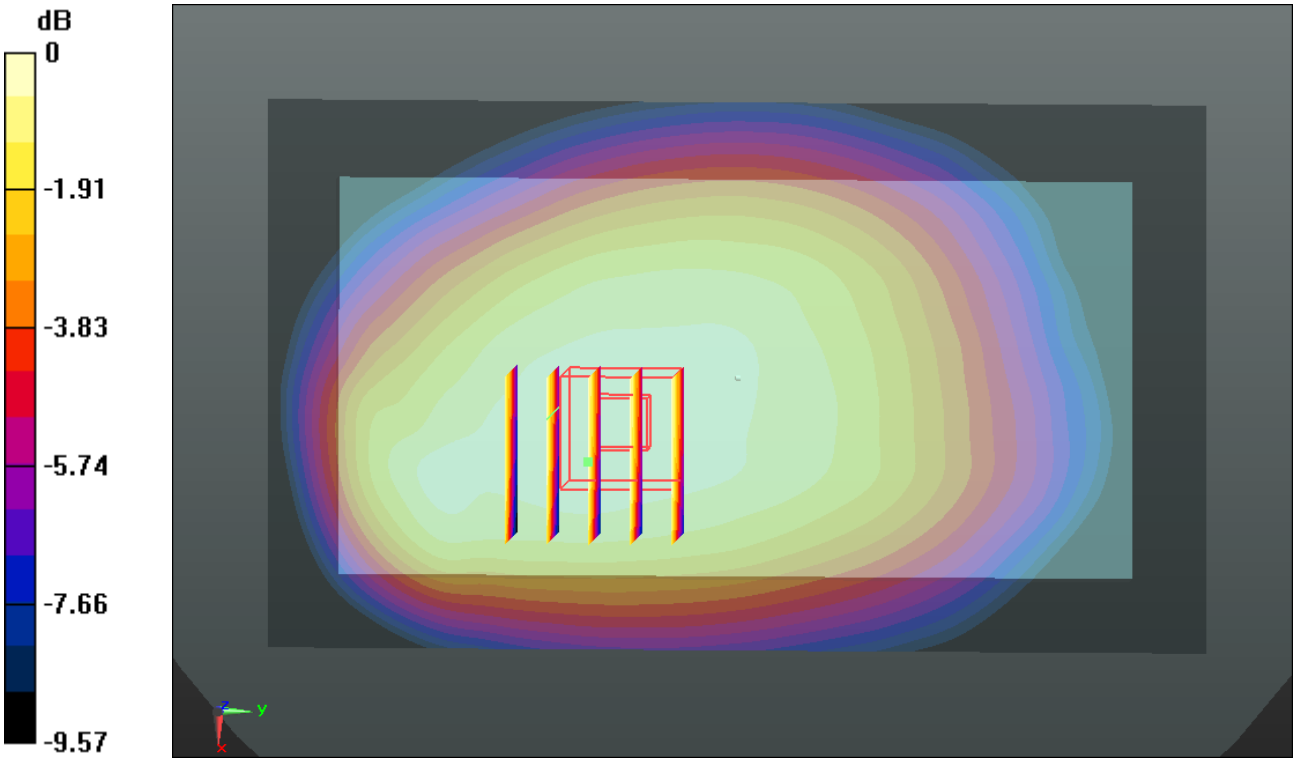
#21_LTE Band 17_10M_QPSK(1,0)_Back 1cm_Ch23790

Communication System: FDD_LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium: MSL_750_150325 Medium parameters used: f = 710 MHz; σ = 0.933 mho/m; ε_r = 54.842; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.46, 9.46, 9.46); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch23790/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.216 mW/g

Ch23790/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.945 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.238 W/kg
SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.150 mW/g
Maximum value of SAR (measured) = 0.217 mW/g



0 dB = 0.220mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2015.03.25

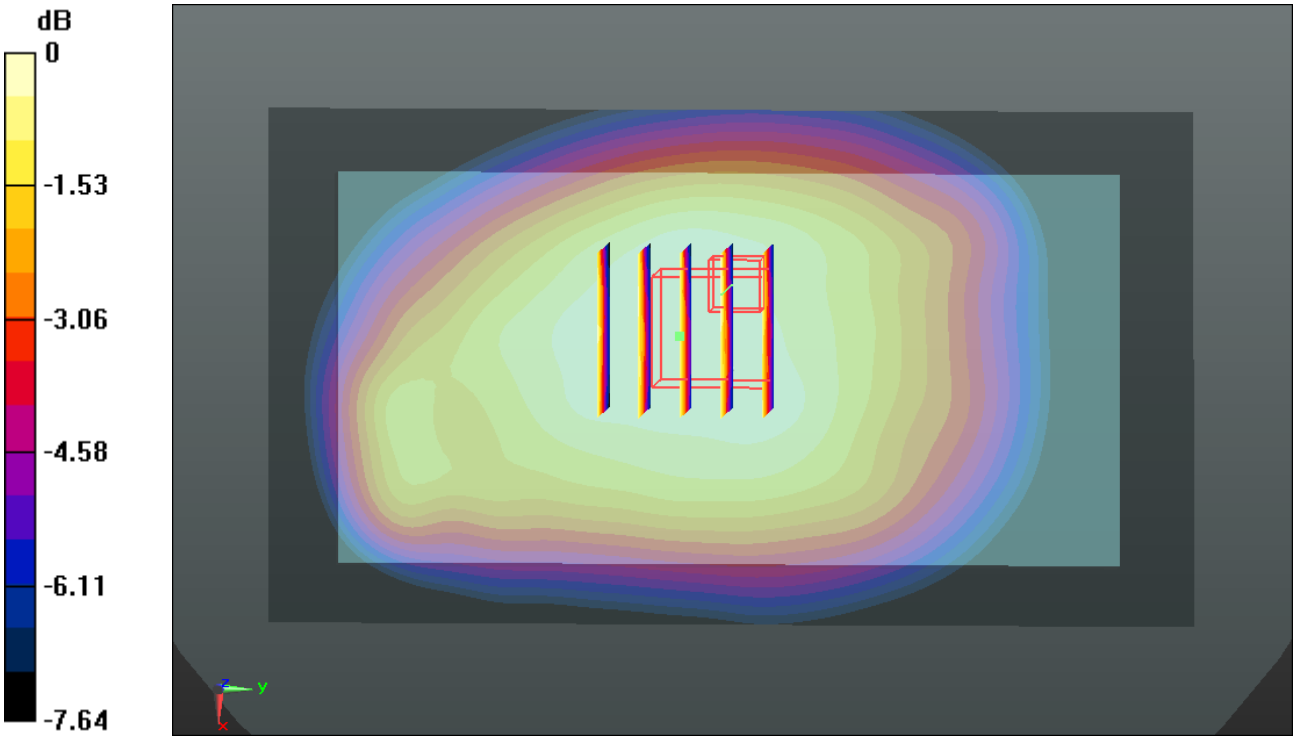
#22_LTE Band 5_10M_QPSK(1,24)_Back 1cm_Ch20450

Communication System: FDD_LTE (0); Frequency: 829 MHz;Duty Cycle: 1:1
Medium: MSL_835_150325 Medium parameters used: f = 829 MHz; σ = 0.974 mho/m; ε_r = 54.536; ρ = 1000 kg/m^3
Ambient Temperature：23.7 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(9.31, 9.31, 9.31); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch20450/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.570 mW/g

Ch20450/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.163 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.622 W/kg
SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.364 mW/g
Maximum value of SAR (measured) = 0.564 mW/g



0 dB = 0.560mW/g

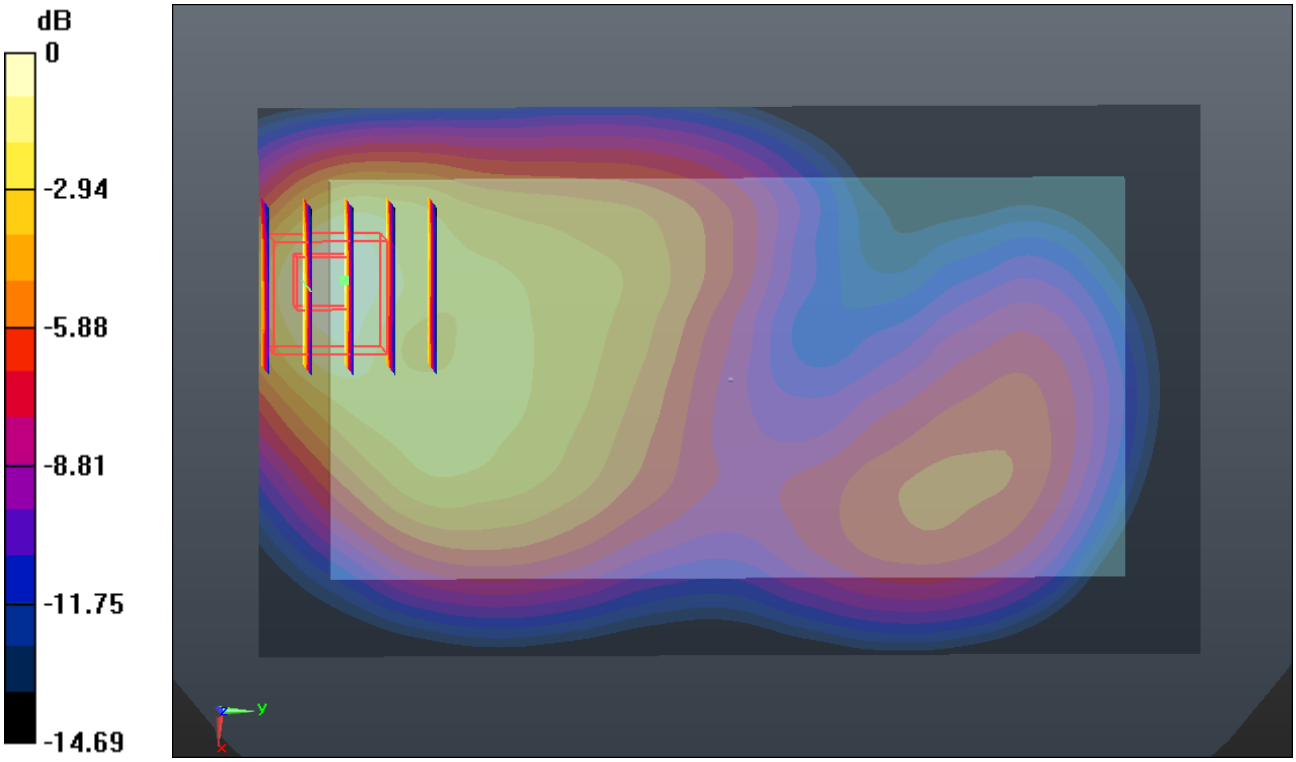
#23_LTE Band 4_20M_QPSK(1,0)_Front 1cm_Ch20300

Communication System: FDD_LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: MSL_1750_150325 Medium parameters used: f = 1745 MHz; σ = 1.516 mho/m; ε_r = 54.446; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.89, 7.89, 7.89); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch20300/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.168 mW/g

Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.207 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.430 W/kg
SAR(1 g) = 0.872 mW/g; SAR(10 g) = 0.494 mW/g
Maximum value of SAR (measured) = 1.110 mW/g



0 dB = 1.110mW/g

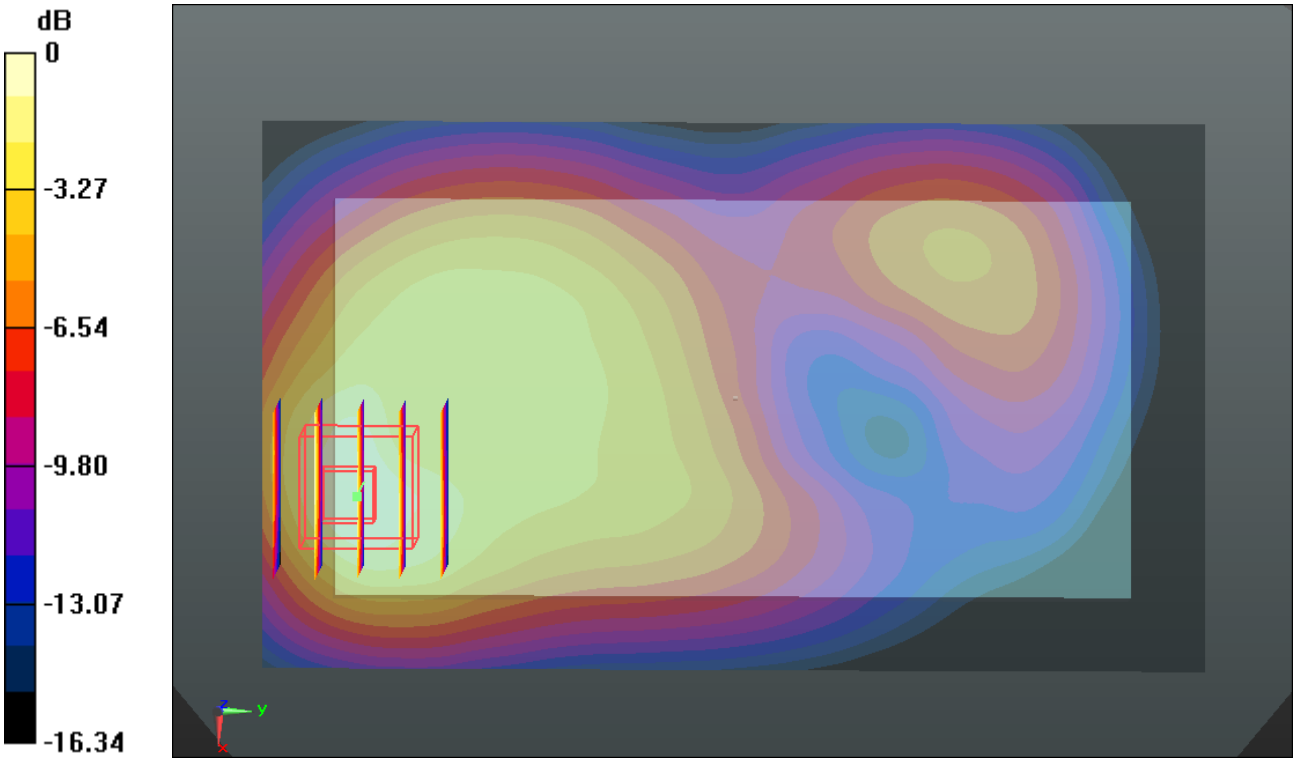
#24_LTE Band 2_20M_QPSK(1,0)_Back 1cm_Ch18900

Communication System: FDD_LTE (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_150325 Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.289; ρ = 1000 kg/m^3
Ambient Temperature：23.0 ℃; Liquid Temperature：22.0 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3857; ConvF(7.56, 7.56, 7.56); Calibrated: 2014.05.23
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.4.5 (3634)

Ch18900/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.655 mW/g

Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.404 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.865 W/kg
SAR(1 g) = 1.170 mW/g; SAR(10 g) = 0.684 mW/g
Maximum value of SAR (measured) = 1.541 mW/g



0 dB = 1.540mW/g