Registration
No.788871

TEST REPORT

FOR SAR TESTING

Report No.: SRTC2018-9004(F)-18062601(H)

Product Name: Mobile Phone

Product Model: Hisense F15

Applicant: Hisense International Co., Ltd.

Manufacturer: Hisense Communications Co., Ltd.

Specification: FCC Part 2.1093

IEEE Std 1528-2013

FCC RF Exposure KDB Procedures

FCC ID: 2ADOBF15

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District, Beijing, P.R.China

Tel: 86-10-57996183 Fax: 86-10-57996388

Contents

1 GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu Jia
Tel:	+86 10 57996183
Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	Hisense International Co., Ltd.
Address:	Floor 22, Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China
City:	Qingdao
Country or Region:	China
Contacted person:	Geng Ruifeng
Tel:	+86-532-80877742
Fax:	---
Email:	gengruifeng@hisense.com

1.4 Manufacturer's details

Company:	Hisense Communications Co., Ltd.
Address:	218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao, China
City:	Qingdao
Country or Region:	China
Contacted person:	Dai Qingtao
Tel:	+86-532-55753749
Fax:	---
Email:	daiqingtao@hisense.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2018.06.24
Testing Start Date:	2018.07.09
Testing End Date:	2018.08.10

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	21.0-22.0	35.0-45.0

Normal Supply Voltage (V d.c.):	3.8

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Wireless Technology and Frequency Bands	☒GSM Band: GSM850/PCS1900 ☒WCDMA Band: FDD2/4/5 ☒LTE Band 2/4/5/7/12/28 ☒Bluetooth Band: 2.4GHz ☒Wi-Fi Band: 2.4GHz 5GHz
Mode	GSM ☒Voice (GMSK) ☒GPRS (GMSK) ☒EGPRS (GMSK) WCDMA ☒UMTS Rel. 99 (Voice & Data) ☒HSDPA (Rel. 5) ☒HSUPA (Rel. 6) ☒HSPA+ (Rel.) ☒DC-HSDPA (Rel.) Wi-Fi (802.11a/b/g/n) ☒802.11a ☒802.11b ☒802.11g ☒802.11n (20MHz) ☒802.11n (40MHz) ☐802.11ac (20MHz) ☐802.11ac (40MHz) ☐802.11ac (80MHz) Bluetooth ☒BR(GFSK) ☒EDR(π/4 DQPSK , 8-DPSK) ☒BLE(GFSK) LTE ☒QPSK ☒16QAM ☐64QAM
Duty Cycle	GSM Voice: 12.5%; GPRS: 12.5% (1 Slot), 25% (2 Slots), 37.5% (3 Slots), 50% (4 Slots) WCDMA: 100% Wi-Fi 802.11b/g/n: 100% Bluetooth: 32.25% (DH1), 66.68% (DH3), 77.52% (DH5)
GPRS Multi-Slot Class	☐Class 8 - One Up ☐Class 10 - Two Up ☒Class 12 - Four Up
Mobile Phone Capability	☐Class A - Mobile phones can be connected to both GPRS and GSM services simultaneously. ☒Class B - Mobile phones can be attached to both GPRS and GSM services, using one service at a time. ☐Class C - Mobile phones are attached to either GPRS or GSM voice service. You need to switch manually between services
DTM (Dual Transfer Mode)	Not Supported

Note: We don’t need to consider LTE band28 in the report according to “LTE in FCC Bands and Services”

2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

State of sample	Normal
Headset	B1G513A07/Shenzhen Jinchuangju Electronic Technology Co.,Ltd.
Batteries	LIW38210A/Guangdong Teamgiant New Energy Tech Co.,LTD
H/W Version S/W Version	YK737_V0.2 Hisense_F15_4G_10
IMEI	Main supply Sample1:861854039419435 Sample2:861854039418718 Second supply Sample3: 861854039419641
Notes	As the information described above, we used three test sample offered by the customer. The relevant tests have been performed in order to verify in which combination case the EUT would have the worst features. Compare with main supply, Second supply is different on the supplier of LCD/TP/Camera/Flash.

3 REFERENCE SPECIFICATION

Specification	Version	Title
Part 2.1093	2018	Radiofrequency radiation exposure evaluation: portable devices.
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
IEEE Std 1528a	2005	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques Amendment 1: CAD File for Human Head Model (SAM Phantom)
KDB 447498 D01	v06	General RF Exposure Guidance
KDB 648474 D04	v01r03	Handset SAR
KDB 941225 D01	v03r01	3G SAR Procedures
KDB 941225 D06	v02r01	Hotspot Mode
KDB 248227 D01	v02r02	SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB 865664 D01	v01r04	SAR Measurement from 100 MHz to 6 GHz
KDB 865664 D02	v01r02	RF Exposure Reporting
KDB 941225 D05	v02r05	SAR for LTE Devices

4 TEST CONDITIONS

4.1 Picture to demonstrate the required liquid depth

The liquid depth in the used SAM phantoms

Liquid depth for SAR Measurement

4.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester. Communication between the device and the call tester was established by air link.
The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.
In all operating bands the measurements were performed on middle channel, and few of them were also performed on lowest and highest channels.

4.3 SAR Measurement Set-up

The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit. A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the

robot motors.
The PC consists of the Micron Pentium IV computer with Win7 system and SAR Measurement Software DASY5 Professional, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot.
A data acquisition electronic (DAE) circuit performs the signal amplification; signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The 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 PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines.
The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection
The robot uses its own controller with a built in VME-bus computer.

4.4 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin headed "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements of IEEE 1528 - 2013.
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.
The SPEAG device holder (see Section 5.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

4.5 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2013 and FCC Supplement C to OET Bulletin 65. All tests were carried out using simulants whose dielectric parameters were within ± 5% of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.
The depth of the tissue simulant was 15.0 ± 0.5 cm measured from the ear reference point during system checking and device measurements.

4.5.1 Tissue Stimulant Recipes

The following tissue stimulants were used for Head and Body test:

Name	Broadband tissue-equivalent liquid
Type for Head	HBBL600-6000V6 Head Simulating Liquid
Type for Body	MBBL600-6000V6 Body Simulating Liquid

4.6 DESCRIPTION OF THE TEST PROCEDURE

4.6.1 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the Dasy5 system.

Device holder supplied by SPEAG

4.6.2 Test positions

4.6.2.1 Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.
The positions used in the measurements were according to IEEE 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".

4.6.2.2 Body Worn Configuration

The device was placed in the SPEAG holder below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance using a separate flat spacer that was removed before the start of the measurements. And the distance is 10mm.The device was oriented with its antenna facing the phantom since this orientation gives higher results.

4.6.3 Scan Procedure

First, area scans were used for determination of the field distribution and the approximate location of the local peak SAR values. The SAR distribution is scanned along the inside surface, at least for an area larger than the projection of the handset and antenna. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30°. The SAR distribution is first measured on a 2-D coarse grid. The scan region should cover all areas that are exposed and encompassed by the projection of the handset. There are 15 mm × 15 mm (equal or less than 2GHz), 12 mm × 12 mm (from 2GHz~3GHz) and 10mm x 10mm (above 5GHz) measurement grid used when two staggered one-dimensional cubic splines are used to estimate the maximum SAR location. Next, a zoom scan, a minimum of 7 x 7x7 points covering a volume of at least 30x30x30mm, was performed around the highest E-field value to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.

4.6.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.
The interpolation, extrapolation and maximum search routines within DASY5 are all based on the modified Quadratic Shepard’s method (Robert J. Renka,”Multivariate Interpolation of Large Sets of Scattered Data”, University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).
The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighbouring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.
In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

5 RESULT SUMMARY

The maximum reported SAR values for Head configuration and Body Worn configuration are given as follows. The device conforms to the requirements of the standard(s) when the maximum reported SAR value is less than or equal to the limit.

Note: The test result of second supply is better than the test data of main supply. So the original test data retain and adopted as the final test result.

Exposure Posltion	Frequency Band	1g-SAR Reported Result (W/kg)	Highest 1g-SAR Reported Result (W/kg)		Limit (W/kg)/1g	Result
Head	GSM 850	0.226	1.382	1.382	1.60	pass
	GSM 1900	0.160				
	WCDMA Band 2	0.265				
	WCDMA Band 4	0.233				
	WCDMA Band 5	0.124				
	LTE Band 2	0.367				
	LTE Band 4	0.223				
	LTE Band 5	0.166				
	LTE Band 7	0.221				
	LTE Band 12	0.174				
	WLAN 2.4GHz Band	1.123				
	WLAN 5GHz Band	1.382				
Body (10mm Gap)	GSM 850	0.685	1.178			
	GSM 1900	0.545				
	WCDMA Band 2	0.512				
	WCDMA Band 4	0.619				
	WCDMA Band 5	0.266				
	LTE Band 2	0.515				
	LTE Band 4	0.443				
	LTE Band 5	0.344				
	LTE Band 7	1.178				
	LTE Band 12	0.326				
	WLAN 2.4GHz Band	0.179				
	WLAN 5GHz Band	0.341				

Simultaneous Transmission Summary

Exposure Position	Frequency Band	1g-SAR Result(W/kg)	Highest 1g-SAR Result(W/kg)		Limit (W/kg) /1g	Result
Head	GSM & Wi-Fi	1.512	1.524	1.524	1.60	pass
	WCDMA & Wi-Fi	1.496				
	LTE & Wi-Fi	1.524				
	GSM & Bluetooth	0.359				
	WCDMA & Bluetooth	0.398				
	LTE & Bluetooth	0.500				
Body (10mm Gap)	GSM & Wi-Fi	0.911	1.244			
	WCDMA & Wi-Fi	0.845				
	LTE & Wi-Fi	1.178				
	GSM & Bluetooth	0.751				
	WCDMA & Bluetooth	0.685				
	LTE & Bluetooth	1.244				

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. Chang Tianyu	Issued date: 20180816

6 TEST RESULT

6.1 Manufacturing Tolerance

GSM

GSM 850			
Channel	Channel 128	Channel 189	Channel 251
Tolerance (dBm)	29.0~33.0	29.0~33.0	29.0~33.0
GSM 1900			
Channel	Channel 512	Channel 661	Channel 810
Tolerance (dBm)	26.0~30.0	26.0~30.0	26.0~30.0

GSM 850 GPRS				
Channel		128	189	251
1 Txslot	Tolerance (dBm)	29.0~33.0	29.0~33.0	29.0~33.0
2 Txslot	Tolerance (dBm)	**28.5~32.5**	**28.5~32.5**	**28.5~32.5**
3 Txslot	Tolerance (dBm)	26.5~30.5	26.5~30.5	26.5~30.5
4 Txslot	Tolerance (dBm)	25.0~29.0	25.0~29.0	25.0~29.0
GSM 850 EGPRS (GMSK)				
Channel		128	189	251
1 Txslot	Tolerance (dBm)	29.0~33.0	29.0~33.0	29.0~33.0
2 Txslot	Tolerance (dBm)	**28.5~32.5**	**28.5~32.5**	**28.5~32.5**
3 Txslot	Tolerance (dBm)	26.5~30.5	26.5~30.5	26.5~30.5
4 Txslot	Tolerance (dBm)	25.0~29.0	25.0~29.0	25.0~29.0

GSM 1900 GPRS				
Channel		512	661	810
1 Txslot	Tolerance (dBm)	26.0~30.0	26.0~30.0	26.0~30.0
2 Txslot	Tolerance (dBm)	**25.5~29.5**	**25.5~29.5**	**25.5~29.5**
3 Txslot	Tolerance (dBm)	24.0~28.0	24.0~28.0	24.0~28.0
4 Txslot	Tolerance (dBm)	23.0~27.0	23.0~27.0	23.0~27.0
GSM 1900 EGPRS (GMSK)				
Channel		512	661	810
1 Txslot	Tolerance (dBm)	26.0~30.0	26.0~30.0	26.0~30.0
2 Txslot	Tolerance (dBm)	**25.5~29.5**	**25.5~29.5**	**25.5~29.5**
3 Txslot	Tolerance (dBm)	24.0~28.0	24.0~28.0	24.0~28.0
4 Txslot	Tolerance (dBm)	23.0~27.0	23.0~27.0	23.0~27.0

WCDMA

WCDMA Band2			
Channel	9262	9400	9538
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
WCDMA Band4			
Channel	1312	1412	1513
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
WCDMA Band5			
Channel	4132	4183	4233
Tolerance (dBm)	19.5~23.5	19.5~23.5	19.5~23.5

HSDPA Band2				
Channel		9262	9400	9538
Sub test 1	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 2	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 3	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 4	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSDPA Band4				
Channel		1312	1412	1513
Sub test 1	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 2	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 3	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 4	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSDPA Band5				
Channel		4132	4183	4233
Sub test 1	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 2	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 3	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 4	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0

HSUPA Band2				
Channel		9262	9400	9538
Sub test 1	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 2	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 3	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 4	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 5	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSUPA Band4				
Channel		1312	1412	1513
Sub test 1	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 2	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 3	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 4	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
Sub test 5	Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSUPA Band5				
Channel		4132	4183	4233
Sub test 1	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 2	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 3	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 4	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
Sub test 5	Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0

HSPA+ Band2			
Channel	9262	9400	9538
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSPA+ Band4			
Channel	1312	1412	1513
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
HSPA+ Band5			
Channel	4132	4183	4233
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0

LTE

Band 2

20BW 100%RB			
Channel	Channel 19300	Channel 19575	Channel 19850
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
20BW 50%RB			
Channel	Channel 19300	Channel 19575	Channel 19850
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
20BW 1RB			
Channel	Channel 19300	Channel 19575	Channel 19850
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0

Band 4

20BW 100%RB			
Channel	Channel 20050	Channel 20175	Channel 20300
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
20BW 50%RB			
Channel	Channel 20050	Channel 20175	Channel 20300
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0
20BW 1RB			
Channel	Channel 20050	Channel 20175	Channel 20300
Tolerance (dBm)	19.0~23.0	19.0~23.0	19.0~23.0

Band 5

10BW 100%RB			
Channel	Channel	Channel	Channel
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
10BW 50%RB			
Channel	Channel	Channel	Channel
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
10BW 1RB			
Channel	Channel	Channel	Channel
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0

Band 7

20BW 100%RB			
Channel	Channel 20850	Channel 21100	Channel 21350
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
20BW 50%RB			
Channel	Channel 20850	Channel 21100	Channel 21350
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
20BW 1RB			
Channel	Channel 20850	Channel 21100	Channel 21350
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0

Band 12

10BW 100%RB			
Channel	Channel 23060	Channel 23095	Channel 23130
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
10BW 50%RB			
Channel	Channel 23060	Channel 23095	Channel 23130
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0
10BW 1RB			
Channel	Channel 23060	Channel 23095	Channel 23130
Tolerance (dBm)	18.0~22.0	18.0~22.0	18.0~22.0

Bluetooth

GFSK			
Channel	0	39	78
Tolerance (dBm)	-1.0~3.0	-1.0~3.0	-1.0~3.0
π/4DQPSK			
Channel	0	39	78
Tolerance (dBm)	-3.5~0.5	-3.5~0.5	-3.5~0.5
8DPSK			
Channel	0	39	78
Tolerance (dBm)	-3.5~0.5	-3.5~0.5	-3.5~0.5

Bluetooth (BLE)

GFSK			
Channel	0	19	39
Tolerance (dBm)	1.0~5.0	1.0~5.0	1.0~5.0

Wi-Fi (2.4GHz)

802.11b			
Channel	1	6	11
Tolerance (dBm)	12.0~16.0	12.0~16.0	12.0~16.0
802.11g			
Channel	1	6	11
Tolerance (dBm)	11.0~15.0	11.0~15.0	11.0~15.0
802.11n HT20			
Channel	1	6	11
Tolerance (dBm)	11.0~15.0	11.0~15.0	11.0~15.0
802.11n HT40			
Channel	3	6	9
Tolerance (dBm)	11.0~15.0	11.0~15.0	11.0~15.0

Wi-Fi 5GHz (U-NII-1)

802.11a	
Tolerance (dBm)	8.0~12.0
802.11n HT20	
Tolerance (dBm)	8.0~12.0
802.11n HT40	
Tolerance (dBm)	8.0~12.0

Wi-Fi 5GHz (U-NII-3)

802.11a	
Tolerance (dBm)	8.0~12.0
802.11n HT20	
Tolerance (dBm)	8.0~12.0
802.11n HT40	
Tolerance (dBm)	8.0~12.0

6.2 GSM Measurement result

GSM Measured Power

Mode	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
Measured Power(dBm)	**32.92**	**32.77**	**32.80**	**29.85**	**29.78**	**29.81**

GPRS Measured Power

Mode	GPRS850			GPRS1900		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplinkPower(dBm)	32.92	32.77	32.80	29.85	29.78	29.81
3Downlink2uplinkPower(dBm)	**31.99**	**32.14**	**32.19**	**29.16**	**29.20**	**29.23**
2Downlink3uplinkPower(dBm)	29.92	30.04	30.10	27.17	27.20	27.25
1Downlink4uplinkPower(dBm)	28.79	28.92	28.98	26.09	26.11	26.15

GPRS Averaged Power

Mode	GPRS850			GPRS1900		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplinkPower(dBm)	23.89	23.74	23.77	20.82	20.75	20.78
3Downlink2uplinkPower(dBm)	25.97	26.12	26.17	23.14	23.18	23.21
2Downlink3uplinkPower(dBm)	25.66	25.78	25.84	22.91	22.94	22.99
1Downlink4uplinkPower(dBm)	25.78	25.91	25.97	23.08	23.10	23.14

Division Factors (for Measured Power and Averaged Power):

To average the power, the division factor is as follows:

1TX-slot (4Downlink1uplink) = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots(3Downlink2uplink) = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots (2Downlink3uplink)= 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots (1Downlink4uplink)= 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 2Txslots (3Downlink2uplink) for GPRS.

EGPRS Measured Power

Mode	EGPRS850 (GMSK)			EGPRS1900 (GMSK)		
	EGPRS850 (8PSK)			EGPRS1900 (8PSK)		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplinkPower(dBm)	32.91	32.78	32.82	29.67	29.74	29.76
	26.55	26.74	26.85	26.21	26.27	26.22
3Downlink2uplinkPower(dBm)	**32.02**	**32.15**	**32.17**	**29.18**	**29.21**	**29.23**
	25.33	25.49	25.61	25.36	25.42	25.51
2Downlink3uplinkPower(dBm)	29.90	30.05	30.12	27.17	27.22	27.27
	23.05	23.14	23.32	23.28	23.34	23.26
1Downlink4uplinkPower(dBm)	28.78	28.93	28.86	26.08	26.14	26.18
	21.92	22.01	22.03	22.07	22.15	22.28

EGPRS Averaged Power

Mode	EGPRS850 (GMSK)			EGPRS1900 (GMSK)		
	EGPRS850 (8PSK)			EGPRS1900 (8PSK)		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplinkPower(dBm)	23.88	23.75	23.79	20.64	20.71	20.73
	17.52	17.71	17.82	17.18	17.24	17.19
3Downlink2uplinkPower(dBm)	26.00	26.13	26.15	23.16	23.19	23.21
	19.31	19.47	19.59	19.34	19.40	19.49
2Downlink3uplinkPower(dBm)	25.64	25.79	25.86	22.91	22.96	23.01
	18.79	18.88	19.06	19.02	19.08	19.00
1Downlink4uplinkPower(dBm)	25.77	25.92	25.85	23.07	23.13	23.17
	18.91	19.00	19.02	19.06	19.14	19.27

Division Factors (for Measured Power and Averaged Power):

To average the power, the division factor is as follows:

1TX-slot (4Downlink1uplink) = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots(3Downlink2uplink) = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots (2Downlink3uplink) = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots (1Downlink4uplink) = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 2Txslots (3Downlink2uplink)for EGPRS (GMSK).

6.3 WCDMA Measurement result

The following procedures are according to FCC KDB Publication 941225 D01.
Release 99
The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Measured Results

Mode	Band2			Band5		
Channel	9262	9400	9538	4132	4183	4233
Frequency(MHz)	1852.4	1880	1907.6	826.4	836.4	846.6
RB test mode1+64kRMC(dBm)	22.32	22.51	22.52	23.17	23.18	23.18
RB test mode1+12.2kRMC(dBm)	**22.34**	**22.49**	**22.48**	**23.25**	**23.27**	**23.23**
RB test mode1+144kRMC(dBm)	22.35	22.47	22.52	23.18	23.23	23.20
RB test mode1+384kRMC(dBm)	22.35	22.49	22.54	23.18	23.20	23.18
AMR Voice test mode+12.2kRMC(dBm)	22.32	22.48	22.51	23.20	23.23	23.22

Mode	Band4		
Channel	1312	1412	1513
Frequency(MHz)	1712.4	1732.4	1752.6
RB test mode1+64kRMC(dBm)	22.18	22.26	22.34
RB test mode1+12.2kRMC(dBm)	**22.59**	**22.61**	**22.47**
RB test mode1+144kRMC(dBm)	22.20	22.29	22.35
RB test mode1+384kRMC(dBm)	22.19	22.29	22.38
AMR Voice test mode+12.2kRMC(dBm)	22.22	22.45	22.46

HSDPA

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	CM(dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0
3	15/15	8/15	64	15/18	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$ =8⇔$A_{hs}=\beta_{hs}/\beta_c=30/15$⇔$\beta_{hs}=30/15*\beta_c$.

Note2: CM=1 for $\beta_c/\beta_d=12/15$, $\beta_{hs}/\beta_c=24/15$.

Note3: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=11/15 and β_d=15/15.

Measured Results

Mode	HSDPA Band 2			HSDPA Band 5		
Channel	9262	9400	9538	4132	4183	4233
Frequency(MHz)	1852.4	1880	1907.6	826.4	836.4	846.6
sub-test1(dBm)	21.27	21.14	21.18	22.14	22.31	22.24
sub-test2(dBm)	21.14	21.01	21.05	22.16	22.33	22.26
sub-test3(dBm)	21.29	21.16	21.20	22.07	22.24	22.17
sub-test4(dBm)	21.20	21.07	21.11	22.10	22.27	22.20

Mode	HSDPA Band 4		
Channel	1312	1412	1513
Frequency(MHz)	1712.4	1732.4	1752.6
sub-test1(dBm)	21.14	21.26	21.18
sub-test2(dBm)	21.01	21.13	21.05
sub-test3(dBm)	21.16	21.28	21.20
sub-test4(dBm)	21.07	21.19	21.11

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	2.0	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_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	2.0	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(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	2.0	21	81

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$ =8⇔A_{hs}=β_{hs}/β_c=30/15⇔β_{hs}=30/15*β_c.

Note2: 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.

Note3: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=10/15 and β_d=15/15.

Note4: 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 signaled gain factors for the reference TFC(TF1,TF1) to β_c=14/15 and β_d=15/15.

NOTE5: Testing UE using E-DPDCH Physical layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

NOTE6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Measured Results

Mode	HSUPA Band 2			HSUPA Band 5		
Channel	9262	9400	9538	4132	4183	4233
Frequency(MHz)	1852.4	1880	1907.6	826.4	836.4	846.6
sub-test1(dBm)	21.27	21.14	21.18	22.14	22.31	22.24
sub-test2(dBm)	21.14	21.01	21.05	22.01	22.18	22.11
sub-test3(dBm)	21.16	21.28	21.20	22.16	22.33	22.26
sub-test4(dBm)	21.20	21.07	21.11	22.07	22.24	22.17
sub-test5(dBm)	21.10	21.22	21.14	22.10	22.27	22.20

Mode	HSDPA Band 4		
Channel	1312	1312	1312
Frequency(MHz)	1712.4	1712.4	1712.4
sub-test1(dBm)	21.14	21.26	21.18
sub-test2(dBm)	21.01	21.13	21.05
sub-test3(dBm)	21.16	21.28	21.20
sub-test4(dBm)	21.07	21.19	21.11
sub-test5(dBm)	21.10	21.22	21.14

HSPA+ Mode

WCDMA band 2

Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
1852.4	9262	21.24
1880.0	9400	21.21
1907.6	9538	21.16

WCDMA band5

Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
826.4	4132	22.13
836.6	4183	22.34
846.6	4233	22.26

WCDMA band 4

Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
1712.4	1312	21.31
1732.4	1412	21.24
1752.6	1513	21.15

UMTS SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01.HSPA,HSPA+ SAR were not required since the average output power was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.

6.4 Bluetooth Measurement result

BT

Modulation type	Average Power Output (dBm)		
	2402MHz (Ch0)	2441MHz (Ch39)	2480MHz (Ch78)
GFSK	2.13	2.79	1.89
π/4DQPSK	-0.44	0.24	-1.13
8DPSK	-0.42	0.24	-1.12

BLE

Modulation type	Average Power Output (dBm)		
	2402MHz (Ch0)	2440MHz (Ch19)	2480MHz (Ch39)
GFSK (LE 1Mbps)	3.22	4.39	4.37

6.5 Wi-Fi Measurement result

WIFI 2.4G

Modulation type		Average power output (dBm)		
		2412MHz	2437MHz	2462MHz
11b	1 Mbps	15.59	15.67	15.42
	2 Mbps	15.52	15.60	15.39
	5.5 Mbps	15.45	15.53	15.35
	11 Mbps	15.38	15.46	15.31
11g	6 Mbps	14.28	14.36	14.19
	9 Mbps	14.13	14.23	13.97
	12 Mbps	13.97	14.09	13.76
	18 Mbps	13.82	13.96	13.54
	24 Mbps	13.67	13.82	13.33
	36 Mbps	13.52	13.69	13.11
	48 Mbps	13.36	13.55	12.90
	54 Mbps	13.21	13.42	12.68
11n HT20	6.5 Mbps	14.24	14.32	14.17
	13 Mbps	14.03	14.10	13.94
	19.5 Mbps	13.82	13.89	13.72
	26 Mbps	13.61	13.67	13.49
	39 Mbps	13.39	13.46	13.26
	52 Mbps	13.18	13.24	13.03
	58.5 Mbps	12.97	13.03	12.81
	65 Mbps	12.76	12.81	12.58
Modulation type		Average power output (dBm)		
		2422MHz	2437MHz	2452MHz
11n HT40	13.5 Mbps	14.55	14.37	14.28
	27 Mbps	14.12	13.98	13.93
	40.5 Mbps	13.68	13.59	13.58
	54 Mbps	13.25	13.20	13.23
	81 Mbps	12.82	12.80	12.87
	108 Mbps	12.39	12.41	12.52
	121.5 Mbps	11.95	12.02	12.17
	135 Mbps	11.52	11.63	11.82

WIFI 5G

U-NII-1

Test Mode	Data Rate (Mbps)	Average Power(dBm)			Limit(dBm)	Conclusion
		5180 MHz	5200 MHz	5240MHz		
802.11a	6	11.88	11.89	11.86	24.0	pass
	9	11.71	11.81	11.74	24.0	pass
	12	11.64	11.74	11.67	24.0	pass
	18	11.57	11.66	11.60	24.0	pass
	24	11.49	11.58	11.52	24.0	pass
	36	11.42	11.50	11.45	24.0	pass
	48	11.35	11.43	11.38	24.0	pass
	54	11.28	11.35	11.31	24.0	pass
802.11n (HT20)	6.5	11.85	11.82	11.87	24.0	pass
	13	11.60	11.60	11.62	24.0	pass
	19.5	11.35	11.37	11.37	24.0	pass
	26	11.10	11.15	11.12	24.0	pass
	39	10.86	10.93	10.88	24.0	pass
	52	10.61	10.71	10.63	24.0	pass
	58.5	10.36	10.48	10.38	24.0	pass
	65	10.11	10.26	10.13	24.0	pass

Test Mode	Data Rate (Mbps)	Average Power(dBm)		Limit(dBm)	Conclusion
		5190 MHz	5230 MHz		
802.11n (HT40)	13.5	11.84	11.86	24.0	pass
	27	11.52	11.56	24.0	pass
	40.5	11.21	11.26	24.0	pass
	54	10.89	10.96	24.0	pass
	81	10.58	10.65	24.0	pass
	108	10.26	10.35	24.0	pass
	121.5	9.95	10.05	24.0	pass
	135	9.63	9.75	24.0	pass

U-NII-3

Test Mode	Data Rate (Mbps)	Average Power(dBm)			Limit(dBm)	Conclusion
		5745MHz	5785MHz	5825MHz		
802.11a	6	11.67	11.68	11.65	30.0	pass
	9	11.46	11.41	11.37	30.0	pass
	12	11.38	11.34	11.28	30.0	pass
	18	11.31	11.27	11.20	30.0	pass
	24	11.24	11.19	11.12	30.0	pass
	36	11.17	11.12	11.04	30.0	pass
	48	11.09	11.05	10.95	30.0	pass
	54	11.02	10.98	10.87	30.0	pass
802.11n (HT20)	6.5	11.47	11.48	11.43	30.0	pass
	13	11.27	11.27	11.20	30.0	pass
	19.5	11.07	11.07	10.98	30.0	pass
	26	10.87	10.86	10.75	30.0	pass
	39	10.66	10.65	10.53	30.0	pass
	52	10.46	10.44	10.30	30.0	pass
	58.5	10.26	10.24	10.08	30.0	pass
	65	10.06	10.03	9.85	30.0	pass

Test Mode	Data Rate (Mbps)	Average Power(dBm)		Limit(dBm)	Conclusion
		5755 MHz	5795 MHz		
802.11n (HT40)	13.5	11.67	11.58	30.0	pass
	27	11.38	11.31	30.0	pass
	40.5	11.09	11.04	30.0	pass
	54	10.80	10.77	30.0	pass
	81	10.52	10.49	30.0	pass
	108	10.23	10.22	30.0	pass
	121.5	9.94	9.95	30.0	pass
	135	9.65	9.68	30.0	pass

6.6 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

According to the KDB447498 4.3.1 (1)

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f (GHz)] ≤ 3.0 for 1-g SAR, where

- ·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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is ≤5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

This is equivalent to [(max. power of channel, including tune-up tolerance, mW)/(60/√f(GHz) mW)]·[20 mm/(min.test separation distance, mm)] ≤ 1.0 for 1-g SAR; also see Appendix A for approximate exclusion threshold values at selected frequencies and distances.
According to the KDB447498 appendix A

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

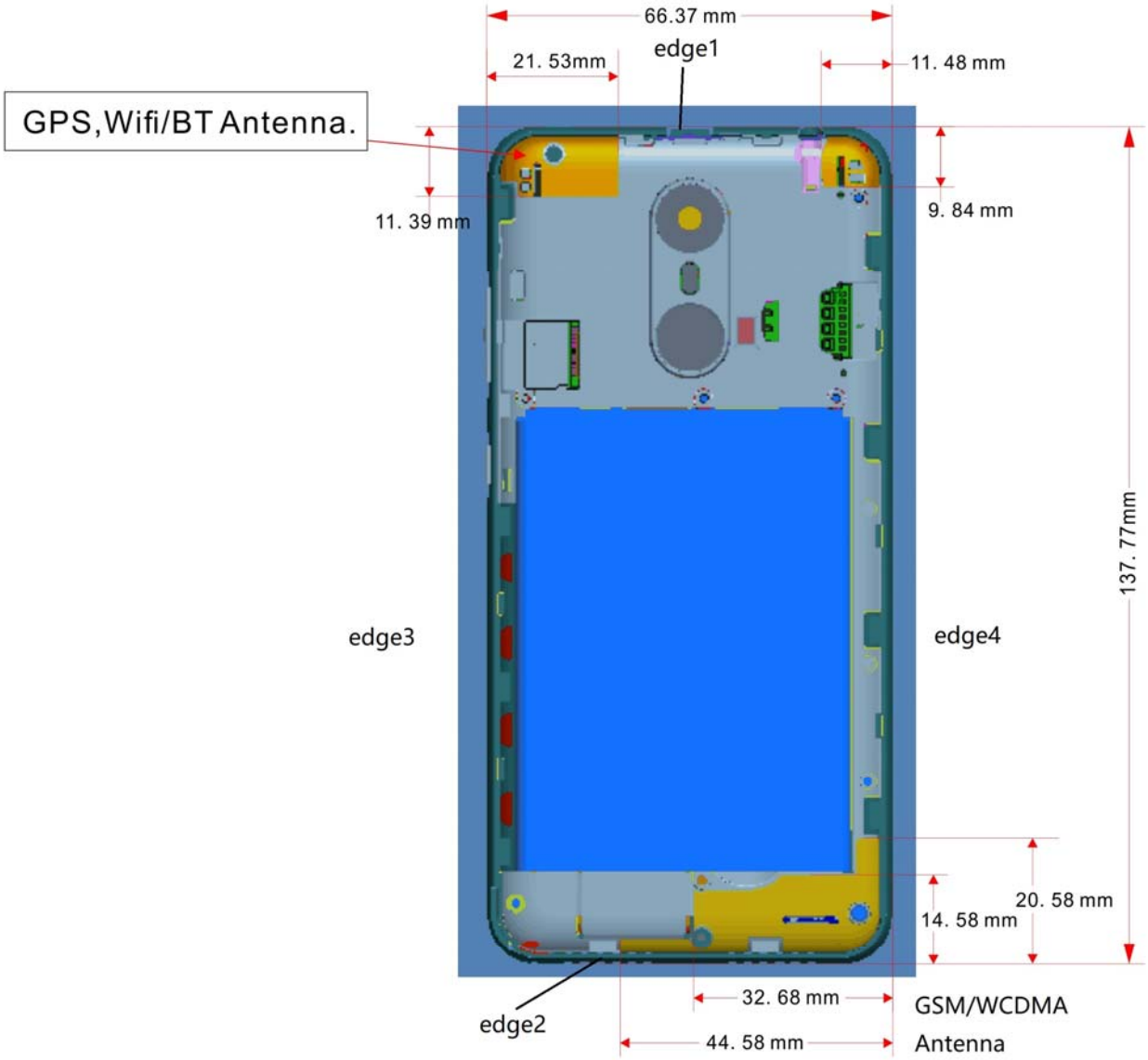
MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

Summary of Transmitters

Band/Mode	Position	Max.RF output power (mW)	SAR test exclusion Threshold (mW)	SAR Required
(2.4~2.4835)GHz Bluetooth	Head	2.75	10	No
	Body	2.75	19	No
(2.4~2.4835)GHz Wifi_	Head	36.90	10	Yes
	Body	36.90	19	Yes
(5.15~5.25)GHz Wifi_	Head	15.45	7	Yes
	Body	15.45	13	Yes
(5.725~5.85)GHz Wifi	Head	14.72	6	Yes
	Body	14.72	12	Yes

6.7 RF exposure conditions

Refer to the follow picture “Antenna Locations & Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.



6.7.1 Head Exposure Conditions

For WWAN

Test Configurations	SAR Required	Note
Left Touch	yes	/
Left Tilt (15°)	yes	/
Right Touch	yes	/
Right Tilt (15°)	yes	/

For WLAN

Test Configurations	SAR Required	Note
Left Touch	yes	/
Left Tilt (15°)	yes	/
Right Touch	yes	/
Right Tilt (15°)	yes	/

6.7.2 Body Exposure conditions

For WWAN

Test Configurations	SAR Required	Note
Rear	yes	/
Front	yes	/

For WLAN

Test Configurations	SAR Required	Note
Rear	yes	/
Front	yes	/

6.7.3 Hotspot Exposure Conditions

For WWAN

Test Configurations	Antenna-to-edge/surface	SAR Required
Rear	<25 mm	Yes
Front	<25 mm	Yes
Edge 1	>25 mm	No
Edge 2	>25 mm	Yes
Edge 3	>25 mm	Yes
Edge 4	>25 mm	Yes

For WLAN

Test Configurations	Antenna-to-edge/surface	SAR Required
Rear	<25 mm	Yes
Front	<25 mm	Yes
Edge 1	<25 mm	Yes
Edge 2	>25 mm	No
Edge 3	<25 mm	Yes
Edge 4	>25 mm	No

Note: For hotspot mode, it's not necessary test Rear and Front position cause we already test the these position without hotspot mode in Body Exposure conditions ,Normally if the hotspot mode opened, the technology" power reduction" used for mobile, so we consider the worst condition.

6.8 System Checking

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system checking results (dielectric parameters and SAR values) are given in the table below.

Date Tested	System dipole	T.S. Liquid	SAR measured (normalized to 1W)		Target (Ref.Value)	Delta (%)	Tolerance (%)
2018/7/9	D750V3	Head	1g	8.44	8.26	2.18	±10
2018/7/10	D835V2	Head	1g	9.44	9.37	0.75	±10
2018/7/11	D835V2	Head	1g	9.40	9.37	0.32	±10
2018/7/13	D1800V2	Head	1g	38.28	38.90	-1.59	±10
2018/7/14	D1800V2	Head	1g	37.84	38.90	-2.72	±10
2018/7/20	D2450V2	Head	1g	54.40	52.40	3.82	±10
2018/7/21	D5GHzV2 (5.2GHz)	Head	1g	78.70	77.60	1.42	±10
2018/7/22	D5GHzV2 (5.8GHz)	Head	1g	77.50	78.70	-1.52	±10

Date Tested	System dipole	T.S. Liquid	SAR measured (normalized to 1W)		Target (Ref.Value)	Delta (%)	Tolerance (%)
2018/7/25	D750V3	Body	1g	8.24	8.26	-0.24	±10
2018/7/26	D835V2	Body	1g	9.48	9.47	1.17	±10
2018/7/29	D835V2	Body	1g	9.36	9.47	-0.11	±10
2018/8/1	D1800V2	Body	1g	38.20	39.0	-1.80	±10
2018/8/3	D1800V2	Body	1g	38.68	39.0	-0.57	±10
2018/8/5	D2450V2	Body	1g	52.80	52.30	0.76	±10
2018/8/8	D5GHzV2 (5.2GHz)	Body	1g	73.00	75.40	-5.93	±10
2018/8/9	D5GHzV2 (5.8GHz)	Body	1g	75.00	77.50	-4.70	±10

Plots of the system checking scans are given in Appendix A.
Tissue Simulants used in the Measurements
For the measurement of the following parameters the SPEAG DAKS-3.5 dielectric parameter probe is used, representing the open-ended coaxial probe measurement procedure.

Date Tested	Freq.(MHz)	Liquid parameters	measured	Target	Delta(%)	Tolerance(%)
2018/7/9	Head 750	εr	42.068	41.90	0.40	±5
		σ[S/m]	0.917	0.89	3.03	±5
2018/7/10	Head 835	εr	42.529	41.50	2.48	±5
		σ[S/m]	0.912	0.90	1.33	±5
2018/7/11	Head 835	εr	40.217	41.50	-3.09	±5
		σ[S/m]	0.908	0.90	0.89	±5
2018/7/13	Head 1800	εr	38.905	40.00	-2.74	±5
		σ[S/m]	1.409	1.40	0.64	±5
2018/7/14	Head 1800	εr	40.607	40.00	1.52	±5
		σ[S/m]	1.411	1.40	0.79	±5
2018/7/20	Head 2450	εr	38.145	39.20	-2.69	±5
		σ[S/m]	1.873	1.80	4.06	±5
2018/7/21	Head 5200	εr	36.853	36.00	2.37	±5
		σ[S/m]	4.483	4.66	-3.80	±5
2018/7/22	Head 5800	εr	36.334	35.30	2.93	±5
		σ[S/m]	5.185	5.27	-1.61	±5

Date Tested	Freq.(MHz)	Liquid parameters	measured	Target	Delta(%)	Tolerance(%)
2018/7/25	Body 750	εr	53.279	55.50	-4.00	±5
		σ[S/m]	0.976	0.96	1.67	±5
2018/7/26	Body 835	εr	54.541	55.20	-1.19	±5
		σ[S/m]	0.975	0.97	0.52	±5
2018/7/29	Body 835	εr	55.036	55.20	-0.30	±5
		σ[S/m]	0.971	0.97	0.10	±5
2018/8/1	Body 1800	εr	52.879	53.30	-0.79	±5
		σ[S/m]	1.523	1.52	0.20	±5
2018/8/3	Body 1800	εr	51.717	53.30	-2.97	±5
		σ[S/m]	1.542	1.52	1.45	±5
2018/8/5	Body 2450	εr	50.795	52.70	-3.61	±5
		σ[S/m]	1.926	1.95	-1.23	±5
2018/8/8	Body 5200	εr	49.035	49.00	0.07	±5
		σ[S/m]	5.355	5.30	1.04	±5
2018/8/9	Body 5800	εr	47.36	48.20	-1.74	±5
		σ[S/m]	6.11	6.00	1.83	±5

6.9 SAR TEST RESULT

In order to determine the largest value of the peak spatial-average SAR of a handset, all device positions, configurations, and operational modes should be tested for each frequency band according to Steps 1 to 3 below.

Step 1: The tests should be performed at the channel that is closest to the center of the transmit frequency band.
a) All device positions (cheek and tilt, for both left and right sides of the SAM phantom),
b) All configurations for each device position in a), e.g., antenna extended and retracted, and
c) All operational modes for each device position in item a) and configuration in item b) in each frequency band, e.g., analog and digital, If more than three frequencies need to be tested (i.e., Nc > 3), then all frequencies, configurations and modes shall be tested for all of the above test conditions.
Step 2: For the condition providing the highest peak spatial-average SAR determined in Step 1 for each frequency, perform all tests at all other test frequency channels, e.g., lowest and highest frequencies. In addition, for all other conditions (device position, configuration, and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies should be tested as well.
Step 3: Examine all data to determine the largest value of the peak.
Note:
1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
Reported SAR (W/kg) = Measured SAR (W/kg)* Scaling Factor
2. Per KDB 447498 D01v06, for each exposure position, if the highest output channel reported SAR ≤0.8W/kg, other channels SAR testing are not necessary.
3. In the report the test position “Mobile phone screen Towards Ground” abbreviated as “TG”, and “Mobile phone screen Towards Phantom” abbreviated as “TP”.
4. The distance between the EUT and the phantom bottom is 10mm.

The measured and reported Head/body SAR values for the test device are tabulated below:

Mode: GSM 850

fL(MHz)=824.2MHz fM(MHz)=836.5MHz fH(MHz)= 848.8MHz

SAR Values(Head，850MHz Band)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		Ch	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
position	mode					1g Average	1g Average
Left cheek	GSM	L	32.92	33.00	1.02	---	---
		M	32.77	33.00	1.05	0.196	0.206
		H	32.80	33.00	1.05	---	---
Left Tilted		L	32.92	33.00	1.02	---	---
		M	32.77	33.00	1.05	0.124	0.130
		H	32.80	33.00	1.05	---	---
Right cheek		L	32.92	33.00	1.02	---	---
		M(main supply)	**32.77**	**33.00**	**1.05**	**0.215**	**0.226**
		M(second supply)	**32.77**	**33.00**	**1.05**	**0.213**	**0.224**
		H	32.80	33.00	1.05	---	---
Right Tilted		L	32.92	33.00	1.02	---	---
		M	32.77	33.00	1.05	0.116	0.122
		H	32.80	33.00	1.05	---	---

Mode: GSM850 (GSM/GPRS)
fL (MHz)=824.2MHz fM (MHz)=836.5MHz fH (MHz)= 848.8MHz
SAR Values(Body, 850MHz Band)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		Ch	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
position	mode					1g Average	1g Average
TG	GSM With headset	L	32.92	33.00	1.02	---	---
		M	32.77	33.00	1.05	0.381	0.400
		H	32.80	33.00	1.05	---	---
	GPRS	L	31.99	32.50	1.12	---	---
		M(main supply)	**32.14**	**32.50**	**1.09**	**0.628**	**0.685**
		M(second supply)	**32.14**	**32.50**	**1.09**	**0.605**	**0.659**
		H	32.19	32.50	1.07	---	---
	EGPRS	L	32.02	32.50	1.12	---	---
		M	32.15	32.50	1.08	0.610	0.659
		H	32.17	32.50	1.08	---	---
TP	GSM With headset	L	32.92	33.00	1.02	---	---
		M	32.77	33.00	1.05	0.213	0.224
		H	32.80	33.00	1.05	---	---
	GPRS	L	31.99	32.50	1.12	---	---
		M	32.14	32.50	1.09	0.360	0.392
		H	32.19	32.50	1.07	---	---
	EGPRS	L	32.02	32.50	1.12	---	---
		M	32.15	32.50	1.08	0.334	0.361
		H	32.17	32.50	1.08	---	---
Hotspot EDGE 2	GPRS	L	31.99	32.50	1.12	---	---
		M	32.14	32.50	1.09	0.093	0.101
		H	32.19	32.50	1.07	---	---
Hotspot EDGE 3		L	31.99	32.50	1.12	---	---
		M	32.14	32.50	1.09	0.396	0.432
		H	32.19	32.50	1.07	---	---
Hotspot EDGE 4		L	31.99	32.50	1.12	---	---
		M	32.14	32.50	1.09	0.363	0.396
		H	32.19	32.50	1.07	---	---

Mode: GSM1900

fL (MHz)=1850.2MHz fM (MHz)=1880.0MHz fH (MHz)=1909.8MHz

SAR Values (Head, 1900MHz Band)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
position	mode					1g Average	1g Average
Left cheek	GSM	L	29.85	30.00	1.04	---	---
		M(main supply)	**29.78**	**30.00**	**1.05**	**0.152**	**0.160**
		M(second supply)	**29.78**	**30.00**	**1.05**	**0.143**	**0.150**
		H	29.81	30.00	1.04	---	---
Left Tilted		L	29.85	30.00	1.04	---	---
		M	29.78	30.00	1.05	0.061	0.064
		H	29.81	30.00	1.04	---	---
Right cheek		L	29.85	30.00	1.04	---	---
		M	29.78	30.00	1.05	0.063	0.066
		H	29.81	30.00	1.04	---	---
Right Tilted		L	29.85	30.00	1.04	---	---
		M	29.78	30.00	1.05	0.071	0.074
		H	29.81	30.00	1.04	---	---

Mode: GSM1900 (GSM/GPRS/EGPRS)
fL (MHz)=1850.2MHz fM (MHz)=1880.0MHz fH (MHz)=1909.8MHz
SAR Values (body, 1900MHz Band)
Limit of SAR (W/kg) :< 1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
position	mode					1g Average	1g Average
TG	GSM With headset	L	29.85	30.00	1.04	---	---
		M	29.78	30.00	1.05	0.245	0.257
		H	29.81	30.00	1.04	---	---
	GPRS	L	29.16	29.50	1.08	---	---
		M	29.20	29.50	1.07	0.390	0.417
		H	29.23	29.50	1.06	---	---
	EGPRS	L	29.18	29.50	1.08	---	---
		M	29.21	29.50	1.07	0.391	0.418
		H	29.23	29.50	1.06	---	---
TP	GSM With headset	L	29.85	30.00	1.04	---	---
		M	29.78	30.00	1.05	0.188	0.197
		H	29.81	30.00	1.04	---	---
	GPRS	L	29.16	29.50	1.08	---	---
		M	29.20	29.50	1.07	0.295	0.316
		H	29.23	29.50	1.06	---	---
	EGPRS	L	29.18	29.50	1.08	---	---
		M	29.21	29.50	1.07	0.279	0.299
		H	29.23	29.50	1.06	---	---
Hotspot EDGE 2	EGPRS	L	29.18	29.50	1.08	---	---
		M(main supply)	**29.21**	**29.50**	**1.07**	**0.509**	**0.545**
		M(second supply)	**29.21**	**29.50**	**1.07**	**0.475**	**0.508**
		H	29.23	29.50	1.06	---	---
Hotspot EDGE 3		L	29.18	29.50	1.08	---	---
		M	29.21	29.50	1.07	0.126	0.135
		H	29.23	29.50	1.06	---	---
Hotspot EDGE 4		L	29.18	29.50	1.08	---	---
		M	29.21	29.50	1.07	0.172	0.184
		H	29.23	29.50	1.06	---	---

.

Mode: WCDMA BAND2
fL (MHz)=1852.4MHz fM (MHz)=1880MHz fH (MHz)= 1907.6MHz
SAR Values (Head, WCDMA BAND2)
Limit of SAR (W/kg) :< 1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
position	mode					1g Average	1g Average
Left cheek	VOICE	L	22.34	23.00	1.16	---	---
		M(main supply)	**22.49**	**23.00**	**1.12**	**0.237**	**0.265**
		M(second supply)	**22.49**	**23.00**	**1.12**	**0.232**	**0.260**
		H	22.48	23.00	1.13	---	---
Left Tilted		L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.102	0.114
		H	22.48	23.00	1.13	---	---
Right cheek		L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.158	0.177
		H	22.48	23.00	1.13	---	---
Right Tilted		L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.117	0.131
		H	22.48	23.00	1.13	---	---

Mode: WCDMA BAND2
fL (MHz)=1852.4MHz fM (MHz)=1880MHz fH (MHz)= 1907.6MHz
SAR Values (Body, WCDMA BAND2)
Limit of SAR (W/kg) :< 1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	VOICE	L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.347	0.389
		H	22.48	23.00	1.13	---	---
	DATA	L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.359	0.402
		H	22.48	23.00	1.13	---	---
TP	VOICE	L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.258	0.289
		H	22.48	23.00	1.13	---	---
	DATA	L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.248	0.278
		H	22.48	23.00	1.13	---	---
Hotspot EDGE2	VOICE	L	22.34	23.00	1.16	---	---
		M(main supply)	**22.49**	**23.00**	**1.12**	**0.457**	**0.512**
		M(second supply)	**22.49**	**23.00**	**1.12**	**0.452**	**0.506**
		H	22.48	23.00	1.13	---	---
Hotspot EDGE3		L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.082	0.092
		H	22.48	23.00	1.13	---	---
Hotspot EDGE4		L	22.34	23.00	1.16	---	---
		M	22.49	23.00	1.12	0.173	0.194
		H	22.48	23.00	1.13	---	---

Mode: WCDMA BAND4

fL (MHz)=1712.4MHz fM (MHz)=1732.6MHz fH (MHz)= 1752.6MHz

SAR Values (Head, WCDMA BAND4)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	VOICE	L	22.59	23.00	1.10	---	---
		M(main supply)	**22.61**	**23.00**	**1.09**	**0.214**	**0.233**
		M(second supply)	**22.61**	**23.00**	**1.09**	**0.206**	**0.225**
		H	22.47	23.00	1.13	---	---
Left Tilted		L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.073	0.080
		H	22.47	23.00	1.13	---	---
Right cheek		L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.167	0.182
		H	22.47	23.00	1.13	---	---
Right Tilted		L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.050	0.055
		H	22.47	23.00	1.13	---	---

Mode: WCDMA BAND4

fL (MHz)=1712.4MHz fM (MHz)=1732.6MHz fH (MHz)= 1752.6MHz

SAR Values (Body, WCDMA BAND4)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	VOICE	L	22.59	23.00	1.10	---	---
		M(main supply)	**22.61**	**23.00**	**1.09**	**0.568**	**0.619**
		M(second supply)	**22.61**	**23.00**	**1.09**	**0.524**	**0.571**
		H	22.47	23.00	1.13	---	---
	DATA	L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.436	0.475
		H	22.47	23.00	1.13	---	---
TP	VOICE	L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.373	0.407
		H	22.47	23.00	1.13	---	---
	DATA	L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.371	0.404
		H	22.47	23.00	1.13	---	---
Hotspot EDGE2	VOICE	L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.384	0.419
		H	22.47	23.00	1.13	---	---
Hotspot EDGE3		L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.075	0.082
		H	22.47	23.00	1.13	---	---
Hotspot EDGE4		L	22.59	23.00	1.10	---	---
		M	22.61	23.00	1.09	0.198	0.216
		H	22.47	23.00	1.13	---	---

Mode: WCDMA BAND5
fL (MHz)=826.4MHz fM (MHz)=836.4MHz fH (MHz)= 846.6MHz
SAR Values(Head, WCDMA BAND5)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	VOICE	L	23.25	23.50	1.06	---	---
		M(main supply)	**23.27**	**23.50**	**1.05**	**0.118**	**0.124**
		M(second supply)	**23.27**	**23.50**	**1.05**	**0.112**	**0.118**
		H	23.23	23.50	1.06	---	---
Left Tilted		L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.060	0.062
		H	23.23	23.50	1.06	---	---
Right cheek		L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.104	0.109
		H	23.23	23.50	1.06	---	---
Right Tilted		L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.070	0.074
		H	23.23	23.50	1.06	---	---

Mode: WCDMA BAND5

fL (MHz)=826.4MHz fM (MHz)=836.4MHz fH (MHz)= 846.6MHz

SAR Values(body, WCDMA BAND5)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	VOICE	L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.230	0.242
		H	23.23	23.50	1.06	---	---
	DATA	L	23.25	23.50	1.06	---	---
		M(main supply)	**23.27**	**23.50**	**1.05**	**0.253**	**0.266**
		M(second supply)	**23.27**	**23.50**	**1.05**	**0.237**	**0.249**
		H	23.23	23.50	1.06	---	---
TP	VOICE	L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.159	0.167
		H	23.23	23.50	1.06	---	---
	DATA	L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.155	0.163
		H	23.23	23.50	1.06	---	---
Hotspot EDGE2	DATA	L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.041	0.043
		H	23.23	23.50	1.06	---	---
Hotspot EDGE3		L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.147	0.154
		H	23.23	23.50	1.06	---	---
Hotspot EDGE4		L	23.25	23.50	1.06	---	---
		M	23.27	23.50	1.05	0.133	0.140
		H	23.23	23.50	1.06	---	---

Mode: LTE Band 2-20BW-1RB

fL (MHz)= 1860MHz fM (MHz)= 1880MHz fH (MHz)=1900MHz

SAR Values(Head, LTE BAND2)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	20BW 1RB	L	22.80	23.00	1.05	---	---
		M(main supply)	**22.90**	**23.00**	**1.02**	**0.360**	**0.367**
		M(second supply)	**22.90**	**23.00**	**1.02**	**0.336**	**0.343**
		H	22.80	23.00	1.05	---	---
Left Tilted		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.139	0.142
		H	22.80	23.00	1.05	---	---
Right cheek		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.150	0.153
		H	22.80	23.00	1.05	---	---
Right Tilted		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.208	0.212
		H	22.80	23.00	1.05	---	---

Mode: LTE Band 2-20BW-1RB

fL (MHz)= 1860MHz fM (MHz)= 1880MHz fH (MHz)=1900MHz

SAR Values(body, LTE BAND2)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	20BW 1RB	L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.437	0.446
		H	22.80	23.00	1.05	---	---
TP		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.323	0.329
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 2		L	22.80	23.00	1.05	---	---
		M(main supply)	**22.90**	**23.00**	**1.02**	**0.505**	**0.515**
		M(second supply)	**22.90**	**23.00**	**1.02**	**0.478**	**0.488**
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 3		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.107	0.109
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 4		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.173	0.176
		H	22.80	23.00	1.05	---	---

Mode: LTE Band 2-20BW-50%RB
fL (MHz)= 1860MHz fM (MHz)= 1880MHz fH (MHz)=1900MHz
SAR Values(body, LTE BAND2)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	20BW 50%RB	L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.293	0.360
		H	22.10	23.00	1.23	---	---
Left Tilted		L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.110	0.135
		H	22.10	23.00	1.23	---	---
Right cheek		L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.142	0.175
		H	22.10	23.00	1.23	---	---
Right Tilted		L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.136	0.167
		H	22.10	23.00	1.23	---	---

Mode: LTE Band 2-20BW-50%RB
fL (MHz)= 1860MHz fM (MHz)= 1880MHz fH (MHz)=1900MHz
SAR Values(body, LTE BAND2)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	20BW 50%RB	L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.384	0.472
		H	22.10	23.00	1.23	---	---
TP		L	22.00	23.00	1.26	---	---
		M	22.10	23.00	1.23	0.275	0.338
		H	22.10	23.00	1.23	---	---

Mode: LTE BAND4- 20BW-1RB
fL(MHz)=1720MHz fM(MHz)= 1732.5MHz fH(MHz)= 1745MHz
SAR Values (Head, LTE BAND4)
Limit of SAR (W/kg) : <1.6W/kg(1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	20BW 1RB	L	22.80	23.00	1.05	---	---
		M(main supply)	**22.90**	**23.00**	**1.02**	**0.219**	**0.223**
		M(second supply)	**22.90**	**23.00**	**1.02**	**0.206**	**0.210**
		H	22.80	23.00	1.05	---	---
Left Tilted		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.081	0.083
		H	22.80	23.00	1.05	---	---
Right cheek		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.189	0.193
		H	22.80	23.00	1.05	---	---
Right Tilted		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.051	0.052
		H	22.80	23.00	1.05	---	---

Mode: LTE BAND4- 20BW-1RB

fL(MHz)=1720MHz fM(MHz)= 1732.5MHz fH(MHz)= 1745MHz

SAR Values (Body, LTE BAND4)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	20BW 1RB	L	22.80	23.00	1.05	---	---
		M(main supply)	**22.90**	**23.00**	**1.02**	**0.434**	**0.443**
		M(second supply)	**22.90**	**23.00**	**1.02**	**0.427**	**0.436**
		H	22.80	23.00	1.05	---	---
TP		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.382	0.390
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 2		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.360	0.367
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 3		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.141	0.144
		H	22.80	23.00	1.05	---	---
Hotspot EDGE 4		L	22.80	23.00	1.05	---	---
		M	22.90	23.00	1.02	0.189	0.193
		H	22.80	23.00	1.05	---	---

Mode: LTE BAND4- 20BW-50%RB
fL(MHz)=1720MHz fM(MHz)= 1732.5MHz fH(MHz)= 1745MHz
SAR Values (Head, LTE BAND4)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	20BW 50%RB	L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.180	0.216
		H	22.10	23.00	1.23	---	---
Left Tilted		L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.064	0.077
		H	22.10	23.00	1.23	---	---
Right cheek		L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.151	0.181
		H	22.10	23.00	1.23	---	---
Right Tilted		L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.044	0.053
		H	22.10	23.00	1.23	---	---

Mode: LTE BAND4- 20BW-50%RB
fL(MHz)=1720MHz fM(MHz)= 1732.5MHz fH(MHz)= 1745MHz
SAR Values (Body, LTE BAND4)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	20BW 50%RB	L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.351	0.421
		H	22.10	23.00	1.23	---	---
TP		L	22.20	23.00	1.20	---	---
		M	22.20	23.00	1.20	0.314	0.377
		H	22.10	23.00	1.23	---	---

Mode: LTE BAND5- 10BW-1RB
fL (MHz)=829 MHz fM (MHz)=836.5MHz fH (MHz)= 844MHz
SAR Values (Head, LTE BAND5)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	10BW 1RB	L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.065	0.069
		H	21.90	22.00	1.02	---	---
Left Tilted		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.083	0.088
		H	21.90	22.00	1.02	---	---
Right cheek		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.136	0.146
		H	21.90	22.00	1.02	---	---
Right Tilted		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.075	0.080
		H	21.90	22.00	1.02	---	---

Mode: LTE BAND5- 10BW-1RB
fL (MHz)=829 MHz fM (MHz)=836.5MHz fH (MHz)= 844MHz
SAR Values (Body, LTE BAND5)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	10BW 1RB	L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.266	0.285
		H	21.90	22.00	1.02	---	---
TP		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.209	0.224
		H	21.90	22.00	1.02	---	---
Hotspot EDGE 2		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.044	0.048
		H	21.90	22.00	1.02	---	---
Hotspot EDGE 3		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.143	0.153
		H	21.90	22.00	1.02	---	---
Hotspot EDGE 4		L	21.60	22.00	1.10	---	---
		M	21.70	22.00	1.07	0.166	0.178
		H	21.90	22.00	1.02	---	---

Mode: LTE BAND5- 10BW-50%RB
fL (MHz)=829 MHz fM (MHz)=836.5MHz fH (MHz)= 844MHz
SAR Values (Head, LTE BAND5)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	10BW 50%RB	L	20.60	22.00	1.38	---	---
		M	20.60	22.00	1.38	0.084	0.115
		H	20.70	22.00	1.35	---	---
Left Tilted		L	20.60	22.00	1.38	---	---
		M	20.60	22.00	1.38	0.073	0.100
		H	20.70	22.00	1.35	---	---
Right cheek		L	20.60	22.00	1.38	---	---
		M(main supply)	**20.60**	**22.00**	**1.38**	**0.120**	**0.166**
		M(second supply)	**20.60**	**22.00**	**1.38**	**0.108**	**0.149**
		H	20.70	22.00	1.35	---	---
Right Tilted		L	20.60	22.00	1.38	---	---
		M	20.60	22.00	1.38	0.081	0.112
		H	20.70	22.00	1.35	---	---

Mode: LTE BAND5- 10BW-50%RB
fL (MHz)=829 MHz fM (MHz)=836.5MHz fH (MHz)= 844MHz
SAR Values (Body, LTE BAND5)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	10BW 50%RB	L	20.60	22.00	1.38	---	---
		M(main supply)	**20.60**	**22.00**	**1.38**	**0.249**	**0.344**
		M(second supply)	**20.60**	**22.00**	**1.38**	**0.244**	**0.337**
		H	20.70	22.00	1.35	---	---
TP		L	20.60	22.00	1.38	---	---
		M	20.60	22.00	1.38	0.172	0.237
		H	20.70	22.00	1.35	---	---

Mode: LTE BAND7- 20BW-1RB

fL (MHz)=2510 MHz fM (MHz)=2535MHz fH (MHz)= 2560MHz

SAR Values(Head, LTE BAND7)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	20BW 1RB	L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.169	0.186
		H	21.5	22.00	1.12	---	---
Left Tilted		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.057	0.063
		H	21.5	22.00	1.12	---	---
Right cheek		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.061	0.067
		H	21.5	22.00	1.12	---	---
Right Tilted		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.072	0.079
		H	21.5	22.00	1.12	---	---

Mode: LTE BAND7- 20BW-1RB

fL(MHz)=2510 MHz fM(MHz)=2535MHz fH(MHz)= 2560MHz

SAR Values(Body, LTE BAND7)

Limit of SAR (W/kg): <1.6W/kg(1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1 g Average	1g Average
TG	20BW 1RB	L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.636	0.700
		H	21.5	22.00	1.12	---	---
TP		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.415	0.457
		H	21.5	22.00	1.12	---	---
Hotspot EDGE 2		L	21.5	22.00	1.12	0.574	0.643
		M	21.6	22.00	1.10	0.798	0.878
		H	21.5	22.00	1.12	0.962	1.077
		L2	21.5	22.00	1.12	0.573	0.643
		M2	21.6	22.00	1.10	0.793	0.870
		H2(main supply)	**21.5**	**22.00**	**1.12**	**1.050**	**1.178**
		H(second supply)	**21.5**	**22.00**	**1.12**	**0.963**	**1.079**
Hotspot EDGE 3		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.025	0.028
		H	21.5	22.00	1.12	---	---
Hotspot EDGE 4		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.081	0.090
		H	21.5	22.00	1.12	---	---

According to KDB 941225 D05,For QPSK with 50% and 100% RB allocation, SAR is required for the highest output power channel when the highest reported SAR for 1 RB or 50% RB allocation are ≥ 0.8 W/kg. So we performed SAR measurements in mid channel and high channel (cause the highest channel have the highest SAR value, although the output power is not the highest).the test result showing below:

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Hotspot EDGE 2	20BW 50RB	M	21.6	22.00	1.10	0.606	0.667
		H	21.5	22.00	1.12	0.712	0.797
	20BW 100RB	M	21.6	22.00	1.10	0.602	0.662
		H	21.5	22.00	1.12	0.698	0.782

Mode: LTE BAND7- 20BW-50%RB
fL(MHz)=2510 MHz fM(MHz)=2535MHz fH(MHz)= 2560MHz
SAR Values(Head，LTE BAND7)
Limit of SAR (W/kg): <1.6W/kg(1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1 g Average	1g Average
Left cheek	20BW 50%RB	L	20.6	22.00	1.38	---	---
		M(main supply)	**20.7**	**22.00**	**1.35**	**0.164**	**0.221**
		M(second supply)	**20.7**	**22.00**	**1.35**	**0.162**	**0.219**
		H	20.8	22.00	1.32	---	---
Left Tilted		L	20.6	22.00	1.38	---	---
		M	20.7	22.00	1.35	0.053	0.072
		H	20.8	22.00	1.32	---	---
Right cheek		L	20.6	22.00	1.38	---	---
		M	20.7	22.00	1.35	0.060	0.081
		H	20.8	22.00	1.32	---	---
Right Tilted		L	20.6	22.00	1.38	---	---
		M	20.7	22.00	1.35	0.068	0.091
		H	20.8	22.00	1.32	---	---

Mode: LTE BAND7- 20BW-50%RB
fL(MHz)=2510 MHz fM(MHz)=2535MHz fH(MHz)= 2560MHz
SAR Values(Body，LTE BAND7)
Limit of SAR (W/kg): <1.6W/kg(1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	20BW 50%RB	L	20.6	22.00	1.38	---	---
		M	20.7	22.00	1.35	0.569	0.768
		H	20.8	22.00	1.32	---	---
TP		L	20.6	22.00	1.38	---	---
		M	20.7	22.00	1.35	0.371	0.501
		H	20.8	22.00	1.32	---	---

Mode: LTE BAND12- 10BW-1RB
fL (MHz)= 704MHz fM (MHz)= 707.5MHz fH (MHz)= 711MHz
SAR Values(Head, LTE BAND12)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	10BW 1RB	L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.142	0.156
		H	21.5	22.00	1.12	---	---
Left Tilted		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.092	0.101
		H	21.5	22.00	1.12	---	---
Right cheek		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.132	0.145
		H	21.5	22.00	1.12	---	---
Right Tilted		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.088	0.097
		H	21.5	22.00	1.12	---	---

Mode: LTE BAND12- 10BW-1RB
fL (MHz)= 704MHz fM (MHz)= 707.5MHz fH (MHz)= 711MHz
SAR Values(Body, LTE BAND12)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	10BW 1RB	L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.261	0.287
		H	21.5	22.00	1.12	---	---
TP		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.184	0.202
		H	21.5	22.00	1.12	---	---
Hotspot EDGE 2		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.047	0.051
		H	21.5	22.00	1.12	---	---
Hotspot EDGE 3		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.135	0.149
		H	21.5	22.00	1.12	---	---
Hotspot EDGE 4		L	21.5	22.00	1.12	---	---
		M	21.6	22.00	1.10	0.149	0.164
		H	21.5	22.00	1.12	---	---

Mode: LTE BAND12- 10BW-50%RB
fL (MHz)= 704MHz fM (MHz)= 707.5MHz fH (MHz)= 711MHz
SAR Values(Head, LTE BAND12)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1 g Average	1g Average
Left cheek	10BW 50%RB	L	20.7	22.00	1.35	---	---
		M(main supply)	**20.4**	**22.00**	**1.45**	**0.120**	**0.174**
		M(second supply)	**20.4**	**22.00**	**1.45**	**0.107**	**0.155**
		H	20.5	22.00	1.41	---	---
Left Tilted		L	20.7	22.00	1.35	---	---
		M	20.4	22.00	1.45	0.076	0.109
		H	20.5	22.00	1.41	---	---
Right cheek		L	20.7	22.00	1.35	---	---
		M	20.4	22.00	1.45	0.106	0.154
		H	20.5	22.00	1.41	---	---
Right Tilted		L	20.7	22.00	1.35	---	---
		M	20.4	22.00	1.45	0.076	0.110
		H	20.5	22.00	1.41	---	---

Mode: LTE BAND12- 10BW-50%RB
fL (MHz)= 704MHz fM (MHz)= 707.5MHz fH (MHz)= 711MHz
SAR Values(Body, LTE BAND12)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	10BW 50%RB	L	20.7	22.00	1.35	---	---
		M(main supply)	**20.4**	**22.00**	**1.45**	**0.225**	**0.326**
		M(second supply)	**20.4**	**22.00**	**1.45**	**0.204**	**0.296**
		H	20.5	22.00	1.41	---	---
TP		L	20.7	22.00	1.35	---	---
		M	20.4	22.00	1.45	0.157	0.228
		H	20.5	22.00	1.41	---	---

Mode: Wi-Fi 2.4GHz

fL (MHz)=2412MHz fM (MHz)=2437MHz fH (MHz)= 2462MHz

SAR Values (Wi-Fi 802.11b)

Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	802.11b 1Mbps	L	15.59	16.00	1.10	0.777	0.855
		M(main supply)	**15.67**	**16.00**	**1.08**	**1.040**	**1.123**
		M(second supply)	**15.67**	**16.00**	**1.08**	**0.896**	**0.968**
		H	15.42	16.00	1.14	0.903	1.029
		L2	15.59	16.00	1.10	0.780	0.857
		M2	15.67	16.00	1.08	1.030	1.111
		H2	15.42	16.00	1.14	0.887	1.014
Left Tilted		L	15.59	16.00	1.10	0.741	0.815
		M	15.67	16.00	1.08	0.881	0.951
		H	15.42	16.00	1.14	0.816	0.930
		L2	15.59	16.00	1.10	0.740	0.813
		M2	15.67	16.00	1.08	0.887	0.957
		H2	15.42	16.00	1.14	0.814	0.930
Right cheek		L	15.59	16.00	1.10	---	---
		M	15.67	16.00	1.08	0.472	0.510
		H	15.42	16.00	1.14	---	---
Right Tilted		L	15.59	16.00	1.10	---	---
		M	15.67	16.00	1.08	0.600	0.648
		H	15.42	16.00	1.14	---	---

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	802.11b 1Mbps	L	15.59	16.00	1.10	---	---
		M	15.67	16.00	1.08	0.159	0.172
		H	15.42	16.00	1.14	---	---
TP		L	15.59	16.00	1.10	---	---
		M	15.67	16.00	1.08	0.155	0.167
		H	15.42	16.00	1.14	---	---
Hotspot EDGE1		L	15.59	16.00	1.10	---	---
		M(main supply)	**15.67**	**16.00**	**1.08**	**0.166**	**0.179**
		M(second supply)	**15.67**	**16.00**	**1.08**	**0.153**	**0.165**
		H	15.42	16.00	1.14	---	---
Hotspot EDGE3		L	15.59	16.00	1.10	---	---
		M	15.67	16.00	1.08	0.149	0.161
		H	15.42	16.00	1.14	---	---

Mode: Wi-Fi 5GHz (U-NII-1**)**
fL (MHz)=5180MHz fM (MHz)=5200MHz fH (MHz)= 5240MHz
SAR Values (Wi-Fi 802.11a)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	802.11a 6Mbps	L	11.88	12.00	1.03	0.981	1.010
		M	11.89	12.00	1.03	1.030	1.061
		H	11.86	12.00	1.03	1.120	1.154
		L2	11.88	12.00	1.03	0.987	1.015
		M2	11.89	12.00	1.03	1.040	1.067
		H2(main supply)	**11.86**	**12.00**	**1.03**	**1.120**	**1.157**
		H(second supply)	**11.86**	**12.00**	**1.03**	**1.090**	**1.123**
Left Tilted		L	11.88	12.00	1.03	1.110	1.143
		M	11.89	12.00	1.03	1.030	1.061
		H	11.86	12.00	1.03	1.040	1.071
		L2	11.88	12.00	1.03	1.110	1.141
		M2	11.89	12.00	1.03	1.030	1.056
		H2	11.86	12.00	1.03	1.040	1.074
Right cheek		L	11.88	12.00	1.03	---	---
		M	11.89	12.00	1.03	0.575	0.592
		H	11.86	12.00	1.03	---	---
Right Tilted		L	11.88	12.00	1.03	---	---
		M	11.89	12.00	1.03	0.629	0.648
		H	11.86	12.00	1.03	---	---

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	802.11a 6Mbps	L	11.88	12.00	1.03	---	---
		M	11.89	12.00	1.03	0.155	0.160
		H	11.86	12.00	1.03	---	---
TP		L	11.88	12.00	1.03	---	---
		M	11.89	12.00	1.03	0.027	0.028
		H	11.86	12.00	1.03	---	---
Hotspot EDGE1		L	11.88	12.00	1.03	---	---
		M(main supply)	**11.89**	**12.00**	**1.03**	**0.303**	**0.312**
		M(second supply)	**11.89**	**12.00**	**1.03**	**0.274**	**0.282**
		H	11.86	12.00	1.03	---	---
Hotspot EDGE3		L	11.88	12.00	1.03	---	---
		M	11.89	12.00	1.03	0.102	0.105
		H	11.86	12.00	1.03	---	---

Mode: Wi-Fi 5GHz (U-NII-3**)**
fL (MHz)=5745MHz fM (MHz)=5785MHz fH (MHz)= 5825MHz
SAR Values (Wi-Fi 802.11a)
Limit of SAR (W/kg) : <1.6W/kg (1g Average)

Test Case		CH	Measure Conducted Power (dBm)	Tune-uplimit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
Left cheek	802.11a 6Mbps	L	11.67	12.00	1.08	1.030	1.112
		M	11.68	12.00	1.08	1.020	1.102
		H	11.65	12.00	1.08	0.833	0.900
		L2	11.67	12.00	1.08	0.979	1.056
		M2	11.68	12.00	1.08	0.956	1.029
		H2	11.65	12.00	1.08	0.848	0.919
Left Tilted		L	11.67	12.00	1.08	1.240	1.339
		M(main supply)	**11.68**	**12.00**	**1.08**	**1.280**	**1.382**
		M(second supply)	**11.68**	**12.00**	**1.08**	**1.070**	**1.057**
		H	11.65	12.00	1.08	1.200	1.296
		L2	11.67	12.00	1.08	1.240	1.338
		M2	11.68	12.00	1.08	1.220	1.313
		H2	11.65	12.00	1.08	1.210	1.312
Right cheek		L	11.67	12.00	1.08	0.788	0.851
		M	11.68	12.00	1.08	0.753	0.813
		H	11.65	12.00	1.08	0.677	0.731
		L2	11.67	12.00	1.08	0.787	0.849
		M2	11.68	12.00	1.08	0.759	0.817
		H2	11.65	12.00	1.08	0.633	0.686
Right Tilted		L	11.67	12.00	1.08	0.704	0.760
		M	11.68	12.00	1.08	0.784	0.847
		H	11.65	12.00	1.08	0.667	0.720
		L2	11.67	12.00	1.08	0.710	0.766
		M2	11.68	12.00	1.08	0.739	0.796
		H2	11.65	12.00	1.08	0.680	0.737

Test Case		CH	Measure Conducted Power (dBm)	Tune-up limit (dBm)	Scaling Factor	Measure Results (W/kg)	Reported Results (W/kg)
Position	mode					1g Average	1g Average
TG	802.11a 6Mbps	L	11.67	12.00	1.08	---	---
		M	11.68	12.00	1.08	0.209	0.226
		H	11.65	12.00	1.08	---	---
TP		L	11.67	12.00	1.08	---	---
		M	11.68	12.00	1.08	0.220	0.238
		H	11.65	12.00	1.08	---	---
Hotspot EDGE1		L	11.67	12.00	1.08	---	---
		M(main supply)	**11.68**	**12.00**	**1.08**	**0.316**	**0.341**
		M(second supply)	**11.68**	**12.00**	**1.08**	**0.227**	**0.245**
		H	11.65	12.00	1.08	---	---
Hotspot EDGE3		L	11.67	12.00	1.08	---	---
		M	11.68	12.00	1.08	0.101	0.109
		H	11.65	12.00	1.08	---	---

6.10 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.
The following procedures are applied to determine if repeated measurements are required.
1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The Highest Reported SAR configuration in Each Frequency Band

Frequency band	Air interface	Head(w/kg)	Body(w/kg)
700 MHz	LTE Band12	<0.8	<0.8
850 MHz	GSM850 WCDMA band5 LTE Band5	<0.8	<0.8
1800/1900 MHz	GSM1900 WCDMA band2 WCDMA band4 LTE Band2 LTE Band4	<0.8	<0.8
From 2GHz to 3GHz	LTE band7 WIFI 2.4G	>0.8	>0.8
Above 5GHz	WIFI 5GHz(U-NII-1) WIFI 5GHz(U-NII-3)	>0.8	<0.8

6.11 Simultaneous Transmission SAR Analysis

Summary: there are two simultaneous transmission mode.
Mode1: GSM/WCDMA/LTE+MAX OF WIFI (2.4GHz&5GHz)
Mode2:GSM/WCDMA/LTE+BT2.4GHz
Note: WIFI 5GHz and BT2.4GHz can't transmit simultaneously.

The sum of SAR values for GSM & WiFi (2.4G&5G)

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
GSM	0.130	0.685
WiFi	1.382	0.226
Sum	1.512	0.911
Note	GSM850+WIFI5G Left Tilt	GSM 850+WIFI5G TG

According to the above tables, the sum of SAR values for GSM and WiFi < 1.6W/kg. So simultaneous transmission SAR are not required for WiFi transmitter.

The sum of SAR values for WCDMA & WiFi(2.4G&5G)

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
WCDMA	0.114	0.619
WiFi	1.382	0.226
Sum	1.496	0.845
Note	WCDMA BAND2+WIFI5G Left Tilt	WCDMA BAND4+WIFI5G TG

According to the above tables, the sum of SAR values for WCDMA and WiFi < 1.6W/kg. So simultaneous transmission SAR are not required for WiFi transmitter.

The sum of SAR values for LTE & WiFi(2.4G&5G)

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
LTE	0.142(1); 0.367(2)	1.178
WiFi	1.382(1); 1.157(2)	---*
Sum	1.524(1); 1.524(2)	1.178
Note	LTE BAND2+WIFI5G Left cheek(1) LTE BAND2+WIFI5G Left Tilt(2)	LTE BAND7+WIFI Edge2

According to the above tables, the sum of SAR values for LTE and WiFi < 1.6W/kg. So simultaneous transmission SAR are not required for WiFi transmitter.
Note*: We didn't test the edge2 for WIFI antennas, because the distance between the WIFI antenna and edge 2 is much larger than 25mm, refer to SAR value of other edges and antenna's position for WIFI, the SAR value of edge2 must be very small, the Simultaneous Transmission do not have risk, and we don't take it into consideration.

According to the formula (KDB447498 4.3.2) the Bluetooth SAR as follow:
[(max.power of channel, including tune-up tolerance,mw)/(min.test separation distance,mm)]
[√f(GHz)/x] W/kg for test separation distances≦50mm.
Head:
min. test separation distance = 5mm
Body:
min. test separation distance = 10mm
Where x=7.5 for 1-g SAR, and x=18.75 for 10-g SAR.

Eestimated SAR Bluetooth

Mode	Position	F(GHz)	Distance(mm)	Estimated
Bluetooth	Head	2.437	5	0.133
	Body	2.437	10	0.066

The sum of SAR values for GSM & Bluetooth

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
GSM	0.226	0.685
Bluetooth	0.133	0.066
Sum	0.359	0.751
Note	GSM850+BT Right cheek	GSM 850+BT TG

According to the above tables, the sum of SAR values for GSM and Bluetooth ＜1.6W/kg. So simultaneous transmission SAR are not required for Bluetooth transmitter.

The sum of SAR values for WCDMA & Bluetooth

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
WCDMA	0.265	0.619
Bluetooth	0.133	0.066
Sum	0.398	0.685
Note	WCDMA BAND2+BT Left cheek	WCDMA BAND4+BT TG

According to the above tables, the sum of SAR values for WCDMA and Bluetooth ＜1.6W/kg. So simultaneous transmission SAR are not required for Bluetooth transmitter.

he sum of SAR values for LTE & Bluetooth

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
LTE	0.367	1.178
Bluetooth	0.133	0.066
Sum	0.500	1.244
Note	LTE BAND2+BT Left cheek	LTE BAND7+BT EDGE2

According to the above tables, the sum of SAR values for LTE and Bluetooth ＜1.6W/kg. So simultaneous transmission SAR are not required for Bluetooth transmitter.

7 MEASUREMENT UNCERTAINTY

(0.3 - 3 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.0%	N	1	1	1	±6.0%	±6.0%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Modulation Response^m	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±2.0%	R	$\sqrt{3}$	1	1	±1.2%	±1.2%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Power Scaling^p	±0%	R	$\sqrt{3}$	1	1	±0.0%	±0.0%	∞
Phantom and Setup								
Phantom Uncertainty	±6.1%	R	$\sqrt{3}$	1	1	±3.5%	±3.5%	∞
SAR correction	±1.9%	R	$\sqrt{3}$	1	0.84	±1.1%	±0.9%	∞
Liquid Conductivity (mea.)^{DAK}	±2.5%	R	$\sqrt{3}$	0.78	0.71	±1.1%	±1.0%	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5%	R	$\sqrt{3}$	0.26	0.26	±0.3%	±0.4%	∞
Temp. unc. - Conductivity ^{BB}	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%	∞
Temp. unc. - Permittivity ^{BB}	±0.4%	R	$\sqrt{3}$	0.23	0.26	±0.1%	±0.1%	∞
Combined Std. Uncertainty						±11.2%	±11.1%	361
Expanded STD Uncertainty						**±22.3%**	**±22.2%**	

(3 - 6 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.55 %	N	1	1	1	±6.55 %	±6.55 %	∞
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±2.0 %	R	$\sqrt{3}$	1	1	±1.2 %	±1.2 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Modulation Response^m	±2.4 %	R	$\sqrt{3}$	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Probe Positioning	±6.7 %	R	$\sqrt{3}$	1	1	±3.9 %	±3.9 %	∞
Max. SAR Eval.	±4.0 %	R	$\sqrt{3}$	1	1	±2.3 %	±2.3 %	∞
Test Sample Related								
Device Positioning	±2.9 %	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0 %	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Power Scaling^p	±0 %	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.6 %	R	$\sqrt{3}$	1	1	±3.8 %	±3.8 %	∞
SAR correction	±1.9 %	R	$\sqrt{3}$	1	0.84	±1.1 %	±0.9 %	∞
Liquid Conductivity (mea.)^{DAK}	±2.5 %	R	$\sqrt{3}$	0.78	0.71	±1.1 %	±1.0 %	∞
Liquid Permittivity (mea.) ^{DAK}	±2.5 %	R	$\sqrt{3}$	0.26	0.26	±0.3 %	±0.4 %	∞
Temp. unc. - Conductivity ^{BB}	±3.4 %	R	$\sqrt{3}$	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. - Permittivity ^{BB}	±0.4 %	R	$\sqrt{3}$	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±12.3 %	±12.2 %	748
Expanded STD Uncertainty						**±24.6 %**	**±24.5 %**	

8 TEST EQUIPMENTS

The measurements were performed using an automated near-field scanning system, DASY5, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Model	Serial Number	Calibration date	Calibration Due data
DAE	DAE4	546	2017.09.15	2018.09.14
DAE	DAE4	720	2017.10.24	2018.10.23
Dosimetric E-field Probe	EX3DV4	3127	2017.10.13	2018.10.12
Dosimetric E-field Probe	EX3DV4	3708	2017.11.07	2018.11.06
Dipole Validation Kit	D750V3	1101	2017.09.13	2018.09.12
Dipole Validation Kit	D835V2	4d023	2017.09.13	2018.09.12
Dipole Validation Kit	D1800V2	2d084	2017.09.15	2018.09.14
Dipole Validation Kit	D2450V2	738	2017.09.18	2018.09.17
Dipole Validation Kit	D5GHzV2	1079	2017.09.25	2018.09.24

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration Due data
Signal Generator	E4428C	MY45280865	2017.08.20	2018.08.19
Signal Generator	SML 03	103514	2017.08.20	2018.08.19
Power meter	E4417A	MY45101182	2017.08.20	2018.08.19
Power Sensor	E4412A	MY41502214	2017.08.20	2018.08.19
Power Sensor	E4412A	MY41502130	2017.08.20	2018.08.19
Power meter	E4417A	MY45101004	2017.08.20	2018.08.19
Power Sensor	E9300B	MY41496001	2017.08.20	2018.08.19
Power Sensor	E9300B	MY41496003	2017.08.20	2018.08.19
Communication Tester	8960	GB43194054	2017.08.20	2018.08.19
Communication Tester	MT8820C	6201300660	2017.08.20	2018.08.19
Vector Network Analyzer	VNA R140	0011213	2017.10.17	2018.10.16
Dielectric Parameter Probe	DAKS-3.5	1042	2017.10.17	2018.10.16

Detailed information of Isotropic E-field Probe Type ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix C
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Optical Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Dynamic Range	5 µW/g to > 100 W/kg; Linearity: ± 0.2 dB
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

Detailed information of Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix C
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Optical Surface Detection	± 0.3 mm repeatability in air and clear liquids over diffuse reflecting surfaces
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
Dynamic Range	10 µW/g to > 100 W/kg Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

ANNEX A – TEST PLOTS

Please refer to the attachment.

Note: We only display the worst SAR value in each band for head and body position.

ANNEX B – RELEVANT PAGES FROM CALIBRATION REPORTS

Please refer to the attachment.

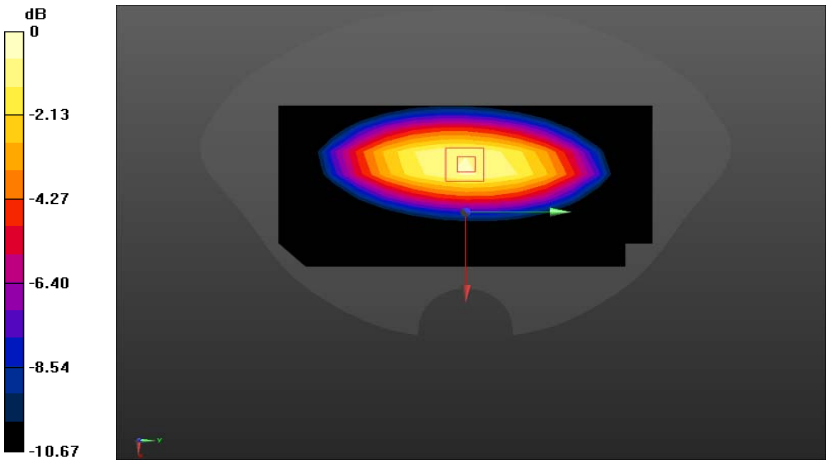
ANNEX A – TEST PLOTS

Head liquid

System check	750MHz

Communication System: UID 0, CW (0); Communication System Band: D750 (750.0 MHz); Frequency: 750 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 750 MHz; σ = 0.917 S/m; ε_r = 42.068; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.26, 6.26, 6.26); Calibrated: 10/11/2017, ConvF(6.26, 6.26, 6.26); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  System Performance Check at Frequencies 750MHz/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.16 W/kg
  System Performance Check at Frequencies 750MHz/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 41.00 V/m; Power Drift = 0.13 dB
  Peak SAR (extrapolated) = 3.26 W/kg
  SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.37 W/kg
  Maximum value of SAR (measured) = 2.49 W/kg



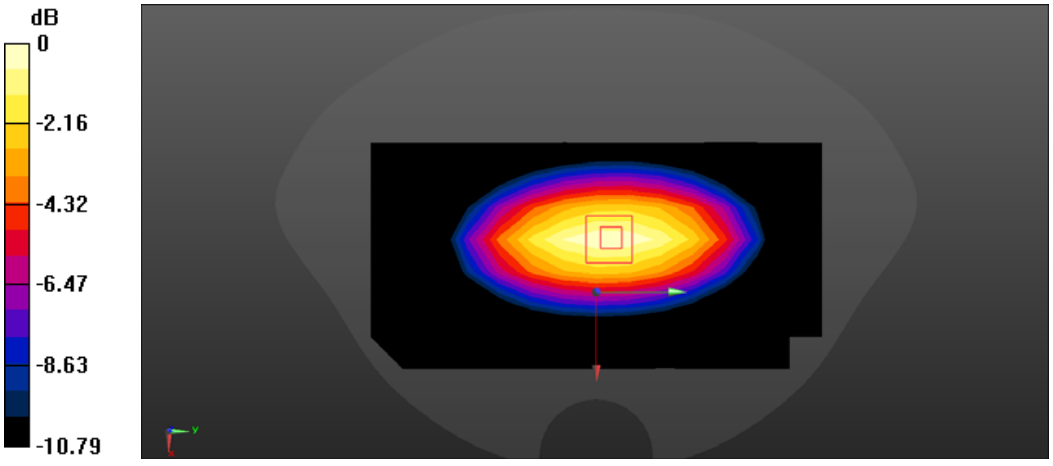
0 dB = 2.49 W/kg = 3.96 dBW/kg

System check	835MHz

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used (interpolated): f = 835 MHz; σ = 0.912 S/m; ε_r = 42.529; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017, ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 835/835/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.75 W/kg
  Configuration 835/835/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 51.68 V/m; Power Drift = -0.05 dB
  Peak SAR (extrapolated) = 3.58 W/kg
  SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.53 W/kg
  Maximum value of SAR (measured) = 2.78 W/kg



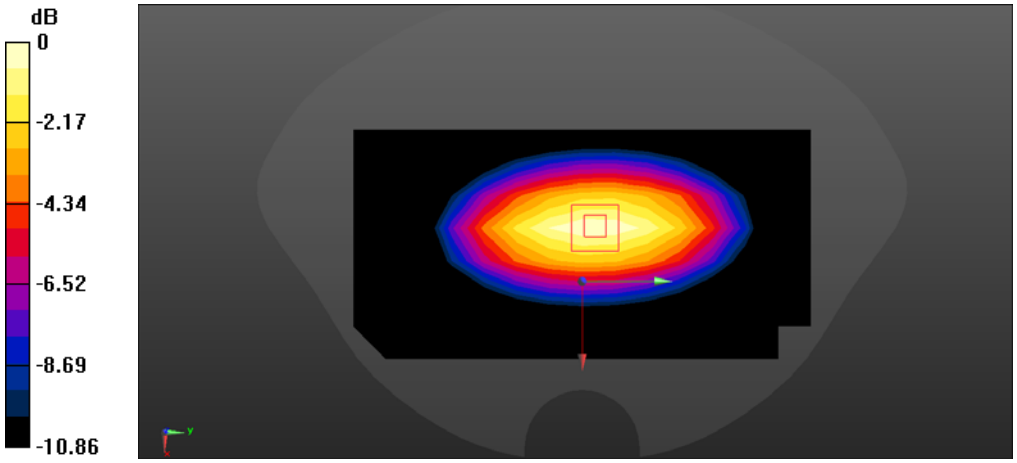
0 dB = 2.78 W/kg = 4.44 dBW/kg

System check	835MHz

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used (interpolated): f = 835 MHz; σ = 0.908 S/m; ε_r = 40.217; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017, ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 835/835/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.72 W/kg
  Configuration 835/835/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 50.67 V/m; Power Drift = 0.14 dB
  Peak SAR (extrapolated) = 3.58 W/kg
  SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.52 W/kg
  Maximum value of SAR (measured) = 2.74 W/kg



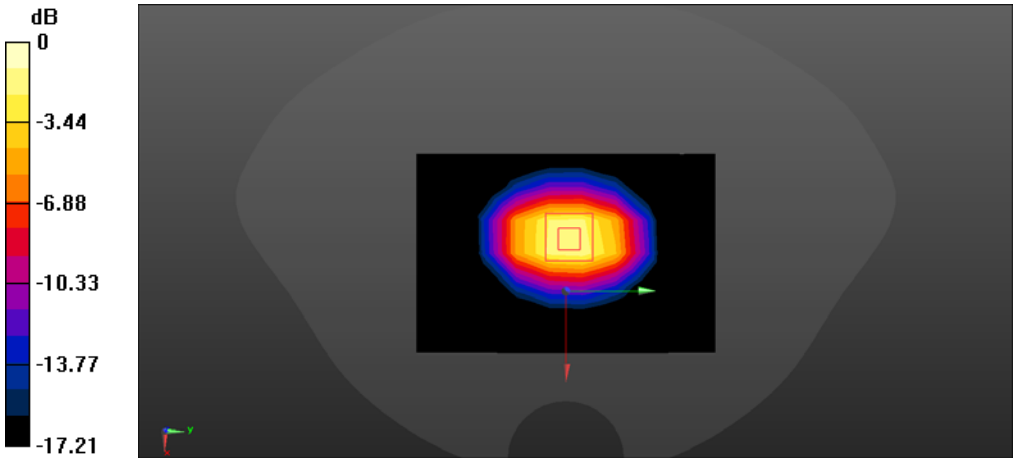
0 dB = 2.74 W/kg = 4.41 dBW/kg

System check	1800MHz

Communication System: UID 0, CW (0); Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.409 S/m; ε_r = 38.905; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 1800/1800/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 8.57 W/kg
  Configuration 1800/1800/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 80.04 V/m; Power Drift = 0.11 dB
  Peak SAR (extrapolated) = 17.7 W/kg
  SAR(1 g) = 9.57 W/kg; SAR(10 g) = 5.02 W/kg
  Maximum value of SAR (measured) = 12.2 W/kg



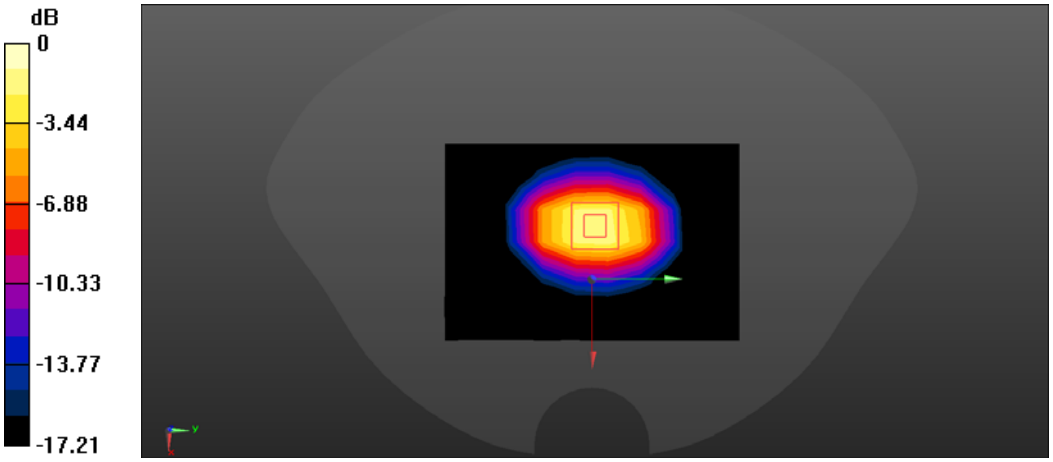
0 dB = 12.2 W/kg = 10.86 dBW/kg

System check	1800MHz

Communication System: UID 0, CW (0); Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.411 S/m; ε_r = 40.607; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 1800/1800/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 8.31 W/kg
  Configuration 1800/1800/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 76.60 V/m; Power Drift = 0.01 dB
  Peak SAR (extrapolated) = 17.5 W/kg
  SAR(1 g) = 9.46 W/kg; SAR(10 g) = 4.96 W/kg
  Maximum value of SAR (measured) = 12.1 W/kg



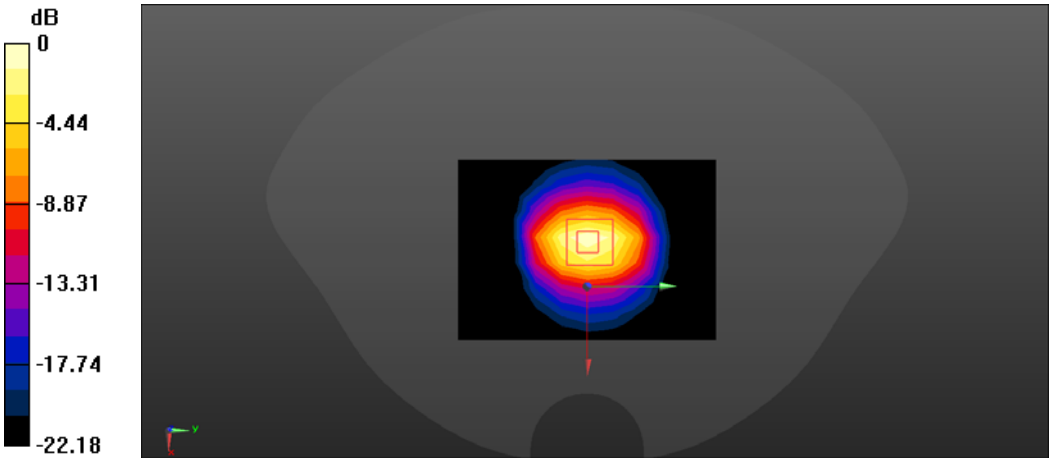
0 dB = 12.1 W/kg = 10.83 dBW/kg

System check	2450MHz

Communication System: UID 0, CW (0); Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.873 S/m; ε_r = 38.145; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.58, 4.58, 4.58); Calibrated: 10/11/2017, ConvF(4.58, 4.58, 4.58); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  System Performance Check at Frequencies 2450 MHz/2450/Area Scan (8x11x1):
  Measurement grid: dx=12mm, dy=12mm
  Maximum value of SAR (measured) = 21.2 W/kg
  System Performance Check at Frequencies 2450 MHz/2450/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 109.3 V/m; Power Drift = 0.14 dB
  Peak SAR (extrapolated) = 28.2 W/kg
  SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.34 W/kg
  Maximum value of SAR (measured) = 23.0 W/kg



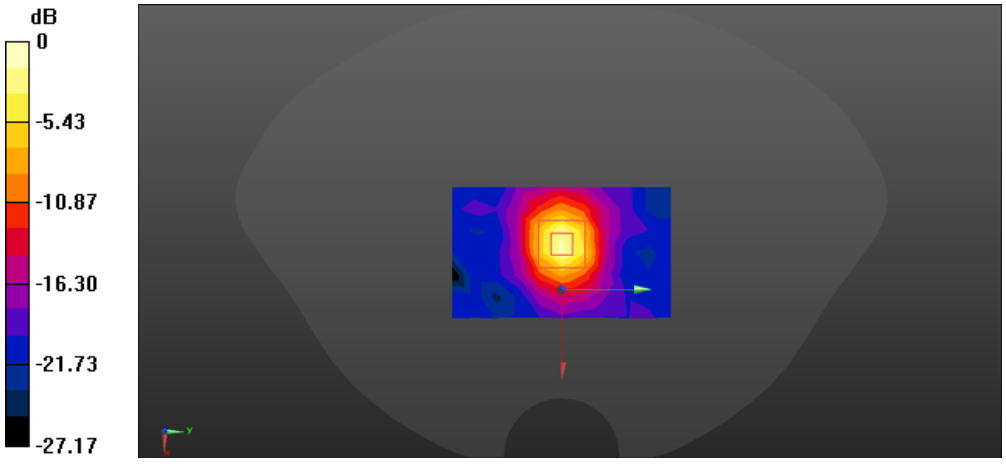
0 dB = 23.0 W/kg = 13.62 dBW/kg

System check	5200MHz

Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps);
Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 4.483 S/m; ε_r = 36.853; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(5.64, 5.64, 5.64); Calibrated: 11/7/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 10/23/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: 1559
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)
  Configuration/5200/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm
  Maximum value of SAR (measured) = 1.55 W/kg
  Configuration/5200/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 19.30 V/m; Power Drift = 0.18 dB
  Peak SAR (extrapolated) = 3.21 W/kg
  SAR(1 g) = 0.787 W/kg; SAR(10 g) = 0.234 W/kg
  Maximum value of SAR (measured) = 1.97 W/kg



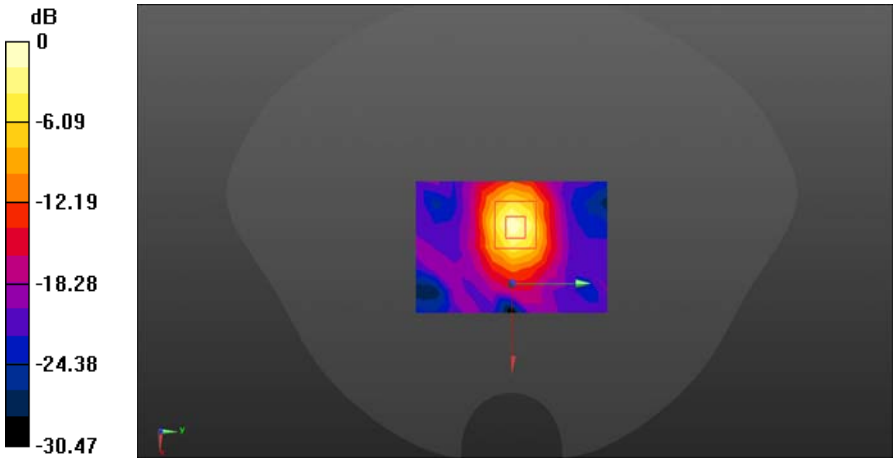
0 dB = 1.97 W/kg = 2.94 dBW/kg

System check	5800MHz

Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps);
Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 5.185 S/m; ε_r = 36.334; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(5.03, 5.03, 5.03); Calibrated: 11/7/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 10/23/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: 1559
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)
  Configuration/5800/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm
  Maximum value of SAR (measured) = 1.97 W/kg
  Configuration/5800/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 13.10 V/m; Power Drift = 0.02 dB
  Peak SAR (extrapolated) = 3.51 W/kg
  SAR(1 g) = 0.775 W/kg; SAR(10 g) = 0.226 W/kg
  Maximum value of SAR (measured) = 2.01 W/kg



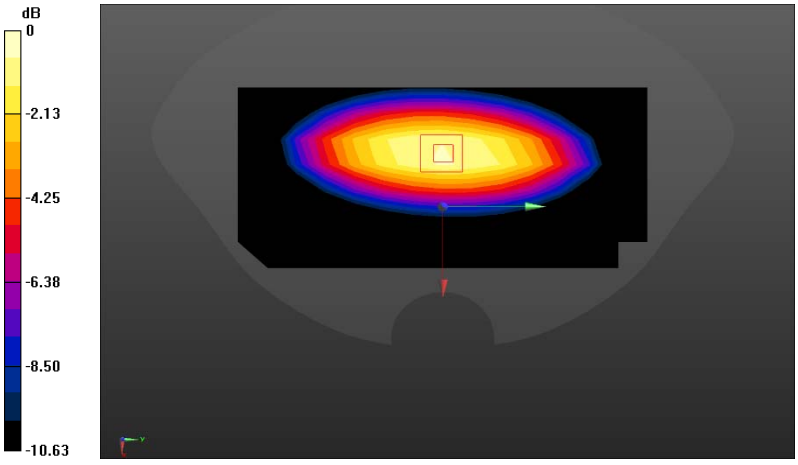
0 dB = 2.01 W/kg = 3.03 dBW/kg

Body liquid

System check	750MHz

Communication System: UID 0, CW (0); Communication System Band: D750 (750.0 MHz); Frequency: 750 MHz;Communication System PAR: 0 dB
Medium parameters used: f = 750 MHz; σ = 0.976 S/m; ε_r = 53.279; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.18, 6.18, 6.18); Calibrated: 10/11/2017, ConvF(6.18, 6.18, 6.18); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  System Performance Check at Frequencies 750MHz/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.31 W/kg
  System Performance Check at Frequencies 750MHz/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 41.26 V/m; Power Drift = 0.13 dB
  Peak SAR (extrapolated) = 3.45 W/kg
  SAR(1 g) = 2.06 W/kg; SAR(10 g) = 1.47 W/kg
  Maximum value of SAR (measured) = 2.66 W/kg



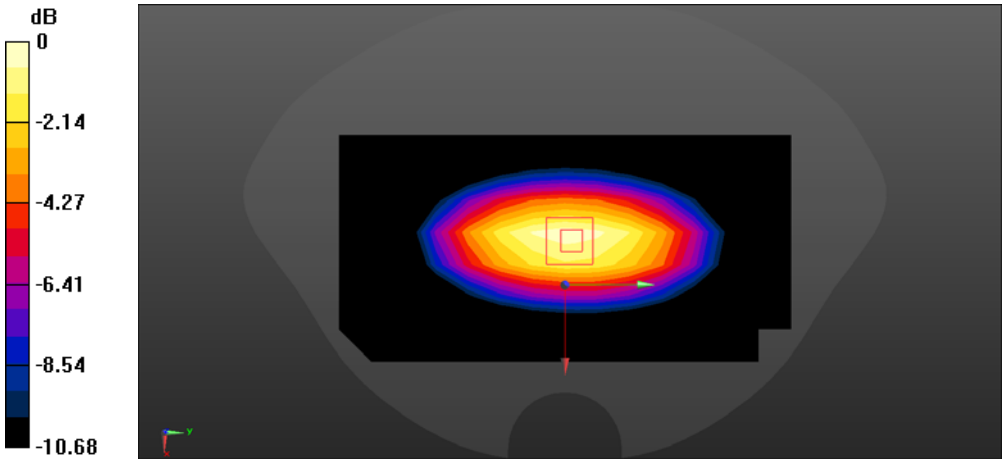
0 dB = 2.66 W/kg = 4.25 dBW/kg

System check	835MHz

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used (interpolated): f = 835 MHz; σ = 0.975 S/m; ε_r = 54.541; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017, ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 835/835/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.63 W/kg
  Configuration 835/835/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 52.70 V/m; Power Drift = 0.06 dB
  Peak SAR (extrapolated) = 3.54 W/kg
  SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.54 W/kg
  Maximum value of SAR (measured) = 2.77 W/kg



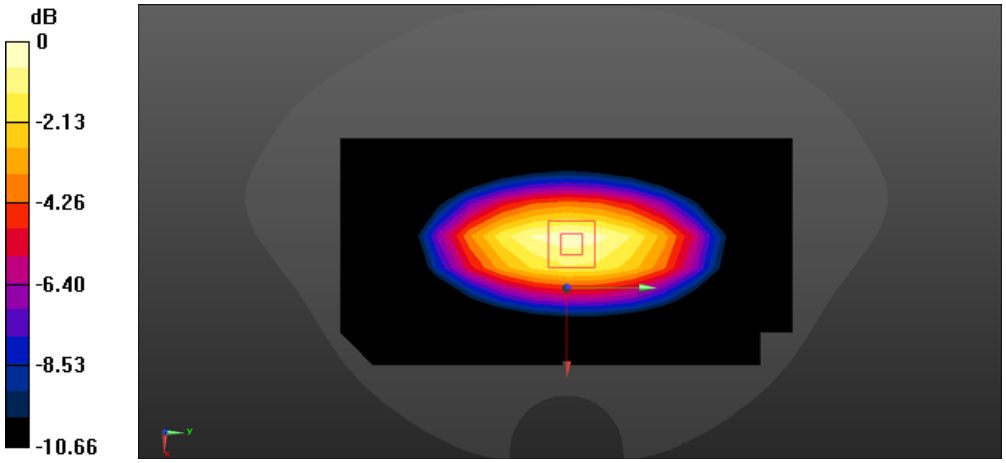
0 dB = 2.77 W/kg = 4.42 dBW/kg

System check	835MHz

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used (interpolated): f = 835 MHz; σ = 0.971 S/m; ε_r = 55.036; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017, ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 835/835/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.63 W/kg
  Configuration 835/835/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 53.21 V/m; Power Drift = -0.07 dB
  Peak SAR (extrapolated) = 3.50 W/kg
  SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.52 W/kg
  Maximum value of SAR (measured) = 2.74 W/kg



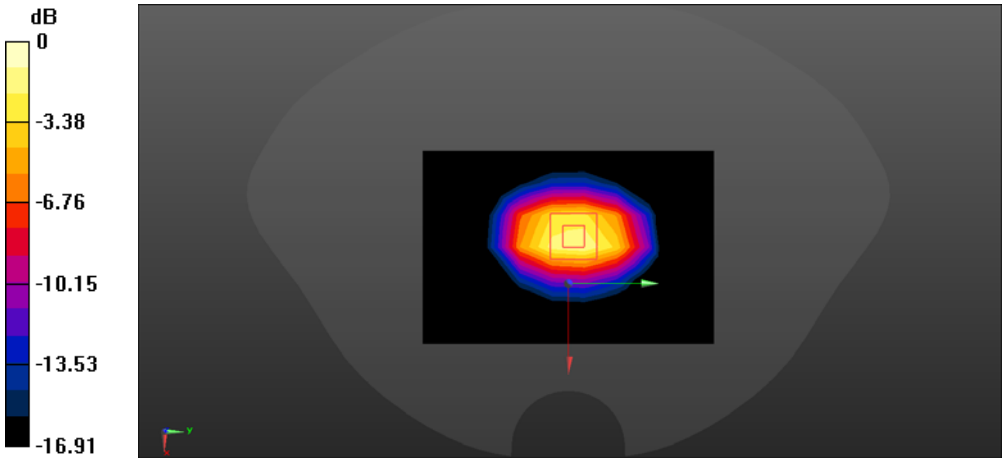
0 dB = 2.74 W/kg = 4.38 dBW/kg

System check	1800MHz

Communication System: UID 0, CW (0); Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.523 S/m; ε_r = 52.879; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 1800/1800/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 9.43 W/kg
  Configuration 1800/1800/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 80.19 V/m; Power Drift = 0.19 dB
  Peak SAR (extrapolated) = 17.5 W/kg
  SAR(1 g) = 9.55 W/kg; SAR(10 g) = 4.98 W/kg
  Maximum value of SAR (measured) = 12.2 W/kg



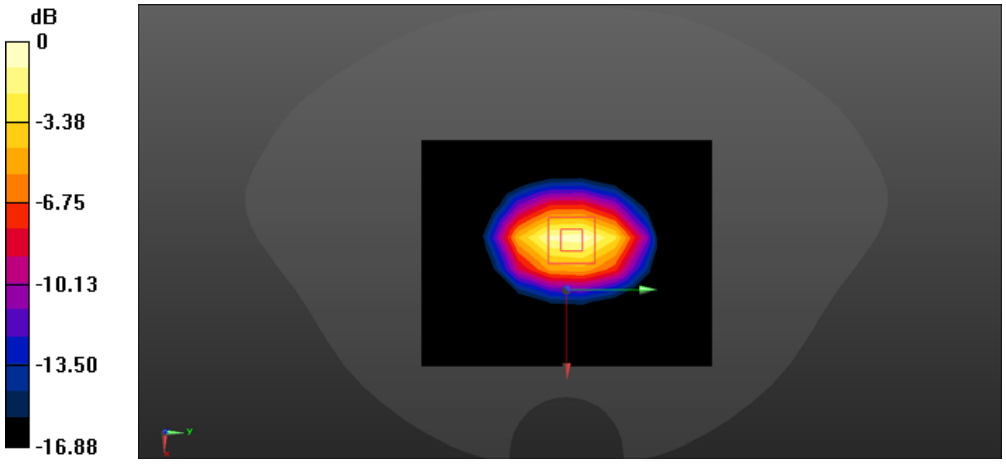
0 dB = 12.2 W/kg = 10.86 dBW/kg

System check	1800MHz

Communication System: UID 0, CW (0); Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.542 S/m; ε_r = 51.717; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Configuration 1800/1800/Area Scan (8x10x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 11.5 W/kg
  Configuration 1800/1800/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 80.17 V/m; Power Drift = 0.15 dB
  Peak SAR (extrapolated) = 17.8 W/kg
  SAR(1 g) = 9.67 W/kg; SAR(10 g) = 5.03 W/kg
  Maximum value of SAR (measured) = 12.4 W/kg



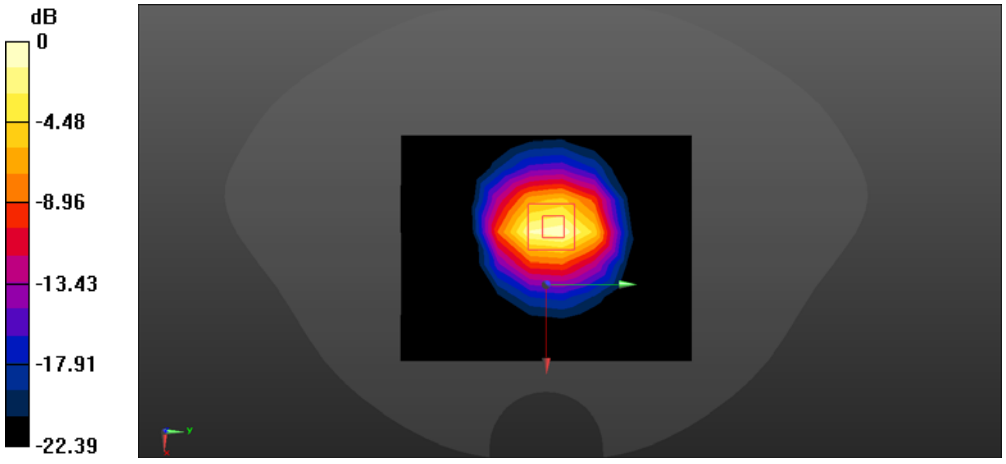
0 dB = 12.4 W/kg = 10.93 dBW/kg

System check	2450MHz

Communication System: UID 0, CW (0); Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.926 S/m; ε_r = 50.795; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.28, 4.28, 4.28); Calibrated: 10/11/2017, ConvF(4.28, 4.28, 4.28); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  System Performance Check at Frequencies 2450 MHz/2450/Area Scan (8x10x1):
  Measurement grid: dx=12mm, dy=12mm
  Maximum value of SAR (measured) = 15.9 W/kg
  System Performance Check at Frequencies 2450 MHz/2450/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 62.46 V/m; Power Drift = 0.12 dB
  Peak SAR (extrapolated) = 27.5 W/kg
  SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.09 W/kg
  Maximum value of SAR (measured) = 17.3 W/kg



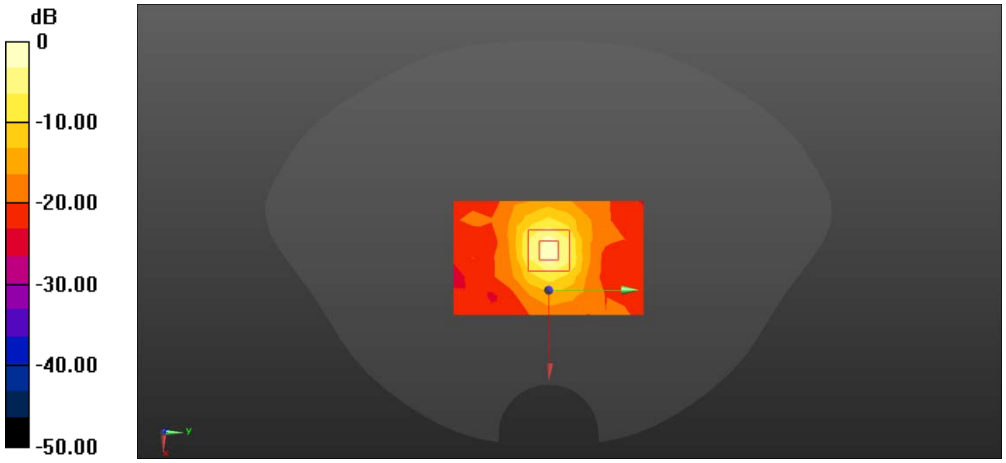
0 dB = 17.3 W/kg = 12.38 dBW/kg

System check	5200MHz

Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps);
Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.355 S/m; ε_r = 49.035; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.79, 4.79, 4.79); Calibrated: 11/7/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 10/23/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: 1560
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)
  Configuration/5200/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm
  Maximum value of SAR (measured) = 1.47 W/kg
  Configuration/5200/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, d5=5mm
  Reference Value = 11.12 V/m; Power Drift = 0.08 dB
  Peak SAR (extrapolated) = 3.29 W/kg
  SAR(1 g) = 0.73 W/kg; SAR(10 g) = 0.206 W/kg
  Maximum value of SAR (measured) = 2.11 W/kg



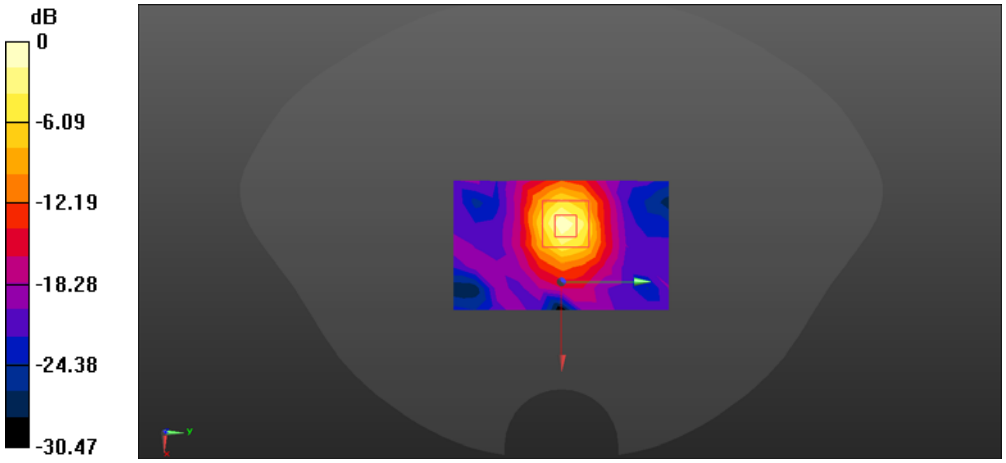
0 dB = 2.11 W/kg = 3.24 dBW/kg

System check	5800MHz

Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps);
Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.11 S/m; ε_r = 47.36; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.19, 4.19, 4.19); Calibrated: 11/7/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 10/23/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: 1560
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)
  Configuration/5800/Area Scan (7x11x1): Measurement grid: dx=10mm, dy=10mm
  Maximum value of SAR (measured) = 2.12 W/kg
  Configuration/5800/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 11.35 V/m; Power Drift = 0.02 dB
  Peak SAR (extrapolated) = 3.39 W/kg
  SAR(1 g) = 0.75 W/kg; SAR(10 g) = 0.226 W/kg
  Maximum value of SAR (measured) = 2.46 W/kg



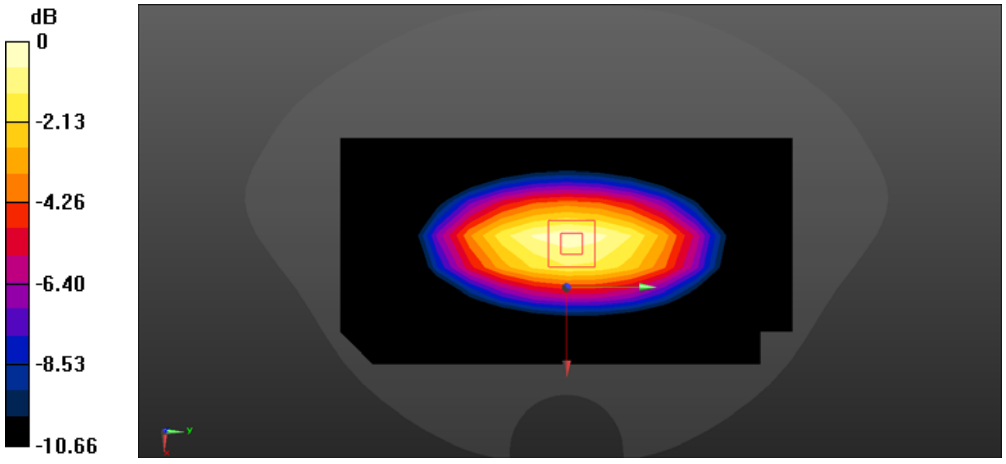
0 dB = 2.46 W/kg = 3.91 dBW/kg

System check	835MHz

Communication System: UID 0, CW (0); Frequency: 835 MHz
Medium parameters used (interpolated): f = 835 MHz; σ = 0.971 S/m; ε_r = 55.036; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(9.16, 9.16, 9.16); Calibrated: 11/7/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 10/23/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: 1560
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7373)
  Configuration 835/835/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 2.63 W/kg
  Configuration 835/835/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 53.21 V/m; Power Drift = -0.07 dB
  Peak SAR (extrapolated) = 3.50 W/kg
  SAR(1 g) = 2.34 W/kg; SAR(10 g) = 1.52 W/kg
  Maximum value of SAR (measured) = 2.74 W/kg



0 dB = 2.74 W/kg = 4.38 dBW/kg

Main supply

GSM 850MHz

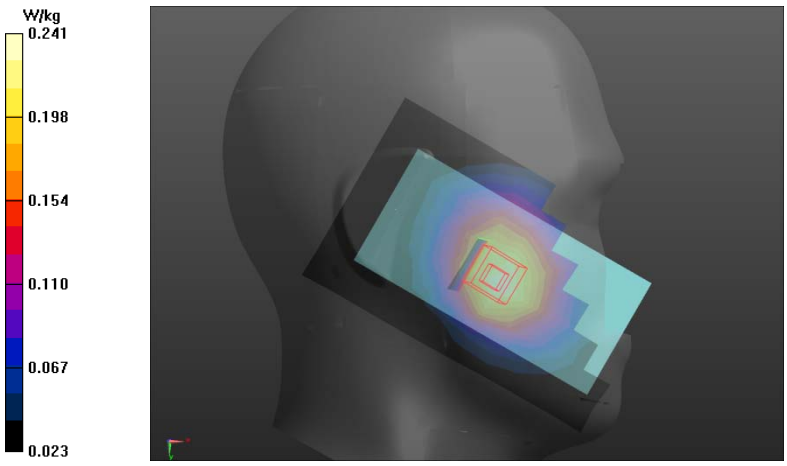
Right Side	Cheek

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.913 S/m; ε_r = 42.52; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017, ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Head-Section Right HSL 850/850GSM HSL touch L/Area Scan (8x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.246 W/kg
  Head-Section Right HSL 850/850GSM HSL touch L/Zoom Scan (7x7x7)/Cube 0:
  Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 4.750 V/m; Power Drift = 0.03 dB
  Peak SAR (extrapolated) = 0.286 W/kg
  SAR(1 g) = 0.215 W/kg; SAR(10 g) = 0.154 W/kg
  Maximum value of SAR (measured) = 0.241 W/kg



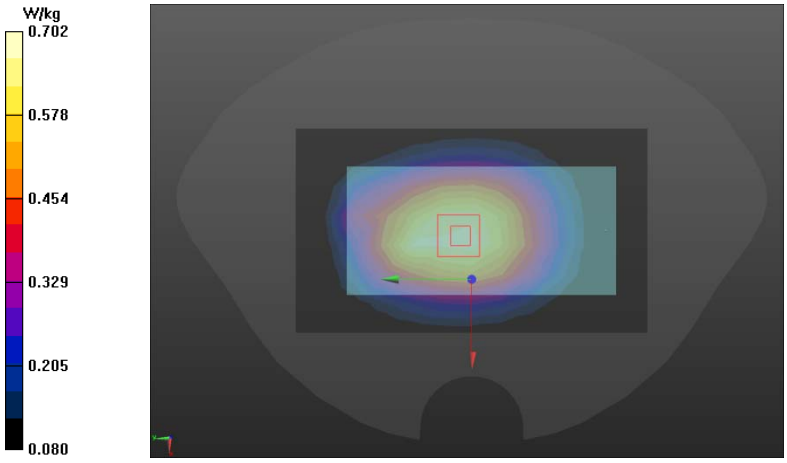
FLAT	Towards ground

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.976 S/m; ε_r = 54.535; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017, ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Flat-Section MSL GSM850 TG/GPRS850 TG M 10mm M/Area Scan (8x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.686 W/kg
  Flat-Section MSL GSM850 TG/GPRS850 TG M 10mm M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 27.29 V/m; Power Drift = 0.05 dB
  Peak SAR (extrapolated) = 0.837 W/kg
  SAR(1 g) = 0.628 W/kg; SAR(10 g) = 0.457 W/kg
  Maximum value of SAR (measured) = 0.702 W/kg



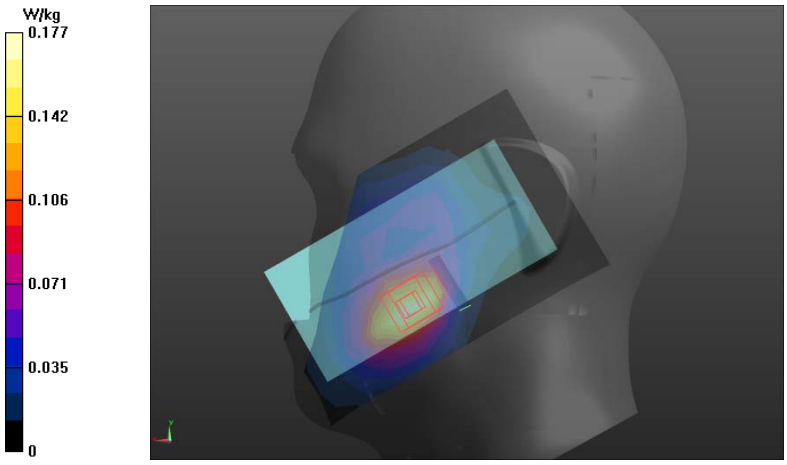
GSM 1900MHz

Left Side	Cheek

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.465 S/m; ε_r = 40.422; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Head-Section Left HSL 1900/1900GSM HSL touch M/Area Scan (8x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.177 W/kg
  Head-Section Left HSL 1900/1900GSM HSL touch M/Zoom Scan (7x7x7)/Cube 0:
  Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 3.466 V/m; Power Drift = -0.13 dB
  Peak SAR (extrapolated) = 0.255 W/kg
  SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.089 W/kg
  Maximum value of SAR (measured) = 0.185 W/kg

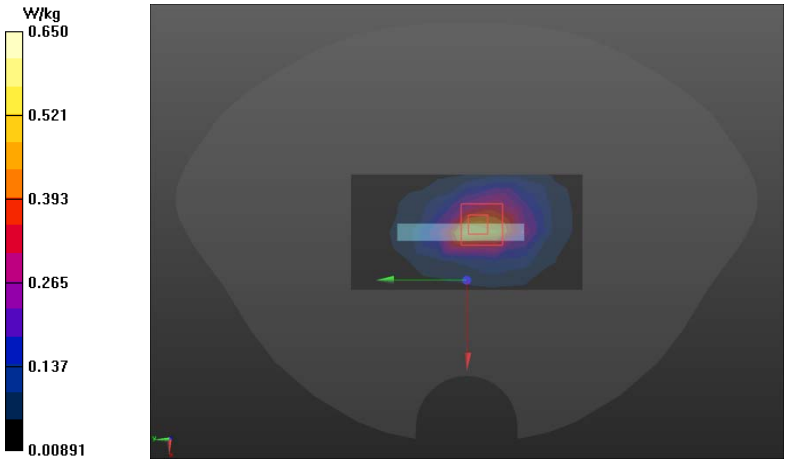


FLAT	EDGE2

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.538 S/m; ε_r = 52.717; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Flat-Section MSL GSM1900 HOT/EGPRS1900 M edge 2/Area Scan (5x9x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.534 W/kg
  Flat-Section MSL GSM1900 HOT/EGPRS1900 M edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 19.39 V/m; Power Drift = -0.05 dB
  Peak SAR (extrapolated) = 0.936 W/kg
  SAR(1 g) = 0.509 W/kg; SAR(10 g) = 0.260 W/kg
  Maximum value of SAR (measured) = 0.650 W/kg



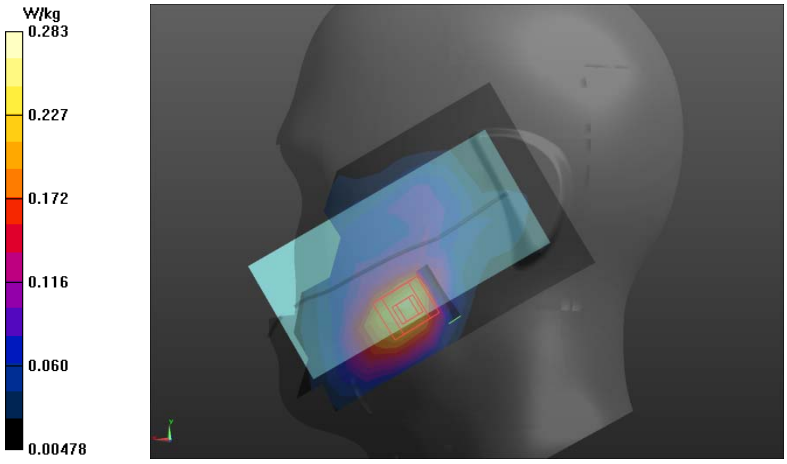
WCDMA Band 2

Left Side	Cheek

Communication System: UID 0, wcdma II (0); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.465 S/m; ε_r = 40.422; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Head-Section HSL WCDMA BNAD2 Left Head/WCDMA BAND2 HSL touch M/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.260 W/kg
  Head-Section HSL WCDMA BNAD2 Left Head/WCDMA BAND2 HSL touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 4.620 V/m; Power Drift = 0.01 dB
  Peak SAR (extrapolated) = 0.384 W/kg
  SAR(1 g) = 0.237 W/kg; SAR(10 g) = 0.142 W/kg
  Maximum value of SAR (measured) = 0.283 W/kg

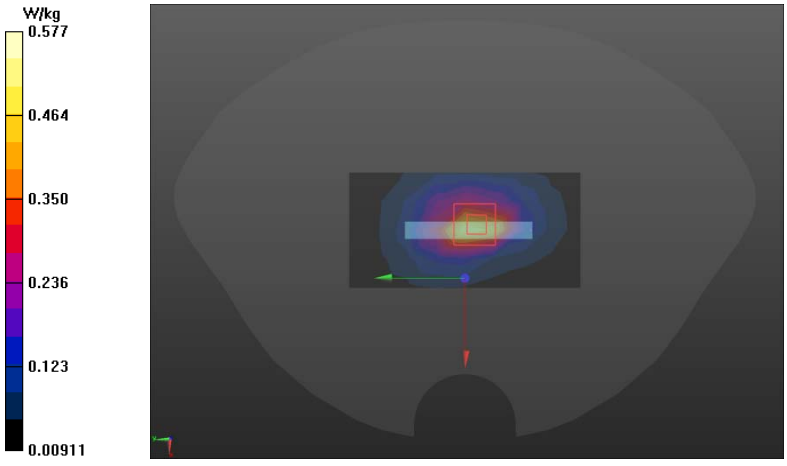


FLAT	EDGE2

Communication System: UID 0, wcdma II (0); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.538 S/m; ε_r = 52.717; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Flat-Section MSL WCDMA BAND2 HOT/WCDMA BAND2 M edge 2/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.510 W/kg
  Flat-Section MSL WCDMA BAND2 HOT/WCDMA BAND2 M edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 19.12 V/m; Power Drift = -0.01 dB
  Peak SAR (extrapolated) = 0.801 W/kg
  SAR(1 g) = 0.457 W/kg; SAR(10 g) = 0.240 W/kg
  Maximum value of SAR (measured) = 0.577 W/kg



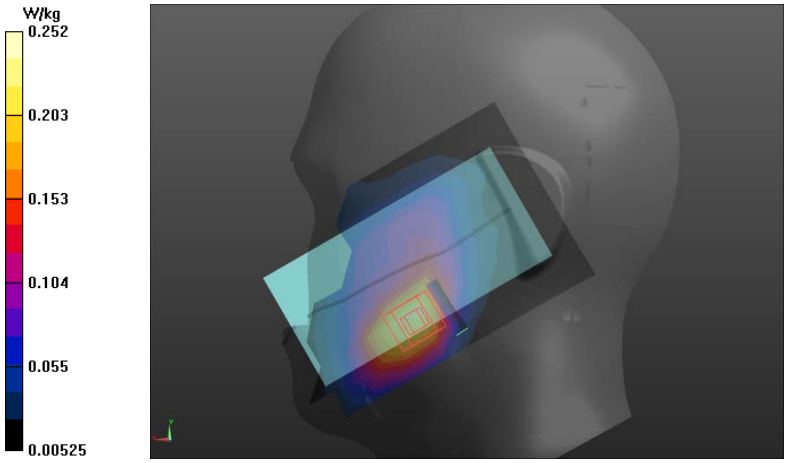
WCDMA Band 4

Left Side	Cheek

Communication System: UID 0, wcdma band4 (0); Frequency: 1732.4 MHz
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.363 S/m; ε_r = 40.678; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Head-Section HSL WCDMA BNAD4 Left Head/WCDMA BAND4 HSL touch M/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.233 W/kg
  Head-Section HSL WCDMA BNAD4 Left Head/WCDMA BAND4 HSL touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 3.696 V/m; Power Drift = 0.09 dB
  Peak SAR (extrapolated) = 0.338 W/kg
  SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.134 W/kg
  Maximum value of SAR (measured) = 0.252 W/kg

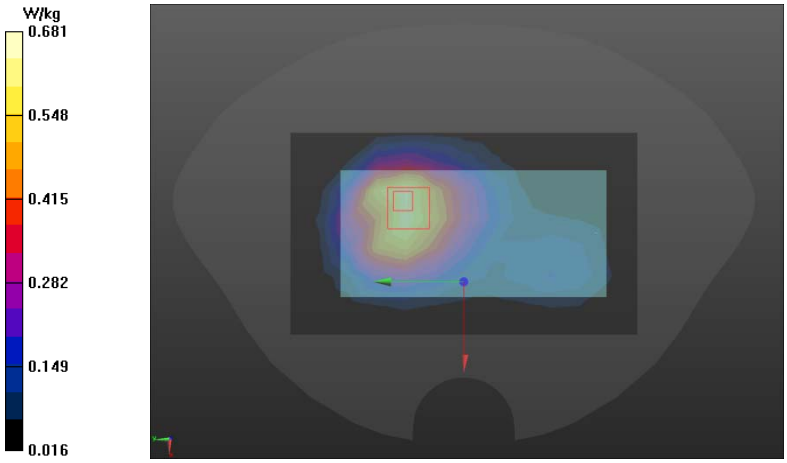


FLAT(VIOCE)	Towards ground

Communication System: UID 0, wcdma band4 (0); Frequency: 1732.4 MHz
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.468 S/m; ε_r = 52.935; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Flat-Section MSL wcdma band4 TG/wcdma band4 TG M 10mm voice/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.647 W/kg
  Flat-Section MSL wcdma band4 TG/wcdma band4 TG M 10mm voice/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 14.39 V/m; Power Drift = -0.10 dB
  Peak SAR (extrapolated) = 0.930 W/kg
  SAR(1 g) = 0.568 W/kg; SAR(10 g) = 0.348 W/kg
  Maximum value of SAR (measured) = 0.681 W/kg



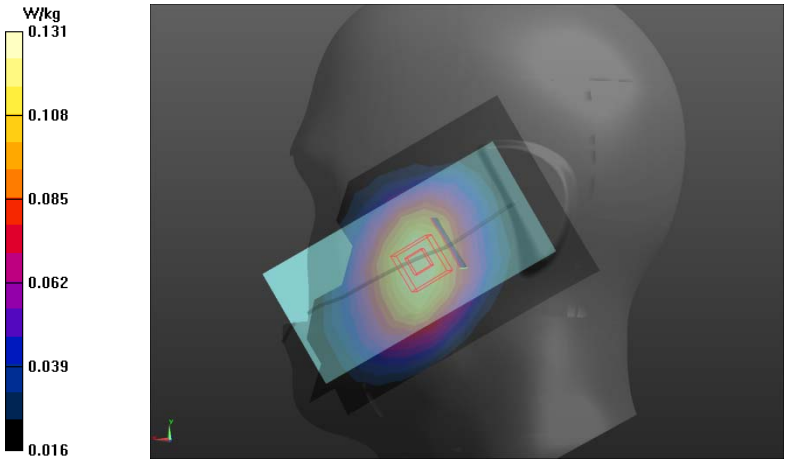
WCDMA Band 5

Left Side	Cheek

Communication System: UID 0, UMTS 835 (0); Frequency: 836.5 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.913 S/m; ε_r = 42.521; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017, ConvF(6.15, 6.15, 6.15); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Head-Section HSL WCDMA BNAD5 Left Head/WCDMA BAND5 HSL touch M/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.124 W/kg
  Head-Section HSL WCDMA BNAD5 Left Head/WCDMA BAND5 HSL touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 4.121 V/m; Power Drift = 0.17 dB
  Peak SAR (extrapolated) = 0.151 W/kg
  SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.088 W/kg
  Maximum value of SAR (measured) = 0.131 W/kg

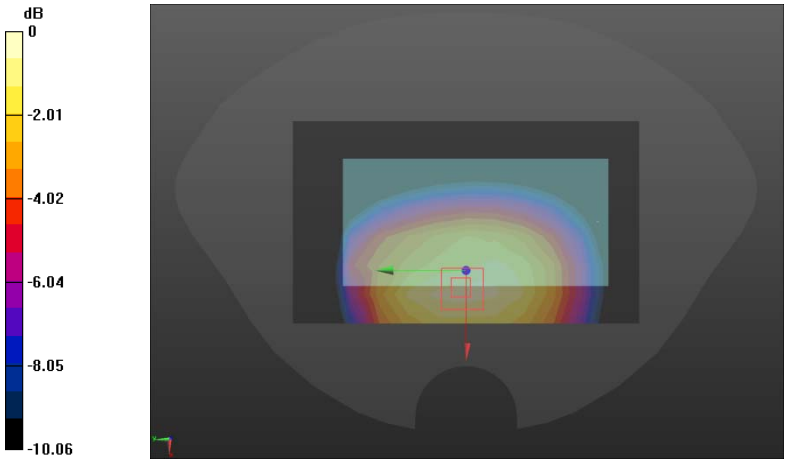


FLAT(DATA）	Towards ground

Communication System: UID 0, UMTS 835 (0); Frequency: 836.5 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.975 S/m; ε_r = 54.535; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017, ConvF(6.06, 6.06, 6.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  Flat-Section MSL wcdma band5 TG/wcdma band5 TG M 10mm data/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.264 W/kg
  Flat-Section MSL wcdma band5 TG/wcdma band5 TG M 10mm data/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 12.11 V/m; Power Drift = -0.04 dB
  Peak SAR (extrapolated) = 0.337 W/kg
  SAR(1 g) = 0.253 W/kg; SAR(10 g) = 0.185 W/kg
  Maximum value of SAR (measured) = 0.284 W/kg



0 dB = 0.284 W/kg = -5.47 dBW/kg

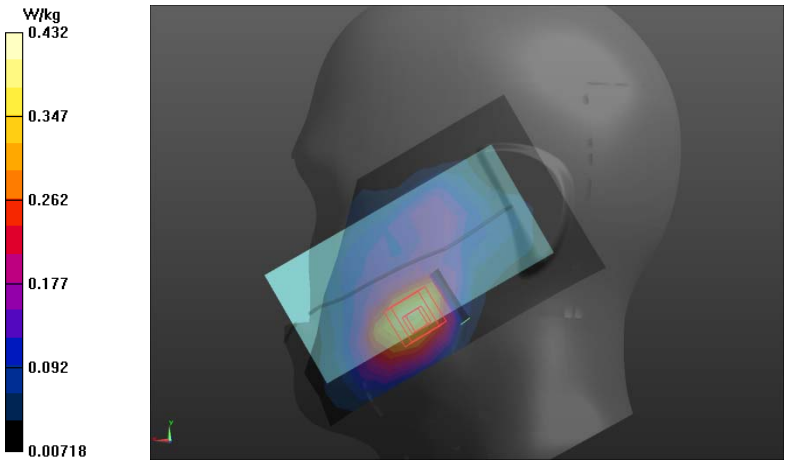
LTE (Band2 20BW)

Left Side	Cheek

Communication System: UID 10169 - CAC, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.465 S/m; ε_r = 40.422; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017, ConvF(5.06, 5.06, 5.06); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1559; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  LTE BAND2 LEFT/LTE BAND2 LC 1RB/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.406 W/kg
  LTE BAND2 LEFT/LTE BAND2 LC 1RB/Zoom Scan (7x7x7)/Cube 0:
  Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 7.215 V/m; Power Drift = -0.02 dB
  Peak SAR (extrapolated) = 0.604 W/kg
  SAR(1 g) = 0.360 W/kg; SAR(10 g) = 0.212 W/kg
  Maximum value of SAR (measured) = 0.432 W/kg



FLAT	EDGE2

Communication System: UID 10169 - CAC, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1880 MHz
Medium parameters used (interpolated): f = 1880 MHz; σ = 1.538 S/m; ε_r = 52.717; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017, ConvF(4.83, 4.83, 4.83); Calibrated: 10/11/2017;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 9/15/2017
- Phantom: Twin-SAM 1560; Type: QD 000 P40 CD; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)
  LTE BAND2 HOT/LTE BAND2 M edge 2 1RB/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.554 W/kg
  LTE BAND2 HOT/LTE BAND2 M edge 2 1RB/Zoom Scan (7x7x7)/Cube 0:
  Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 19.63 V/m; Power Drift = 0.01 dB
  Peak SAR (extrapolated) = 0.892 W/kg
  SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.263 W/kg
  Maximum value of SAR (measured) = 0.635 W/kg