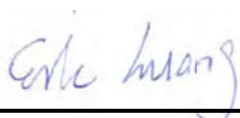


FCC SAR Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : Z970
FCC ID : SRQ-Z970
STANDARD : FCC 47 CFR Part 2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2003

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

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Deputy Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.



Table of Contents

1. Statement of Compliance	4
2. Administration Data	5
3. Guidance Standard	5
4. Equipment Under Test (EUT)	6
4.1 General Information	6
4.2 Maximum Tune-up Limit	7
4.3 General LTE SAR Test and Reporting Considerations	12
5. RF Exposure Limits	14
5.1 Uncontrolled Environment	14
5.2 Controlled Environment	14
6. Specific Absorption Rate (SAR)	15
6.1 Introduction	15
6.2 SAR Definition	15
7. System Description and Setup	16
8. Measurement Procedures	17
8.1 Spatial Peak SAR Evaluation	17
8.2 Power Reference Measurement	18
8.3 Area Scan	18
8.4 Zoom Scan	19
8.5 Volume Scan Procedures	19
8.6 Power Drift Monitoring	19
9. Test Equipment List	20
10. System Verification	21
10.1 Tissue Verification	21
10.2 System Performance Check Results	22
11. RF Exposure Positions	23
11.1 Ear and handset reference point	23
11.2 Definition of the cheek position	24
11.3 Definition of the tilt position	25
11.4 Body Worn Accessory	26
11.5 Wireless Router	26
11.6 Extremity Exposure	26
12. Conducted RF Output Power (Unit: dBm)	27
13. Bluetooth Exclusions Applied	45
14. Antenna Location	46
15. SAR Test Results	47
15.1 Head SAR	48
15.2 Hotspot SAR	51
15.3 Body Worn Accessory SAR	56
15.4 Test Records for Extremity SAR Test	59
15.5 Repeated SAR Measurement	60
16. Simultaneous Transmission Analysis	61
16.1 Head Exposure Conditions	62
16.2 Hotspot Exposure Conditions	65
16.3 Body-Worn Accessory Exposure Conditions	71
16.4 SPLSR Evaluation and Analysis	74
17. Uncertainty Assessment	83
18. References	85
Appendix A. Plots of System Performance Check	
Appendix B. Plots of High SAR Measurement	
Appendix C. DASY Calibration Certificate	
Appendix D. Test Setup Photos	

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA440414	Rev. 01	Initial issue of report	Jul. 22, 2014

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **ZTE CORPORATION, LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone, Z970** are as follows.

Equipment Class	Frequency Band	Operating Mode	Highest SAR Summary			
			Head 1g SAR (W/kg)	Wireless Router 1g SAR (W/kg) (Gap 1cm)	Body-worn 1g SAR (W/kg) (Gap 1cm)	Simultaneous Transmission SAR (W/kg)
PCE	GSM850	Voice/Data	< 0.10	< 0.10	< 0.10	1.59
	GSM1900	Voice/Data	0.14	0.75	0.75	
	WCDMA Band V	Voice/Data	< 0.10	< 0.10	< 0.10	
	WCDMA Band IV	Voice/Data	0.35	1.43	1.43	
	WCDMA Band II	Voice/Data	0.23	1.33	1.33	
	LTE Band 12	Data	0.25	0.46	0.46	
	LTE Band 17	Data	0.21	0.38	0.38	
	LTE Band 4	Data	0.36	1.43	1.43	
	LTE Band 2	Data	0.24	1.25	1.26	
	LTE Band 7	Data	< 0.10	< 0.10	< 0.10	
DTS	WLAN 2.4GHz Band	Data	0.13	0.27	0.27	1.53
NII	WLAN 5.2GHz Band	Data	0.29		0.88	1.59
	WLAN 5.8GHz Band	Data	0.37	0.83	0.42	
DSS	Bluetooth	Data				1.46
Date of Testing:			Jun. 06, 2014 ~ Jul. 09, 2014			

Equipment Class	Frequency Band	Operating Mode	Highest SAR Summary
			Extremity 10g SAR (W/kg) (Gap 0cm)
PCE	WCDMA Band IV	Voice/Data	3.52
	WCDMA Band II	Voice/Data	3.76
	LTE Band 4	Data	3.38
	LTE Band 2	Data	3.74

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 4.0W/kg as averaged over any 10 gram of tissue for extremity SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003.

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958

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

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

3. Guidance Standard

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03
- FCC KDB 865664 D02 SAR Reporting v01r01
- FCC KDB 447498 D01 General RF Exposure Guidance v05r02
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r02
- FCC KDB 248227 D01 SAR meas for 802 11abg v01r02
- FCC KDB 941225 D01 SAR test for 3G devices v02
- FCC KDB 941225 D02 HSPA and 1x Advanced v02r02
- FCC KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- FCC KDB 941225 D05 SAR for LTE Devices v02r03
- FCC KDB 941225 D06 Hotspot Mode SAR v01r01

4. Equipment Under Test (EUT)

4.1 General Information

Product Feature & Specification	
Equipment Name	LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	Z970
FCC ID	SRQ-Z970
IMEI Code	864507020002944
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5805 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	• GSM/GPRS/EGPRS • RMC/AMR 12.2Kbps • HSDPA • HSUPA • DC-HSDPA • HSPA+ (Downlink Only) • LTE • WLAN 2.4GHz 802.11b/g/n (HT20/HT40) • WLAN 5GHz 802.11a/n (HT20/HT40)/ac (VHT20/VHT40/VHT80) • Bluetooth v3.0+EDR, Bluetooth v4.0 LE
HW Version	wwdB
SW Version	Z970V1.0.0B01
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: 1. This device supported VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP). 2. This device supports GRPS/EGPRS mode up to multi-slot class12 and does not support DTM operation. 3. This device 2.4GHz WLAN supports hotspot operation, and 2.4GHz / 5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.2GHz supports WiFi Direct (GC only).	

4.2 Maximum Tune-up Limit

Mode	Burst average power (dBm)	
	GSM 850	GSM 1900
GSM (GMSK, 1 Tx slot)	33.0	29.5
GPRS (GMSK, 1 Tx slot)	33.0	29.5
GPRS (GMSK, 2 Tx slots)	29.5	27.5
GPRS (GMSK, 3 Tx slots)	28.0	25.5
GPRS (GMSK, 4 Tx slots)	26.5	24.0
EDGE (8PSK, 1 Tx slot)	28.0	26.5
EDGE (8PSK, 2 Tx slots)	26.0	25.0
EDGE (8PSK, 3 Tx slots)	25.0	24.0
EDGE (8PSK, 4 Tx slots)	24.0	21.5

Mode	Average power (dBm)		
	WCDMA Band V	WCDMA Band II	WCDMA Band IV
AMR 12.2Kbps	25.0	24.0	23.7
RMC 12.2Kbps	25.0	24.0	23.7
HSDPA Subtest-1	23.5	23.5	23.5
HSDPA Subtest-2	23.5	23.5	23.5
HSDPA Subtest-3	23.0	23.0	23.0
HSDPA Subtest-4	23.0	23.0	23.0
DC-HSDPA Subtest-1	23.5	23.5	23.5
DC-HSDPA Subtest-2	23.5	23.5	23.5
DC-HSDPA Subtest-3	23.0	23.0	23.0
DC-HSDPA Subtest-4	23.0	23.0	23.0
HSUPA Subtest-1	23.5	23.5	23.0
HSUPA Subtest-2	22.5	22.0	22.0
HSUPA Subtest-3	22.5	21.5	22.0
HSUPA Subtest-4	23.0	23.0	22.5
HSUPA Subtest-5	23.0	23.0	22.5

LTE Band 12				
Average Power (dBm)				
Modulation	BW (MHz)	RB size	MPR	Target Power
QPSK	10	≤ 12	0	24.5
QPSK	10	> 12	1	23.5
16QAM	10	≤ 12	1	23.5
16QAM	10	> 12	2	22.5
QPSK	5	≤ 8	0	24.5
QPSK	5	> 8	1	23.5
16QAM	5	≤ 8	1	23.5
16QAM	5	> 8	2	22.5
QPSK	3	≤ 4	0	24.5
QPSK	3	> 4	1	23.5
16QAM	3	≤ 4	1	23.5
16QAM	3	> 4	2	22.5
QPSK	1.4	≤ 5	0	24.5
QPSK	1.4	> 5	1	23.5
16QAM	1.4	≤ 5	1	23.5
16QAM	1.4	> 5	2	22.5

LTE Band 17				
Average Power (dBm)				
Modulation	BW (MHz)	RB size	MPR	Target Power
QPSK	10	≤ 12	0	23.5
QPSK	10	> 12	1	22.5
16QAM	10	≤ 12	1	22.5
16QAM	10	> 12	2	21.5
QPSK	5	≤ 8	0	23.5
QPSK	5	> 8	1	22.5
16QAM	5	≤ 8	1	22.5
16QAM	5	> 8	2	21.5

LTE Band 4				
Average Power (dBm)				
Modulation	BW (MHz)	RB size	MPR	Target Power
QPSK	20	≤ 18	0	23.3
QPSK	20	> 18	1	22.3
16QAM	20	≤ 18	1	22.3
16QAM	20	> 18	2	21.3
QPSK	15	≤ 16	0	23.3
QPSK	15	> 16	1	22.3
16QAM	15	≤ 16	1	22.3
16QAM	15	> 16	2	21.3
QPSK	10	≤ 12	0	23.3
QPSK	10	> 12	1	22.3
16QAM	10	≤ 12	1	22.3
16QAM	10	> 12	2	21.3
QPSK	5	≤ 8	0	23.3
QPSK	5	> 8	1	22.3
16QAM	5	≤ 8	1	22.3
16QAM	5	> 8	2	21.3
QPSK	3	≤ 4	0	23.3
QPSK	3	> 4	1	22.3
16QAM	3	≤ 4	1	22.3
16QAM	3	> 4	2	21.3
QPSK	1.4	≤ 5	0	23.3
QPSK	1.4	> 5	1	22.3
16QAM	1.4	≤ 5	1	22.3
16QAM	1.4	> 5	2	21.3

LTE Band 2				
Average Power (dBm)				
Modulation	BW (MHz)	RB size	MPR	Target Power
QPSK	20	≤ 18	0	23.5
QPSK	20	> 18	1	22.5
16QAM	20	≤ 18	1	22.5
16QAM	20	> 18	2	21.5
QPSK	15	≤ 16	0	23.5
QPSK	15	> 16	1	22.5
16QAM	15	≤ 16	1	22.5
16QAM	15	> 16	2	21.5
QPSK	10	≤ 12	0	23.5
QPSK	10	> 12	1	22.5
16QAM	10	≤ 12	1	22.5
16QAM	10	> 12	2	21.5
QPSK	5	≤ 8	0	23.5
QPSK	5	> 8	1	22.5
16QAM	5	≤ 8	1	22.5
16QAM	5	> 8	2	21.5
QPSK	3	≤ 4	0	23.5
QPSK	3	> 4	1	22.5
16QAM	3	≤ 4	1	22.5
16QAM	3	> 4	2	21.5
QPSK	1.4	≤ 5	0	23.5
QPSK	1.4	> 5	1	22.5
16QAM	1.4	≤ 5	1	22.5
16QAM	1.4	> 5	2	21.5

LTE Band 7				
Average Power (dBm)				
Modulation	BW (MHz)	RB size	MPR	Target Power
QPSK	20	≤ 18	0	24.0
QPSK	20	> 18	1	23.0
16QAM	20	≤ 18	1	23.0
16QAM	20	> 18	2	22.0
QPSK	15	≤ 16	0	24.0
QPSK	15	> 16	1	23.0
16QAM	15	≤ 16	1	23.0
16QAM	15	> 16	2	22.0
QPSK	10	≤ 12	0	24.0
QPSK	10	> 12	1	23.0
16QAM	10	≤ 12	1	23.0
16QAM	10	> 12	2	22.0
QPSK	5	≤ 8	0	24.0
QPSK	5	> 8	1	23.0
16QAM	5	≤ 8	1	23.0
16QAM	5	> 8	2	22.0

Mode			Maximum Average Power (dBm)
2.4GHz	802.11b		14.5
	802.11g		12.0
	802.11n HT20		12.0
	802.11n HT40		14.0
5.2GHz	802.11a		15.0
	802.11n HT20		15.0
	802.11n HT40		14.0
	802.11ac VHT20		14.0
	802.11ac VHT40		13.0
	802.11ac VHT80		15.5
5.8GHz	802.11a	CH 149	15.0
		CH 153	15.0
		CH 157	17.0
		CH 161	17.0
	802.11n HT20		16.5
	802.11n HT40		16.0
	802.11ac VHT20		16.5
	802.11ac VHT40		15.5
	802.11ac VHT80		15.5
	Bluetooth v3.0 + EDR		
Bluetooth v4.0 LE			-0.5

4.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r03																																																					
FCC ID	SRQ-Z970																																																				
Equipment Name	LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone																																																				
Operating Frequency Range of each LTE transmission band	LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz																																																				
Channel Bandwidth	1.4MHz, 3MHz, 5MHz, 10MHz (LTE Band 12) 5MHz, 10MHz (LTE Band 17) 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 2/4) 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 7)																																																				
uplink modulations used	QPSK and 16QAM																																																				
LTE Voice / Data requirements	Data only																																																				
LTE MPR permanently built-in by design	<table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr></table>							Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3								Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3																																																					
Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)																																														
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																															
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																														
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																														
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																														
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																				
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																				

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

5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

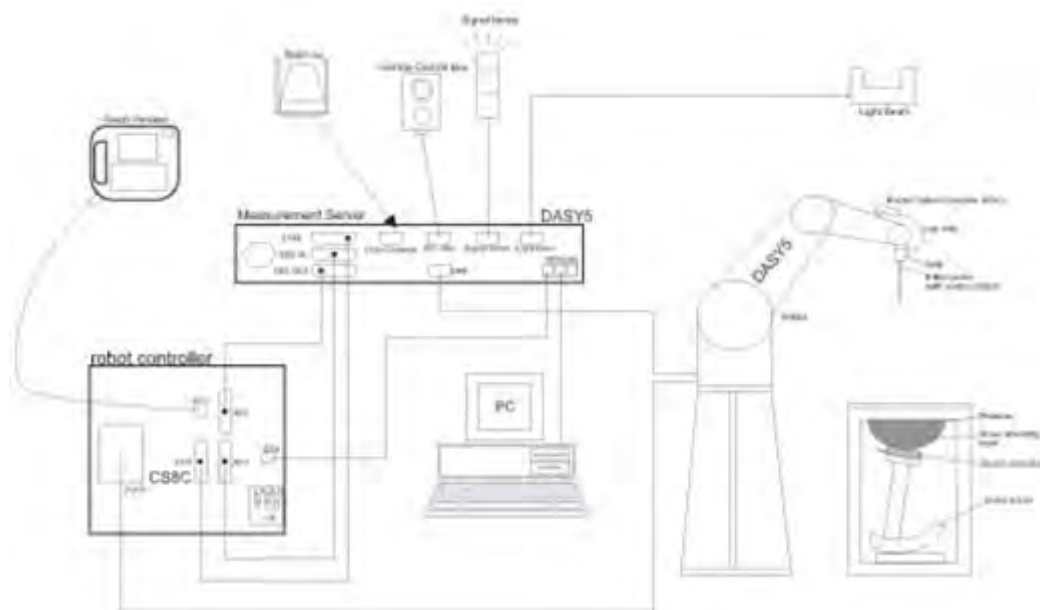
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



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

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

Area scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

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

8.4 Zoom Scan

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

Zoom scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Nov. 11, 2013	Nov. 10, 2014
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 18, 2011	Nov. 14, 2014
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Mar. 27, 2013	Mar. 25, 2015
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	Nov. 18, 2011	Nov. 14, 2014
SPEAG	2450MHz System Validation Kit	D2450V2	736	Aug. 23, 2013	Aug. 22, 2014
SPEAG	2600MHz System Validation Kit	D2600V2	1061	Mar. 26, 2013	Mar. 24, 2015
SPEAG	5000MHz System Validation Kit	D5GHV2	1006	Sep. 23, 2013	Sep. 22, 2014
SPEAG	Data Acquisition Electronics	DAE4	1210	May 19, 2014	May 18, 2015
SPEAG	Data Acquisition Electronics	DAE4	1358	Apr. 30, 2014	Apr. 29, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	May 23, 2014	May 22, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3911	Apr. 22, 2014	Apr. 21, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3753	Mar. 26, 2014	Mar. 25, 2015
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1477	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1479	NCR	NCR
Agilent	Wireless Communication Test Set	E5515C	MY52102706	May 03, 2014	May 02, 2015
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May 06, 2014	May 05, 2015
Anritsu	Radio communication analyzer	MT8820C	6201074235	Nov. 05, 2013	Nov. 04, 2014
R&S	Signal Generator	SMR40	100455	Jan. 17, 2014	Jan. 16, 2015
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	Dec. 30, 2013	Dec. 29, 2014
Agilent	Dielectric Probe Kit	85070E	MY44300475	NCR	NCR
Anritsu	Power Sensor	MA2411B	0917070	Feb. 27, 2014	Feb. 26, 2015
Anritsu	Power Meter	ML2495A	1005002	Feb. 27, 2014	Feb. 26, 2015
ARRA	Power Divider	A3200-2	N/A	NA	NA
R&S	Spectrum Analyzer	FSP30	101399	May 22, 2014	May 21, 2015
Agilent	Dual Directional Coupler	778D	50422	Note 1	
Woken	Attenuator	WK0602-XX	N/A	Note 1	
PE	Attenuator	PE7005-10	N/A	Note 1	
PE	Attenuator	PE7005- 3	N/A	Note 1	
AR	Power Amplifier	5S1G4M2	0328767	Note 1	
Mini-Circuits	Power Amplifier	ZVE-3W	162601250	Note 1	
Mini-Circuits	Power Amplifier	ZHL-42W+	13440021344	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. Referring to KDB 865664 D01v01r03, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D835V2, SN: 4d091, D1750V2, SN: 1090, D1900V2, SN: 5d118 and D2600V2, SN: 1061 can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

10. System Verification

10.1 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ϵ_r)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1750	55.2	0	0	0.3	0	44.5	1.37	40.1
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	55.0	0	0	0	0	45.0	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1750	70.2	0	0	0.4	0	29.4	1.49	53.4
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.6	0	0	0	0	31.4	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	Head	22.6	0.880	40.936	0.89	41.90	-1.12	-2.30	±5	Jun. 15, 2014
835	Head	22.6	0.884	41.015	0.90	41.50	-1.78	-1.17	±5	Jun. 15, 2014
1750	Head	22.8	1.405	41.417	1.37	40.10	2.55	3.28	±5	Jun. 16, 2014
1900	Head	22.8	1.424	38.959	1.40	40.00	1.71	-2.60	±5	Jun. 16, 2014
2450	Head	22.5	1.819	39.212	1.80	39.20	1.06	0.03	±5	Jun. 16, 2014
2600	Head	22.7	1.974	38.204	1.96	39.00	0.71	-2.04	±5	Jun. 06, 2014
5200	Head	22.6	4.814	35.458	4.66	36.00	3.30	-1.51	±5	Jul. 09, 2014
5800	Head	22.6	5.423	34.346	5.27	35.30	2.90	-2.70	±5	Jul. 09, 2014
750	Body	22.7	0.963	54.228	0.96	55.50	0.31	-2.29	±5	Jun. 14, 2014
835	Body	22.7	0.974	55.995	0.97	55.20	0.41	1.44	±5	Jun. 14, 2014
1750	Body	22.9	1.512	55.585	1.49	53.40	1.48	4.09	±5	Jun. 11, 2014
1900	Body	22.8	1.552	53.358	1.52	53.30	2.11	0.11	±5	Jun. 12, 2014
2450	Body	22.5	1.942	50.948	1.95	52.70	-0.41	-3.32	±5	Jun. 11, 2014
2600	Body	22.9	2.165	53.823	2.16	52.50	0.23	2.52	±5	Jun. 10, 2014
5200	Body	22.5	5.162	48.492	5.30	49.00	-2.60	-1.04	±5	Jul. 09, 2014
5800	Body	22.5	5.976	47.158	6.00	48.20	-0.40	-2.16	±5	Jul. 09, 2014

10.2 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Jun. 15, 2014	750	Head	250	1099	3753	1358	2.06	8.42	8.24	-2.14
Jun. 15, 2014	835	Head	250	4d091	3753	1358	2.42	9.40	9.68	2.98
Jun. 16, 2014	1750	Head	250	1090	3753	1358	9.08	36.90	36.32	-1.57
Jun. 16, 2014	1900	Head	250	5d118	3753	1358	10.10	40.30	40.4	0.25
Jun. 16, 2014	2450	Head	250	736	3753	1358	13.30	53.20	53.2	0.00
Jun. 06, 2014	2600	Head	250	1061	3911	1358	15.60	58.60	62.4	6.48
Jul. 09, 2014	5200	Head	100	1006	3857	1210	7.97	76.60	79.7	4.05
Jul. 09, 2014	5800	Head	100	1006	3857	1210	7.77	76.30	77.7	1.83
Jun. 14, 2014	750	Body	250	1099	3753	1358	2.19	8.56	8.76	2.34
Jun. 14, 2014	835	Body	250	4d091	3753	1358	2.26	9.42	9.04	-4.03
Jun. 11, 2014	1750	Body	250	1090	3753	1358	9.12	38.10	36.48	-4.25
Jun. 12, 2014	1900	Body	250	5d118	3753	1358	10.30	41.80	41.2	-1.44
Jun. 11, 2014	2450	Body	250	736	3753	1358	12.40	51.30	49.6	-3.31
Jun. 10, 2014	2600	Body	250	1061	3753	1358	14.10	55.60	56.4	1.44
Jul. 09, 2014	5200	Body	100	1006	3857	1210	7.07	71.50	70.7	-1.12
Jul. 09, 2014	5800	Body	100	1006	3857	1210	6.89	72.30	68.9	-4.70

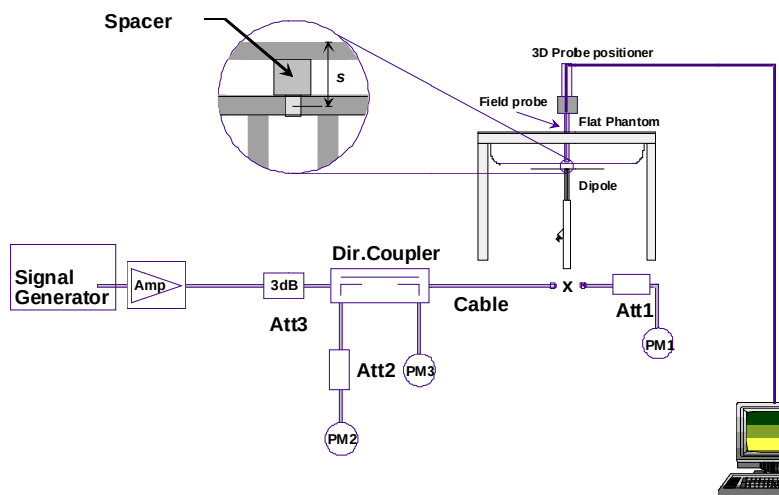


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled "M," the left ear reference point (ERP) is marked "LE," and the right ERP is marked "RE." Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

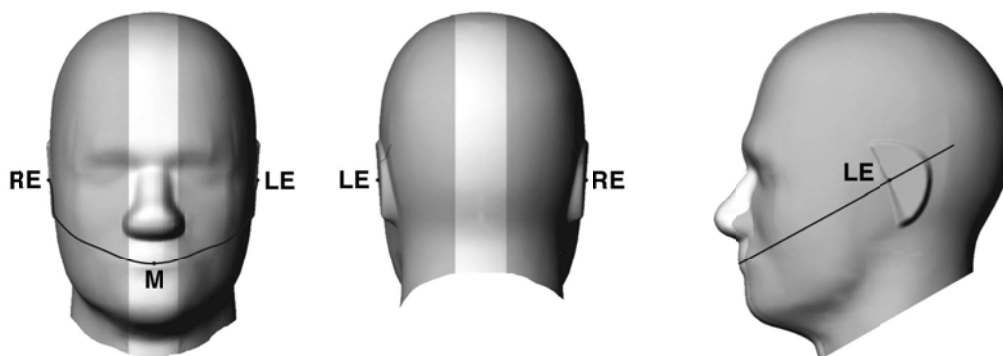


Fig 9.1.1 Front, back, and side views of SAM twin phantom

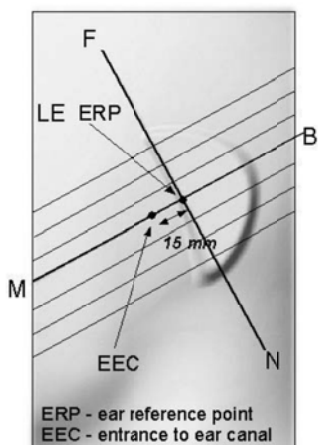


Fig 9.1.2 Close-up side view of phantom showing the ear region.

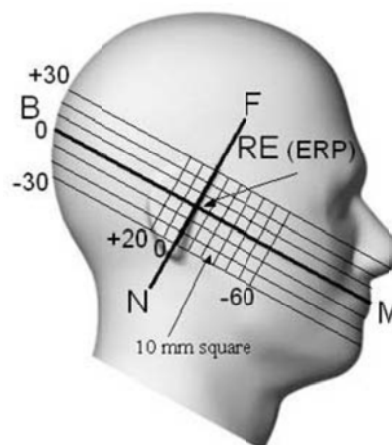


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width w_t of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

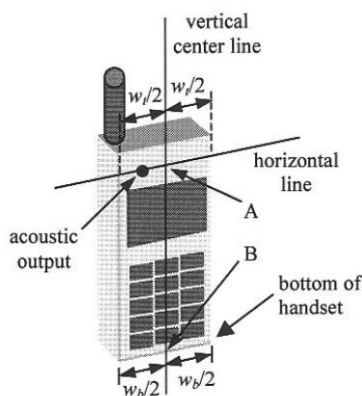


Fig 9.2.1 Handset vertical and horizontal reference lines—“fixed case”

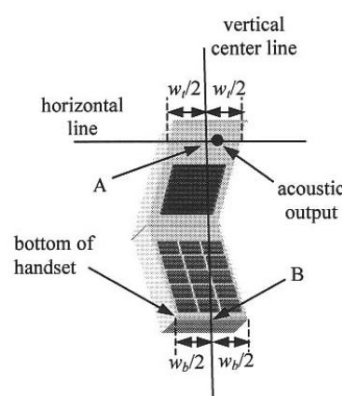


Fig 9.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

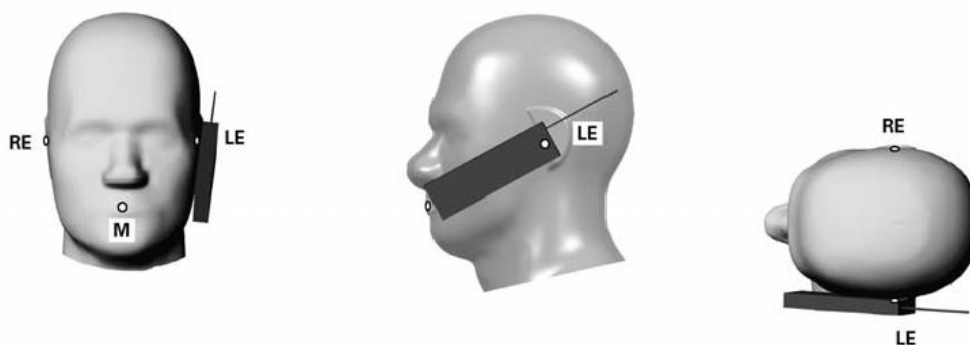


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

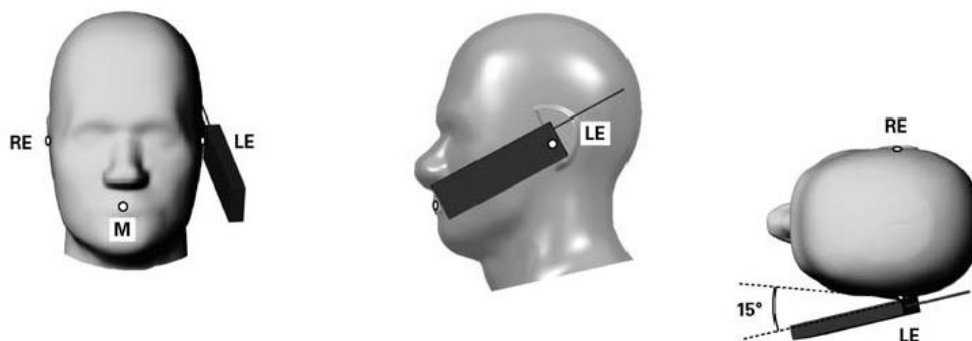


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB 648474 D04v01r02, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v05r02 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $< 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

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

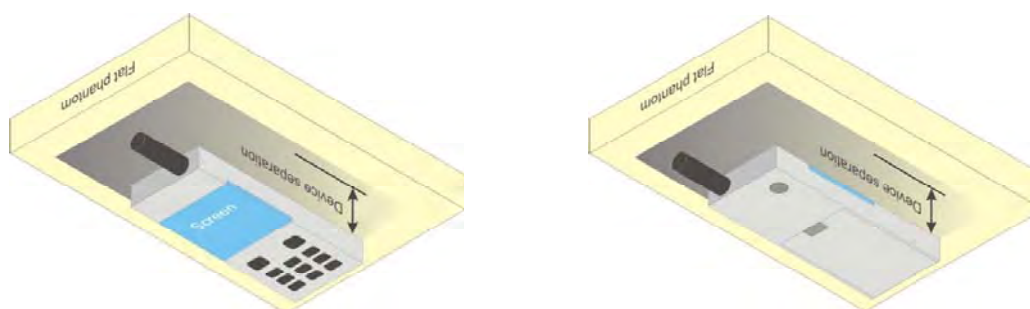


Fig 9.4 Body Worn Position

11.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC HDB Publication 941225 D06v01r01 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v05r02 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

11.6 Extremity Exposure

For smart phones with a display diagonal dimension $> 15.0 \text{ cm}$ or an overall diagonal dimension $> 16.0 \text{ cm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474D04v01r02, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless mode and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

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

12. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v05r02, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. According to October 2013TCB Workshop, for GSM / GPRS / EGPRS, the number of time slots to test for SAR should correspond to the highest frame-average maximum output power configuration, considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR testing, the EUT was set in GPRS (1Tx slot) for GSM850 band and set in GPRS (2Tx slots) for GSM1900 band due to their highest frame-average power.
3. For hotspot mode SAR testing, GPRS / EDGE should be evaluated, therefore the EUT was set in GPRS (1Tx slot) for GSM850 band and set in GPRS (2Tx slots) for GSM1900 band due to their highest frame-average power.

Band GSM850	Burst Average Power (dBm)			Tune-up	Frame-Average Power (dBm)			Tune-up
TX Channel	128	189	251	Limit	128	189	251	Limit
Frequency (MHz)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8	(dBm)
GSM (GMSK, 1 Tx slot)	32.66	32.64	32.61	33.0	23.66	23.64	23.61	24
GPRS (GMSK, 1 Tx slot) – CS1	32.67	32.65	32.62	33.0	23.67	23.65	23.62	24
GPRS (GMSK, 2 Tx slots) – CS1	29.37	29.31	29.28	29.5	23.37	23.31	23.28	23.5
GPRS (GMSK, 3 Tx slots) – CS1	27.49	27.35	27.26	28.0	23.23	23.09	23.00	23.74
GPRS (GMSK, 4 Tx slots) – CS1	26.38	26.32	26.25	26.5	23.38	23.32	23.25	23.5
EDGE (8PSK, 1 Tx slot) – MCS5	27.52	27.46	27.45	28.0	18.52	18.46	18.45	19
EDGE (8PSK, 2 Tx slots) – MCS5	25.98	25.94	25.89	26.0	19.98	19.94	19.89	20
EDGE (8PSK, 3 Tx slots) – MCS5	24.82	24.77	24.75	25.0	20.56	20.51	20.49	20.74
EDGE (8PSK, 4 Tx slots) – MCS5	23.72	23.69	23.67	24.0	20.72	20.69	20.67	21
Band GSM1900	Burst Average Power (dBm)			Tune-up	Frame-Average Power (dBm)			Tune-up
TX Channel	512	661	810	Limit	512	661	810	Limit
Frequency (MHz)	1850.2	1880	1909.8	(dBm)	1850.2	1880	1909.8	(dBm)
GSM (GMSK, 1 Tx slot)	29.31	29.30	29.22	29.5	20.31	20.30	20.22	20.5
GPRS (GMSK, 1 Tx slot) – CS1	29.29	29.29	29.20	29.5	20.29	20.29	20.20	20.5
GPRS (GMSK, 2 Tx slots) – CS1	27.04	26.99	26.95	27.5	21.04	20.99	20.95	21.5
GPRS (GMSK, 3 Tx slots) – CS1	25.24	25.20	25.18	25.5	20.98	20.94	20.92	21.24
GPRS (GMSK, 4 Tx slots) – CS1	23.91	23.90	23.88	24.0	20.91	20.90	20.88	21
EDGE (8PSK, 1 Tx slot) – MCS5	26.11	25.98	25.97	26.5	17.11	16.98	16.97	17.5
EDGE (8PSK, 2 Tx slots) – MCS5	24.56	24.47	24.45	25.0	18.56	18.47	18.45	19
EDGE (8PSK, 3 Tx slots) – MCS5	23.51	23.50	23.48	24.0	19.25	19.24	19.22	19.74
EDGE (8PSK, 4 Tx slots) – MCS5	21.48	21.43	21.42	21.5	18.48	18.43	18.42	18.5

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.

The calculated method are shown as below:

Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB

Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB

Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB

Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

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

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

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

Setup Configuration

HSUPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

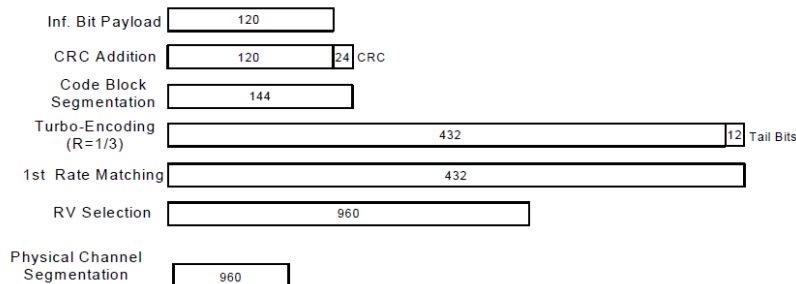
DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

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

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


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



<WCDMA Conducted Power>

General Note:

1. SAR testing in AMR configuration is not required when the maximum average output of each RF channel for AMR 12.2Kbps is less than 0.25dB higher than that measured in RMC 12.2Kbps
2. Per KDB 941225 D02v02r02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA/DC-HSDPA output power is < 0.25dB higher than RMC, or reported SAR with RMC 12.2kbps setting is ≤ 1.2W/kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.

Band			WCDMA Band V				WCDMA Band II			
Tx Channel			4132	4182	4233	Tune-up Limit (dBm)	9262	9400	9538	Tune-up Limit (dBm)
Rx Channel			4357	4407	4458		9662	9800	9938	
Frequency (MHz)			826.4	836.4	846.6		1852.4	1880	1907.6	
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	24.67	24.61	24.67	25.0	23.75	23.68	23.65	24.0
	3GPP Rel 99	RMC 12.2Kbps	24.67	24.63	24.68	25.0	23.76	23.69	23.67	24.0
0	3GPP Rel 6	HSDPA Subtest-1	23.16	23.34	23.39	23.5	23.07	23.18	22.99	23.5
0	3GPP Rel 6	HSDPA Subtest-2	23.19	23.33	23.34	23.5	22.97	23.16	22.98	23.5
0.5	3GPP Rel 6	HSDPA Subtest-3	22.77	22.49	22.94	23.0	22.52	22.65	22.57	23.0
0.5	3GPP Rel 6	HSDPA Subtest-4	22.81	22.88	22.99	23.0	22.48	22.64	22.57	23.0
0	3GPP Rel 8	DC-HSDPA Subtest-1	23.02	23.22	23.27	23.5	22.95	23.04	22.85	23.5
0	3GPP Rel 8	DC-HSDPA Subtest-2	23.07	23.10	23.18	23.5	22.81	23.01	22.86	23.5
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	22.65	22.62	22.82	23.0	22.39	22.53	22.41	23.0
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	22.61	22.76	22.85	23.0	22.36	22.52	22.45	23.0
0	3GPP Rel 6	HSUPA Subtest-1	22.54	22.46	23.12	23.5	22.29	23.07	22.20	23.5
2	3GPP Rel 6	HSUPA Subtest-2	22.03	22.07	21.70	22.5	21.81	21.56	21.61	22.0
1	3GPP Rel 6	HSUPA Subtest-3	22.10	22.25	21.45	22.5	21.39	21.22	21.22	21.5
2	3GPP Rel 6	HSUPA Subtest-4	22.04	22.27	22.58	23.0	21.95	22.63	21.79	23.0
0	3GPP Rel 6	HSUPA Subtest-5	22.72	22.72	22.69	23.0	22.48	22.57	22.38	23.0

Band			WCDMA Band IV			
Tx Channel			1312	1413	1513	Tune-up Limit (dBm)
Rx Channel			1537	1638	1738	
Frequency (MHz)			1712.4	1732.6	1752.6	
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	23.37	23.33	23.40	23.7
	3GPP Rel 99	RMC 12.2Kbps	23.37	23.34	23.41	23.7
0	3GPP Rel 6	HSDPA Subtest-1	23.12	23.06	23.02	23.5
0	3GPP Rel 6	HSDPA Subtest-2	23.15	23.16	23.11	23.5
0.5	3GPP Rel 6	HSDPA Subtest-3	22.70	22.64	22.61	23.0
0.5	3GPP Rel 6	HSDPA Subtest-4	22.66	22.62	22.59	23.0
0	3GPP Rel 8	DC-HSDPA Subtest-1	23.02	22.94	22.90	23.5
0	3GPP Rel 8	DC-HSDPA Subtest-2	23.03	22.91	22.92	23.5
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	22.53	22.52	22.43	23.0
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	22.54	22.50	22.47	23.0
0	3GPP Rel 6	HSUPA Subtest-1	22.71	22.82	22.83	23.0
2	3GPP Rel 6	HSUPA Subtest-2	21.43	21.36	21.54	22.0
1	3GPP Rel 6	HSUPA Subtest-3	21.60	21.00	21.74	22.0
2	3GPP Rel 6	HSUPA Subtest-4	21.68	22.26	21.82	22.5
0	3GPP Rel 6	HSUPA Subtest-5	22.20	22.35	22.34	22.5

<LTE Conducted Power>**General Note:**

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r03, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				23060	23095	23130	24.5	0
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	23.65	23.54	23.47		
10	QPSK	1	24	23.57	23.57	23.63	23.5	0-1
10	QPSK	1	49	23.70	23.85	23.66		
10	QPSK	25	0	22.65	22.55	22.69		
10	QPSK	25	12	22.60	22.70	22.70	23.5	0-1
10	QPSK	25	24	22.55	22.71	22.63		
10	QPSK	50	0	22.75	22.63	22.63		
10	16QAM	1	0	22.64	22.75	22.68	23.5	0-1
10	16QAM	1	24	22.43	22.72	22.67		
10	16QAM	1	49	22.29	22.70	22.55		
10	16QAM	25	0	21.63	21.77	21.68	22.5	0-2
10	16QAM	25	12	21.61	21.73	21.74		
10	16QAM	25	24	21.67	21.80	21.77		
10	16QAM	50	0	21.77	21.88	21.74	24.5	0
Channel				23035	23095	23155		
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.59	23.62	23.68	24.5	0
5	QPSK	1	12	23.56	23.58	23.54		
5	QPSK	1	24	23.60	23.77	23.80		
5	QPSK	12	0	22.65	22.48	22.79	23.5	0-1
5	QPSK	12	6	22.71	22.51	22.69		
5	QPSK	12	11	22.75	22.65	22.72		
5	QPSK	25	0	22.70	22.76	22.67	23.5	0-1
5	16QAM	1	0	22.78	22.81	22.53		
5	16QAM	1	12	22.28	22.67	22.38		
5	16QAM	1	24	22.43	22.41	22.52	22.5	0-2
5	16QAM	12	0	21.68	21.79	21.83		
5	16QAM	12	6	21.74	21.79	21.77		
5	16QAM	12	11	21.86	21.72	21.81	22.5	0-2
5	16QAM	25	0	21.81	21.70	21.75		



Channel				23025	23095	23165	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.77	23.75	23.74	24.5	0
3	QPSK	1	7	23.70	23.61	23.61		
3	QPSK	1	14	23.76	23.74	23.73		
3	QPSK	8	0	22.79	22.68	22.72	23.5	0-1
3	QPSK	8	4	22.69	22.52	22.74		
3	QPSK	8	7	22.74	22.63	22.73		
3	QPSK	15	0	22.73	22.76	22.78		
3	16QAM	1	0	22.54	22.51	22.44	23.5	0-1
3	16QAM	1	7	22.62	22.50	22.59		
3	16QAM	1	14	22.68	22.78	22.69		
3	16QAM	8	0	21.89	21.74	21.79	22.5	0-2
3	16QAM	8	4	21.75	21.67	21.82		
3	16QAM	8	7	21.77	21.79	21.85		
3	16QAM	15	0	21.70	21.80	21.71		
Channel				23017	23095	23173	Tune up Limit (dBm)	Target MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.67	23.67	23.77	24.5	0
1.4	QPSK	1	2	23.75	23.62	23.80		
1.4	QPSK	1	5	23.81	23.80	23.77		
1.4	QPSK	3	0	23.69	23.82	23.78		
1.4	QPSK	3	1	23.84	23.81	23.81		
1.4	QPSK	3	2	23.83	23.67	23.69		
1.4	QPSK	6	0	22.70	22.59	22.82	23.5	0-1
1.4	16QAM	1	0	22.31	22.40	22.75	23.5	0-1
1.4	16QAM	1	2	22.87	22.72	22.78		
1.4	16QAM	1	5	22.86	22.49	22.55		
1.4	16QAM	3	0	22.59	22.59	22.77		
1.4	16QAM	3	1	22.50	22.66	22.75		
1.4	16QAM	3	2	22.83	22.63	22.72		
1.4	16QAM	6	0	21.57	21.72	21.82	22.5	0-2

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				23780	23790	23800	23.5	0
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.52	22.63	22.56		
10	QPSK	1	24	22.69	22.59	22.59	22.5	0-1
10	QPSK	1	49	22.82	22.83	22.69		
10	QPSK	25	0	21.71	21.74	21.71		
10	QPSK	25	12	21.79	21.78	21.79	22.5	0-1
10	QPSK	25	24	21.80	21.81	21.80		
10	QPSK	50	0	21.79	21.79	21.79		
10	16QAM	1	0	21.47	21.52	21.73	22.5	0-1
10	16QAM	1	24	21.42	21.71	21.59		
10	16QAM	1	49	21.62	21.75	21.94		
10	16QAM	25	0	20.74	20.67	20.69	21.5	0-2
10	16QAM	25	12	20.82	20.69	20.82		
10	16QAM	25	24	20.75	20.79	20.79		
10	16QAM	50	0	20.82	20.83	20.74	23.5	0
Channel				23755	23790	23825		
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.61	22.64	22.65	23.5	0
5	QPSK	1	12	22.65	22.67	22.78		
5	QPSK	1	24	22.80	22.74	22.81		
5	QPSK	12	0	21.73	21.73	21.72	22.5	0-1
5	QPSK	12	6	21.72	21.71	21.75		
5	QPSK	12	11	21.85	21.70	21.89		
5	QPSK	25	0	21.74	21.78	21.78	22.5	0-1
5	16QAM	1	0	21.51	21.61	21.93		
5	16QAM	1	12	21.39	21.78	21.87		
5	16QAM	1	24	21.50	21.91	21.83	21.5	0-2
5	16QAM	12	0	20.74	20.70	20.70		
5	16QAM	12	6	20.74	20.66	20.75		
5	16QAM	12	11	20.83	20.76	20.85	21.5	0-2
5	16QAM	25	0	20.83	20.73	20.88		

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.76	22.92	22.78	23.3	0
20	QPSK	1	49	22.67	22.83	22.73		
20	QPSK	1	99	22.72	22.55	22.49		
20	QPSK	50	0	21.87	21.91	21.85	22.3	0-1
20	QPSK	50	24	21.81	21.88	21.81		
20	QPSK	50	49	21.86	21.86	21.71		
20	QPSK	100	0	21.86	21.88	21.81		
20	16QAM	1	0	21.78	22.00	21.84	22.3	0-1
20	16QAM	1	49	21.69	21.47	21.82		
20	16QAM	1	99	21.66	21.78	21.46		
20	16QAM	50	0	20.92	20.92	20.88	21.3	0-2
20	16QAM	50	24	20.82	20.90	20.77		
20	16QAM	50	49	20.85	20.83	20.74		
20	16QAM	100	0	20.92	20.85	20.76		
Channel				20025	20175	20325	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.87	22.74	22.77	23.3	0
15	QPSK	1	37	22.81	22.73	22.63		
15	QPSK	1	74	22.74	22.39	22.42		
15	QPSK	36	0	21.87	21.90	21.77	22.3	0-1
15	QPSK	36	18	21.90	21.86	21.85		
15	QPSK	36	37	21.86	21.76	21.72		
15	QPSK	75	0	21.95	21.89	21.79		
15	16QAM	1	0	22.15	22.05	21.97	22.3	0-1
15	16QAM	1	37	21.67	22.04	21.80		
15	16QAM	1	74	21.83	21.42	21.49		
15	16QAM	36	0	20.90	20.83	20.71	21.3	0-2
15	16QAM	36	18	20.81	20.84	20.83		
15	16QAM	36	37	20.83	20.73	20.69		
15	16QAM	75	0	20.87	20.88	20.76		
Channel				20000	20175	20350	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.82	22.86	22.70	23.3	0
10	QPSK	1	24	22.67	22.68	22.63		
10	QPSK	1	49	22.73	22.85	22.69		
10	QPSK	25	0	21.83	21.88	21.72	22.3	0-1
10	QPSK	25	12	21.88	21.69	21.75		
10	QPSK	25	24	21.84	21.81	21.74		
10	QPSK	50	0	21.96	21.84	21.75		
10	16QAM	1	0	22.00	22.08	21.85	22.3	0-1
10	16QAM	1	24	21.87	21.99	21.68		
10	16QAM	1	49	21.50	21.86	21.84		
10	16QAM	25	0	20.92	20.79	20.93	21.3	0-2
10	16QAM	25	12	20.93	20.82	20.68		
10	16QAM	25	24	20.90	20.74	20.78		
10	16QAM	50	0	20.88	20.81	20.72		



FCC SAR Test Report

Report No. : FA440414

Channel				19975	20175	20375	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.84	22.83	22.76	23.3	0
5	QPSK	1	12	22.78	22.82	22.55		
5	QPSK	1	24	22.83	22.76	22.75		
5	QPSK	12	0	21.88	21.90	21.71	22.3	0-1
5	QPSK	12	6	21.85	21.88	22.01		
5	QPSK	12	11	21.88	21.76	21.65		
5	QPSK	25	0	21.86	21.88	21.72		
5	16QAM	1	0	21.93	21.66	21.60	22.3	0-1
5	16QAM	1	12	21.52	21.48	21.50		
5	16QAM	1	24	21.62	21.31	21.54		
5	16QAM	12	0	20.84	20.92	20.74	21.3	0-2
5	16QAM	12	6	20.75	20.82	20.75		
5	16QAM	12	11	20.96	20.84	20.77		
5	16QAM	25	0	20.89	20.77	20.78		
Channel				19965	20175	20385	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.87	22.87	22.78	23.3	0
3	QPSK	1	7	22.73	22.69	22.75		
3	QPSK	1	14	22.84	22.70	22.66		
3	QPSK	8	0	21.88	21.88	21.76	22.3	0-1
3	QPSK	8	4	21.92	21.85	21.72		
3	QPSK	8	7	21.89	21.86	21.77		
3	QPSK	15	0	21.92	21.91	21.77		
3	16QAM	1	0	21.88	21.83	21.62	22.3	0-1
3	16QAM	1	7	21.83	21.81	21.52		
3	16QAM	1	14	21.87	21.80	21.61		
3	16QAM	8	0	20.85	20.90	20.81	21.3	0-2
3	16QAM	8	4	20.91	20.85	20.76		
3	16QAM	8	7	20.98	20.87	20.74		
3	16QAM	15	0	20.70	20.89	20.75		
Channel				19957	20175	20393	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.86	22.89	22.78	23.3	0
1.4	QPSK	1	2	22.74	22.87	22.74		
1.4	QPSK	1	5	22.85	22.81	22.73		
1.4	QPSK	3	0	22.83	22.87	22.77		
1.4	QPSK	3	1	22.82	22.85	22.72		
1.4	QPSK	3	2	22.77	22.80	22.77		
1.4	QPSK	6	0	21.92	21.93	21.88	22.3	0-1
1.4	16QAM	1	0	22.11	21.88	21.85	22.3	0-1
1.4	16QAM	1	2	21.76	21.74	21.40		
1.4	16QAM	1	5	21.50	21.59	21.61		
1.4	16QAM	3	0	21.85	21.86	21.74		
1.4	16QAM	3	1	21.81	21.87	21.80		
1.4	16QAM	3	2	21.92	21.70	21.79		
1.4	16QAM	6	0	20.81	20.65	20.62	21.3	0-2



<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.65	22.83	22.82		
20	QPSK	1	49	22.63	22.67	22.80	23.5	0
20	QPSK	1	99	22.47	22.62	22.81		
20	QPSK	50	0	21.68	21.89	21.88		
20	QPSK	50	24	21.73	21.79	21.79	22.5	0-1
20	QPSK	50	49	21.68	21.88	21.81		
20	QPSK	100	0	21.63	21.76	21.75		
20	16QAM	1	0	21.86	21.89	22.19	22.5	0-1
20	16QAM	1	49	21.75	21.84	22.02		
20	16QAM	1	99	21.56	21.27	21.62		
20	16QAM	50	0	20.55	20.67	20.87	21.5	0-2
20	16QAM	50	24	20.76	20.73	20.96		
20	16QAM	50	49	20.69	20.88	20.78		
20	16QAM	100	0	20.66	20.73	20.88		
Channel				18675	18900	19125	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.35	22.70	22.75		
15	QPSK	1	37	22.75	22.67	22.76	23.5	0
15	QPSK	1	74	22.74	22.69	22.73		
15	QPSK	36	0	21.61	21.73	21.86		
15	QPSK	36	18	21.70	21.78	21.84	22.5	0-1
15	QPSK	36	37	21.63	21.67	21.80		
15	QPSK	75	0	21.65	21.73	21.80		
15	16QAM	1	0	21.59	21.79	21.86	22.5	0-1
15	16QAM	1	37	22.04	21.87	21.87		
15	16QAM	1	74	21.86	21.86	21.71		
15	16QAM	36	0	20.58	20.64	20.88	21.5	0-2
15	16QAM	36	18	20.74	20.63	20.83		
15	16QAM	36	37	20.62	20.94	20.83		
15	16QAM	75	0	20.75	20.72	20.80		
Channel				18650	18900	19150	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.29	22.78	22.78		
10	QPSK	1	24	22.52	22.71	22.67	23.5	0
10	QPSK	1	49	22.70	22.81	22.79		
10	QPSK	25	0	21.52	21.68	21.85		
10	QPSK	25	12	21.55	21.76	21.78	22.5	0-1
10	QPSK	25	24	21.62	21.72	21.83		
10	QPSK	50	0	21.53	21.78	21.86		
10	16QAM	1	0	21.17	21.64	21.62	22.5	0-1
10	16QAM	1	24	21.78	21.72	21.77		
10	16QAM	1	49	21.64	21.67	21.75		
10	16QAM	25	0	20.53	20.72	20.92	21.5	0-2
10	16QAM	25	12	20.61	20.69	20.78		
10	16QAM	25	24	20.68	20.85	20.79		
10	16QAM	50	0	20.66	20.71	20.71		



FCC SAR Test Report

Report No. : FA440414

Channel				18625	18900	19175	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.26	22.72	22.66	23.5	0
5	QPSK	1	12	22.41	22.56	22.66		
5	QPSK	1	24	22.74	22.82	22.68		
5	QPSK	12	0	21.35	21.57	21.79	22.5	0-1
5	QPSK	12	6	21.42	21.62	21.83		
5	QPSK	12	11	21.42	21.77	21.79		
5	QPSK	25	0	21.39	21.72	21.83		
5	16QAM	1	0	21.15	21.59	21.48	22.5	0-1
5	16QAM	1	12	21.46	21.81	21.65		
5	16QAM	1	24	21.45	21.57	21.64		
5	16QAM	12	0	20.45	20.75	20.88	21.5	0-2
5	16QAM	12	6	20.41	20.56	20.83		
5	16QAM	12	11	20.41	20.69	20.74		
5	16QAM	25	0	20.39	20.64	20.78		
Channel				18615	18900	19185	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.50	22.71	22.82	23.5	0
3	QPSK	1	7	22.31	22.66	22.80		
3	QPSK	1	14	22.46	22.67	22.81		
3	QPSK	8	0	21.37	21.71	21.87	22.5	0-1
3	QPSK	8	4	21.34	21.74	21.78		
3	QPSK	8	7	21.37	21.69	21.81		
3	QPSK	15	0	21.34	21.79	21.83		
3	16QAM	1	0	21.41	21.55	21.88	22.5	0-1
3	16QAM	1	7	21.56	21.78	21.90		
3	16QAM	1	14	21.29	21.77	21.62		
3	16QAM	8	0	20.46	20.73	20.88	21.5	0-2
3	16QAM	8	4	20.49	20.72	20.91		
3	16QAM	8	7	20.36	20.62	20.84		
3	16QAM	15	0	20.41	20.71	20.86		
Channel				18607	18900	19193	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.29	22.69	22.74	23.5	0
1.4	QPSK	1	2	22.38	22.64	22.80		
1.4	QPSK	1	5	22.43	22.82	22.81		
1.4	QPSK	3	0	22.42	22.69	22.79		
1.4	QPSK	3	1	22.30	22.76	22.80		
1.4	QPSK	3	2	22.25	22.68	22.75		
1.4	QPSK	6	0	21.38	21.74	21.82	22.5	0-1
1.4	16QAM	1	0	21.41	21.79	21.90	22.5	0-1
1.4	16QAM	1	2	21.50	21.92	21.91		
1.4	16QAM	1	5	21.39	21.83	21.56		
1.4	16QAM	3	0	21.34	21.75	21.76		
1.4	16QAM	3	1	21.30	21.70	21.65		
1.4	16QAM	3	2	21.29	21.68	21.76		
1.4	16QAM	6	0	20.21	20.66	20.59	21.5	0-2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20850	21100	21350	24.0	0
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	23.07	23.05	23.08		
20	QPSK	1	49	23.17	23.28	23.22	23.0	0-1
20	QPSK	1	99	23.16	23.15	23.16		
20	QPSK	50	0	22.09	22.09	22.15		
20	QPSK	50	24	22.11	22.19	22.16	23.0	0-1
20	QPSK	50	49	22.06	22.16	22.11		
20	QPSK	100	0	22.03	22.37	22.21		
20	16QAM	1	0	21.83	22.01	21.96	23.0	0-1
20	16QAM	1	49	21.98	22.06	22.03		
20	16QAM	1	99	22.20	22.15	22.42		
20	16QAM	50	0	21.16	21.02	21.35	22.0	0-2
20	16QAM	50	24	21.19	21.22	21.37		
20	16QAM	50	49	21.31	21.21	21.18		
20	16QAM	100	0	21.20	21.17	21.33	24.0	0
Channel				20825	21100	21375		
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.09	23.06	23.22	24.0	0
15	QPSK	1	37	23.16	23.13	23.27		
15	QPSK	1	74	23.10	23.02	23.20		
15	QPSK	36	0	22.04	22.11	22.29	23.0	0-1
15	QPSK	36	18	22.12	22.18	22.26		
15	QPSK	36	37	22.09	22.14	22.20		
15	QPSK	75	0	22.16	22.15	22.29	23.0	0-1
15	16QAM	1	0	21.86	21.83	22.33		
15	16QAM	1	37	22.30	21.84	22.34		
15	16QAM	1	74	22.24	21.82	22.22	22.0	0-2
15	16QAM	36	0	21.23	21.18	21.26		
15	16QAM	36	18	21.15	21.13	21.37		
15	16QAM	36	37	21.25	21.08	21.36	22.0	0-2
15	16QAM	75	0	21.23	21.10	21.25		

Channel				20800	21100	21400	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.08	23.00	23.14	24.0	0
10	QPSK	1	24	23.00	23.03	23.25		
10	QPSK	1	49	23.12	23.04	23.27		
10	QPSK	25	0	22.04	22.15	22.21	23.0	0-1
10	QPSK	25	12	22.02	22.14	22.26		
10	QPSK	25	24	22.05	22.16	22.20		
10	QPSK	50	0	22.09	22.13	22.19	23.0	0-1
10	16QAM	1	0	21.72	21.92	21.87		
10	16QAM	1	24	22.22	21.93	21.88		
10	16QAM	1	49	22.01	21.91	21.87	22.0	0-2
10	16QAM	25	0	21.27	21.06	21.24		
10	16QAM	25	12	21.29	21.17	21.24		
10	16QAM	25	24	21.30	21.15	21.48	22.0	0-2
10	16QAM	50	0	21.23	21.08	21.14		
Channel				20775	21100	21425	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.97	23.02	23.19	24.0	0
5	QPSK	1	12	23.04	23.04	23.10		
5	QPSK	1	24	23.11	23.18	23.24		
5	QPSK	12	0	22.09	22.11	22.22	23.0	0-1
5	QPSK	12	6	22.06	22.17	22.22		
5	QPSK	12	11	22.12	22.18	22.24		
5	QPSK	25	0	21.98	22.15	22.19	23.0	0-1
5	16QAM	1	0	21.92	21.85	22.23		
5	16QAM	1	12	22.01	22.20	22.38		
5	16QAM	1	24	22.02	22.21	22.41	22.0	0-2
5	16QAM	12	0	21.14	21.11	21.34		
5	16QAM	12	6	21.28	21.15	21.32		
5	16QAM	12	11	21.24	21.16	21.40	22.0	0-2
5	16QAM	25	0	21.14	21.21	21.20		

<WLAN Conducted Power>
General Note:

1. For WLAN 2.4GHz SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were selected for SAR evaluation. 802.11g/n (HT20/HT40) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11b mode.
2. For WLAN 5GHz SAR testing, highest average RF output power channel for the lowest data rate for 802.11a were selected for SAR evaluation. 802.11n (HT20/HT40)/ac VHT20/VHT40 modes were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11a mode.
3. WLAN 5GHz 802.11ac VHT80 only verified the worst case of 802.11a mode.

<WLAN 2.4GHz>

WLAN 2.4GHz 802.11b Average Power (dBm)							Tune up Limit (dBm)
Power vs. Channel			Power vs. Data Rate				
Channel	Frequency (MHz)	Data Rate 1Mbps	Channel	2Mbps	5.5Mbps	11Mbps	
CH 01	2412	13.92	CH 01	13.85	13.60	13.74	14.5
CH 06	2437	13.85					
CH 11	2462	13.22					

WLAN 2.4GHz 802.11g Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. Data Rate								
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps	
CH 01	2412	11.30	CH 11	11.53	11.51	11.46	11.36	11.52	11.52	11.43	12.0
CH 06	2437	10.79									
CH 11	2462	11.61									

WLAN 2.4GHz 802.11n HT20 Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
CH 01	2412	11.44	CH 01	11.36	11.37	11.37	11.22	11.30	11.13	11.06	12.0
CH 06	2437	11.22									
CH 11	2462	11.01									

WLAN 2.4GHz 802.11n HT40 Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
CH 03	2422	12.40	CH 09	13.43	13.49	13.26	13.45	13.49	13.48	13.06	14.0
CH 06	2437	12.57									
CH 09	2452	13.51									

<WLAN 5GHz>

WLAN 5GHz 802.11a Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. Data Rate								
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps	
CH 36	5180	14.47	CH 48	14.48	14.58	14.63	14.36	14.38	14.56	14.39	15.0
CH 40	5200	14.34									
CH 44	5220	14.36									
CH 48	5240	14.65									
CH 149	5745	14.73	CH 157	16.63	16.61	16.72	16.61	16.57	16.59	16.62	15.0
CH 153	5765	14.63									15.0
CH 157	5785	16.83									17.0
CH 161	5805	16.71									17.0

WLAN 5GHz 802.11n HT20 Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
CH 36	5180	14.12	CH 48	14.25	14.28	14.02	14.11	14.26	14.11	14.16	15.0
CH 40	5200	13.94									
CH 44	5220	14.05									
CH 48	5240	14.46									
CH 149	5745	14.39	CH 157	16.38	16.43	16.36	16.33	16.44	16.32	16.28	16.5
CH 153	5765	14.42									
CH 157	5785	16.45									
CH 161	5805	16.33									

WLAN 5GHz 802.11n HT40 Average Power (dBm)											Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
		MCS0									
CH 38	5190	13.64	CH 46	13.82	13.61	13.56	13.69	13.86	13.83	13.70	14.0
CH 46	5230	13.91									
CH 151	5755	12.54	CH 159	15.66	15.66	15.55	15.65	15.85	15.67	15.65	16.0
CH 159	5795	15.95									

WLAN 5GHz 802.11ac VHT20 Average Power (dBm)												Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index									
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	
		MCS0										
CH 36	5180	13.46	CH 48	13.83	13.82	13.71	13.82	13.84	13.84	13.74	13.82	14.0
CH 40	5200	13.33										
CH 44	5220	13.71										
CH 48	5240	13.86										
CH 149	5745	16.25	CH 157	16.11	16.22	15.93	16.14	16.31	16.05	15.97	16.14	16.5
CH 153	5765	16.20										
CH 157	5785	16.38										
CH 161	5805	16.21										

WLAN 5GHz 802.11ac VHT40 Average Power (dBm)													Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index										
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
		MCS0											
CH 38	5190	12.62	CH 46	12.85	12.86	12.73	12.89	12.96	12.95	12.88	12.96	12.55	13.0
CH 46	5230	12.97											
CH 151	5755	14.04	CH 159	15.25	15.28	14.99	15.32	15.33	15.38	15.23	15.33	15.08	15.5
CH 159	5795	15.41											

WLAN 5GHz 802.11ac VHT80 Average Power (dBm)													Tune up Limit (dBm)
Power vs. Channel			Power vs. MCS Index										
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
		MCS0											
CH 42	5210	14.96	CH 42	14.79	14.86	14.90	14.82	14.79	14.86	14.87	14.82	14.71	15.5
CH 155	5775	15.18	CH 155	14.89	14.80	14.99	14.84	15.05	15.03	14.98	14.86	15.14	15.5

13. Bluetooth Exclusions Applied

Mode Band	Average power(dBm)	
	Bluetooth v3.0+EDR	Bluetooth v4.0 LE
2.4GHz Bluetooth	0.5	-0.5

Note:

- Per KDB 447498 D01v05r02, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for

1-g SAR and ≤ 7.5 for 10-g extremity SAR

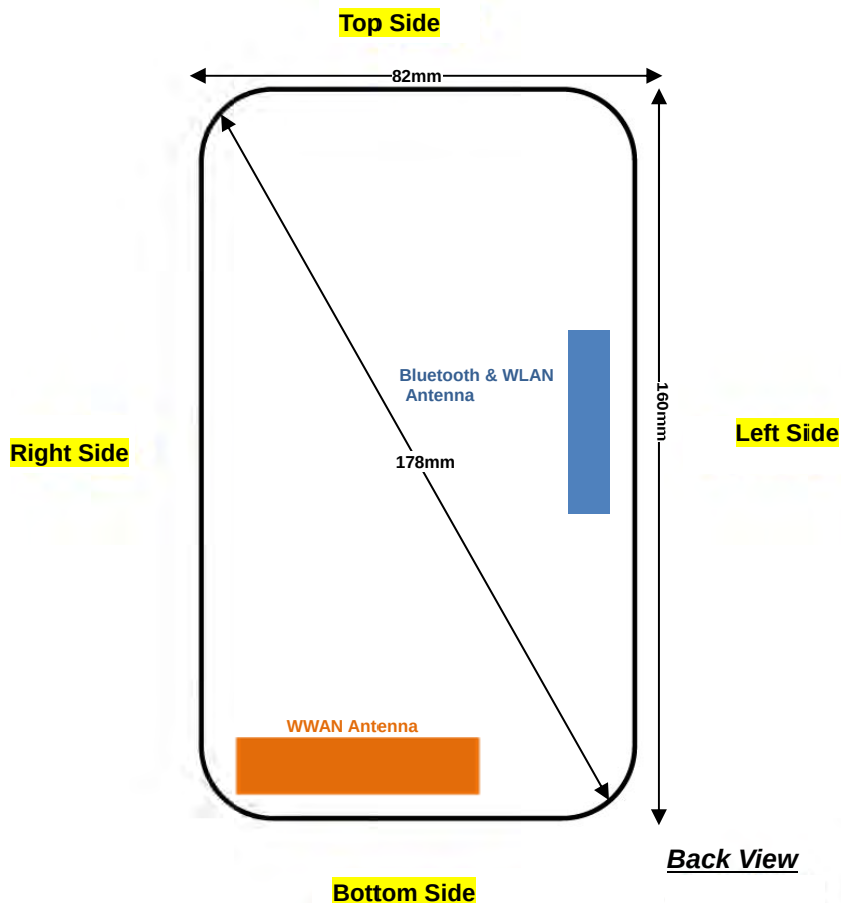
- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion Thresholds
0.5	0	2.48	0.3

Note:

Per KDB 447498 D01v05r02, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. The test exclusion threshold is 0.3 which is ≤ 3 , SAR testing is not required.

14. Antenna Location



Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	146mm	≤ 25mm	≤ 25mm	35mm
BT&WLAN	≤ 25mm	≤ 25mm	56mm	57mm	70mm	≤ 25mm

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

General Note: Referring to KDB 941225 D06 v01r01, when the overall device length and width are $\geq 9\text{cm} \times 5\text{cm}$, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v05r02, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
802.11b duty cycle = 97.53%
802.11a duty cycle = 87.23%
802.11ac VHT80 duty cycle = 55.11%
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v05r02, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. According to October 2013TCB Workshop, for GSM / GPRS / EGPRS, the number of time slots to test for SAR should correspond to the highest frame-average maximum output power configuration, considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR testing, the EUT was set in GPRS (1Tx slot) for GSM850 band and set in GPRS (2Tx slots) for GSM1900 band due to their highest frame-average power.
4. For hotspot mode SAR testing, GPRS / EDGE should be evaluated, therefore the EUT was set in GPRS (1Tx slot) for GSM850 band and set in GPRS (2Tx slots) for GSM1900 band due to their highest frame-average power.
5. Per KDB 941225 D02v02r02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA/HSUPA/DC-HSDPA output power is < 0.25 dB higher than RMC, or reported SAR with RMC 12.2kbps setting is ≤ 1.2 W/kg, HSDPA/HSUPA/DC-HSDPA SAR evaluation can be excluded.
6. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
7. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
8. Per KDB 941225 D05v02r03, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
9. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is $> \text{not } \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
10. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is $> \text{not } \frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.
11. This device 2.4GHz WLAN supports hotspot operation, and 2.4GHz / 5.8GHz WLAN supports WiFi Direct (Group Client / Group Owner), and 5.2GHz supports WiFi Direct (Group Client only).
12. Per KDB648474 D04v01r02, when the reported SAR for a body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.
13. Additional WLAN 2.4/5.8GHz SAR with headset testing was performed for simultaneous transmission analysis.
14. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg, and the limit for extremity SAR is 4.0W/kg as averaged over any 10 gram of tissue.

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#01	GSM850	GPRS (1 Tx slot)	Right Cheek	128	824.2	32.67	33	1.079	0.02	0.016	0.017
	GSM850	GPRS (1 Tx slot)	Right Tilted	128	824.2	32.67	33	1.079	0.07	0.0083	0.009
	GSM850	GPRS (1 Tx slot)	Left Cheek	128	824.2	32.67	33	1.079	0.13	0.012	0.013
	GSM850	GPRS (1 Tx slot)	Left Tilted	128	824.2	32.67	33	1.079	0.09	0.00621	0.007
#02	GSM1900	GPRS (2 Tx slots)	Right Cheek	512	1850.2	27.04	27.5	1.112	0.10	0.123	0.137
	GSM1900	GPRS (2 Tx slots)	Right Tilted	512	1850.2	27.04	27.5	1.112	0.01	0.035	0.039
	GSM1900	GPRS (2 Tx slots)	Left Cheek	512	1850.2	27.04	27.5	1.112	0.02	0.056	0.062
	GSM1900	GPRS (2 Tx slots)	Left Tilted	512	1850.2	27.04	27.5	1.112	0.05	0.048	0.053

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#03	WCDMA Band V	RMC 12.2K	Right Cheek	4233	846.6	24.68	25	1.076	0.04	0.014	0.015
	WCDMA Band V	RMC 12.2K	Right Tilted	4233	846.6	24.68	25	1.076	0.06	0.00686	0.007
	WCDMA Band V	RMC 12.2K	Left Cheek	4233	846.6	24.68	25	1.076	0.05	0.00974	0.010
	WCDMA Band V	RMC 12.2K	Left Tilted	4233	846.6	24.68	25	1.076	0.16	0.00548	0.006
#04	WCDMA Band IV	RMC 12.2K	Right Cheek	1513	1752.6	23.41	23.7	1.069	0.17	0.324	0.346
	WCDMA Band IV	RMC 12.2K	Right Tilted	1513	1752.6	23.41	23.7	1.069	-0.02	0.100	0.107
	WCDMA Band IV	RMC 12.2K	Left Cheek	1513	1752.6	23.41	23.7	1.069	0.15	0.166	0.177
	WCDMA Band IV	RMC 12.2K	Left Tilted	1513	1752.6	23.41	23.7	1.069	0.07	0.069	0.074
#05	WCDMA Band II	RMC 12.2K	Right Cheek	9262	1852.4	23.76	24	1.057	0.05	0.218	0.230
	WCDMA Band II	RMC 12.2K	Right Tilted	9262	1852.4	23.76	24	1.057	0.13	0.061	0.064
	WCDMA Band II	RMC 12.2K	Left Cheek	9262	1852.4	23.76	24	1.057	0.08	0.107	0.113
	WCDMA Band II	RMC 12.2K	Left Tilted	9262	1852.4	23.76	24	1.057	0.15	0.086	0.091



<LTE SAR>

Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#06	LTE Band 12	10M	1	49	QPSK	Right Cheek	23095	707.5	23.85	24.5	1.161	0.18	0.212	0.246
	LTE Band 12	10M	1	49	QPSK	Right Tilted	23095	707.5	23.85	24.5	1.161	0.03	0.117	0.136
	LTE Band 12	10M	1	49	QPSK	Left Cheek	23095	707.5	23.85	24.5	1.161	0.06	0.199	0.231
	LTE Band 12	10M	1	49	QPSK	Left Tilted	23095	707.5	23.85	24.5	1.161	0.09	0.103	0.120
	LTE Band 12	10M	25	24	QPSK	Right Cheek	23095	707.5	22.71	23.5	1.199	0.00029	0.161	0.193
	LTE Band 12	10M	25	24	QPSK	Right Tilted	23095	707.5	22.71	23.5	1.199	0.03	0.085	0.102
	LTE Band 12	10M	25	24	QPSK	Left Cheek	23095	707.5	22.71	23.5	1.199	0.09	0.149	0.179
	LTE Band 12	10M	25	24	QPSK	Left Tilted	23095	707.5	22.71	23.5	1.199	0.03	0.077	0.092
#07	LTE Band 17	10M	1	49	QPSK	Right Cheek	23790	710	22.83	23.5	1.167	0.0032	0.181	0.211
	LTE Band 17	10M	1	49	QPSK	Right Tilted	23790	710	22.83	23.5	1.167	-0.07	0.097	0.113
	LTE Band 17	10M	1	49	QPSK	Left Cheek	23790	710	22.83	23.5	1.167	0.11	0.170	0.198
	LTE Band 17	10M	1	49	QPSK	Left Tilted	23790	710	22.83	23.5	1.167	0.07	0.088	0.103
	LTE Band 17	10M	25	24	QPSK	Right Cheek	23790	710	21.81	22.5	1.172	0.08	0.135	0.158
	LTE Band 17	10M	25	24	QPSK	Right Tilted	23790	710	21.81	22.5	1.172	0.05	0.073	0.086
	LTE Band 17	10M	25	24	QPSK	Left Cheek	23790	710	21.81	22.5	1.172	0.11	0.127	0.149
	LTE Band 17	10M	25	24	QPSK	Left Tilted	23790	710	21.81	22.5	1.172	0.16	0.065	0.076
#08	LTE Band 4	20M	1	0	QPSK	Right Cheek	20175	1732.5	22.92	23.3	1.091	0.03	0.327	0.357
	LTE Band 4	20M	1	0	QPSK	Right Tilted	20175	1732.5	22.92	23.3	1.091	0.03	0.118	0.129
	LTE Band 4	20M	1	0	QPSK	Left Cheek	20175	1732.5	22.92	23.3	1.091	0.08	0.173	0.189
	LTE Band 4	20M	1	0	QPSK	Left Tilted	20175	1732.5	22.92	23.3	1.091	0.05	0.094	0.103
	LTE Band 4	20M	50	0	QPSK	Right Cheek	20175	1732.5	21.91	22.3	1.094	0.10	0.267	0.292
	LTE Band 4	20M	50	0	QPSK	Right Tilted	20175	1732.5	21.91	22.3	1.094	0.06	0.095	0.104
	LTE Band 4	20M	50	0	QPSK	Left Cheek	20175	1732.5	21.91	22.3	1.094	0.04	0.140	0.153
	LTE Band 4	20M	50	0	QPSK	Left Tilted	20175	1732.5	21.91	22.3	1.094	0.03	0.078	0.085
#09	LTE Band 2	20M	1	0	QPSK	Right Cheek	18900	1880	22.83	23.5	1.167	0.09	0.207	0.242
	LTE Band 2	20M	1	0	QPSK	Right Tilted	18900	1880	22.83	23.5	1.167	0.05	0.064	0.075
	LTE Band 2	20M	1	0	QPSK	Left Cheek	18900	1880	22.83	23.5	1.167	0.01	0.109	0.127
	LTE Band 2	20M	1	0	QPSK	Left Tilted	18900	1880	22.83	23.5	1.167	0.01	0.082	0.096
	LTE Band 2	20M	50	0	QPSK	Right Cheek	18900	1880	21.89	22.5	1.151	0.17	0.163	0.188
	LTE Band 2	20M	50	0	QPSK	Right Tilted	18900	1880	21.89	22.5	1.151	0.03	0.049	0.056
	LTE Band 2	20M	50	0	QPSK	Left Cheek	18900	1880	21.89	22.5	1.151	0.07	0.088	0.101
	LTE Band 2	20M	50	0	QPSK	Left Tilted	18900	1880	21.89	22.5	1.151	0.03	0.066	0.076
#10	LTE Band 7	20M	1	49	QPSK	Right Cheek	21100	2535	23.28	24	1.180	0.07	0.049	0.058
	LTE Band 7	20M	1	49	QPSK	Right Tilted	21100	2535	23.28	24	1.180	0.02	0.019	0.022
	LTE Band 7	20M	1	49	QPSK	Left Cheek	21100	2535	23.28	24	1.180	0.08	0.029	0.034
	LTE Band 7	20M	1	49	QPSK	Left Tilted	21100	2535	23.28	24	1.180	0.09	0.031	0.037
	LTE Band 7	20M	50	24	QPSK	Right Cheek	21100	2535	22.19	23	1.205	-0.01	0.038	0.046
	LTE Band 7	20M	50	24	QPSK	Right Tilted	21100	2535	22.19	23	1.205	0.05	0.017	0.020
	LTE Band 7	20M	50	24	QPSK	Left Cheek	21100	2535	22.19	23	1.205	0.05	0.023	0.028
	LTE Band 7	20M	50	24	QPSK	Left Tilted	21100	2535	22.19	23	1.205	0.06	0.025	0.030

<DTS WLAN SAR>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b 1Mbps	Right Cheek	1	2412	13.92	14.5	1.143	97.53	1.025	0.04	0.034	0.040
	WLAN 2.4GHz	802.11b 1Mbps	Right Tilted	1	2412	13.92	14.5	1.143	97.53	1.025	0.09	0.027	0.032
#11	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	1	2412	13.92	14.5	1.143	97.53	1.025	0.02	0.110	0.129
	WLAN 2.4GHz	802.11b 1Mbps	Left Tilted	1	2412	13.92	14.5	1.143	97.53	1.025	0.07	0.020	0.023

<NII WLAN SAR>

Plot No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 5.2GHz	802.11a 6Mbps	Right Cheek	48	5240	14.65	15	1.084	87.23	1.146	0.09	0.072	0.089
	WLAN 5.2GHz	802.11a 6Mbps	Right Tilted	48	5240	14.65	15	1.084	87.23	1.146	0.01	0.014	0.017
#12	WLAN 5.2GHz	802.11a 6Mbps	Left Cheek	48	5240	14.65	15	1.084	87.23	1.146	0.03	0.233	0.289
	WLAN 5.2GHz	802.11a 6Mbps	Left Tilted	48	5240	14.65	15	1.084	87.23	1.146	-0.05	0.030	0.037
	WLAN 5.2GHz	802.11ac VHT80 MCS0	Left Cheek	42	5210	14.96	15.5	1.132	55.11	1.815	0.06	0.108	0.222
	WLAN 5.8GHz	802.11a 6Mbps	Right Cheek	157	5785	16.83	17	1.040	87.23	1.146	0.02	0.073	0.087
	WLAN 5.8GHz	802.11a 6Mbps	Right Tilted	157	5785	16.83	17	1.040	87.23	1.146	-0.01	0.020	0.024
#13	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	157	5785	16.83	17	1.040	87.23	1.146	0.03	0.311	0.371
	WLAN 5.8GHz	802.11a 6Mbps	Left Tilted	157	5785	16.83	17	1.040	87.23	1.146	0.03	0.018	0.021
	WLAN 5.8GHz	802.11ac VHT80 MCS0	Left Cheek	155	5775	15.18	15.5	1.076	55.11	1.815	0.08	0.117	0.229

15.2 Hotspot SAR

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	146mm	≤ 25mm	≤ 25mm	35mm
BT&WLAN	≤ 25mm	≤ 25mm	56mm	57mm	70mm	≤ 25mm

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

General Note: Referring to KDB 941225 D06 v01r01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS(1 Tx slot)	Front	1	128	824.2	32.67	33	1.079	-0.03	0.030	0.032
#14	GSM850	GPRS(1 Tx slot)	Back	1	128	824.2	32.67	33	1.079	0.02	0.052	0.056
	GSM850	GPRS(1 Tx slot)	Right Side	1	128	824.2	32.67	33	1.079	0.13	0.027	0.029
	GSM850	GPRS(1 Tx slot)	Bottom Side	1	128	824.2	32.67	33	1.079	0.13	0.032	0.035
	GSM1900	GPRS(2 Tx slots)	Front	1	512	1850.2	27.04	27.5	1.112	-0.04	0.379	0.421
#15	GSM1900	GPRS(2 Tx slots)	Back	1	512	1850.2	27.04	27.5	1.112	0.12	0.674	0.749
	GSM1900	GPRS(2 Tx slots)	Right Side	1	512	1850.2	27.04	27.5	1.112	-0.04	0.142	0.158
	GSM1900	GPRS(2 Tx slots)	Bottom Side	1	512	1850.2	27.04	27.5	1.112	0.13	0.452	0.503

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#16	WCDMA Band V	RMC 12.2K	Front	1	4233	846.6	24.68	25	1.076	0.0039	0.038	0.041
	WCDMA Band V	RMC 12.2K	Back	1	4233	846.6	24.68	25	1.076	0.1	0.077	0.083
	WCDMA Band V	RMC 12.2K	Right Side	1	4233	846.6	24.68	25	1.076	0.14	0.020	0.022
	WCDMA Band V	RMC 12.2K	Bottom Side	1	4233	846.6	24.68	25	1.076	0.02	0.038	0.041
#17	WCDMA Band IV	RMC12.2K	Front	1	1513	1752.6	23.41	23.7	1.069	-0.03	0.802	0.857
	WCDMA Band IV	RMC12.2K	Back	1	1513	1752.6	23.41	23.7	1.069	0.13	1.330	1.422
	WCDMA Band IV	RMC12.2K	Right Side	1	1513	1752.6	23.41	23.7	1.069	0.09	0.406	0.434
	WCDMA Band IV	RMC12.2K	Bottom Side	1	1513	1752.6	23.41	23.7	1.069	0.09	0.893	0.955
	WCDMA Band IV	RMC12.2K	Front	1	1312	1712.4	23.37	23.7	1.079	-0.07	0.810	0.874
	WCDMA Band IV	RMC12.2K	Front	1	1413	1732.6	23.34	23.7	1.086	-0.12	0.809	0.879
	WCDMA Band IV	RMC12.2K	Back	1	1312	1712.4	23.37	23.7	1.079	0.08	1.280	1.381
	WCDMA Band IV	RMC12.2K	Back	1	1413	1732.6	23.34	23.7	1.086	0.11	1.320	1.434
	WCDMA Band IV	RMC12.2K	Bottom Side	1	1312	1712.4	23.37	23.7	1.079	0.1	0.827	0.892
	WCDMA Band IV	RMC12.2K	Bottom Side	1	1413	1732.6	23.34	23.7	1.086	0.01	0.849	0.922
	WCDMA Band II	RMC 12.2K	Front	1	9262	1852.4	23.76	24	1.057	-0.05	0.692	0.731
	WCDMA Band II	RMC 12.2K	Back	1	9262	1852.4	23.76	24	1.057	0.05	1.210	1.279
#18	WCDMA Band II	RMC 12.2K	Right Side	1	9262	1852.4	23.76	24	1.057	0.18	0.272	0.287
	WCDMA Band II	RMC 12.2K	Bottom Side	1	9262	1852.4	23.76	24	1.057	0.15	0.805	0.851
	WCDMA Band II	RMC 12.2K	Back	1	9400	1880	23.69	24	1.074	0.03	1.240	1.332
	WCDMA Band II	RMC 12.2K	Back	1	9538	1907.6	23.67	24	1.079	0.01	1.190	1.284
	WCDMA Band II	RMC 12.2K	Bottom Side	1	9400	1880	23.69	24	1.074	0.14	0.798	0.857
	WCDMA Band II	RMC 12.2K	Bottom Side	1	9538	1907.6	23.67	24	1.079	0.12	0.770	0.831



<LTE SAR>

Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
#19	LTE Band 12	10M	1	49	QPSK	Front	1	23095	707.5	23.85	24.5	1.161	0.05	0.258	0.300
	LTE Band 12	10M	1	49	QPSK	Back	1	23095	707.5	23.85	24.5	1.161	-0.0015	0.396	0.460
	LTE Band 12	10M	1	49	QPSK	Right Side	1	23095	707.5	23.85	24.5	1.161	-5.80e-005	0.243	0.282
	LTE Band 12	10M	1	49	QPSK	Bottom Side	1	23095	707.5	23.85	24.5	1.161	0.07	0.159	0.185
	LTE Band 12	10M	25	24	QPSK	Front	1	23095	707.5	22.71	23.5	1.199	0.1	0.192	0.230
#20	LTE Band 12	10M	25	24	QPSK	Back	1	23095	707.5	22.71	23.5	1.199	-0.01	0.292	0.350
	LTE Band 12	10M	25	24	QPSK	Right Side	1	23095	707.5	22.71	23.5	1.199	-0.0078	0.183	0.220
	LTE Band 12	10M	25	24	QPSK	Bottom Side	1	23095	707.5	22.71	23.5	1.199	0.1	0.120	0.144
	LTE Band 17	10M	1	49	QPSK	Front	1	23790	710	22.83	23.5	1.167	0.02	0.222	0.259
	LTE Band 17	10M	1	49	QPSK	Back	1	23790	710	22.83	23.5	1.167	-0.0073	0.329	0.384
#21	LTE Band 17	10M	1	49	QPSK	Right Side	1	23790	710	22.83	23.5	1.167	0.05	0.217	0.253
	LTE Band 17	10M	1	49	QPSK	Bottom Side	1	23790	710	22.83	23.5	1.167	0.06	0.132	0.154
	LTE Band 17	10M	25	24	QPSK	Front	1	23790	710	21.81	22.5	1.172	-0.0059	0.165	0.193
	LTE Band 17	10M	25	24	QPSK	Back	1	23790	710	21.81	22.5	1.172	0.07	0.249	0.292
	LTE Band 17	10M	25	24	QPSK	Right Side	1	23790	710	21.81	22.5	1.172	0.09	0.156	0.183
#22	LTE Band 17	10M	25	24	QPSK	Bottom Side	1	23790	710	21.81	22.5	1.172	0.02	0.100	0.117
	LTE Band 4	20M	1	0	QPSK	Front	1	20175	1732.5	22.92	23.3	1.091	-0.12	0.814	0.888
	LTE Band 4	20M	1	0	QPSK	Back	1	20175	1732.5	22.92	23.3	1.091	0.13	1.280	1.397
	LTE Band 4	20M	1	0	QPSK	Right Side	1	20175	1732.5	22.92	23.3	1.091	0.1	0.366	0.399
	LTE Band 4	20M	1	0	QPSK	Bottom Side	1	20175	1732.5	22.92	23.3	1.091	0.01	0.826	0.902
#23	LTE Band 4	20M	1	0	QPSK	Front	1	20050	1720	22.76	23.3	1.132	-0.17	0.819	0.927
	LTE Band 4	20M	1	0	QPSK	Front	1	20300	1745	22.78	23.3	1.127	-0.04	0.798	0.900
	LTE Band 4	20M	1	0	QPSK	Back	1	20050	1720	22.76	23.3	1.132	0.06	1.260	1.427
	LTE Band 4	20M	1	0	QPSK	Back	1	20300	1745	22.78	23.3	1.127	0.16	1.270	1.432
	LTE Band 4	20M	1	0	QPSK	Bottom Side	1	20050	1720	22.76	23.3	1.132	0.02	0.799	0.905
#24	LTE Band 4	20M	1	0	QPSK	Bottom Side	1	20300	1745	22.78	23.3	1.127	0.02	0.818	0.922
	LTE Band 4	20M	50	0	QPSK	Front	1	20175	1732.5	21.91	22.3	1.094	-0.08	0.650	0.711
	LTE Band 4	20M	50	0	QPSK	Back	1	20175	1732.5	21.91	22.3	1.094	0.11	1.090	1.192
	LTE Band 4	20M	50	0	QPSK	Right Side	1	20175	1732.5	21.91	22.3	1.094	0.04	0.299	0.327
	LTE Band 4	20M	50	0	QPSK	Bottom Side	1	20175	1732.5	21.91	22.3	1.094	0.04	0.665	0.727
#25	LTE Band 4	20M	50	0	QPSK	Back	1	20050	1720	21.87	22.3	1.104	0.15	1.090	1.203
	LTE Band 4	20M	50	0	QPSK	Back	1	20300	1745	21.85	22.3	1.109	0.04	1.080	1.198
	LTE Band 4	20M	100	0	QPSK	Front	1	20175	1732.5	21.88	22.3	1.102	-0.13	0.636	0.701
	LTE Band 4	20M	100	0	QPSK	Back	1	20175	1732.5	21.88	22.3	1.102	0.15	1.080	1.190
	LTE Band 4	20M	100	0	QPSK	Right Side	1	20175	1732.5	21.88	22.3	1.102	0.10	0.300	0.330
#26	LTE Band 4	20M	100	0	QPSK	Bottom Side	1	20175	1732.5	21.88	22.3	1.102	0.01	0.671	0.739



Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	1	0	QPSK	Front	1	18900	1880	22.83	23.5	1.167	-0.08	0.594	0.693
	LTE Band 2	20M	1	0	QPSK	Back	1	18900	1880	22.83	23.5	1.167	0.05	1.070	1.248
	LTE Band 2	20M	1	0	QPSK	Right Side	1	18900	1880	22.83	23.5	1.167	0.19	0.293	0.342
	LTE Band 2	20M	1	0	QPSK	Bottom Side	1	18900	1880	22.83	23.5	1.167	0.07	0.810	0.945
	LTE Band 2	20M	1	0	QPSK	Back	1	18700	1860	22.65	23.5	1.216	0.04	1.010	1.228
#22	LTE Band 2	20M	1	0	QPSK	Back	1	19100	1900	22.82	23.5	1.169	0.06	1.070	1.251
	LTE Band 2	20M	1	0	QPSK	Bottom Side	1	18700	1860	22.65	23.5	1.216	0.05	0.739	0.899
	LTE Band 2	20M	1	0	QPSK	Bottom Side	1	19100	1900	22.82	23.5	1.169	0.07	0.809	0.946
	LTE Band 2	20M	50	0	QPSK	Front	1	18900	1880	21.89	22.5	1.151	-0.02	0.482	0.555
	LTE Band 2	20M	50	0	QPSK	Back	1	18900	1880	21.89	22.5	1.151	0.04	1.010	1.162
	LTE Band 2	20M	50	0	QPSK	Right Side	1	18900	1880	21.89	22.5	1.151	0.19	0.229	0.264
	LTE Band 2	20M	50	0	QPSK	Bottom Side	1	18900	1880	21.89	22.5	1.151	0.04	0.650	0.748
	LTE Band 2	20M	50	0	QPSK	Back	1	18700	1860	21.68	22.5	1.208	0.13	0.987	1.192
	LTE Band 2	20M	50	0	QPSK	Back	1	19100	1900	21.88	22.5	1.153	0.08	1.030	1.188
	LTE Band 2	20M	100	0	QPSK	Front	1	18900	1880	21.76	22.5	1.186	0.02	0.546	0.647
	LTE Band 2	20M	100	0	QPSK	Back	1	18900	1880	21.76	22.5	1.186	0.04	1.000	1.186
	LTE Band 2	20M	100	0	QPSK	Right Side	1	18900	1880	21.76	22.5	1.186	0.15	0.226	0.268
	LTE Band 2	20M	100	0	QPSK	Bottom Side	1	18900	1880	21.76	22.5	1.186	0.12	0.648	0.768
	LTE Band 7	20M	1	49	QPSK	Front	1	21100	2535	23.28	24	1.180	-0.11	0.054	0.064
#23	LTE Band 7	20M	1	49	QPSK	Back	1	21100	2535	23.28	24	1.180	0.05	0.070	0.083
	LTE Band 7	20M	1	49	QPSK	Right Side	1	21100	2535	23.28	24	1.180	-0.07	0.065	0.077
	LTE Band 7	20M	1	49	QPSK	Bottom Side	1	21100	2535	23.28	24	1.180	-0.08	0.022	0.026
	LTE Band 7	20M	50	24	QPSK	Front	1	21100	2535	22.19	23	1.205	0.08	0.043	0.052
	LTE Band 7	20M	50	24	QPSK	Back	1	21100	2535	22.19	23	1.205	0.01	0.055	0.066
	LTE Band 7	20M	50	24	QPSK	Right Side	1	21100	2535	22.19	23	1.205	-0.02	0.049	0.059
	LTE Band 7	20M	50	24	QPSK	Bottom Side	1	21100	2535	22.19	23	1.205	0.03	0.018	0.022

**<DTS WLAN SAR>**

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b 1Mbps	Front	1	1	2412	13.92	14.5	1.143	97.53	1.025	-0.16	0.031	0.036
#24	WLAN 2.4GHz	802.11b 1Mbps	Back	1	1	2412	13.92	14.5	1.143	97.53	1.025	-0.03	0.234	0.274
	WLAN 2.4GHz	802.11b 1Mbps	Left Side	1	1	2412	13.92	14.5	1.143	97.53	1.025	0.07	0.106	0.124

<UNII WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 5.8GHz	802.11a 6Mbps	Front	1	157	5785	16.83	17	1.040	87.23	1.146	-0.05	0.091	0.108
	WLAN 5.8GHz	802.11a 6Mbps	Back	1	157	5785	16.83	17	1.040	87.23	1.146	0.04	0.324	0.386
#25	WLAN 5.8GHz	802.11a 6Mbps	Left Side	1	157	5785	16.83	17	1.040	87.23	1.146	0.09	0.694	0.827
	WLAN 5.8GHz	802.11ac VHT80 MCS0	Left Side	1	155	5775	15.18	15.5	1.076	55.11	1.815	0.03	0.374	0.731
	WLAN 5.8GHz	802.11a 6Mbps	Left Side	1	149	5745	14.73	15	1.064	87.23	1.146	0.04	0.478	0.583



15.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS(1 Tx slot)	Front	1	128	824.2	32.67	33	1.079	-0.03	0.030	0.032
#14	GSM850	GPRS(1 Tx slot)	Back	1	128	824.2	32.67	33	1.079	0.02	0.052	0.056
	GSM1900	GPRS(2 Tx slots)	Front	1	512	1850.2	27.04	27.5	1.112	-0.04	0.379	0.421
#15	GSM1900	GPRS(2 Tx slots)	Back	1	512	1850.2	27.04	27.5	1.112	0.12	0.674	0.749

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2K	Front	1	4233	846.6	24.68	25	1.076	0.0039	0.038	0.041
#16	WCDMA Band V	RMC12.2K	Back	1	4233	846.6	24.68	25	1.076	0.1	0.077	0.083
	WCDMA Band IV	RMC12.2K	Front	1	1513	1752.6	23.41	23.7	1.069	-0.03	0.802	0.857
	WCDMA Band IV	RMC12.2K	Back	1	1513	1752.6	23.41	23.7	1.069	0.13	1.330	1.422
	WCDMA Band IV	RMC12.2K	Front	1	1312	1712.4	23.37	23.7	1.079	-0.07	0.810	0.874
	WCDMA Band IV	RMC12.2K	Front	1	1413	1732.6	23.34	23.7	1.086	-0.12	0.809	0.879
	WCDMA Band IV	RMC12.2K	Back	1	1312	1712.4	23.37	23.7	1.079	0.08	1.280	1.381
#17	WCDMA Band IV	RMC12.2K	Back	1	1413	1732.6	23.34	23.7	1.086	0.11	1.320	1.434
#26	WCDMA Band IV	RMC12.2K	Back (with headset)	1	1413	1732.6	23.34	23.7	1.086	0.06	1.320	1.434
	WCDMA Band IV	RMC12.2K	Back (with headset)	1	1312	1712.4	23.37	23.7	1.079	0.16	1.280	1.381
	WCDMA Band IV	RMC12.2K	Back (with headset)	1	1513	1752.6	23.41	23.7	1.069	0.07	1.300	1.390
	WCDMA Band II	RMC12.2K	Front	1	9262	1852.4	23.76	24	1.057	-0.05	0.692	0.731
	WCDMA Band II	RMC12.2K	Back	1	9262	1852.4	23.76	24	1.057	0.05	1.210	1.279
#18	WCDMA Band II	RMC12.2K	Back	1	9400	1880	23.69	24	1.074	0.03	1.240	1.332
	WCDMA Band II	RMC12.2K	Back	1	9538	1907.6	23.67	24	1.079	0.01	1.190	1.284
	WCDMA Band II	RMC12.2K	Back (with headset)	1	9400	1880	23.69	24	1.074	0.09	1.120	1.203
	WCDMA Band II	RMC12.2K	Back (with headset)	1	9262	1852.4	23.76	24	1.057	0.11	1.110	1.173
	WCDMA Band II	RMC12.2K	Back (with headset)	1	9538	1907.6	23.67	24	1.079	0.08	1.110	1.198



<LTE SAR>

Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	1	49	QPSK	Front	1	23095	707.5	23.85	24.5	1.161	0.05	0.258	0.300
#19	LTE Band 12	10M	1	49	QPSK	Back	1	23095	707.5	23.85	24.5	1.161	-0.0015	0.396	0.460
	LTE Band 12	10M	25	24	QPSK	Front	1	23095	707.5	22.71	23.5	1.199	0.1	0.192	0.230
	LTE Band 12	10M	25	24	QPSK	Back	1	23095	707.5	22.71	23.5	1.199	-0.01	0.292	0.350
	LTE Band 17	10M	1	49	QPSK	Front	1	23790	710	22.83	23.5	1.167	0.02	0.222	0.259
#20	LTE Band 17	10M	1	49	QPSK	Back	1	23790	710	22.83	23.5	1.167	-0.0073	0.329	0.384
	LTE Band 17	10M	25	24	QPSK	Front	1	23790	710	21.81	22.5	1.172	-0.0059	0.165	0.193
	LTE Band 17	10M	25	24	QPSK	Back	1	23790	710	21.81	22.5	1.172	0.07	0.249	0.292
	LTE Band 4	20M	1	0	QPSK	Front	1	20175	1732.5	22.92	23.3	1.091	-0.12	0.814	0.888
	LTE Band 4	20M	1	0	QPSK	Back	1	20175	1732.5	22.92	23.3	1.091	0.13	1.280	1.397
	LTE Band 4	20M	1	0	QPSK	Front	1	20050	1720	22.76	23.3	1.132	-0.17	0.819	0.927
	LTE Band 4	20M	1	0	QPSK	Front	1	20300	1745	22.78	23.3	1.127	-0.04	0.798	0.900
	LTE Band 4	20M	1	0	QPSK	Back	1	20050	1720	22.76	23.3	1.132	0.06	1.260	1.427
#21	LTE Band 4	20M	1	0	QPSK	Back	1	20300	1745	22.78	23.3	1.127	0.16	1.270	1.432
	LTE Band 4	20M	1	0	QPSK	Back (with headset)	1	20300	1745	22.78	23.3	1.127	0.15	1.250	1.409
	LTE Band 4	20M	1	0	QPSK	Back (with headset)	1	20050	1720	22.76	23.3	1.132	0.11	1.240	1.404
	LTE Band 4	20M	1	0	QPSK	Back (with headset)	1	20175	1732.5	22.92	23.3	1.091	0.12	1.270	1.386
	LTE Band 4	20M	50	0	QPSK	Front	1	20175	1732.5	21.91	22.3	1.094	-0.08	0.650	0.711
	LTE Band 4	20M	50	0	QPSK	Back	1	20175	1732.5	21.91	22.3	1.094	0.11	1.090	1.192
	LTE Band 4	20M	50	0	QPSK	Back	1	20050	1720	21.87	22.3	1.104	0.15	1.090	1.203
	LTE Band 4	20M	50	0	QPSK	Back	1	20300	1745	21.85	22.3	1.109	0.04	1.080	1.198
	LTE Band 4	20M	50	0	QPSK	Back (with headset)	1	20050	1720	21.87	22.3	1.104	0.11	1.080	1.192
	LTE Band 4	20M	50	0	QPSK	Back (with headset)	1	20175	1732.5	21.91	22.3	1.094	0.11	1.090	1.192
	LTE Band 4	20M	50	0	QPSK	Back (with headset)	1	20300	1745	21.85	22.3	1.109	0.16	1.070	1.187
	LTE Band 4	20M	100	0	QPSK	Front	1	20175	1732.5	21.88	22.3	1.102	-0.13	0.636	0.701
	LTE Band 4	20M	100	0	QPSK	Back	1	20175	1732.5	21.88	22.3	1.102	0.15	1.080	1.190

Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	1	0	QPSK	Front	1	18900	1880	22.83	23.5	1.167	-0.08	0.594	0.693
	LTE Band 2	20M	1	0	QPSK	Back	1	18900	1880	22.83	23.5	1.167	0.05	1.070	1.248
	LTE Band 2	20M	1	0	QPSK	Back	1	18700	1860	22.65	23.5	1.216	0.04	1.010	1.228
	LTE Band 2	20M	1	0	QPSK	Back	1	19100	1900	22.82	23.5	1.169	0.06	1.070	1.251
	LTE Band 2	20M	1	0	QPSK	Back (with headset)	1	19100	1900	22.82	23.5	1.169	0.04	1.070	1.251
#27	LTE Band 2	20M	1	0	QPSK	Back (with headset)	1	18900	1880	22.83	23.5	1.167	0.04	1.080	1.260
	LTE Band 2	20M	1	0	QPSK	Back (with headset)	1	18700	1860	22.65	23.5	1.216	0.08	1.000	1.216
	LTE Band 2	20M	50	0	QPSK	Front	1	18900	1880	21.89	22.5	1.151	-0.02	0.482	0.555
	LTE Band 2	20M	50	0	QPSK	Back	1	18900	1880	21.89	22.5	1.151	0.04	1.010	1.162
	LTE Band 2	20M	50	0	QPSK	Back	1	18700	1860	21.68	22.5	1.208	0.13	0.987	1.192
	LTE Band 2	20M	50	0	QPSK	Back	1	19100	1900	21.88	22.5	1.153	0.08	1.030	1.188
	LTE Band 2	20M	100	0	QPSK	Front	1	18900	1880	21.76	22.5	1.186	0.02	0.546	0.647
	LTE Band 2	20M	100	0	QPSK	Back	1	18900	1880	21.76	22.5	1.186	0.04	1.000	1.186
	LTE Band 7	20M	1	49	QPSK	Front	1	21100	2535	23.28	24	1.180	-0.11	0.054	0.064
#23	LTE Band 7	20M	1	49	QPSK	Back	1	21100	2535	23.28	24	1.180	0.05	0.070	0.083
	LTE Band 7	20M	50	24	QPSK	Front	1	21100	2535	22.19	23	1.205	0.08	0.043	0.052
	LTE Band 7	20M	50	24	QPSK	Back	1	21100	2535	22.19	23	1.205	0.01	0.055	0.066

<DTS WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b 1Mbps	Front	1	1	2412	13.92	14.5	1.143	97.53	1.025	-0.16	0.031	0.036
#24	WLAN 2.4GHz	802.11b 1Mbps	Back	1	1	2412	13.92	14.5	1.143	97.53	1.025	-0.03	0.234	0.274
	WLAN 2.4GHz	802.11b 1Mbps	Back (with headset)	1	1	2412	13.92	14.5	1.143	97.53	1.025	0.06	0.216	0.253

<UNII WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 5.2GHz	802.11a 6Mbps	Front	1	48	5240	14.65	15	1.084	87.23	1.146	0.08	0.130	0.161
	WLAN 5.2GHz	802.11a 6Mbps	Back	1	48	5240	14.65	15	1.084	87.23	1.146	-0.09	0.680	0.845
	WLAN 5.2GHz	802.11ac VHT80 MCS0	Back	1	42	5210	14.96	15.5	1.132	55.11	1.815	-0.04	0.385	0.791
	WLAN 5.2GHz	802.11a 6Mbps	Back	1	36	5180	14.47	15	1.130	87.23	1.146	0.03	0.651	0.843
	WLAN 5.2GHz	802.11a 6Mbps	Back (with headset)	1	48	5240	14.65	15	1.084	87.23	1.146	0.08	0.703	0.873
#28	WLAN 5.2GHz	802.11a 6Mbps	Back (with headset)	1	36	5180	14.47	15	1.130	87.23	1.146	-0.04	0.682	0.883
	WLAN 5.8GHz	802.11a 6Mbps	Front	1	157	5785	16.83	17	1.040	87.23	1.146	-0.05	0.091	0.108
	WLAN 5.8GHz	802.11a 6Mbps	Back	1	157	5785	16.83	17	1.040	87.23	1.146	0.04	0.324	0.386
	WLAN 5.8GHz	802.11ac VHT80 MCS0	Back	1	155	5775	15.18	15.5	1.076	55.11	1.815	0.02	0.153	0.299
#29	WLAN 5.8GHz	802.11a 6Mbps	Back (with headset)	1	157	5785	16.83	17	1.040	87.23	1.146	0.08	0.348	0.415

15.4 Extremity SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
#30	WCDMA Band IV	RMC12.2K	Back	0	1413	1732.6	23.34	23.7	1.086	-0.07	3.240	3.520
	WCDMA Band IV	RMC12.2K	Back	0	1312	1712.4	23.37	23.7	1.079	0.03	3.170	3.420
	WCDMA Band IV	RMC12.2K	Back	0	1513	1752.6	23.41	23.7	1.069	0.06	3.250	3.474
	WCDMA Band II	RMC 12.2K	Back	0	9400	1880	23.69	24	1.074	0.0024	3.370	3.619
	WCDMA Band II	RMC 12.2K	Back	0	9262	1852.4	23.76	24	1.057	0.17	3.180	3.361
#31	WCDMA Band II	RMC 12.2K	Back	0	9538	1907.6	23.67	24	1.079	0.04	3.480	3.755

<LTE SAR>

Plot No.	Band	BW (MHz)	RB Size	RB offset	Modulation	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
#32	LTE Band 4	20M	1	0	QPSK	Back	0	20300	1745	22.78	23.3	1.127	-0.05	3.000	3.382
	LTE Band 4	20M	1	0	QPSK	Back	0	20050	1720	22.76	23.3	1.132	-0.03	2.940	3.329
	LTE Band 4	20M	1	0	QPSK	Back	0	20175	1732.5	22.92	23.3	1.091	0.01	3.000	3.274
	LTE Band 4	20M	50	0	QPSK	Back	0	20300	1745	21.85	22.3	1.109	0.06	2.460	2.729
	LTE Band 4	20M	50	0	QPSK	Back	0	20050	1720	21.87	22.3	1.104	-0.11	2.500	2.760
	LTE Band 4	20M	50	0	QPSK	Back	0	20175	1732.5	21.91	22.3	1.094	0.12	2.530	2.768
#33	LTE Band 2	20M	1	0	QPSK	Back	0	19100	1900	22.82	23.5	1.169	-0.0077	3.200	3.742
	LTE Band 2	20M	1	0	QPSK	Back	0	18900	1880	22.83	23.5	1.167	-0.0075	3.150	3.675
	LTE Band 2	20M	1	0	QPSK	Back	0	18700	1860	22.65	23.5	1.216	0.06	2.840	3.454

15.5 Repeated SAR Measurement

General Note:

1. Per KDB 865664 D01v01r03, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8\text{W/kg}$ for 1g SAR and $\geq 2.0\text{W/kg}$ for 10g SAR.
2. Per KDB 865664 D01v01r03, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45\text{W/kg}$ for 1g SAR, $< 3.625\text{W/kg}$ for 10g SAR, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured* SAR.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA Band IV	RMC12.2K	Back	1	1513	1752.6	23.41	23.7	1.069	0.13	1.330	1	1.422
2nd	WCDMA Band IV	RMC12.2K	Back	1	1513	1752.6	23.41	23.7	1.069	0.03	1.320	1.008	1.411
1st	WCDMA Band II	RMC 12.2K	Back	1	9400	1880	23.69	24	1.074	0.03	1.240	1	1.332
2nd	WCDMA Band II	RMC 12.2K	Back	1	9400	1880	23.69	24	1.074	0.03	1.220	1.016	1.310

No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA Band IV	RMC12.2K	Back	0	1513	1752.6	23.41	23.7	1.069	0.06	3.250	1	3.474
2nd	WCDMA Band IV	RMC12.2K	Back	0	1513	1752.6	23.41	23.7	1.069	0.01	3.140	1.035	3.357
1st	WCDMA Band II	RMC 12.2K	Back	0	9538	1907.6	23.67	24	1.079	0.04	3.480	1	3.755
2nd	WCDMA Band II	RMC 12.2K	Back	0	9538	1907.6	23.67	24	1.079	0.13	3.240	1.074	3.496

16. Simultaneous Transmission Analysis

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

General Note:

- This device supported VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP).
- WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
- EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
- EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
- This device 2.4GHz WLAN supports hotspot operation, and 2.4GHz / 5.8GHz WLAN supports WiFi Direct (Group Client / Group Owner), and 5.2GHz supports WiFi Direct (Group Client only).
- The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WiFi Direct and hotspot capability. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.
- The reported SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v05r02, simultaneous transmission SAR is compliant if,
 - Scalar SAR summation < 1.6W/kg.
 - $SPLSR = (SAR_1 + SAR_2)^{1.5} / (\min. \text{ separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
- For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05r02 based on the formula below.
 - $(\max. \text{ power of channel, including tune-up tolerance, mW}) / (\min. \text{ test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})} / x] \text{ W/kg}$ for test separation distances $\leq 50 \text{ mm}$; where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.
 - When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
 - 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

Bluetooth Max Power	Exposure Position	Head	Hotspot	Body worn
	Test separation	0 mm	10 mm	10 mm
0.5 dBm	Estimated SAR (W/kg)	0.042 W/kg	0.021 W/kg	0.021 W/kg

**16.1 Head Exposure Conditions****<WWAN PCE + WLAN DTS>**

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.017	0.040	0.06		
		Right Tilted	0.009	0.032	0.04		
		Left Cheek	0.013	0.129	0.14		
		Left Tilted	0.007	0.023	0.03		
	GSM1900	Right Cheek	0.137	0.040	0.18		
		Right Tilted	0.039	0.032	0.07		
		Left Cheek	0.062	0.129	0.19		
		Left Tilted	0.053	0.023	0.08		
WCMDA	Band V	Right Cheek	0.015	0.040	0.06		
		Right Tilted	0.007	0.032	0.04		
		Left Cheek	0.010	0.129	0.14		
		Left Tilted	0.006	0.023	0.03		
	Band IV	Right Cheek	0.346	0.040	0.39		
		Right Tilted	0.107	0.032	0.14		
		Left Cheek	0.177	0.129	0.31		
		Left Tilted	0.074	0.023	0.10		
	Band II	Right Cheek	0.230	0.040	0.27		
		Right Tilted	0.064	0.032	0.10		
		Left Cheek	0.113	0.129	0.24		
		Left Tilted	0.091	0.023	0.11		
LTE	Band 12	Right Cheek	0.246	0.040	0.29		
		Right Tilted	0.136	0.032	0.17		
		Left Cheek	0.231	0.129	0.36		
		Left Tilted	0.120	0.023	0.14		
	Band 17	Right Cheek	0.211	0.040	0.25		
		Right Tilted	0.113	0.032	0.15		
		Left Cheek	0.198	0.129	0.33		
		Left Tilted	0.103	0.023	0.13		
	Band 4	Right Cheek	0.357	0.040	0.40		
		Right Tilted	0.129	0.032	0.16		
		Left Cheek	0.189	0.129	0.32		
		Left Tilted	0.103	0.023	0.13		
	Band 2	Right Cheek	0.242	0.040	0.28		
		Right Tilted	0.075	0.032	0.11		
		Left Cheek	0.127	0.129	0.26		
		Left Tilted	0.096	0.023	0.12		
	Band 7	Right Cheek	0.058	0.040	0.10		
		Right Tilted	0.022	0.032	0.05		
		Left Cheek	0.034	0.129	0.16		
		Left Tilted	0.037	0.023	0.06		

<WWAN PCE + WLAN NII>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.017	0.089	0.11		
		Right Tilted	0.009	0.024	0.03		
		Left Cheek	0.013	0.371	0.38		
		Left Tilted	0.007	0.037	0.04		
	GSM1900	Right Cheek	0.137	0.089	0.23		
		Right Tilted	0.039	0.024	0.06		
		Left Cheek	0.062	0.371	0.43		
		Left Tilted	0.053	0.037	0.09		
WCMDA	Band V	Right Cheek	0.015	0.089	0.10		
		Right Tilted	0.007	0.024	0.03		
		Left Cheek	0.010	0.371	0.38		
		Left Tilted	0.006	0.037	0.04		
	Band IV	Right Cheek	0.346	0.089	0.44		
		Right Tilted	0.107	0.024	0.13		
		Left Cheek	0.177	0.371	0.55		
		Left Tilted	0.074	0.037	0.11		
	Band II	Right Cheek	0.230	0.089	0.32		
		Right Tilted	0.064	0.024	0.09		
		Left Cheek	0.113	0.371	0.48		
		Left Tilted	0.091	0.037	0.13		
LTE	Band 12	Right Cheek	0.246	0.089	0.34		
		Right Tilted	0.136	0.024	0.16		
		Left Cheek	0.231	0.371	0.60		
		Left Tilted	0.120	0.037	0.16		
	Band 17	Right Cheek	0.211	0.089	0.30		
		Right Tilted	0.113	0.024	0.14		
		Left Cheek	0.198	0.371	0.57		
		Left Tilted	0.103	0.037	0.14		
	Band 4	Right Cheek	0.357	0.089	0.45		
		Right Tilted	0.129	0.024	0.15		
		Left Cheek	0.189	0.371	0.56		
		Left Tilted	0.103	0.037	0.14		
	Band 2	Right Cheek	0.242	0.089	0.33		
		Right Tilted	0.075	0.024	0.10		
		Left Cheek	0.127	0.371	0.50		
		Left Tilted	0.096	0.037	0.13		
	Band 7	Right Cheek	0.058	0.089	0.15		
		Right Tilted	0.022	0.024	0.05		
		Left Cheek	0.034	0.371	0.41		
		Left Tilted	0.037	0.037	0.07		



<WWAN PCE + Bluetooth DSS>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	Bluetooth DSS Max. Bluetooth SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.017	0.042	0.06		
		Right Tilted	0.009	0.042	0.05		
		Left Cheek	0.013	0.042	0.06		
		Left Tilted	0.007	0.042	0.05		
	GSM1900	Right Cheek	0.137	0.042	0.18		
		Right Tilted	0.039	0.042	0.08		
		Left Cheek	0.062	0.042	0.10		
		Left Tilted	0.053	0.042	0.10		
WCMDA	Band V	Right Cheek	0.015	0.042	0.06		
		Right Tilted	0.007	0.042	0.05		
		Left Cheek	0.010	0.042	0.05		
		Left Tilted	0.006	0.042	0.05		
	Band IV	Right Cheek	0.346	0.042	0.39		
		Right Tilted	0.107	0.042	0.15		
		Left Cheek	0.177	0.042	0.22		
		Left Tilted	0.074	0.042	0.12		
	Band II	Right Cheek	0.230	0.042	0.27		
		Right Tilted	0.064	0.042	0.11		
		Left Cheek	0.113	0.042	0.16		
		Left Tilted	0.091	0.042	0.13		
LTE	Band 12	Right Cheek	0.246	0.042	0.29		
		Right Tilted	0.136	0.042	0.18		
		Left Cheek	0.231	0.042	0.27		
		Left Tilted	0.120	0.042	0.16		
	Band 17	Right Cheek	0.211	0.042	0.25		
		Right Tilted	0.113	0.042	0.16		
		Left Cheek	0.198	0.042	0.24		
		Left Tilted	0.103	0.042	0.15		
	Band 4	Right Cheek	0.357	0.042	0.40		
		Right Tilted	0.129	0.042	0.17		
		Left Cheek	0.189	0.042	0.23		
		Left Tilted	0.103	0.042	0.15		
	Band 2	Right Cheek	0.242	0.042	0.28		
		Right Tilted	0.075	0.042	0.12		
		Left Cheek	0.127	0.042	0.17		
		Left Tilted	0.096	0.042	0.14		
	Band 7	Right Cheek	0.058	0.042	0.10		
		Right Tilted	0.022	0.042	0.06		
		Left Cheek	0.034	0.042	0.08		
		Left Tilted	0.037	0.042	0.08		

16.2 Hotspot Exposure Conditions

<WWAN PCE + WLAN DTS>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.036	0.07		
		Back	0.056	0.274	0.33		
		Left side		0.124	0.12		
		Right side	0.029		0.03		
		Bottom side	0.035		0.04		
	GSM1900	Front	0.421	0.036	0.46		
		Back	0.749	0.274	1.02		
		Left side		0.124	0.12		
		Right side	0.158		0.16		
		Bottom side	0.503		0.50		
WCMDA	Band V	Front	0.041	0.036	0.08		
		Back	0.083	0.274	0.36		
		Left side		0.124	0.12		
		Right side	0.022		0.02		
		Bottom side	0.041		0.04		
	Band IV	Front	0.879	0.036	0.92		
		Back	1.434	0.274	1.71	0.02	#1
		Left side		0.124	0.12		
		Right side	0.434		0.43		
		Bottom side	0.955		0.96		
	Band II	Front	0.731	0.036	0.77		
		Back	1.332	0.274	1.61	0.02	#2
		Left side		0.124	0.12		
		Right side	0.287		0.29		
		Bottom side	0.857		0.86		



WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
LTE	Band 12	Front	0.300	0.036	0.34		
		Back	0.460	0.274	0.73		
		Left side		0.124	0.12		
		Right side	0.282		0.28		
		Bottom side	0.185		0.19		
	Band 17	Front	0.259	0.036	0.30		
		Back	0.384	0.274	0.66		
		Left side		0.124	0.12		
		Right side	0.253		0.25		
		Bottom side	0.154		0.15		
	Band 4	Front	0.927	0.036	0.96		
		Back	1.432	0.274	1.71	0.02	#3
		Left side		0.124	0.12		
		Right side	0.399		0.40		
		Bottom side	0.922		0.92		
	Band 2	Front	0.693	0.036	0.73		
		Back	1.251	0.274	1.53		
		Left side		0.124	0.12		
		Right side	0.342		0.34		
		Bottom side	0.946		0.95		
	Band 7	Front	0.064	0.036	0.10		
		Back	0.083	0.274	0.36		
		Left side		0.124	0.12		
		Right side	0.077		0.08		
		Bottom side	0.026		0.03		

<WWAN PCE + WLAN NII>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.108	0.14		
		Back	0.056	0.386	0.44		
		Left side		0.827	0.83		
		Right side	0.029		0.03		
		Bottom side	0.035		0.04		
	GSM1900	Front	0.421	0.108	0.53		
		Back	0.749	0.386	1.14		
		Left side		0.827	0.83		
		Right side	0.158		0.16		
		Bottom side	0.503		0.50		
WCMDA	Band V	Front	0.041	0.108	0.15		
		Back	0.083	0.386	0.47		
		Left side		0.827	0.83		
		Right side	0.022		0.02		
		Bottom side	0.041		0.04		
	Band IV	Front	0.879	0.108	0.99		
		Back	1.434	0.386	1.82	0.03	#4
		Left side		0.827	0.83		
		Right side	0.434		0.43		
		Bottom side	0.955		0.96		
	Band II	Front	0.731	0.108	0.84		
		Back	1.332	0.386	1.72	0.02	#5
		Left side		0.827	0.83		
		Right side	0.287		0.29		
		Bottom side	0.857		0.86		



WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
LTE	Band 12	Front	0.300	0.108	0.41		
		Back	0.460	0.386	0.85		
		Left side		0.827	0.83		
		Right side	0.282		0.28		
		Bottom side	0.185		0.19		
	Band 17	Front	0.259	0.108	0.37		
		Back	0.384	0.386	0.77		
		Left side		0.827	0.83		
		Right side	0.253		0.25		
		Bottom side	0.154		0.15		
	Band 4	Front	0.927	0.108	1.04		
		Back	1.432	0.386	1.82	0.03	#6
		Left side		0.827	0.83		
		Right side	0.399		0.40		
		Bottom side	0.922		0.92		
	Band 2	Front	0.693	0.108	0.80		
		Back	1.251	0.386	1.64	0.02	#7
		Left side		0.827	0.83		
		Right side	0.342		0.34		
		Bottom side	0.946		0.95		
	Band 7	Front	0.064	0.108	0.17		
		Back	0.083	0.386	0.47		
		Left side		0.827	0.83		
		Right side	0.077		0.08		
		Bottom side	0.026		0.03		

<WWAN PCE + Bluetooth DSS>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	Bluetooth DSS Max. Bluetooth SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.021	0.05		
		Back	0.056	0.021	0.08		
		Left side		0.021	0.02		
		Right side	0.029		0.03		
		Bottom side	0.035		0.04		
	GSM1900	Front	0.421	0.021	0.44		
		Back	0.749	0.021	0.77		
		Left side		0.021	0.02		
		Right side	0.158		0.16		
		Bottom side	0.503		0.50		
WCMDA	Band V	Front	0.041	0.021	0.06		
		Back	0.083	0.021	0.10		
		Left side		0.021	0.02		
		Right side	0.022		0.02		
		Bottom side	0.041		0.04		
	Band IV	Front	0.879	0.021	0.90		
		Back	1.434	0.021	1.46		
		Left side		0.021	0.02		
		Right side	0.434		0.43		
		Bottom side	0.955		0.96		
	Band II	Front	0.731	0.021	0.75		
		Back	1.332	0.021	1.35		
		Left side		0.021	0.02		
		Right side	0.287		0.29		
		Bottom side	0.857		0.86		

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	Bluetooth DSS Max. Bluetooth SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
LTE	Band 12	Front	0.300	0.021	0.32		
		Back	0.460	0.021	0.48		
		Left side		0.021	0.02		
		Right side	0.282		0.28		
		Bottom side	0.185		0.19		
	Band 17	Front	0.259	0.021	0.28		
		Back	0.384	0.021	0.41		
		Left side		0.021	0.02		
		Right side	0.253		0.25		
		Bottom side	0.154		0.15		
	Band 4	Front	0.927	0.021	0.95		
		Back	1.432	0.021	1.45		
		Left side		0.021	0.02		
		Right side	0.399		0.40		
		Bottom side	0.922		0.92		
	Band 2	Front	0.693	0.021	0.71		
		Back	1.251	0.021	1.27		
		Left side		0.021	0.02		
		Right side	0.342		0.34		
		Bottom side	0.946		0.95		
	Band 7	Front	0.064	0.021	0.09		
		Back	0.083	0.021	0.10		
		Left side		0.021	0.02		
		Right side	0.077		0.08		
		Bottom side	0.026		0.03		

16.3 Body-Worn Accessory Exposure Conditions

<WWAN PCE + WLAN DTS>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.036	0.07		
		Back	0.056	0.274	0.33		
		Back (with headset)		0.253	0.25		
	GSM1900	Front	0.421	0.036	0.46		
		Back	0.749	0.274	1.02		
		Back (with headset)		0.253	0.25		
WCMDA	Band V	Front	0.041	0.036	0.08		
		Back	0.083	0.274	0.36		
		Back (with headset)		0.253	0.25		
	Band IV	Front	0.879	0.036	0.92		
		Back	1.434	0.274	1.71	0.02	#1
		Back (with headset)	1.434	0.253	1.69	0.02	#8
	Band II	Front	0.731	0.036	0.77		
		Back	1.332	0.274	1.61	0.02	#2
		Back (with headset)	1.203	0.253	1.46		
LTE	Band 12	Front	0.300	0.036	0.34		
		Back	0.460	0.274	0.73		
		Back (with headset)		0.253	0.25		
	Band 17	Front	0.259	0.036	0.30		
		Back	0.384	0.274	0.66		
		Back (with headset)		0.253	0.25		
	Band 4	Front	0.927	0.036	0.96		
		Back	1.432	0.274	1.71	0.02	#3
		Back (with headset)	1.409	0.253	1.66	0.02	#9
	Band 2	Front	0.693	0.036	0.73		
		Back	1.251	0.274	1.53		
		Back (with headset)	1.260	0.253	1.51		
	Band 7	Front	0.064	0.036	0.10		
		Back	0.083	0.274	0.36		
		Back (with headset)		0.253	0.25		



<WWAN PCE + WLAN NII>

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.161	0.19		
		Back	0.056	0.845	0.90		
		Back (with headset)		0.883	0.88		
	GSM1900	Front	0.421	0.161	0.58		
		Back	0.749	0.845	1.59		
		Back (with headset)		0.883	0.88		
WCMDA	Band V	Front	0.041	0.161	0.20		
		Back	0.083	0.845	0.93		
		Back (with headset)		0.883	0.88		
	Band IV	Front	0.879	0.161	1.04		
		Back	1.434	0.845	2.28	0.04	#10
		Back (with headset)	1.434	0.883	2.32	0.04	#11
	Band II	Front	0.731	0.161	0.89		
		Back	1.332	0.845	2.18	0.04	#12
		Back (with headset)	1.203	0.883	2.09	0.04	#13
LTE	Band 12	Front	0.300	0.161	0.46		
		Back	0.460	0.845	1.31		
		Back (with headset)		0.883	0.88		
	Band 17	Front	0.259	0.161	0.42		
		Back	0.384	0.845	1.23		
		Back (with headset)		0.883	0.88		
	Band 4	Front	0.927	0.161	1.09		
		Back	1.432	0.845	2.28	0.04	#14
		Back (with headset)	1.409	0.883	2.29	0.04	#15
	Band 2	Front	0.693	0.161	0.85		
		Back	1.251	0.845	2.10	0.03	#16
		Back (with headset)	1.260	0.883	2.14	0.04	#17
	Band 7	Front	0.064	0.161	0.23		
		Back	0.083	0.845	0.93		
		Back (with headset)		0.883	0.88		

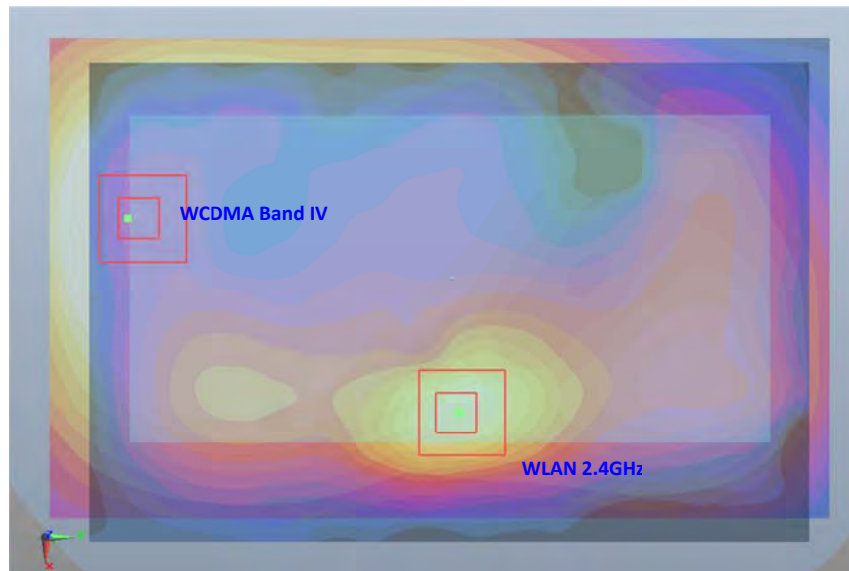


<WWAN PCE + Bluetooth DSS>

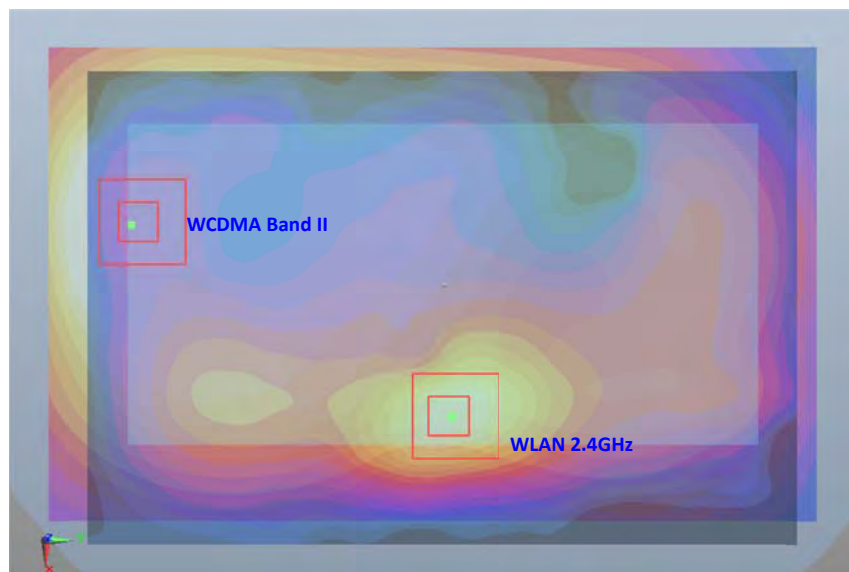
WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	Bluetooth DSS Max. Bluetooth SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.032	0.021	0.05		
		Back	0.056	0.021	0.08		
		Back (with headset)		0.021	0.02		
	GSM1900	Front	0.421	0.021	0.44		
		Back	0.749	0.021	0.77		
		Back (with headset)		0.021	0.02		
WCMDA	Band V	Front	0.041	0.021	0.06		
		Back	0.083	0.021	0.10		
		Back (with headset)		0.021	0.02		
	Band IV	Front	0.879	0.021	0.90		
		Back	1.434	0.021	1.46		
		Back (with headset)	1.434	0.021	1.46		
	Band II	Front	0.731	0.021	0.75		
		Back	1.332	0.021	1.35		
		Back (with headset)	1.203	0.021	1.22		
LTE	Band 12	Front	0.300	0.021	0.32		
		Back	0.460	0.021	0.48		
		Back (with headset)		0.021	0.02		
	Band 17	Front	0.259	0.021	0.28		
		Back	0.384	0.021	0.41		
		Back (with headset)		0.021	0.02		
	Band 4	Front	0.927	0.021	0.95		
		Back	1.432	0.021	1.45		
		Back (with headset)	1.409	0.021	1.43		
	Band 2	Front	0.693	0.021	0.71		
		Back	1.251	0.021	1.27		
		Back (with headset)	1.260	0.021	1.28		
	Band 7	Front	0.064	0.021	0.09		
		Back	0.083	0.021	0.10		
		Back (with headset)		0.021	0.02		

16.4 SPLSR Evaluation and Analysis

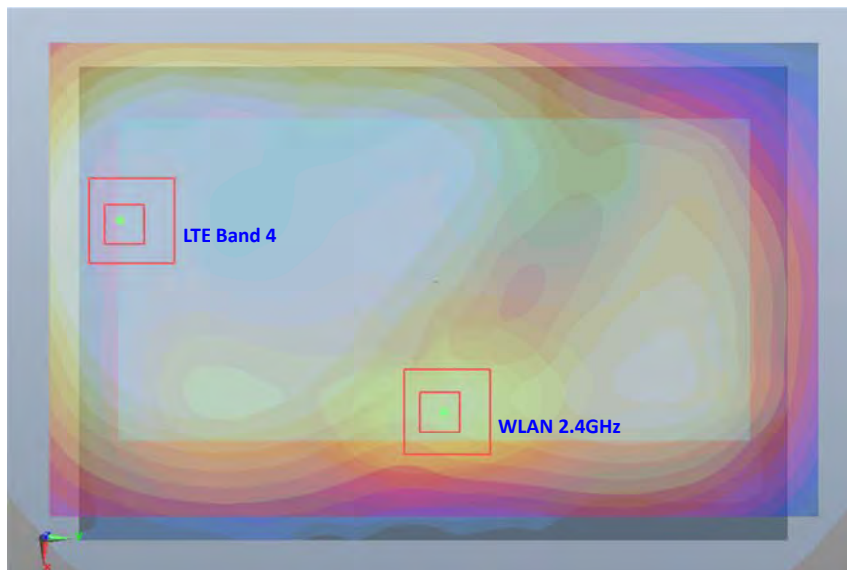
Case No #1 Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band IV	1.434	1	-0.032	-0.0805	-0.205	96.1	1.71	0.02	Not required
	WLAN 2.4GHz	0.274	1	0.0166	0.0024	-0.205				



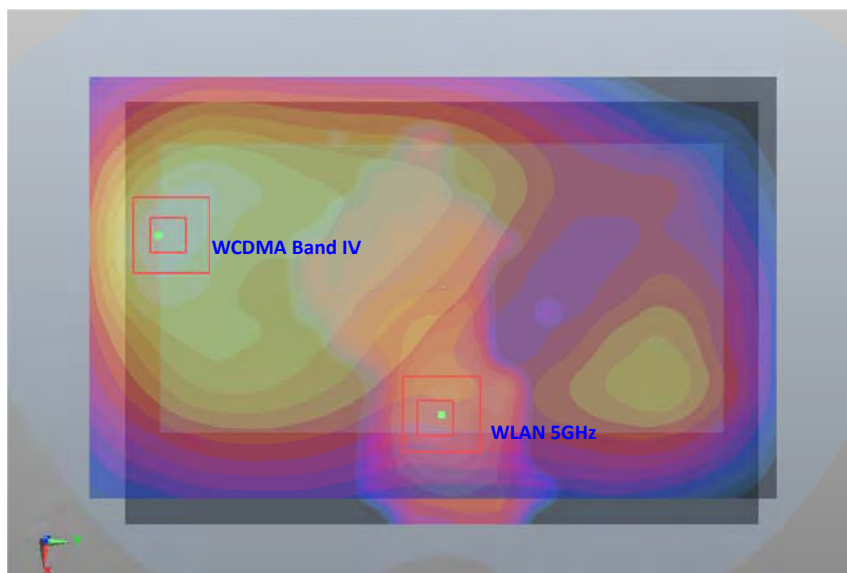
Case No #2 Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band II	1.332	1	-0.032	-0.079	-0.205	94.8	1.61	0.02	Not required
	WLAN 2.4GHz	0.274	1	0.0166	0.0024	-0.205				



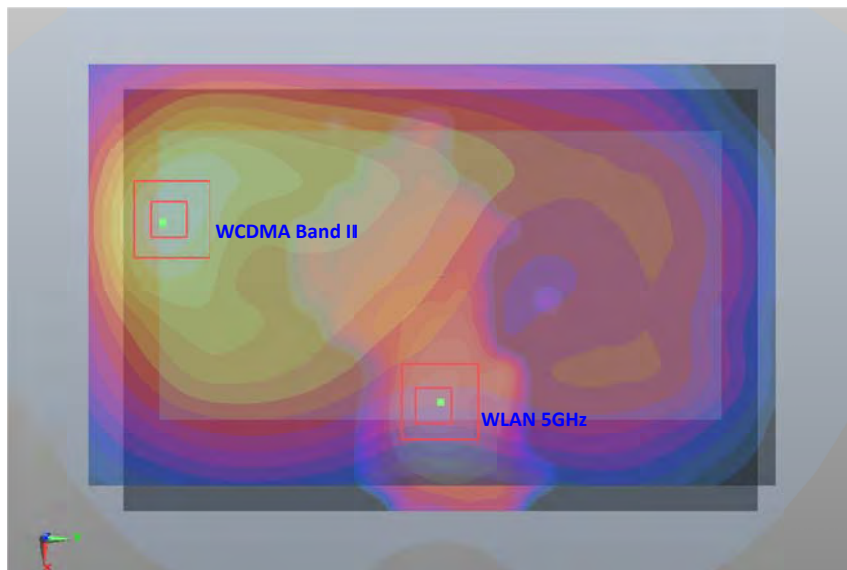
Case No #3	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 4	1.432	1	-0.032	-0.0795	-0.205	95.2	1.71	0.02	Not required
	WLAN 2.4GHz	0.274	1	0.0166	0.0024	-0.205				



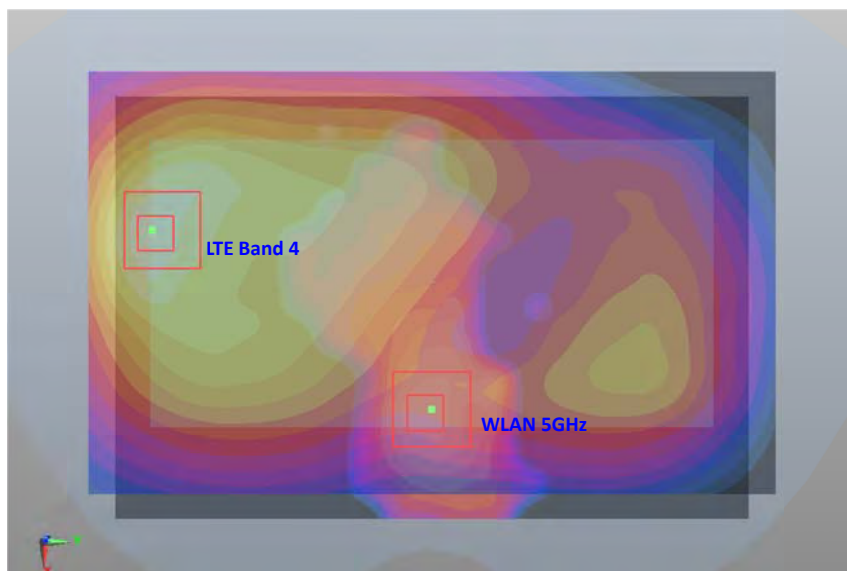
Case No #4	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band IV	1.434	1	-0.032	-0.0805	-0.205	94.7	1.82	0.03	Not required
	WLAN 5GHz	0.386	1	0.021	-0.002	-0.205				



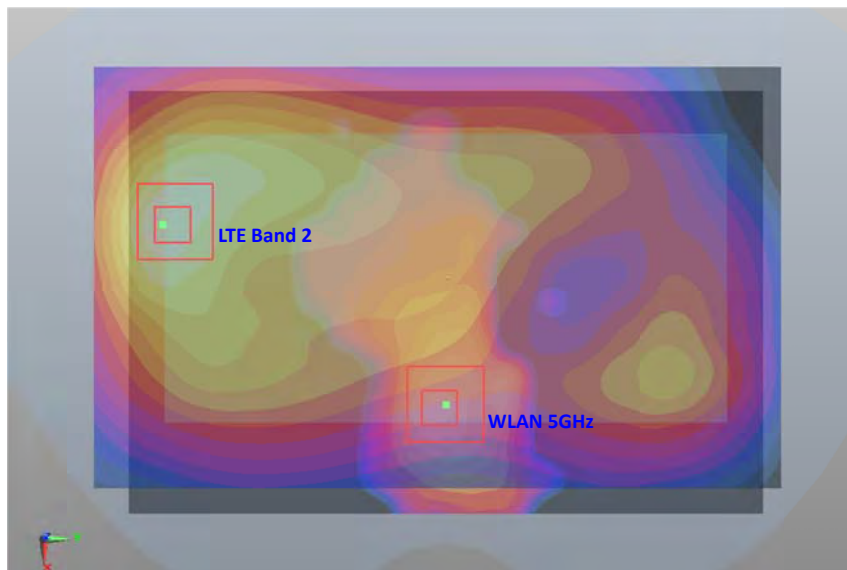
Case No #5	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band II	1.332	1	-0.032	-0.079	-0.205	93.5	1.72	0.02	Not required
	WLAN 5GHz	0.386	1	0.021	-0.002	-0.205				



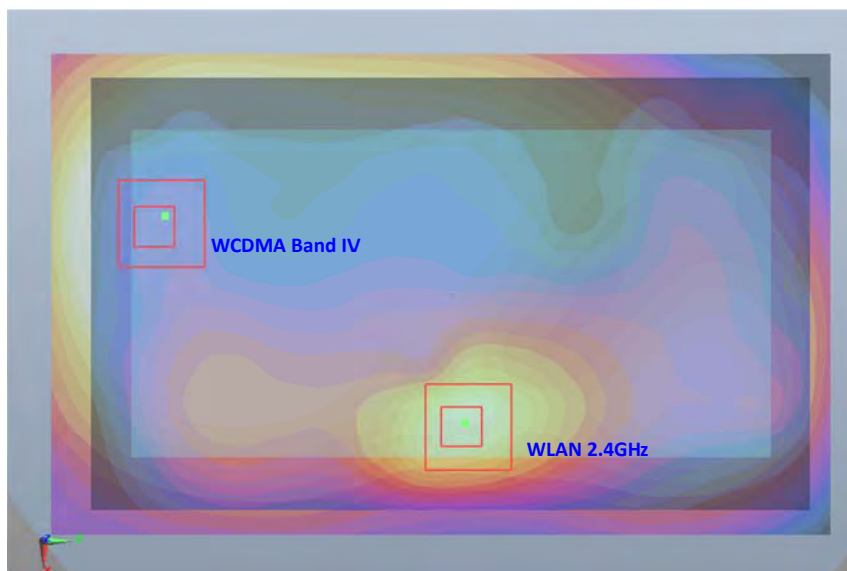
Case No #6	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 4	1.432	1	-0.032	-0.0795	-0.205	93.9	1.82	0.03	Not required
	WLAN 5GHz	0.386	1	0.021	-0.002	-0.205				



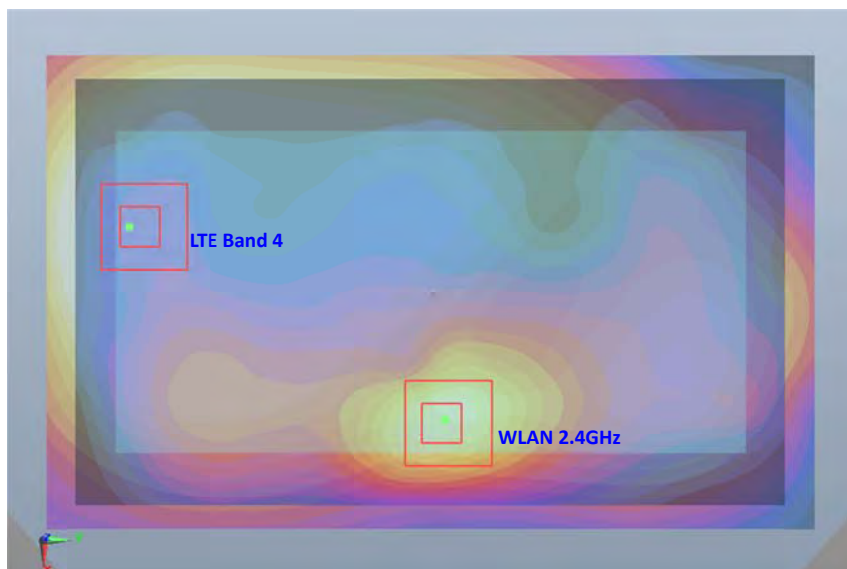
Case No #7	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 2	1.251	1	-0.032	-0.0805	-0.205	94.7	1.64	0.02	Not required
	WLAN 5GHz	0.386	1	0.021	-0.002	-0.205				



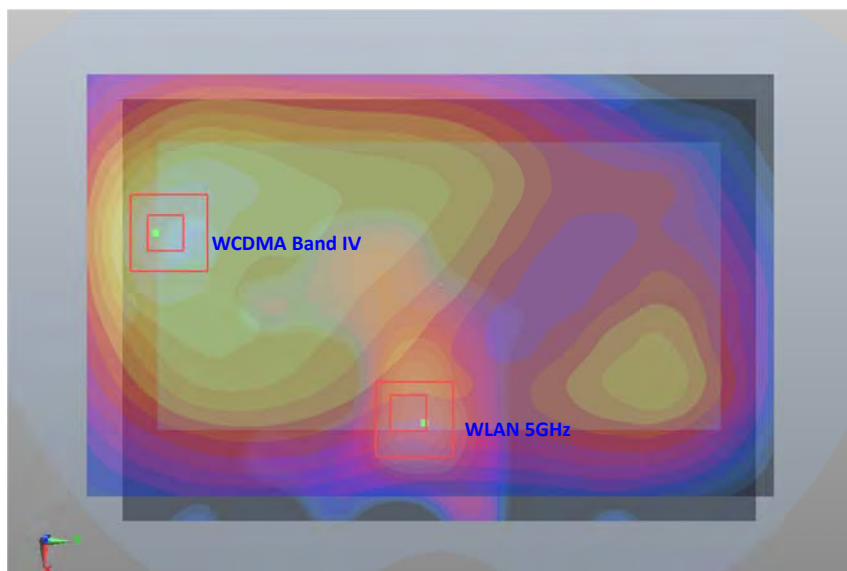
Case No #8	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back (with headset)	WCDMA Band IV	1.434	1	-0.032	-0.0805	-0.205	91.3	1.69	0.02	Not required
	WLAN 2.4GHz	0.253	1	0.0154	0.0036	-0.205				



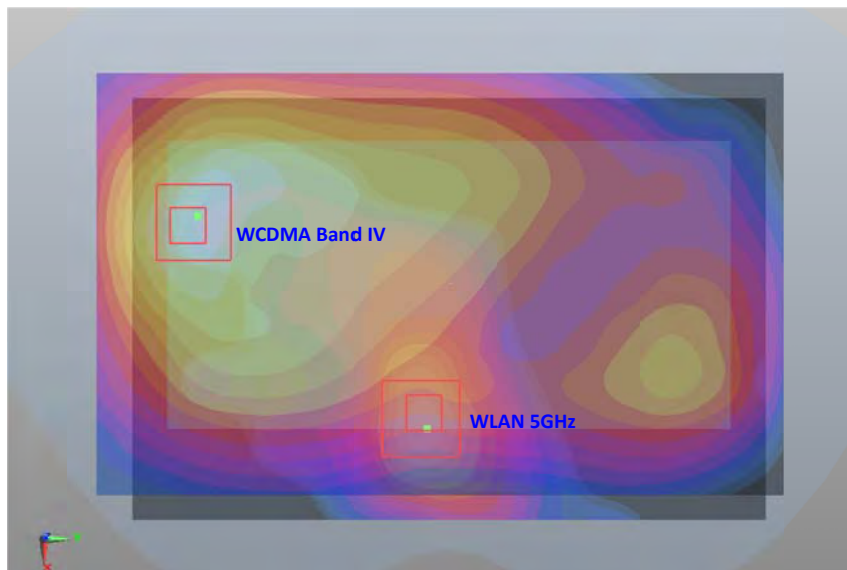
Case No #9	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Position				X	Y	Z				
Back (with headset)	LTE Band 4	1.409	1	-0.0335	-0.0765	-0.205	93.8	1.66	0.02	Not required
	WLAN 2.4GHz	0.253	1	0.0154	0.0036	-0.205				



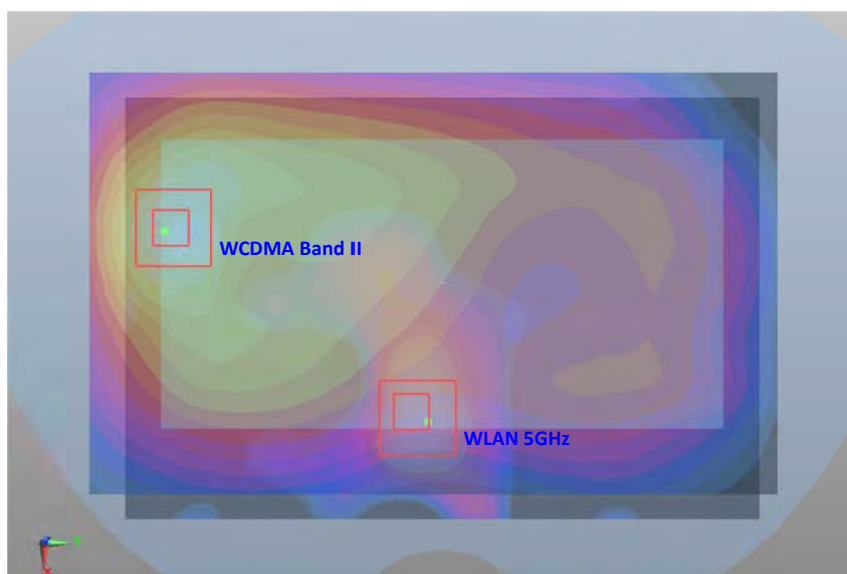
Case No #10	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Position				X	Y	Z				
Back	WCDMA Band IV	1.434	1	-0.032	-0.0805	-0.205	89.2	2.28	0.04	Not required
	WLAN 5GHz	0.845	1	0.02	-0.008	-0.205				



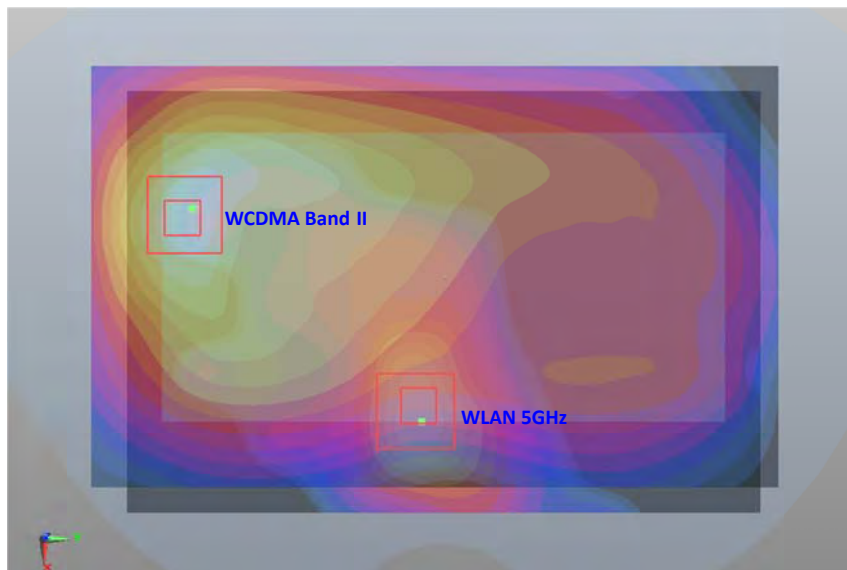
Case No #11	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back (with headset)	WCDMA Band IV	1.434	1	-0.0365	-0.0715	-0.205	83.7	2.32	0.04	Not required
	WLAN 5GHz	0.883	1	0.018	-0.008	-0.205				



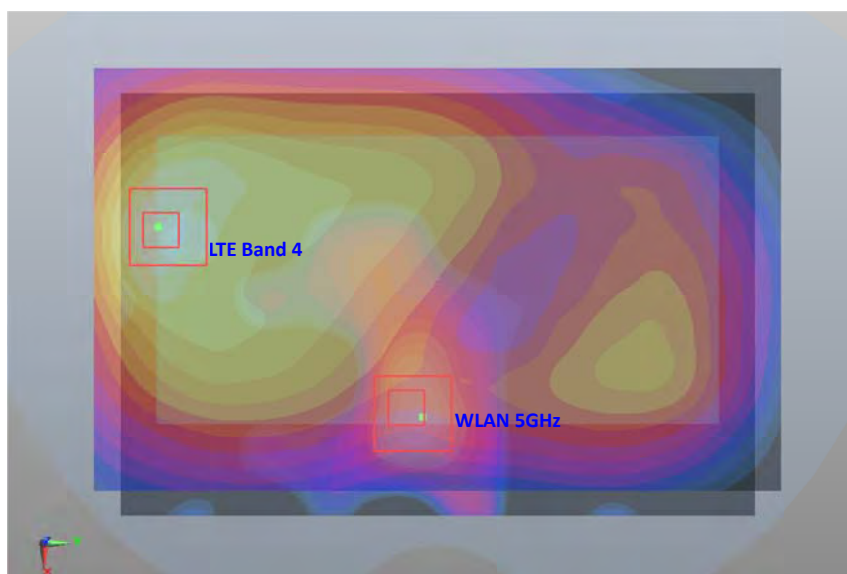
Case No #12	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	WCDMA Band II	1.332	1	-0.032	-0.079	-0.205	88.0	2.18	0.04	Not required
	WLAN 5GHz	0.845	1	0.02	-0.008	-0.205				



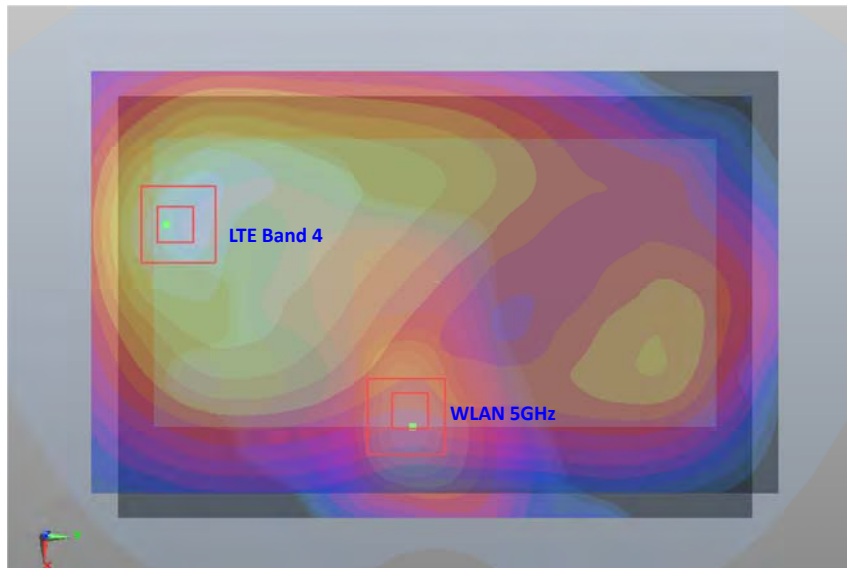
Case No #13	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back (with headset)	WCDMA Band II	1.203	1	-0.0365	-0.0715	-0.205	83.7	2.09	0.04	Not required
	WLAN 5GHz	0.883	1	0.018	-0.008	-0.205				



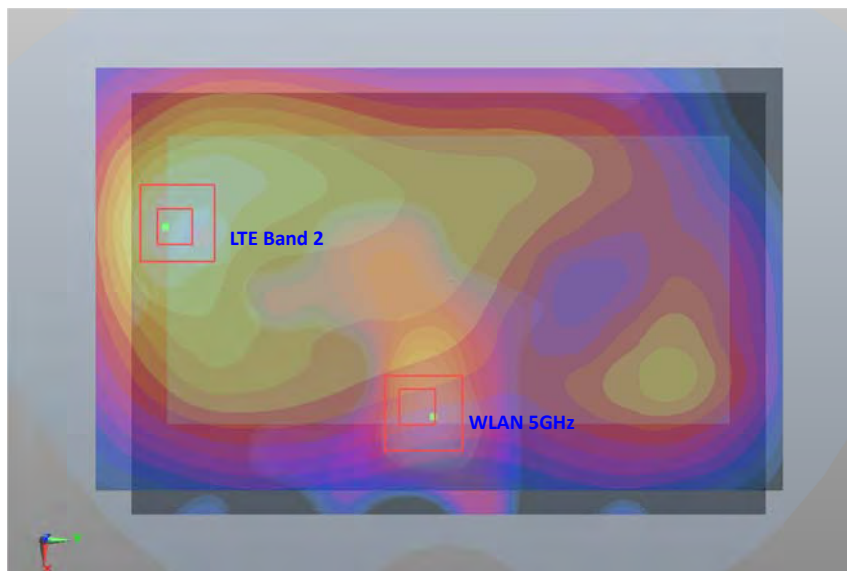
Case No #14	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 4	1.432	1	-0.032	-0.0795	-0.205	88.4	2.28	0.04	Not required
	WLAN 5GHz	0.845	1	0.02	-0.008	-0.205				



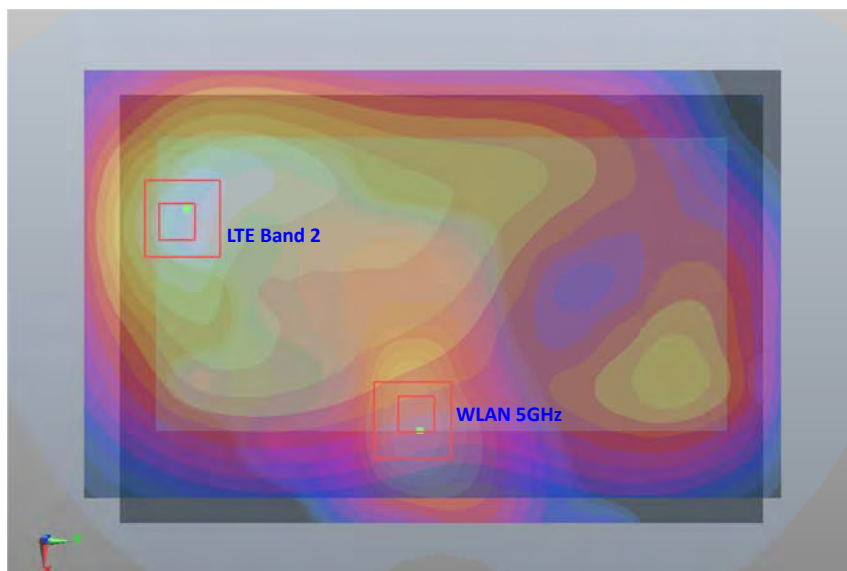
Case No #15	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back (with headset)	LTE Band 4	1.409	1	-0.0335	-0.0765	-0.205	85.7	2.29	0.04	Not required
	WLAN 5GHz	0.883	1	0.018	-0.008	-0.205				



Case No #16	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back	LTE Band 2	1.251	1	-0.032	-0.0805	-0.205	89.2	2.10	0.03	Not required
	WLAN 5GHz	0.845	1	0.02	-0.008	-0.205				



Case No #17	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Position				X	Y	Z				
Back (with headset)	LTE Band 2	1.260	1	-0.038	-0.0715	-0.205	84.7	2.14	0.04	Not required
	WLAN 5GHz	0.883	1	0.018	-0.008	-0.205				


General Note:

$SPLSR = (SAR_1 + SAR_2)^{1.5} / (min. \text{ separation distance, mm})$. If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.

Test Engineer : Fulu Hu

17. Uncertainty Assessment

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

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

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

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

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

(b) k is the coverage factor

Table 17.1. Standard Uncertainty for Assumed Distribution

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

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

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.0	Normal	1	1	1	± 6.0 %	± 6.0 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.4	Rectangular	√3	1	1	± 0.2 %	± 0.2 %
Probe Positioning	2.9	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Max. SAR Eval.	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 11.0 %	± 10.8 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						± 22.0 %	± 21.5 %

Table 17.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

18. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2003, "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r03, "SAR Measurement Requirements for 100 MHz to 6 GHz", Feb 2014.
- [6] FCC KDB 865664 D02 v01r01, "RF Exposure Compliance Reporting and Documentation Considerations" May 2013.
- [7] FCC KDB 447498 D01 v05r02, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Feb 2014
- [8] FCC KDB 648474 D03 v01r02, "Evaluation and Approval Considerations for Handsets with Specific Wireless Charging Battery Covers" May 2013.
- [9] FCC KDB 248227 D01 v01r02, "SAR Measurement Procedures for 802.11 a/b/g Transmitters", May 2007
- [10] FCC KDB 941225 D01 v02, "SAR Measurement Procedures for 3G Devices – CDMA 2000 / Ev-Do / WCDMA / HSDPA / HSPA", October 2007
- [11] FCC KDB 941225 D02 v02r02, "SAR Guidance for HSPA, HSPA+, DC-HSDPA and 1x-Advanced", May 2013.
- [12] FCC KDB 941225 D03 v01, "Recommended SAR Test Reduction Procedures for GSM / GPRS / EDGE", December 2008
- [13] FCC KDB 941225 D05 v02r03, "SAR Evaluation Considerations for LTE Devices", Dec 2013
- [14] FCC KDB 941225 D06 v01r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", May 2013.



Appendix A. *Plots of System Performance Check*

The plots are shown as follows.

System Check_Head_750MHz_140615**DUT: D750V3 - SN:1099**

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: HSL_750_140615 Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 40.936$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : $23.3 \text{ }^\circ\text{C}$; Liquid Temperature : $22.6 \text{ }^\circ\text{C}$

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.48, 9.48, 9.48); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.632 mW/g

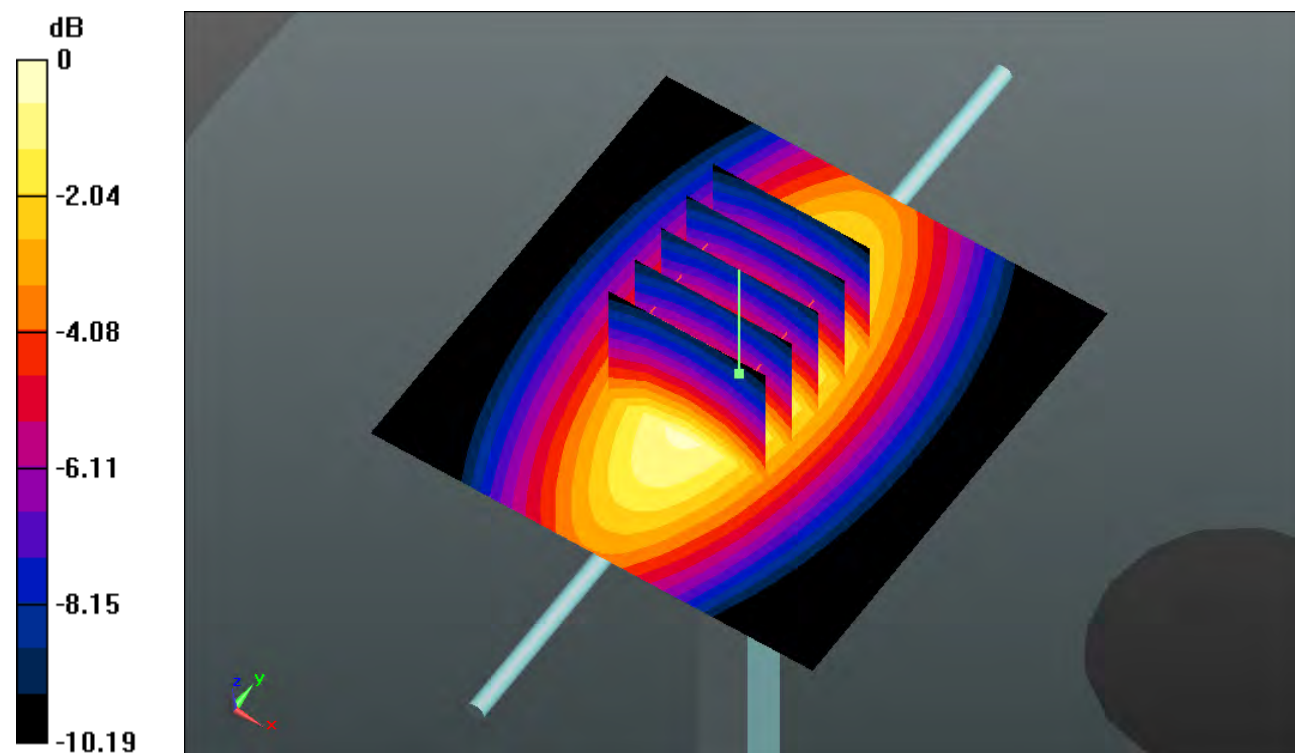
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 50.050 V/m ; Power Drift = 0.0012 dB

Peak SAR (extrapolated) = 3.073 W/kg

SAR(1 g) = 2.06 mW/g ; SAR(10 g) = 1.41 mW/g

Maximum value of SAR (measured) = 2.623 mW/g



0 dB = 2.620 mW/g

System Check_Head_835MHz_140615**DUT: D835V2 - SN:4d091**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL_835_140615 Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.884 \text{ mho/m}$; $\epsilon_r = 41.015$;

$\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : $23.3 \text{ }^\circ\text{C}$; Liquid Temperature : $22.6 \text{ }^\circ\text{C}$

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.13, 9.13, 9.13); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 3.131 mW/g

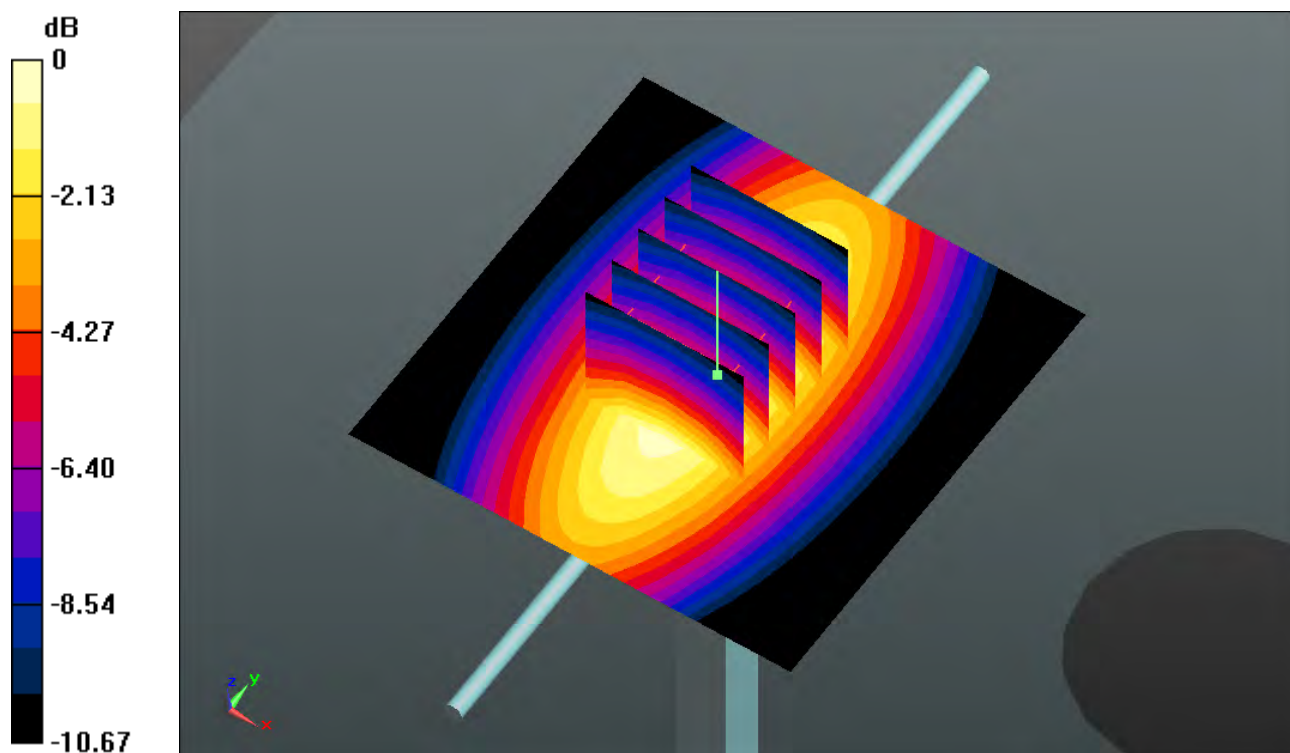
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 53.503 V/m ; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.520 W/kg

SAR(1 g) = 2.42 mW/g ; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 3.138 mW/g



0 dB = 3.140 mW/g

System Check_Head_1750MHz_140616**DUT: D1750V2 - SN:1090**

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL_1750_140616 Medium parameters used: $f = 1750$ MHz; $\sigma = 1.405$ mho/m; $\epsilon_r =$

41.417 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(8.06, 8.06, 8.06); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.269 mW/g

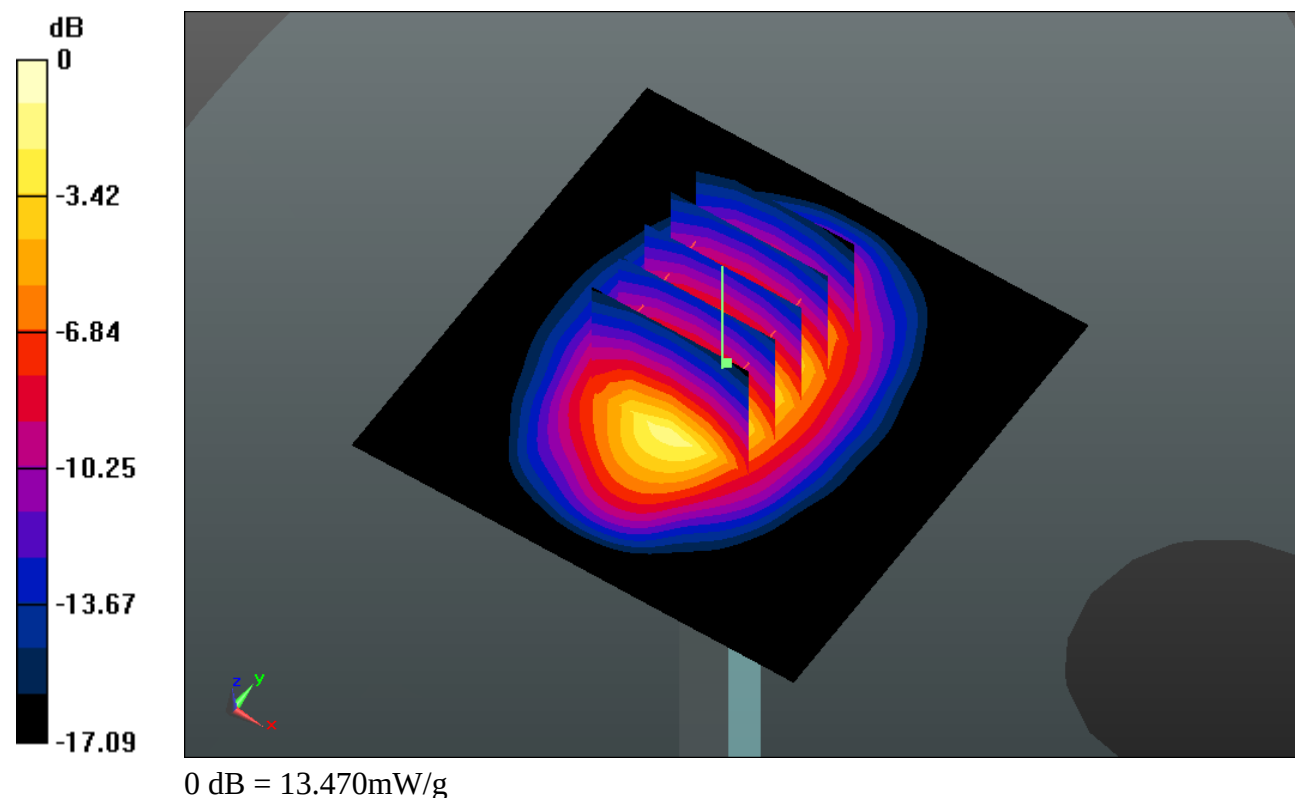
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.147 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 16.560 W/kg

SAR(1 g) = 9.08 mW/g; SAR(10 g) = 4.72 mW/g

Maximum value of SAR (measured) = 13.473 mW/g



System Check_Head_1900MHz_140616**DUT: D1900V2 - SN:5d118**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL_1900_140616 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.424$ mho/m; $\epsilon_r =$

38.959 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.91, 7.91, 7.91); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 14.932 mW/g

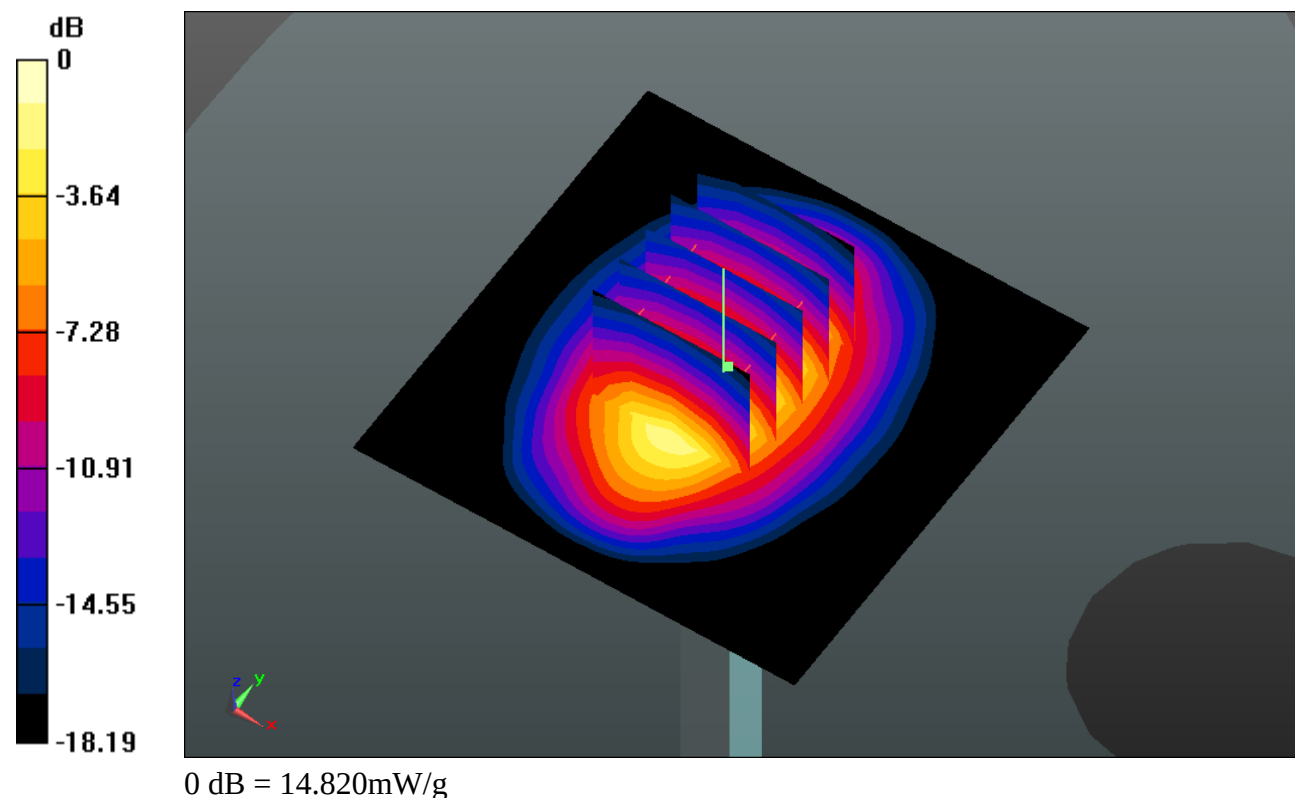
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 88.751 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 18.383 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.24 mW/g

Maximum value of SAR (measured) = 14.821 mW/g



System Check_Head_2450MHz_140616**DUT: D2450V2 - SN:736**

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL_2450_140616 Medium parameters used: $f = 2450$ MHz; $\sigma = 1.819$ mho/m; $\epsilon_r =$

39.212 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.29, 7.29, 7.29); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 21.674 mW/g

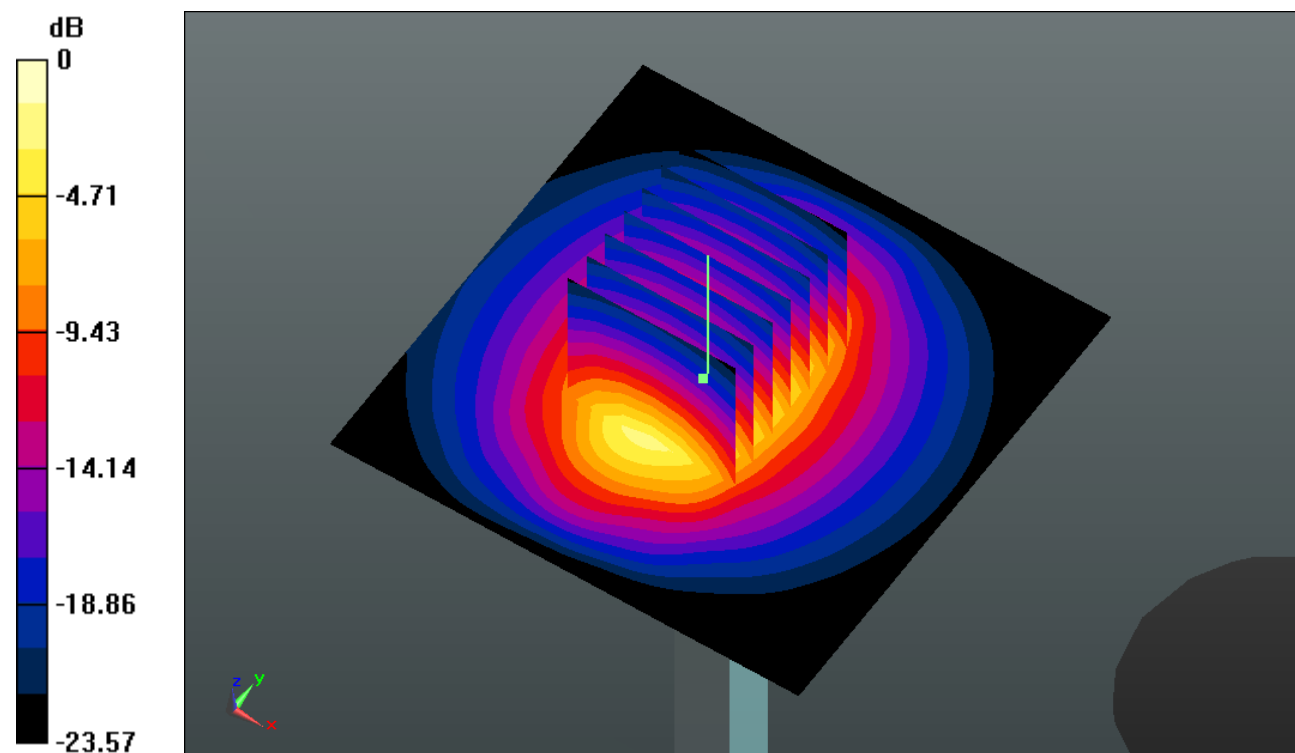
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 91.179 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 28.609 W/kg

SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.05 mW/g

Maximum value of SAR (measured) = 20.618 mW/g



0 dB = 20.620mW/g

System Check_Head_2600MHz_140606**DUT: D2600V2 - SN:1061**

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: HSL_2600_140606 Medium parameters used: $f = 2600$ MHz; $\sigma = 1.974$ mho/m; $\epsilon_r =$

38.204 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3911; ConvF(6.87, 6.87, 6.87); Calibrated: 2014.04.22
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 22.373 mW/g

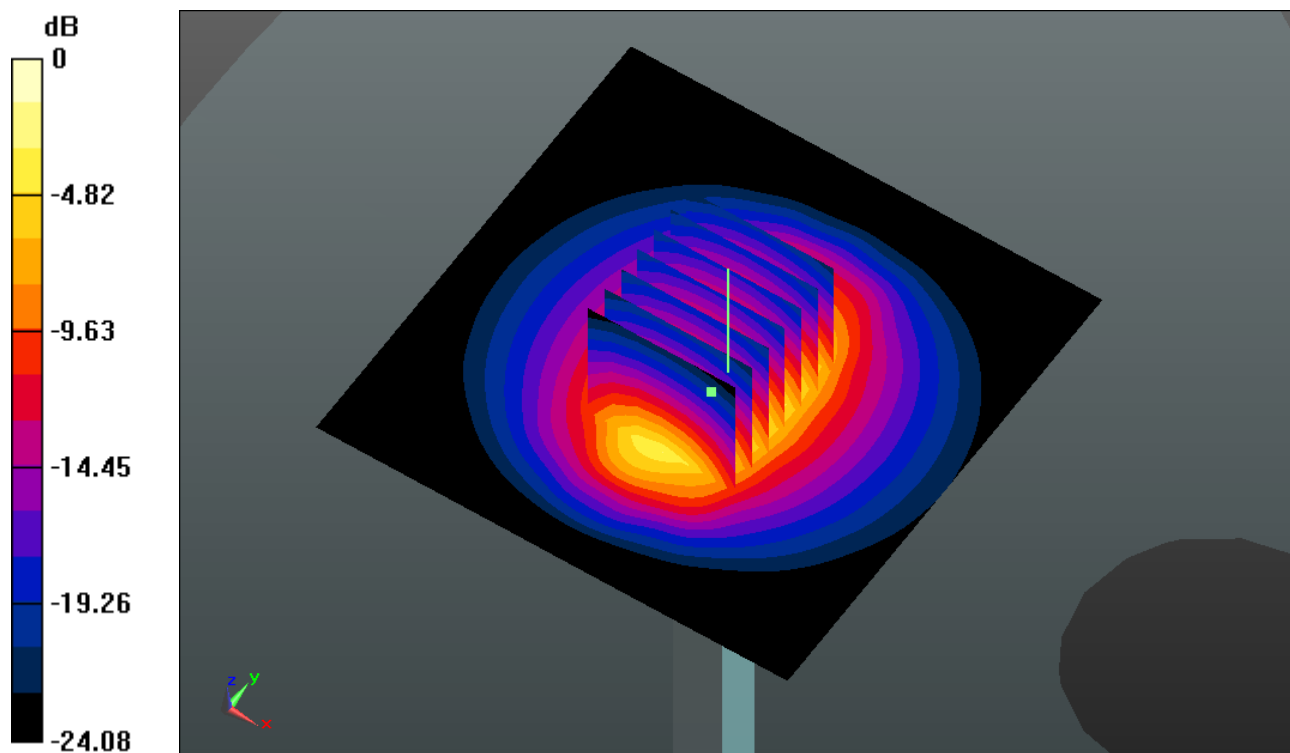
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.316 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 32.230 W/kg

SAR(1 g) = 15.6 mW/g; SAR(10 g) = 6.68 mW/g

Maximum value of SAR (measured) = 22.341 mW/g



0 dB = 22.340mW/g

System Check_Head_5200MHz_140709**DUT: D5GHzV2-SN:1006**

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: HSL_5000_140709 Medium parameters used: $f = 5200$ MHz; $\sigma = 4.814$ mho/m; $\epsilon_r =$

35.458 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C ; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.35, 5.35, 5.35); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 19.089 mW/g

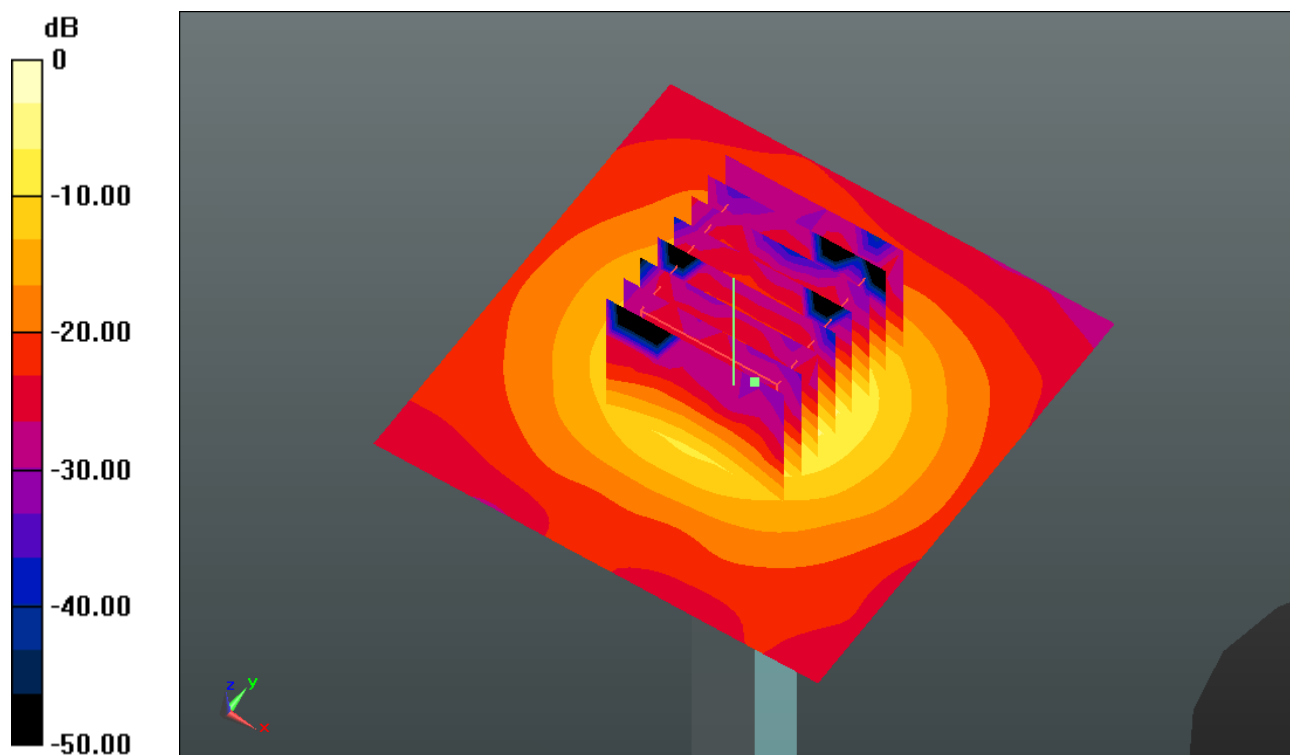
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 43.382 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 33.461 W/kg

SAR(1 g) = 7.97 mW/g; SAR(10 g) = 2.28 mW/g

Maximum value of SAR (measured) = 18.618 mW/g



0 dB = 18.620mW/g

System Check_Head_5800MHz_140709**DUT: D5GHzV2-SN:1006**

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL_5000_140709 Medium parameters used: $f = 5800$ MHz; $\sigma = 5.423$ mho/m; $\epsilon_r =$

34.346 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C ; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.79, 4.79, 4.79); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 19.296 mW/g

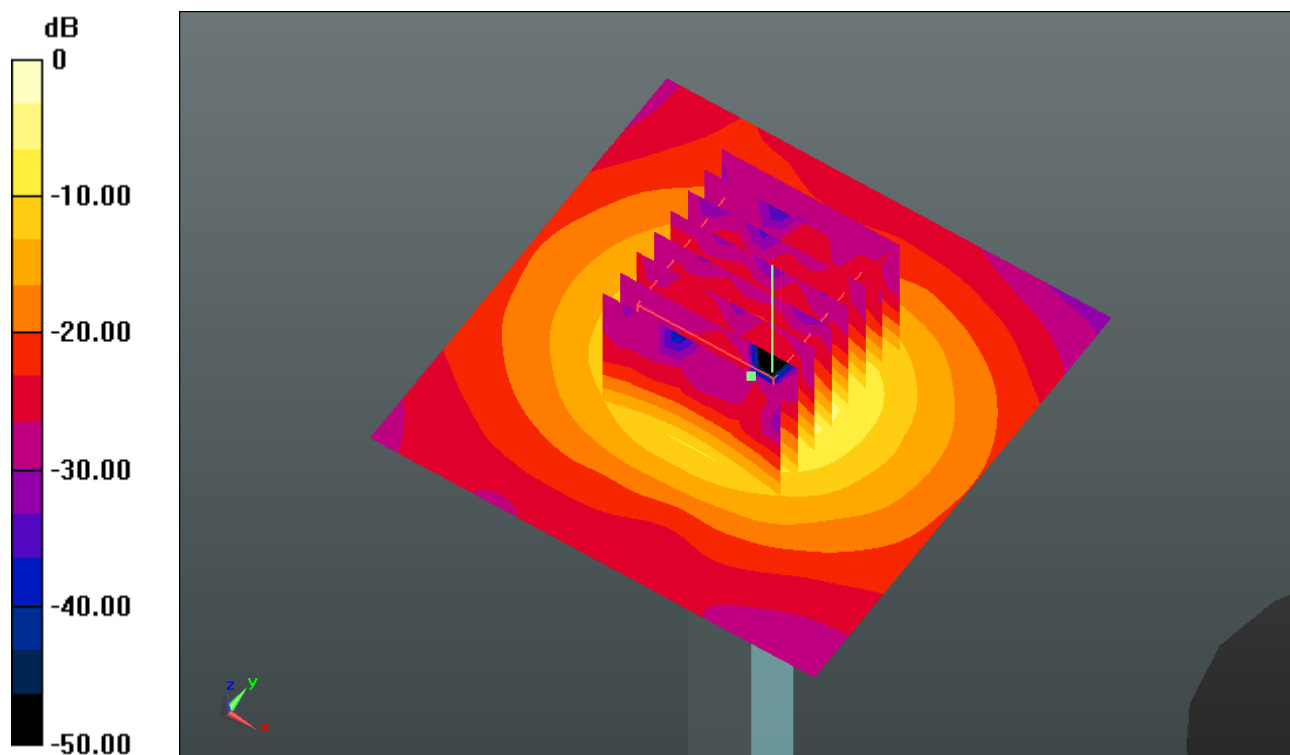
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 39.591 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 35.052 W/kg

SAR(1 g) = 7.77 mW/g; SAR(10 g) = 2.22 mW/g

Maximum value of SAR (measured) = 18.796 mW/g



0 dB = 18.800mW/g

System Check_Body_750MHz_140614**DUT: D750V2 - SN:1099**

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: MSL_750_140614 Medium parameters used: $f = 750$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 54.228$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.54, 9.54, 9.54); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.680 mW/g

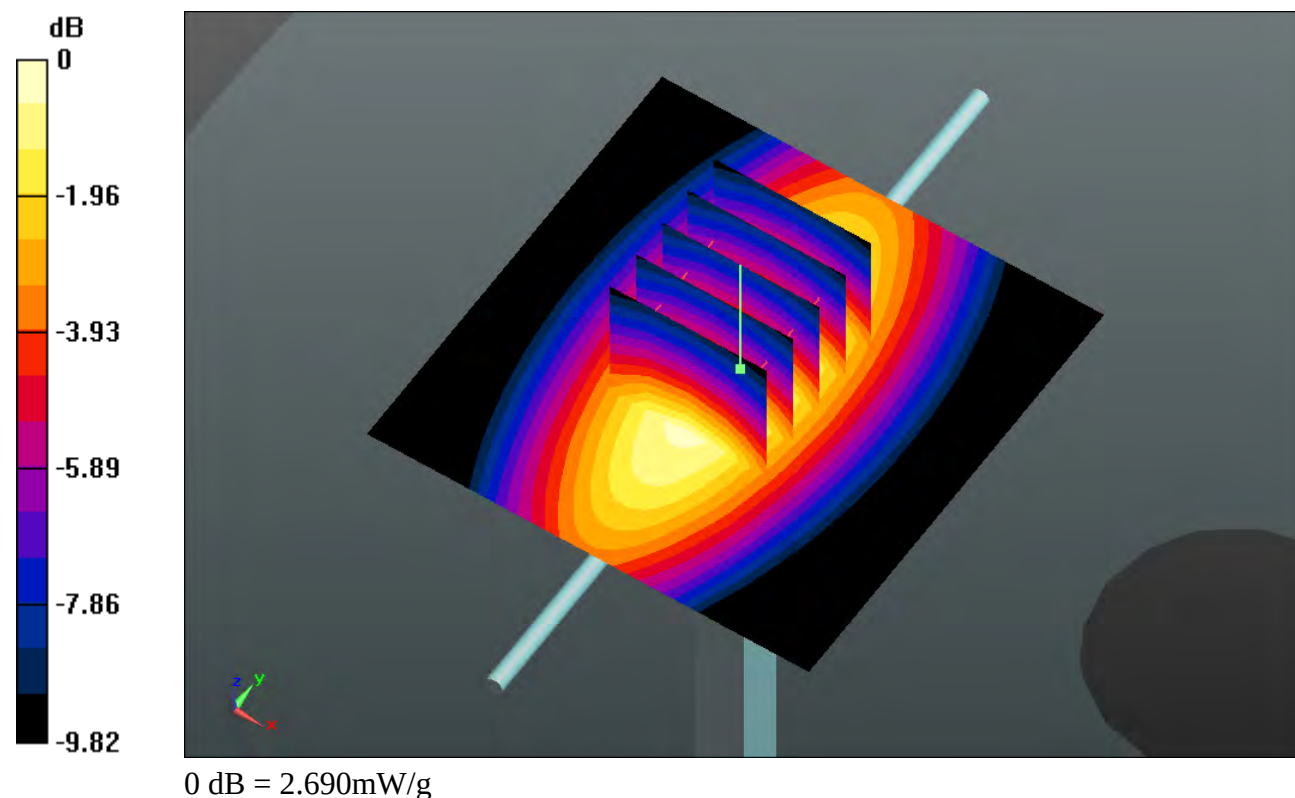
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 49.090 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.126 W/kg

SAR(1 g) = 2.19 mW/g; SAR(10 g) = 1.43 mW/g

Maximum value of SAR (measured) = 2.686 mW/g



System Check_Body_835MHz_140614**DUT: D835V2 - SN:4d091**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL_835_140614 Medium parameters used: $f = 835$ MHz; $\sigma = 0.974$ mho/m; $\epsilon_r = 55.995$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C ; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.14, 9.14, 9.14); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.916 mW/g

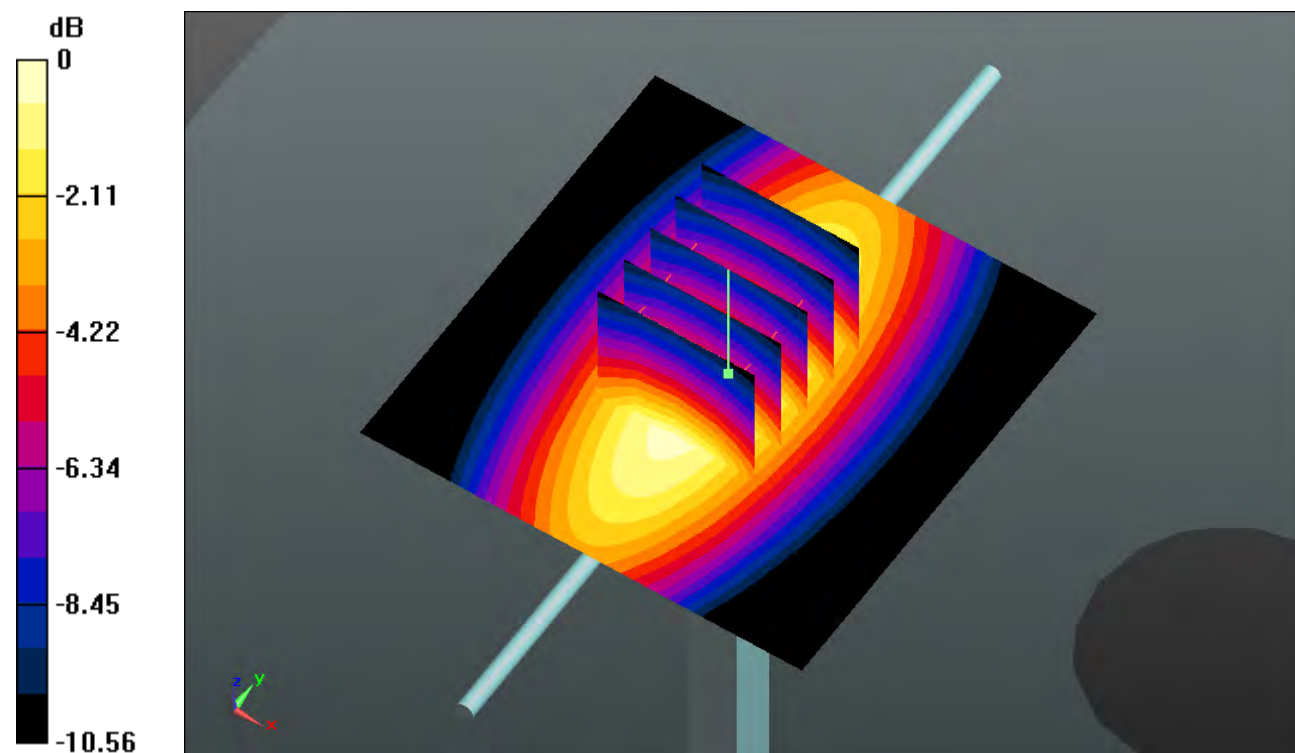
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 49.856 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.404 W/kg

SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.48 mW/g

Maximum value of SAR (measured) = 2.920 mW/g



0 dB = 2.920mW/g

System Check_Body_1750MHz_140611**DUT: D1750V2 - SN:1090**

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1750$ MHz; $\sigma = 1.512$ mho/m; $\epsilon_r =$

55.585; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C ; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.069 mW/g

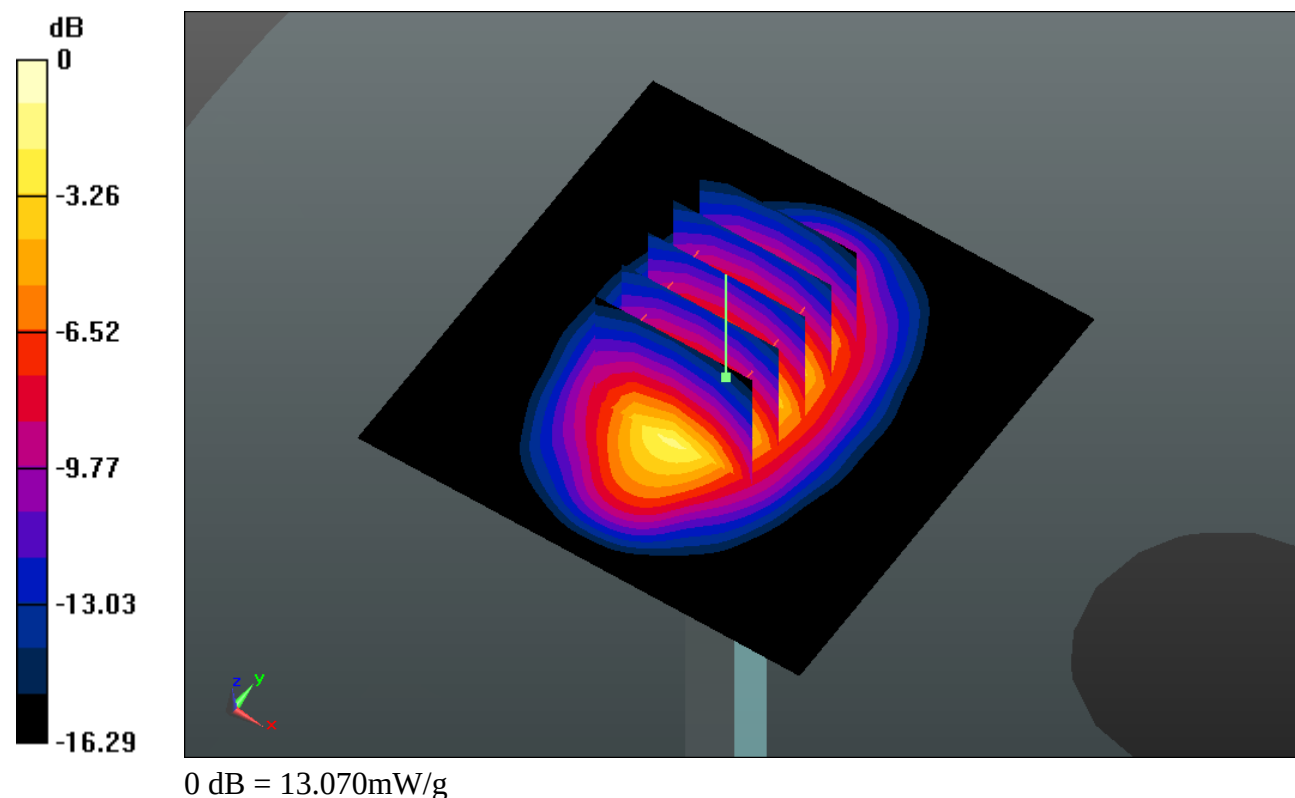
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 82.765 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 15.691 W/kg

SAR(1 g) = 9.12 mW/g; SAR(10 g) = 4.93 mW/g

Maximum value of SAR (measured) = 13.074 mW/g



System Check_Body_1900MHz_140612**DUT: D1900V2 - SN:5d118**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.552$ mho/m; $\epsilon_r =$

53.358; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C ; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 14.969 mW/g

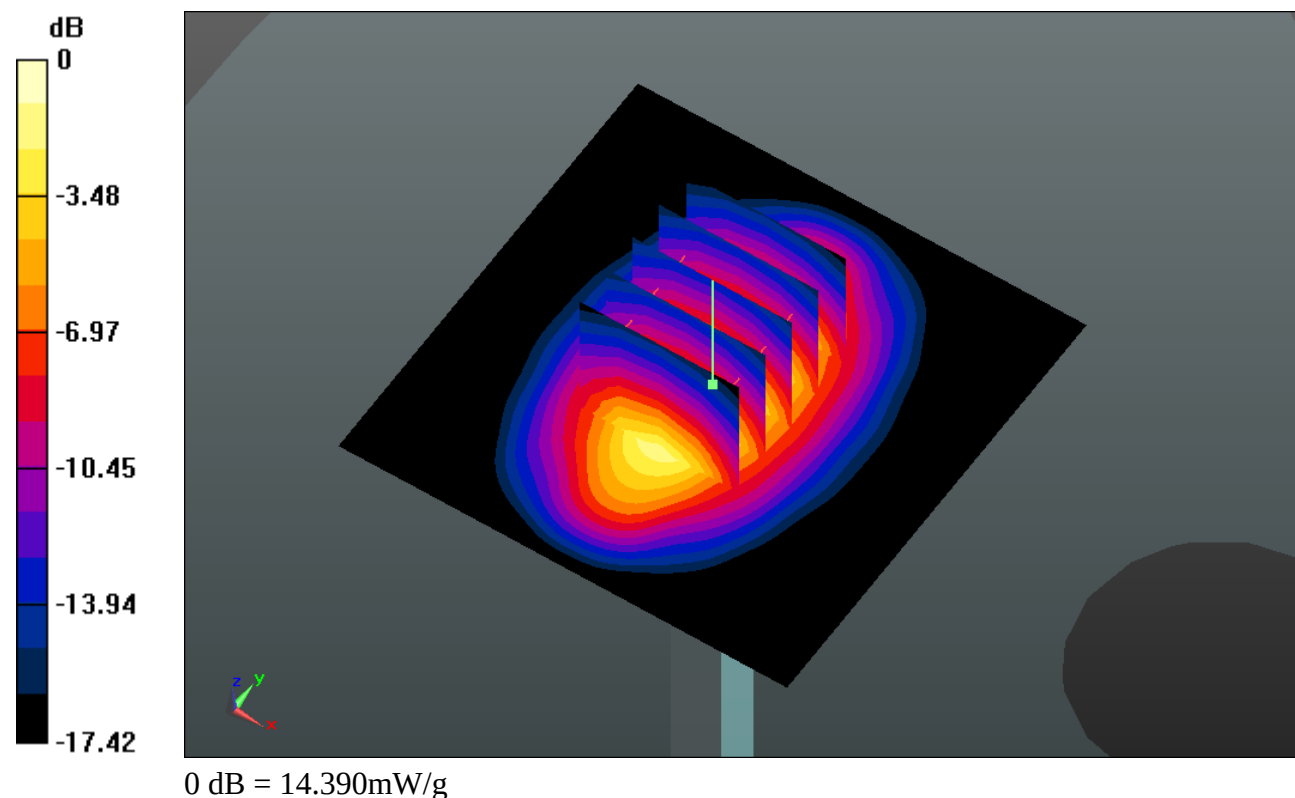
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 97.726 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 18.209 W/kg

SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.47 mW/g

Maximum value of SAR (measured) = 14.389 mW/g



System Check_Body_2450MHz_140611**DUT: D2450V2 - SN:736**

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: MSL_2450_140611 Medium parameters used: $f = 2450$ MHz; $\sigma = 1.942$ mho/m; $\epsilon_r =$

50.948 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.31, 7.31, 7.31); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 19.366 mW/g

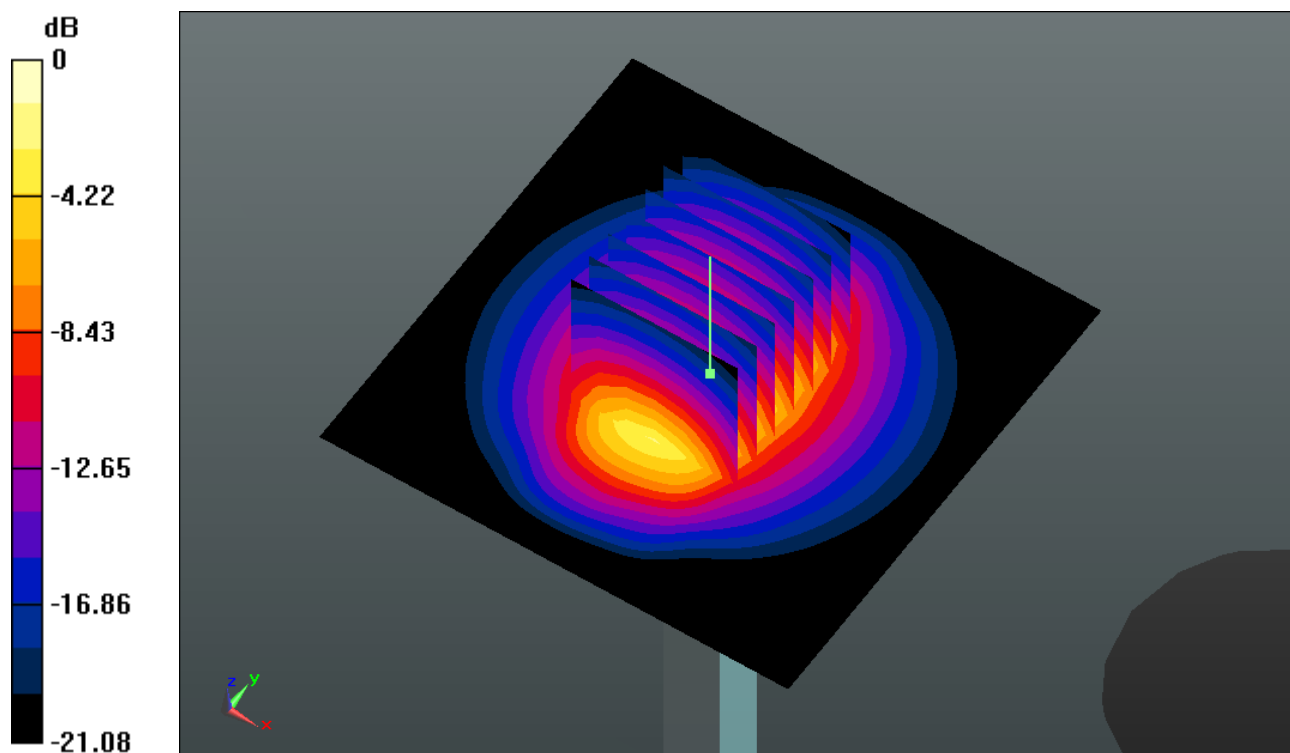
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.098 V/m; Power Drift = 0.0063 dB

Peak SAR (extrapolated) = 25.763 W/kg

SAR(1 g) = 12.4 mW/g; SAR(10 g) = 5.79 mW/g

Maximum value of SAR (measured) = 19.550 mW/g



0 dB = 19.550mW/g

System Check_Body_2600MHz_140610**DUT: D2600V2 - SN:1061**

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: MSL_2600_140610 Medium parameters used: $f = 2600$ MHz; $\sigma = 2.165$ mho/m; $\epsilon_r =$

53.823; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C ; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(6.93, 6.93, 6.93); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 20.602 mW/g

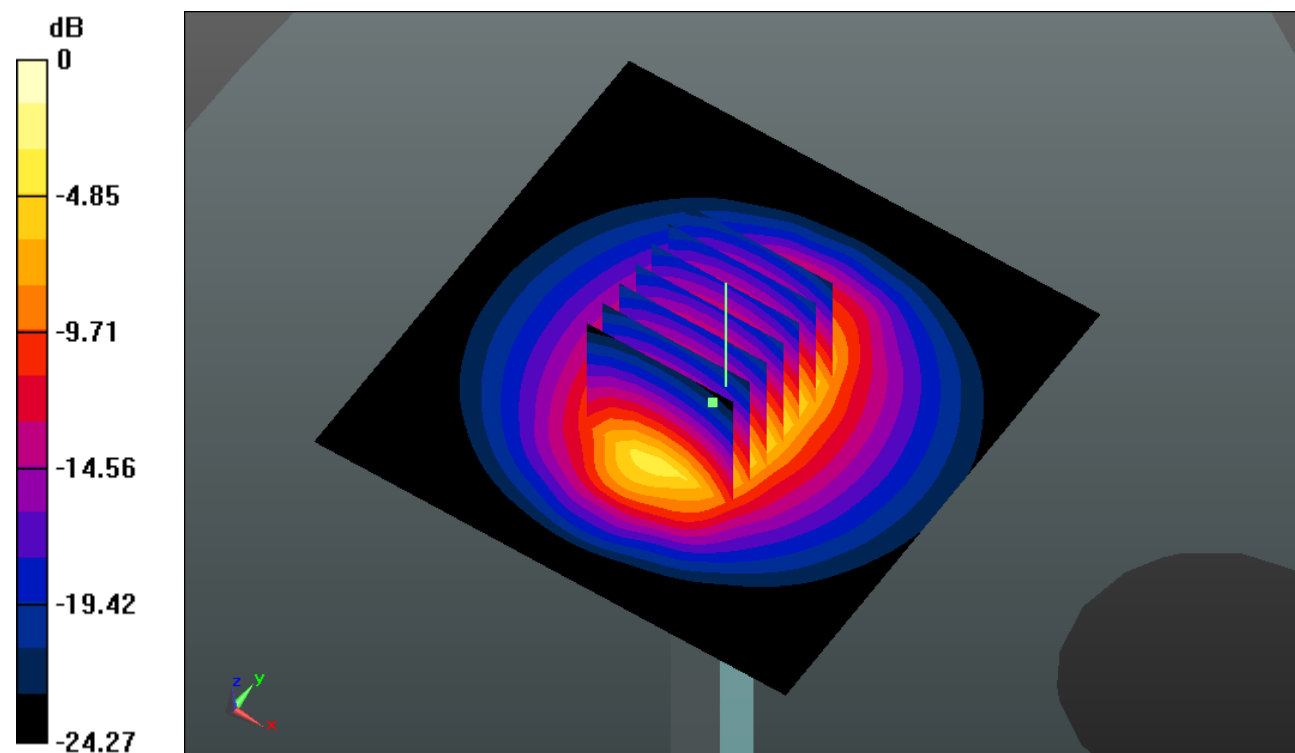
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.591 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 24.398 W/kg

SAR(1 g) = 14.1 mW/g; SAR(10 g) = 6.37 mW/g

Maximum value of SAR (measured) = 20.584 mW/g



0 dB = 23.580mW/g

System Check_Body_5200MHz_140709**DUT: D5GHzV2-SN:1006**

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: MSL_5000_140709 Medium parameters used: $f = 5200$ MHz; $\sigma = 5.162$ mho/m; $\epsilon_r =$

48.492; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.54, 4.54, 4.54); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 16.602 mW/g

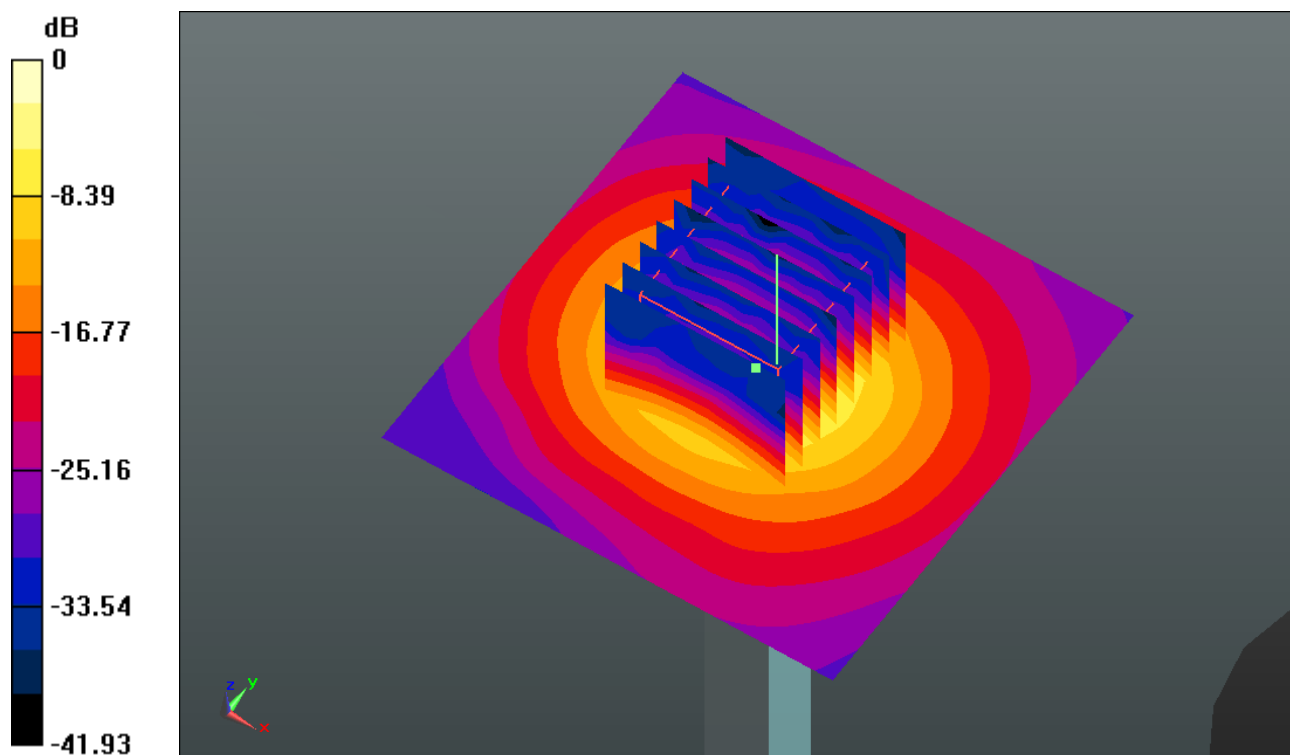
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 40.432 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 29.250 W/kg

SAR(1 g) = 7.07 mW/g; SAR(10 g) = 1.98 mW/g

Maximum value of SAR (measured) = 16.468 mW/g



0 dB = 16.470mW/g

System Check_Body_5800MHz_140709**DUT: D5GHzV2-SN:1006**

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: MSL_5000_140709 Medium parameters used: $f = 5800$ MHz; $\sigma = 5.976$ mho/m; $\epsilon_r =$

47.158 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.21, 4.21, 4.21); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Pin=100mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 17.216 mW/g

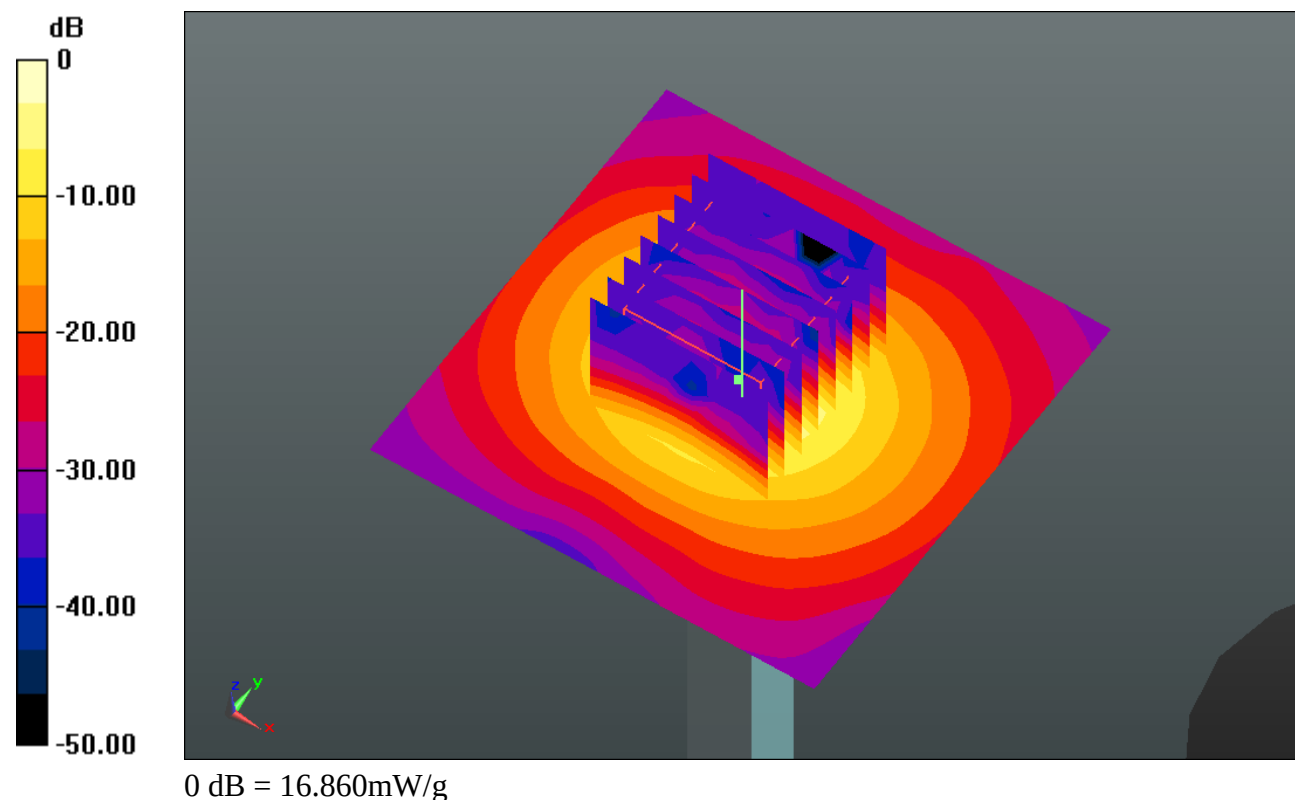
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 36.555 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 31.241 W/kg

SAR(1 g) = 6.89 mW/g; SAR(10 g) = 1.91 mW/g

Maximum value of SAR (measured) = 16.856 mW/g





Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

#01_GSM850_GPRS (1 Tx slot)_Right Cheek 1cm_Ch128

Communication System: GPRS/EDGE (1 Tx slots) (0); Frequency: 824.2 MHz; Duty Cycle: 1:8.3
Medium: HSL_835_140615 Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.874$ mho/m; $\epsilon_r =$

41.141; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.13, 9.13, 9.13); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch128/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.019 mW/g

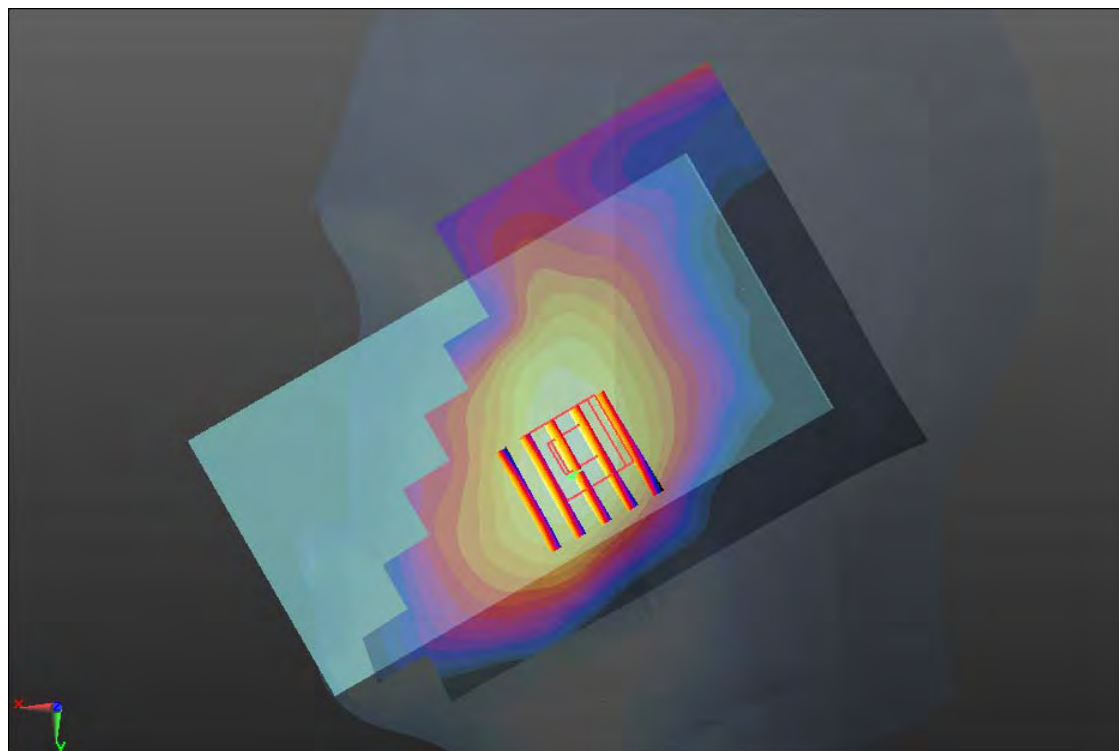
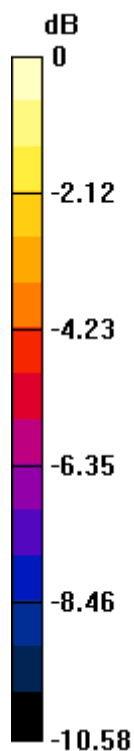
Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.054 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.020 W/kg

SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.012 mW/g

Maximum value of SAR (measured) = 0.018 mW/g



0 dB = 0.020mW/g

#02_GSM1900_GPRS (2 Tx slots)_Right Cheek_Ch512

Communication System: GPRS/EDGE (2 Tx slots) (0); Frequency: 1850.2 MHz; Duty Cycle: 1:4.15
Medium: HSL_1900_140616 Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.375$ mho/m; $\epsilon_r =$

39.144; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.91, 7.91, 7.91); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch512/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.172 mW/g

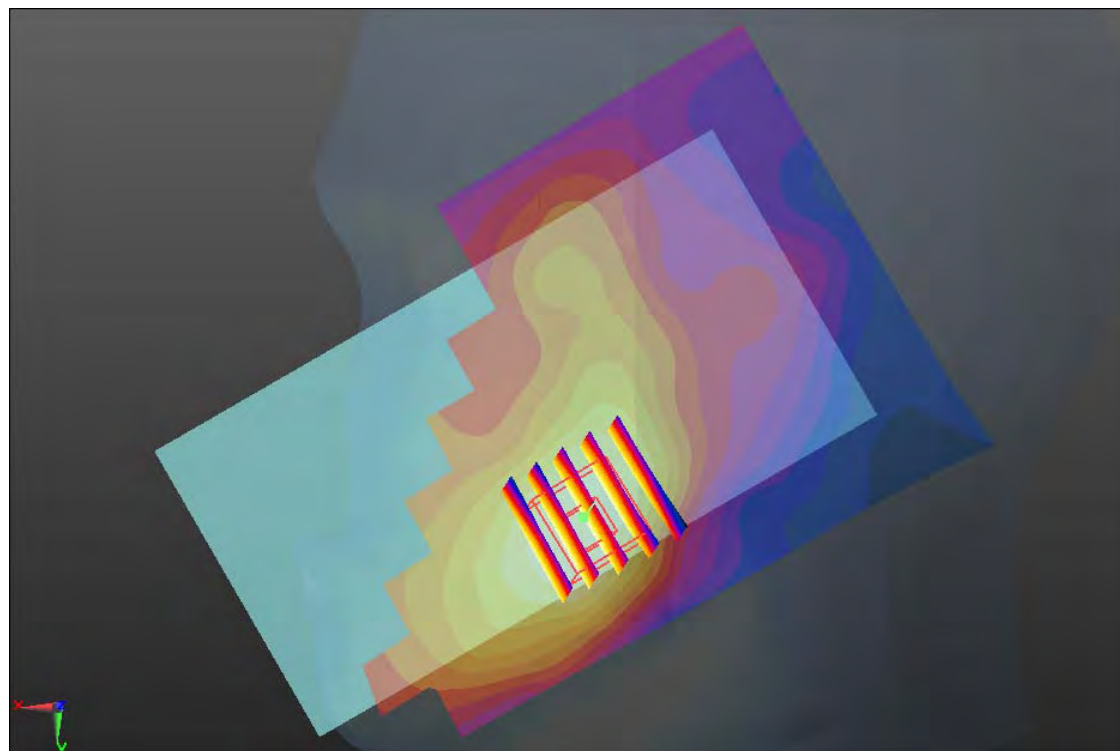
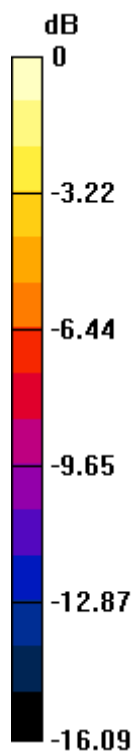
Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.458 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.188 W/kg

SAR(1 g) = 0.123 mW/g; SAR(10 g) = 0.076 mW/g

Maximum value of SAR (measured) = 0.154 mW/g



0 dB = 0.150mW/g

#03_WCDMA Band V_RMC12.2K_Right Cheek_Ch4233

Communication System: UMTS (0); Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL_835_140615 Medium parameters used: $f = 846.6$ MHz; $\sigma = 0.894$ mho/m; $\epsilon_r = 40.855$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.13, 9.13, 9.13); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch4233/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.017 mW/g

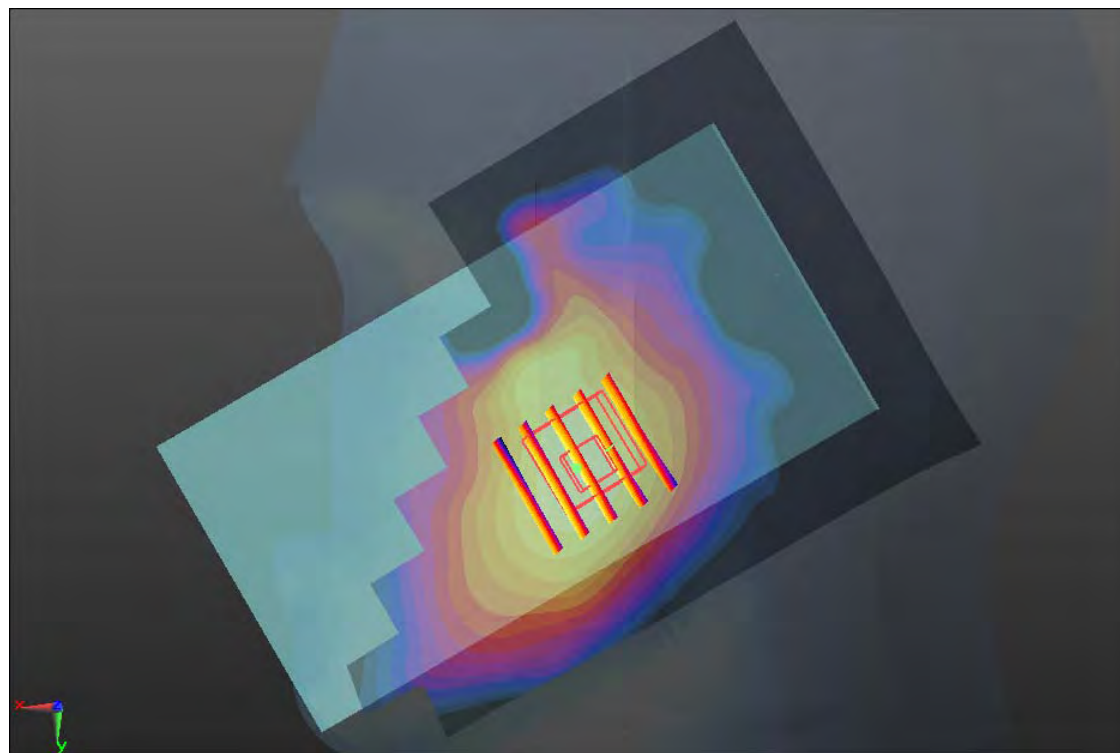
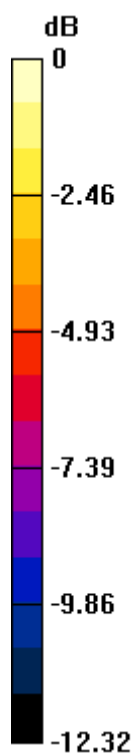
Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.515 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.017 W/kg

SAR(1 g) = 0.014 mW/g; SAR(10 g) = 0.011 mW/g

Maximum value of SAR (measured) = 0.016 mW/g



0 dB = 0.020mW/g

#04_WCDMA Band IV_RMC12.2K_Right Cheek_Ch1513

Communication System: UMTS (0); Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: HSL_1750_140616 Medium parameters used: $f = 1752.6$ MHz; $\sigma = 1.408$ mho/m; $\epsilon_r =$

41.408; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(8.06, 8.06, 8.06); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1513/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.436 mW/g

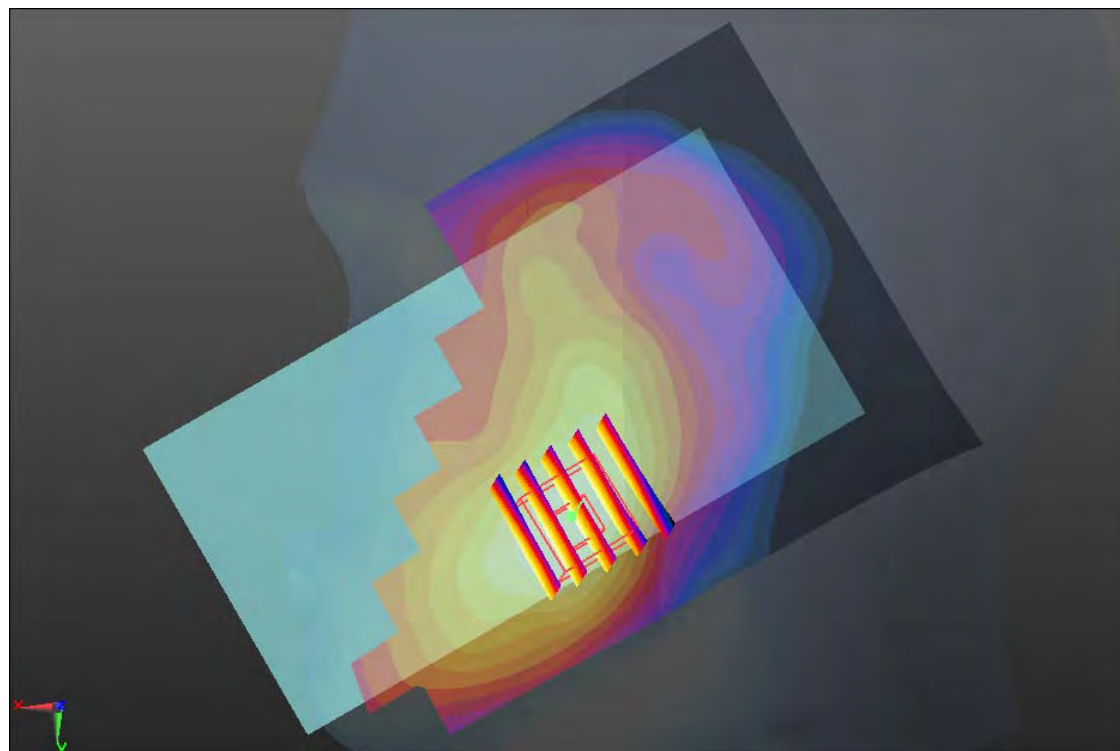
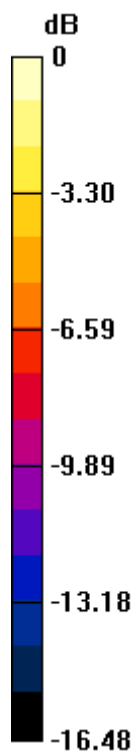
Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.146 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.484 W/kg

SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.203 mW/g

Maximum value of SAR (measured) = 0.404 mW/g



0 dB = 0.400mW/g

#05_WCDMA Band II_RMC12.2K_Right Cheek_Ch9262

Communication System: UMTS (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL_1900_140616 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.377$ mho/m; $\epsilon_r =$

39.137; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.91, 7.91, 7.91); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch9262/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.290 mW/g

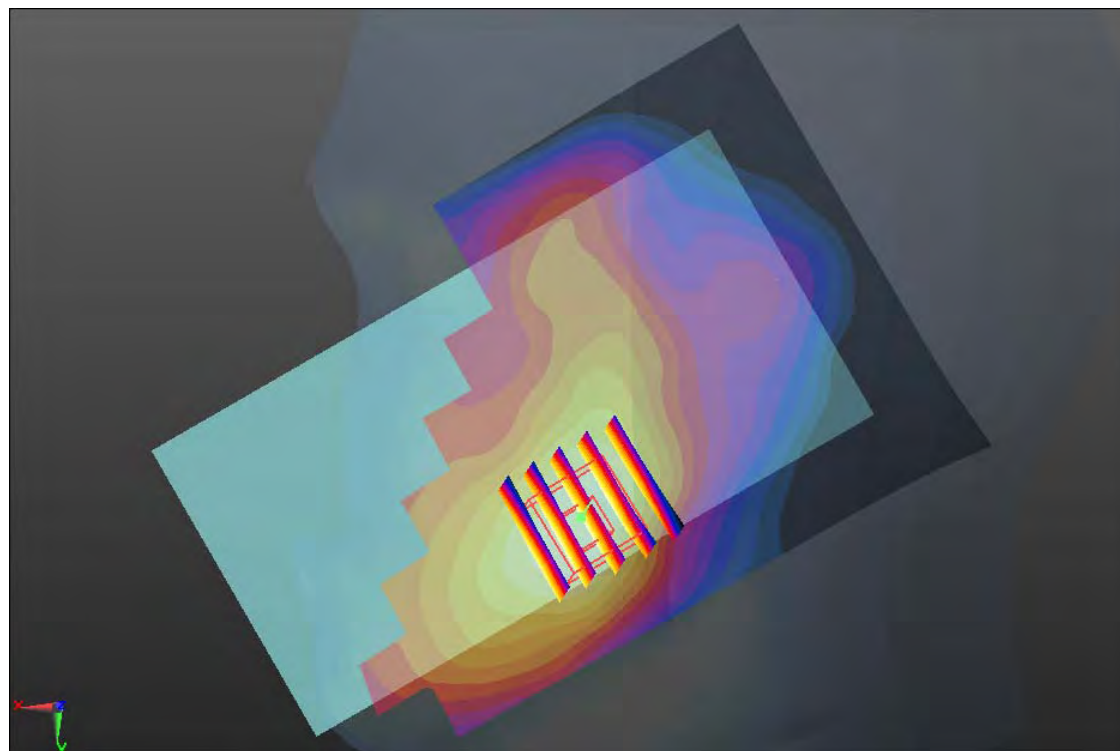
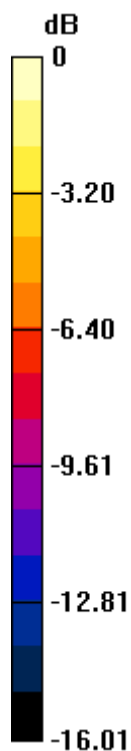
Ch9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.440 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.334 W/kg

SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.133 mW/g

Maximum value of SAR (measured) = 0.273 mW/g



0 dB = 0.270mW/g

#06_LTE Band 12_10M_QPSK(1,49)_Right Cheek_Ch23095

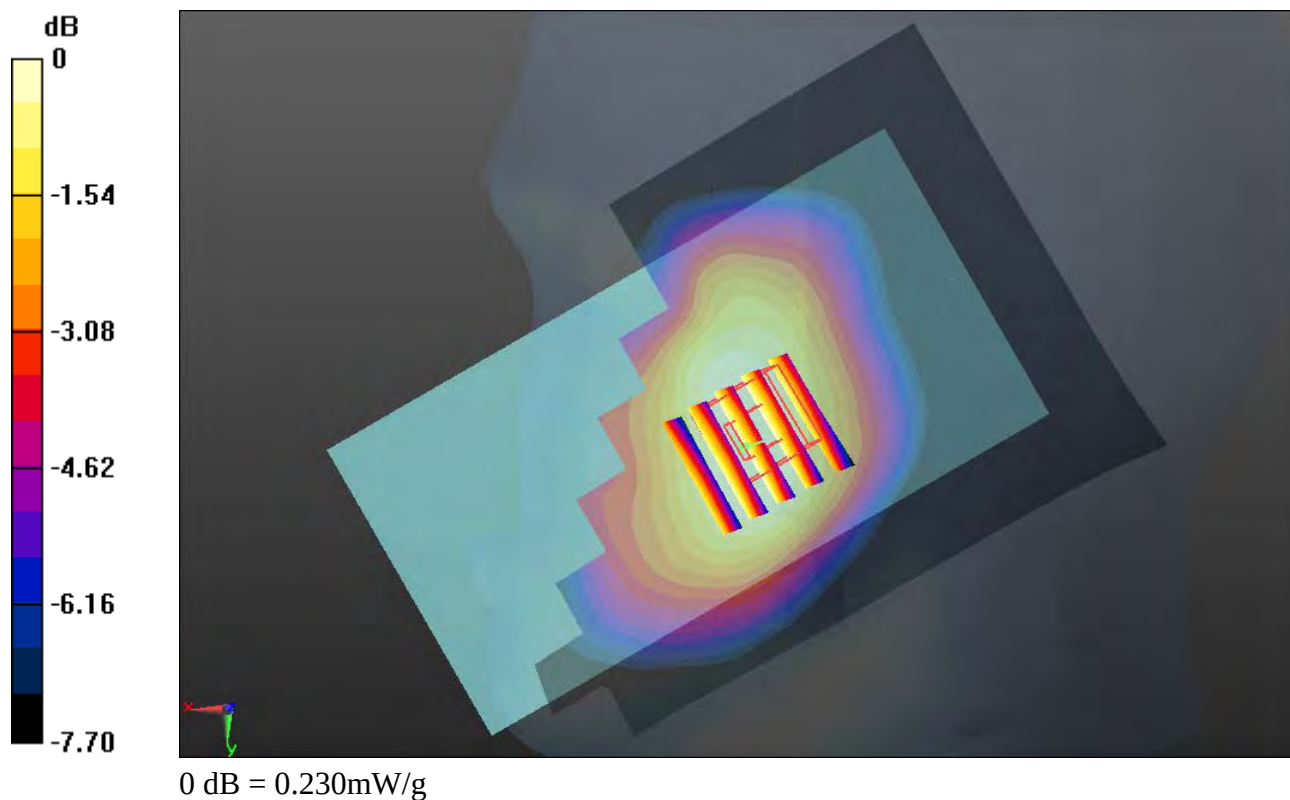
Communication System: FDD_LTE (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: HSL_750_140615 Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.857$ mho/m; $\epsilon_r = 41.861$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.48, 9.48, 9.48); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch23095/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.237 mW/g

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.155 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.212 mW/g; SAR(10 g) = 0.171 mW/g
Maximum value of SAR (measured) = 0.234 mW/g



#07_LTE Band 17_10M_QPSK(1,49)_Right Cheek_Ch23790

Communication System: FDD_LTE (0); Frequency: 710 MHz; Duty Cycle: 1:1

Medium: HSL_750_140615 Medium parameters used: $f = 710$ MHz; $\sigma = 0.86$ mho/m; $\epsilon_r = 41.834$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.48, 9.48, 9.48); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch23790/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.202 mW/g

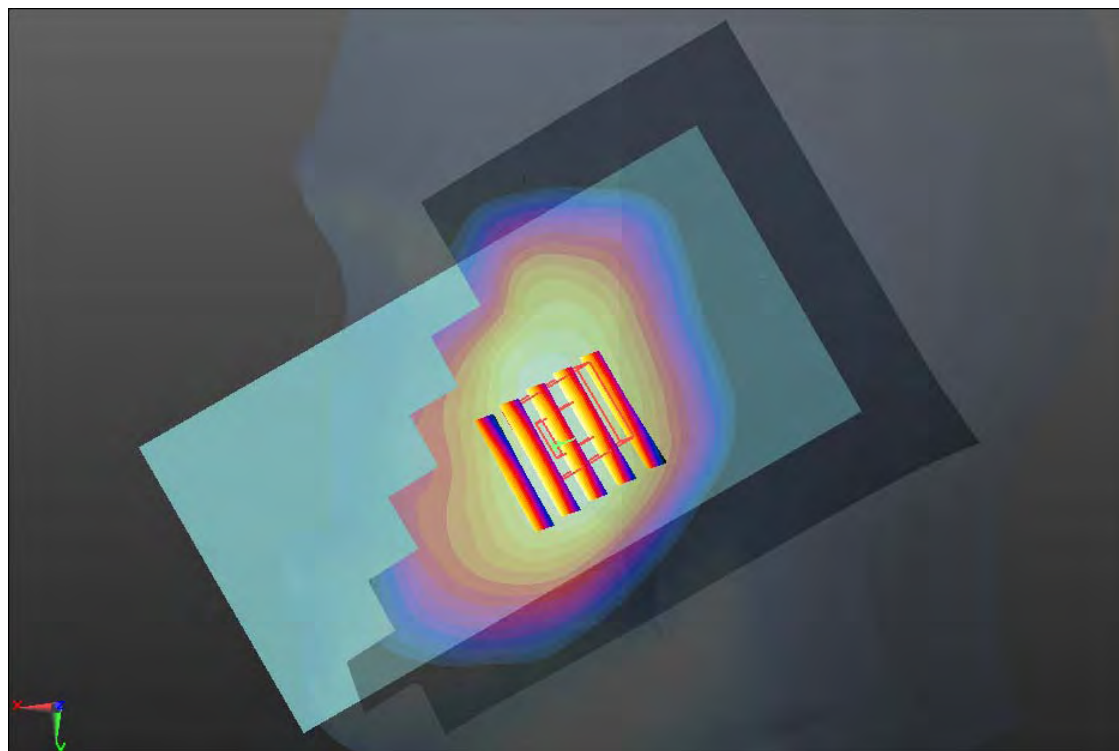
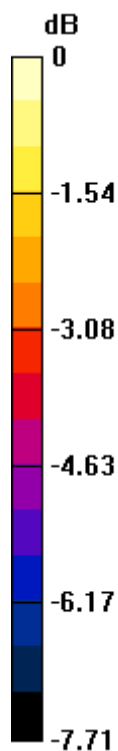
Ch23790/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.944 V/m; Power Drift = 0.0032 dB

Peak SAR (extrapolated) = 0.216 W/kg

SAR(1 g) = 0.181 mW/g; SAR(10 g) = 0.146 mW/g

Maximum value of SAR (measured) = 0.200 mW/g



0 dB = 0.200mW/g

#08_LTE Band 4_20M_QPSK(1,0)_Right Cheek_Ch20175

Communication System: FDD_LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: HSL_1750_140616 Medium parameters used: $f = 1732.5$ MHz; $\sigma = 1.383$ mho/m; $\epsilon_r =$

41.467; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(8.06, 8.06, 8.06); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch20175/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.436 mW/g

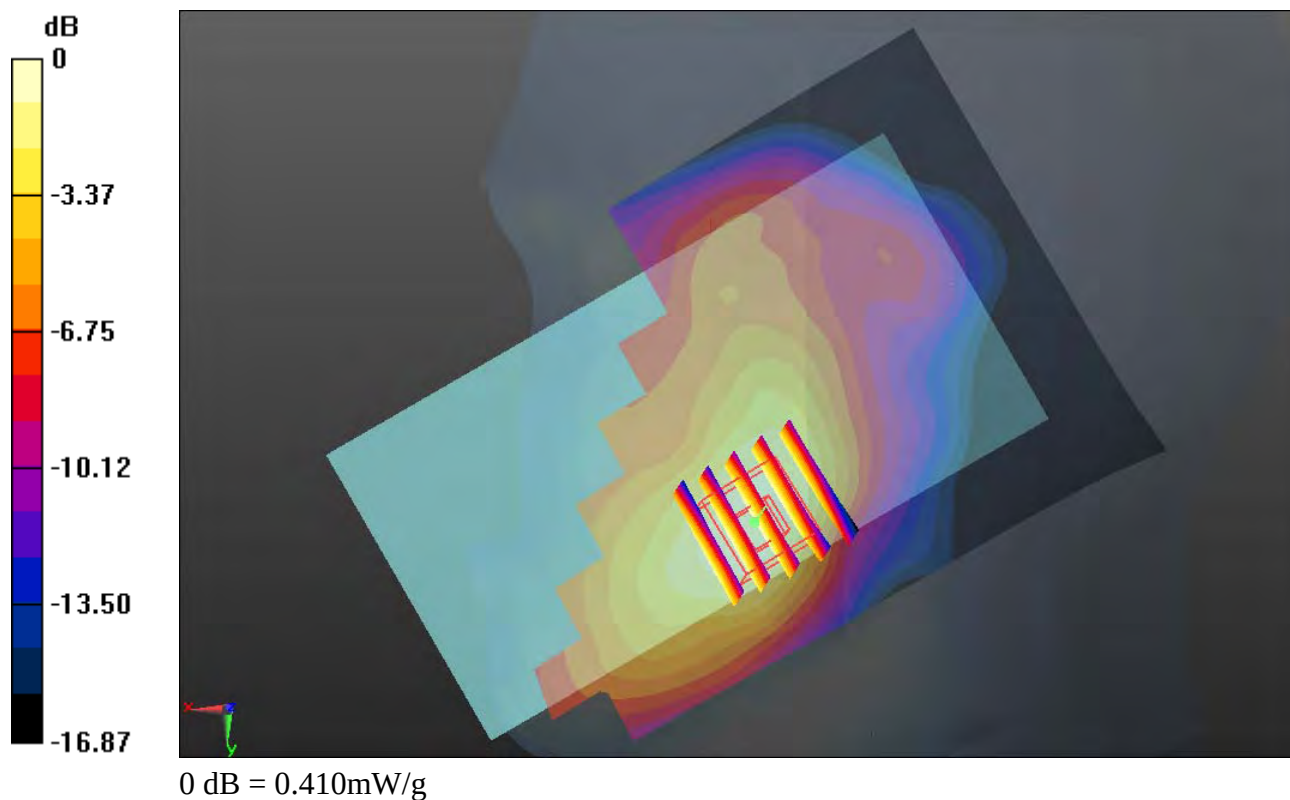
Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.135 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.327 mW/g; SAR(10 g) = 0.207 mW/g

Maximum value of SAR (measured) = 0.408 mW/g



#09_LTE Band 2_20M_QPSK(1,0)_Right Cheek_Ch18900

Communication System: FDD_LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL_1900_140616 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.404$ mho/m; $\epsilon_r =$

39.046 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.91, 7.91, 7.91); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch18900/Area Scan (81x131x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.274 mW/g

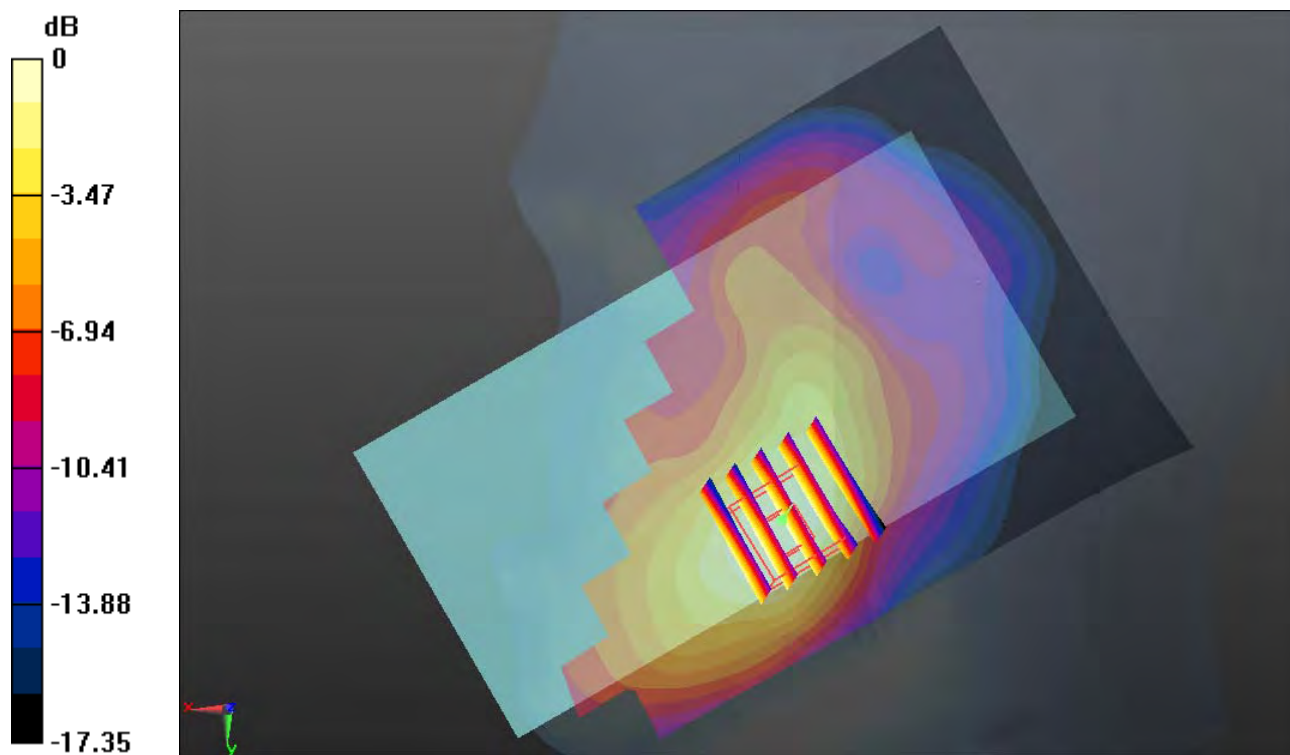
Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 3.930 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.325 W/kg

SAR(1 g) = 0.207 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.259 mW/g



0 dB = 0.260 mW/g

#10_LTE Band 7_20M_QPSK(1,49)_Right Check_Ch21100

Communication System: FDD_LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: HSL_2600_140606 Medium parameters used: $f = 2535$ MHz; $\sigma = 1.917$ mho/m; $\epsilon_r =$

38.53; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3911; ConvF(6.87, 6.87, 6.87); Calibrated: 2014.04.22
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM2; Type: SAM; Serial: TP-1477
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch21100/Area Scan (91x161x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.071 mW/g

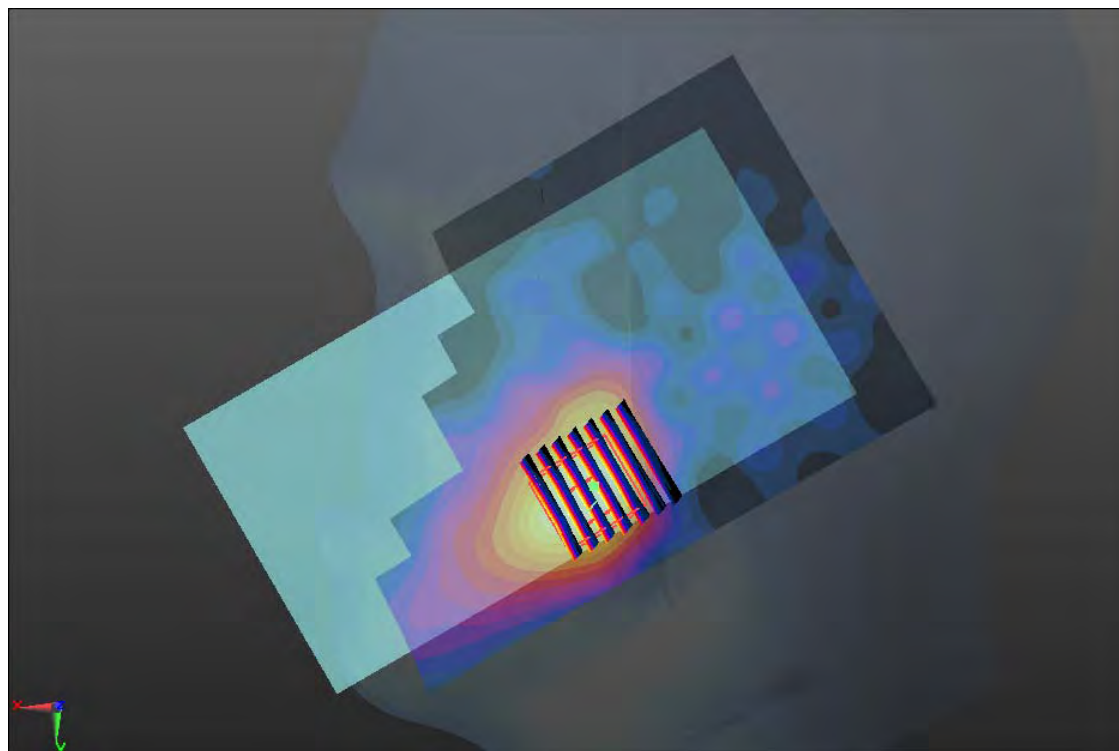
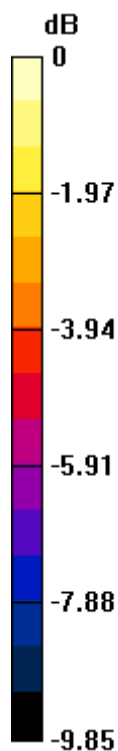
Ch21100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.077 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.085 W/kg

SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.029 mW/g

Maximum value of SAR (measured) = 0.066 mW/g



0 dB = 0.070mW/g

#11_WLAN 2.4GHz_802.11b_1Mbps_Left Check_Ch1

Communication System: WIFI (0); Frequency: 2412 MHz; Duty Cycle: 1:1.025

Medium: HSL_2450_140616 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.776$ mho/m; $\epsilon_r =$

39.359; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.29, 7.29, 7.29); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1/Area Scan (91x161x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.151 mW/g

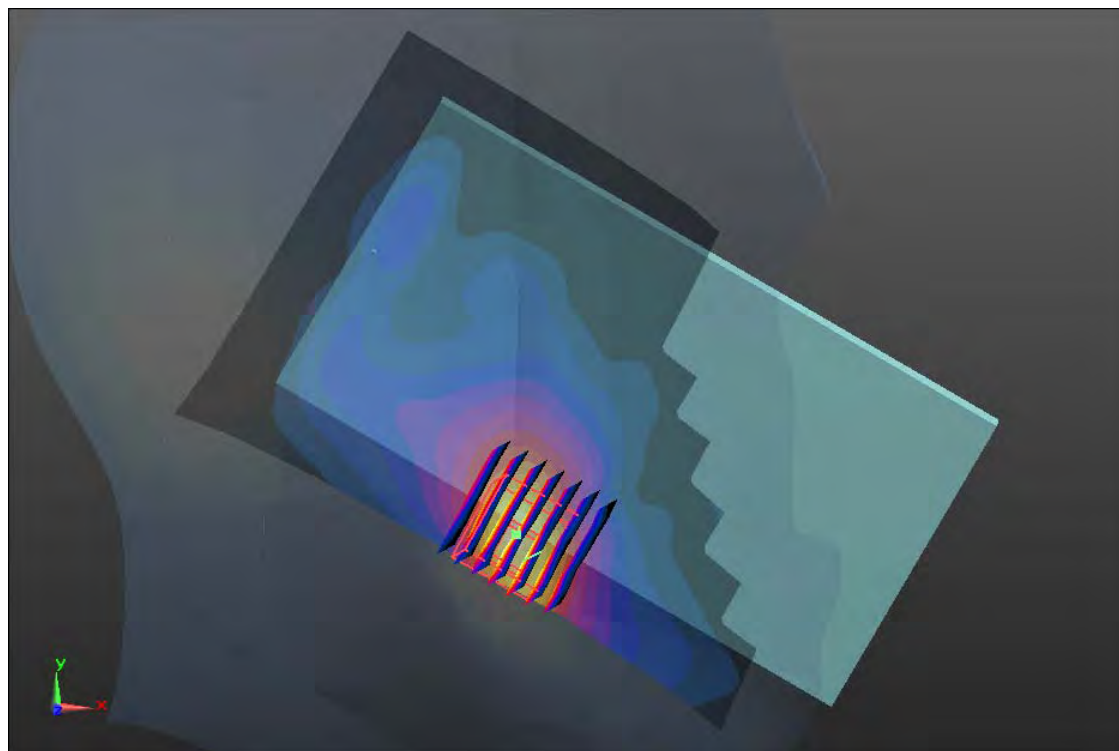
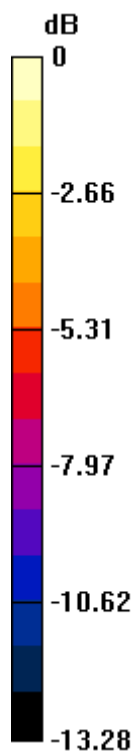
Ch1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.741 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.257 W/kg

SAR(1 g) = 0.110 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.165 mW/g



0 dB = 0.170mW/g

#12_WLAN 5.2GHz_802.11a_6Mbps_Left Cheek_Ch48

Communication System: WIFI (0); Frequency: 5240 MHz; Duty Cycle: 1:1.146

Medium: HSL_5000_140709 Medium parameters used: $f = 5240$ MHz; $\sigma = 4.863$ mho/m; $\epsilon_r =$

35.407 ; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.35, 5.35, 5.35); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch48/Area Scan (121x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.589 mW/g

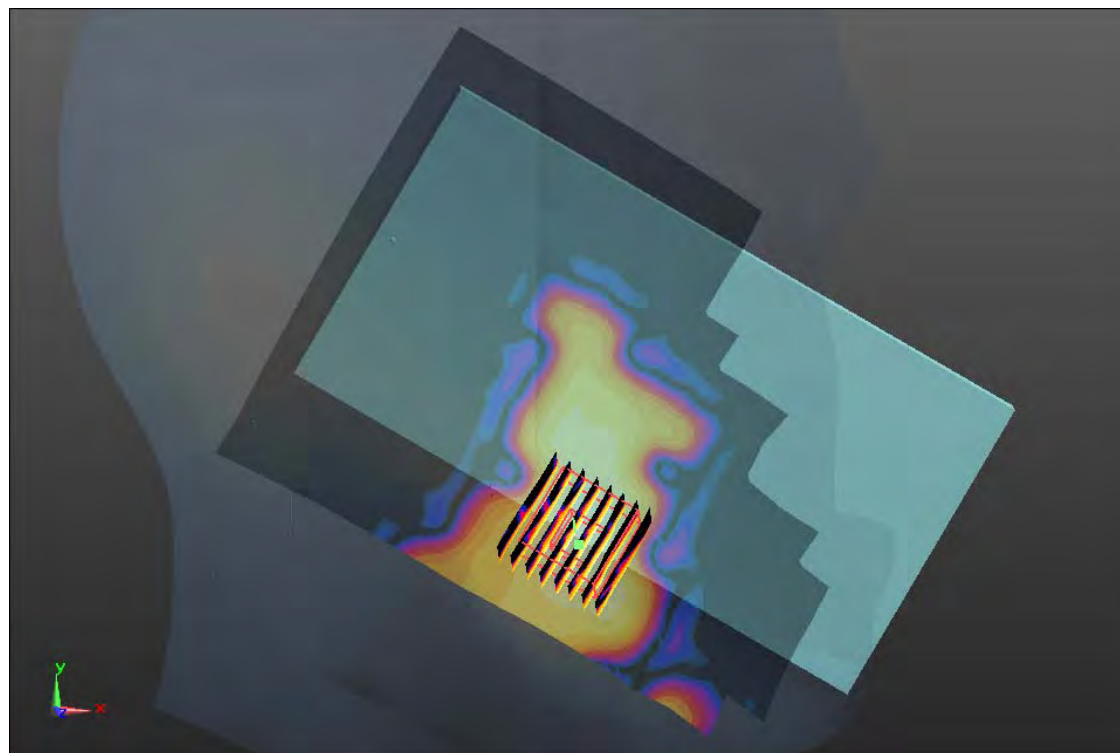
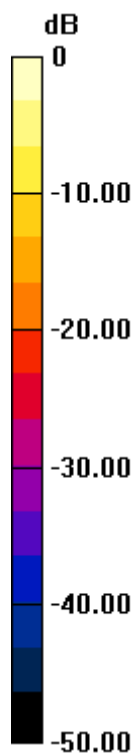
Ch48/Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.373 W/kg

SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.068 mW/g

Maximum value of SAR (measured) = 0.535 mW/g



0 dB = 0.540 mW/g

#13_WLAN 5.8GHz_802.11a_6Mbps__Left Check_Ch157

Communication System: WIFI (0); Frequency: 5785 MHz; Duty Cycle: 1:1.146

Medium: HSL_5000_140709 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.413$ mho/m; $\epsilon_r =$

34.388; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.79, 4.79, 4.79); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch157/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.874 mW/g

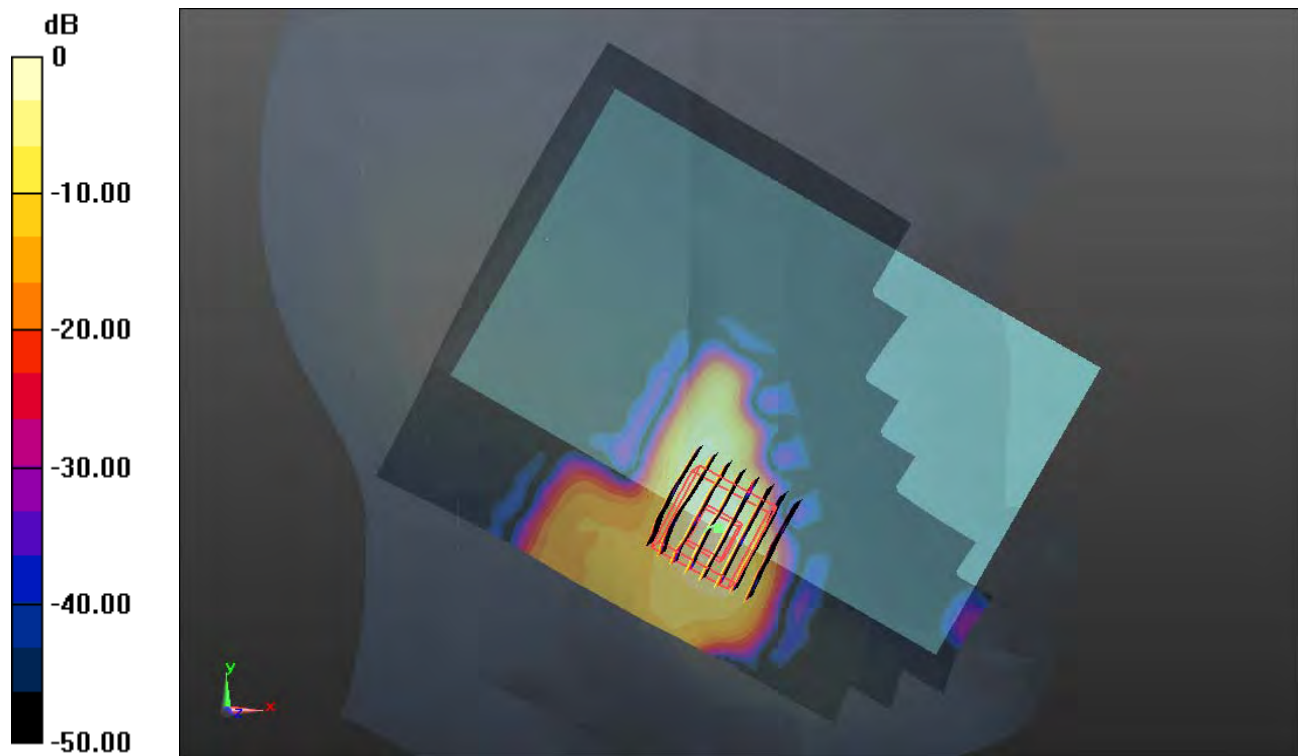
Ch157/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.145 W/kg

SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.087 mW/g

Maximum value of SAR (measured) = 0.776 mW/g



0 dB = 0.780mW/g

#14_GSM850_GPRS (1 Tx slot)_Back 1cm_Ch128

Communication System: GPRS/EDGE (1 Tx slots) (0); Frequency: 824.2 MHz; Duty Cycle: 1:8.3
Medium: MSL_835_140614 Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r =$

56.094; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.14, 9.14, 9.14); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch128/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.079 mW/g

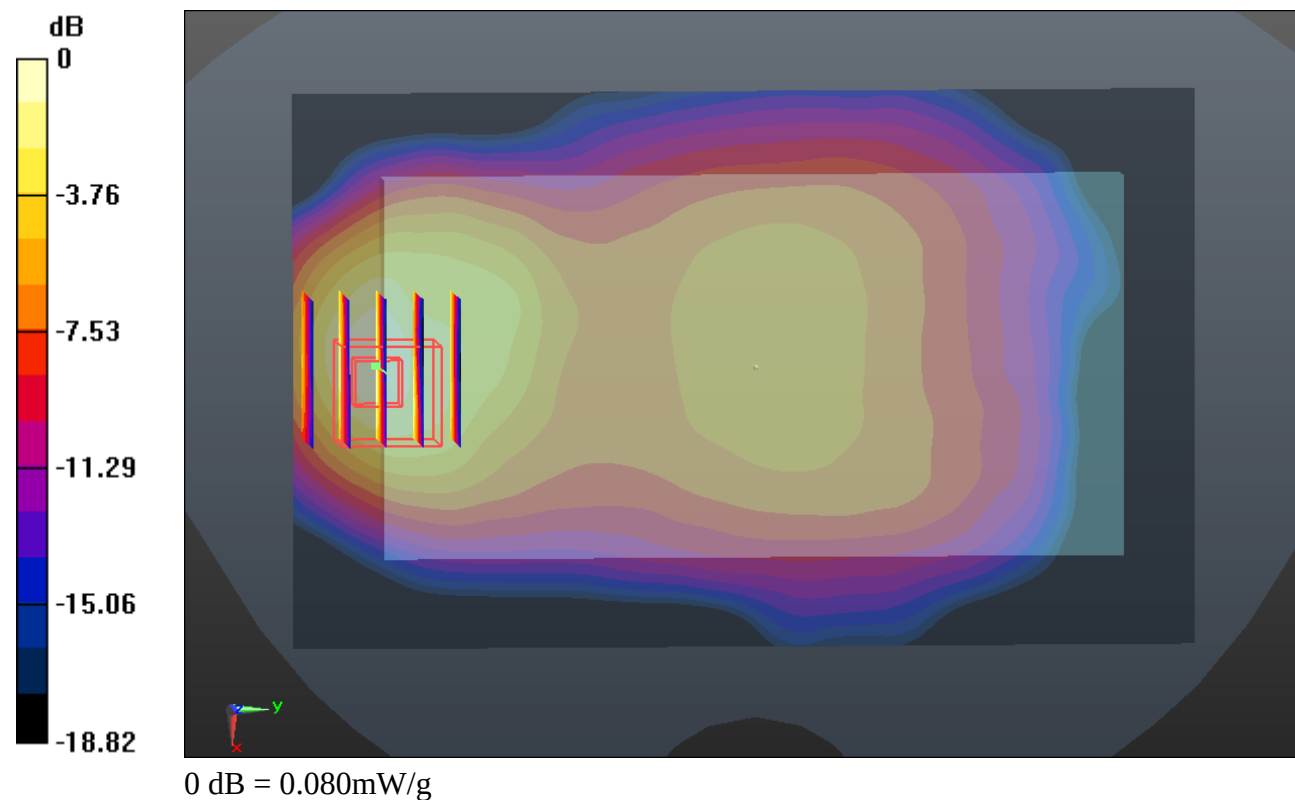
Ch128/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.630 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.109 W/kg

SAR(1 g) = 0.052 mW/g; SAR(10 g) = 0.027 mW/g

Maximum value of SAR (measured) = 0.078 mW/g



#15_GSM1900_GPRS (2 Tx slots)_Back 1cm_Ch512

Communication System: GPRS/EDGE (2 Tx slots) (0); Frequency: 1850.2 MHz; Duty Cycle: 1:4.15
Medium: MSL_1900_140612 Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.493$ mho/m; $\epsilon_r =$

53.474; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch512/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.831 mW/g

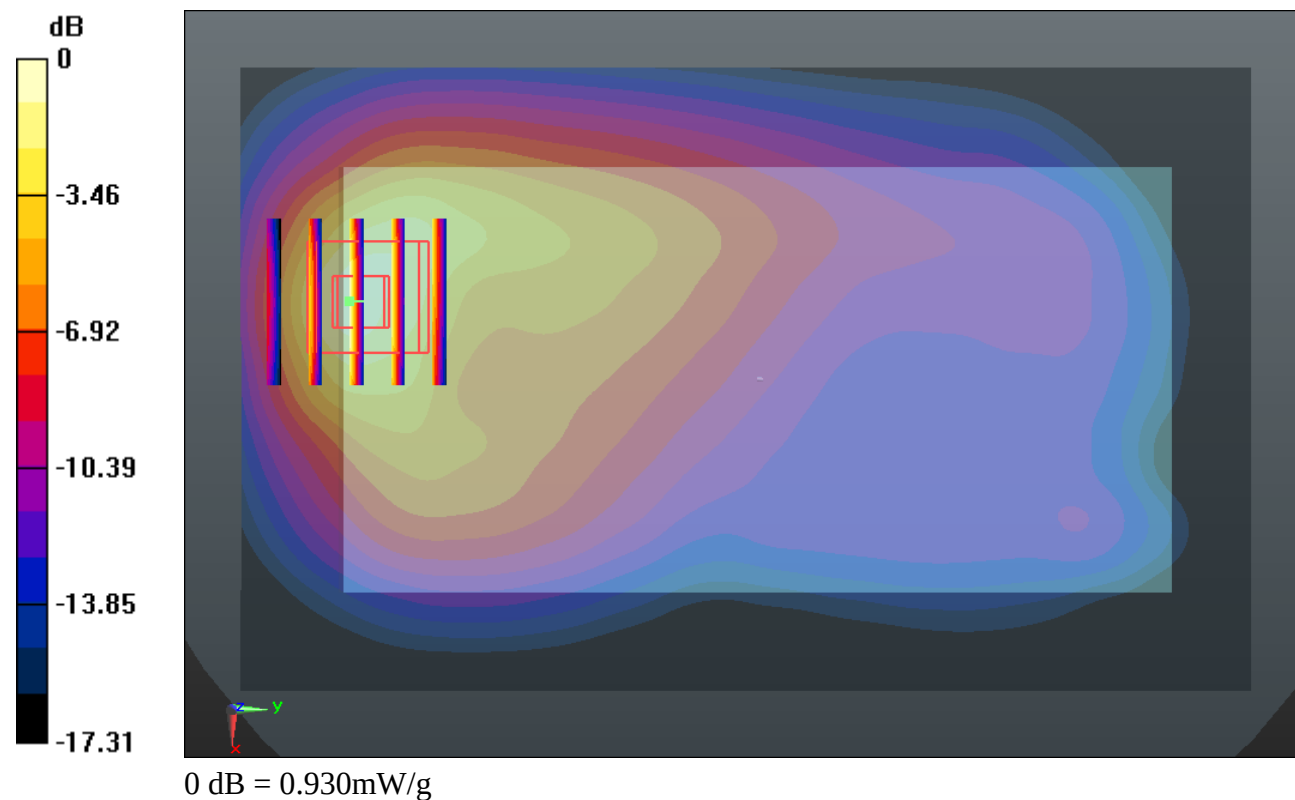
Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.439 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.143 W/kg

SAR(1 g) = 0.674 mW/g; SAR(10 g) = 0.361 mW/g

Maximum value of SAR (measured) = 0.928 mW/g



#16_WCDMA Band V_RMC12.2K_Back 1cm_Ch4233

Communication System: UMTS (0); Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: MSL_835_140614 Medium parameters used: $f = 846.6$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 55.891$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.14, 9.14, 9.14); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch4233/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.113 mW/g

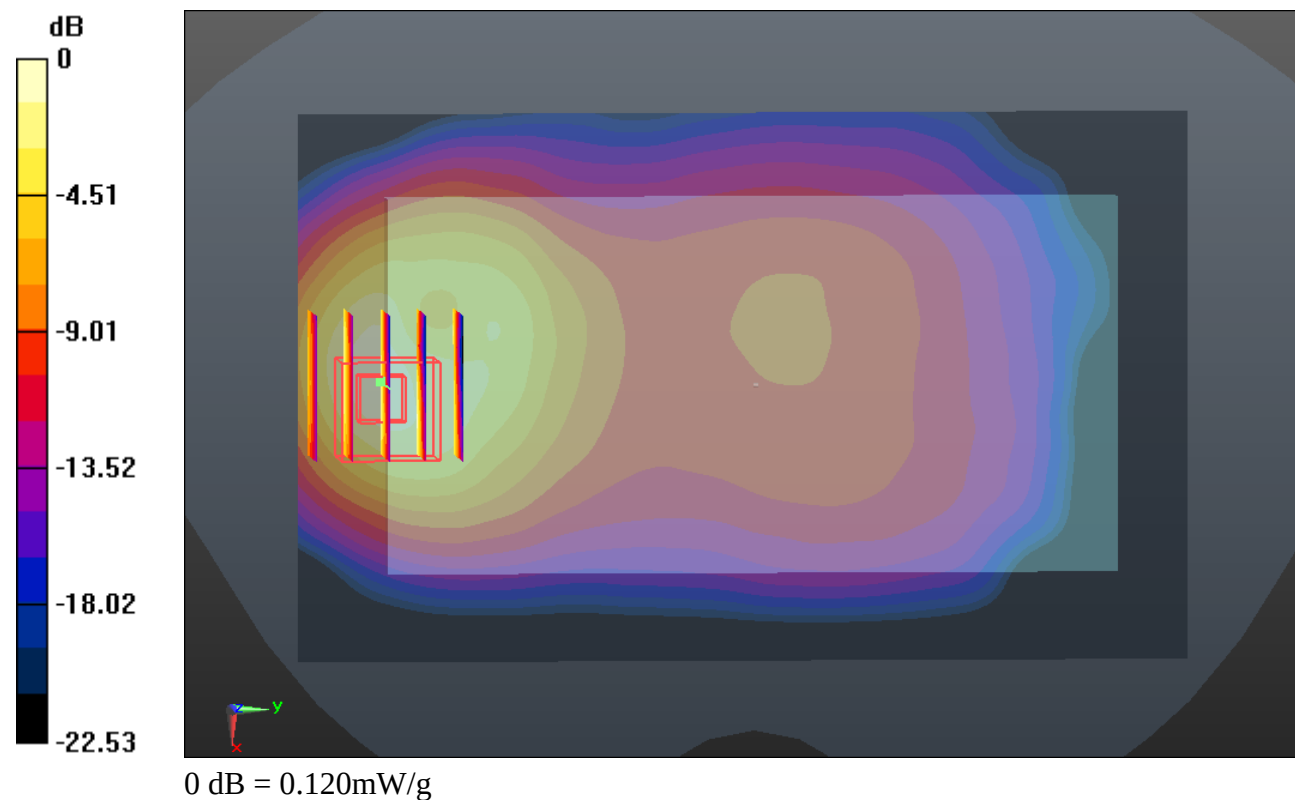
Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.868 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.157 W/kg

SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.115 mW/g



#17_WCDMA Band IV_RMC12.2K_Back 1cm_Ch1413

Communication System: UMTS (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1732.6$ MHz; $\sigma = 1.493$ mho/m; $\epsilon_r =$

55.612; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1413/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.677 mW/g

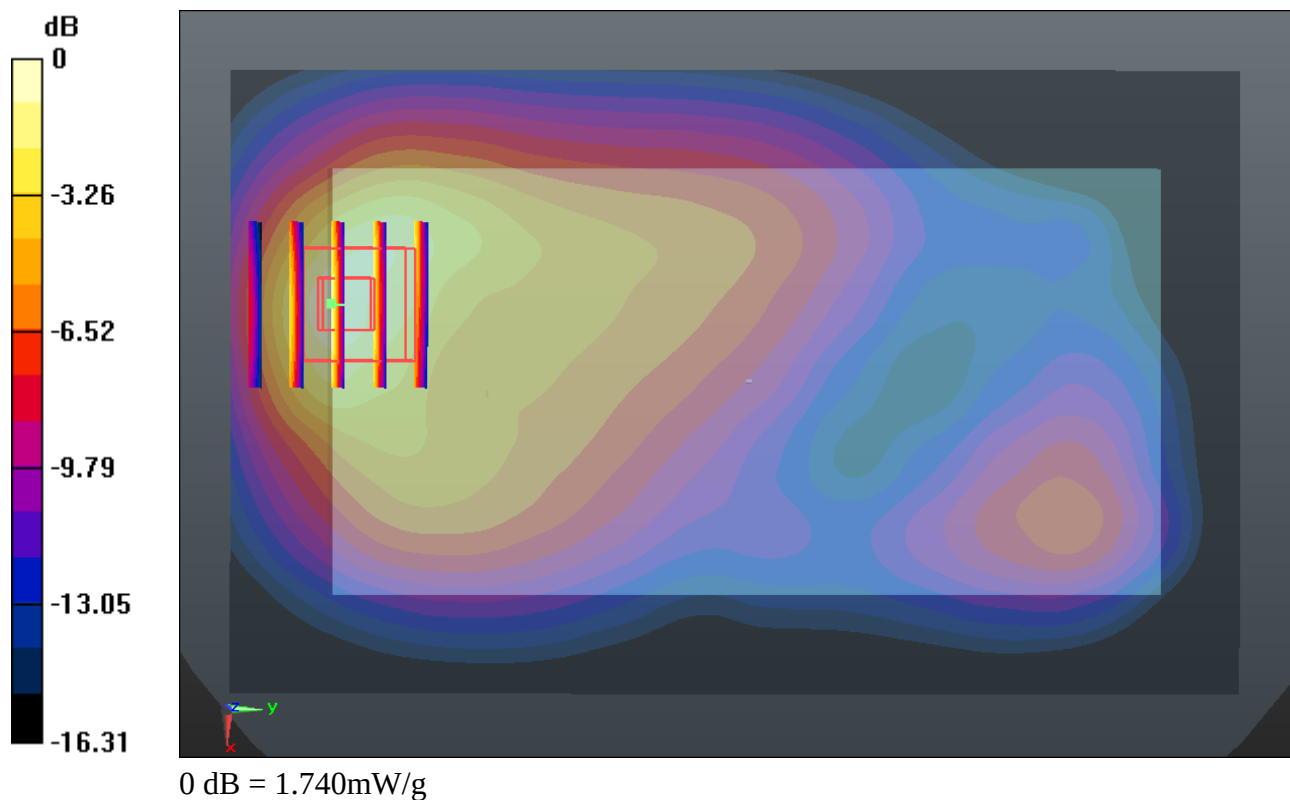
Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.729 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 2.143 W/kg

SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.750 mW/g

Maximum value of SAR (measured) = 1.743 mW/g



#18_WCDMA Band II_RMC12.2K_Back 1cm_Ch9400

Communication System: UMTS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.528$ mho/m; $\epsilon_r =$

53.412; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch9400/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.545 mW/g

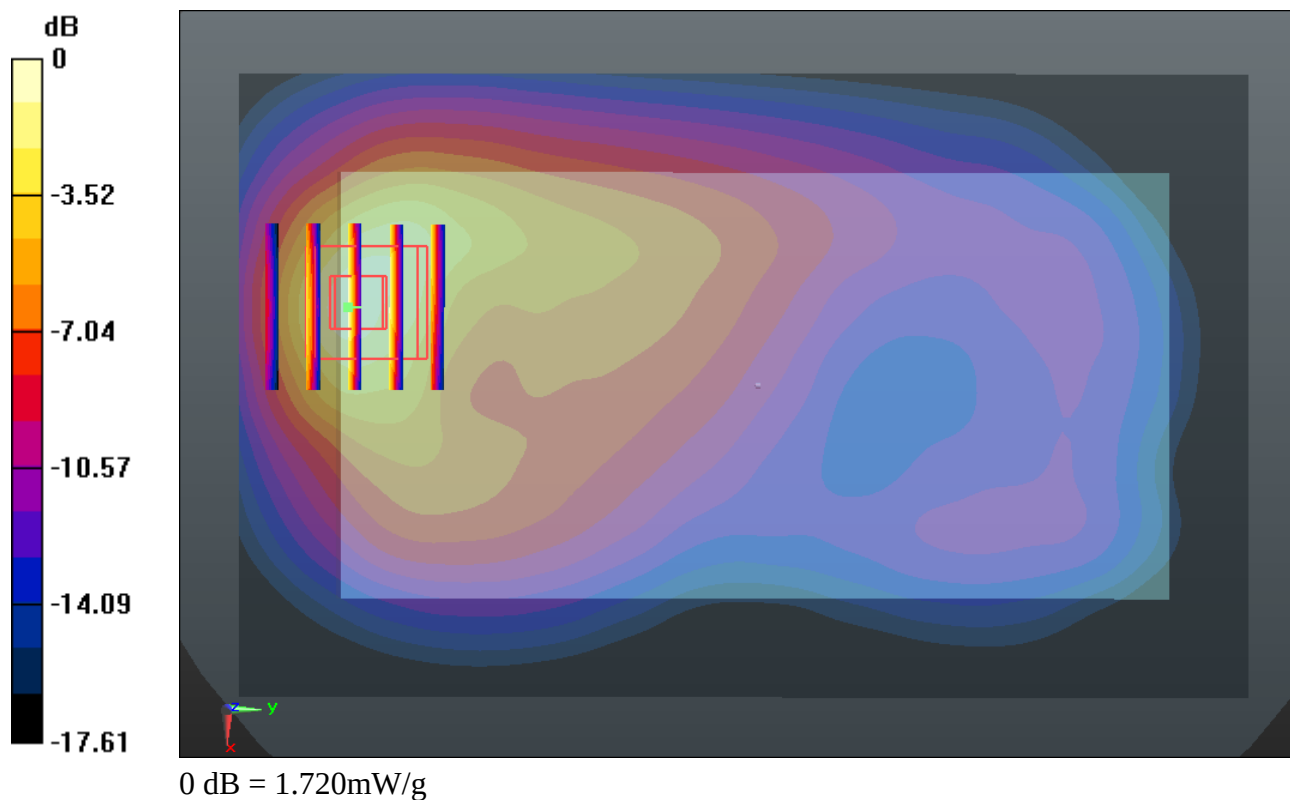
Ch9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.072 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.139 W/kg

SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.657 mW/g

Maximum value of SAR (measured) = 1.715 mW/g



#19_LTE Band 12_10M_QPSK(1,49)_Back 1cm_Ch23095

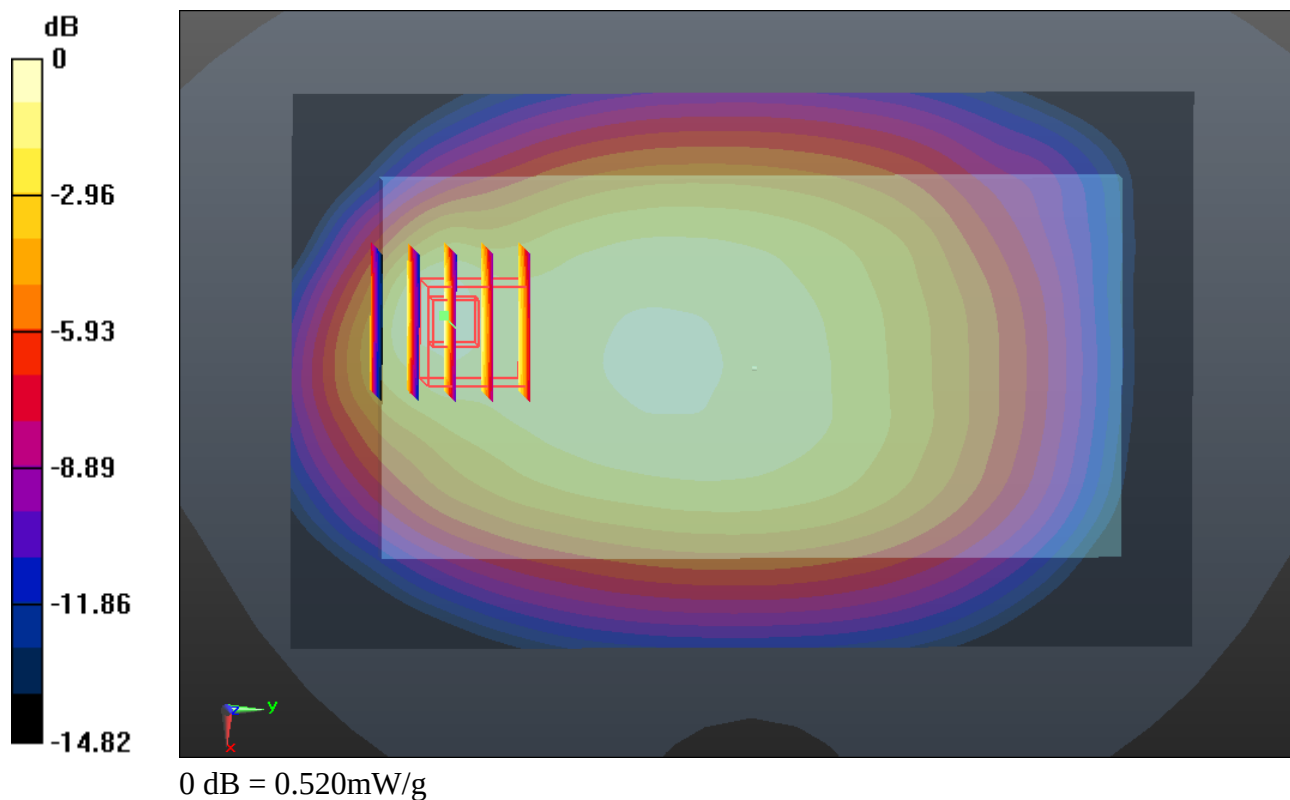
Communication System: FDD_LTE (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: MSL_750_140614 Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.933$ mho/m; $\epsilon_r = 55.183$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.2 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.54, 9.54, 9.54); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch23095/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.537 mW/g

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.054 V/m; Power Drift = -0.0015 dB
Peak SAR (extrapolated) = 0.603 W/kg
SAR(1 g) = 0.396 mW/g; SAR(10 g) = 0.263 mW/g
Maximum value of SAR (measured) = 0.519 mW/g



#20_LTE Band 17_10M_QPSK(1,49)_Back 1cm_Ch23790

Communication System: FDD_LTE (0); Frequency: 710 MHz; Duty Cycle: 1:1

Medium: MSL_750_140614 Medium parameters used: $f = 710$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 55.151$;

$\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(9.54, 9.54, 9.54); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch23790/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

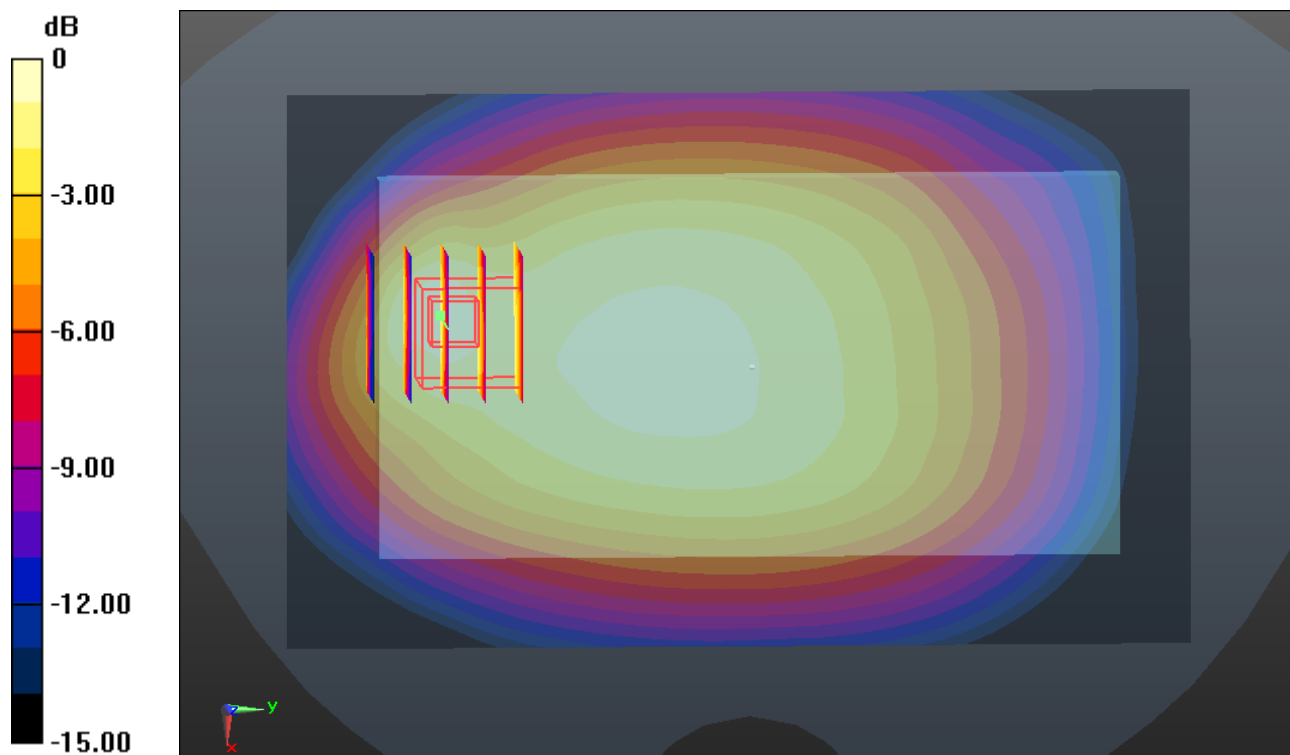
Ch23790/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.704 V/m; Power Drift = -0.0073 dB

Peak SAR (extrapolated) = 0.500 W/kg

SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.220 mW/g

Maximum value of SAR (measured) = 0.430 mW/g



#21_LTE Band 4_20M_QPSK(1,0)_Back 1cm_Ch20300

Communication System: FDD_LTE (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.507$ mho/m; $\epsilon_r =$

55.594; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch20300/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.715 mW/g

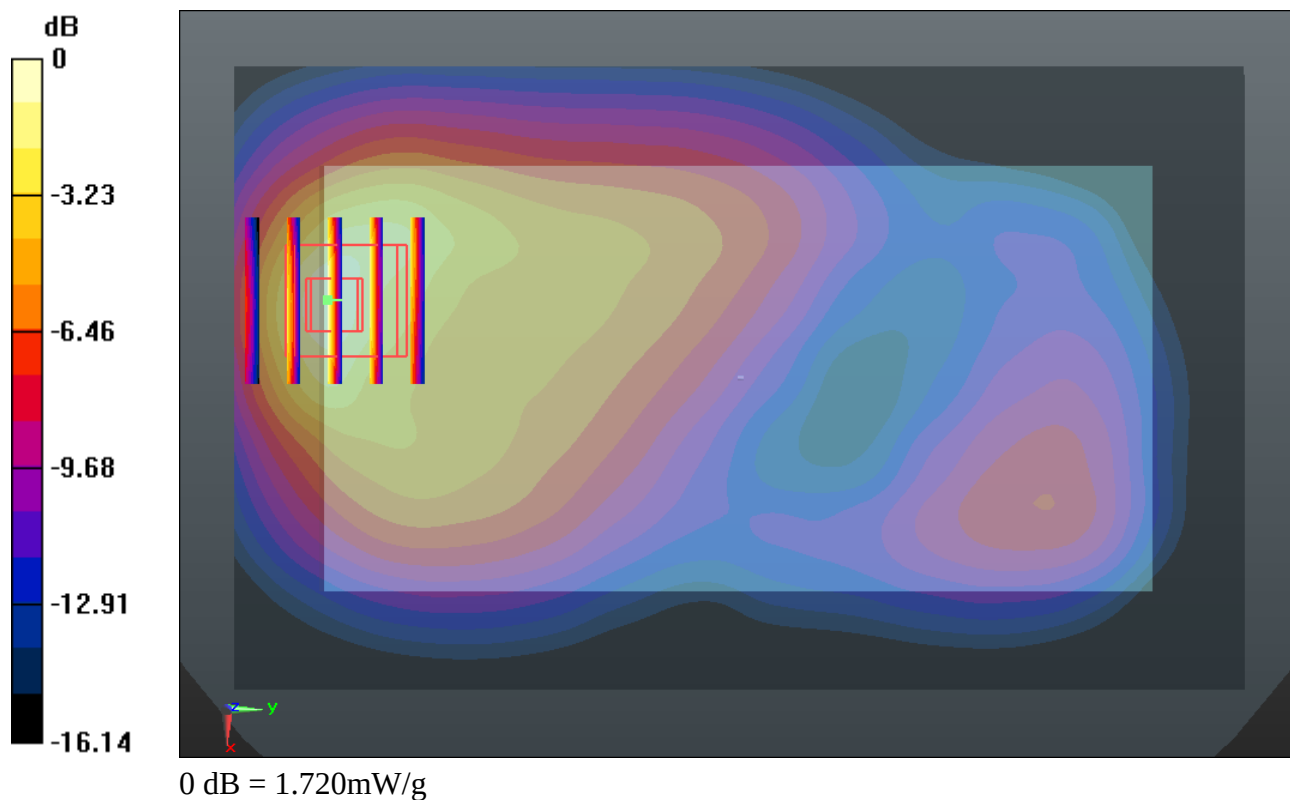
Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.271 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 2.065 W/kg

SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.719 mW/g

Maximum value of SAR (measured) = 1.718 mW/g



#22_LTE Band 2_20M_QPSK(1,0)_Back 1cm_Ch19100

Communication System: FDD_LTE (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.552$ mho/m; $\epsilon_r =$

53.358; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch19100/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.372 mW/g

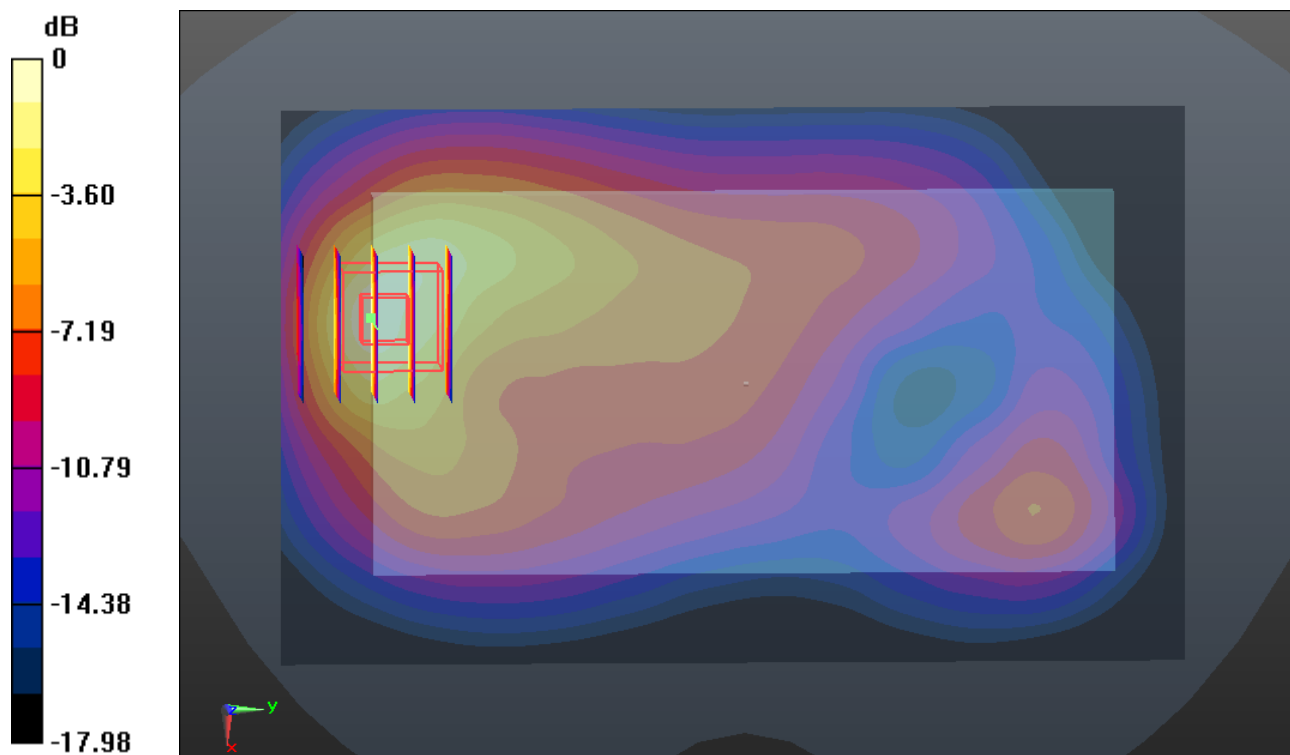
Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.490 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.806 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 1.448 mW/g



0 dB = 1.450mW/g

#23_LTE Band 7_20M_QPSK(1,49)_Back 1cm_Ch21100

Communication System: FDD_LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: MSL_2600_140610 Medium parameters used: $f = 2535$ MHz; $\sigma = 2.091$ mho/m; $\epsilon_r =$

53.894; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(6.93, 6.93, 6.93); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch21100/Area Scan (91x161x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.115 mW/g

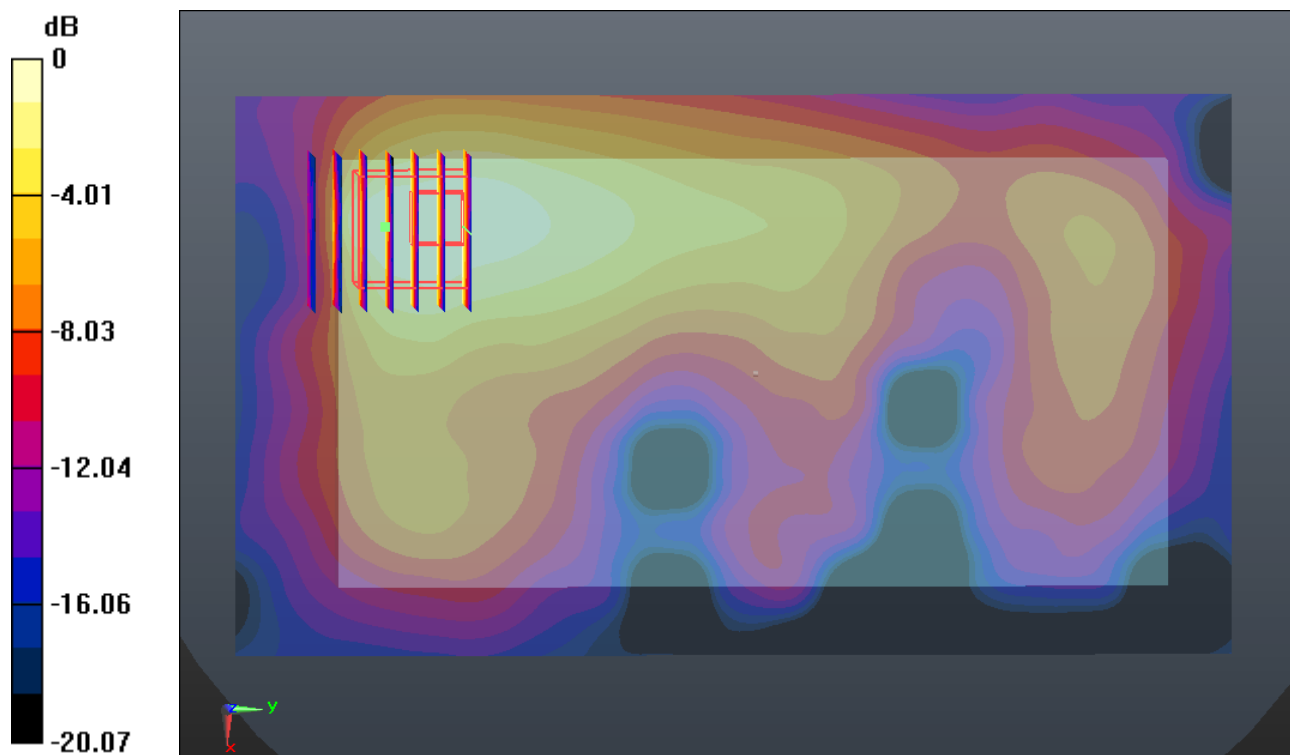
Ch21100/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.388 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.143 W/kg

SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.037 mW/g

Maximum value of SAR (measured) = 0.109 mW/g



#24_WLAN 2.4GHz_802.11b_1Mbps_Back 1cm_Ch1

Communication System: WIFI (0); Frequency: 2412 MHz; Duty Cycle: 1:1.025

Medium: MSL_2450_140611 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.886$ mho/m; $\epsilon_r =$

51.12; $\rho = 1000$ kg/m³

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.31, 7.31, 7.31); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1/Area Scan (101x151x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.348 mW/g

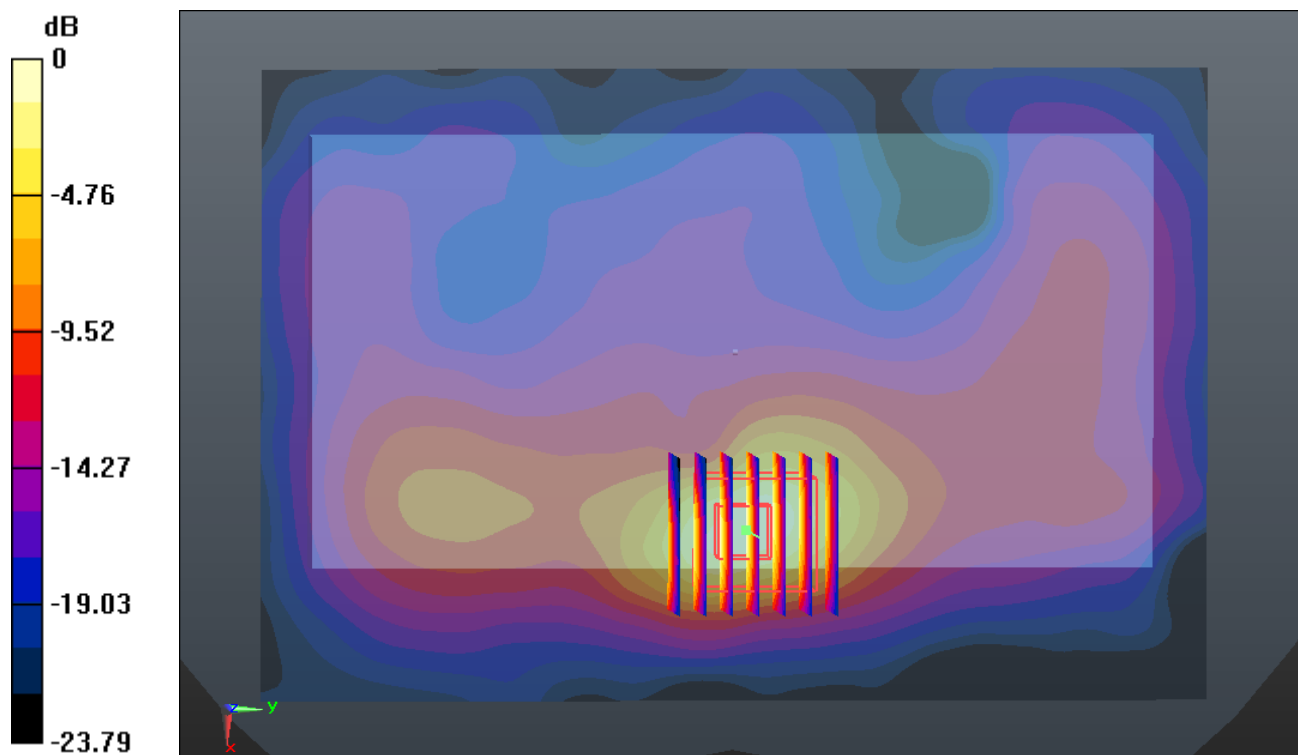
Ch1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.502 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.490 W/kg

SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.101 mW/g

Maximum value of SAR (measured) = 0.366 mW/g



0 dB = 0.370mW/g

#25_WLAN 5.8GHz_802.11a_6Mbps_Left Side 1cm_Ch157

Communication System: WIFI (0); Frequency: 5785 MHz; Duty Cycle: 1:1.146

Medium: MSL_5000_140709 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.961$ mho/m; $\epsilon_r =$

47.221; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.21, 4.21, 4.21); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch157/Area Scan (51x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.621 mW/g

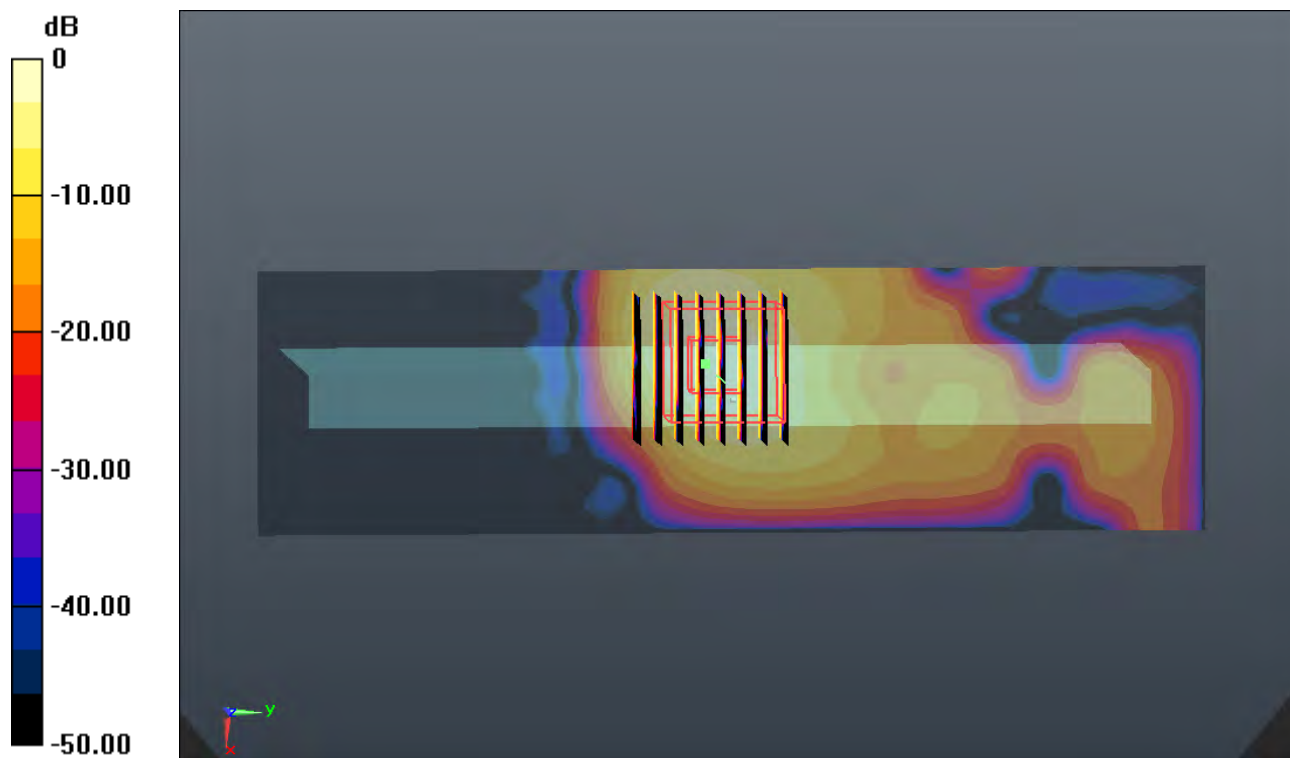
Ch157/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 9.617 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 2.317 W/kg

SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.221 mW/g

Maximum value of SAR (measured) = 1.559 mW/g



#26_WCDMA Band IV_RMC12.2K_Back 1cm_Ch1413_Headset

Communication System: UMTS (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1732.6$ MHz; $\sigma = 1.493$ mho/m; $\epsilon_r =$

55.612; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1413/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.619 mW/g

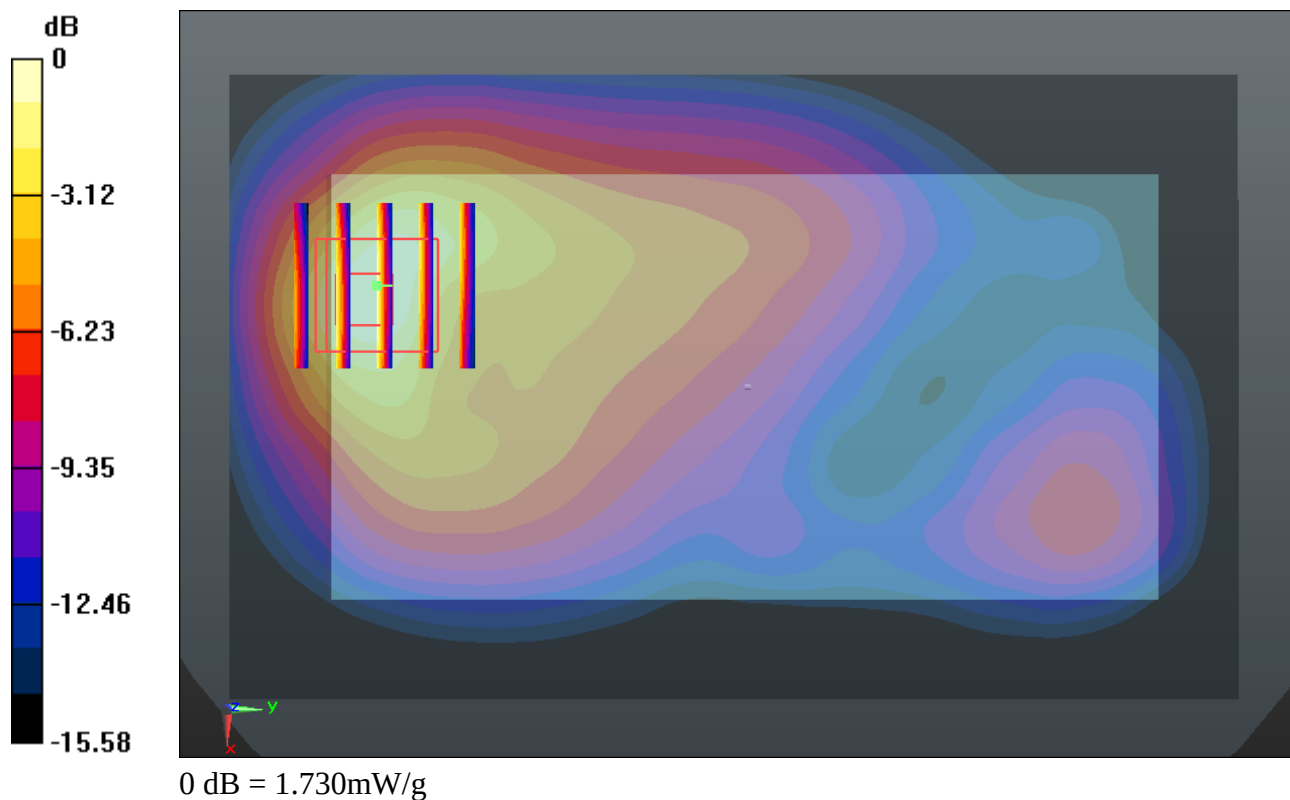
Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.989 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.134 W/kg

SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.746 mW/g

Maximum value of SAR (measured) = 1.728 mW/g



#27_LTE Band 2_20M_QPSK(1,0)_Back 1cm_Ch18900_Headset

Communication System: FDD_LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.528$ mho/m; $\epsilon_r =$

53.412; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch18900/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.349 mW/g

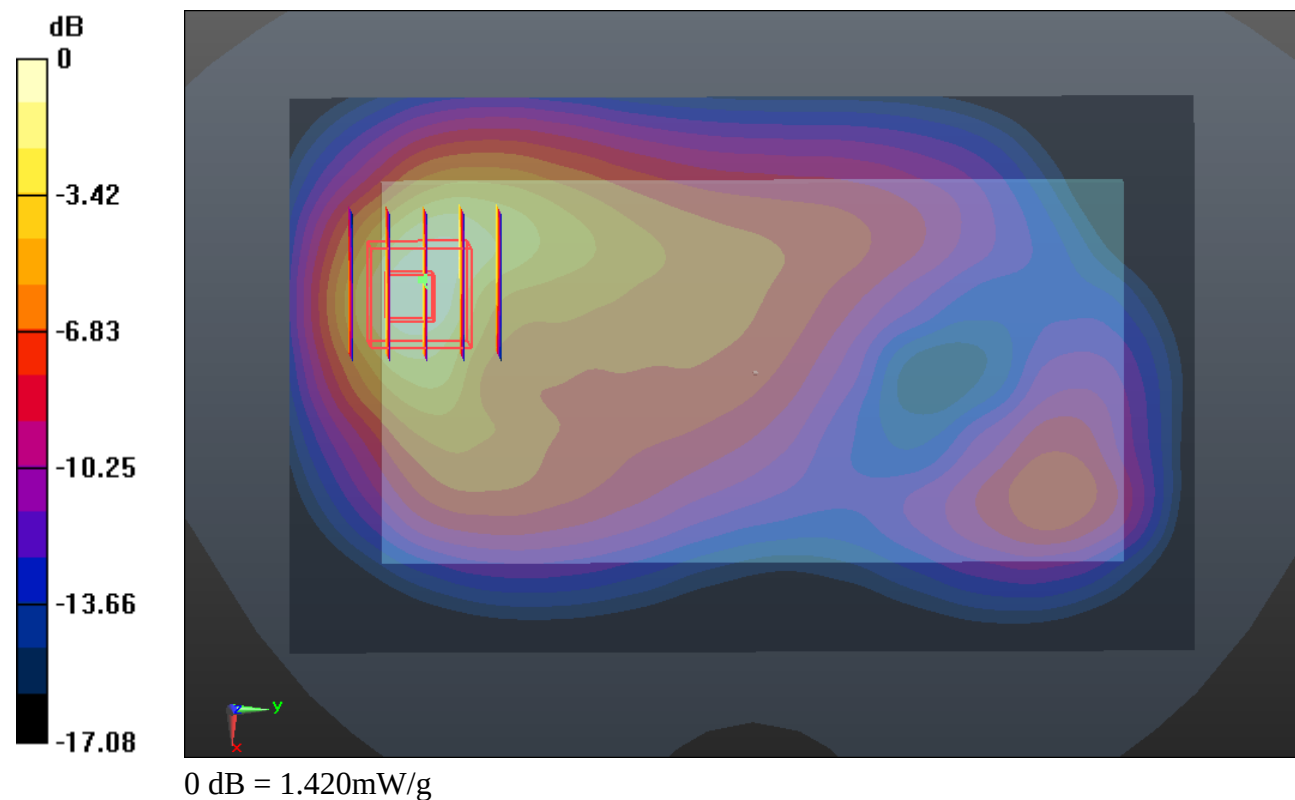
Ch18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.027 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.806 W/kg

SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.584 mW/g

Maximum value of SAR (measured) = 1.418 mW/g



#28_WLAN 5.2GHz_802.11a_6Mbps_Back 1cm_Ch36_Headset

Communication System: WIFI (0); Frequency: 5180 MHz; Duty Cycle: 1:1.146

Medium: MSL_5000_140709 Medium parameters used: $f = 5180$ MHz; $\sigma = 5.134$ mho/m; $\epsilon_r =$

48.523; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.54, 4.54, 4.54); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch36/Area Scan (61x91x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 0.662 mW/g

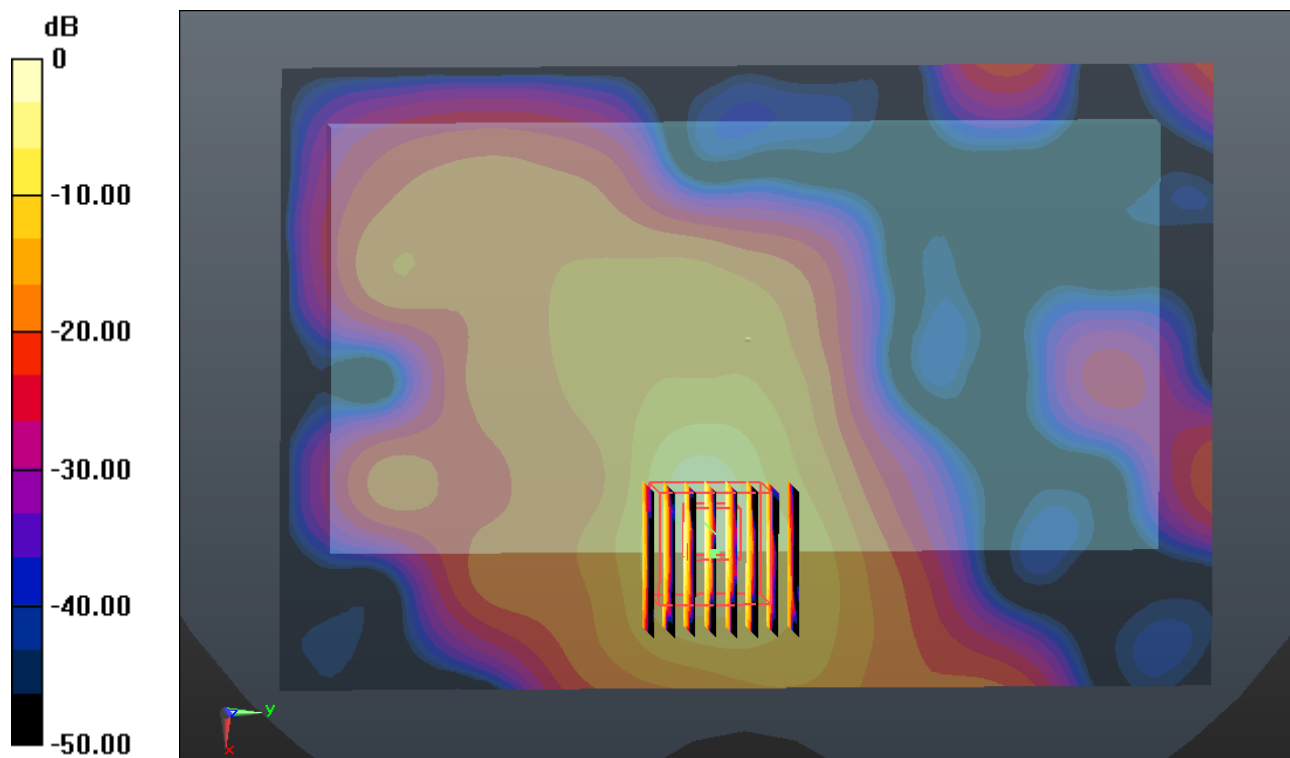
Ch36/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.299 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 2.212 W/kg

SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.201 mW/g

Maximum value of SAR (measured) = 1.507 mW/g



0 dB = 1.510mW/g

#29_WLAN 5.8GHz_802.11a_6Mbps_Back 1cm_Ch157_Headset

Communication System: WIFI (0); Frequency: 5785 MHz; Duty Cycle: 1:1.146

Medium: MSL_5000_140709 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.961$ mho/m; $\epsilon_r =$

47.221; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.21, 4.21, 4.21); Calibrated: 2014.05.23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2014.05.19
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch157/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.803 mW/g

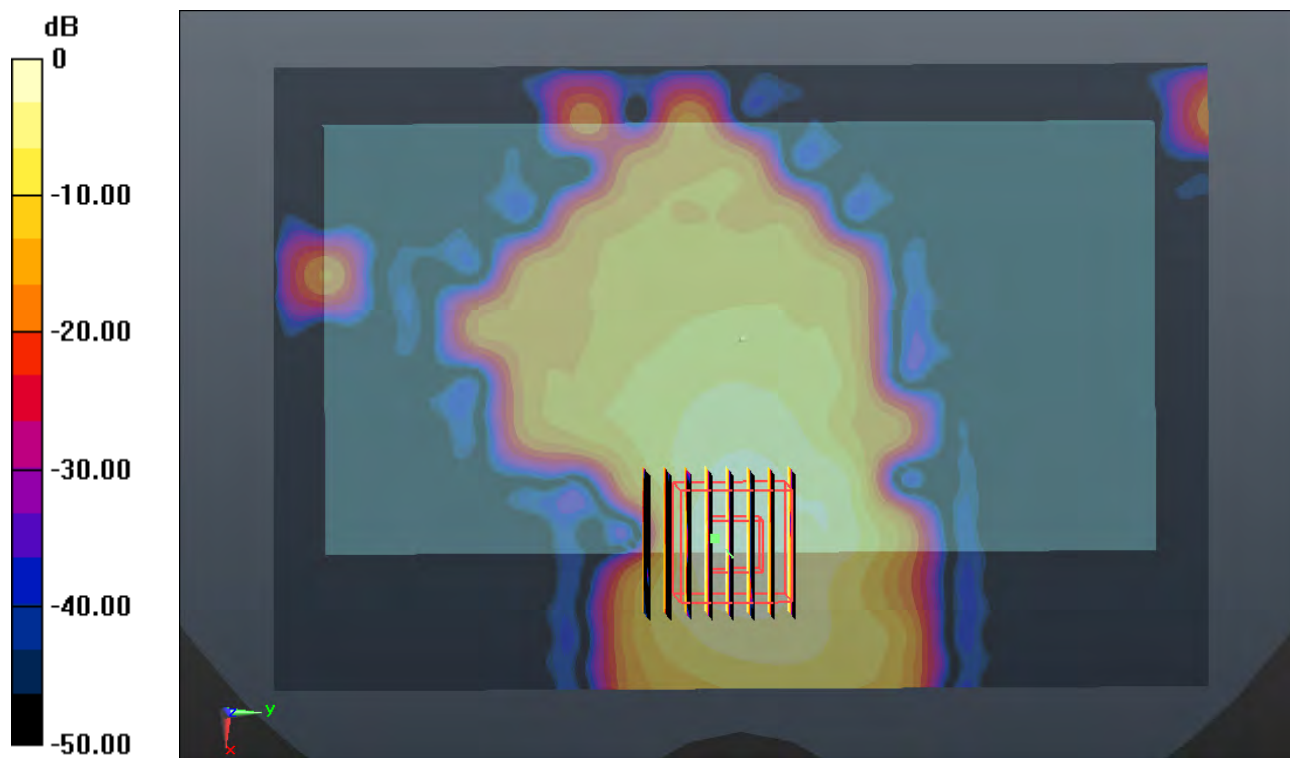
Ch157/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.710 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.216 W/kg

SAR(1 g) = 0.348 mW/g; SAR(10 g) = 0.116 mW/g

Maximum value of SAR (measured) = 0.806 mW/g



0 dB = 0.810mW/g

#30_WCDMA Band IV_RMC12.2K_Back 0cm_Ch1413

Communication System: UMTS (0); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1732.6$ MHz; $\sigma = 1.493$ mho/m; $\epsilon_r =$

55.612; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch1413/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.216 mW/g

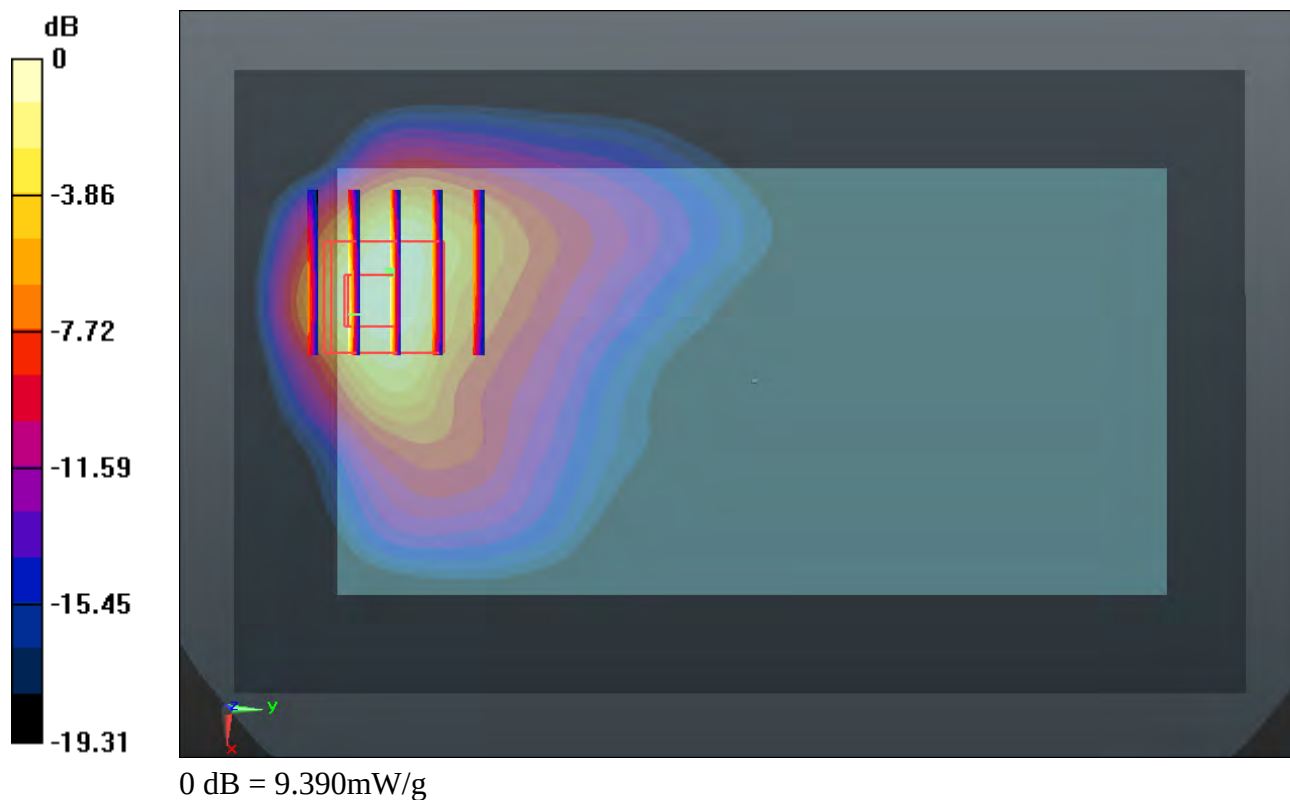
Ch1413/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.918 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 15.229 W/kg

SAR(1 g) = 7.05 mW/g; SAR(10 g) = 3.24 mW/g

Maximum value of SAR (measured) = 9.390 mW/g



#31_WCDMA Band II_RMC12.2K_Back 0cm_Ch9538

Communication System: UMTS (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1907.6$ MHz; $\sigma = 1.561$ mho/m; $\epsilon_r =$

53.334; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch9538/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.526 mW/g

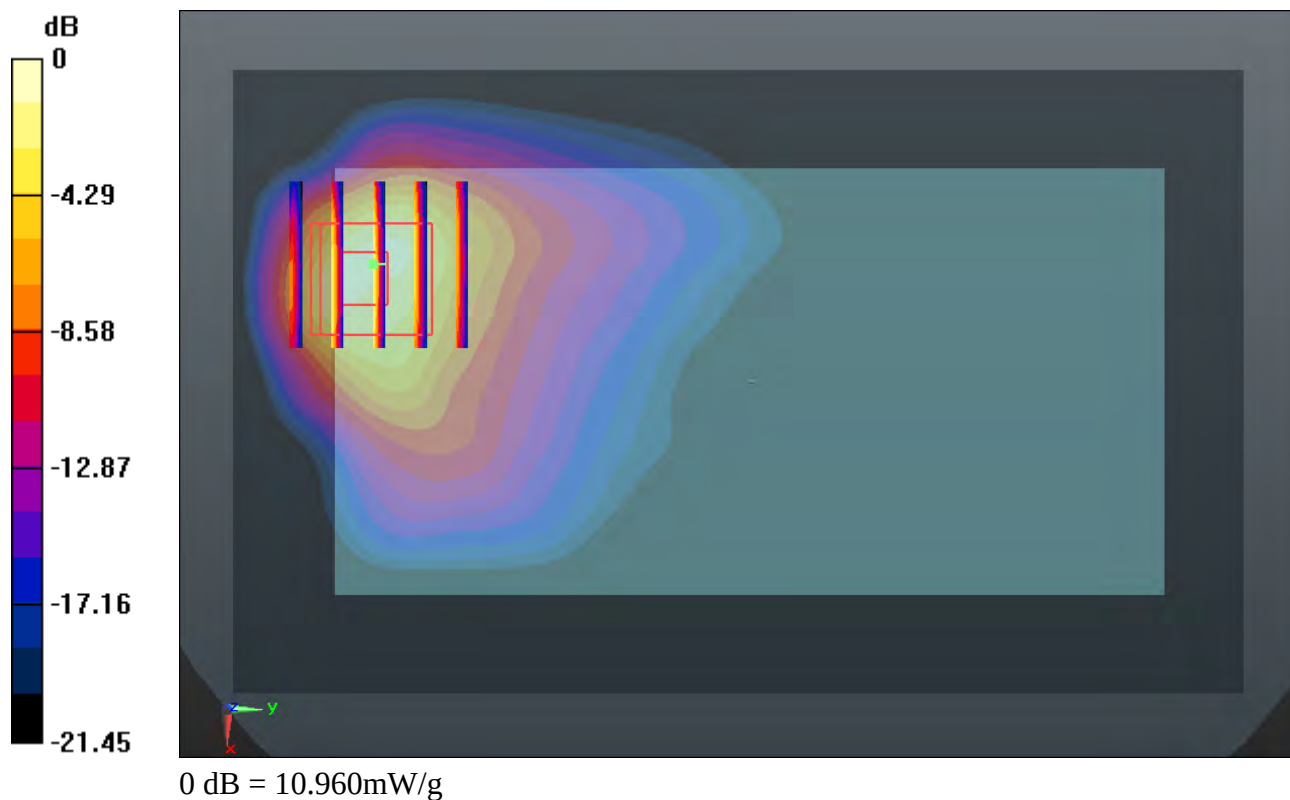
Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.234 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 16.903 W/kg

SAR(1 g) = 7.75 mW/g; SAR(10 g) = 3.48 mW/g

Maximum value of SAR (measured) = 10.957 mW/g



#32_LTE Band 4_20M_QPSK(1,0)_Back 0cm_Ch20300

Communication System: FDD_LTE (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: MSL_1750_140611 Medium parameters used: $f = 1745$ MHz; $\sigma = 1.507$ mho/m; $\epsilon_r =$

55.594; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.8, 7.8, 7.8); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch20300/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.534 mW/g

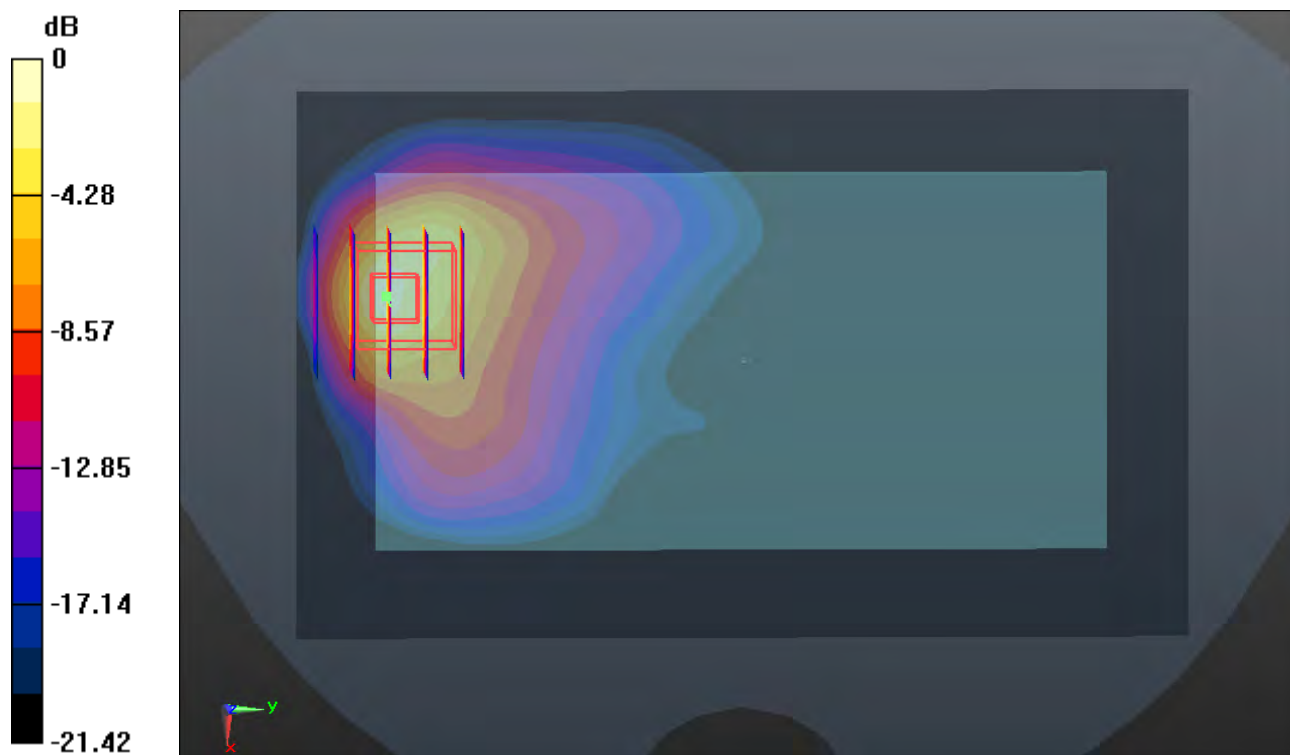
Ch20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.805 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 14.271 W/kg

SAR(1 g) = 6.47 mW/g; SAR(10 g) = 3 mW/g

Maximum value of SAR (measured) = 10.686 mW/g



0 dB = 10.690mW/g

#33_LTE Band 2_20M_QPSK(1,0)_Back 0cm_Ch19100

Communication System: FDD_LTE (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL_1900_140612 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.552$ mho/m; $\epsilon_r =$

53.358; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3753; ConvF(7.49, 7.49, 7.49); Calibrated: 2014.03.26
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2014.04.30
- Phantom: SAM1; Type: SAM; Serial: TP-1479
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.4.5 (3634)

Ch19100/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 8.636 mW/g

Ch19100/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.971 V/m; Power Drift = -0.0077 dB

Peak SAR (extrapolated) = 15.267 W/kg

SAR(1 g) = 7.09 mW/g; SAR(10 g) = 3.2 mW/g

Maximum value of SAR (measured) = 9.801 mW/g

