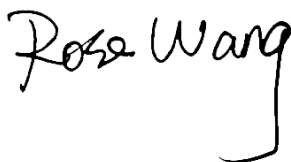


FCC SAR Test Report

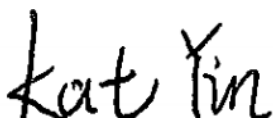
APPLICANT : Honeywell International Inc.
EQUIPMENT : Dolphin CT60
BRAND NAME : Honeywell
MODEL NAME : CT60L1N
FCC ID : HD5-CT60L1N
STANDARD : FCC 47 CFR Part 2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2013

The product was received on Apr. 24, 2020 and testing was started from Apr. 26, 2020 and completed on May 25, 2020. 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: Rose Wang / Supervisor



Approved by: Kat Yin / Manager



Sporton International (Kunshan) Inc.

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
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Revision History

[illegible]

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Honeywell International Inc., Dolphin CT60, CT60L1N**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 0mm/10mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.71	0.85	0.85	1.36
		GSM1900	0.23	0.38	0.38	
	WCDMA	Band II	0.73	1.11	1.11	
		Band IV	0.77	1.11	1.11	
		Band V	0.69	0.67	0.67	
	CDMA	BC0	0.74	0.73	0.73	
		BC1	0.65	1.08	1.08	
		BC10	0.74	0.87	0.87	
	LTE	Band 2	0.67	0.84	0.84	
		Band 4	0.75	0.92	0.92	
		Band 5	0.58	0.40	0.40	
		Band 7	0.37	1.02	0.86	
		Band 12/ Band 17	0.33	0.57	0.57	
		Band 13	0.43	0.43	0.43	
		Band 25	0.53	0.83	0.83	
		Band 26	0.61	0.64	0.64	
		Band 38	0.38	0.99	0.44	
		Band 41	0.34	0.57	0.49	
DTS	WLAN	2.4GHz WLAN	0.44	0.42	0.25	1.36
NII		5GHz WLAN	0.23	0.20	0.18	1.31
DSS	Bluetooth	2.4GHz Bluetooth	<0.10	<0.10	<0.10	1.12
Highest 10g SAR Summary						
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)			
NII	WLAN	5GHz WLAN	0.25			
Date of Testing:				2020/4/26~2020/5/25		
Remark:						
1. This device supports LTE B17 and B12. Since the supported frequency span for LTE B17 falls completely within the supports frequency span for LTE B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12.						
2. 0mm body-worn SAR testing is performed for device with holster.						

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

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

2. Administration Data

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory		
Test Firm	Sporton International (Kunshan) Inc.	
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958	
Test Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CN1257	314309

Applicant	
Company Name	Honeywell International Inc.
Address	9680 Old Bailes Road, Fort Mill, SC 29707 USA

Manufacturer	
Company Name	Honeywell International Inc.
Address	9680 Old Bailes Road, Fort Mill, SC 29707 USA

3. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Dolphin CT60
Brand Name	Honeywell
Model Name	CT60L1N
FCC ID	HD5-CT60L1N
IMEI Code	990010901595323
Wireless Technology and Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) CDMA2000 : 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz 802.11b/g/n/ac HT20/ HT40/VHT20/VHT40 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	V1.0
HW P/N	DVT
SW Version	OS.03.003-HON.02.001
SW P/N	88.00.00-DEBUG(0579)
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 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications. 2. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).	

3. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 12.
4. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at GSM850, CDMA 2000 BC0/BC10.
5. This is a variant report for CT60L1N. For change note, please refer the product equality declaration exhibit separately. According to the change, WLAN/Bluetooth full SAR testing and performed WLAN new measured power. LTE band 7 new measured power with lower tune up power, LTE band 7 CA downlink power also verified. GSM850/CDMA 2000 BC0/BC10 implanted receiver detect mechanism to trigger reduced power for head SAR, only reduce tune up power (measured power is the same as before). Other WWAN bands verified the worst case of the original report which can refer to Bureau Veritas Report with Original FCC ID: HD5-CT60L1N, Model: CT60L1N.

Variant for Maximum Target Conducted Power

Mode	Burst Average Power (dBm)		
	GSM 850		
	Full Power	Original	Variant
		At-Head	At-Head
GSM 1 Tx slot	34.4	34.4	33.8
GPRS 1 Tx slot	34.4	34.4	33.8
GPRS 2 Tx slots	30.5	30.5	29.9
GPRS 3 Tx slots	28.5	28.5	27.9
GPRS 4 Tx slots	27.5	27.5	26.9
EDGE 1 Tx slot	28.4	28.4	27.8
EDGE 2 Tx slots	25.0	25.0	24.4
EDGE 3 Tx slots	23.0	23.0	22.4
EDGE 4 Tx slots	21.5	21.5	20.9

Mode	Band	Original	Variant
1xRTT / EVDO	CDMA BC0	25.4	24.8
	CDMA BC10	25.4	24.8
LTE	LTE band 7	24.4	24.0
WLAN	802.11b	19.5	19.0

Note: Above table show variant power level and other bands are the same as the original application.

the detail differences between Original and Variant product are list in the following table:

Object	Original	Variant	Remark
Carrier Board	Scanner N6703 imager	Scanner change to N6803 imager	

CT60L1N have the following new parts:

RF Module	Under fill Modified
RF Module	LPDDR4x Layout Optimization
RF Module	Wi-Fi Layout Optimization
RF Module	WWAN Path Optimization
RF Module	WWAN Shielding Frame Optimization
RF Module	WWAN PA Power Optimization
RF Module	SOM PAD Mask Optimization
RF Module	Change DC regulator and WLAN amplifier DC power
RF Module	BOM Change for Optimization **
RF Module	B25 Duplexer-AVAGO-ACMD-6225-TR1
RF Module	B40 TRX filter-AVAGO-ACPF-8240-TR1
RF Module	Add New power inductor in BOM
RF Module	Remove un-used CLK trace WCN_CLK
Carrier Board	Add 1F/2.7V supercap
Carrier Board	Add MAX38888 DC/DC for supercap charge/ change discharge circuit
Carrier Board	Add low battery protection circuit
Carrier Board	Change speaker and add a connector for it
Carrier Board	Change ADS1014 to ADS1015 to add supercap voltage detection
Carrier Board	AUX antenna tuner circuit change placement location
Carrier Board	Upgrade the SOM to SOM4
Carrier Board	Add new model battery
Carrier Board	Add WIFI-AUX layout, RF WIFI AUX Matching
Carrier Board	Modify two n-PTH to PTH to reduce RSE issue.
Carrier Board	Upgrade to gen 8 scanner, adjust 2 spring contacts' location.
Carrier Board	Add a high-G sensor.
WIFI 11b	Power reduction from 18+/-1.5 dB to 17.5+/-1.5 dB
LTE 7	Power reduction from 23.4 + 1 / -2.7 dB to 23 + 1 / -2.7dB
GSM 850	Power reduction for Head with WIFI ON mode from 33.4 + 1 / - 2 dB to 32.8 + 1 / - 2 dB
CDMA2K BC0	Power reduction for Head with WIFI ON mode from 24.4 +/- 1 dB to 23.8 + /- 1dB
CDMA2K BC10	Power reduction for Head with WIFI ON mode from 24.4 +/- 1 dB to 23.8 + /- 1dB

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05									
FCC ID		HD5-CT60L1N							
Equipment Name		Dolphin CT60							
Operating Frequency Range of each LTE transmission band		LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz							
Channel Bandwidth		LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 40: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz							
uplink modulations used		QPSK / 16QAM / 64QAM							
LTE Voice / Data requirements		Voice and Data							
CA Support		Supported, Downlink only							
LTE MPR permanently built-in by design		Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3							
		Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})					MPR (dB)	
			1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz		20 MHz
		QPSK	> 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
		64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
		64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
		256 QAM	≥ 1						≤ 5
LTE A-MPR		In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)							
Spectrum plots for RB configuration		A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.							
LTE Carrier Aggregation Combinations		Inter-Band and Intra-Band possible combinations and the detail power verification please referred to original report.							
LTE Carrier Aggregation Additional Information		1. This device supports maximum of 2 carriers in the downlink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.							

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		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	20407	824.7	20415	825.5	20425	826.5	20450	829	20450	829	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844	20600	844	20600	844
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		Bandwidth 25 MHz		Bandwidth 30 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510	20850	2510	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560
LTE Band 12												
	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	23017	699.7	23025	700.5	23035	701.5	23060	704	23060	704	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711	23130	711	23130	711
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782		23230		782	
M	23230		782									
H	23255		784.5									
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)		Channel #		Freq. (MHz)	
L	23755		706.5		23780		709		23780		709	
M	23790		710		23790		710		23790		710	
H	23825		713.5		23800		711		23800		711	
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5	26790	824.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5	26940	838.5

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

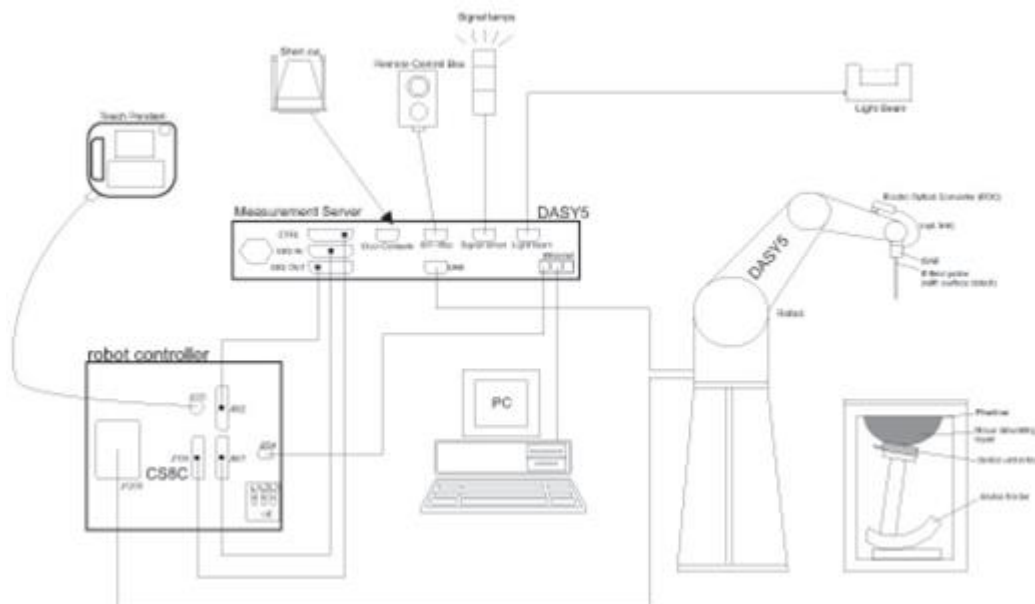
SAR is expressed in units of Watts per kilogram (W/kg)

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

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.

7.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – >6 GHz Linearity: ± 0.2 dB (30 MHz – 6 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.2 Data Acquisition Electronics (DAE)

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

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



Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values 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 dB0) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 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 D01v01r04 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	1087	2019/3/27	2022/3/26
SPEAG	835MHz System Validation Kit	D835V2	4d151	2019/3/27	2022/3/26
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2019/3/27	2022/3/26
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2019/3/26	2022/3/25
SPEAG	2300MHz System Validation Kit	D2300V2	1055	2018/9/20	2021/9/19
SPEAG	2450MHz System Validation Kit	D2450V2	908	2019/3/25	2022/3/24
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2018/12/7	2021/12/6
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2019/9/24	2020/9/23
SPEAG	Data Acquisition Electronics	DAE4	1210	2019/7/23	2020/7/22
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	2019/5/27	2020/5/26
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1697	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6201432831	2020/4/16	2021/4/15
Agilent	Wireless Communication Test Set	E5515C	MY52102706	2020/4/16	2021/4/15
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	2020/4/16	2021/4/15
SPEAG	Dielectric Probe Kit	DAK-3.5	1071	2019/10/28	2020/10/27
Anritsu	Vector Signal Generator	MG3710A	6201682672	2020/1/8	2021/1/7
Rohde & Schwarz	Power Meter	NRVD	102081	2019/8/15	2020/8/14
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2019/8/14	2020/8/13
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2019/8/14	2020/8/13
R&S	CBT BLUETOOTH TESTER	CBT	101641	2020/1/8	2021/1/7
EXA	Spectrum Analyzer	FSV7	101631	2020/1/8	2021/1/7
Testo	Hygrometer	608-H1	1241332088	2020/1/8	2021/1/7
FLUKE	DIGITAC THERMOMETER	51II	97240029	2019/8/15	2020/8/14
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	

Note:

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

10. System Verification

10.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

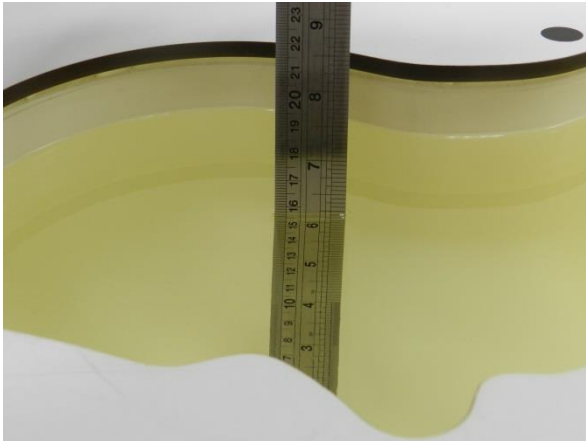


Fig 11.1 Photo of Liquid Height for Head SAR

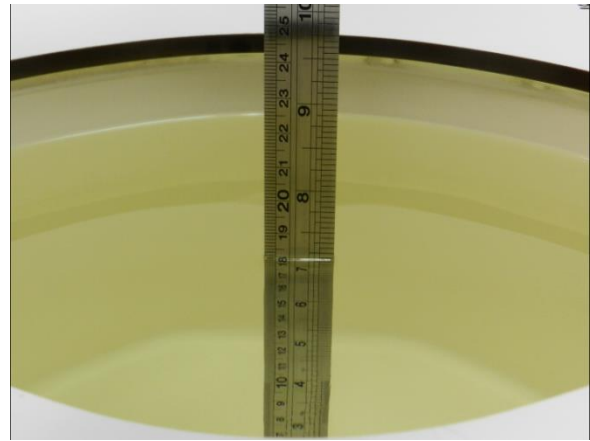


Fig 11.2 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (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
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	Head	22.7	0.896	41.730	0.89	41.900	0.67	-0.41	±5	2020/4/26
835	Head	22.8	0.906	40.723	0.90	41.500	0.67	-1.87	±5	2020/4/26
1750	Head	22.7	1.357	41.045	1.37	40.100	-0.95	2.36	±5	2020/4/26
1900	Head	22.7	1.440	40.495	1.40	40.000	2.86	1.24	±5	2020/4/27
2300	Head	22.7	1.649	39.344	1.67	39.500	-1.26	-0.39	±5	2020/5/25
2450	Head	22.9	1.779	40.589	1.80	39.200	-1.17	3.54	±5	2020/5/20
2600	Head	22.9	1.934	40.117	1.96	39.000	-1.33	2.86	±5	2020/4/27
5250	Head	22.8	4.600	36.383	4.71	35.900	-2.34	1.35	±5	2020/5/1
5600	Head	22.6	4.990	35.806	5.07	35.500	-1.58	0.86	±5	2020/5/3
5750	Head	22.6	5.166	35.551	5.22	35.400	-1.03	0.43	±5	2020/5/5

10.3 System Performance Check Results

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

<1g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2020/4/26	750	Head	250	1087	3857	1210	2.16	8.36	8.64	3.35
2020/4/26	835	Head	250	4d151	3857	1210	2.46	9.30	9.84	5.81
2020/4/26	1750	Head	250	1090	3857	1210	9.57	36.40	38.28	5.16
2020/4/27	1900	Head	250	5d170	3857	1210	10.3	39.00	41.20	5.64
2020/5/25	2300	Head	250	1055	3857	1210	11.5	48.70	46.00	-5.54
2020/5/20	2450	Head	250	908	3857	1210	12.9	52.80	51.60	-2.27
2020/4/27	2600	Head	250	1061	3857	1210	13.4	57.70	53.60	-7.11
2020/5/1	5250	Head	100	1113	3857	1210	8.48	80.50	84.80	5.34
2020/5/3	5600	Head	100	1113	3857	1210	8.94	83.40	89.40	7.19
2020/5/5	5750	Head	100	1113	3857	1210	8.53	80.00	85.30	6.63

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2020/5/1	5250	Head	100	1113	3857	1210	2.48	23.10	24.80	7.36
2020/5/3	5600	Head	100	1113	3857	1210	2.57	23.80	25.70	7.98

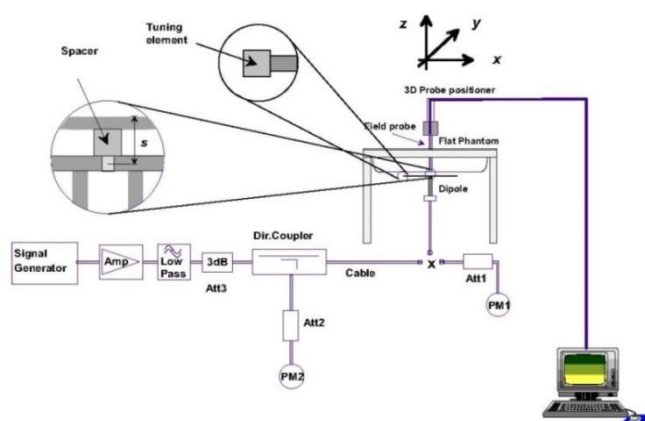


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 12.1.1 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 12.1.2 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 12.1.3). 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 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

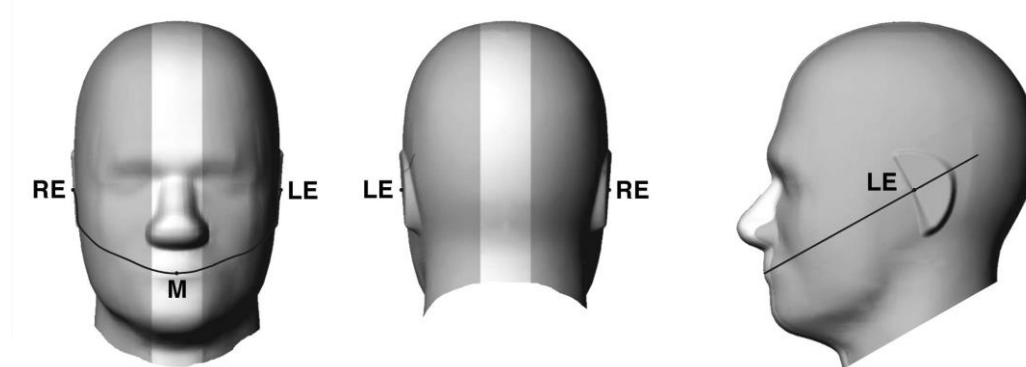


Fig 12.1.1 Front, back, and side views of SAM twin phantom

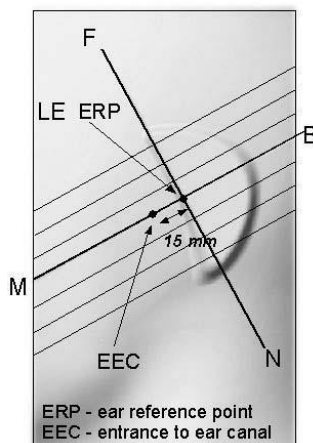


Fig 12.1.2 Close-up side view of phantom showing the ear region.

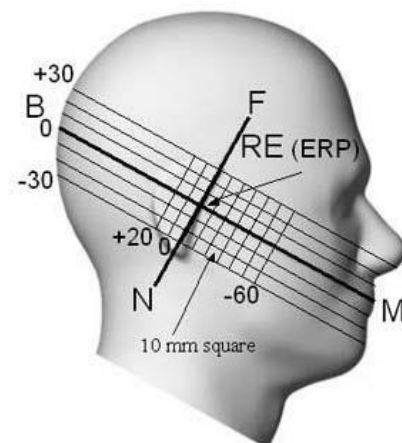


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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 12.2.1 and Figure 12.2.2), 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 12.2.1). 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 handset. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), 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 12.2.3), 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 12.2.3. The actual rotation angles should be documented in the test report.

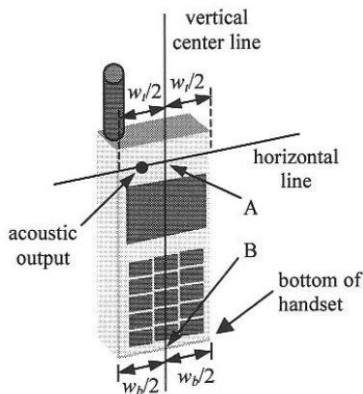


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case"

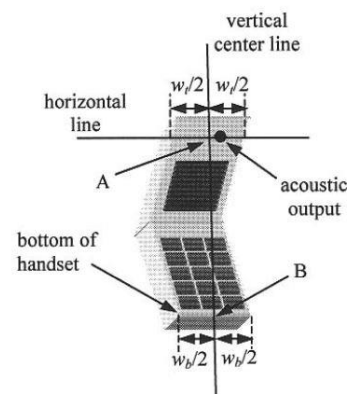


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

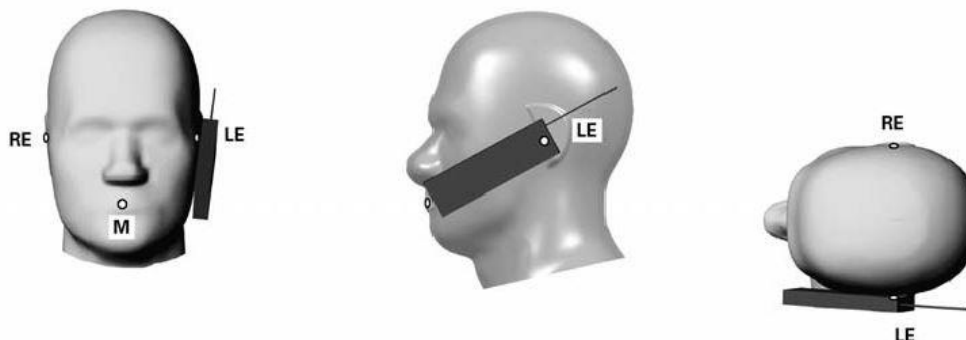


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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 12.3.1. 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

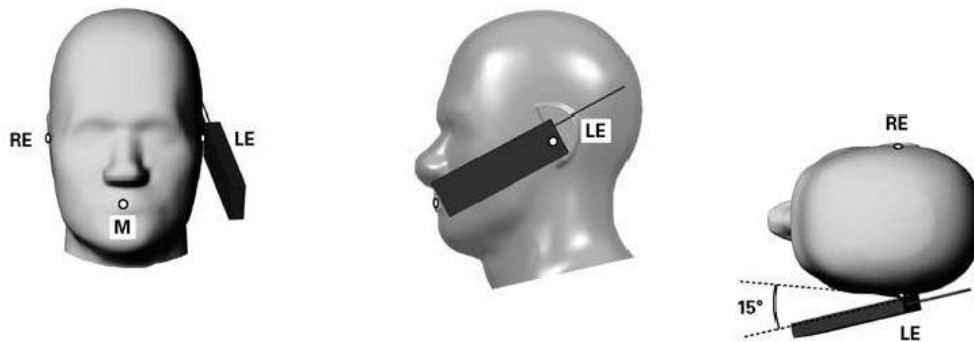


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

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 12.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. 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.

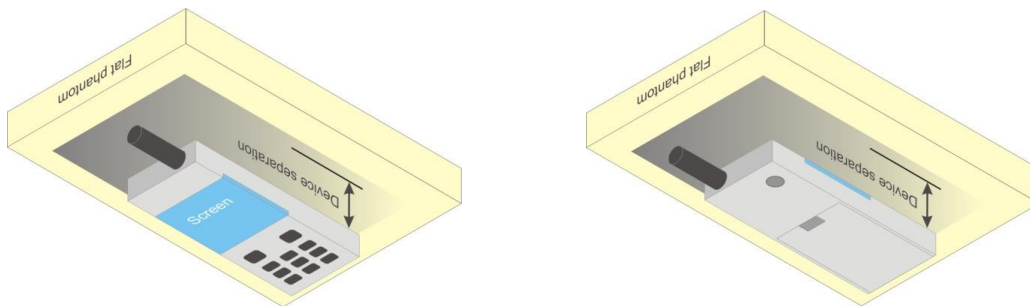


Fig 12.4 Body Worn Position

11.5 Product Specific 10g SAR Exposure

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

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

11.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ($L \times W \geq 9$ cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined 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 D01v06 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

12. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<WLAN Conducted Power>

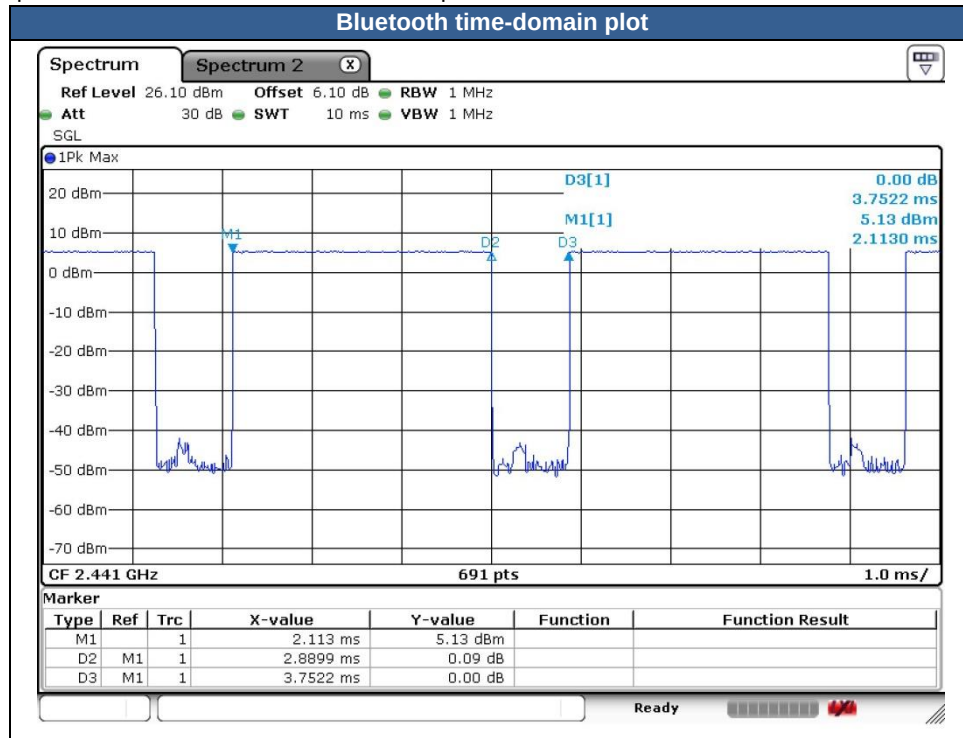
General Note:

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

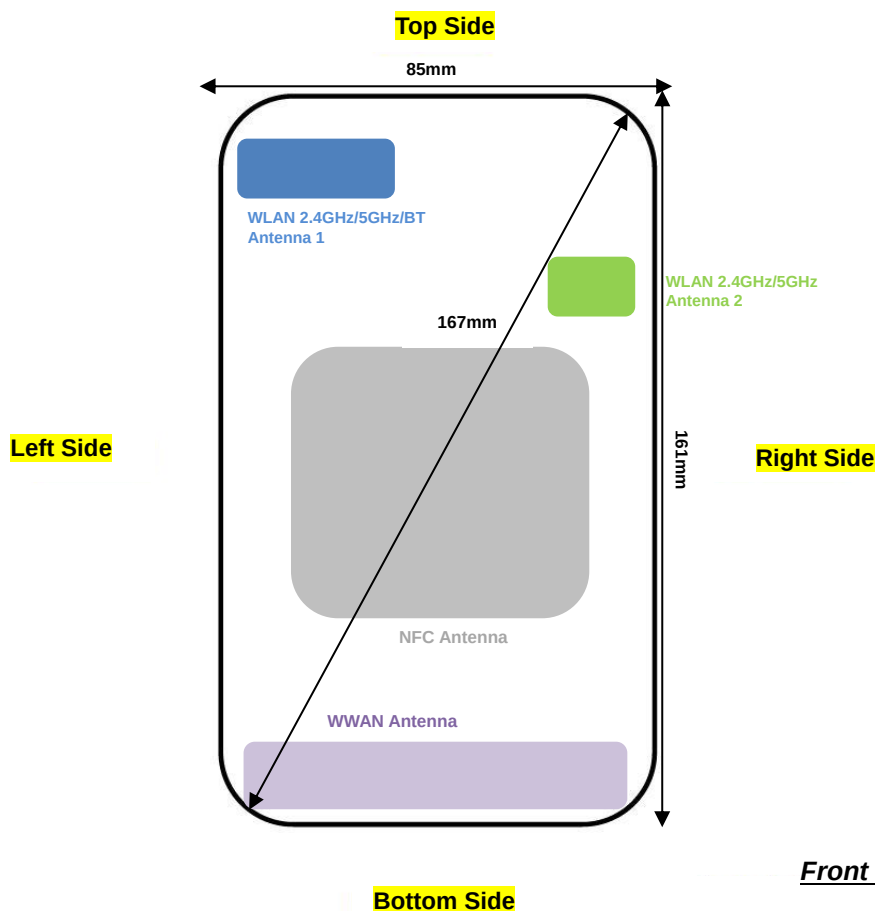
<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 77.02 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation



13. Antenna Location



Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Main	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
WLAN 2.4GHz/5GHz/BT Antenna 1	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WLAN 2.4GHz/5GHz Antenna 2	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Main	Yes	Yes	No	Yes	Yes	Yes
WLAN 2.4GHz/5GHz/BT Antenna 1	Yes	Yes	Yes	No	No	Yes
WLAN 2.4GHz/5GHz Antenna 2	Yes	Yes	Yes	No	Yes	No

General Note:

Referring to KDB 941225 D06 v02r01, 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.

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8 W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at GSM850, CDMA 2000 BC0/BC10.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power (for handheld on state, the maximum full power means reduced power), including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
 - a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of WLAN5.3/5.5GHz therefore product specific 10g SAR is necessary.
 - b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
 - c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
7. This is a variant report for CT60L1N, for WWAN Bands verified the worst case of original report, if the verified SAR value is less than original, it is not required to add the remaining channel SAR testing, although the reported SAR higher than 0.8W/kg.

WLAN/Bluetooth Note:

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

14.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	GSM850	GPRS8	Right Cheek	0mm	Reduced	189	836.4	33.21	33.80	1.146	-0.09	0.618	0.71
02	GSM1900	GPRS10	Left Cheek	0mm	Full	810	1909.8	28.32	28.50	1.042	-0.03	0.220	0.23

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
03	WCDMA II	RMC12.2K	Left Cheek	0mm	Full	9538	1907.6	24.18	25.10	1.236	-0.01	0.591	0.73
04	WCDMA IV	RMC12.2K	Left Cheek	0mm	Full	1312	1712.4	24.69	25.10	1.099	0.01	0.696	0.77
05	WCDMA V	RMC12.2K	Right Cheek	0mm	Full	4233	846.6	24.45	24.90	1.109	-0.04	0.622	0.69

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	CDMA2000 BC0	RC3+SO55	Right Cheek	0mm	Reduced	777	848.31	24.29	24.80	1.125	0.06	0.662	0.74
07	CDMA2000 BC1	RC3+SO55	Left Cheek	0mm	Full	25	1851.25	23.90	24.30	1.096	-0.04	0.593	0.65
08	CDMA2000 BC10	RC3+SO55	Right Cheek	0mm	Reduced	684	823.1	24.23	24.80	1.140	-0.14	0.651	0.74

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 2	20M	QPSK	1	0	Left Cheek	0mm	Full	18900	1880	24.90	25.10	1.047	0.02	0.637	0.67
10	LTE Band 4	20M	QPSK	1	0	Left Cheek	0mm	Full	20050	1720	24.90	25.10	1.047	0.09	0.718	0.75
11	LTE Band 5	10M	QPSK	1	0	Right Cheek	0mm	Full	20600	844	23.99	24.70	1.178	-0.08	0.491	0.58
12	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Full	21100	2535	22.77	24.00	1.327	-0.11	0.280	0.37
13	LTE Band 12	10M	QPSK	1	0	Right Cheek	0mm	Full	23060	704	23.81	24.90	1.285	0.08	0.255	0.33
14	LTE Band 13	10M	QPSK	1	0	Right Cheek	0mm	Full	23230	782	23.95	24.90	1.245	-0.11	0.346	0.43
15	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Full	26140	1860	23.55	24.00	1.109	-0.06	0.475	0.53
16	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Full	26965	841.5	23.94	24.60	1.164	-0.07	0.526	0.61

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
17	LTE Band 38	20M	QPSK	1	0	Left Cheek	0mm	Full	38000	2595	23.84	24.50	1.164	62.9	1.006	0.02	0.320	0.38
19	LTE Band 41	20M	QPSK	1	0	Left Cheek	0mm	Full	39750	2506	23.86	24.40	1.132	62.9	1.006	0.03	0.294	0.34



<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
20	WLAN 2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.1	0.387	0.44
	WLAN 2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.09	0.133	0.15
	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	-0.06	0.157	0.18
	WLAN 2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.05	0.127	0.15
	WLAN 2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 1+2	6	2437	18.24	19.00	1.191	100	1.000	0.01	0.288	0.34
	WLAN 2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 1+2	1	2412	18.26	19.00	1.186	100	1.000	0.03	0.282	0.33

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
21	Bluetooth	1Mbps	Right Cheek	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.007	0.01
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.05	0.004	0.01
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.06	0.005	0.01
	Bluetooth	1Mbps	Left Tilted	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.004	0.00
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 1	39	2441	6.03	7.00	1.250	77.02	1.082	0.05	0.003	0.00
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 1	78	2480	6.39	7.00	1.151	77.02	1.082	0.06	0.004	0.01

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 5.3GHz	802.11n-HT40 MCS0	Right Cheek	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.03	0.037	0.05
	WLAN 5.3GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.01	0.024	0.03
22	WLAN 5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	-0.09	0.076	0.10
	WLAN 5.3GHz	802.11n-HT40 MCS0	Left Tilted	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.01	0.013	0.02
	WLAN 5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 1+2	62	5310	13.75	15.00	1.334	96.24	1.039	-0.01	0.052	0.07
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.01	0.142	0.20
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.01	0.082	0.12
23	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.08	0.156	0.22
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.01	0.048	0.07
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1+2	106	5530	15.21	16.50	1.346	93.19	1.073	0.01	0.093	0.13
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1+2	122	5610	15.12	16.50	1.374	93.19	1.073	0.03	0.101	0.15
24	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.02	0.155	0.23
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.01	0.032	0.05
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.02	0.155	0.23
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.03	0.044	0.06

14.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS8	Rear Face	10mm	Full	189	836.4	33.21	34.40	1.315	0.03	0.618	0.81
	GSM850	GPRS8	Rear Face	10mm	Full	128	824.2	33.23	34.40	1.309	0.05	0.504	0.66
25	GSM850	GPRS8	Rear Face	10mm	Full	251	848.8	33.27	34.40	1.297	0.04	0.654	0.85
26	GSM1900	GPRS10	Rear Face	10mm	Full	810	1909.8	28.32	28.50	1.042	-0.03	0.367	0.38

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
27	WCDMA II	RMC12.2K	Rear Face	10mm	Full	9400	1880	24.15	25.10	1.245	-0.04	0.895	1.11
28	WCDMA IV	RMC12.2K	Rear Face	10mm	Full	1513	1752.6	24.63	25.10	1.114	-0.05	1.000	1.11
29	WCDMA V	RMC12.2K	Rear Face	10mm	Full	4233	846.6	24.45	24.90	1.109	0.07	0.606	0.67

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
30	CDMA2000 BC0	RTAP 153.6	Rear Face	10mm	Full	777	848.31	24.40	25.40	1.259	0.03	0.578	0.73
31	CDMA2000 BC1	RTAP 153.6	Rear Face	10mm	Full	1175	1908.75	23.84	24.30	1.112	-0.12	0.969	1.08
	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	580	820.5	24.34	25.40	1.276	0.06	0.669	0.85
32	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	476	817.9	24.26	25.40	1.300	0.03	0.666	0.87
	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	684	823.1	24.32	25.40	1.282	0.01	0.673	0.86

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
33	LTE Band 2	20M	QPSK	1	0	Rear Face	10mm	Full	18700	1860	24.77	25.10	1.079	-0.01	0.777	0.84
34	LTE Band 4	20M	QPSK	1	0	Rear Face	10mm	Full	20050	1720	24.90	25.10	1.047	-0.03	0.882	0.92
35	LTE Band 5	10M	QPSK	1	0	Rear Face	10mm	Full	20600	844	23.99	24.70	1.178	-0.02	0.337	0.40
36	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Full	21350	2560	22.82	24.00	1.312	0.03	0.776	1.02
37	LTE Band 12	10M	QPSK	1	0	Rear Face	10mm	Full	23060	704	23.81	24.90	1.285	0.03	0.442	0.57
38	LTE Band 13	10M	QPSK	1	0	Rear Face	10mm	Full	23230	782	23.95	24.90	1.245	0.13	0.346	0.43
39	LTE Band 25	20M	QPSK	1	0	Rear Face	10mm	Full	26140	1860	23.55	24.00	1.109	-0.12	0.748	0.83
40	LTE Band 26	15M	QPSK	1	0	Rear Face	10mm	Full	26965	841.5	23.94	24.60	1.164	0.08	0.549	0.64

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 38	20M	QPSK	1	0	Bottom Side	10mm	Full	38000	2595	23.84	24.50	1.164	62.9	1.006	-0.08	0.747	0.88
	LTE Band 38	20M	QPSK	1	0	Bottom Side	10mm	Full	37850	2580	23.66	24.50	1.213	62.9	1.006	0.03	0.774	0.95
41	LTE Band 38	20M	QPSK	1	0	Bottom Side	10mm	Full	38150	2610	23.76	24.50	1.186	62.9	1.006	0.04	0.833	0.99
43	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	Full	39750	2506	23.86	24.40	1.132	62.9	1.006	0.08	0.498	0.57

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.03	0.100	0.11
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	-0.02	0.217	0.25
	WLAN 2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.08	0.087	0.10
44	WLAN 2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.03	0.370	0.42
	WLAN 2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.09	0.071	0.08
	WLAN 2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 1+2	6	2437	18.24	19.00	1.191	100	1.000	0.01	0.177	0.21
	WLAN 2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 1+2	1	2412	18.26	19.00	1.186	100	1.000	0.08	0.173	0.21

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front Face	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.004	0.01
45	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.009	0.01
	Bluetooth	1Mbps	Left Side	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.001	0.00
	Bluetooth	1Mbps	Right Side	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	-0.03	0.001	0.00
	Bluetooth	1Mbps	Top Side	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.01	0.000	0.00
	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	39	2441	6.03	7.00	1.250	77.02	1.082	0.02	0.005	0.01
	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	78	2480	6.39	7.00	1.151	77.02	1.082	0.07	0.004	0.01

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 5.2GHz	802.11n-HT40 MCS0	Front Face	10mm	Ant 1+2	46	5230	15.58	16.50	1.236	96.24	1.039	0.06	0.039	0.05
46	WLAN 5.2GHz	802.11n-HT40 MCS0	Rear Face	10mm	Ant 1+2	46	5230	15.58	16.50	1.236	96.24	1.039	0.06	0.159	0.20
	WLAN 5.2GHz	802.11n-HT40 MCS0	Left Side	10mm	Ant 1+2	46	5230	15.58	16.50	1.236	96.24	1.039	0.04	0.079	0.10
	WLAN 5.2GHz	802.11n-HT40 MCS0	Right Side	10mm	Ant 1+2	46	5230	15.58	16.50	1.236	96.24	1.039	0.02	0.077	0.10
	WLAN 5.2GHz	802.11n-HT40 MCS0	Top Side	10mm	Ant 1+2	46	5230	15.58	16.50	1.236	96.24	1.039	-0.07	0.012	0.02
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Front Face	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.02	0.060	0.09
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Rear Face	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.03	0.075	0.11
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.01	0.109	0.16
47	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	-0.07	0.135	0.20
	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.01	0.026	0.04

14.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS8	Rear Face	10mm	Full	189	836.4	33.21	34.40	1.315	0.03	0.618	0.81
	GSM850	GPRS8	Rear Face	10mm	Full	128	824.2	33.23	34.40	1.309	0.05	0.504	0.66
48	GSM850	GPRS8	Rear Face	10mm	Full	251	848.8	33.27	34.40	1.297	0.04	0.654	0.85
49	GSM1900	GPRS10	Rear Face	10mm	Full	810	1909.8	28.32	28.50	1.042	-0.03	0.367	0.38

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
50	WCDMA II	RMC12.2K	Rear Face	10mm	Full	9400	1880	24.15	25.10	1.245	-0.04	0.895	1.11
51	WCDMA IV	RMC12.2K	Rear Face	10mm	Full	1513	1752.6	24.63	25.10	1.114	-0.05	1.000	1.11
52	WCDMA V	RMC12.2K	Rear Face	10mm	Full	4233	846.6	24.45	24.90	1.109	0.07	0.606	0.67

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
53	CDMA2000 BC0	RTAP 153.6	Rear Face	10mm	Full	777	848.31	24.40	25.40	1.259	0.03	0.578	0.73
54	CDMA2000 BC1	RTAP 153.6	Rear Face	10mm	Full	1175	1908.75	23.84	24.30	1.112	-0.12	0.969	1.08
	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	580	820.5	24.34	25.40	1.276	0.06	0.669	0.85
55	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	476	817.9	24.26	25.40	1.300	0.03	0.666	0.87
	CDMA2000 BC10	RTAP 153.6	Rear Face	10mm	Full	684	823.1	24.32	25.40	1.282	0.01	0.673	0.86

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
56	LTE Band 2	20M	QPSK	1	0	Rear Face	10mm	Full	18700	1860	24.77	25.10	1.079	-0.01	0.777	0.84
57	LTE Band 4	20M	QPSK	1	0	Rear Face	10mm	Full	20050	1720	24.90	25.10	1.047	-0.03	0.882	0.92
58	LTE Band 5	10M	QPSK	1	0	Rear Face	10mm	Full	20600	844	23.99	24.70	1.178	-0.02	0.337	0.40
59	LTE Band 7	20M	QPSK	1	0	Rear Face	10mm	Full	21350	2560	22.82	24.00	1.312	-0.02	0.652	0.86
60	LTE Band 12	10M	QPSK	1	0	Rear Face	10mm	Full	23060	704	23.81	24.90	1.285	0.03	0.442	0.57
61	LTE Band 13	10M	QPSK	1	0	Rear Face	10mm	Full	23230	782	23.95	24.90	1.245	0.13	0.346	0.43
62	LTE Band 25	20M	QPSK	1	0	Rear Face	10mm	Full	26140	1860	23.55	24.00	1.109	-0.12	0.748	0.83
63	LTE Band 26	15M	QPSK	1	0	Rear Face	10mm	Full	26965	841.5	23.94	24.60	1.164	0.08	0.549	0.64

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
64	LTE Band 38	20M	QPSK	1	0	Rear Face	10mm	Full	38000	2595	23.84	24.50	1.164	62.9	1.006	-0.06	0.379	0.44
66	LTE Band 41	20M	QPSK	1	0	Rear Face	10mm	Full	39750	2506	23.86	24.40	1.132	62.9	1.006	-0.07	0.434	0.49

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.03	0.100	0.11	
67	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	10mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	-0.02	0.217	0.25	
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	10mm	Ant 1+2	6	2437	18.24	19.00	1.191	100	1.000	-0.02	0.120	0.14	
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	10mm	Ant 1+2	1	2412	18.26	19.00	1.186	100	1.000	-0.02	0.130	0.15	
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.01	0.073	0.08	Holster 1
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.03	0.092	0.11	Holster 1
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	0mm	Ant 1+2	6	2437	18.24	19.00	1.191	100	1.000	0.01	0.066	0.08	Holster 1
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	0mm	Ant 1+2	1	2412	18.26	19.00	1.186	100	1.000	0.03	0.064	0.08	Holster 1
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.01	0.067	0.08	Holster 2
	WLAN 2.4GHz	802.11b 1Mbps	Rear Face	0mm	Ant 1+2	11	2462	18.42	19.00	1.143	100	1.000	0.03	0.036	0.04	Holster 2
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	0mm	Ant 1+2	6	2437	18.24	19.00	1.191	100	1.000	0.01	0.105	0.13	Holster 2
	WLAN 2.4GHz	802.11b 1Mbps	Front Face	0mm	Ant 1+2	1	2412	18.26	19.00	1.186	100	1.000	0.03	0.102	0.12	Holster 2

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note
69	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	78	2480	6.39	7.00	1.151	77.02	1.082	0.01	0.009	0.01	
	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.02	0.005	0.01	
	Bluetooth	1Mbps	Rear Face	10mm	Ant 1	39	2441	6.03	7.00	1.250	77.02	1.082	0.07	0.004	0.01	
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	78	2480	6.39	7.00	1.151	77.02	1.082	0.06	0.006	0.01	Holster 1
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.05	0.004	0.00	Holster 1
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	39	2441	6.03	7.00	1.250	77.02	1.082	0.03	0.003	0.00	Holster 1
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	78	2480	6.39	7.00	1.151	77.02	1.082	0.01	0.005	0.01	Holster 2
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	0	2402	6.65	7.00	1.084	77.02	1.082	0.04	0.003	0.00	Holster 2
	Bluetooth	1Mbps	Rear Face	0mm	Ant 1	39	2441	6.03	7.00	1.250	77.02	1.082	0.06	0.002	0.00	Holster 2



<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Note		
69	WLAN 5.3GHz	802.11n-HT40 MCS0	Front Face	10mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	-0.09	0.051	0.07		
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	10mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.05	0.139	0.18		
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	10mm	Ant 1+2	62	5310	13.75	15.00	1.334	96.24	1.039	0.02	0.093	0.13		
	WLAN 5.3GHz	802.11n-HT40 MCS0	Front Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.06	0.058	0.08	Holster 1	
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.07	0.065	0.09	Holster 1	
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	62	5310	13.75	15.00	1.334	96.24	1.039	0.03	0.072	0.10	Holster 1	
	WLAN 5.3GHz	802.11n-HT40 MCS0	Front Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.01	0.046	0.06	Holster 2	
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.06	0.047	0.06	Holster 2	
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	62	5310	13.75	15.00	1.334	96.24	1.039	0.02	0.036	0.05	Holster 2	
70	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	10mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	-0.03	0.045	0.07		
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	10mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.01	0.053	0.08		
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	10mm	Ant 1+2	106	5530	15.21	16.50	1.346	93.19	1.073	0.05	0.103	0.15		
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	10mm	Ant 1+2	122	5610	15.12	16.50	1.374	93.19	1.073	0.02	0.108	0.16		
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.02	0.051	0.07	Holster 1	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.08	0.052	0.08	Holster 1	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	106	5530	15.21	16.50	1.346	93.19	1.073	-0.13	0.089	0.13	Holster 1	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	122	5610	15.12	16.50	1.374	93.19	1.073	0.02	0.092	0.14	Holster 1	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.03	0.048	0.07	Holster 2	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.02	0.028	0.04	Holster 2	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	106	5530	15.21	16.50	1.346	93.19	1.073	-0.05	0.053	0.08	Holster 2	
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	122	5610	15.12	16.50	1.374	93.19	1.073	0.01	0.055	0.08	Holster 2	
	71	WLAN 5.8GHz	802.11ac-VHT80 MCS0	Front Face	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.02	0.060	0.09	
		WLAN 5.8GHz	802.11ac-VHT80 MCS0	Rear Face	10mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.03	0.075	0.11	
		WLAN 5.8GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.01	0.069	0.10	Holster 1
		WLAN 5.8GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.03	0.053	0.08	Holster 1
		WLAN 5.8GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.01	0.058	0.09	Holster 2
		WLAN 5.8GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	155	5775	15.14	16.50	1.368	93.19	1.073	0.03	0.025	0.04	Holster 2

14.4 Product Specific SAR

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN 5.3GHz	802.11n-HT40 MCS0	Front Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	-0.03	0.037	0.05
72	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.08	0.188	0.25
	WLAN 5.3GHz	802.11n-HT40 MCS0	Left Side	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	-0.05	0.106	0.14
	WLAN 5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.01	0.068	0.09
	WLAN 5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 1+2	54	5270	15.48	16.50	1.265	96.24	1.039	0.02	0.019	0.03
	WLAN 5.3GHz	802.11n-HT40 MCS0	Rear Face	0mm	Ant 1+2	62	5310	13.75	15.00	1.334	96.24	1.039	-0.01	0.111	0.15
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Front Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.01	0.066	0.10
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Rear Face	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.03	0.088	0.13
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.08	0.098	0.14
73	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	0.04	0.148	0.21
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 1+2	138	5690	15.24	16.50	1.337	93.19	1.073	-0.03	0.001	0.00
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 1+2	106	5530	15.21	16.50	1.346	93.19	1.073	-0.05	0.132	0.19
	WLAN 5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 1+2	122	5610	15.12	16.50	1.374	93.19	1.073	-0.13	0.137	0.20

14.5 Repeated SAR Measurement

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA IV	-	-	-	-	RMC12.2K	Rear Face	10mm	1513	1752.6	24.63	25.10	1.114	-	-	-0.05	1.000	1	1.11
2nd	WCDMA IV	-	-	-	-	RMC12.2K	Rear Face	10mm	1513	1752.6	24.63	25.10	1.114	-	-	0.11	0.979	1.021	1.09
1st	CDMA2000 BC1	-	-	-	-	RTAP 153.6	Rear Face	10mm	1175	1908.75	23.84	24.30	1.112	-	-	-0.12	0.969	1	1.08
2nd	CDMA2000 BC1	-	-	-	-	RTAP 153.6	Rear Face	10mm	1175	1908.75	23.84	24.30	1.112	-	-	0.11	0.944	1.026	1.05
1st	LTE Band 38	20M	QPSK	1	0	-	Bottom Side	10mm	38150	2610	23.76	24.50	1.186	62.9	1.006	0.04	0.833	1	0.99
2nd	LTE Band 38	20M	QPSK	1	0	-	Bottom Side	10mm	38150	2610	23.76	24.50	1.186	62.9	1.006	0.11	0.809	1.030	0.97

General Note:

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

15. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset		
		Head	Body-worn	Hotspot
1.	GSM + 2.4GHz WLAN	Yes	Yes	Yes
2.	CDMA + 2.4GHz WLAN	Yes	Yes	Yes
3.	WCDMA + 2.4GHz WLAN	Yes	Yes	Yes
4.	LTE + 2.4GHz WLAN	Yes	Yes	Yes
5.	GSM + 5GHz WLAN	Yes	Yes	Yes
6.	CDMA + 5GHz WLAN	Yes	Yes	Yes
7.	WCDMA + 5GHz WLAN	Yes	Yes	Yes
8.	LTE + 5GHz WLAN	Yes	Yes	Yes
9.	GSM + Bluetooth	Yes	Yes	Yes
10.	CDMA + Bluetooth	Yes	Yes	Yes
11.	WCDMA + Bluetooth	Yes	Yes	Yes
12.	LTE + Bluetooth	Yes	Yes	Yes

Note:

- This is a variant report for CT60L1N. For change note, please refer the product equality declaration exhibit separately. According to the change, WLAN/Bluetooth performed full SAR testing. Other WWAN bands verified the worst case of the original report which can refer to Bureau Veritas Report Number SA171122C17-1. For WWAN SAR, base on this verified SAR and other WWAN SAR from original SAR chose to do co-located analysis with new WLAN/BT SAR.
- 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.
- According to the EUT character, WLAN 5GHz and Bluetooth can't transmit simultaneously.
- WLAN and Bluetooth share the same antenna 1, and they can't transmit simultaneously each other.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- All licensed modes share the same antenna part and cannot transmit simultaneously
- The Scaled SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - Scalar SAR summation < 1.6W/kg.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{ separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - 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.

15.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1+2	5GHz WLAN Ant 1+2	Bluetooth Ant 1			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM	GSM850	Right Cheek	0.71	0.44	0.23	0.01	1.15	0.94	0.72
		Right Tilted	0.27	0.15	0.12	0.01	0.42	0.39	0.28
		Left Cheek	0.36	0.18	0.23	0.01	0.54	0.59	0.37
		Left Tilted	0.26	0.15	0.07	0.00	0.41	0.33	0.26
	GSM1900	Right Cheek	0.22	0.44	0.23	0.01	0.66	0.45	0.23
		Right Tilted	0.18	0.15	0.12	0.01	0.33	0.30	0.19
		Left Cheek	0.23	0.18	0.23	0.01	0.41	0.46	0.24
		Left Tilted	0.16	0.15	0.07	0.00	0.31	0.23	0.16
WCDMA	WCDMA II	Right Cheek	0.43	0.44	0.23	0.01	0.87	0.66	0.44
		Right Tilted	0.37	0.15	0.12	0.01	0.52	0.49	0.38
		Left Cheek	0.73	0.18	0.23	0.01	0.91	0.96	0.74
		Left Tilted	0.33	0.15	0.07	0.00	0.48	0.40	0.33
	WCDMA IV	Right Cheek	0.25	0.44	0.23	0.01	0.69	0.48	0.26
		Right Tilted	0.24	0.15	0.12	0.01	0.39	0.36	0.25
		Left Cheek	0.77	0.18	0.23	0.01	0.94	0.99	0.77
		Left Tilted	0.21	0.15	0.07	0.00	0.36	0.28	0.21
	WCDMA V	Right Cheek	0.69	0.44	0.23	0.01	1.13	0.92	0.70
		Right Tilted	0.34	0.15	0.12	0.01	0.49	0.46	0.35
		Left Cheek	0.45	0.18	0.23	0.01	0.63	0.68	0.46
		Left Tilted	0.33	0.15	0.07	0.00	0.48	0.40	0.33
CDMA	CDMA2000 BC0	Right Cheek	0.74	0.44	0.23	0.01	1.19	0.97	0.75
		Right Tilted	0.45	0.15	0.12	0.01	0.60	0.57	0.46
		Left Cheek	0.56	0.18	0.23	0.01	0.74	0.79	0.57
		Left Tilted	0.43	0.15	0.07	0.00	0.58	0.50	0.43
	CDMA2000 BC1	Right Cheek	0.36	0.44	0.23	0.01	0.80	0.59	0.37
		Right Tilted	0.32	0.15	0.12	0.01	0.47	0.44	0.33
		Left Cheek	0.65	0.18	0.23	0.01	0.83	0.88	0.66
		Left Tilted	0.25	0.15	0.07	0.00	0.40	0.32	0.25
	CDMA2000 BC10	Right Cheek	0.74	0.44	0.23	0.01	1.18	0.97	0.75
		Right Tilted	0.35	0.15	0.12	0.01	0.50	0.47	0.36
		Left Cheek	0.48	0.18	0.23	0.01	0.66	0.71	0.49
		Left Tilted	0.36	0.15	0.07	0.00	0.51	0.43	0.36
LTE	LTE Band 2	Right Cheek	0.41	0.44	0.23	0.01	0.85	0.64	0.42
		Right Tilted	0.28	0.15	0.12	0.01	0.43	0.40	0.29
		Left Cheek	0.67	0.18	0.23	0.01	0.85	0.90	0.68
		Left Tilted	0.23	0.15	0.07	0.00	0.38	0.30	0.23
	LTE Band 4	Right Cheek	0.26	0.44	0.23	0.01	0.70	0.49	0.27
		Right Tilted	0.25	0.15	0.12	0.01	0.40	0.37	0.26
		Left Cheek	0.75	0.18	0.23	0.01	0.93	0.98	0.76
		Left Tilted	0.21	0.15	0.07	0.00	0.36	0.28	0.21
	LTE Band 5	Right Cheek	0.58	0.44	0.23	0.01	1.02	0.81	0.59
		Right Tilted	0.29	0.15	0.12	0.01	0.44	0.41	0.30
		Left Cheek	0.39	0.18	0.23	0.01	0.57	0.62	0.40
		Left Tilted	0.27	0.15	0.07	0.00	0.42	0.34	0.27
	LTE Band 7	Right Cheek	0.19	0.44	0.23	0.01	0.63	0.42	0.20
		Right Tilted	0.16	0.15	0.12	0.01	0.31	0.28	0.17
		Left Cheek	0.37	0.18	0.23	0.01	0.55	0.60	0.38



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	LTE Band 12&17	Left Tilted	0.13	0.15	0.07	0.00	0.28	0.20	0.13
		Right Cheek	0.33	0.44	0.23	0.01	0.77	0.56	0.34
		Right Tilted	0.14	0.15	0.12	0.01	0.29	0.26	0.15
		Left Cheek	0.20	0.18	0.23	0.01	0.38	0.43	0.21
	LTE Band 13	Left Tilted	0.14	0.15	0.07	0.00	0.29	0.21	0.14
		Right Cheek	0.43	0.44	0.23	0.01	0.87	0.66	0.44
		Right Tilted	0.25	0.15	0.12	0.01	0.40	0.37	0.26
		Left Cheek	0.27	0.18	0.23	0.01	0.45	0.50	0.28
	LTE Band 25	Left Tilted	0.22	0.15	0.07	0.00	0.37	0.29	0.22
		Right Cheek	0.30	0.44	0.23	0.01	0.74	0.53	0.31
		Right Tilted	0.26	0.15	0.12	0.01	0.41	0.38	0.27
		Left Cheek	0.53	0.18	0.23	0.01	0.71	0.76	0.53
	LTE Band 26	Left Tilted	0.21	0.15	0.07	0.00	0.36	0.28	0.21
		Right Cheek	0.61	0.44	0.23	0.01	1.05	0.84	0.62
		Right Tilted	0.08	0.15	0.12	0.01	0.23	0.20	0.09
		Left Cheek	0.14	0.18	0.23	0.01	0.32	0.37	0.15
	LTE Band 38	Left Tilted	0.10	0.15	0.07	0.00	0.25	0.17	0.10
		Right Cheek	0.10	0.44	0.23	0.01	0.54	0.33	0.11
		Right Tilted	0.08	0.15	0.12	0.01	0.23	0.20	0.09
		Left Cheek	0.38	0.18	0.23	0.01	0.55	0.60	0.38
	LTE Band 41	Left Tilted	0.06	0.15	0.07	0.00	0.21	0.13	0.06
		Right Cheek	0.12	0.44	0.23	0.01	0.56	0.35	0.13
		Right Tilted	0.09	0.15	0.12	0.01	0.24	0.21	0.10
		Left Cheek	0.34	0.18	0.23	0.01	0.51	0.56	0.34
		Left Tilted	0.09	0.15	0.07	0.00	0.24	0.16	0.09

15.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1+2	5GHz WLAN Ant 1+2	Bluetooth Ant 1			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM	GSM850	Front Face	0.45	0.11	0.09	0.01	0.56	0.54	0.46
		Rear Face	0.85	0.25	0.20	0.01	1.10	1.05	0.86
		Left side	0.12	0.10	0.16	0.00	0.22	0.28	0.12
		Right side	0.25	0.42	0.20	0.00	0.67	0.45	0.25
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.29				0.29	0.29	0.29
	GSM1900	Front Face	0.43	0.11	0.09	0.01	0.54	0.52	0.44
		Rear Face	0.38	0.25	0.20	0.01	0.63	0.58	0.39
		Left side	0.10	0.10	0.16	0.00	0.20	0.26	0.10
		Right side	0.00	0.42	0.20	0.00	0.42	0.20	0.00
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.38				0.38	0.38	0.38
WCDMA	WCDMA II	Front Face	0.79	0.11	0.09	0.01	0.90	0.88	0.80
		Rear Face	1.11	0.25	0.20	0.01	1.36	1.31	1.12
		Left side	0.22	0.10	0.16	0.00	0.32	0.38	0.22
		Right side	0.05	0.42	0.20	0.00	0.47	0.25	0.05
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	1.07				1.07	1.07	1.07
	WCDMA IV	Front Face	1.00	0.11	0.09	0.01	1.11	1.09	1.01
		Rear Face	1.11	0.25	0.20	0.01	1.36	1.31	1.12
		Left side	0.06	0.10	0.16	0.00	0.16	0.22	0.06
		Right side	0.00	0.42	0.20	0.00	0.42	0.20	0.00
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.67				0.67	0.67	0.67
	WCDMA V	Front Face	0.45	0.11	0.09	0.01	0.56	0.54	0.46
		Rear Face	0.67	0.25	0.20	0.01	0.92	0.87	0.68
		Left side	0.12	0.10	0.16	0.00	0.22	0.28	0.12
		Right side	0.25	0.42	0.20	0.00	0.67	0.45	0.25
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.16				0.16	0.16	0.16
CDMA	CDMA2000 BC0	Front Face	0.61	0.11	0.09	0.01	0.72	0.70	0.62
		Rear Face	0.73	0.25	0.20	0.01	0.98	0.93	0.74
		Left side	0.28	0.10	0.16	0.00	0.38	0.44	0.28
		Right side	0.49	0.42	0.20	0.00	0.91	0.69	0.49
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.23				0.23	0.23	0.23
	CDMA2000 BC1	Front Face	0.96	0.11	0.09	0.01	1.07	1.05	0.97
		Rear Face	1.08	0.25	0.20	0.01	1.33	1.28	1.09
		Left side	0.35	0.10	0.16	0.00	0.45	0.51	0.35
		Right side	0.00	0.42	0.20	0.00	0.42	0.20	0.00
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.79				0.79	0.79	0.79
	CDMA2000 BC10	Front Face	0.52	0.11	0.09	0.01	0.63	0.61	0.53
		Rear Face	0.87	0.25	0.20	0.01	1.12	1.07	0.88
		Left side	0.17	0.10	0.16	0.00	0.27	0.33	0.17
		Right side	0.19	0.42	0.20	0.00	0.61	0.39	0.19



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LTE		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.15				0.15	0.15	0.15
	LTE Band 2	Front Face	0.91	0.11	0.09	0.01	1.02	1.00	0.92
		Rear Face	0.84	0.25	0.20	0.01	1.09	1.04	0.85
		Left side	0.60	0.10	0.16	0.00	0.70	0.76	0.60
		Right side	0.11	0.42	0.20	0.00	0.53	0.31	0.11
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.79				0.79	0.79	0.79
	LTE Band 4	Front Face	0.82	0.11	0.09	0.01	0.93	0.91	0.83
		Rear Face	0.92	0.25	0.20	0.01	1.17	1.12	0.93
		Left side	0.30	0.10	0.16	0.00	0.40	0.46	0.30
		Right side	0.08	0.42	0.20	0.00	0.50	0.28	0.08
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.57				0.57	0.57	0.57
	LTE Band 5	Front Face	0.44	0.11	0.09	0.01	0.55	0.53	0.45
		Rear Face	0.40	0.25	0.20	0.01	0.65	0.60	0.41
		Left side	0.20	0.10	0.16	0.00	0.30	0.36	0.20
		Right side	0.22	0.42	0.20	0.00	0.64	0.42	0.22
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.17				0.17	0.17	0.17
	LTE Band 7	Front Face	0.54	0.11	0.09	0.01	0.65	0.63	0.55
		Rear Face	0.90	0.25	0.20	0.01	1.15	1.10	0.91
		Left side	0.28	0.10	0.16	0.00	0.38	0.44	0.28
		Right side	0.10	0.42	0.20	0.00	0.52	0.30	0.10
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	1.02				1.02	1.02	1.02
	LTE Band 12&17	Front Face	0.44	0.11	0.09	0.01	0.55	0.53	0.45
		Rear Face	0.57	0.25	0.20	0.01	0.82	0.77	0.58
		Left side	0.11	0.10	0.16	0.00	0.21	0.27	0.11
		Right side	0.13	0.42	0.20	0.00	0.55	0.33	0.13
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.08				0.08	0.08	0.08
	LTE Band 13	Front Face	0.47	0.11	0.09	0.01	0.58	0.56	0.48
		Rear Face	0.43	0.25	0.20	0.01	0.68	0.63	0.44
		Left side	0.14	0.10	0.16	0.00	0.24	0.30	0.14
		Right side	0.18	0.42	0.20	0.00	0.60	0.38	0.18
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.19				0.19	0.19	0.19
	LTE Band 25	Front Face	0.74	0.11	0.09	0.01	0.85	0.83	0.75
		Rear Face	0.83	0.25	0.20	0.01	1.08	1.03	0.84
		Left side	0.30	0.10	0.16	0.00	0.40	0.46	0.30
		Right side	0.00	0.42	0.20	0.00	0.42	0.20	0.00
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.60				0.60	0.60	0.60
	LTE Band 26	Front Face	0.39	0.11	0.09	0.01	0.50	0.48	0.40
		Rear Face	0.64	0.25	0.20	0.01	0.89	0.84	0.65
		Left side	0.07	0.10	0.16	0.00	0.17	0.23	0.07
		Right side	0.06	0.42	0.20	0.00	0.48	0.26	0.06
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.14				0.14	0.14	0.14
	LTE Band 38	Front Face	0.29	0.11	0.09	0.01	0.40	0.38	0.30
		Rear Face	0.46	0.25	0.20	0.01	0.71	0.66	0.47
		Left side	0.11	0.10	0.16	0.00	0.21	0.27	0.11



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		Right side	0.05	0.42	0.20	0.00	0.47	0.25	0.05
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.99				0.99	0.99	0.99
	LTE Band 41	Front Face	0.31	0.11	0.09	0.01	0.42	0.40	0.32
		Rear Face	0.46	0.25	0.20	0.01	0.71	0.66	0.47
		Left side	0.14	0.10	0.16	0.00	0.24	0.30	0.14
		Right side	0.07	0.42	0.20	0.00	0.49	0.27	0.07
		Top side		0.08	0.04	0.00	0.08	0.04	0.00
		Bottom side	0.57				0.57	0.57	0.57

15.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1+2	5GHz WLAN Ant 1+2	Bluetooth Ant 1			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
GSM	GSM850	Front Face at 10mm	0.45	0.11	0.09	0.01	0.56	0.54	0.46
		Rear Face at 10mm	0.85	0.25	0.18	0.01	1.10	1.03	0.86
		Front Face at 0mm	0.52	0.13	0.12	0.01	0.65	0.64	0.53
		Rear Face at 0mm	0.35	0.11	0.14	0.00	0.46	0.49	0.35
	GSM1900	Front Face at 10mm	0.43	0.11	0.09	0.01	0.54	0.52	0.44
		Rear Face at 10mm	0.38	0.25	0.18	0.01	0.63	0.56	0.39
		Front Face at 0mm	0.28	0.13	0.12	0.01	0.41	0.40	0.29
		Rear Face at 0mm	0.42	0.11	0.14	0.00	0.53	0.56	0.42
WCDMA	WCDMA II	Front Face at 10mm	0.79	0.11	0.09	0.01	0.90	0.88	0.80
		Rear Face at 10mm	1.11	0.25	0.18	0.01	1.36	1.29	1.12
		Front Face at 0mm	0.46	0.13	0.12	0.01	0.59	0.58	0.47
		Rear Face at 0mm	0.59	0.11	0.14	0.00	0.70	0.73	0.59
	WCDMA IV	Front Face at 10mm	1.00	0.11	0.09	0.01	1.11	1.09	1.01
		Rear Face at 10mm	1.11	0.25	0.18	0.01	1.36	1.29	1.12
		Front Face at 0mm	0.51	0.13	0.12	0.01	0.64	0.63	0.52
		Rear Face at 0mm	0.70	0.11	0.14	0.00	0.81	0.84	0.70
	WCDMA V	Front Face at 10mm	0.45	0.11	0.09	0.01	0.56	0.54	0.46
		Rear Face at 10mm	0.67	0.25	0.18	0.01	0.92	0.85	0.68
		Front Face at 0mm	0.50	0.13	0.12	0.01	0.63	0.62	0.51
		Rear Face at 0mm	0.38	0.11	0.14	0.00	0.49	0.52	0.38
CDMA	CDMA2000 BC0	Front Face at 10mm	0.61	0.11	0.09	0.01	0.72	0.70	0.62
		Rear Face at 10mm	0.73	0.25	0.18	0.01	0.98	0.91	0.74
		Front Face at 0mm	0.53	0.13	0.12	0.01	0.66	0.65	0.54
		Rear Face at 0mm	0.50	0.11	0.14	0.00	0.61	0.64	0.50
	CDMA2000 BC1	Front Face at 10mm	0.96	0.11	0.09	0.01	1.07	1.05	0.97
		Rear Face at 10mm	1.08	0.25	0.18	0.01	1.33	1.26	1.09
		Front Face at 0mm	0.48	0.13	0.12	0.01	0.61	0.60	0.49
		Rear Face at 0mm	0.65	0.11	0.14	0.00	0.76	0.79	0.65
	CDMA2000 BC10	Front Face at 10mm	0.52	0.11	0.09	0.01	0.63	0.61	0.53
		Rear Face at 10mm	0.87	0.25	0.18	0.01	1.12	1.05	0.88
		Front Face at 0mm	0.58	0.13	0.12	0.01	0.71	0.70	0.59
		Rear Face at 0mm	0.50	0.11	0.14	0.00	0.61	0.64	0.50
LTE	LTE Band 2	Front Face at 10mm	0.91	0.11	0.09	0.01	1.02	1.00	0.92
		Rear Face at 10mm	0.84	0.25	0.18	0.01	1.09	1.02	0.85
		Front Face at 0mm	0.41	0.13	0.12	0.01	0.54	0.53	0.42
		Rear Face at 0mm	0.63	0.11	0.14	0.00	0.74	0.77	0.63
	LTE Band 4	Front Face at 10mm	0.82	0.11	0.09	0.01	0.93	0.91	0.83
		Rear Face at 10mm	0.92	0.25	0.18	0.01	1.17	1.10	0.93
		Front Face at 0mm	0.35	0.13	0.12	0.01	0.48	0.47	0.36
		Rear Face at 0mm	0.61	0.11	0.14	0.00	0.72	0.75	0.61
	LTE Band 5	Front Face at 10mm	0.44	0.11	0.09	0.01	0.55	0.53	0.45
		Rear Face at 10mm	0.40	0.25	0.18	0.01	0.65	0.58	0.41
		Front Face at 0mm	0.36	0.13	0.12	0.01	0.49	0.48	0.37
		Rear Face at 0mm	0.33	0.11	0.14	0.00	0.44	0.47	0.33
	LTE Band 7	Front Face at 10mm	0.44	0.11	0.09	0.01	0.55	0.53	0.45

		Rear Face at 10mm	0.86	0.25	0.18	0.01	1.11	1.04	0.87
		Front Face at 0mm	0.42	0.13	0.12	0.01	0.55	0.54	0.43
		Rear Face at 0mm	0.44	0.11	0.14	0.00	0.55	0.58	0.44
	LTE Band 12&17	Front Face at 10mm	0.44	0.11	0.09	0.01	0.55	0.53	0.45
		Rear Face at 10mm	0.57	0.25	0.18	0.01	0.82	0.75	0.58
		Front Face at 0mm	0.45	0.13	0.12	0.01	0.58	0.57	0.46
	LTE Band 13	Rear Face at 0mm	0.46	0.11	0.14	0.00	0.57	0.60	0.46
		Front Face at 10mm	0.47	0.11	0.09	0.01	0.58	0.56	0.48
		Rear Face at 10mm	0.43	0.25	0.18	0.01	0.68	0.61	0.44
	LTE Band 25	Front Face at 0mm	0.53	0.13	0.12	0.01	0.66	0.65	0.54
		Rear Face at 0mm	0.56	0.11	0.14	0.00	0.67	0.70	0.56
		Front Face at 10mm	0.75	0.11	0.09	0.01	0.86	0.84	0.76
	LTE Band 26	Rear Face at 10mm	0.83	0.25	0.18	0.01	1.08	1.01	0.84
		Front Face at 0mm	0.45	0.13	0.12	0.01	0.58	0.57	0.46
		Rear Face at 0mm	0.57	0.11	0.14	0.00	0.68	0.71	0.57
	LTE Band 38	Front Face at 10mm	0.39	0.11	0.09	0.01	0.50	0.48	0.40
		Rear Face at 10mm	0.64	0.25	0.18	0.01	0.89	0.82	0.65
		Front Face at 0mm	0.32	0.13	0.12	0.01	0.45	0.44	0.33
	LTE Band 41	Rear Face at 0mm	0.27	0.11	0.14	0.00	0.38	0.41	0.27
		Front Face at 10mm	0.29	0.11	0.09	0.01	0.40	0.38	0.30
		Rear Face at 10mm	0.44	0.25	0.18	0.01	0.69	0.62	0.45
	LTE Band 41	Front Face at 0mm	0.28	0.13	0.12	0.01	0.41	0.40	0.29
		Rear Face at 0mm	0.29	0.11	0.14	0.00	0.40	0.43	0.29
		Front Face at 10mm	0.31	0.11	0.09	0.01	0.42	0.40	0.32
	LTE Band 41	Rear Face at 10mm	0.49	0.25	0.18	0.01	0.74	0.67	0.50
		Front Face at 0mm	0.13	0.13	0.12	0.01	0.26	0.25	0.14
		Rear Face at 0mm	0.15	0.11	0.14	0.00	0.26	0.29	0.15

Test Engineer : Nick Hu, Yuan Zhao, Jiaxing Chang, Yuankai Kong

16. Uncertainty Assessment

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

17. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [6] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.
- [7] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [8] FCC KDB 648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 2015.
- [9] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [10] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [11] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [12] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [13] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

-----THE END-----



Appendix A. Plots of System Performance Check

The plots are shown as follows.

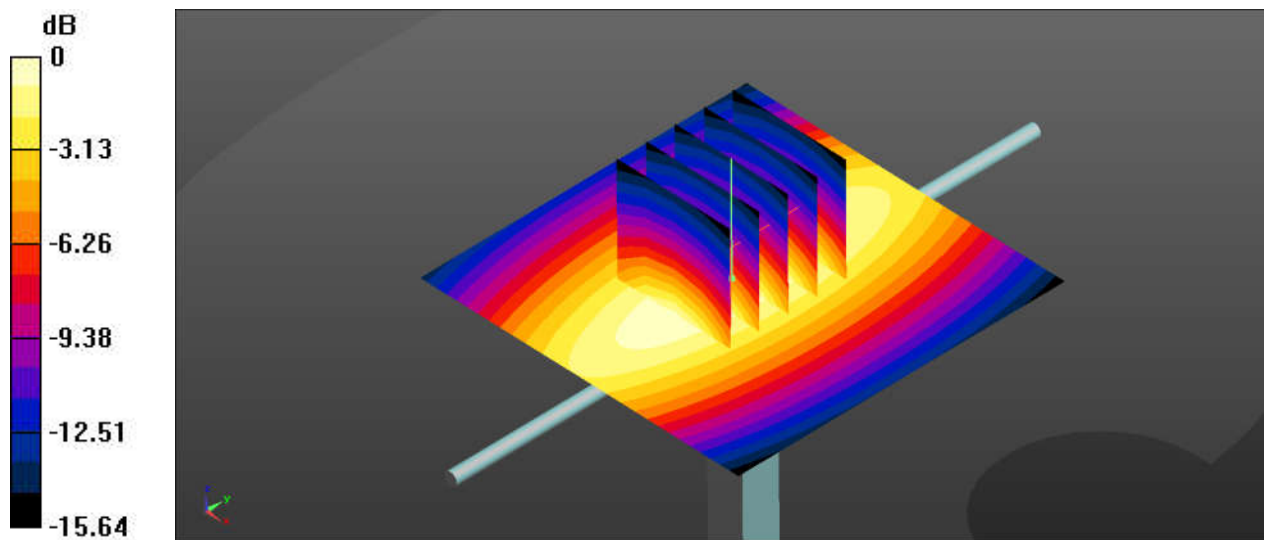
System Check_Head_750MHz**DUT: D750V3 - SN:1087**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: HSL_750 Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.896 \text{ S/m}$; $\epsilon_r = 41.73$; $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature : $23.3 \text{ }^\circ\text{C}$; Liquid Temperature : $22.7 \text{ }^\circ\text{C}$

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.77, 9.77, 9.77); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$ Maximum value of SAR (interpolated) = 2.69 W/kg **Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$ Reference Value = 50.66 V/m ; Power Drift = 0.03 dB Peak SAR (extrapolated) = 3.18 W/kg **SAR(1 g) = 2.16 W/kg ; SAR(10 g) = 1.44 W/kg** Maximum value of SAR (measured) = 2.72 W/kg  $0 \text{ dB} = 2.69 \text{ W/kg} = 4.30 \text{ dBW/kg}$

System Check_Head_850MHz**DUT: D835V2 - SN:4d151**

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL_850 Medium parameters used: $f = 835$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 40.723$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.22 W/kg

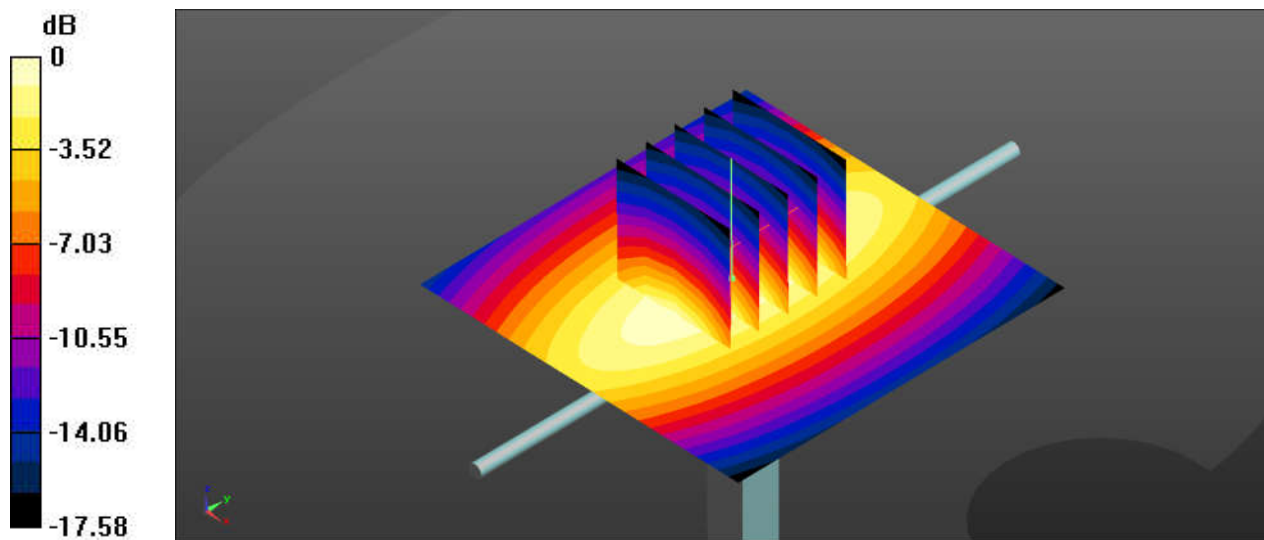
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 53.36 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.81 W/kg

SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.6 W/kg

Maximum value of SAR (measured) = 3.23 W/kg



0 dB = 3.22 W/kg = 5.08 dBW/kg

System Check_Head_1750MHz**DUT: D1750V2 - SN:1090**

Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL_1750 Medium parameters used: $f = 1750$ MHz; $\sigma = 1.357$ S/m; $\epsilon_r = 41.045$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.46, 8.46, 8.46); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 13.3 W/kg

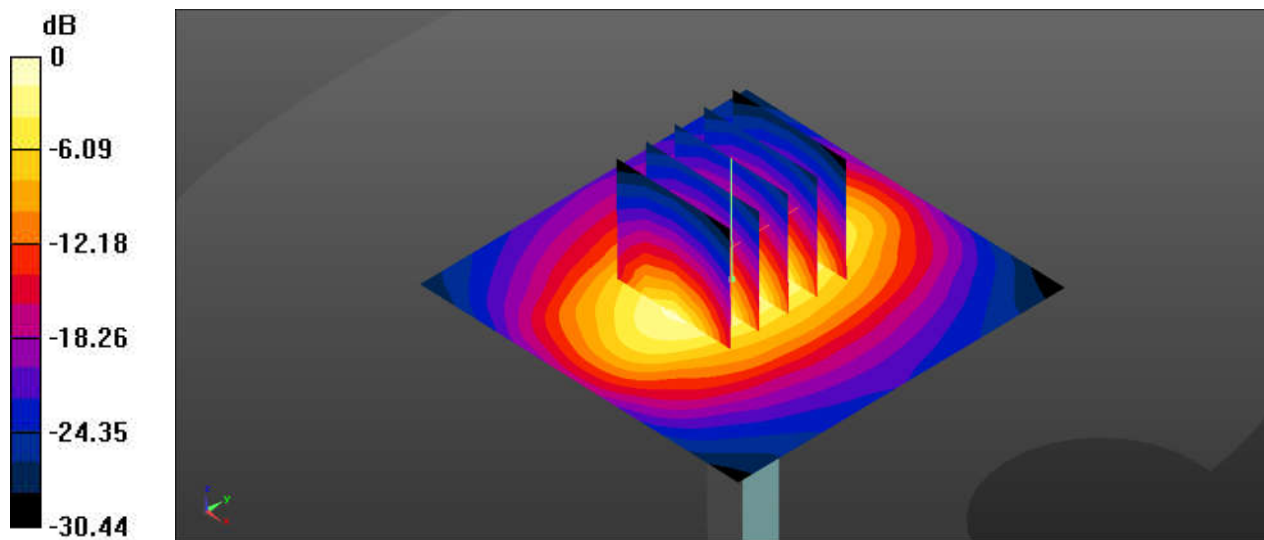
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 86.85 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 9.57 W/kg; SAR(10 g) = 5.24 W/kg

Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 13.3 W/kg = 11.24 dBW/kg

System Check_Head_1900MHz**DUT: D1900V2 - SN:5d170**

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL_1900 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.44$ S/m; $\epsilon_r = 40.495$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 14.6 W/kg

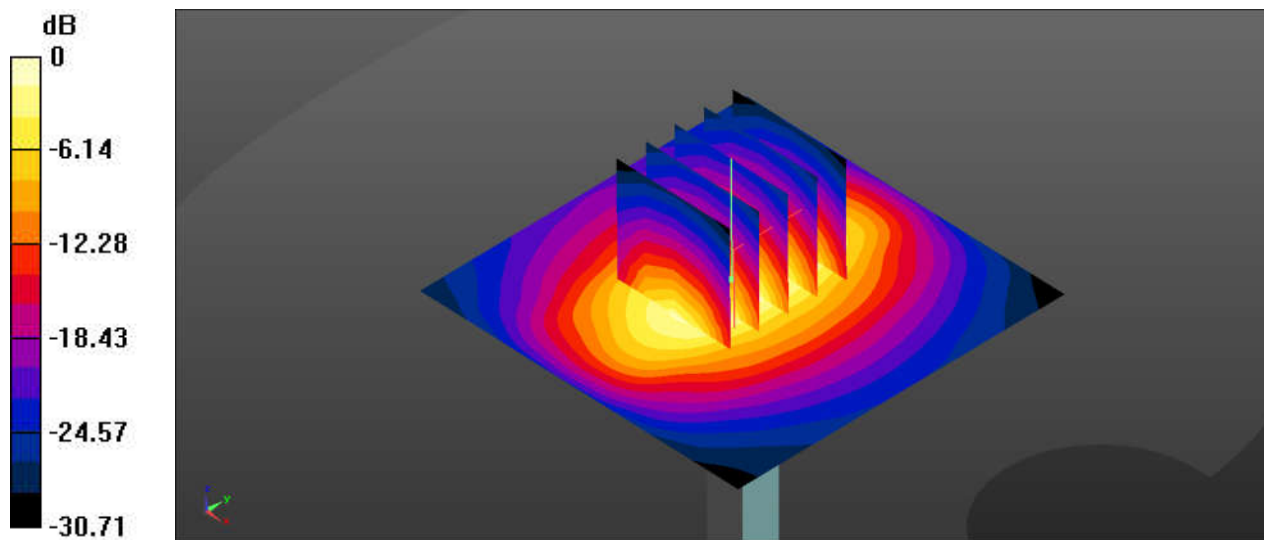
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 85.98 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 18.6 W/kg

SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.38 W/kg

Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.6 W/kg = 11.64 dBW/kg

System Check_Head_2300MHz**DUT: D2300V2 - SN:1055**

Communication System: UID 0, CW (0); Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: HSL_2300 Medium parameters used: $f = 2300$ MHz; $\sigma = 1.649$ S/m; $\epsilon_r = 39.344$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.88, 7.88, 7.88); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 17.1 W/kg

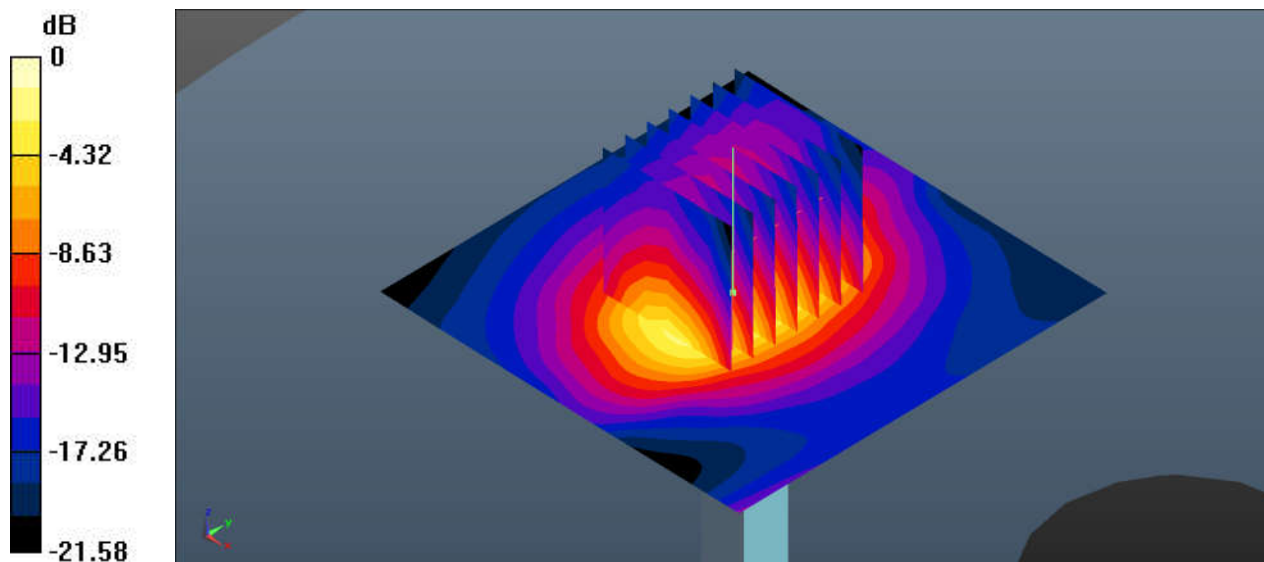
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.3 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 20.2 W/kg

SAR(1 g) = 11.5 W/kg; SAR(10 g) = 6.04 W/kg

Maximum value of SAR (measured) = 17.5 W/kg



0 dB = 17.1 W/kg = 12.33 dBW/kg

System Check_Head_2450MHz**DUT: D2450V2 - SN:908**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL_2450 Medium parameters used: $f = 2450$ MHz; $\sigma = 1.779$ S/m; $\epsilon_r = 40.589$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.5, 7.5, 7.5); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.9 W/kg

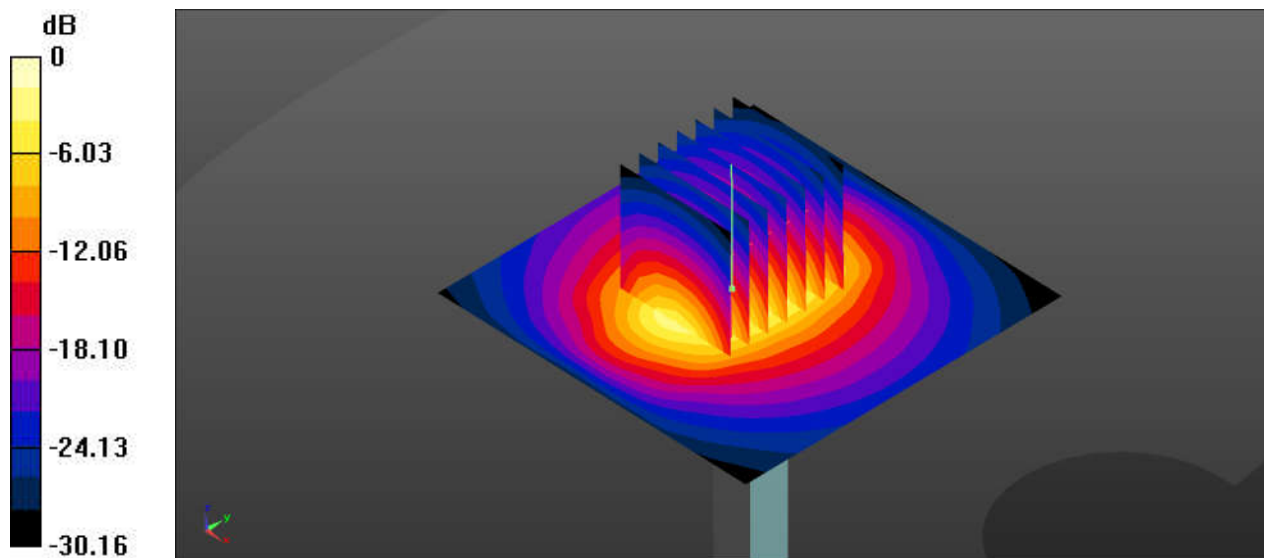
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.74 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 25.3 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.14 W/kg

Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.9 W/kg = 12.99 dBW/kg

System Check_Head_2600MHz**DUT: D2600V2 - SN:1061**

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: HSL_2600 Medium parameters used: $f = 2600$ MHz; $\sigma = 1.934$ S/m; $\epsilon_r = 40.117$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.31, 7.31, 7.31); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 21.2 W/kg

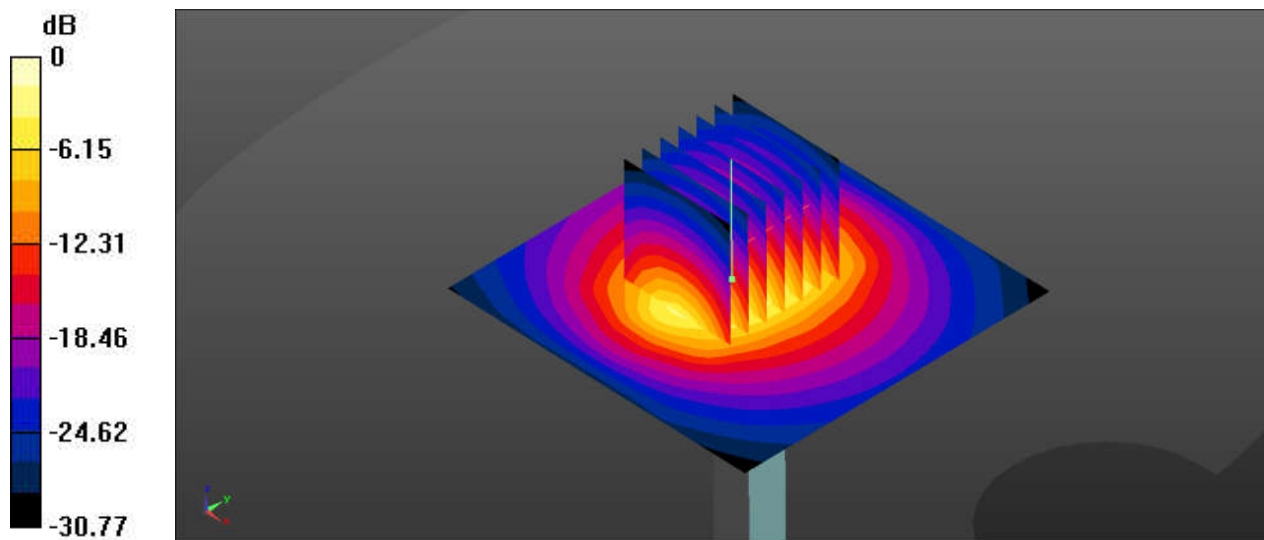
Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 83.41 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 27.9 W/kg

SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.09 W/kg

Maximum value of SAR (measured) = 20.6 W/kg



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

System Check_Head_5250MHz**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: HSL_5000 Medium parameters used: $f = 5250$ MHz; $\sigma = 4.6$ S/m; $\epsilon_r = 36.383$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.19, 5.19, 5.19); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 20.0 W/kg

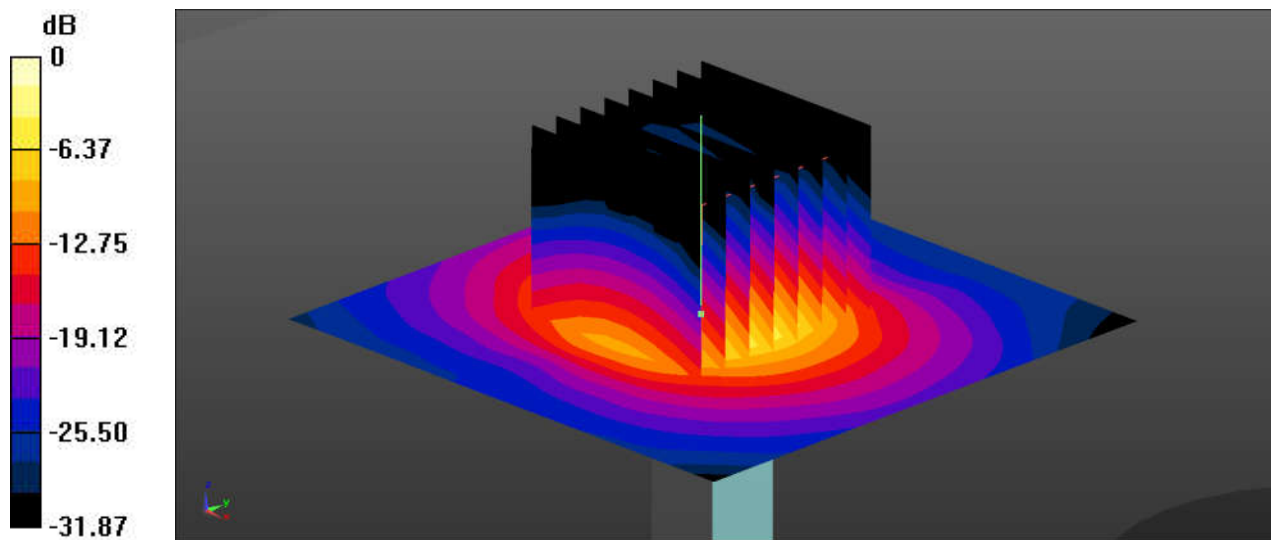
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 46.59 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 30.9 W/kg

SAR(1 g) = 8.48 W/kg; SAR(10 g) = 2.48 W/kg

Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 20.0 W/kg = 13.01 dBW/kg

System Check_Head_5600MHz**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: HSL_5000 Medium parameters used: $f = 5600$ MHz; $\sigma = 4.99$ S/m; $\epsilon_r = 35.806$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.92, 4.92, 4.92); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 22.0 W/kg

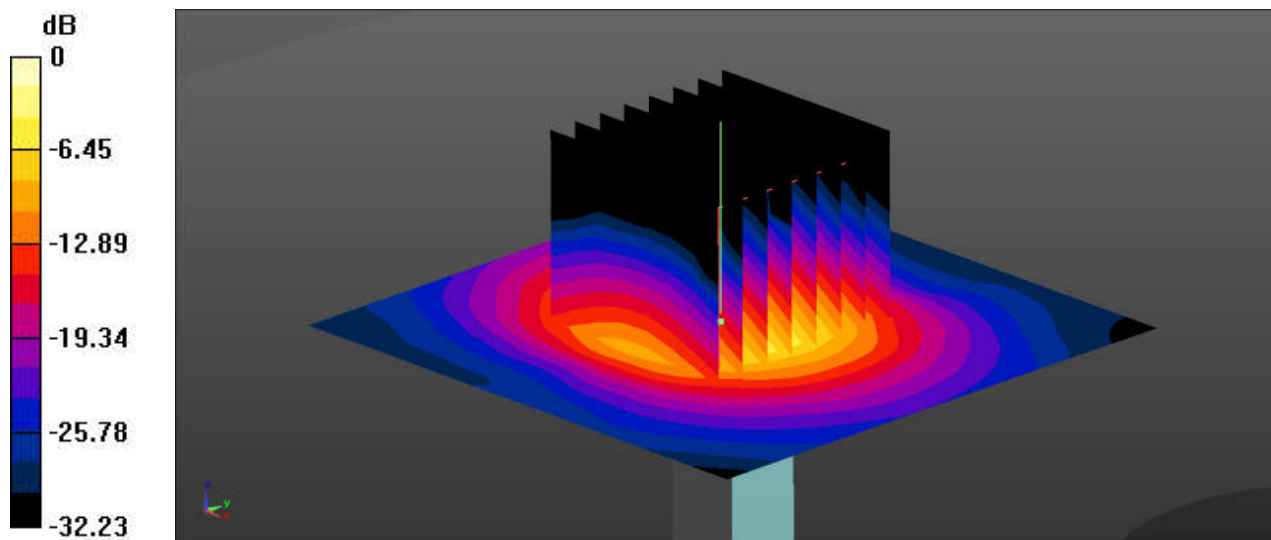
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 45.01 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 34.8 W/kg

SAR(1 g) = 8.94 W/kg; SAR(10 g) = 2.57 W/kg

Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 22.0 W/kg = 13.42 dBW/kg

System Check_Head_5750MHz**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: HSL_5000 Medium parameters used: $f = 5750$ MHz; $\sigma = 5.166$ S/m; $\epsilon_r = 35.551$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.17, 5.17, 5.17); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 20.3 W/kg

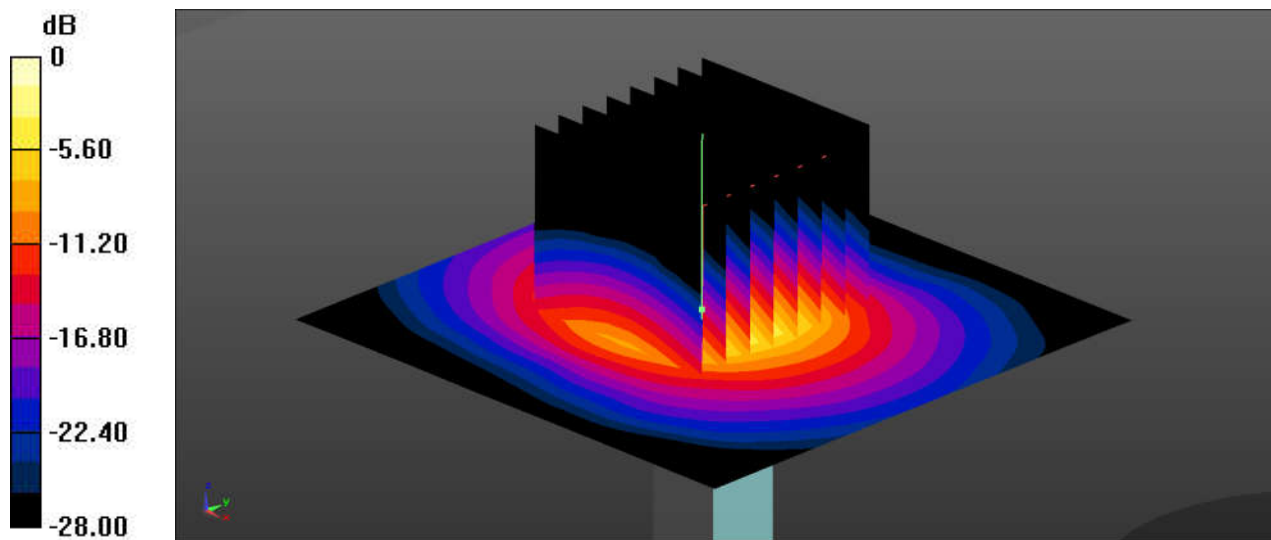
Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 41.83 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 34.6 W/kg

SAR(1 g) = 8.53 W/kg; SAR(10 g) = 2.45 W/kg

Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.3 W/kg = 13.07 dBW/kg



Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

01_GSM850_GPRS8_Right Cheek_0mm_Ch189

Communication System: UID 0, GSM850 (0); Frequency: 836.4 MHz; Duty Cycle: 1:8.3
Medium: HSL_850 Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 40.702$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.739 W/kg

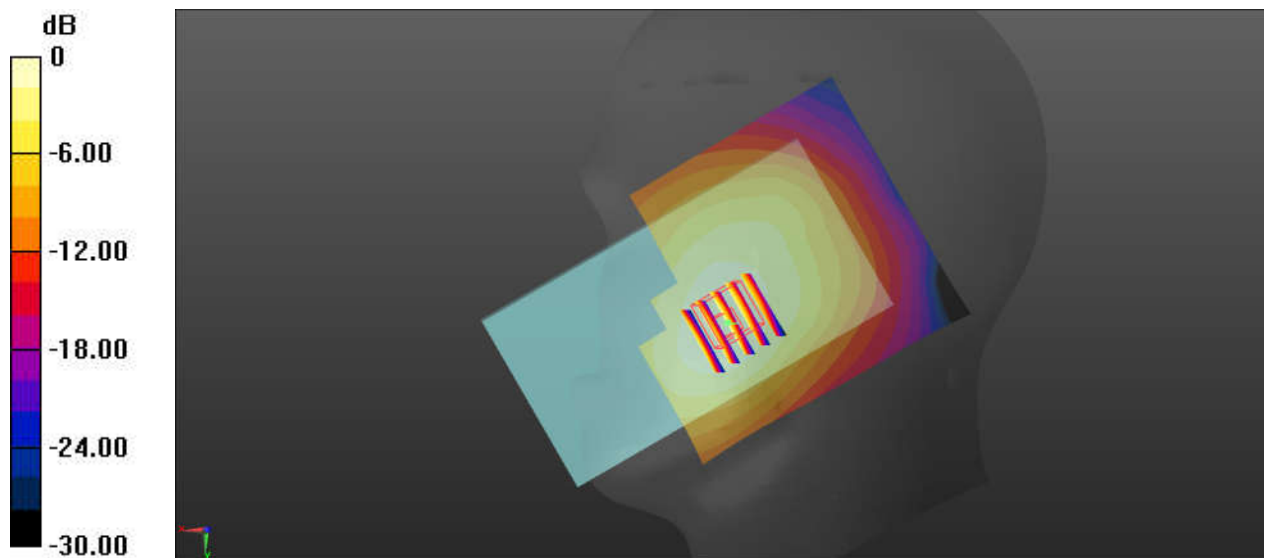
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.929 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.808 W/kg

SAR(1 g) = 0.618 W/kg; SAR(10 g) = 0.477 W/kg

Maximum value of SAR (measured) = 0.734 W/kg



0 dB = 0.739 W/kg = -1.31 dBW/kg

02_GSM1900_GPRS10_Left Cheek_0mm_Ch810

Communication System: UID 0, PCS (0); Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: HSL_1900 Medium parameters used: $f = 1910$ MHz; $\sigma = 1.451$ S/m; $\epsilon_r = 40.459$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.314 W/kg

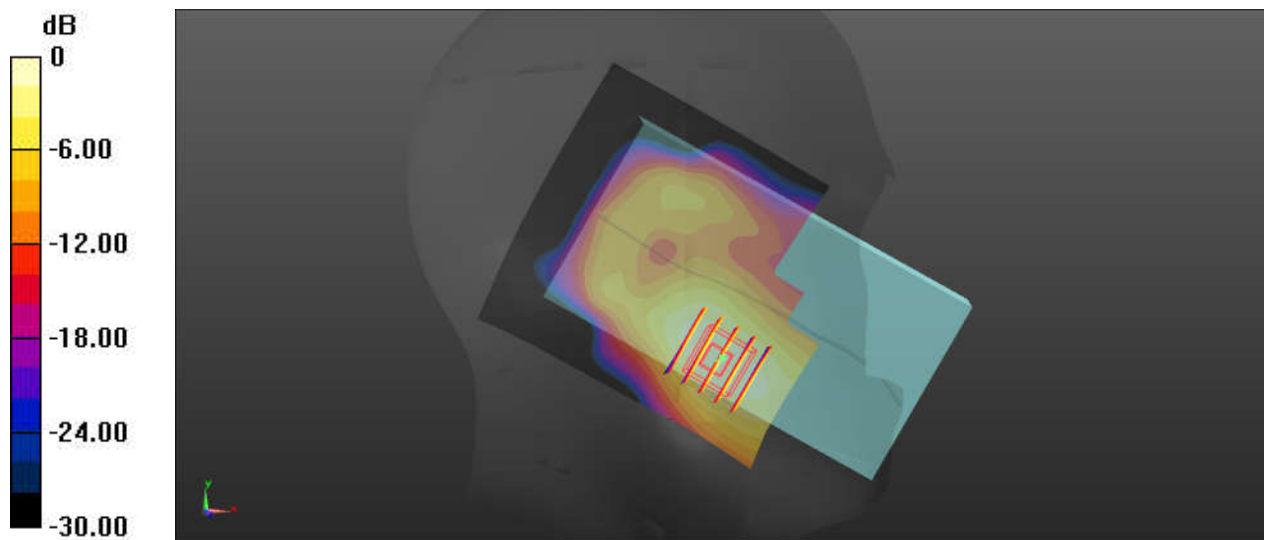
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.407 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.365 W/kg

SAR(1 g) = 0.220 W/kg; SAR(10 g) = 0.136 W/kg

Maximum value of SAR (measured) = 0.288 W/kg



0 dB = 0.314 W/kg = -5.03 dBW/kg

03_WCDMA II_RMC 12.2 Kbps_Left Cheek_0mm_Ch9538

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: $f = 1908$ MHz; $\sigma = 1.449$ S/m; $\epsilon_r = 40.463$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (71x81x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.837 W/kg

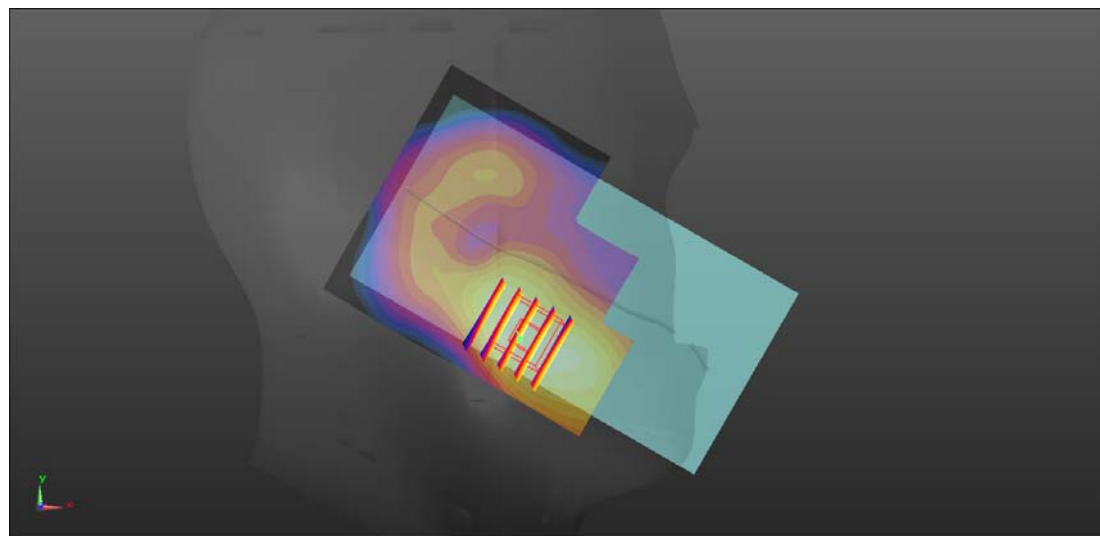
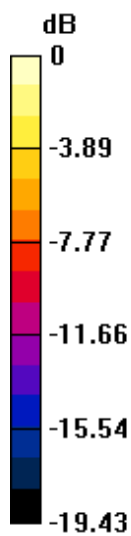
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 8.929 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.591 W/kg; SAR(10 g) = 0.358 W/kg

Maximum value of SAR (measured) = 0.847 W/kg



0 dB = 0.847 W/kg = -0.72 dBW/kg

04_WCDMA IV_RMC 12.2K_Left Cheek_0mm_Ch1312

Communication System: UID 0, WCDMA (0); Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.318$ S/m; $\epsilon_r = 41.234$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.46, 8.46, 8.46); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.02 W/kg

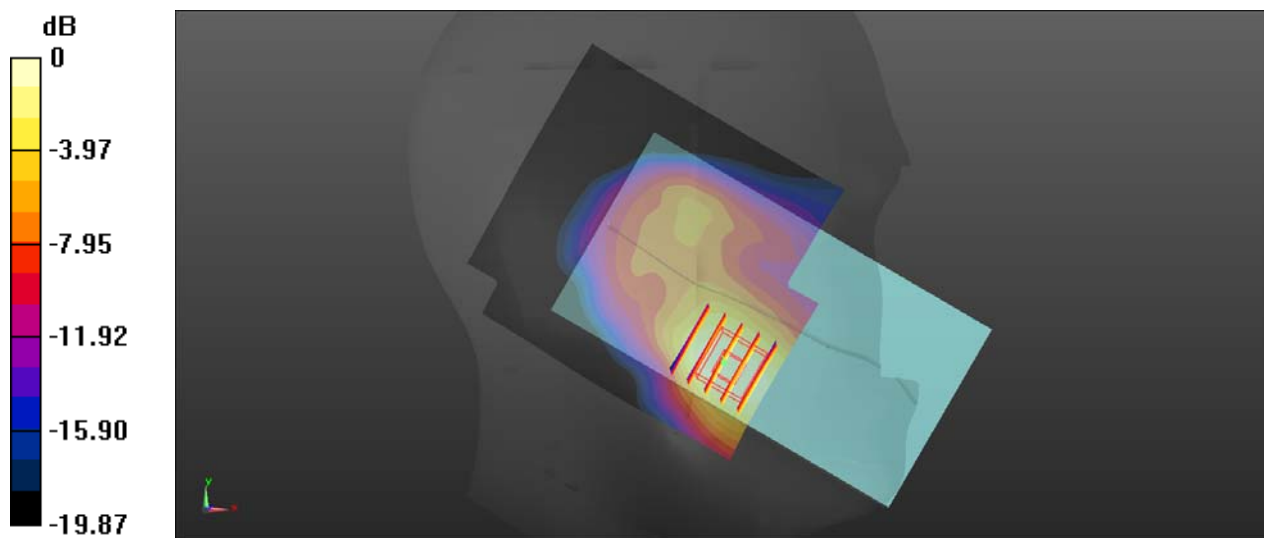
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 8.425 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.696 W/kg; SAR(10 g) = 0.433 W/kg

Maximum value of SAR (measured) = 0.938 W/kg



0 dB = 0.938 W/kg = -0.28 dBW/kg

05_WCDMA V_RMC 12.2 Kbps_Right Cheek_0mm_Ch4233

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: $f = 847$ MHz; $\sigma = 0.918$ S/m; $\epsilon_r = 40.571$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.728 W/kg

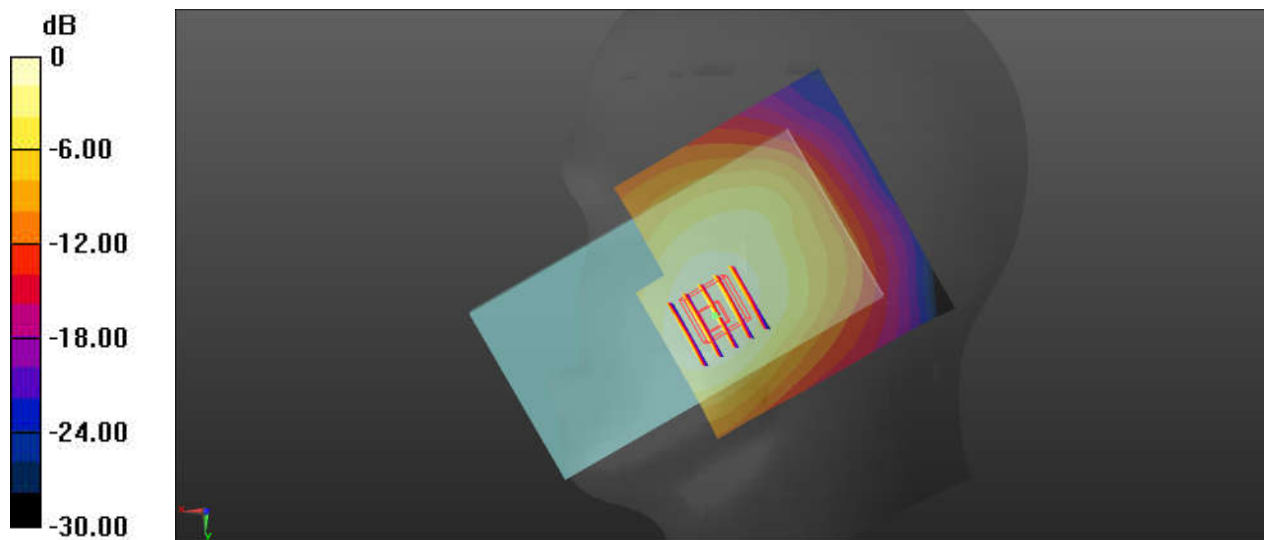
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.620 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.795 W/kg

SAR(1 g) = 0.622 W/kg; SAR(10 g) = 0.484 W/kg

Maximum value of SAR (measured) = 0.730 W/kg



0 dB = 0.728 W/kg = -1.38 dBW/kg

06_CDMA2000 BC0_RC3+SO55_Right Cheek_0mm_Ch777

Communication System: UID 0, CDMA (0); Frequency: 848.31 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: $f = 848.31$ MHz; $\sigma = 0.919$ S/m; $\epsilon_r = 40.549$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.792 W/kg

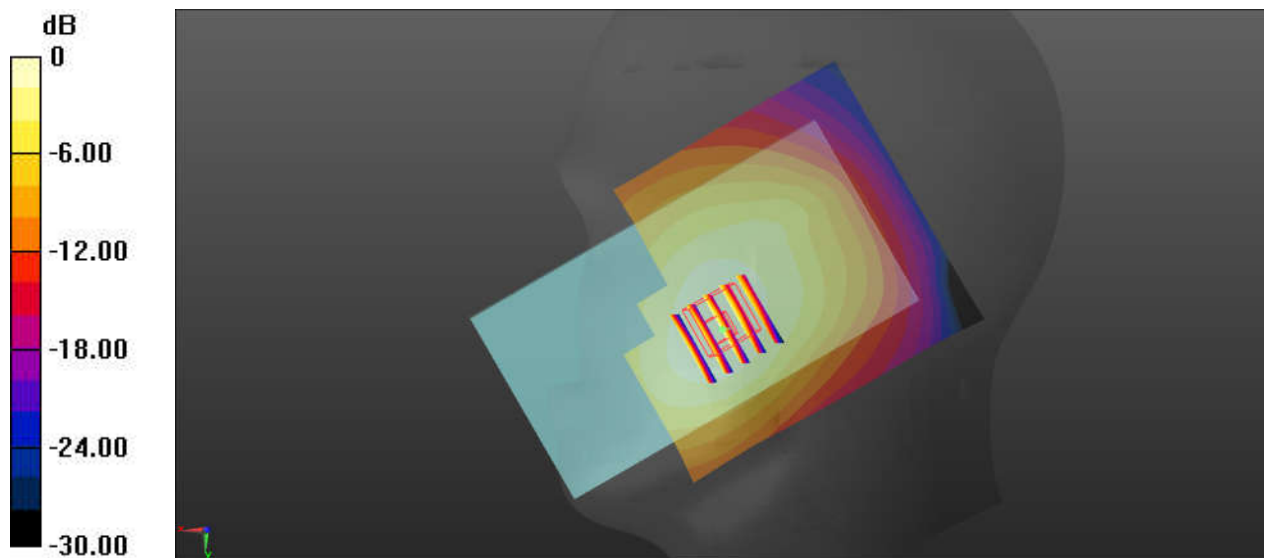
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.755 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.865 W/kg

SAR(1 g) = 0.662 W/kg; SAR(10 g) = 0.512 W/kg

Maximum value of SAR (measured) = 0.782 W/kg



0 dB = 0.779 W/kg = -1.07 dBW/kg

07_CDMA2000 BC1_RC3+SO55_Left Cheek_0mm_Ch25

Communication System: UID 0, CDMA (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: $f = 1851.25$ MHz; $\sigma = 1.392$ S/m; $\epsilon_r = 40.671$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.870 W/kg

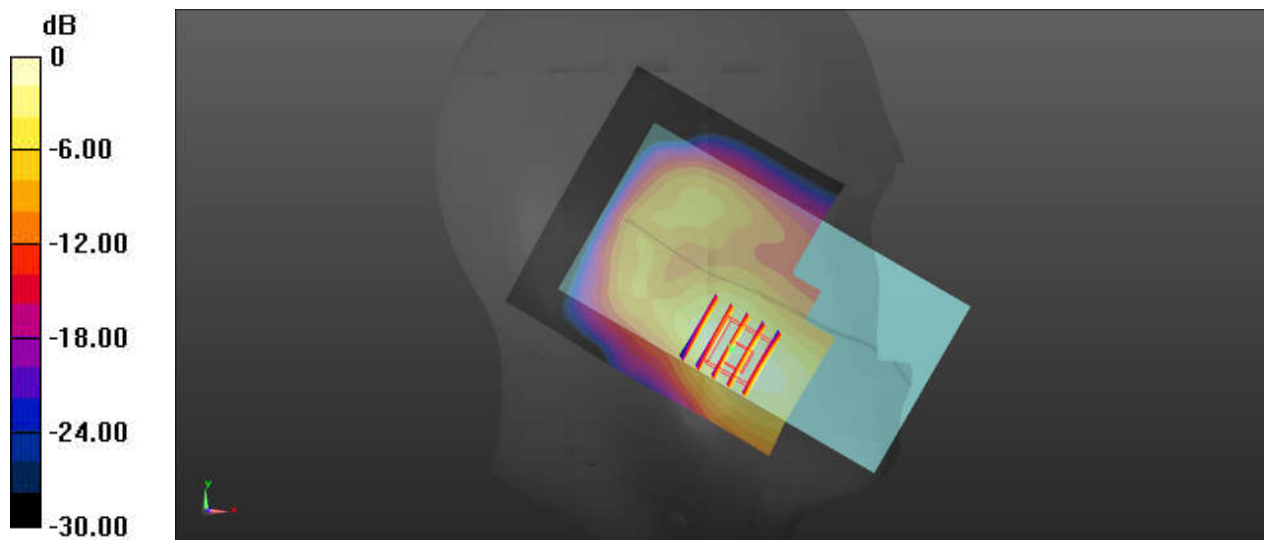
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.890 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.957 W/kg

SAR(1 g) = 0.593 W/kg; SAR(10 g) = 0.371 W/kg

Maximum value of SAR (measured) = 0.787 W/kg



0 dB = 0.870 W/kg = -0.60 dBW/kg

08_CDMA2000 BC10_RC3+SO55_Right Cheek_0mm_Ch684

Communication System: UID 0, CDMA (0); Frequency: 823.1 MHz; Duty Cycle: 1:1

Medium: HSL_850 Medium parameters used: $f = 823.1$ MHz; $\sigma = 0.895$ S/m; $\epsilon_r = 40.853$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.787 W/kg

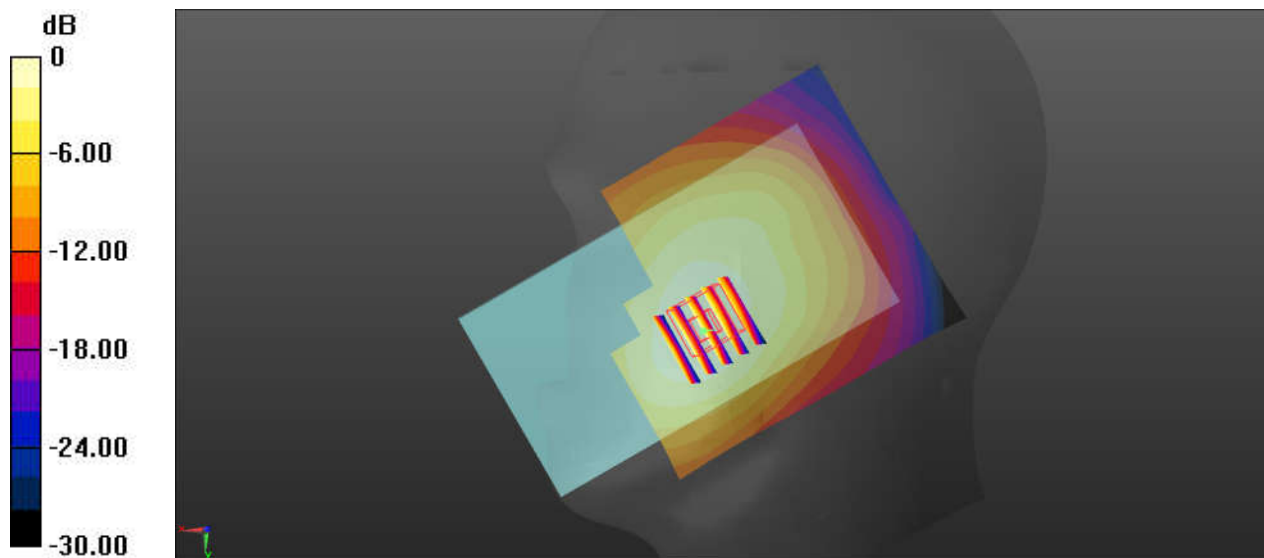
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.48 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.843 W/kg

SAR(1 g) = 0.651 W/kg; SAR(10 g) = 0.505 W/kg

Maximum value of SAR (measured) = 0.765 W/kg



0 dB = 0.787 W/kg = -1.04 dBW/kg

09_LTE Band 2_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch18900

Communication System: UID 0, LTE-FDD (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.42$ S/m; $\epsilon_r = 40.579$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.868 W/kg

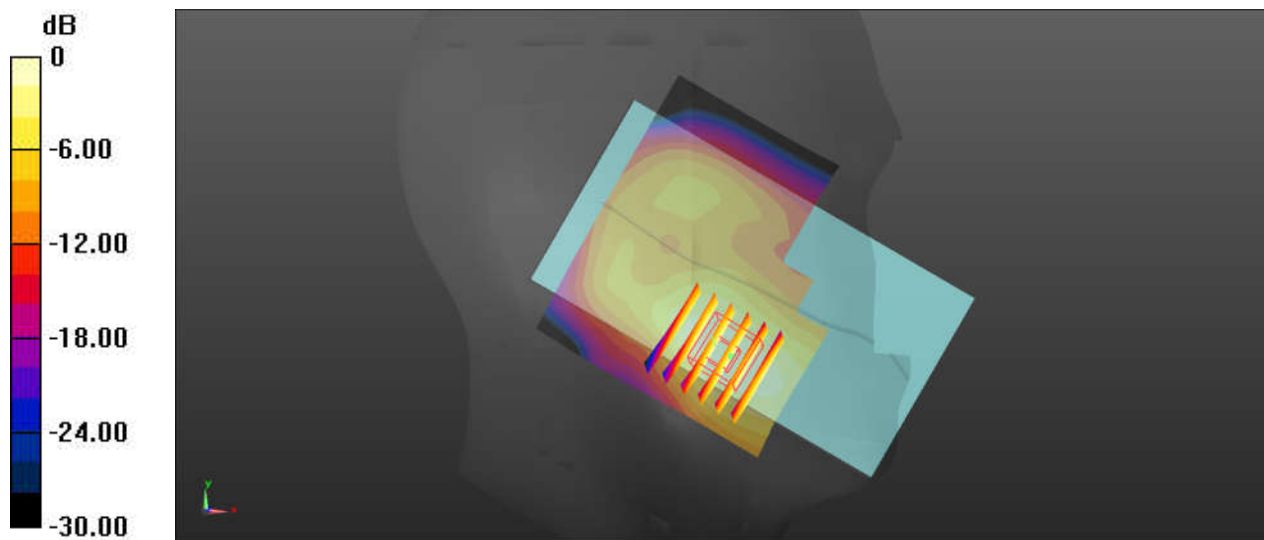
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.235 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.637 W/kg; SAR(10 g) = 0.399 W/kg

Maximum value of SAR (measured) = 0.828 W/kg



0 dB = 0.868 W/kg = -0.61 dBW/kg

10_LTE Band 4_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch20050

Communication System: UID 0, LTE-FDD (0); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium: HSL_1750 Medium parameters used: $f = 1720$ MHz; $\sigma = 1.326$ S/m; $\epsilon_r = 41.199$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.46, 8.46, 8.46); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.985 W/kg

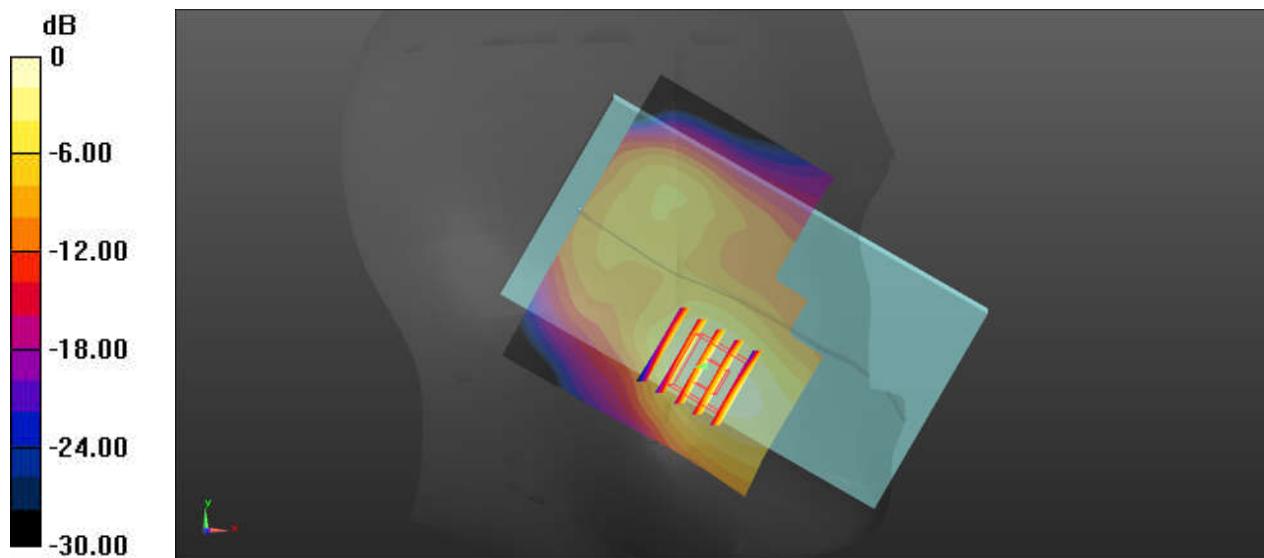
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.852 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.718 W/kg; SAR(10 g) = 0.461 W/kg

Maximum value of SAR (measured) = 0.924 W/kg



0 dB = 0.985 W/kg = -0.07 dBW/kg

11_LTE Band 5_10M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch20600

Communication System: UID 0, LTE-FDD (0); Frequency: 844 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: $f = 844$ MHz; $\sigma = 0.915$ S/m; $\epsilon_r = 40.616$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.592 W/kg

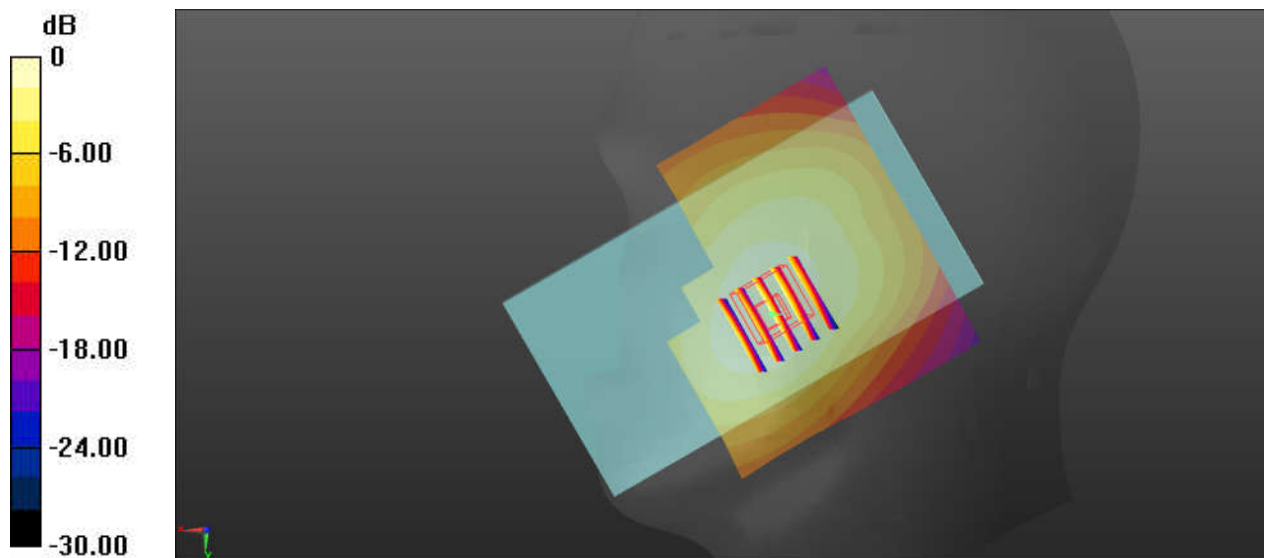
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.672 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.635 W/kg

SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.380 W/kg

Maximum value of SAR (measured) = 0.580 W/kg



0 dB = 0.592 W/kg = -2.28 dBW/kg

12_LTE Band 7_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch21100

Communication System: UID 0, LTE-FDD (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: HSL_2600 Medium parameters used: $f = 2535$ MHz; $\sigma = 1.857$ S/m; $\epsilon_r = 40.367$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.31, 7.31, 7.31); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (101x81x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.495 W/kg

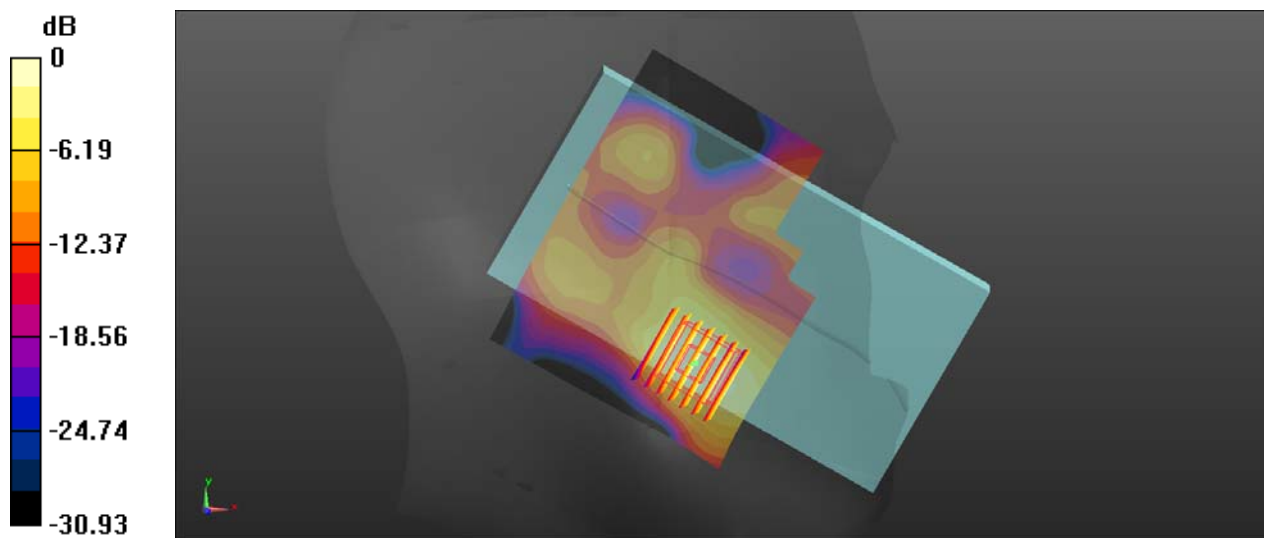
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 6.033 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.584 W/kg

SAR(1 g) = 0.280 W/kg; SAR(10 g) = 0.149 W/kg

Maximum value of SAR (measured) = 0.481 W/kg



13_LTE Band 12_10M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch23060

Communication System: UID 0, LTE-FDD (0); Frequency: 704 MHz; Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: $f = 704$ MHz; $\sigma = 0.849$ S/m; $\epsilon_r = 42.369$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.77, 9.77, 9.77); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.297 W/kg

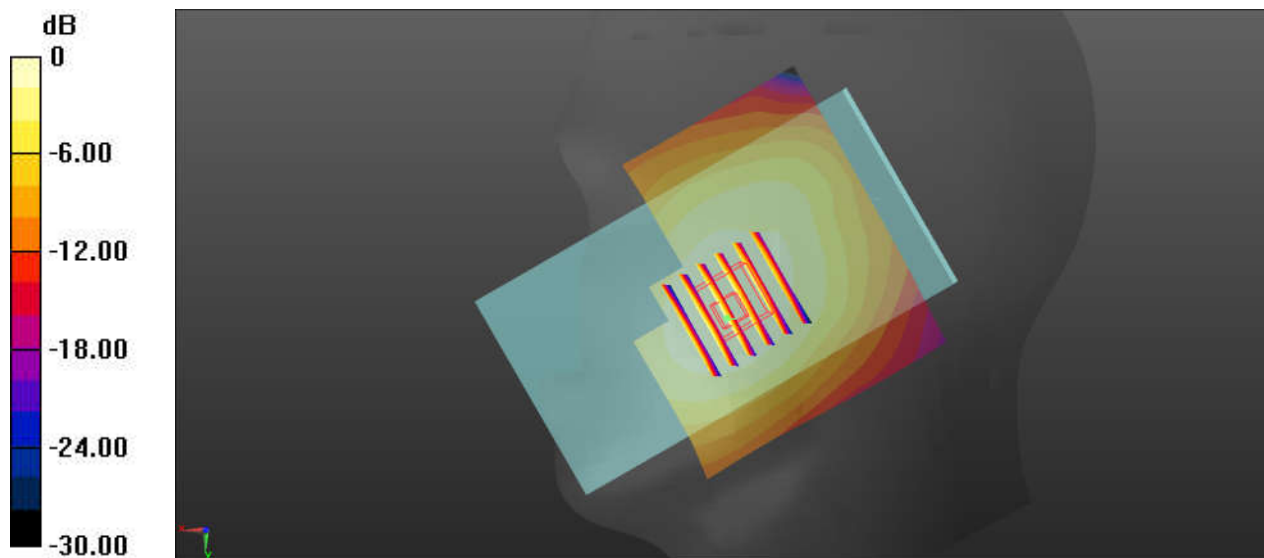
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.839 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.311 W/kg

SAR(1 g) = 0.255 W/kg; SAR(10 g) = 0.203 W/kg

Maximum value of SAR (measured) = 0.290 W/kg



0 dB = 0.297 W/kg = -5.27 dBW/kg

14_LTE Band 13_10M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch23230

Communication System: UID 0, LTE-FDD (0); Frequency: 782 MHz; Duty Cycle: 1:1
Medium: HSL_750 Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.924 \text{ S/m}$; $\epsilon_r = 41.333$; $\rho = 1000 \text{ kg/m}^3$
Ambient Temperature : $23.3 \text{ }^\circ\text{C}$; Liquid Temperature : $22.7 \text{ }^\circ\text{C}$

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.77, 9.77, 9.77); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.398 W/kg

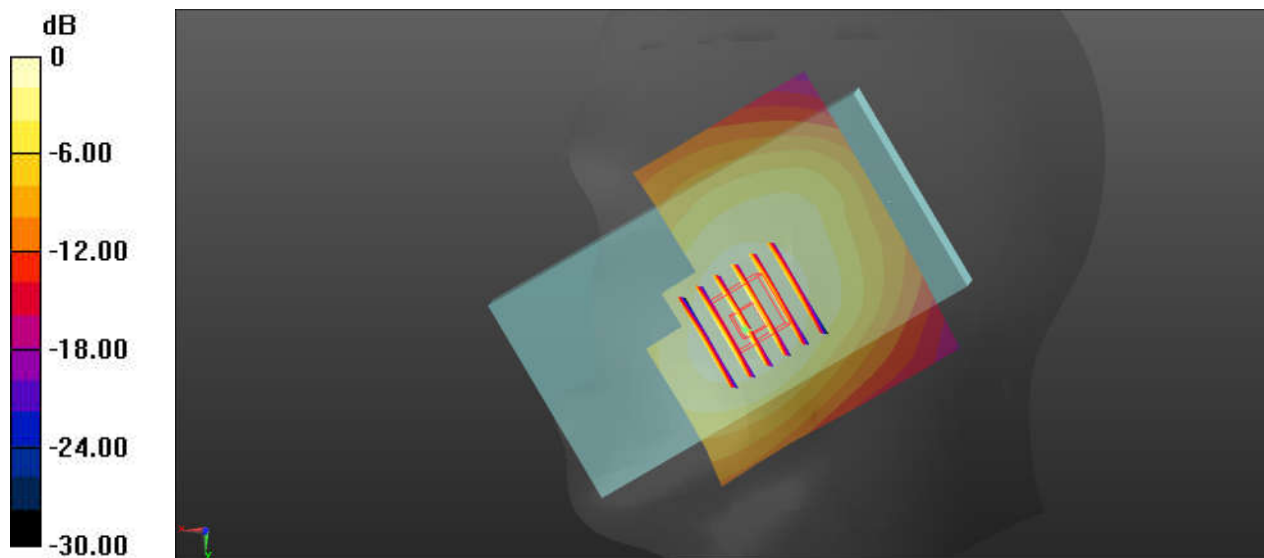
Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.372 V/m ; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.346 W/kg ; SAR(10 g) = 0.273 W/kg

Maximum value of SAR (measured) = 0.401 W/kg



$0 \text{ dB} = 0.398 \text{ W/kg} = -4.00 \text{ dBW/kg}$

15_LTE Band 25_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch26140

Communication System: UID 0, LTE-FDD (0); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: HSL_1900 Medium parameters used: $f = 1860$ MHz; $\sigma = 1.401$ S/m; $\epsilon_r = 40.644$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.660 W/kg

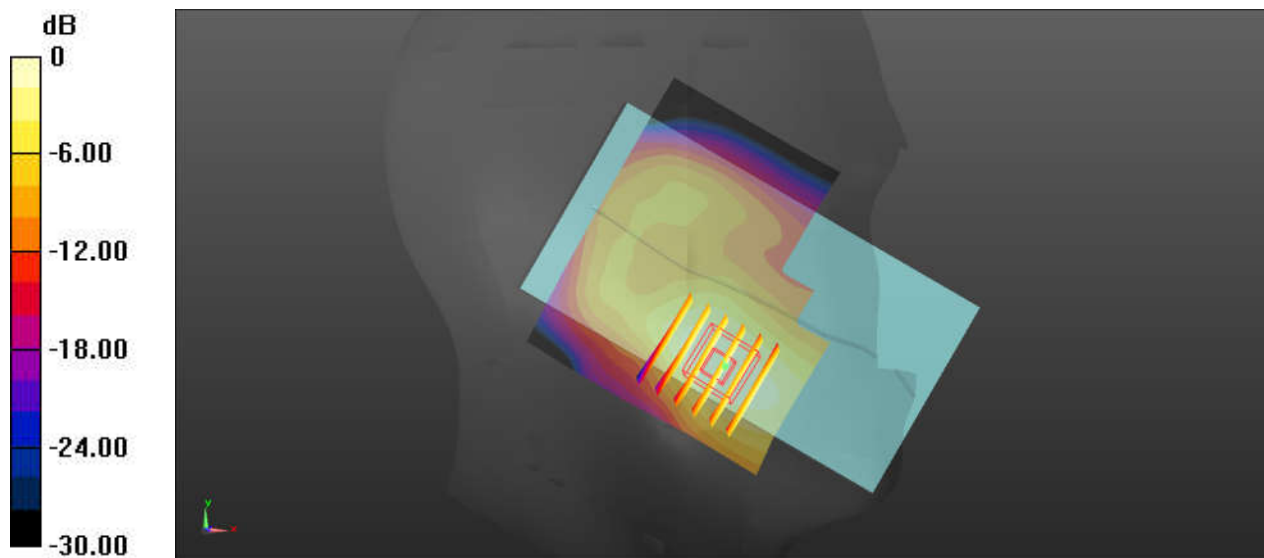
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.923 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.752 W/kg

SAR(1 g) = 0.475 W/kg; SAR(10 g) = 0.299 W/kg

Maximum value of SAR (measured) = 0.622 W/kg



0 dB = 0.660 W/kg = -1.80 dBW/kg

16_LTE Band 26_15M_QPSK_1RB_0Offset_Right Cheek_0mm_Ch26965

Communication System: UID 0, LTE-FDD (0); Frequency: 841.5 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: $f = 841.5$ MHz; $\sigma = 0.912$ S/m; $\epsilon_r = 40.639$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.625 W/kg

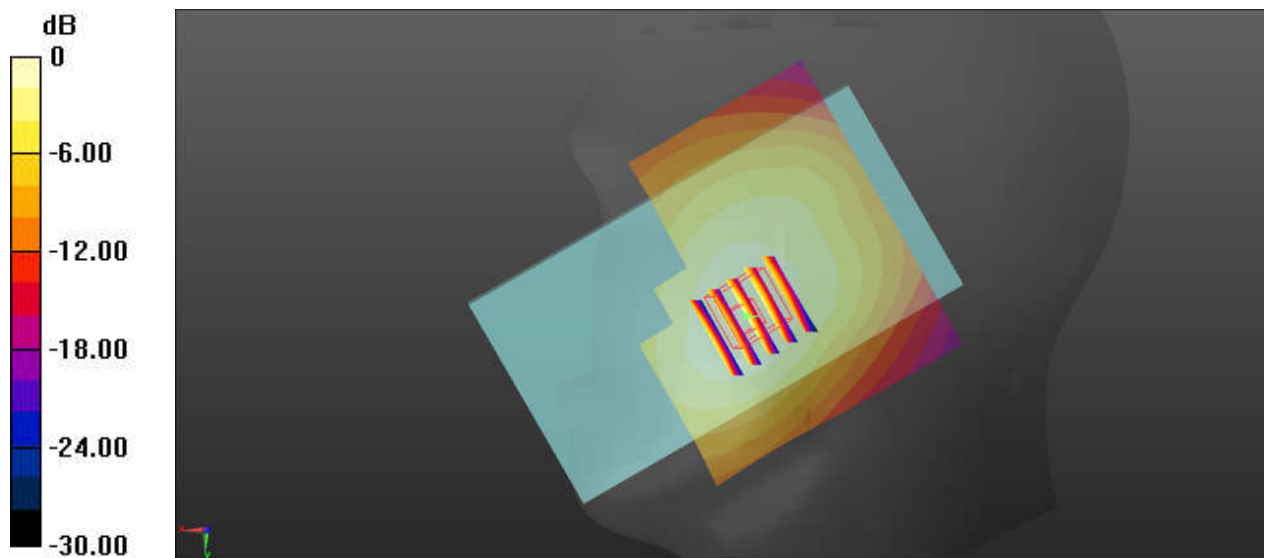
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 8.975 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.682 W/kg

SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.406 W/kg

Maximum value of SAR (measured) = 0.623 W/kg



0 dB = 0.625 W/kg = -2.04 dBW/kg

17_LTE Band 38_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch38000

Communication System: UID 0, LTE-TDD (0); Frequency: 2595 MHz; Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: $f = 2595$ MHz; $\sigma = 1.928$ S/m; $\epsilon_r = 40.139$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.2 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.31, 7.31, 7.31); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (101x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.518 W/kg

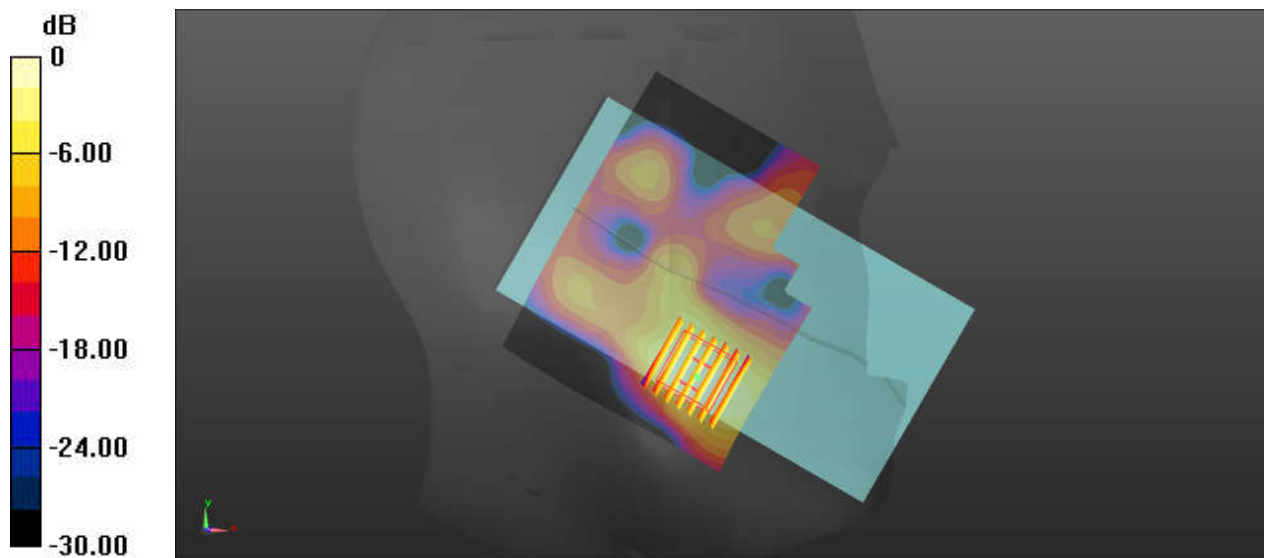
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.968 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.606 W/kg

SAR(1 g) = 0.320 W/kg; SAR(10 g) = 0.163 W/kg

Maximum value of SAR (measured) = 0.501 W/kg



0 dB = 0.518 W/kg = -2.86 dBW/kg

19_LTE Band 41_20M_QPSK_1RB_0Offset_Left Cheek_0mm_Ch39750

Communication System: UID 0, LTE-TDD (0); Frequency: 2506 MHz; Duty Cycle: 1:1.59
Medium: HSL_2600 Medium parameters used: $f = 2506$ MHz; $\sigma = 1.823$ S/m; $\epsilon_r = 40.48$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.2 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.31, 7.31, 7.31); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (101x81x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.475 W/kg

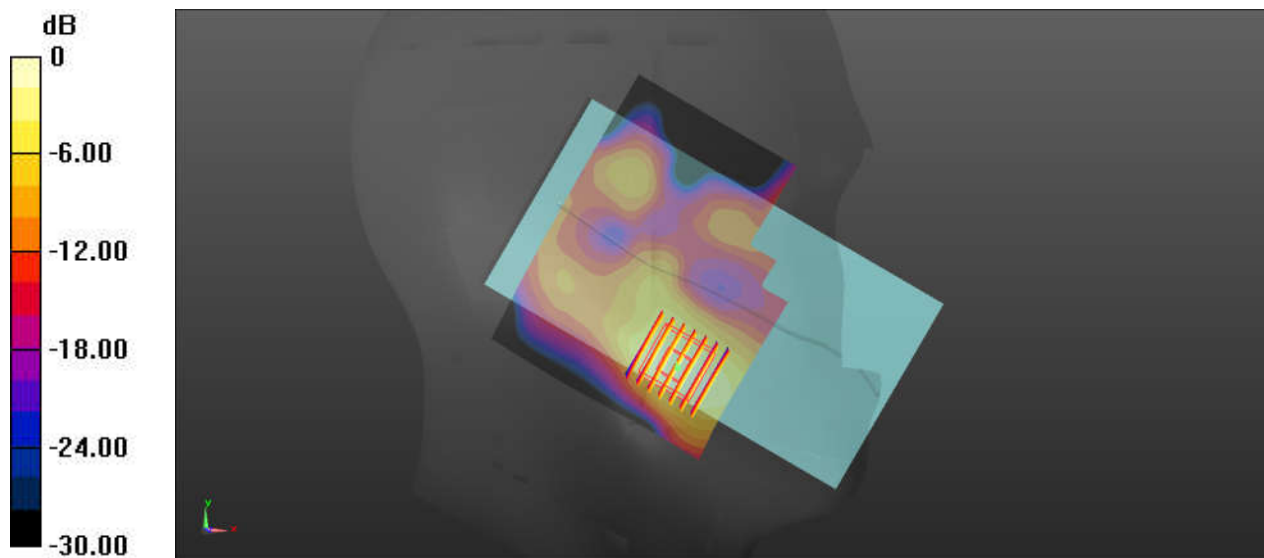
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 4.727 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.294 W/kg; SAR(10 g) = 0.151 W/kg

Maximum value of SAR (measured) = 0.457 W/kg



0 dB = 0.475 W/kg = -3.23 dBW/kg

20_WLAN 2.4GHz_802.11b 1Mbps_Right Cheek_0mm_Ch11_Ant1+2

Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: HSL_2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.793$ S/m; $\epsilon_r = 40.559$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.5, 7.5, 7.5); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (101x91x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.521 W/kg

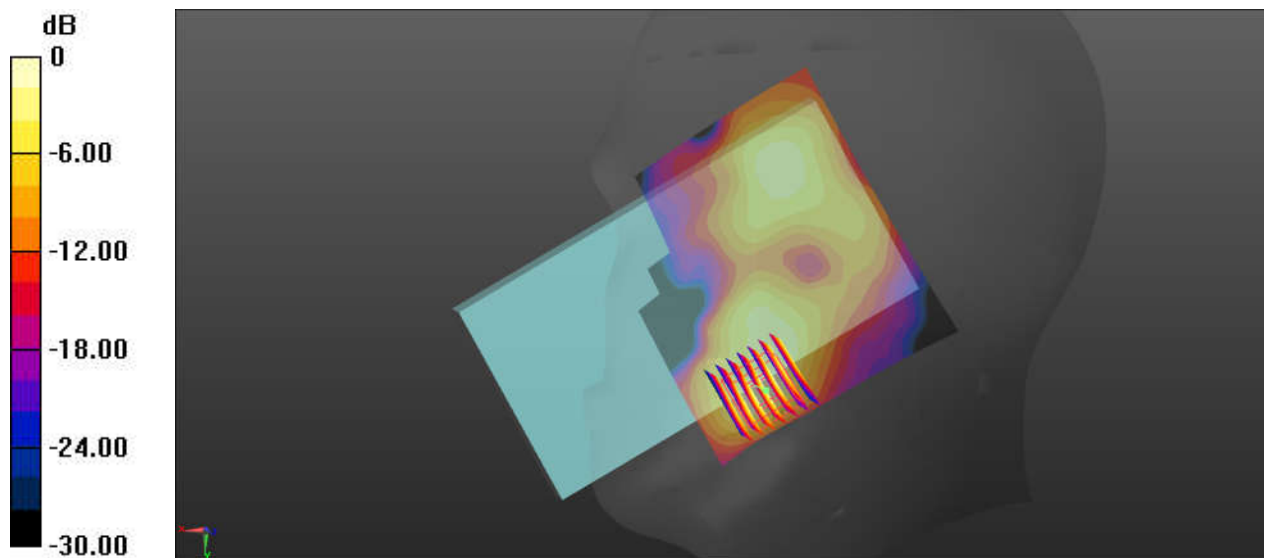
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 7.988 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.821 W/kg

SAR(1 g) = 0.387 W/kg; SAR(10 g) = 0.156 W/kg

Maximum value of SAR (measured) = 0.629 W/kg



0 dB = 0.521 W/kg = -2.83 dBW/kg

21_Bluetooth_1Mbps_Right Cheek_0mm_Ch0_Ant1

Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz; Duty Cycle: 1:1.298

Medium: HSL_2450 Medium parameters used: $f = 2402$ MHz; $\sigma = 1.722$ S/m; $\epsilon_r = 40.768$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C ; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(7.5, 7.5, 7.5); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (101x91x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0109 W/kg

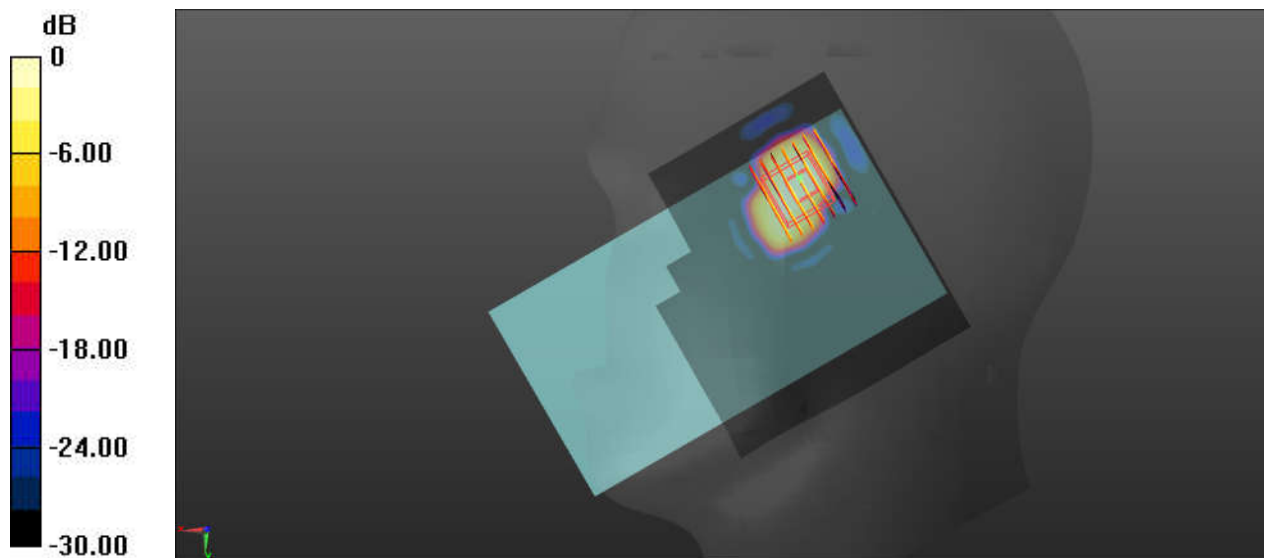
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.7910 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0140 W/kg

SAR(1 g) = 0.007 W/kg; SAR(10 g) = 0.002 W/kg

Maximum value of SAR (measured) = 0.0108 W/kg



0 dB = 0.0109 W/kg = -19.63 dBW/kg

22_WLAN5GHz_802.11n-HT40 MCS0_Left Cheek_0mm_Ch54_Ant1+2

Communication System: UID 0, 802.11n (0); Frequency: 5270 MHz; Duty Cycle: 1:1.039

Medium: HSL_5000 Medium parameters used: $f = 5270$ MHz; $\sigma = 4.628$ S/m; $\epsilon_r = 36.379$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.19, 5.19, 5.19); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (121x101x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.197 W/kg

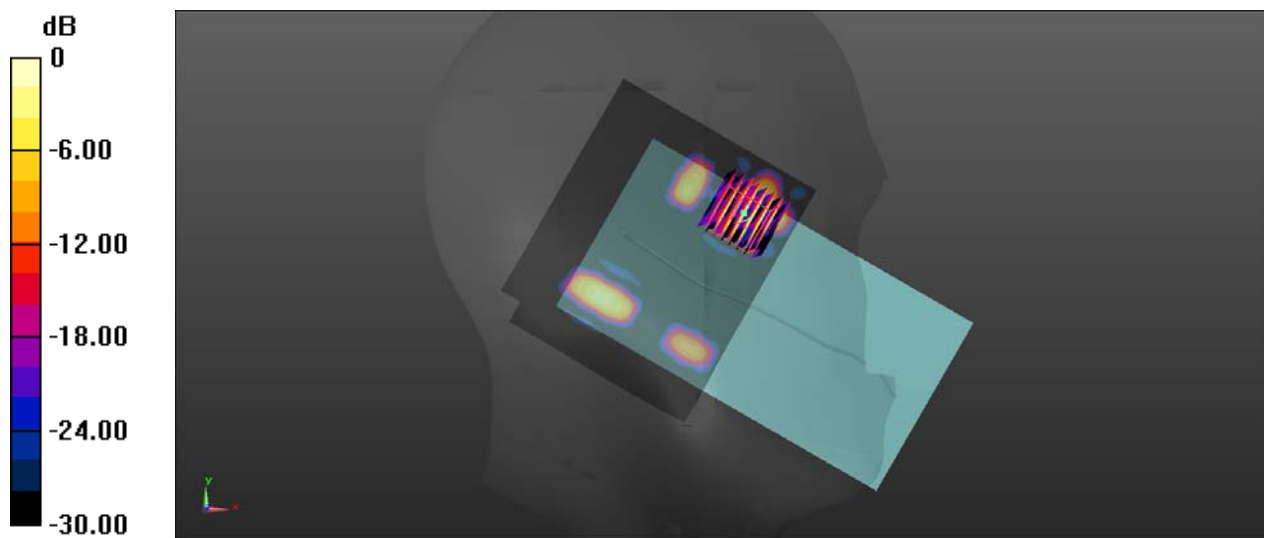
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 1.206 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.461 W/kg

SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.023 W/kg

Maximum value of SAR (measured) = 0.198 W/kg



23_WLAN5GHz_802.11ac-VHT80 MCS0_Left Cheek_0mm_Ch138_Ant1+2

Communication System: UID 0, 802.11ac (0); Frequency: 5690 MHz; Duty Cycle: 1:1.073

Medium: HSL_5000 Medium parameters used: $f = 5690$ MHz; $\sigma = 5.092$ S/m; $\epsilon_r = 35.677$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(4.92, 4.92, 4.92); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (121x101x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.699 W/kg

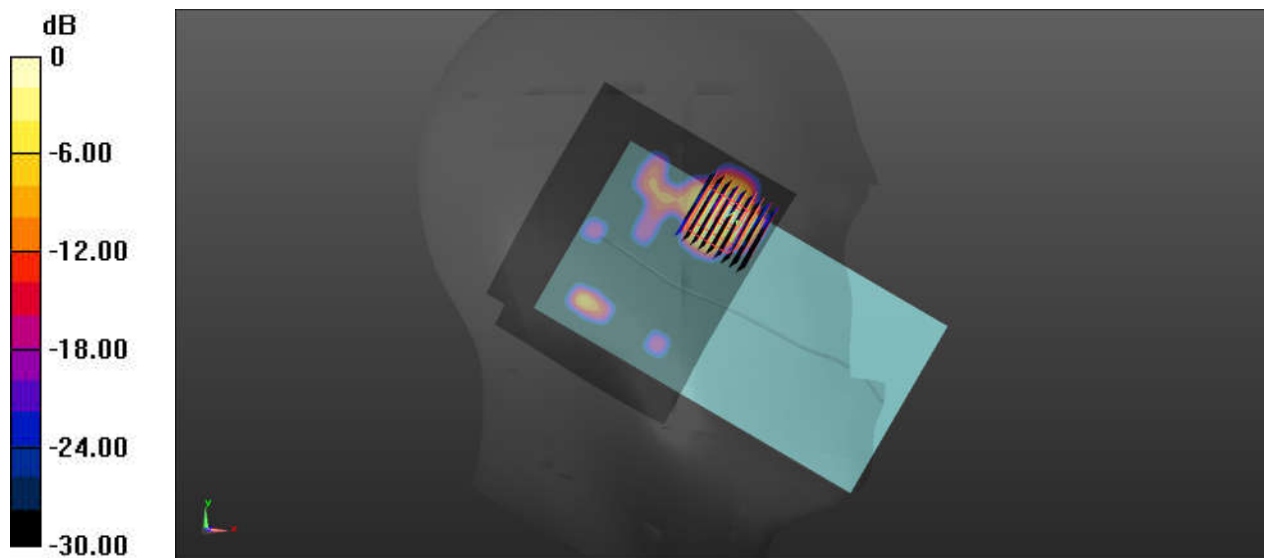
Zoom Scan (9x9x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.9480 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.700 W/kg

SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.051 W/kg

Maximum value of SAR (measured) = 0.417 W/kg



0 dB = 0.699 W/kg = -1.56 dBW/kg

24_WLAN5GHz_802.11ac-VHT80 MCS0_Left Cheek_0mm_Ch155_Ant1+2

Communication System: UID 0, 802.11ac (0); Frequency: 5775 MHz; Duty Cycle: 1:1.073

Medium: HSL_5000 Medium parameters used: $f = 5775$ MHz; $\sigma = 5.2$ S/m; $\epsilon_r = 35.544$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(5.17, 5.17, 5.17); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (121x101x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.546 W/kg

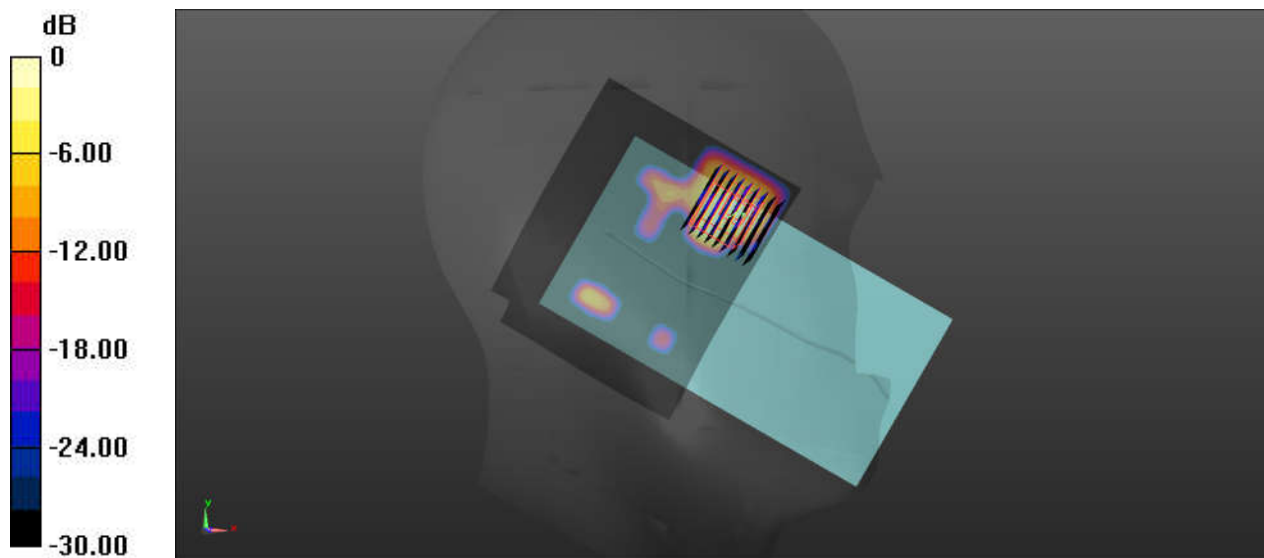
Zoom Scan (9x9x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 1.064 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.675 W/kg

SAR(1 g) = 0.155 W/kg; SAR(10 g) = 0.051 W/kg

Maximum value of SAR (measured) = 0.420 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

25_GSM850_GPRS8_Rear Face_10mm_Ch251

Communication System: UID 0, GSM850 (0); Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL_850 Medium parameters used: $f = 849$ MHz; $\sigma = 0.919$ S/m; $\epsilon_r = 40.543$; $\rho = 1000$ kg/m³

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

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(9.48, 9.48, 9.48); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x101x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.946 W/kg

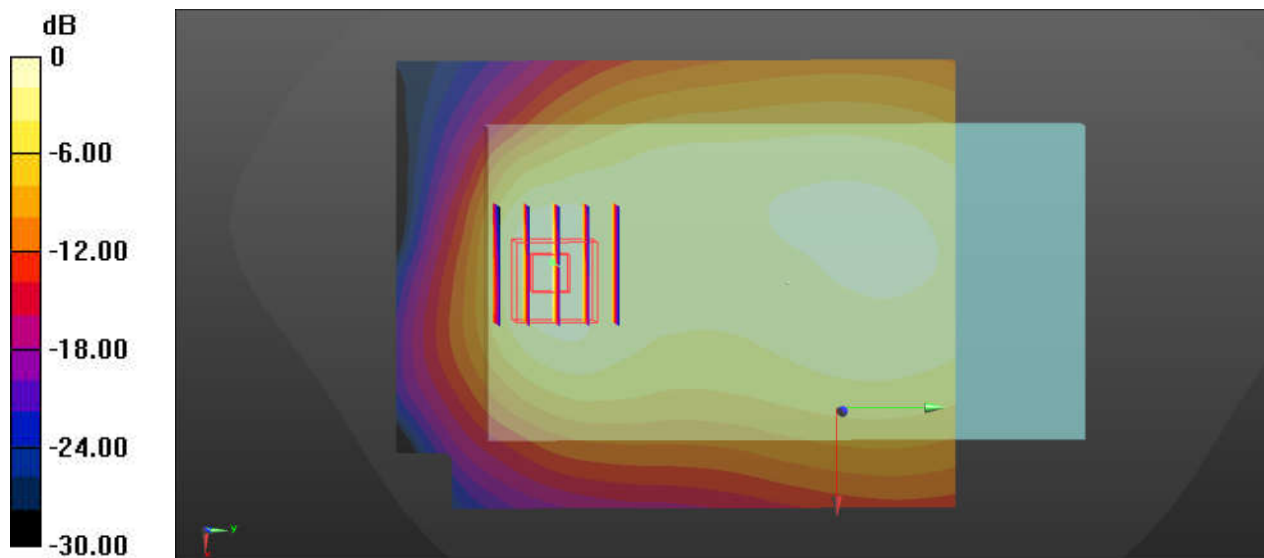
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 24.24 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.654 W/kg; SAR(10 g) = 0.378 W/kg

Maximum value of SAR (measured) = 0.987 W/kg



0 dB = 0.946 W/kg = -0.24 dBW/kg

26_GSM1900_GPRS10_Rear Face_10mm_Ch810

Communication System: UID 0, PCS (0); Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium: HSL_1900 Medium parameters used: $f = 1910$ MHz; $\sigma = 1.451$ S/m; $\epsilon_r = 40.459$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x101x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.555 W/kg

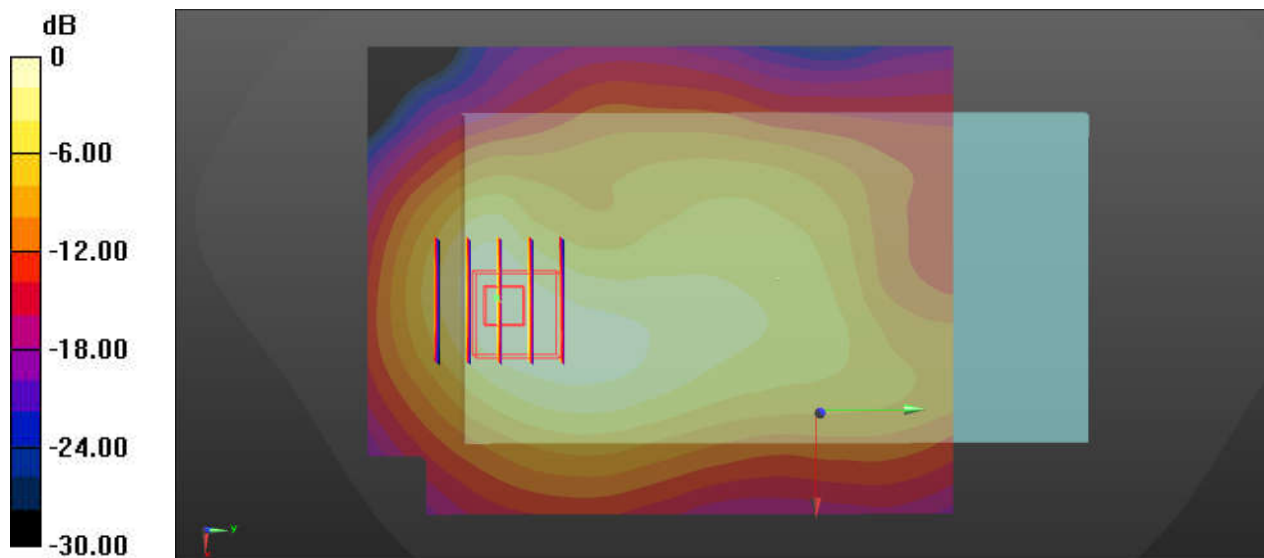
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 11.90 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.620 W/kg

SAR(1 g) = 0.367 W/kg; SAR(10 g) = 0.218 W/kg

Maximum value of SAR (measured) = 0.528 W/kg



0 dB = 0.555 W/kg = -2.56 dBW/kg

27_WCDMA II_RMC 12.2 Kbps_Rear Face_10mm_Ch9400

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.42$ S/m; $\epsilon_r = 40.579$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.1 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.1, 8.1, 8.1); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.47 W/kg

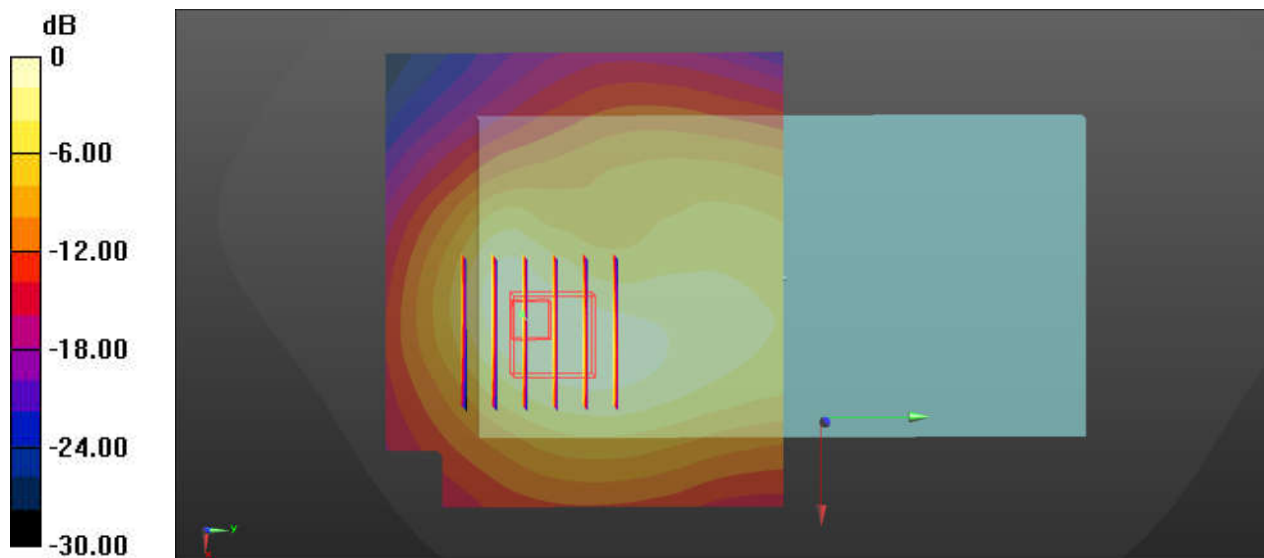
Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 19.86 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.50 W/kg

SAR(1 g) = 0.895 W/kg; SAR(10 g) = 0.545 W/kg

Maximum value of SAR (measured) = 1.27 W/kg



0 dB = 1.47 W/kg = 1.67 dBW/kg

28_WCDMA IV_RMC 12.2 Kbps_Rear Face_10mm_Ch1513

Communication System: UID 0, WCDMA (0); Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: HSL_1750 Medium parameters used: $f = 1753$ MHz; $\sigma = 1.36$ S/m; $\epsilon_r = 41.029$; $\rho = 1000$ kg/m³
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3857; ConvF(8.46, 8.46, 8.46); Calibrated: 2019.5.27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1210; Calibrated: 2019.7.23
- Phantom: SAM1; Type: SAM; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

Area Scan (81x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.41 W/kg

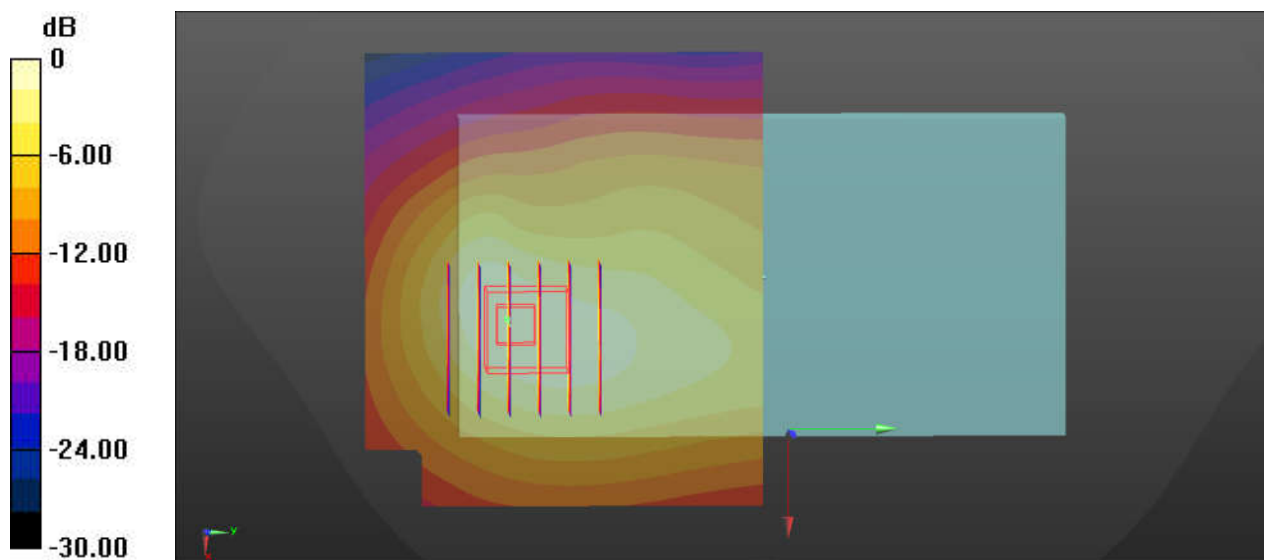
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.66 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 1 W/kg; SAR(10 g) = 0.621 W/kg

Maximum value of SAR (measured) = 1.39 W/kg



0 dB = 1.41 W/kg = 1.49 dBW/kg