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SAR EVALUATION REPORT

Applicant Name:
Apple, Inc.
One Apple Park Way
Cupertino, CA 95014 USA

Date of Testing:
06/22/20 - 07/27/20
Test Site/Location:
PCTEST Lab, Morgan Hill, CA, USA
Document Serial No.:
1C2004270018-01-R2.BCG

FCC ID: **BCG-A2375**

APPLICANT: **APPLE, INC.**

DUT Type: Watch
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: A2375

Equipment Class	Band & Mode	Tx Frequency	SAR	
			1g Head (W/kg)	10g Extremity (W/kg)
PCT	UMTS 850	826.40 - 846.60 MHz	< 0.1	0.16
PCT	UMTS 1750	1712.4 - 1752.6 MHz	0.31	< 0.1
PCT	UMTS 1900	1852.4 - 1907.6 MHz	0.15	< 0.1
PCT	LTE Band 26 (Cell)	814.7 - 848.3 MHz	< 0.1	0.18
PCT	LTE Band 5 (Cell)	824.7 - 848.3 MHz	< 0.1	0.18
PCT	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.23	< 0.1
PCT	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A
PCT	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.13	< 0.1
PCT	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A
PCT	LTE Band 7	2502.5 - 2567.5 MHz	0.82	< 0.1
PCT	LTE Band 41	2498.5 - 2687.5 MHz	0.49	< 0.1
DTS	2.4 GHz WLAN	2412 - 2472 MHz	0.13	< 0.1
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.11	< 0.1
NII	U-NII-2C	5500 - 5720 MHz	0.16	< 0.1
NII	U-NII-3	5745 - 5825 MHz	0.14	< 0.1
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.05	< 0.1
Simultaneous SAR per KDB 690783 D01v01r03:			1.03	0.20

Note: This revised Test Report (S/N: 1C2004270018-01-R2.BCG) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This watch has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

Randy Ortanez
President

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TABLE OF CONTENTS

1 DEVICE UNDER TEST 3

2 LTE INFORMATION 8

3 INTRODUCTION 9

4 DOSIMETRIC ASSESSMENT 10

5 TEST CONFIGURATION POSITIONS.... 11

6 RF EXPOSURE LIMITS 12

7 FCC MEASUREMENT PROCEDURES.... 13

8 RF CONDUCTED POWERS.... 18

9 SYSTEM VERIFICATION.... 43

10 SAR DATA SUMMARY 47

11 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS.... 61

12 SAR MEASUREMENT VARIABILITY 63

13 EQUIPMENT LIST.... 64

14 MEASUREMENT UNCERTAINTIES.... 65

15 CONCLUSION.... 66

16 REFERENCES 67

APPENDIX A: SAR TEST PLOTS

APPENDIX B: SAR DIPOLE VERIFICATION PLOTS

APPENDIX C: SAR TISSUE SPECIFICATIONS

APPENDIX D: SAR SYSTEM VALIDATION

APPENDIX E: DUT ANTENNA DIAGRAM & SAR TEST SETUP PHOTOGRAPHS

APPENDIX F: PROBE AND DIPOLE CALIBRATION CERTIFICATES

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2472 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

1.2 Power Reduction for SAR

There is no power reduction used for any band/mode implemented in this device for SAR purposes.

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1.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

1.3.1 Maximum Output Power – UMTS Mode

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*
UMTS Band 5 (850 MHz)	Maximum	**25.0**	**25.0**	**24.0**
	Nominal	**24.0**	**24.0**	**23.0**
UMTS Band 4 (1750 MHz)	Maximum	**24.0**	**24.0**	**23.0**
	Nominal	**23.0**	**23.0**	**22.0**
UMTS Band 2 (1900 MHz)	Maximum	**24.0**	**24.0**	**23.0**
	Nominal	**23.0**	**23.0**	**22.0**

1.3.2 Maximum Output Power – LTE Mode

Mode / Band		Modulated Average (dBm)
LTE Band 26 (Cell)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 5 (Cell)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 66 (AWS)	Maximum	**24.0**
	Nominal	**23.0**
LTE Band 4 (AWS)	Maximum	**24.0**
	Nominal	**23.0**
LTE Band 25 (PCS)	Maximum	**24.0**
	Nominal	**23.0**
LTE Band 2 (PCS)	Maximum	**24.0**
	Nominal	**23.0**
LTE Band 7	Maximum	**23.5**
	Nominal	**22.5**
LTE Band 41	Maximum	**23.5**
	Nominal	**22.5**

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1.3.3 Maximum Output Power – WiFi Mode

Mode/ Band			IEEE 802.11b (2.4 GHz)		IEEE 802.11g (2.4 GHz)		IEEE 802.11n (2.4 GHz)	
		Channel	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal
Modulated Average - Single Tx Chain (dBm)	20 MHz Bandwidth	1	19.00	18.00	17.00	16.00	17.00	16.00
		2	19.00	18.00	18.50	17.50	18.50	17.50
		3	19.00	18.00	18.50	17.50	18.50	17.50
		4	19.00	18.00	18.50	17.50	18.50	17.50
		5	19.00	18.00	18.50	17.50	18.50	17.50
		6	19.00	18.00	18.50	17.50	18.50	17.50
		7	19.00	18.00	18.50	17.50	18.50	17.50
		8	19.00	18.00	18.50	17.50	18.50	17.50
		9	19.00	18.00	18.50	17.50	18.50	17.50
		10	19.00	18.00	18.00	17.00	18.00	17.00
		11	19.00	18.00	16.50	15.50	16.50	15.50
		12	17.50	16.50	15.50	14.50	15.50	14.50
		13	14.00	13.00	5.50	4.50	5.50	4.50

Mode/ Band			IEEE 802.11a (5 GHz)		IEEE 802.11n (5 GHz)	
		Channel	Maximum	Nominal	Maximum	Nominal
Modulated Average - Single Tx Chain (dBm)	20 MHz Bandwidth	36	16.00	15.00	16.00	15.00
		40	16.00	15.00	16.00	15.00
		44	16.00	15.00	16.00	15.00
		48	16.00	15.00	16.00	15.00
		52	16.00	15.00	16.00	15.00
		56	16.00	15.00	16.00	15.00
		60	16.00	15.00	16.00	15.00
		64	16.00	15.00	16.00	15.00
		100	16.00	15.00	16.00	15.00
		104	16.00	15.00	16.00	15.00
		108	16.00	15.00	16.00	15.00
		112	16.00	15.00	16.00	15.00
		116	16.00	15.00	16.00	15.00
		120	16.00	15.00	16.00	15.00
		124	16.00	15.00	16.00	15.00
		128	16.00	15.00	16.00	15.00
		132	16.00	15.00	16.00	15.00
		136	16.00	15.00	16.00	15.00
		140	13.50	12.50	13.50	12.50
		144	16.00	15.00	16.00	15.00
		149	16.00	15.00	16.00	15.00
		153	16.00	15.00	16.00	15.00
		157	16.00	15.00	16.00	15.00
		161	16.00	15.00	16.00	15.00
		165	16.00	15.00	16.00	15.00

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1.3.4 Maximum Output Power – Bluetooth Mode

Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth BDR/LE	Maximum	**13.00**
	Nominal	**12.00**
Bluetooth EDR	Maximum	**13.00**
	Nominal	**12.00**
Bluetooth HDR	Maximum	**13.00**
	Nominal	**12.00**

1.4 DUT Antenna Locations

A diagram showing the location of the device antennas can be found in Appendix E**.**

1.5 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in Appendix E.

1.6 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be operating simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v06 4.3.2 procedures.

Table 1-1
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Extremity
1	UMTS + 2.4 GHz WI-FI	Yes	Yes
2	UMTS + 5 GHz WI-FI	Yes	Yes
3	UMTS + 2.4 GHz Bluetooth	Yes	Yes
4	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes	Yes
5	LTE + 2.4 GHz WI-FI	Yes	Yes
6	LTE + 5 GHz WI-FI	Yes	Yes
7	LTE + 2.4 GHz Bluetooth	Yes	Yes
8	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes	Yes
9	2.4 GHz Bluetooth + 5 GHz WI-FI	Yes	Yes

1. 2.4 GHz WLAN, and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. 2.4 GHz WLAN and 5 GHz WLAN share the same antenna path and cannot transmit simultaneously.
3. Licensed modes cannot transmit simultaneously.
4. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN scenario.
5. This device supports VOLTE.
6. This device supports VOWIFI.

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1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

This device supports channel 1-13 for 2.4 GHz WLAN. However, due to the reduced output power for channels 12 and 13, channels 1, 6, and 11 were considered for SAR testing per KDB 248227 D01v02r02.

Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg, SAR is not required for U-NII-1 band according to FCC KDB Publication 248227 D01v02r02.

(B) Licensed Transmitter(s)

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

LTE SAR for the higher modulations and lower bandwidths were not tested since the maximum average output power of all required channels and configurations was not more than 0.5 dB higher than the highest bandwidth; and the reported LTE SAR for the highest bandwidth was less than 1.45 W/kg for all configurations according to FCC KDB 941225 D05v02r04.

This device is limited to 27 RB on the uplink for 16QAM modulation. Additional measurements were evaluated to support SAR test exclusion for 16 QAM as described in Section 7.5.4.

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

1.8 Guidance Applied

- FCC KDB Publication 941225 D01v03r01, D05v02r04 (3G/4G)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance, Wrist-worn Device Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)

1.9 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 10.

1.10 Device Housing Types and Wrist Band Types

This device has three housing types that were evaluated independently for SAR: Aluminum, Stainless Steel, and Titanium. The device can also be used with different wristband accessories. The non-metallic wrist accessory, sport band, was evaluated for all exposure conditions. The available metallic wrist accessories, metal links band and metal loop band, were additionally evaluated.

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2 LTE INFORMATION

LTE Information					
Form Factor	Watch				
Frequency Range of each LTE transmission band	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	1				
Modulations Supported in UL	QPSK, 16QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Additional Information	This device does not support full CA features on 3GPP Release 12. All uplink communications are identical to the Release 8 Specifications. The following LTE Release 12 Features are not supported: Carrier Aggregation, Relay, HetNet, Enhanced MIMO, eICIC, WIFI Offloading, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

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3 INTRODUCTION

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [22]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

3.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 3-1).

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

σ = conductivity of the tissue-simulating material (S/m)
ρ = mass density of the tissue-simulating material (kg/m^3)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

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4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04:

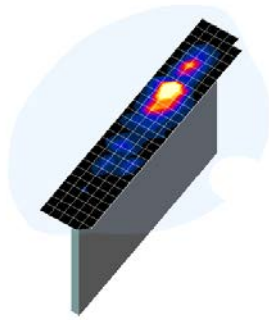

Figure 4-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1).
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1). On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

   a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).

   b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

Table 4-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
			$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)$*	$\Delta z_{zoom}(n>1)$*	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 22

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5 TEST CONFIGURATION POSITIONS

5.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. Additionally, a manufacturer provided low-loss foam was used to position the device for head SAR evaluations.

5.2 Positioning for Head

Devices that are designed to be worn on the wrist may operate in speaker mode for voice communication, with the device worn on the wrist and positioned next to the mouth. When next-to-mouth SAR evaluation is required, the device is positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium. The device is evaluated with wrist bands strapped together to represent normal use conditions.

5.3 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. When extremity SAR evaluation is required, the device is evaluated with the back of the device touching the flat phantom, which is filled with body tissue-equivalent medium. The device was evaluated with Sport wristband unstrapped and touching the phantom. For Metal Loop and Metal Links wristbands, the device was evaluated with wristbands strapped and the distance between wristbands and the phantom was minimized to represent the spacing created by actual use conditions.

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6 RF EXPOSURE LIMITS

6.1 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.

6.2 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. This 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.

Table 6-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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7 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

7.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

7.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

7.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

The device is placed into a simulated call using a base station simulator in a RF shielded chamber. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. Devices under test are evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device is tested throughout the SAR test at maximum output power, the SAR measurement system measures a “point SAR” at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. If the power drift deviates by more than 5%, the SAR test and drift measurements are repeated.

7.4 SAR Measurement Conditions for UMTS

7.4.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all “1s” or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

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7.4.2 Head SAR Measurements

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than 0.25 dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4 kbps SRB (signaling radio bearer) using the exposure configuration that resulted in the highest SAR for that RF channel in the 12.2 kbps RMC mode.

7.4.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all “1s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple $DPDCH_n$ configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or $DPDCH_n$, for the highest reported SAR configuration in 12.2 kbps RMC.

7.4.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

7.4.5 SAR Measurements with Rel 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

7.5 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r04 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

7.5.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

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7.5.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

7.5.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

7.5.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
    i. The required channel and offset combination with the highest maximum output power is required for SAR.
    ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
    iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.
e. This device can only operate with 16QAM on the uplink with less than or equal to 27 RB. For 16QAM configurations with 10 MHz, 15 MHz and 20 MHz bandwidths, LTE powers for RB size of 15 (“50% RB”) and 27 (“100% RB”) with offsets to upper edge, middle, and lower edge of the channel are additionally measured for both QPSK and 16QAM modulations to support comparison and SAR test exclusion per Section 5.2.4 and 5.3.

7.5.5 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05v02r04. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

7.6 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations

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in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

7.6.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

7.6.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

7.6.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. Each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

7.6.4 2.4 GHz SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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7.6.5 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, ad 802.11n or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

7.6.6 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 7.6.5).

7.6.7 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required.

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8 RF CONDUCTED POWERS

8.1 UMTS Conducted Powers

Table 8-1
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.93	23.90	23.81	22.87	22.98	22.58	22.65	22.75	22.81	-
99		12.2 kbps AMR	23.82	23.80	23.73	22.84	22.87	22.61	22.52	22.72	22.75	-
6	HSDPA	Subtest 1	24.00	23.98	23.85	22.88	22.85	22.77	22.69	22.84	23.00	0
6		Subtest 2	23.73	23.30	23.77	22.79	22.97	22.43	22.74	22.86	22.97	0
6		Subtest 3	22.60	23.11	22.95	22.22	22.36	22.21	22.25	22.35	22.48	0.5
6		Subtest 4	22.84	22.85	22.69	22.01	22.21	21.95	22.04	22.15	22.28	0.5
6	HSUPA	Subtest 1	23.67	23.20	23.04	22.17	22.34	22.16	22.13	22.37	22.34	0
6		Subtest 2	21.42	21.50	21.31	20.58	20.74	20.53	20.50	20.68	20.77	2
6		Subtest 3	22.18	22.25	22.13	21.34	21.45	21.31	21.26	21.44	21.51	1
6		Subtest 4	21.70	21.79	21.64	20.88	21.00	20.85	20.86	20.97	21.00	2
6		Subtest 5	23.69	23.72	23.59	22.74	22.86	22.71	22.72	22.82	22.91	0

This device does not support DC-HSDPA.

Figure 8-1
Power Measurement Setup

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8.2 LTE Conducted Powers

8.2.1 LTE Band 26

Table 8-2
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.70	23.73	23.94	0
	1	25	23.94	23.85	23.74	0
	1	49	23.91	**24.00**	23.89	0
	25	0	22.80	22.72	22.80	1
	25	12	22.82	22.77	22.72	1
	25	25	**22.90**	22.82	22.76	1
	50	0	22.89	22.87	22.83	1
	15	0	22.69	22.72	22.81	1
	15	17	22.82	22.76	22.71	1
	15	35	22.85	22.88	22.76	1
	27	0	22.80	22.72	22.82	1
	27	12	22.89	22.77	22.74	1
	27	23	22.91	22.81	22.78	1
16QAM	1	0	22.99	22.90	22.85	1
	1	25	22.95	22.95	22.92	1
	1	49	22.81	22.91	22.95	1
	25	0	21.71	21.72	21.66	2
	25	12	21.61	21.68	21.64	2
	25	25	21.58	21.66	21.65	2
	15	0	21.79	21.70	21.69	2
	15	17	21.61	21.69	21.69	2
	15	35	21.63	21.66	21.67	2
	27	0	21.69	21.72	21.67	2
	27	12	21.66	21.66	21.67	2
	27	23	21.61	21.65	21.68	2

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Table 8-3
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.77	23.53	23.82	0
	1	12	23.83	23.67	23.73	0
	1	24	23.94	23.78	23.89	0
	12	0	22.59	22.60	22.63	1
	12	6	22.63	22.65	22.58	1
	12	13	22.73	22.68	22.68	1
	25	0	22.69	22.68	22.65	1
16QAM	1	0	23.00	22.99	23.00	1
	1	12	22.91	23.00	22.98	1
	1	24	22.87	22.99	22.88	1
	12	0	21.72	21.68	21.65	2
	12	6	21.72	21.68	21.65	2
	12	13	21.65	21.67	21.66	2
	25	0	21.67	21.65	21.65	2

Table 8-4
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.62	23.58	23.56	0
	1	7	23.64	23.72	23.74	0
	1	14	23.71	23.72	23.79	0
	8	0	22.63	22.64	22.64	1
	8	4	22.60	22.67	22.72	1
	8	7	22.67	22.69	22.76	1
	15	0	22.62	22.69	22.74	1
16QAM	1	0	22.95	22.98	22.84	1
	1	7	22.99	23.00	22.93	1
	1	14	22.98	22.94	22.78	1
	8	0	21.81	21.73	21.65	2
	8	4	21.78	21.73	21.68	2
	8	7	21.76	21.72	21.66	2
	15	0	21.80	21.70	21.67	2

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Table 8-5
LTE Band 26 (Cell) Conducted Powers – 1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.67	23.75	23.76	0
	1	2	23.60	23.71	23.77	0
	1	5	23.65	23.75	23.85	0
	3	0	23.63	23.72	23.73	0
	3	2	23.61	23.71	23.75	0
	3	3	23.62	23.74	23.79	0
	6	0	22.60	22.73	22.75	1
16QAM	1	0	23.00	23.00	22.87	1
	1	2	23.00	23.00	22.83	1
	1	5	23.00	23.00	22.84	1
	3	0	22.91	22.82	22.74	1
	3	2	22.90	22.82	22.72	1
	3	3	22.88	22.82	22.70	1
	6	0	21.85	21.78	21.63	2

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8.2.2 LTE Band 5

Table 8-6
LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth				
Modulation	**RB Size**	**RB Offset**	**Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]**	**Design MPR [dB]**
QPSK	1	0	23.85	0
	1	25	**24.00**	0
	1	49	23.89	0
	25	0	22.90	1
	25	12	**22.94**	1
	25	25	22.93	1
	50	0	22.93	1
	15	0	22.82	1
	15	17	22.95	1
	15	35	22.91	1
	27	0	22.91	1
	27	12	22.95	1
	27	23	22.92	1
16QAM	1	0	22.92	1
	1	25	22.90	1
	1	49	22.78	1
	25	0	21.72	2
	25	12	21.73	2
	25	25	21.73	2
	15	0	21.65	2
	15	17	21.73	2
	15	35	21.71	2
	27	0	21.73	2
	27	12	21.75	2
	27	23	21.77	2

Note: LTE Band 5 (Cell) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 8-7
LTE Band 5 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.84	24.00	23.72	0
	1	12	23.71	23.99	23.84	0
	1	24	23.77	24.00	23.86	0
	12	0	22.72	22.93	22.81	1
	12	6	22.67	22.96	22.82	1
	12	13	22.64	22.98	22.87	1
	25	0	22.70	22.99	22.87	1
16QAM	1	0	22.81	23.00	22.78	1
	1	12	22.65	23.00	22.86	1
	1	24	22.79	22.99	22.85	1
	12	0	21.67	21.84	21.57	2
	12	6	21.64	21.82	21.55	2
	12	13	21.62	21.66	21.54	2
	25	0	21.58	21.70	21.54	2

Table 8-8
LTE Band 5 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.78	23.99	23.83	0
	1	7	23.73	24.00	23.88	0
	1	14	23.66	24.00	23.83	0
	8	0	22.77	22.99	22.87	1
	8	4	22.74	23.00	22.87	1
	8	7	22.73	23.00	22.88	1
	15	0	22.76	22.97	22.89	1
16QAM	1	0	22.90	22.95	22.85	1
	1	7	22.91	23.00	22.87	1
	1	14	22.85	23.00	22.81	1
	8	0	21.75	21.84	21.64	2
	8	4	21.72	21.84	21.62	2
	8	7	21.76	21.84	21.59	2
	15	0	21.71	21.85	21.73	2

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Table 8-9
LTE Band 5 (Cell) Conducted Powers – 1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	23.70	23.87	23.80	0
	1	2	23.68	23.89	23.83	0
	1	5	23.64	23.93	23.86	0
	3	0	23.66	23.94	23.82	0
	3	2	23.63	23.95	23.85	0
	3	3	23.63	23.96	23.86	0
	6	0	22.66	22.94	22.83	1
16QAM	1	0	22.78	22.98	22.87	1
	1	2	22.67	23.00	22.76	1
	1	5	22.71	23.00	22.76	1
	3	0	22.77	22.98	22.80	1
	3	2	22.76	22.99	22.85	1
	3	3	22.78	22.99	22.82	1
	6	0	21.63	21.85	21.82	2

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8.2.3 LTE Band 66

Table 8-10
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	Design MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.32	22.11	22.01	0	0
	1	50	**22.56**	22.02	22.01		0
	1	99	22.46	22.05	22.03		0
	50	0	21.60	21.16	21.03	0-1	1
	50	25	**21.63**	21.09	21.04		1
	50	50	21.58	21.26	21.09		1
	100	0	21.53	21.36	21.24		1
	15	0	22.55	22.05	22.05	0-1	0
	15	42	22.78	22.31	22.02		0
	15	85	22.67	22.22	22.10		0
	27	0	21.39	21.17	21.04	0-2	1
	27	37	21.56	21.02	21.02		1
	27	73	21.45	21.01	21.01		1
16QAM	1	0	21.45	21.65	21.41	0-2	1
	1	50	21.76	21.58	21.30		1
	1	99	21.83	21.53	21.22		1
	15	0	21.33	21.31	21.04	0-3	1
	15	42	21.36	21.23	21.08		1
	15	85	21.41	21.14	21.05		1
	27	0	20.31	20.32	20.11	0-5	2
	27	37	20.41	20.25	20.55		2
	27	73	20.43	20.17	20.46		2

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Table 8-11
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.09	22.12	22.05	0
	1	36	22.50	22.16	22.03	0
	1	74	22.43	22.00	22.02	0
	36	0	21.34	21.29	21.06	1
	36	18	21.54	21.33	21.09	1
	36	37	21.53	21.24	21.04	1
	75	0	21.64	21.38	21.14	1
	15	0	22.10	22.05	22.53	0
	15	30	22.41	22.15	22.70	0
	15	60	22.34	22.03	22.63	0
	27	0	21.27	21.25	21.85	1
	27	24	21.52	21.32	21.96	1
	27	48	21.52	21.23	21.94	1
16QAM	1	0	22.00	21.95	21.57	1
	1	36	22.00	21.86	21.50	1
	1	74	22.00	21.84	21.48	1
	15	0	21.70	21.72	21.31	1
	15	30	21.81	21.74	21.37	1
	15	60	21.80	21.55	21.29	1
	27	0	20.79	20.81	20.49	2
	27	24	20.97	20.86	20.52	2
	27	48	20.91	20.72	20.48	2

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Table 8-12
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.23	22.12	22.04	0
	1	25	22.19	22.03	22.02	0
	1	49	22.24	22.01	22.01	0
	25	0	21.32	21.30	21.05	1
	25	12	21.32	21.22	21.02	1
	25	25	21.33	21.26	21.03	1
	50	0	21.36	21.22	21.08	1
	15	0	21.20	21.19	21.85	1
	15	17	21.25	21.21	21.91	1
	15	35	21.35	21.18	21.88	1
	27	0	21.18	21.19	21.86	1
	27	12	21.30	21.19	21.90	1
	27	23	21.38	21.17	21.91	1
16QAM	1	0	21.70	21.84	21.42	1
	1	25	21.97	21.82	21.40	1
	1	49	22.00	21.86	21.55	1
	25	0	20.78	20.82	20.47	2
	25	12	20.80	20.77	20.51	2
	25	25	20.88	20.77	20.52	2
	15	0	20.84	20.68	20.45	2
	15	17	20.79	20.82	20.46	2
	15	35	20.80	20.80	20.52	2
	27	0	20.91	20.70	20.49	2
	27	12	20.82	20.76	20.46	2
	27	23	20.80	20.79	20.47	2

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Table 8-13
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.16	22.10	22.04	0
	1	12	22.12	22.00	22.02	0
	1	24	22.14	22.05	22.01	0
	12	0	21.31	21.21	21.08	1
	12	6	21.26	21.19	21.05	1
	12	13	21.28	21.16	21.06	1
	25	0	21.26	21.19	21.02	1
16QAM	1	0	21.99	21.88	21.55	1
	1	12	21.80	21.86	21.53	1
	1	24	21.95	21.78	21.33	1
	12	0	20.89	20.57	20.45	2
	12	6	20.67	20.75	20.46	2
	12	13	20.67	20.71	20.46	2
	25	0	20.71	20.70	20.47	2

Table 8-14
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.12	22.08	22.09	0
	1	7	22.08	22.07	22.05	0
	1	14	22.10	22.05	22.06	0
	8	0	21.19	21.29	21.06	1
	8	4	21.20	21.15	21.04	1
	8	7	21.29	21.13	21.06	1
	15	0	21.23	21.10	21.03	1
16QAM	1	0	21.72	21.68	21.47	1
	1	7	21.73	21.77	21.32	1
	1	14	21.80	21.71	21.46	1
	8	0	20.81	20.67	20.56	2
	8	4	20.65	20.75	20.58	2
	8	7	20.73	20.78	20.42	2
	15	0	20.70	20.77	20.47	2

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Table 8-15
LTE Band 66 (AWS) Conducted Powers – 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.07	22.01	22.10	0
	1	2	22.02	22.86	22.03	0
	1	5	22.06	22.90	22.06	0
	3	0	22.08	22.93	22.07	0
	3	2	22.05	22.92	22.05	0
	3	3	22.06	22.94	22.53	0
	6	0	21.36	21.23	21.78	1
16QAM	1	0	21.72	21.78	21.41	1
	1	2	21.70	21.72	21.24	1
	1	5	21.68	21.81	21.47	1
	3	0	21.67	21.84	21.56	1
	3	2	21.78	21.87	21.47	1
	3	3	21.68	21.75	21.55	1
	6	0	20.86	20.90	20.60	2

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8.2.4 LTE Band 25

Table 8-16
LTE Band 25 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.00	22.39	**22.40**	0
	1	50	22.06	22.30	22.23	0
	1	99	22.11	22.37	22.26	0
	50	0	21.15	21.29	**21.38**	1
	50	25	21.22	21.33	21.27	1
	50	50	21.29	21.37	21.37	1
	100	0	21.31	21.35	21.36	1
	15	0	22.17	22.34	22.37	0
	15	42	22.16	22.30	22.24	0
	15	85	22.31	22.32	22.19	0
	27	0	21.12	21.30	21.35	1
	27	37	21.16	21.30	21.22	1
	27	73	21.26	21.33	21.24	1
16QAM	1	0	21.46	21.76	21.70	1
	1	50	21.61	21.96	21.88	1
	1	99	21.46	21.87	21.62	1
	15	0	21.42	21.14	21.68	1
	15	42	21.61	21.22	21.78	1
	15	85	21.49	21.35	21.58	1
	27	0	20.38	20.54	20.57	2
	27	37	20.55	20.70	20.75	2
	27	73	20.48	20.68	20.59	2

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Table 8-17
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.17	22.16	22.25	0
	1	36	22.35	22.48	22.49	0
	1	74	22.29	22.48	22.05	0
	36	0	21.32	21.35	21.51	1
	36	18	21.36	21.54	21.58	1
	36	37	21.38	21.58	21.47	1
	75	0	21.39	21.64	21.79	1
	15	0	22.20	22.29	22.32	0
	15	30	22.34	22.59	22.57	0
	15	60	22.23	22.55	22.23	0
	27	0	21.25	21.34	21.47	1
	27	24	21.34	21.59	21.62	1
	27	48	21.31	21.60	21.37	1
16QAM	1	0	21.84	21.69	21.72	1
	1	36	21.89	21.99	22.00	1
	1	74	21.76	22.00	21.50	1
	15	0	21.59	21.50	21.66	1
	15	30	21.64	21.85	21.90	1
	15	60	21.59	21.88	21.51	1
	27	0	20.56	20.59	20.76	2
	27	24	20.69	20.84	20.85	2
	27	48	20.65	20.88	20.60	2

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Table 8-18
LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.31	22.25	22.46	0
	1	25	22.38	22.43	22.25	0
	1	49	22.43	22.55	22.10	0
	25	0	21.27	21.42	21.48	1
	25	12	21.31	21.48	21.41	1
	25	25	21.30	21.56	21.31	1
	50	0	21.35	21.52	21.49	1
	15	0	21.25	21.33	21.49	1
	15	17	21.31	21.48	21.39	1
	15	35	21.32	21.55	21.16	1
	27	0	21.27	21.42	21.51	1
	27	12	21.30	21.48	21.40	1
	27	23	21.29	21.55	21.31	1
16QAM	1	0	21.77	21.80	22.00	1
	1	25	21.83	21.97	21.87	1
	1	49	21.87	22.00	21.58	1
	25	0	20.63	20.68	20.82	2
	25	12	20.66	20.78	20.70	2
	25	25	20.65	20.92	20.61	2
	15	0	20.66	20.84	20.58	2
	15	17	20.59	20.60	20.74	2
	15	35	20.66	20.76	20.74	2
	27	0	20.68	20.83	20.46	2
	27	12	20.61	20.71	20.72	2
	27	23	20.63	20.78	20.68	2

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Table 8-19
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.22	22.28	22.40	0
	1	12	22.26	22.37	22.31	0
	1	24	22.32	22.46	22.28	0
	12	0	21.19	21.38	21.30	1
	12	6	21.21	21.41	21.24	1
	12	13	21.24	21.47	21.08	1
	25	0	21.23	21.43	21.25	1
16QAM	1	0	21.69	21.95	21.57	1
	1	12	21.81	22.00	21.57	1
	1	24	21.74	22.00	21.54	1
	12	0	20.56	20.83	20.52	2
	12	6	20.61	20.67	20.46	2
	12	13	20.63	20.74	20.40	2
	25	0	20.52	20.75	20.42	2

Table 8-20
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.25	22.25	22.02	0
	1	7	22.28	22.37	22.01	0
	1	14	22.26	22.36	22.08	0
	8	0	21.21	21.38	21.19	1
	8	4	21.21	21.39	21.07	1
	8	7	21.22	21.42	21.07	1
	15	0	21.20	21.40	21.07	1
16QAM	1	0	21.82	21.92	21.98	1
	1	7	21.78	22.00	21.74	1
	1	14	22.00	22.00	21.78	1
	8	0	20.45	20.75	20.65	2
	8	4	20.52	20.70	20.45	2
	8	7	20.50	20.79	20.54	2
	15	0	20.49	20.72	20.51	2

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Table 8-21
LTE Band 25 (PCS) Conducted Powers – 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	22.31	22.36	22.24	0
	1	2	22.26	22.36	22.24	0
	1	5	22.30	22.40	22.27	0
	3	0	22.22	22.43	22.10	0
	3	2	22.22	22.45	22.09	0
	3	3	22.24	22.45	22.09	0
	6	0	21.20	21.41	21.04	1
16QAM	1	0	21.70	22.00	21.57	1
	1	2	21.82	21.96	21.40	1
	1	5	21.73	22.00	21.58	1
	3	0	21.65	21.96	21.54	1
	3	2	21.68	21.94	21.61	1
	3	3	21.77	21.98	21.58	1
	6	0	20.60	20.78	20.41	2

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8.2.5 LTE Band 7

Table 8-22
LTE Band 7 Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	21.79	21.62	21.64	0
	1	50	21.76	21.50	21.58	0
	1	99	21.63	21.67	**21.99**	0
	50	0	20.80	20.54	20.73	1
	50	25	20.81	20.54	20.70	1
	50	50	20.82	20.58	**20.89**	1
	100	0	20.81	20.79	20.88	1
	15	0	21.78	21.50	21.50	0
	15	42	21.79	21.56	21.50	0
	15	85	21.80	21.69	21.87	0
	27	0	20.71	20.50	20.50	1
	27	37	20.79	20.50	20.50	1
	27	73	20.80	20.64	20.84	1
16QAM	1	0	21.08	20.82	20.76	1
	1	50	21.11	20.78	20.64	1
	1	99	21.13	21.10	21.28	1
	15	0	20.84	20.54	20.62	1
	15	42	20.91	20.59	20.51	1
	15	85	20.90	20.75	20.97	1
	27	0	19.77	19.50	19.50	2
	27	37	19.81	19.58	20.00	2
	27	73	19.87	19.71	19.91	2

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Table 8-23
LTE Band 7 Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	21.87	21.50	21.64	0
	1	36	21.81	21.51	21.68	0
	1	74	21.92	21.58	22.04	0
	36	0	20.73	20.50	20.59	1
	36	18	20.78	20.52	20.67	1
	36	37	20.76	20.54	20.88	1
	75	0	20.91	20.65	20.88	1
	15	0	21.78	21.51	21.57	0
	15	30	21.80	21.55	21.71	0
	15	60	21.78	21.60	22.00	0
	27	0	20.77	20.50	20.59	1
	27	24	20.78	20.54	20.68	1
	27	48	20.76	20.54	20.92	1
16QAM	1	0	21.08	21.11	20.80	1
	1	36	21.18	20.88	20.84	1
	1	74	21.35	20.97	21.44	1
	15	0	20.72	20.65	20.50	1
	15	30	20.84	20.61	20.55	1
	15	60	20.94	20.64	20.90	1
	27	0	19.72	19.53	19.50	2
	27	24	19.82	19.63	19.57	2
	27	48	19.84	19.64	19.81	2

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Table 8-24
LTE Band 7 Conducted Powers – 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	21.80	21.59	21.58	0
	1	25	21.65	21.60	21.82	0
	1	49	21.78	21.72	22.12	0
	25	0	20.76	20.53	20.71	1
	25	12	20.71	20.54	20.86	1
	25	25	20.82	20.57	20.98	1
	50	0	20.82	20.58	20.93	1
	15	0	20.78	20.51	20.66	1
	15	17	20.76	20.54	20.85	1
	15	35	20.81	20.58	21.01	1
	27	0	20.80	20.55	20.71	1
	27	12	20.75	20.53	20.86	1
	27	23	20.81	20.55	20.97	1
16QAM	1	0	21.28	20.75	20.94	1
	1	25	21.14	20.68	21.14	1
	1	49	21.26	20.81	21.45	1
	25	0	19.82	19.53	19.64	2
	25	12	19.80	19.50	19.83	2
	25	25	19.91	19.61	19.93	2
	15	0	19.87	19.55	19.66	2
	15	17	19.77	19.58	19.83	2
	15	35	19.95	19.62	19.97	2
	27	0	19.84	19.52	19.69	2
	27	12	19.82	19.54	19.85	2
	27	23	19.90	19.63	19.93	2

Table 8-25
LTE Band 7 Conducted Powers – 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	Design MPR [dB]
			Conducted Power [dBm]			
QPSK	1	0	21.81	21.68	21.89	0
	1	12	21.77	21.74	21.95	0
	1	24	21.73	21.78	22.21	0
	12	0	20.82	20.60	20.86	1
	12	6	20.80	20.61	20.85	1
	12	13	20.77	20.63	20.96	1
	25	0	20.81	20.56	20.90	1
16QAM	1	0	21.33	20.93	21.32	1
	1	12	21.30	20.86	21.36	1
	1	24	21.16	20.77	21.64	1
	12	0	19.94	19.61	19.93	2
	12	6	19.92	19.56	19.92	2
	12	13	19.84	19.59	20.03	2
	25	0	19.85	19.53	19.91	2

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8.2.6 LTE Band 41

Table 8-26
LTE Band 41 Conducted Powers – 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	22.13	22.09	22.07	22.29	22.29	0
	1	50	22.05	21.95	22.23	22.32	**22.35**	0
	1	99	22.23	21.80	22.22	22.30	22.26	0
	50	0	21.03	21.05	21.16	21.27	21.28	1
	50	25	21.02	20.98	21.22	21.24	**21.35**	1
	50	50	21.06	20.94	21.24	21.25	21.29	1
	100	0	21.19	21.07	21.30	21.28	21.34	1
	15	0	22.03	22.05	22.16	22.28	22.27	0
	15	42	22.03	21.99	22.30	22.31	22.32	0
	15	85	22.15	21.93	22.32	22.29	22.30	0
	27	0	21.02	21.02	21.14	21.24	21.24	1
	27	37	21.03	20.95	21.27	21.26	21.28	1
	27	73	21.10	20.88	21.26	21.25	21.23	1
16QAM	1	0	21.14	21.16	21.18	21.37	21.24	1
	1	50	20.96	20.92	21.28	21.34	21.28	1
	1	99	21.27	20.82	21.40	21.30	21.33	1
	15	0	21.00	21.02	21.13	21.19	21.08	1
	15	42	20.90	20.76	21.29	21.13	21.09	1
	15	85	21.15	20.70	21.39	21.12	21.19	1
	27	0	20.00	19.98	20.11	20.17	20.02	2
	27	37	19.90	19.75	20.27	20.09	20.06	2
	27	73	20.09	19.69	20.34	20.08	20.11	2

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Table 8-27
LTE Band 41 Conducted Powers – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	22.09	21.93	22.37	22.29	22.22	0
	1	36	22.24	21.88	22.50	22.35	22.29	0
	1	74	22.34	21.72	22.49	22.23	22.24	0
	36	0	21.09	20.94	21.28	21.29	21.21	1
	36	18	21.06	20.86	21.36	21.26	21.20	1
	36	37	21.11	20.72	21.32	21.21	21.18	1
	75	0	21.15	20.82	21.38	21.28	21.21	1
	15	0	22.11	21.92	22.26	22.31	22.13	0
	15	30	22.12	21.82	22.43	22.29	22.23	0
	15	60	22.16	21.67	22.34	22.17	22.16	0
	27	0	21.12	20.91	21.28	21.31	21.14	1
	27	24	21.09	20.80	21.40	21.27	21.20	1
	27	48	21.14	20.69	21.32	21.18	21.16	1
16QAM	1	0	21.36	20.99	21.32	21.42	21.29	1
	1	36	21.24	20.81	21.49	21.48	21.48	1
	1	74	21.36	20.61	21.45	21.42	21.26	1
	15	0	21.14	20.93	21.22	21.21	21.18	1
	15	30	21.11	20.85	21.38	21.23	21.24	1
	15	60	21.19	20.67	21.27	21.11	21.20	1
	27	0	20.10	19.97	20.25	20.23	20.14	2
	27	24	20.13	19.85	20.34	20.21	20.23	2
	27	48	20.19	19.72	20.28	20.13	20.20	2

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Table 8-28
LTE Band 41 Conducted Powers – 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	22.30	22.05	22.34	22.36	22.25	0
	1	25	22.26	21.87	22.41	22.28	22.27	0
	1	49	22.38	21.78	22.39	22.25	22.30	0
	25	0	21.03	20.91	21.28	21.23	21.16	1
	25	12	21.03	20.79	21.29	21.14	21.15	1
	25	25	21.14	20.75	21.28	21.13	21.15	1
	50	0	21.06	20.75	21.31	21.14	21.17	1
	15	0	21.04	20.93	21.26	21.24	21.16	1
	15	17	21.05	20.81	21.30	21.15	21.16	1
	15	35	21.16	20.73	21.29	21.13	21.17	1
	27	0	21.05	20.84	21.26	21.21	21.14	1
	27	12	21.05	20.72	21.28	21.13	21.14	1
	27	23	21.15	20.70	21.26	21.12	21.16	1
16QAM	1	0	21.26	21.10	21.36	21.38	21.34	1
	1	25	21.18	21.00	21.45	21.33	21.39	1
	1	49	21.32	20.75	21.40	21.39	21.41	1
	25	0	20.03	19.90	20.28	20.25	20.17	2
	25	12	20.05	19.76	20.30	20.18	20.15	2
	25	25	20.12	19.72	20.27	20.16	20.17	2
	15	0	20.02	19.91	20.25	20.23	20.19	2
	15	17	20.04	19.77	20.30	20.18	20.18	2
	15	35	20.12	19.72	20.29	20.16	20.18	2
	27	0	20.03	19.86	20.28	20.14	20.17	2
	27	12	20.03	19.76	20.26	20.17	20.14	2
	27	23	20.14	19.72	20.29	20.15	20.16	2

Table 8-29
LTE Band 41 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	Design MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	22.14	21.98	22.45	22.29	22.31	0
	1	12	22.13	21.87	22.46	22.19	22.32	0
	1	24	22.25	21.85	22.45	22.19	22.35	0
	12	0	21.09	20.92	21.37	21.29	21.22	1
	12	6	21.08	20.83	21.39	21.20	21.23	1
	12	13	21.12	20.80	21.40	21.20	21.22	1
	25	0	21.11	20.82	21.39	21.21	21.23	1
16QAM	1	0	20.98	20.88	21.34	21.36	21.18	1
	1	12	21.13	20.86	21.31	21.46	21.24	1
	1	24	21.24	20.92	21.31	21.33	21.12	1
	12	0	20.21	19.91	20.42	20.31	20.27	2
	12	6	20.25	19.88	20.40	20.28	20.25	2
	12	13	20.14	19.90	20.45	20.25	20.24	2
	25	0	20.15	19.87	20.43	20.27	20.25	2

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8.3 WLAN Conducted Powers

Table 8-30
2.4 GHz WLAN Maximum Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	17.99	16.00	16.03
2417	2		17.50	17.47
2437	6	18.03	17.48	17.40
2457	10		17.28	17.30
2462	11	18.01	15.44	15.46

Table 8-31
5 GHz WLAN Maximum Average RF Power

5GHz (20MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11a	802.11n
		Average	Average
5180	36	14.95	15.06
5200	40	15.05	15.04
5220	44	14.97	15.07
5240	48	14.98	15.13
5260	52	15.12	15.10
5280	56	15.13	15.05
5300	60	15.02	14.90
5320	64	14.99	15.13
5500	100	15.10	14.95
5600	120	15.12	15.07
5620	124	15.01	15.02
5720	144	15.10	14.94
5745	149	15.03	14.88
5785	157	15.06	15.08
5825	165	15.05	15.04

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.

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- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

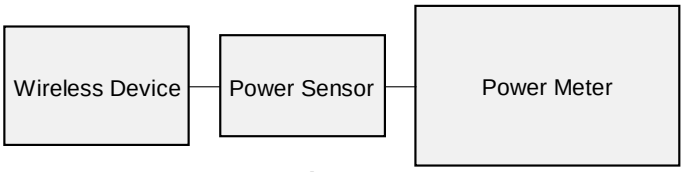

Figure 8-2
Power Measurement Setup

8.4 Bluetooth Conducted Powers

Table 8-32
Bluetooth Average RF Power

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.92	15.560
2441	GFSK	1.0	39	12.07	16.106
2480	GFSK	1.0	78	**12.20**	16.596

Note: The bolded data rates and channel above were tested for SAR.
Note 2: Bluetooth was evaluated with a test mode with 100% transmission duty factor.

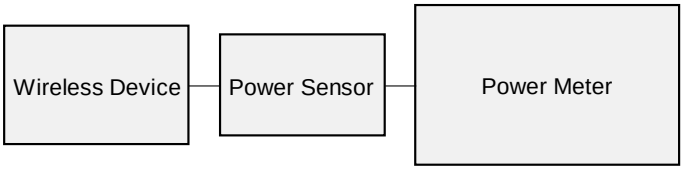

Figure 8-3
Power Measurement Setup

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9 SYSTEM VERIFICATION

9.1 Tissue Verification

Table 9-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/22/2020	835H	22.3	815	0.876	41.172	0.898	41.604	-2.45%	-1.04%
			820	0.880	41.107	0.899	41.578	-2.11%	-1.13%
			835	0.894	40.924	0.900	41.500	-0.67%	-1.39%
			850	0.908	40.748	0.916	41.500	-0.87%	-1.81%
6/29/2020	835H	21.6	800	0.861	40.535	0.897	41.682	-4.01%	-2.75%
			820	0.868	40.483	0.899	41.578	-3.45%	-2.63%
			835	0.873	40.453	0.900	41.500	-3.00%	-2.52%
			850	0.878	40.425	0.916	41.500	-4.15%	-2.59%
7/1/2020	835H	21.8	800	0.877	40.994	0.897	41.682	-2.23%	-1.65%
			820	0.884	40.923	0.899	41.578	-1.67%	-1.58%
			835	0.890	40.887	0.900	41.500	-1.11%	-1.48%
			850	0.895	40.860	0.916	41.500	-2.29%	-1.54%
7/1/2020	1750H	21.1	1710	1.335	39.277	1.348	40.142	-0.96%	-2.15%
			1750	1.359	39.227	1.371	40.079	-0.88%	-2.13%
			1790	1.384	39.164	1.394	40.016	-0.72%	-2.13%
6/24/2020	1900H	22.0	1850	1.375	39.162	1.400	40.000	-1.79%	-2.10%
			1880	1.407	39.019	1.400	40.000	0.50%	-2.45%
			1910	1.437	38.895	1.400	40.000	2.64%	-2.76%
6/26/2020	1900H	21.3	1850	1.394	39.035	1.400	40.000	-0.43%	-2.41%
			1880	1.427	38.892	1.400	40.000	1.93%	-2.77%
			1910	1.459	38.759	1.400	40.000	4.21%	-3.10%
7/6/2020	2450H	21.2	2400	1.756	38.973	1.756	39.289	0.00%	-0.80%
			2450	1.792	38.906	1.800	39.200	-0.44%	-0.75%
			2500	1.836	38.838	1.855	39.136	-1.02%	-0.76%
			2550	1.875	38.737	1.909	39.073	-1.78%	-0.86%
			2600	1.917	38.667	1.964	39.009	-2.39%	-0.88%
			2650	1.957	38.553	2.018	38.945	-3.02%	-1.01%
			2700	1.997	38.481	2.073	38.882	-3.67%	-1.03%
7/16/2020	2450H	21.6	2400	1.759	38.867	1.756	39.289	0.17%	-1.07%
			2450	1.798	38.815	1.800	39.200	-0.11%	-0.98%
			2500	1.834	38.732	1.855	39.136	-1.13%	-1.03%
			2550	1.876	38.664	1.909	39.073	-1.73%	-1.05%
			2600	1.913	38.583	1.964	39.009	-2.60%	-1.09%
			2650	1.954	38.512	2.018	38.945	-3.17%	-1.11%
			2700	1.992	38.413	2.073	38.882	-3.91%	-1.21%
7/22/2020	2450H	22.0	2400	1.827	38.770	1.756	39.289	4.04%	-1.32%
			2450	1.877	38.603	1.800	39.200	4.28%	-1.52%
			2500	1.938	38.416	1.855	39.136	4.47%	-1.84%
7/26/2020	2450H	21.8	2400	1.791	38.542	1.756	39.289	1.99%	-1.90%
			2450	1.845	38.397	1.800	39.200	2.50%	-2.05%
			2500	1.900	38.206	1.855	39.136	2.43%	-2.38%
07/27/2020	5200H-5800H	21.5	5180	4.487	35.055	4.635	36.009	-3.19%	-2.65%
			5200	4.511	35.030	4.655	35.986	-3.09%	-2.66%
			5220	4.530	35.004	4.676	35.963	-3.12%	-2.67%
			5240	4.549	34.944	4.696	35.940	-3.13%	-2.77%
			5260	4.571	34.898	4.717	35.917	-3.10%	-2.84%
			5280	4.598	34.859	4.737	35.894	-2.93%	-2.88%
			5300	4.616	34.820	4.758	35.871	-2.98%	-2.93%
			5320	4.640	34.801	4.778	35.849	-2.89%	-2.92%
			5500	4.843	34.489	4.963	35.643	-2.42%	-3.24%
			5520	4.863	34.460	4.983	35.620	-2.41%	-3.26%
			5540	4.882	34.425	5.004	35.597	-2.44%	-3.29%
			5560	4.910	34.366	5.024	35.574	-2.27%	-3.40%
			5580	4.936	34.343	5.045	35.551	-2.16%	-3.40%
			5600	4.960	34.335	5.065	35.529	-2.07%	-3.36%
			5620	4.972	34.309	5.086	35.506	-2.24%	-3.37%
			5640	4.997	34.250	5.106	35.483	-2.13%	-3.47%
			5660	5.022	34.206	5.127	35.460	-2.05%	-3.54%
			5680	5.049	34.185	5.147	35.437	-1.90%	-3.53%
			5700	5.069	34.157	5.168	35.414	-1.92%	-3.55%
			5745	5.116	34.041	5.214	35.363	-1.88%	-3.74%
			5765	5.155	33.988	5.234	35.340	-1.51%	-3.83%
			5785	5.172	33.982	5.255	35.317	-1.58%	-3.78%
			5800	5.188	33.970	5.270	35.300	-1.56%	-3.77%
			5805	5.193	33.952	5.275	35.294	-1.55%	-3.80%
			5825	5.206	33.897	5.296	35.271	-1.70%	-3.90%

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Table 9-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/25/2020	835B	22.5	800	0.937	53.250	0.967	55.453	-3.10%	-3.97%
			820	0.957	53.039	0.969	55.258	-1.24%	-4.02%
			835	0.971	52.885	0.970	55.200	0.10%	-4.19%
			850	0.985	52.741	0.988	55.154	-0.30%	-4.38%
7/6/2020	835B	20.2	815	0.947	53.321	0.968	55.278	-2.17%	-3.54%
			820	0.952	53.272	0.969	55.258	-1.75%	-3.59%
			835	0.966	53.131	0.970	55.200	-0.41%	-3.75%
			850	0.981	52.989	0.988	55.154	-0.71%	-3.93%
7/10/2020	835B	21.1	815	0.956	53.859	0.968	55.278	-1.24%	-2.57%
			820	0.961	53.809	0.969	55.258	-0.83%	-2.62%
			835	0.977	53.661	0.970	55.200	0.72%	-2.79%
			850	0.992	53.522	0.988	55.154	0.40%	-2.96%
6/26/2020	1750B	21.3	1710	1.440	51.275	1.463	53.537	-1.57%	-4.23%
			1750	1.467	51.256	1.488	53.432	-1.41%	-4.07%
			1790	1.495	51.217	1.514	53.326	-1.25%	-3.95%
7/2/2020	1750B	20.8	1710	1.452	52.184	1.463	53.537	-0.75%	-2.53%
			1750	1.479	52.125	1.488	53.432	-0.60%	-2.45%
			1790	1.507	52.052	1.514	53.326	-0.46%	-2.39%
6/26/2020	1900B	21.3	1850	1.538	51.144	1.520	53.300	1.18%	-4.05%
			1880	1.560	51.100	1.520	53.300	2.63%	-4.13%
			1910	1.582	51.067	1.520	53.300	4.08%	-4.19%
7/2/2020	1900B	20.8	1850	1.548	51.933	1.520	53.300	1.84%	-2.56%
			1880	1.567	51.876	1.520	53.300	3.09%	-2.67%
			1910	1.587	51.843	1.520	53.300	4.41%	-2.73%
6/28/2020	2450B	22.5	2400	1.947	51.616	1.902	52.767	2.37%	-2.18%
			2450	2.015	51.449	1.950	52.700	3.33%	-2.37%
			2500	2.086	51.263	2.021	52.636	3.22%	-2.61%
			2550	2.157	51.089	2.092	52.573	3.11%	-2.82%
			2600	2.232	50.901	2.163	52.509	3.19%	-3.06%
			2650	2.303	50.715	2.234	52.445	3.09%	-3.30%
			2700	2.377	50.507	2.305	52.382	3.12%	-3.58%
7/17/2020	2450B	22.4	2400	1.940	51.456	1.902	52.767	2.00%	-2.48%
			2450	2.005	51.256	1.950	52.700	2.82%	-2.74%
			2500	2.073	51.060	2.021	52.636	2.57%	-2.99%
			2550	2.137	50.861	2.092	52.573	2.15%	-3.26%
			2600	2.209	50.701	2.163	52.509	2.13%	-3.44%
			2650	2.279	50.502	2.234	52.445	2.01%	-3.70%
			2700	2.354	50.308	2.305	52.382	2.13%	-3.96%
7/22/2020	2450B	22.7	2400	1.934	51.657	1.902	52.767	1.68%	-2.10%
			2450	1.999	51.483	1.950	52.700	2.51%	-2.31%
			2500	2.073	51.289	2.021	52.636	2.57%	-2.56%
7/27/2020	2450B	22.2	2400	1.945	51.426	1.902	52.767	2.26%	-2.54%
			2450	2.011	51.251	1.950	52.700	3.13%	-2.75%
			2500	2.085	51.062	2.021	52.636	3.17%	-2.99%
07/21/2020	5200B-5800B	23.6	5180	5.342	47.622	5.276	49.041	1.25%	-2.89%
			5200	5.372	47.596	5.299	49.014	1.38%	-2.89%
			5220	5.400	47.569	5.323	48.987	1.45%	-2.89%
			5240	5.427	47.541	5.346	48.960	1.52%	-2.90%
			5260	5.452	47.506	5.369	48.933	1.55%	-2.92%
			5280	5.476	47.479	5.393	48.906	1.54%	-2.92%
			5300	5.505	47.441	5.416	48.879	1.64%	-2.94%
			5320	5.531	47.405	5.439	48.851	1.69%	-2.96%
			5500	5.755	47.094	5.650	48.607	1.86%	-3.11%
			5520	5.785	47.054	5.673	48.580	1.97%	-3.14%
			5540	5.811	47.028	5.696	48.553	2.02%	-3.14%
			5560	5.835	46.981	5.720	48.526	2.01%	-3.18%
			5580	5.864	46.945	5.743	48.499	2.11%	-3.20%
			5600	5.895	46.920	5.766	48.471	2.24%	-3.20%
			5620	5.921	46.890	5.790	48.444	2.26%	-3.21%
			5640	5.951	46.851	5.813	48.417	2.37%	-3.23%
			5660	5.974	46.844	5.837	48.390	2.35%	-3.19%
			5680	6.005	46.807	5.860	48.363	2.47%	-3.22%
			5700	6.036	46.774	5.883	48.336	2.60%	-3.23%
			5745	6.096	46.740	5.936	48.275	2.70%	-3.18%
			5765	6.121	46.690	5.959	48.248	2.72%	-3.23%
			5785	6.153	46.665	5.982	48.220	2.86%	-3.22%
			5800	6.172	46.643	6.000	48.200	2.87%	-3.23%
			5805	6.181	46.637	6.006	48.193	2.91%	-3.23%
			5825	6.208	46.615	6.029	48.166	2.97%	-3.22%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

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9.2 Test System Verification

Prior to SAR assessment, the system is verified to ±10% of the SAR measurement on the reference dipole at the time of calibration by the calibration facility. Full system validation status and result summary can be found in Appendix E.

Table 9-3
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
AM1	850	HEAD	06/22/2020	23.3	22.0	0.200	1009	7427	1.930	10.000	9.650	-3.50%
AM1	850	HEAD	06/29/2020	23.1	21.4	0.200	1009	7427	1.920	10.000	9.600	-4.00%
AM1	850	HEAD	07/01/2020	23.5	21.7	0.200	1010	7427	1.930	9.930	9.650	-2.82%
AM8	1750	HEAD	07/01/2020	23.5	21.1	0.100	1104	7532	3.760	36.400	37.600	3.30%
AM7	1900	HEAD	06/24/2020	20.9	21.3	0.100	5d026	7490	3.860	40.200	38.600	-3.98%
AM7	1900	HEAD	06/26/2020	22.3	21.2	0.100	5d026	7490	3.850	40.200	38.500	-4.23%
AM1	2450	HEAD	07/06/2020	22.5	21.2	0.100	945	7427	5.390	51.000	53.900	5.69%
AM1	2450	HEAD	07/16/2020	22.7	23.1	0.100	945	7427	5.450	51.000	54.500	6.86%
AM7	2450	HEAD	07/22/2020	21.9	20.3	0.100	921	7490	5.170	53.100	51.700	-2.64%
AM7	2450	HEAD	07/26/2020	21.1	21.4	0.100	945	7490	5.030	51.000	50.300	-1.37%
AM1	2600	HEAD	07/06/2020	22.5	21.2	0.100	1009	7427	5.930	55.800	59.300	6.27%
AM1	2600	HEAD	07/16/2020	22.7	23.1	0.100	1009	7427	5.940	55.800	59.400	6.45%
AM1	5250	HEAD	07/27/2020	22.9	21.3	0.050	1163	7427	3.810	80.600	76.200	-5.46%
AM1	5600	HEAD	07/27/2020	22.9	21.3	0.050	1163	7427	3.950	83.800	79.000	-5.73%
AM1	5750	HEAD	07/27/2020	22.9	21.3	0.050	1163	7427	3.790	81.100	75.800	-6.54%

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Table 9-4
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
AM4	850	BODY	06/25/2020	21.6	21.3	0.200	1010	7421	1.410	6.680	7.050	5.54%
AM4	850	BODY	07/06/2020	21.1	20.9	0.200	1010	7421	1.440	6.680	7.200	7.78%
AM4	850	BODY	07/10/2020	19.9	20.8	0.200	1010	7421	1.420	6.680	7.100	6.29%
AM6	1750	BODY	06/26/2020	23.8	20.5	0.100	1083	3837	2.080	19.700	20.800	5.58%
AM6	1750	BODY	07/02/2020	21.4	20.3	0.100	1092	3837	2.000	19.400	20.000	3.09%
AM6	1900	BODY	06/26/2020	23.8	20.5	0.100	5d030	3837	2.170	21.100	21.700	2.84%
AM6	1900	BODY	07/02/2020	21.4	20.3	0.100	5d181	3837	2.190	20.900	21.900	4.78%
AM5	2450	BODY	06/28/2020	21.1	21.0	0.100	921	7491	2.330	23.800	23.300	-2.10%
AM5	2450	BODY	07/17/2020	22.7	20.4	0.100	945	7416	2.380	23.200	23.800	2.59%
AM3	2450	BODY	07/22/2020	23.1	22.8	0.100	750	3949	2.530	24.100	25.300	4.98%
AM3	2450	BODY	07/27/2020	23.3	22.9	0.100	750	3949	2.250	24.100	22.500	-6.64%
AM5	2600	BODY	06/28/2020	21.1	21.0	0.100	1069	7491	2.370	24.800	23.700	-4.44%
AM5	2600	BODY	07/17/2020	22.7	20.4	0.100	1009	7416	2.410	25.000	24.100	-3.60%
AM1	5250	BODY	07/21/2020	23.5	21.6	0.050	1123	7427	0.955	20.600	19.100	-7.28%
AM1	5600	BODY	07/21/2020	23.5	21.6	0.050	1123	7427	1.120	21.700	22.400	3.23%
AM1	5750	BODY	07/21/2020	23.5	21.6	0.050	1123	7427	0.979	20.800	19.580	-5.87%

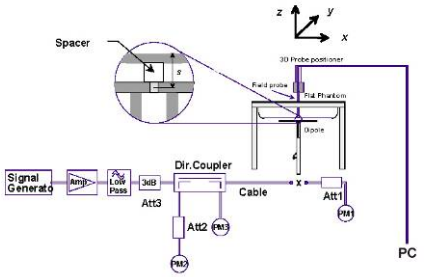

Figure 9-1
System Verification Setup Diagram

Figure 9-2
System Verification Setup Photo

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10 SAR DATA SUMMARY

10.1 Standalone Head SAR Data

Table 10-1
UMTS 850 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.16	10 mm	Aluminum	Sport	GY6CQ01MQ604	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.00	10 mm	Aluminum	Metal Links	GY6CR01JQ604	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.19	10 mm	Aluminum	Metal Loop	GY6CQ01MQ604	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	-0.16	10 mm	Stainless Steel	Sport	GY6CR01CQ60H	1:1	front	0.001	1.288	0.001	A1
836.60	4183	UMTS 850	RMC	25.0	23.90	-0.12	10 mm	Stainless Steel	Metal Links	GY6CR013Q60H	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	-0.02	10 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	1:1	front	0.001	1.288	0.001	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.17	10 mm	Titanium	Sport	GY6CR01PQ60V	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.11	10 mm	Titanium	Metal Links	GY6CR00SQ60V	1:1	front	0.000	1.288	0.000	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.14	10 mm	Titanium	Metal Loop	GY6CR018Q60V	1:1	front	0.000	1.288	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 10-2
UMTS 1750 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.01	10 mm	Aluminum	Sport	GY6CQ01MQ604	1:1	front	0.141	1.265	0.178	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.03	10 mm	Aluminum	Metal Links	GY6CR01JQ604	1:1	front	0.248	1.265	0.314	A2
1732.40	1412	UMTS 1750	RMC	24.0	22.98	-0.03	10 mm	Aluminum	Metal Loop	GY6CQ02BQ604	1:1	front	0.178	1.265	0.225	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.15	10 mm	Stainless Steel	Sport	GY6CR02NQ60H	1:1	front	0.146	1.265	0.185	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.09	10 mm	Stainless Steel	Metal Links	GY6CR013Q60H	1:1	front	0.206	1.265	0.261	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	-0.05	10 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	1:1	front	0.168	1.265	0.213	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.00	10 mm	Titanium	Sport	GY6CR00UQ60V	1:1	front	0.157	1.265	0.199	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	-0.01	10 mm	Titanium	Metal Links	GY6CR01PQ60V	1:1	front	0.186	1.265	0.235	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.08	10 mm	Titanium	Metal Loop	GY6CR00UQ60V	1:1	front	0.144	1.265	0.182	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 10-3
UMTS 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.15	10 mm	Aluminum	Sport	GY6CR01JQ604	1:1	front	0.101	1.334	0.135	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.19	10 mm	Aluminum	Metal Links	GY6CQ01MQ604	1:1	front	0.098	1.334	0.131	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.12	10 mm	Aluminum	Metal Loop	GY6CQ01MQ604	1:1	front	0.091	1.334	0.121	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.12	10 mm	Stainless Steel	Sport	GY6CR01QQ60H	1:1	front	0.079	1.334	0.105	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.12	10 mm	Stainless Steel	Metal Links	GY6CR01QQ60H	1:1	front	0.110	1.334	0.147	A3
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.02	10 mm	Stainless Steel	Metal Loop	GY6CR01CQ60H	1:1	front	0.089	1.334	0.119	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.16	10 mm	Titanium	Sport	GY6CR01PQ60V	1:1	front	0.068	1.334	0.091	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.15	10 mm	Titanium	Metal Links	GY6CR01PQ60V	1:1	front	0.067	1.334	0.089	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.06	10 mm	Titanium	Metal Loop	GY6CR003Q60V	1:1	front	0.096	1.334	0.128	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 10-4
LTE Band 26 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	-0.17	0	Aluminum	GY6CQ01MQ604	QPSK	1	49	10 mm	front	1:1	0.001	1.259	0.001	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	0.10	1	Aluminum	GY6CQ01MQ604	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.19	0	Aluminum	GY6CR01JQ604	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.18	1	Aluminum	GY6CR01JQ604	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	0.13	0	Aluminum	GY6CQ00XQ604	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	0.18	1	Aluminum	GY6CQ00XQ604	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	-0.17	0	Stainless Steel	GY6CR01QQ60H	QPSK	1	49	10 mm	front	1:1	0.001	1.259	0.001	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	0.19	1	Stainless Steel	GY6CR01QQ60H	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.13	0	Stainless Steel	GY6CR013Q60H	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.19	1	Stainless Steel	GY6CR01QQ60H	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	0.11	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	-0.15	1	Stainless Steel	GY6CR00NQ60H	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	0.10	0	Titanium	GY6CR01PQ60V	QPSK	1	49	10 mm	front	1:1	0.001	1.259	0.001	A4
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	0.10	1	Titanium	GY6CR01PQ60V	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.19	0	Titanium	GY6CR004Q60V	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.16	1	Titanium	GY6CR004Q60V	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	-0.10	0	Titanium	GY6CR00SQ60V	QPSK	1	49	10 mm	front	1:1	0.000	1.259	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	0.19	1	Titanium	GY6CR00SQ60V	QPSK	25	25	10 mm	front	1:1	0.000	1.288	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram														

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Table 10-5
LTE Band 5 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	0.11	0	Aluminum	GY6CR01JQ604	QPSK	1	25	10 mm	front	1:1	0.001	1.259	0.001	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	0.17	1	Aluminum	GY6CR01JQ604	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	-0.12	0	Aluminum	GY6CQ02UQ604	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	0.16	1	Aluminum	GY6CQ02UQ604	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	0.18	0	Aluminum	GY6CQ00XQ604	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	0.10	1	Aluminum	GY6CQ00XQ604	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	-0.18	0	Stainless Steel	GY6CR013Q60H	QPSK	1	25	10 mm	front	1:1	0.001	1.259	0.001	A5
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	-0.18	1	Stainless Steel	GY6CR013Q60H	QPSK	25	12	10 mm	front	1:1	0.001	1.276	0.001	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	0.16	0	Stainless Steel	GY6CR013Q60H	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	-0.15	1	Stainless Steel	GY6CR013Q60H	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	-0.12	0	Stainless Steel	GY6CR018Q60H	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	-0.14	1	Stainless Steel	GY6CR018Q60H	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	-0.11	0	Titanium	GY6CR01PQ60V	QPSK	1	25	10 mm	front	1:1	0.001	1.259	0.001	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	-0.12	1	Titanium	GY6CR01PQ60V	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	0.15	0	Titanium	GY6CR003Q60V	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	0.19	1	Titanium	GY6CR003Q60V	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	0.14	0	Titanium	GY6CR00SQ60V	QPSK	1	25	10 mm	front	1:1	0.000	1.259	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	0.18	1	Titanium	GY6CR00SQ60V	QPSK	25	12	10 mm	front	1:1	0.000	1.276	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-6
LTE Band 66 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	0.03	0	Aluminum	GY6CQ02BQ604	QPSK	1	50	10 mm	front	1:1	0.168	1.393	0.234	A6
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	-0.09	1	Aluminum	GY6CQ02BQ604	QPSK	50	25	10 mm	front	1:1	0.141	1.371	0.193	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.02	0	Aluminum	GY6CQ01MQ604	QPSK	1	50	10 mm	front	1:1	0.134	1.393	0.187	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	0.02	1	Aluminum	GY6CQ01MQ604	QPSK	50	25	10 mm	front	1:1	0.112	1.371	0.154	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	0.01	0	Aluminum	GY6CR01JQ604	QPSK	1	50	10 mm	front	1:1	0.139	1.393	0.194	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	0.08	1	Aluminum	GY6CR01JQ604	QPSK	50	25	10 mm	front	1:1	0.118	1.371	0.162	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	0.02	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	50	10 mm	front	1:1	0.111	1.393	0.155	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	0.04	1	Stainless Steel	GY6CR01MQ60H	QPSK	50	25	10 mm	front	1:1	0.092	1.371	0.126	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.01	0	Stainless Steel	GY6CR013Q60H	QPSK	1	50	10 mm	front	1:1	0.097	1.393	0.135	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	0.03	1	Stainless Steel	GY6CR013Q60H	QPSK	50	25	10 mm	front	1:1	0.082	1.371	0.112	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	0.03	0	Stainless Steel	GY6CR02NQ60H	QPSK	1	50	10 mm	front	1:1	0.100	1.393	0.139	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	0.06	1	Stainless Steel	GY6CR02NQ60H	QPSK	50	25	10 mm	front	1:1	0.086	1.371	0.118	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	-0.02	0	Titanium	GY6CR013Q60V	QPSK	1	50	10 mm	front	1:1	0.103	1.393	0.143	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	-0.05	1	Titanium	GY6CR013Q60V	QPSK	50	25	10 mm	front	1:1	0.088	1.371	0.121	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.06	0	Titanium	GY6CR01PQ60V	QPSK	1	50	10 mm	front	1:1	0.110	1.393	0.153	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	0.02	1	Titanium	GY6CR01PQ60V	QPSK	50	25	10 mm	front	1:1	0.093	1.371	0.128	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	-0.10	0	Titanium	GY6CR003Q60V	QPSK	1	50	10 mm	front	1:1	0.116	1.393	0.162	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	-0.08	1	Titanium	GY6CR003Q60V	QPSK	50	25	10 mm	front	1:1	0.099	1.371	0.136	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 10-7
LTE Band 25 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	0.13	0	Aluminum	GY6CQ02BQ604	QPSK	1	0	10 mm	front	1:1	0.075	1.445	0.108	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	0.02	1	Aluminum	GY6CQ02BQ604	QPSK	50	0	10 mm	front	1:1	0.061	1.452	0.089	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	0.01	0	Aluminum	GY6CQ02BQ604	QPSK	1	0	10 mm	front	1:1	0.083	1.445	0.120	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	0.20	1	Aluminum	GY6CQ02BQ604	QPSK	50	0	10 mm	front	1:1	0.070	1.452	0.102	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.07	0	Aluminum	GY6CQ00MQ604	QPSK	1	0	10 mm	front	1:1	0.092	1.445	0.133	A7
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.13	1	Aluminum	GY6CQ00MQ604	QPSK	50	0	10 mm	front	1:1	0.074	1.452	0.107	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	0.19	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	0	10 mm	front	1:1	0.079	1.445	0.114	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	-0.10	1	Stainless Steel	GY6CR01MQ60H	QPSK	50	0	10 mm	front	1:1	0.064	1.452	0.093	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	0.06	0	Stainless Steel	GY6CR01CQ60H	QPSK	1	0	10 mm	front	1:1	0.072	1.445	0.104	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	0.02	1	Stainless Steel	GY6CR01CQ60H	QPSK	50	0	10 mm	front	1:1	0.059	1.452	0.086	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.07	0	Stainless Steel	GY6CR00TQ60H	QPSK	1	0	10 mm	front	1:1	0.082	1.445	0.118	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.05	1	Stainless Steel	GY6CR00TQ60H	QPSK	50	0	10 mm	front	1:1	0.067	1.452	0.097	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	-0.05	0	Titanium	GY6CR00UQ60V	QPSK	1	0	10 mm	front	1:1	0.080	1.445	0.116	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	0.03	1	Titanium	GY6CR00UQ60V	QPSK	50	0	10 mm	front	1:1	0.064	1.452	0.093	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	0.03	0	Titanium	GY6CR00MQ60V	QPSK	1	0	10 mm	front	1:1	0.075	1.445	0.108	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	0.01	1	Titanium	GY6CR00MQ60V	QPSK	50	0	10 mm	front	1:1	0.062	1.452	0.090	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.07	0	Titanium	GY6CR00UQ60V	QPSK	1	0	10 mm	front	1:1	0.089	1.445	0.129	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.08	1	Titanium	GY6CR00UQ60V	QPSK	50	0	10 mm	front	1:1	0.074	1.452	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-8
LTE Band 7 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.02	0	Aluminum	GY6CQ01JQ604	QPSK	1	99	10 mm	front	1:1	0.490	1.416	0.694	
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.13	1	Aluminum	GY6CQ024Q604	QPSK	50	50	10 mm	front	1:1	0.351	1.449	0.509	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.13	0	Aluminum	GY6CQ00KQ604	QPSK	1	99	10 mm	front	1:1	0.368	1.416	0.521	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.09	1	Aluminum	GY6CQ02BQ604	QPSK	50	50	10 mm	front	1:1	0.236	1.449	0.342	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	0.13	0	Aluminum	GY6CQ00MQ604	QPSK	1	99	10 mm	front	1:1	0.319	1.416	0.452	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	0.20	1	Aluminum	GY6CQ01JQ604	QPSK	50	50	10 mm	front	1:1	0.258	1.449	0.374	
2510.00	20850	Low	LTE Band 7	20	Sport	23.5	21.79	0.09	0	Stainless Steel	GY6CR003Q60H	QPSK	1	0	10 mm	front	1:1	0.375	1.483	0.556	
2535.00	21100	Mid	LTE Band 7	20	Sport	23.5	21.67	0.03	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	99	10 mm	front	1:1	0.362	1.524	0.552	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.00	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	99	10 mm	front	1:1	0.581	1.416	**0.823**	A8
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.03	1	Stainless Steel	GY6CR00TQ60H	QPSK	50	50	10 mm	front	1:1	0.456	1.449	0.661	
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.88	0.06	1	Stainless Steel	GY6CR01CQ60H	QPSK	100	0	10 mm	front	1:1	0.453	1.452	0.658	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.10	0	Stainless Steel	GY6CR013Q60H	QPSK	1	99	10 mm	front	1:1	0.340	1.416	0.481	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.02	1	Stainless Steel	GY6CR02NQ60H	QPSK	50	50	10 mm	front	1:1	0.184	1.449	0.267	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	0.14	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	99	10 mm	front	1:1	0.348	1.416	0.493	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	-0.11	1	Stainless Steel	GY6CR00NQ60H	QPSK	50	50	10 mm	front	1:1	0.263	1.449	0.381	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.17	0	Titanium	GY6CR00SQ60V	QPSK	1	99	10 mm	front	1:1	0.512	1.416	0.725	
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.08	1	Titanium	GY6CR004Q60V	QPSK	50	50	10 mm	front	1:1	0.354	1.449	0.513	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.01	0	Titanium	GY6CR003Q60V	QPSK	1	99	10 mm	front	1:1	0.341	1.416	0.483	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.05	1	Titanium	GY6CR00SQ60V	QPSK	50	50	10 mm	front	1:1	0.226	1.449	0.327	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	-0.14	0	Titanium	GY6CR004Q60V	QPSK	1	99	10 mm	front	1:1	0.357	1.416	0.506	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	0.05	1	Titanium	GY6CR003Q60V	QPSK	50	50	10 mm	front	1:1	0.236	1.449	0.342	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 10-9
LTE Band 41 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	-0.02	0	Aluminum	GY6CR01JQ604	QPSK	1	50	10 mm	front	1:1.58	0.254	1.303	0.331	
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.07	1	Aluminum	GY6CR01JQ604	QPSK	50	25	10 mm	front	1:1.58	0.227	1.303	0.296	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	0.03	0	Aluminum	GY6CQ01MQ604	QPSK	1	50	10 mm	front	1:1.58	0.196	1.303	0.255	
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.05	1	Aluminum	GY6CQ01MQ604	QPSK	50	25	10 mm	front	1:1.58	0.174	1.303	0.227	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.04	0	Aluminum	GY6CQ02UQ604	QPSK	1	50	10 mm	front	1:1.58	0.220	1.303	0.287	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.02	1	Aluminum	GY6CQ00XQ604	QPSK	50	25	10 mm	front	1:1.58	0.180	1.303	0.235	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	0.05	0	Stainless Steel	GY6CR00TQ60H	QPSK	1	50	10 mm	front	1:1.58	0.324	1.303	0.422	
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.05	1	Stainless Steel	GY6CR00TQ60H	QPSK	50	25	10 mm	front	1:1.58	0.255	1.303	0.332	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	0.09	0	Stainless Steel	GY6CR00TQ60H	QPSK	1	50	10 mm	front	1:1.58	0.320	1.303	0.417	
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.04	1	Stainless Steel	GY6CR02NQ60H	QPSK	50	25	10 mm	front	1:1.58	0.156	1.303	0.203	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.00	0	Stainless Steel	GY6CR00TQ60H	QPSK	1	50	10 mm	front	1:1.58	0.357	1.303	0.465	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.01	1	Stainless Steel	GY6CR003Q60H	QPSK	50	25	10 mm	front	1:1.58	0.241	1.303	0.314	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	0.05	0	Titanium	GY6CR00MQ60V	QPSK	1	50	10 mm	front	1:1.58	0.375	1.303	0.489	A9
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.16	1	Titanium	GY6CR00MQ60V	QPSK	50	25	10 mm	front	1:1.58	0.289	1.303	0.377	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	0.02	0	Titanium	GY6CR00SQ60V	QPSK	1	50	10 mm	front	1:1.58	0.257	1.303	0.335	
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.10	1	Titanium	GY6CR00SQ60V	QPSK	50	25	10 mm	front	1:1.58	0.199	1.303	0.259	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.07	0	Titanium	GY6CR004Q60V	QPSK	1	50	10 mm	front	1:1.58	0.215	1.303	0.280	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.19	1	Titanium	GY6CR004Q60V	QPSK	50	25	10 mm	front	1:1.58	0.176	1.303	0.229	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram												

Table 10-10
2.4 GHz WLAN Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.03	-0.07	10 mm	Aluminum	Sport	GY6CR01JQ604	1	front	100.0	0.107	1.250	1.000	**0.134**	A10
2437	6	802.11b	DSSS	22	19.0	18.03	-0.03	10 mm	Aluminum	Metal Links	GY6CR01JQ604	1	front	100.0	0.085	1.250	1.000	0.106	
2437	6	802.11b	DSSS	22	19.0	18.03	0.03	10 mm	Aluminum	Metal Loop	GY6CR01JQ604	1	front	100.0	0.091	1.250	1.000	0.114	
2437	6	802.11b	DSSS	22	19.0	18.03	-0.04	10 mm	Stainless Steel	Sport	GY6CR013Q60H	1	front	100.0	0.093	1.250	1.000	0.116	
2437	6	802.11b	DSSS	22	19.0	18.03	0.18	10 mm	Stainless Steel	Metal Links	GY6CR013Q60H	1	front	100.0	0.062	1.250	1.000	0.078	
2437	6	802.11b	DSSS	22	19.0	18.03	0.01	10 mm	Stainless Steel	Metal Loop	GY6CR013Q60H	1	front	100.0	0.073	1.250	1.000	0.091	
2437	6	802.11b	DSSS	22	19.0	18.03	0.00	10 mm	Titanium	Sport	GY6CR00UQ60V	1	front	100.0	0.097	1.250	1.000	0.121	
2437	6	802.11b	DSSS	22	19.0	18.03	-0.06	10 mm	Titanium	Metal Links	GY6CR00UQ60V	1	front	100.0	0.062	1.250	1.000	0.078	
2437	6	802.11b	DSSS	22	19.0	18.03	0.05	10 mm	Titanium	Metal Loop	GY6CR00UQ60V	1	front	100.0	0.071	1.250	1.000	0.089	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 10-11
5 GHz WLAN Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.13	10 mm	Aluminum	Sport	GY6CQ02UQ604	6	front	97.3	0.088	1.222	1.028	0.111	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.19	10 mm	Aluminum	Metal Links	GY6CQ02UQ604	6	front	97.3	0.087	1.222	1.028	0.109	
5280	56	802.11a	OFDM	20	16.0	15.13	0.00	10 mm	Aluminum	Metal Loop	GY6CQ00KQ604	6	front	97.3	0.086	1.222	1.028	0.108	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.17	10 mm	Stainless Steel	Sport	GY6CR00TQ60H	6	front	97.3	0.081	1.222	1.028	0.102	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.15	10 mm	Stainless Steel	Metal Links	GY6CR00TQ60H	6	front	97.3	0.079	1.222	1.028	0.099	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.15	10 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	6	front	97.3	0.075	1.222	1.028	0.094	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.01	10 mm	Titanium	Sport	GY6CR018Q60V	6	front	97.3	0.076	1.222	1.028	0.095	
5280	56	802.11a	OFDM	20	16.0	15.13	0.10	10 mm	Titanium	Metal Links	GY6CR018Q60V	6	front	97.3	0.075	1.222	1.028	0.094	
5280	56	802.11a	OFDM	20	16.0	15.13	0.07	10 mm	Titanium	Metal Loop	GY6CR018Q60V	6	front	97.3	0.086	1.222	1.028	0.108	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.13	10 mm	Aluminum	Sport	GY6CR01JQ604	6	front	97.3	0.074	1.225	1.028	0.093	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.17	10 mm	Aluminum	Metal Links	GY6CQ01MQ604	6	front	97.3	0.082	1.225	1.028	0.103	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.21	10 mm	Aluminum	Metal Loop	GY6CQ01MQ604	6	front	97.3	0.074	1.225	1.028	0.093	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.13	10 mm	Stainless Steel	Sport	GY6CR018Q60H	6	front	97.3	0.074	1.225	1.028	0.093	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.06	10 mm	Stainless Steel	Metal Links	GY6CR018Q60H	6	front	97.3	0.089	1.225	1.028	0.112	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.12	10 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	6	front	97.3	0.069	1.225	1.028	0.087	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.12	10 mm	Titanium	Sport	GY6CR01PQ60V	6	front	97.3	0.103	1.225	1.028	0.130	
5600	120	802.11a	OFDM	20	16.0	15.12	0.06	10 mm	Titanium	Metal Links	GY6CR01PQ60V	6	front	97.3	0.109	1.225	1.028	0.137	
5600	120	802.11a	OFDM	20	16.0	15.12	0.09	10 mm	Titanium	Metal Loop	GY6CR01PQ60V	6	front	97.3	0.124	1.225	1.028	**0.156**	A11
5785	157	802.11a	OFDM	20	16.0	15.06	0.18	10 mm	Aluminum	Sport	GY6CR01JQ604	6	front	97.3	0.065	1.242	1.028	0.083	
5785	157	802.11a	OFDM	20	16.0	15.06	0.18	10 mm	Aluminum	Metal Links	GY6CR01JQ604	6	front	97.3	0.073	1.242	1.028	0.093	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.11	10 mm	Aluminum	Metal Loop	GY6CR01JQ604	6	front	97.3	0.064	1.242	1.028	0.082	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.18	10 mm	Stainless Steel	Sport	GY6CR00TQ60H	6	front	97.3	0.096	1.242	1.028	0.123	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.14	10 mm	Stainless Steel	Metal Links	GY6CR00TQ60H	6	front	97.3	0.102	1.242	1.028	0.130	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.11	10 mm	Stainless Steel	Metal Loop	GY6CR00TQ60H	6	front	97.3	0.104	1.242	1.028	0.133	
5785	157	802.11a	OFDM	20	16.0	15.06	0.12	10 mm	Titanium	Sport	GY6CR00UQ60V	6	front	97.3	0.101	1.242	1.028	0.129	
5785	157	802.11a	OFDM	20	16.0	15.06	0.08	10 mm	Titanium	Metal Links	GY6CR00UQ60V	6	front	97.3	0.104	1.242	1.028	0.133	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.14	10 mm	Titanium	Metal Loop	GY6CR00UQ60V	6	front	97.3	0.109	1.242	1.028	0.139	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-12
Bluetooth Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.03	10 mm	Aluminum	Sport	GY6CQ00MQ604	1	front	100	0.042	1.202	1.000	0.050	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.09	10 mm	Aluminum	Metal Links	GY6CQ00MQ604	1	front	100	0.026	1.202	1.000	0.031	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.13	10 mm	Aluminum	Metal Loop	GY6CQ00MQ604	1	front	100	0.032	1.202	1.000	0.038	
2480	78	Bluetooth	FHSS	13.0	12.20	0.00	10 mm	Stainless Steel	Sport	GY6CR003Q60H	1	front	100	0.044	1.202	1.000	**0.053**	A12
2480	78	Bluetooth	FHSS	13.0	12.20	-0.04	10 mm	Stainless Steel	Metal Links	GY6CR003Q60H	1	front	100	0.028	1.202	1.000	0.034	
2480	78	Bluetooth	FHSS	13.0	12.20	0.09	10 mm	Stainless Steel	Metal Loop	GY6CR003Q60H	1	front	100	0.031	1.202	1.000	0.037	
2480	78	Bluetooth	FHSS	13.0	12.20	0.17	10 mm	Titanium	Sport	GY6CR004Q60V	1	front	100	0.043	1.202	1.000	0.052	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.12	10 mm	Titanium	Metal Links	GY6CR004Q60V	1	front	100	0.028	1.202	1.000	0.034	
2480	78	Bluetooth	FHSS	13.0	12.20	0.05	10 mm	Titanium	Metal Loop	GY6CR004Q60V	1	front	100	0.029	1.202	1.000	0.035	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

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10.2 Standalone Extremity SAR Data

Table 10-13
UMTS 850 Extremity SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.12	0 mm	Aluminum	Sport	GY6CR01JQ604	1:1	back	0.065	1.288	0.084	
836.60	4183	UMTS 850	RMC	25.0	23.90	-0.01	0 mm	Aluminum	Metal Links	GY6CR01JQ604	1:1	back	0.125	1.288	0.161	A13
836.60	4183	UMTS 850	RMC	25.0	23.90	0.08	0 mm	Aluminum	Metal Loop	GY6CR01JQ604	1:1	back	0.111	1.288	0.143	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.15	0 mm	Stainless Steel	Sport	GY6CR018Q60H	1:1	back	0.071	1.288	0.091	
836.60	4183	UMTS 850	RMC	25.0	23.90	-0.01	0 mm	Stainless Steel	Metal Links	GY6CR018Q60H	1:1	back	0.121	1.288	0.156	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.14	0 mm	Stainless Steel	Metal Loop	GY6CR018Q60H	1:1	back	0.097	1.288	0.125	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.13	0 mm	Titanium	Sport	GY6CR005Q610	1:1	back	0.067	1.288	0.086	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.12	0 mm	Titanium	Metal Links	GY6CR003Q60V	1:1	back	0.118	1.288	0.152	
836.60	4183	UMTS 850	RMC	25.0	23.90	0.14	0 mm	Titanium	Metal Loop	GY6CR003Q60V	1:1	back	0.108	1.288	0.139	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Extremity 4.0 W/kg (mW/g) averaged over 10 grams									

Table 10-14
UMTS 1750 Extremity SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.17	0 mm	Aluminum	Sport	GY6CR01JQ604	1:1	back	0.041	1.265	0.052	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	-0.01	0 mm	Aluminum	Metal Links	GY6CQ024Q604	1:1	back	0.049	1.265	0.062	A14
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.12	0 mm	Aluminum	Metal Loop	GY6CQ02UQ604	1:1	back	0.020	1.265	0.025	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.13	0 mm	Stainless Steel	Sport	GY6CR00TQ60H	1:1	back	0.037	1.265	0.047	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.00	0 mm	Stainless Steel	Metal Links	GY6CR02NQ60H	1:1	back	0.033	1.265	0.042	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.07	0 mm	Stainless Steel	Metal Loop	GY6CR013Q60H	1:1	back	0.026	1.265	0.033	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.05	0 mm	Titanium	Sport	GY6CR00SQ60V	1:1	back	0.039	1.265	0.049	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.17	0 mm	Titanium	Metal Links	GY6CR00UQ60V	1:1	back	0.048	1.265	0.061	
1732.40	1412	UMTS 1750	RMC	24.0	22.98	0.15	0 mm	Titanium	Metal Loop	GY6CR01PQ60V	1:1	back	0.033	1.265	0.042	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Extremity 4.0 W/kg (mW/g) averaged over 10 grams									

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Table 10-15
UMTS 1900 Extremity SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.14	0 mm	Aluminum	Sport	GY6CQ02UQ604	1:1	back	0.027	1.334	0.036	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	-0.04	0 mm	Aluminum	Metal Links	GY6CQ024Q604	1:1	back	0.042	1.334	0.056	A15
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.16	0 mm	Aluminum	Metal Loop	GY6CQ02UQ604	1:1	back	0.014	1.334	0.019	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.05	0 mm	Stainless Steel	Sport	GY6CR01CQ60H	1:1	back	0.027	1.334	0.036	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	-0.03	0 mm	Stainless Steel	Metal Links	GY6CR018Q60H	1:1	back	0.039	1.334	0.052	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	-0.20	0 mm	Stainless Steel	Metal Loop	GY6CR00TQ60H	1:1	back	0.007	1.334	0.009	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.17	0 mm	Titanium	Sport	GY6CR018Q60V	1:1	back	0.028	1.334	0.037	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	0.01	0 mm	Titanium	Metal Links	GY6CR00UQ60V	1:1	back	0.026	1.334	0.035	
1880.00	9400	UMTS 1900	RMC	24.0	22.75	-0.15	0 mm	Titanium	Metal Loop	GY6CR00UQ60V	1:1	back	0.023	1.334	0.031	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Extremity 4.0 W/kg (mW/g) averaged over 10 grams									

Table 10-16
LTE Band 26 Extremity SAR

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	0.05	0	Aluminum	GY6CQ01JQ604	QPSK	1	49	0 mm	back	1:1	0.068	1.259	0.086	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	-0.19	1	Aluminum	GY6CQ01JQ604	QPSK	25	25	0 mm	back	1:1	0.041	1.288	0.053	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.05	0	Aluminum	GY6CQ01JQ604	QPSK	1	49	0 mm	back	1:1	0.115	1.259	0.145	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.04	1	Aluminum	GY6CQ01JQ604	QPSK	25	25	0 mm	back	1:1	0.075	1.288	0.097	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	0.15	0	Aluminum	GY6CQ01JQ604	QPSK	1	49	0 mm	back	1:1	0.090	1.259	0.113	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	0.15	1	Aluminum	GY6CQ01JQ604	QPSK	25	25	0 mm	back	1:1	0.064	1.288	0.082	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	0.18	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	49	0 mm	back	1:1	0.057	1.259	0.072	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	0.16	1	Stainless Steel	GY6CR018Q60H	QPSK	25	25	0 mm	back	1:1	0.047	1.288	0.061	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.01	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	49	0 mm	back	1:1	0.139	1.259	0.175	A16
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.14	1	Stainless Steel	GY6CR00NQ60H	QPSK	25	25	0 mm	back	1:1	0.087	1.288	0.112	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	-0.11	0	Stainless Steel	GY6CR018Q60H	QPSK	1	49	0 mm	back	1:1	0.091	1.259	0.115	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	0.10	1	Stainless Steel	GY6CR018Q60H	QPSK	25	25	0 mm	back	1:1	0.060	1.288	0.077	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Sport	25.0	24.00	0.12	0	Titanium	GY6CR01PQ60V	QPSK	1	49	0 mm	back	1:1	0.070	1.259	0.088	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.0	22.90	-0.17	1	Titanium	GY6CR01PQ60V	QPSK	25	25	0 mm	back	1:1	0.048	1.288	0.062	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Links	25.0	24.00	0.09	0	Titanium	GY6CR005Q610	QPSK	1	49	0 mm	back	1:1	0.124	1.259	0.156	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.0	22.90	0.10	1	Titanium	GY6CR005Q610	QPSK	25	25	0 mm	back	1:1	0.087	1.288	0.112	
831.50	26865	Mid	LTE Band 26 (Cell)	10	Metal Loop	25.0	24.00	0.10	0	Titanium	GY6CR003Q60V	QPSK	1	49	0 mm	back	1:1	0.099	1.259	0.125	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.0	22.90	0.18	1	Titanium	GY6CR003Q60V	QPSK	25	25	0 mm	back	1:1	0.068	1.288	0.088	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Extremity 4.0 W/kg (mW/g) averaged over 10 grams														

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Table 10-17
LTE Band 5 Extremity SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	0.07	0	Aluminum	GY6CR01JQ604	QPSK	1	25	0 mm	back	1:1	0.066	1.259	0.083	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	0.02	1	Aluminum	GY6CR01JQ604	QPSK	25	12	0 mm	back	1:1	0.049	1.276	0.063	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	-0.08	0	Aluminum	GY6CR01JQ604	QPSK	1	25	0 mm	back	1:1	0.115	1.259	0.145	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	-0.02	1	Aluminum	GY6CR01JQ604	QPSK	25	12	0 mm	back	1:1	0.091	1.276	0.116	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	0.19	0	Aluminum	GY6CR01JQ604	QPSK	1	25	0 mm	back	1:1	0.096	1.259	0.121	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	0.12	1	Aluminum	GY6CR01JQ604	QPSK	25	12	0 mm	back	1:1	0.076	1.276	0.097	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	-0.19	0	Stainless Steel	GY6CR003Q60H	QPSK	1	25	0 mm	back	1:1	0.065	1.259	0.082	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	0.04	1	Stainless Steel	GY6CR003Q60H	QPSK	25	12	0 mm	back	1:1	0.052	1.276	0.066	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	-0.19	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	25	0 mm	back	1:1	0.140	1.259	**0.176**	A17
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	-0.18	1	Stainless Steel	GY6CR00NQ60H	QPSK	25	12	0 mm	back	1:1	0.101	1.276	0.129	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	0.17	0	Stainless Steel	GY6CR003Q60H	QPSK	1	25	0 mm	back	1:1	0.087	1.259	0.110	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	0.18	1	Stainless Steel	GY6CR003Q60H	QPSK	25	12	0 mm	back	1:1	0.069	1.276	0.088	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.0	24.00	0.16	0	Titanium	GY6CR01PQ60V	QPSK	1	25	0 mm	back	1:1	0.069	1.259	0.087	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.0	22.94	0.12	1	Titanium	GY6CR01PQ60V	QPSK	25	12	0 mm	back	1:1	0.057	1.276	0.073	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.0	24.00	0.10	0	Titanium	GY6CR005Q610	QPSK	1	25	0 mm	back	1:1	0.122	1.259	0.154	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.0	22.94	0.13	1	Titanium	GY6CR005Q610	QPSK	25	12	0 mm	back	1:1	0.098	1.276	0.125	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.0	24.00	0.14	0	Titanium	GY6CR003Q60V	QPSK	1	25	0 mm	back	1:1	0.107	1.259	0.135	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.0	22.94	0.16	1	Titanium	GY6CR003Q60V	QPSK	25	12	0 mm	back	1:1	0.087	1.276	0.111	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Extremity 4.0 W/kg (mW/g) averaged over 10 grams											

Table 10-18
LTE Band 66 Extremity SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	0.13	0	Aluminum	GY6CQ01MQ604	QPSK	1	50	0 mm	back	1:1	0.029	1.393	0.040	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	0.18	1	Aluminum	GY6CQ01MQ604	QPSK	50	25	0 mm	back	1:1	0.025	1.371	0.034	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.01	0	Aluminum	GY6CQ00MQ604	QPSK	1	50	0 mm	back	1:1	0.035	1.393	0.049	A18
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	-0.03	1	Aluminum	GY6CQ00MQ604	QPSK	50	25	0 mm	back	1:1	0.029	1.371	0.040	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	-0.05	0	Aluminum	GY6CQ024Q604	QPSK	1	50	0 mm	back	1:1	0.016	1.393	0.022	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	-0.13	1	Aluminum	GY6CQ024Q604	QPSK	50	25	0 mm	back	1:1	0.013	1.371	0.018	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	0.06	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	50	0 mm	back	1:1	0.030	1.393	0.042	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	-0.05	1	Stainless Steel	GY6CR01MQ60H	QPSK	50	25	0 mm	back	1:1	0.026	1.371	0.036	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.00	0	Stainless Steel	GY6CR01MQ60H	QPSK	1	50	0 mm	back	1:1	0.021	1.393	0.029	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	0.05	1	Stainless Steel	GY6CR01MQ60H	QPSK	50	25	0 mm	back	1:1	0.018	1.371	0.025	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	0.12	0	Stainless Steel	GY6CR01CQ60H	QPSK	1	50	0 mm	back	1:1	0.009	1.393	0.013	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	0.16	1	Stainless Steel	GY6CR01CQ60H	QPSK	50	25	0 mm	back	1:1	0.008	1.371	0.011	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.0	22.56	0.15	0	Titanium	GY6CR018Q60V	QPSK	1	50	0 mm	back	1:1	0.029	1.393	0.040	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.0	21.63	0.16	1	Titanium	GY6CR018Q60V	QPSK	50	25	0 mm	back	1:1	0.025	1.371	0.034	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.0	22.56	0.09	0	Titanium	GY6CR003Q60V	QPSK	1	50	0 mm	back	1:1	0.030	1.393	0.042	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.0	21.63	0.20	1	Titanium	GY6CR003Q60V	QPSK	50	25	0 mm	back	1:1	0.026	1.371	0.036	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.0	22.56	0.19	0	Titanium	GY6CR004Q60V	QPSK	1	50	0 mm	back	1:1	0.009	1.393	0.013	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.0	21.63	0.17	1	Titanium	GY6CR004Q60V	QPSK	50	25	0 mm	back	1:1	0.006	1.371	0.008	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Extremity 4.0 W/kg (mW/g) averaged over 10 grams											

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Table 10-19
LTE Band 25 Extremity SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	0.13	0	Aluminum	GY6CQ02UQ604	QPSK	1	0	0 mm	back	1:1	0.032	1.445	0.046	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	-0.19	1	Aluminum	GY6CQ02UQ604	QPSK	50	0	0 mm	back	1:1	0.024	1.452	0.035	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	0.04	0	Aluminum	GY6CQ01MQ604	QPSK	1	0	0 mm	back	1:1	0.030	1.445	0.043	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	-0.01	1	Aluminum	GY6CQ01MQ604	QPSK	50	0	0 mm	back	1:1	0.024	1.452	0.035	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.21	0	Aluminum	GY6CQ02UQ604	QPSK	1	0	0 mm	back	1:1	0.016	1.445	0.023	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.13	1	Aluminum	GY6CQ02UQ604	QPSK	50	0	0 mm	back	1:1	0.013	1.452	0.019	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	0.11	0	Stainless Steel	GY6CR02NQ60H	QPSK	1	0	0 mm	back	1:1	0.016	1.445	0.023	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	0.12	1	Stainless Steel	GY6CR02NQ60H	QPSK	50	0	0 mm	back	1:1	0.013	1.452	0.019	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	-0.07	0	Stainless Steel	GY6CR00NQ60H	QPSK	1	0	0 mm	back	1:1	0.040	1.445	0.058	A19
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	0.11	1	Stainless Steel	GY6CR00NQ60H	QPSK	50	0	0 mm	back	1:1	0.031	1.452	0.045	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.13	0	Stainless Steel	GY6CR01CQ60H	QPSK	1	0	0 mm	back	1:1	0.012	1.445	0.017	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.14	1	Stainless Steel	GY6CR01CQ60H	QPSK	50	0	0 mm	back	1:1	0.012	1.452	0.017	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	24.0	22.40	-0.16	0	Titanium	GY6CR004Q60V	QPSK	1	0	0 mm	back	1:1	0.023	1.445	0.033	
1905.00	26590	High	LTE Band 25 (PCS)	20	Sport	23.0	21.38	-0.09	1	Titanium	GY6CR004Q60V	QPSK	50	0	0 mm	back	1:1	0.017	1.452	0.025	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	24.0	22.40	0.17	0	Titanium	GY6CR01PQ60V	QPSK	1	0	0 mm	back	1:1	0.029	1.445	0.042	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Links	23.0	21.38	0.03	1	Titanium	GY6CR01PQ60V	QPSK	50	0	0 mm	back	1:1	0.021	1.452	0.030	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.0	22.40	0.16	0	Titanium	GY6CR013Q60V	QPSK	1	0	0 mm	back	1:1	0.011	1.445	0.016	
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	23.0	21.38	0.20	1	Titanium	GY6CR013Q60V	QPSK	50	0	0 mm	back	1:1	0.007	1.452	0.010	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Extremity 4.0 W/kg (mW/g) averaged over 10 grams											

Table 10-20
LTE Band 7 Extremity SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.15	0	Aluminum	GY6CQ00KQ604	QPSK	1	99	0 mm	back	1:1	0.058	1.416	0.082	A20
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.14	1	Aluminum	GY6CQ00KQ604	QPSK	50	50	0 mm	back	1:1	0.047	1.449	0.068	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.18	0	Aluminum	GY6CQ01JQ604	QPSK	1	99	0 mm	back	1:1	0.048	1.416	0.068	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.09	1	Aluminum	GY6CQ01JQ604	QPSK	50	50	0 mm	back	1:1	0.038	1.449	0.055	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	-0.12	0	Aluminum	GY6CR01JQ604	QPSK	1	99	0 mm	back	1:1	0.051	1.416	0.072	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	0.12	1	Aluminum	GY6CR01JQ604	QPSK	50	50	0 mm	back	1:1	0.020	1.449	0.029	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.13	0	Stainless Steel	GY6CR01QQ60H	QPSK	1	99	0 mm	back	1:1	0.041	1.416	0.058	
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.11	1	Stainless Steel	GY6CR01QQ60H	QPSK	50	50	0 mm	back	1:1	0.028	1.449	0.041	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.11	0	Stainless Steel	GY6CR01CQ60H	QPSK	1	99	0 mm	back	1:1	0.046	1.416	0.065	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.17	1	Stainless Steel	GY6CR02NQ60H	QPSK	50	50	0 mm	back	1:1	0.028	1.449	0.041	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	-0.18	0	Stainless Steel	GY6CR01QQ60H	QPSK	1	99	0 mm	back	1:1	0.041	1.416	0.058	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	0.12	1	Stainless Steel	GY6CR013Q60H	QPSK	50	50	0 mm	back	1:1	0.021	1.449	0.030	
2560.00	21350	High	LTE Band 7	20	Sport	23.5	21.99	0.13	0	Titanium	GY6CR018Q60V	QPSK	1	99	0 mm	back	1:1	0.049	1.416	0.069	
2560.00	21350	High	LTE Band 7	20	Sport	22.5	20.89	0.10	1	Titanium	GY6CR01PQ60V	QPSK	50	50	0 mm	back	1:1	0.043	1.449	0.062	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.5	21.99	0.13	0	Titanium	GY6CR013Q60V	QPSK	1	99	0 mm	back	1:1	0.058	1.416	0.082	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.5	20.89	0.08	1	Titanium	GY6CR00MQ60V	QPSK	50	50	0 mm	back	1:1	0.048	1.449	0.070	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.5	21.99	0.11	0	Titanium	GY6CR00UQ60V	QPSK	1	99	0 mm	back	1:1	0.048	1.416	0.068	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.5	20.89	0.17	1	Titanium	GY6CR01PQ60V	QPSK	50	50	0 mm	back	1:1	0.034	1.449	0.049	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Extremity 4.0 W/kg (mW/g) averaged over 10 grams											

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Table 10-21
LTE Band 41 Extremity SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Wristband Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Housing Type	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	0.14	0	Aluminum	GY6CQ02UQ604	QPSK	1	50	0 mm	back	1:1.58	0.029	1.303	0.038	
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.14	1	Aluminum	GY6CQ02UQ604	QPSK	50	25	0 mm	back	1:1.58	0.021	1.303	0.027	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	-0.09	0	Aluminum	GY6CQ024Q604	QPSK	1	50	0 mm	back	1:1.58	0.017	1.303	0.022	
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.00	1	Aluminum	GY6CQ024Q604	QPSK	50	25	0 mm	back	1:1.58	0.013	1.303	0.017	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.16	0	Aluminum	GY6CQ01MQ604	QPSK	1	50	0 mm	back	1:1.58	0.011	1.303	0.014	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.15	1	Aluminum	GY6CQ01MQ604	QPSK	50	25	0 mm	back	1:1.58	0.008	1.303	0.010	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	0.15	0	Stainless Steel	GY6CR00TQ60H	QPSK	1	50	0 mm	back	1:1.58	0.063	1.303	0.082	
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.12	1	Stainless Steel	GY6CR00TQ60H	QPSK	50	25	0 mm	back	1:1.58	0.049	1.303	0.064	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	-0.04	0	Stainless Steel	GY6CR01CQ60H	QPSK	1	50	0 mm	back	1:1.58	0.071	1.303	0.093	A21
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.05	1	Stainless Steel	GY6CR01CQ60H	QPSK	50	25	0 mm	back	1:1.58	0.054	1.303	0.070	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.08	0	Stainless Steel	GY6CR013Q60H	QPSK	1	50	0 mm	back	1:1.58	0.053	1.303	0.069	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.12	1	Stainless Steel	GY6CR013Q60H	QPSK	50	25	0 mm	back	1:1.58	0.042	1.303	0.055	
2680.00	41490	High	LTE Band 41	20	Sport	23.5	22.35	0.16	0	Titanium	GY6CR018Q60V	QPSK	1	50	0 mm	back	1:1.58	0.037	1.303	0.048	
2680.00	41490	High	LTE Band 41	20	Sport	22.5	21.35	0.20	1	Titanium	GY6CR018Q60V	QPSK	50	25	0 mm	back	1:1.58	0.027	1.303	0.035	
2680.00	41490	High	LTE Band 41	20	Metal Links	23.5	22.35	0.01	0	Titanium	GY6CR00SQ60V	QPSK	1	50	0 mm	back	1:1.58	0.066	1.303	0.086	
2680.00	41490	High	LTE Band 41	20	Metal Links	22.5	21.35	0.16	1	Titanium	GY6CR00SQ60V	QPSK	50	25	0 mm	back	1:1.58	0.051	1.303	0.066	
2680.00	41490	High	LTE Band 41	20	Metal Loop	23.5	22.35	0.02	0	Titanium	GY6CR013Q60V	QPSK	1	50	0 mm	back	1:1.58	0.044	1.303	0.057	
2680.00	41490	High	LTE Band 41	20	Metal Loop	22.5	21.35	0.16	1	Titanium	GY6CR013Q60V	QPSK	50	25	0 mm	back	1:1.58	0.033	1.303	0.043	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Extremity 4.0 W/kg (mW/g) averaged over 10 grams												

Table 10-22
2.4 GHz WLAN Extremity SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.03	0.18	0 mm	Aluminum	Sport	GY6CQ02UQ604	1	back	100.0	0.008	1.250	1.000	0.010	
2437	6	802.11b	DSSS	22	19.0	18.03	-0.15	0 mm	Aluminum	Metal Links	GY6CQ02UQ604	1	back	100.0	0.007	1.250	1.000	0.009	
2437	6	802.11b	DSSS	22	19.0	18.03	-0.11	0 mm	Aluminum	Metal Loop	GY6CQ02UQ604	1	back	100.0	0.003	1.250	1.000	0.004	
2437	6	802.11b	DSSS	22	19.0	18.03	0.13	0 mm	Stainless Steel	Sport	GY6CR00TQ60H	1	back	100.0	0.005	1.250	1.000	0.006	
2437	6	802.11b	DSSS	22	19.0	18.03	0.14	0 mm	Stainless Steel	Metal Links	GY6CR00TQ60H	1	back	100.0	0.009	1.250	1.000	0.011	
2437	6	802.11b	DSSS	22	19.0	18.03	0.16	0 mm	Stainless Steel	Metal Loop	GY6CR00TQ60H	1	back	100.0	0.011	1.250	1.000	0.014	
2437	6	802.11b	DSSS	22	19.0	18.03	0.18	0 mm	Titanium	Sport	GY6CR013Q60V	1	back	100.0	0.013	1.250	1.000	**0.016**	A22
2437	6	802.11b	DSSS	22	19.0	18.03	0.21	0 mm	Titanium	Metal Links	GY6CR013Q60V	1	back	100.0	0.012	1.250	1.000	0.015	
2437	6	802.11b	DSSS	22	19.0	18.03	0.14	0 mm	Titanium	Metal Loop	GY6CR013Q60V	1	back	100.0	0.003	1.250	1.000	0.004	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Extremity 4.0 W/kg (mW/g) averaged over 10 grams											

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Table 10-23
5 GHz WLAN Extremity SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	16.0	15.13	0.14	0 mm	Aluminum	Sport	GY6CQ00KQ604	6	back	97.3	0.002	1.222	1.028	0.003	
5280	56	802.11a	OFDM	20	16.0	15.13	0.14	0 mm	Aluminum	Metal Links	GY6CQ00KQ604	6	back	97.3	0.006	1.222	1.028	0.008	
5280	56	802.11a	OFDM	20	16.0	15.13	0.16	0 mm	Aluminum	Metal Loop	GY6CQ02BQ604	6	back	97.3	0.006	1.222	1.028	0.008	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.12	0 mm	Stainless Steel	Sport	GY6CR013Q60H	6	back	97.3	0.013	1.222	1.028	**0.016**	A23
5280	56	802.11a	OFDM	20	16.0	15.13	0.12	0 mm	Stainless Steel	Metal Links	GY6CR013Q60H	6	back	97.3	0.012	1.222	1.028	0.015	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.15	0 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	6	back	97.3	0.010	1.222	1.028	0.013	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.04	0 mm	Titanium	Sport	GY6CR018Q60V	6	back	97.3	0.005	1.222	1.028	0.006	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.18	0 mm	Titanium	Metal Links	GY6CR018Q60V	6	back	97.3	0.004	1.222	1.028	0.005	
5280	56	802.11a	OFDM	20	16.0	15.13	-0.15	0 mm	Titanium	Metal Loop	GY6CR018Q60V	6	back	97.3	0.008	1.222	1.028	0.010	
5600	120	802.11a	OFDM	20	16.0	15.12	0.12	0 mm	Aluminum	Sport	GY6CR01JQ604	6	back	97.3	0.003	1.225	1.028	0.004	
5600	120	802.11a	OFDM	20	16.0	15.12	0.18	0 mm	Aluminum	Metal Links	GY6CR01JQ604	6	back	97.3	0.000	1.225	1.028	0.000	
5600	120	802.11a	OFDM	20	16.0	15.12	0.10	0 mm	Aluminum	Metal Loop	GY6CQ01MQ604	6	back	97.3	0.002	1.225	1.028	0.003	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.16	0 mm	Stainless Steel	Sport	GY6CR003Q60H	6	back	97.3	0.002	1.225	1.028	0.003	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.10	0 mm	Stainless Steel	Metal Links	GY6CR003Q60H	6	back	97.3	0.005	1.225	1.028	0.006	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.16	0 mm	Stainless Steel	Metal Loop	GY6CR01MQ60H	6	back	97.3	0.008	1.225	1.028	0.010	
5600	120	802.11a	OFDM	20	16.0	15.12	0.02	0 mm	Titanium	Sport	GY6CR003Q60V	6	back	97.3	0.005	1.225	1.028	0.006	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.12	0 mm	Titanium	Metal Links	GY6CR018Q60V	6	back	97.3	0.009	1.225	1.028	0.011	
5600	120	802.11a	OFDM	20	16.0	15.12	-0.19	0 mm	Titanium	Metal Loop	GY6CR018Q60V	6	back	97.3	0.009	1.225	1.028	0.011	
5785	157	802.11a	OFDM	20	16.0	15.06	0.11	0 mm	Aluminum	Sport	GY6CQ00KQ604	6	back	97.3	0.002	1.242	1.028	0.003	
5785	157	802.11a	OFDM	20	16.0	15.06	0.14	0 mm	Aluminum	Metal Links	GY6CQ00KQ604	6	back	97.3	0.004	1.242	1.028	0.005	
5785	157	802.11a	OFDM	20	16.0	15.06	0.13	0 mm	Aluminum	Metal Loop	GY6CR01JQ604	6	back	97.3	0.003	1.242	1.028	0.004	
5785	157	802.11a	OFDM	20	16.0	15.06	0.13	0 mm	Stainless Steel	Sport	GY6CR01CQ60H	6	back	97.3	0.001	1.242	1.028	0.001	
5785	157	802.11a	OFDM	20	16.0	15.06	0.19	0 mm	Stainless Steel	Metal Links	GY6CR018Q60H	6	back	97.3	0.001	1.242	1.028	0.001	
5785	157	802.11a	OFDM	20	16.0	15.06	-0.14	0 mm	Stainless Steel	Metal Loop	GY6CR018Q60H	6	back	97.3	0.002	1.242	1.028	0.003	
5785	157	802.11a	OFDM	20	16.0	15.06	0.13	0 mm	Titanium	Sport	GY6CR003Q60V	6	back	97.3	0.007	1.242	1.028	0.009	
5785	157	802.11a	OFDM	20	16.0	15.06	0.08	0 mm	Titanium	Metal Links	GY6CR003Q60V	6	back	97.3	0.008	1.242	1.028	0.010	
5785	157	802.11a	OFDM	20	16.0	15.06	0.06	0 mm	Titanium	Metal Loop	GY6CR003Q60V	6	back	97.3	0.006	1.242	1.028	0.008	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Extremity** **4.0 W/kg (mW/g)** averaged over 10 grams											

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Table 10-24
Bluetooth Extremity SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (10g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	13.0	12.20	0.18	0 mm	Aluminum	Sport	GY6CQ02BQ604	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.21	0 mm	Aluminum	Metal Links	GY6CQ02BQ604	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	-0.12	0 mm	Aluminum	Metal Loop	GY6CQ02BQ604	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	0.16	0 mm	Stainless Steel	Sport	GY6CR00NQ60H	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	0.10	0 mm	Stainless Steel	Metal Links	GY6CR00NQ60H	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	0.13	0 mm	Stainless Steel	Metal Loop	GY6CR00NQ60H	1	back	100	0.000	1.202	1.000	0.000	
2480	78	Bluetooth	FHSS	13.0	12.20	0.19	0 mm	Titanium	Sport	GY6CR003Q60V	1	back	100	0.002	1.202	1.000	0.002	
2480	78	Bluetooth	FHSS	13.0	12.20	0.18	0 mm	Titanium	Metal Links	GY6CR003Q60V	1	back	100	0.005	1.202	1.000	**0.006**	A24
2480	78	Bluetooth	FHSS	13.0	12.20	0.16	0 mm	Titanium	Metal Loop	GY6CR003Q60V	1	back	100	0.002	1.202	1.000	0.002	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							**Head 1.6 W/kg (mW/g)** averaged over 1 gram											

10.3 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Per FCC KDB Publication 865664 D01v01r04, variability SAR tests were not required since measured SAR results for all frequency bands were less than 0.8 W/kg and 2.0 W/kg for 10g SAR. Please see Section 12 for variability analysis.
7. This device has three housing types: Aluminum, Stainless Steel, and Titanium. The non-metallic wrist accessory, sport band, was evaluated for all exposure conditions. The available metallic wrist accessories, metal links band and metal loop band, were additionally evaluated.
8. This device is a portable wrist-worn device and does not support any other use conditions. Therefore, the procedures in FCC KDB Publication 447498 D01v06 Section 6.2 have been applied for extremity and next to mouth (head) conditions.

UMTS Notes:

1. UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

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LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 7.5.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations and > 1.5 W/kg for 10g SAR, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. This device can only operate with 16 QAM on the uplink with less than or equal to 27 RB. QPSK and 16QAM LTE powers for RB size of 15 (“50% RB”) and 27 (“100% RB”) were additionally measured to support comparison and SAR test exclusion per KDB 941225 D05v02r04 Section 5.2.4 and 5.3.

WLAN Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n/ax) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 7.6.4 for more information.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 7.6.5 for more information.
3. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.
4. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8 MHz, VBW = 50 MHz, and detector = peak per guidance of Section 6.0 b) of ANSI C63. 10-2013 and KDB 558074 D01 v04. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100.

Bluetooth Notes

1. To determine compliance, Bluetooth SAR was measured with the maximum power condition. Bluetooth was evaluated with a test mode with 100% transmission duty factor.

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11 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

11.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built-in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

11.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

11.3 Head SAR Simultaneous Transmission Analysis

For SAR summation, the highest reported SAR across all housing and wristband types was used as a conservative evaluation for the simultaneous transmission analysis.

Table 11-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN, Bluetooth, and 5 GHz WLAN (Head at 1.0 cm)

Exposure Condition	Mode	3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/Kg)	Bluetooth SAR (W/Kg)	5 GHz WLAN SAR (W/Kg)	Σ SAR (W/kg)				
		1	2	3	4	1+2	1+3	1+4	3+4	1+3+4
Head SAR	UMTS 850	0.001	0.134	0.053	0.156	0.135	0.054	0.157	0.209	0.210
	UMTS 1750	0.314	0.134	0.053	0.156	0.448	0.367	0.470	0.209	0.523
	UMTS 1900	0.147	0.134	0.053	0.156	0.281	0.200	0.303	0.209	0.356
	LTE Band 26 (Cell)	0.001	0.134	0.053	0.156	0.135	0.054	0.157	0.209	0.210
	LTE Band 5 (Cell)	0.001	0.134	0.053	0.156	0.135	0.054	0.157	0.209	0.210
	LTE Band 66 (AWS)	0.234	0.134	0.053	0.156	0.368	0.287	0.390	0.209	0.443
	LTE Band 25 (PCS)	0.133	0.134	0.053	0.156	0.267	0.186	0.289	0.209	0.342
	LTE Band 7	0.823	0.134	0.053	0.156	0.957	0.876	0.979	0.209	**1.032**
	LTE Band 41	0.489	0.134	0.053	0.156	0.623	0.542	0.645	0.209	0.698

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11.4 Extremity SAR Simultaneous Transmission Analysis

For SAR summation, the highest reported SAR across all housing and wristband types was used as a conservative evaluation for the simultaneous transmission analysis.

Table 11-2
Simultaneous Transmission Scenario with 2.4 GHz WLAN, Bluetooth, and 5 GHz WLAN (Extremity at 0.0 cm)

Exposure Condition	Mode	3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/Kg)	Bluetooth SAR (W/Kg)	5 GHz WLAN SAR (W/Kg)	Σ SAR (W/kg)				
		1	2	3	4	1+2	1+3	1+4	3+4	1+3+4
Extremity	UMTS 850	0.161	0.016	0.006	0.016	0.177	0.167	0.177	0.022	0.183
	UMTS 1750	0.062	0.016	0.006	0.016	0.078	0.068	0.078	0.022	0.084
	UMTS 1900	0.056	0.016	0.006	0.016	0.072	0.062	0.072	0.022	0.078
	LTE Band 26 (Cell)	0.175	0.016	0.006	0.016	0.191	0.181	0.191	0.022	0.197
	LTE Band 5 (Cell)	0.176	0.016	0.006	0.016	0.192	0.182	0.192	0.022	**0.198**
	LTE Band 66 (AWS)	0.049	0.016	0.006	0.016	0.065	0.055	0.065	0.022	0.071
	LTE Band 25 (PCS)	0.058	0.016	0.006	0.016	0.074	0.064	0.074	0.022	0.080
	LTE Band 7	0.082	0.016	0.006	0.016	0.098	0.088	0.098	0.022	0.104
	LTE Band 41	0.093	0.016	0.006	0.016	0.109	0.099	0.109	0.022	0.115

11.5 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06.

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12 SAR MEASUREMENT VARIABILITY

12.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01, SAR measurement variability was not assessed for each frequency band since all measured SAR values are < 0.80 W/kg for 1g SAR and < 2.0 W/kg for 10g SAR.

12.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g SAR and <3.75 W/kg for 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis was not required.

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13 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85033E	3.5mm Standard Calibration Kit	6/6/2020	Annual	6/6/2021	MY53402352
Agilent	E4438C	ESG Vector Signal Generator	9/11/2019	Annual	9/11/2020	MY45093678
Agilent	E4438C	ESG Vector Signal Generator	9/13/2019	Annual	9/13/2020	MY42081752
Agilent	N5182A	MXG Vector Signal Generator	8/19/2019	Annual	8/19/2020	MY47420837
Agilent	8753ES	S-Parameter Network Analyzer	1/16/2020	Annual	1/16/2021	US39170118
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343971
Anritsu	ML2496A	Power Meter	12/17/2019	Annual	12/17/2020	1138001
Anritsu	MA2411B	Pulse Power Sensor	1/21/2020	Annual	1/21/2021	1339007
Anritsu	MT8820C	Radio Communication Analyzer	7/25/2019	Annual	7/25/2020	6201240328
Anritsu	MT8821C	Radio Communication Analyzer	8/16/2019	Annual	8/16/2020	6201144418
Anritsu	MA24106A	USB Power Sensor	8/27/2019	Annual	8/27/2020	1827533
Anritsu	MA24106A	USB Power Sensor	8/27/2019	Annual	8/27/2020	1827529
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181292054
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181292061
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291455
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291460
Insize	1108-150	Digital Caliper	1/17/2020	Biennial	1/17/2022	409193536
MCL	BW-N3W5+	3dB Attenuator	CBT	N/A	CBT	1812
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1311
MCL	BW-N10W5+	10dB Attenuator	CBT	N/A	CBT	1611
Mini-Circuits	NLP-1000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
KEYSIGHT	772D	Dual Directional Coupler	CBT	N/A	CBT	N/A
KEYSIGHT	E4438C	VECTOR SIGNAL GENERATOR	44004	Annual	44369	MY45092078
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	FSP-7	Spectrum Analyzer	43839	Biennial	44570	100288
Rohde & Schwarz	CMW500	Radio Communication Tester	8/20/2019	Annual	8/20/2020	106578
Rohde & Schwarz	CMW500	Radio Communication Tester	4/28/2020	Annual	4/28/2021	167285
Rohde & Schwarz	CMW500	Radio Communication Tester	5/13/2020	Annual	5/13/2021	167284
Rohde& Schwarz	CMW500	Wideband Radio Communication Tester	8/8/2019	Annual	8/8/2020	145663
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2020	Annual	5/12/2021	1070
SPEAG	DAKS-3.5	Portable DAK	9/10/2019	Annual	9/10/2020	1045
SPEAG	EX3DV4	SAR Probe	2/19/2020	Annual	2/19/2021	7427
SPEAG	EX3DV4	SAR Probe	4/20/2020	Annual	4/20/2021	7532
SPEAG	EX3DV4	SAR Probe	12/13/2019	Annual	12/13/2020	7490
SPEAG	EX3DV4	SAR Probe	3/20/2020	Annual	3/20/2021	7421
SPEAG	EX3DV4	SAR Probe	1/20/2020	Annual	1/20/2021	3837
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7491
SPEAG	EX3DV4	SAR Probe	6/22/2020	Annual	6/22/2021	7416
SPEAG	EX3DV4	SAR Probe	8/29/2019	Annual	8/29/2020	3949
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2020	Annual	2/13/2021	1403
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/15/2020	Annual	4/15/2021	501
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/14/2020	Annual	4/14/2021	1532
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/19/2020	Annual	3/19/2021	604
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/14/2020	Annual	1/14/2021	793
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/9/2020	Annual	7/9/2021	1402
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/11/2020	Annual	6/11/2021	701
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/12/2019	Annual	8/12/2020	1408
SPEAG	D850V2	850 MHz SAR Dipole	8/16/2017	Triennial	8/16/2020	1009
SPEAG	D850V2	850 MHz SAR Dipole	9/8/2017	Triennial	9/8/2020	1010
SPEAG	D1750V2	1750 MHz SAR Dipole	9/7/2017	Triennial	9/7/2020	1104
SPEAG	D1900V2	1900 MHz SAR Dipole	5/14/2018	Triennial	5/14/2021	5d026
SPEAG	D2450V2	2450 MHz SAR Dipole	5/16/2018	Triennial	5/16/2021	945
SPEAG	D2450V2	2450 MHz SAR Dipole	11/12/2018	Biennial	11/12/2020	921
SPEAG	D2600V2	2600 MHz SAR Dipole	6/19/2018	Triennial	6/19/2021	1009
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/13/2018	Biennial	9/13/2020	1163
SPEAG	D1750V2	1750 MHz SAR Dipole	6/19/2019	Biennial	6/19/2021	1083
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2018	Triennial	5/15/2021	1092
SPEAG	D1900V2	1900 MHz SAR Dipole	6/19/2019	Biennial	6/19/2021	5d030
SPEAG	D1900V2	1900 MHz SAR Dipole	9/7/2017	Triennial	9/7/2020	5d181
SPEAG	D2450V2	2450 MHz SAR Dipole	6/14/2019	Biennial	6/14/2021	750
SPEAG	D2600V2	2600 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	1069
SPEAG	D5GHzV2	5 GHz SAR Dipole	3/13/2018	Triennial	3/13/2021	1123

Note: All equipment was used strictly during the calibration period.

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

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14 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)		RSS				11.5	11.3	60
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				23.0	22.6	

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15 CONCLUSION

15.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

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APPENDIX A: SAR TEST DATA

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PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01CQ60H

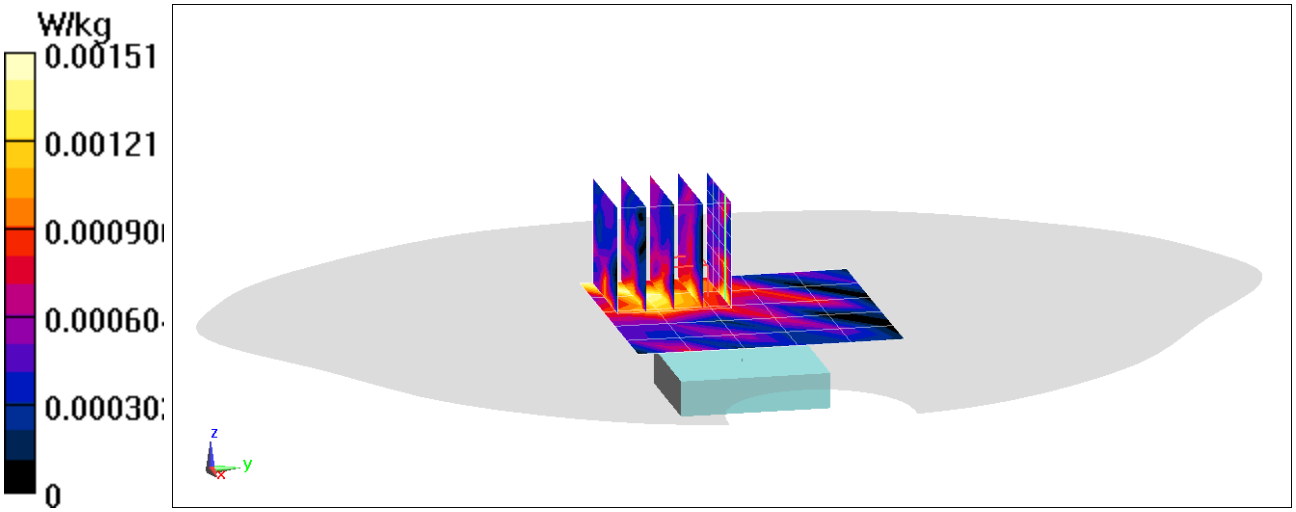
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.874 S/m; ε_r = 40.45; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-29-2020; Ambient Temp: 23.1°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 836.6 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 850, Head SAR, Front side, Mid.ch
Stainless Steel, Sports Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.187 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.00247 W/kg
SAR(1 g) = 0.000851 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01JQ604

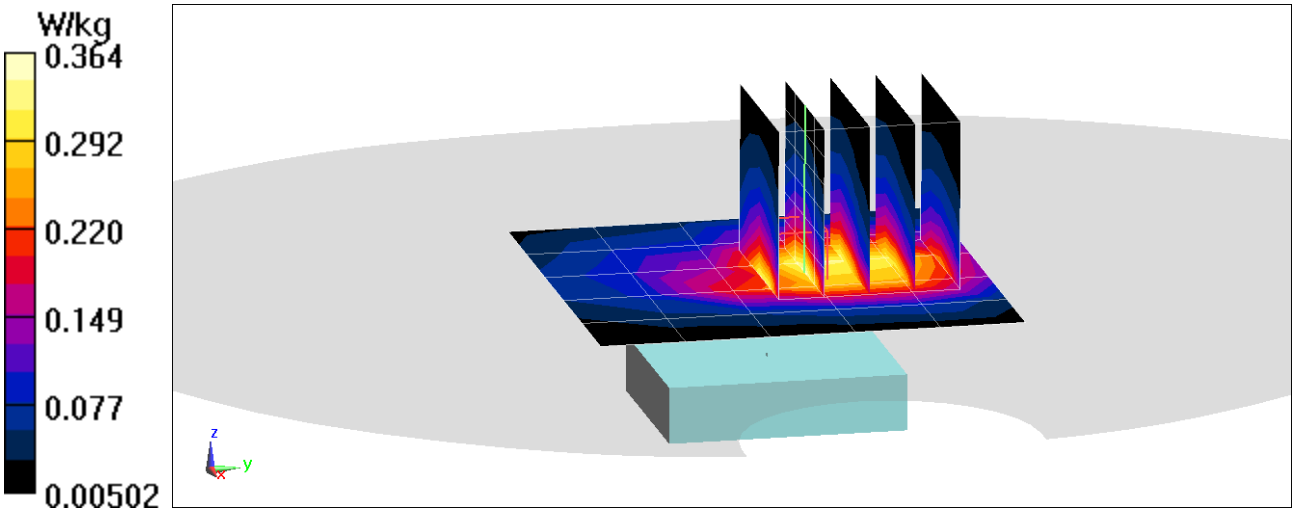
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.348 S/m; ε_r = 39.249; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7532; ConvF(8.46, 8.46, 8.46) @ 1732.4 MHz; Calibrated: 4/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn501; Calibrated: 4/15/2020
Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Head SAR, Front side, Mid.ch
Aluminum, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.68 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.435 W/kg
SAR(1 g) = 0.248 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01QQ60H

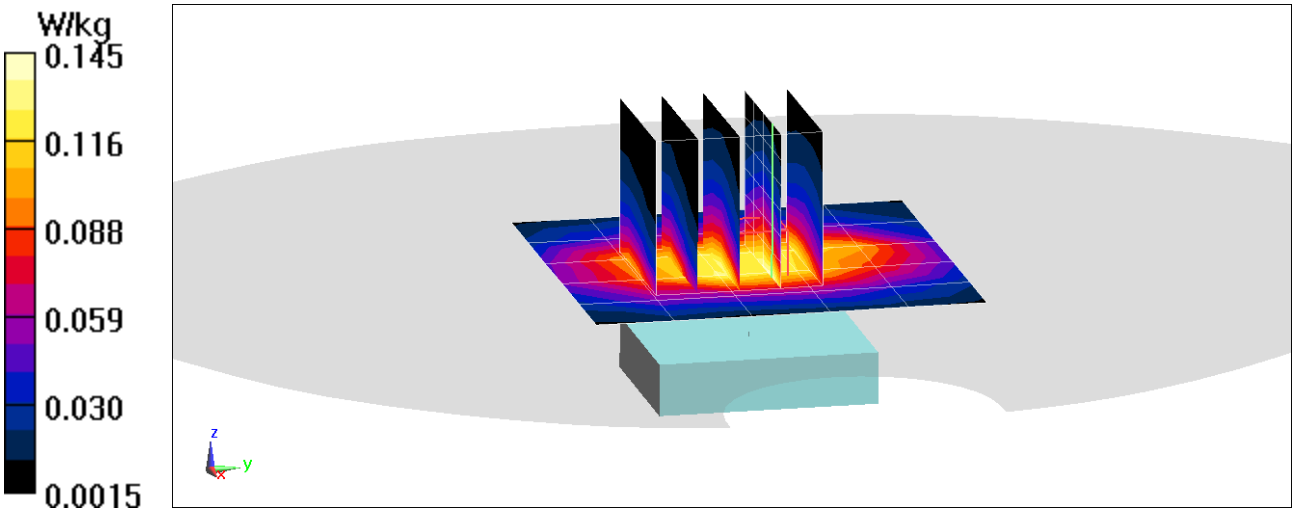
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Head Medium parameters used:
f = 1880 MHz; σ = 1.427 S/m; ε_r = 38.892; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-26-2020; Ambient Temp: 22.3°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7490; ConvF(8.27, 8.27, 8.27) @ 1880 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Head SAR, Front side, Mid.ch
Stainless Steel, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.596 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.174 W/kg
SAR(1 g) = 0.110 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01PQ60V

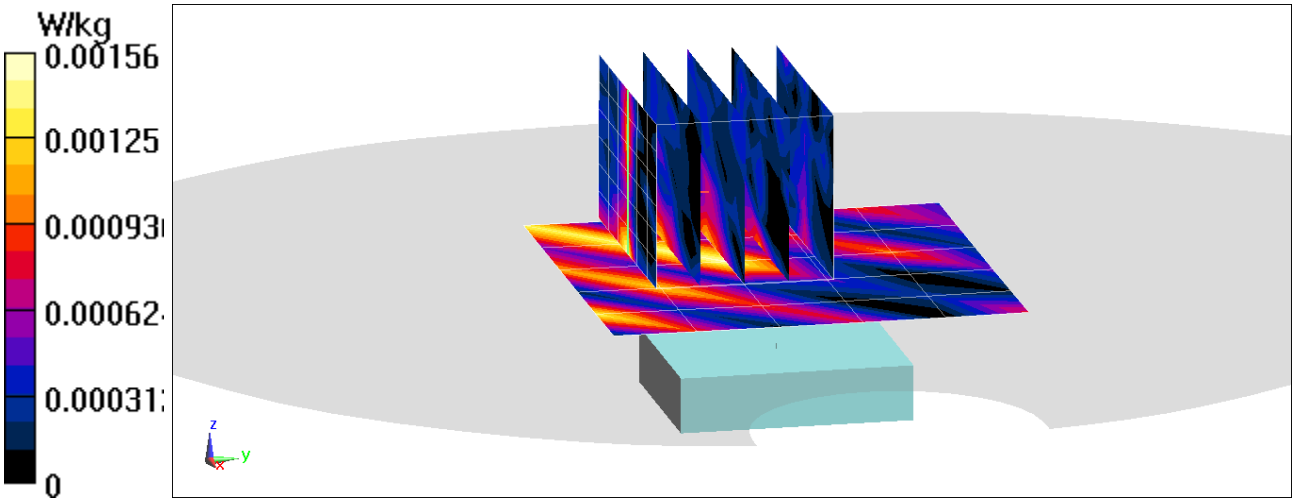
Communication System: UID 0, _LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.889 S/m; ε_r = 40.895; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 831.5 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Head SAR, Front side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset
Titanium, Sport Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (7x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.7870 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.00195 W/kg
SAR(1 g) = 0.000639 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR013Q60H

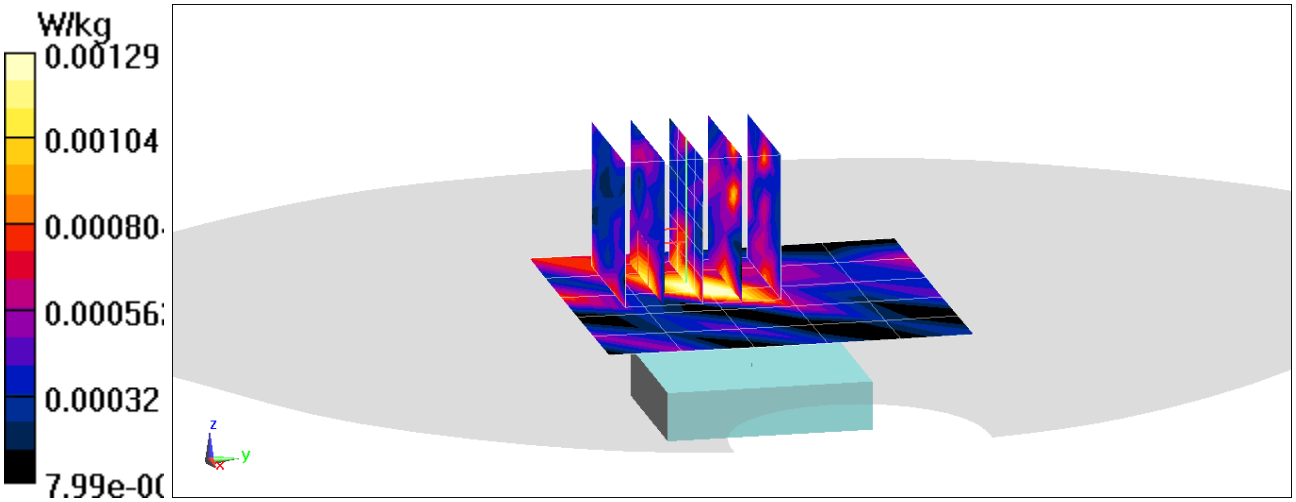
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.895 S/m; ε_r = 40.906; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2020; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 836.5 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 5 (Cell.), Head SAR, Front side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset
Stainless Steel, Sport Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.125 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.00185 W/kg
SAR(1 g) = 0.000956 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ02BQ604

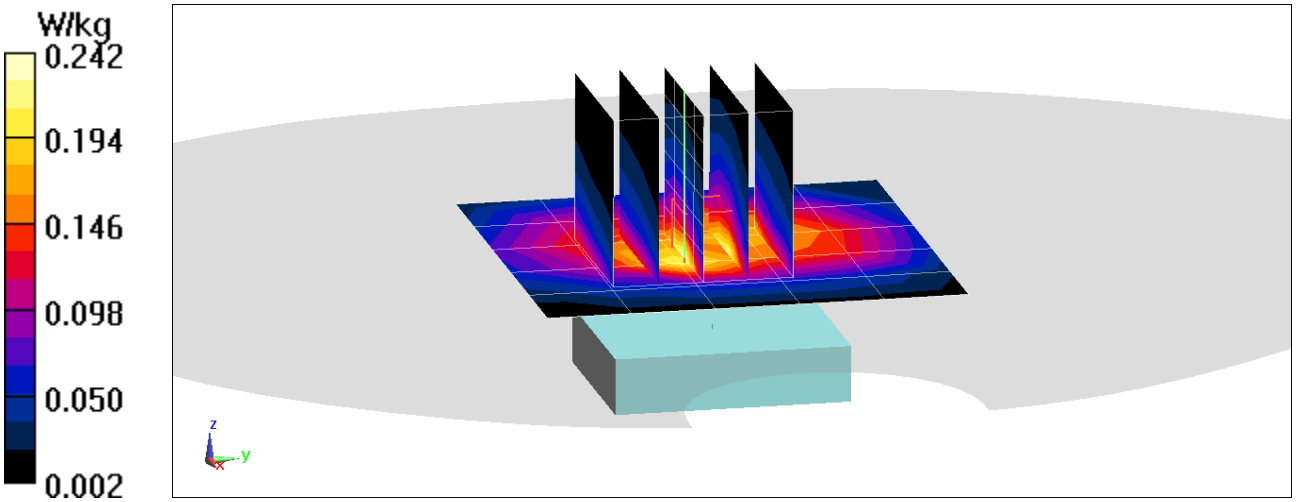
Communication System: UID 0, _LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Head Medium parameters used (interpolated):
f = 1720 MHz; σ = 1.341 S/m; ε_r = 39.264; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7532; ConvF(8.46, 8.46, 8.46) @ 1720 MHz; Calibrated: 4/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn501; Calibrated: 4/15/2020
Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 66 (AWS), Head SAR, Front side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset
Aluminum, Sport Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.09 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.311 W/kg
SAR(1 g) = 0.168 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ00MQ604

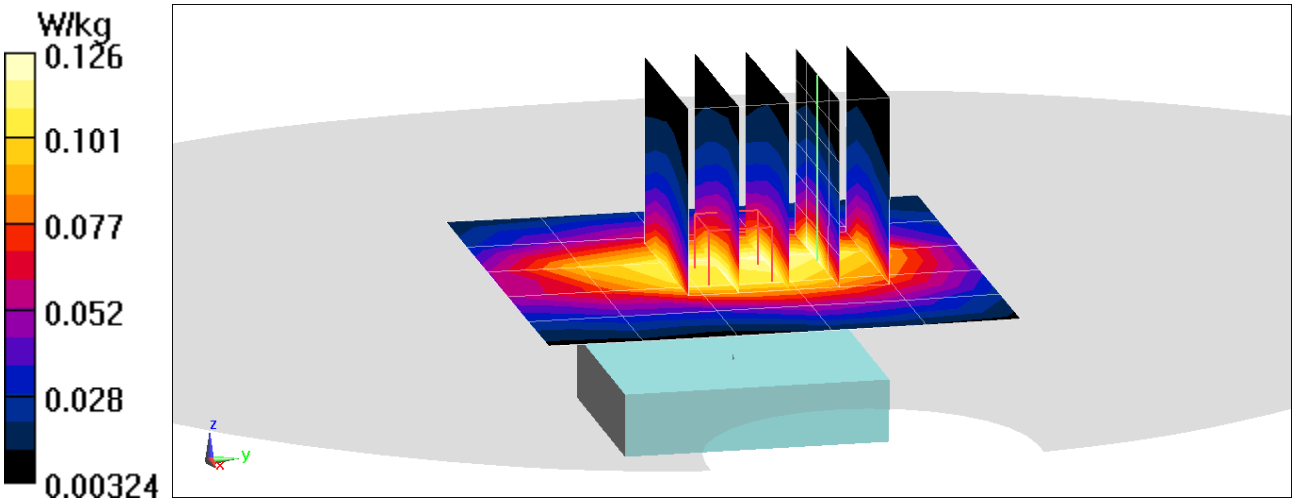
Communication System: UID 0, _LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Head Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.432 S/m; ε_r = 38.916; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2020; Ambient Temp: 20.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7490; ConvF(8.27, 8.27, 8.27) @ 1905 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 25 (PCS), Head SAR, Front side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset
Aluminum, Metal Loop Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.967 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.153 W/kg
SAR(1 g) = 0.092 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01MQ60H

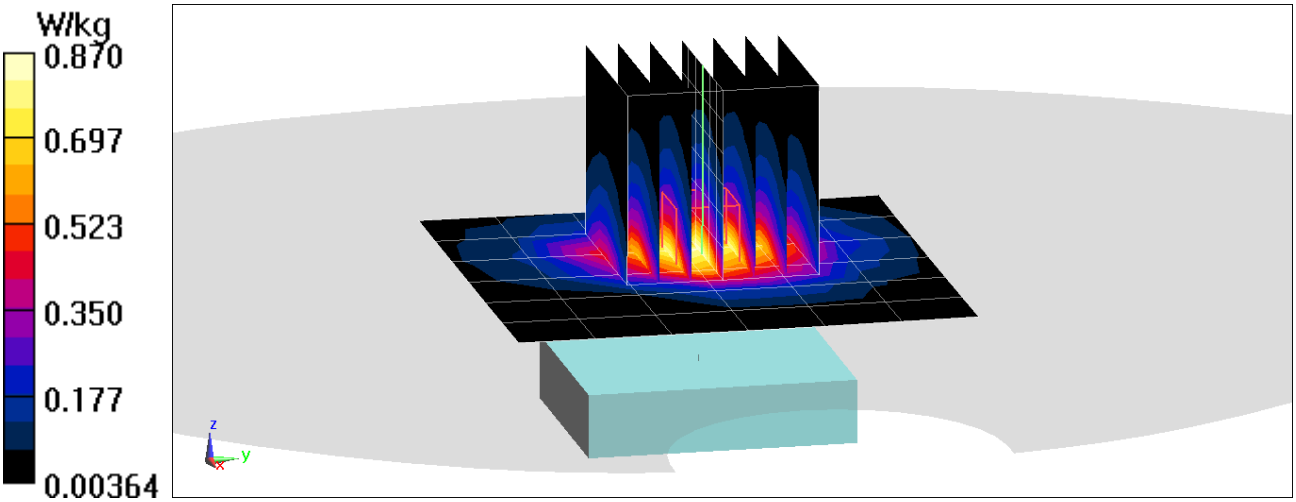
Communication System: UID 0, _LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used (interpolated):
f = 2560 MHz; σ = 1.883 S/m; ε_r = 38.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-16-2020; Ambient Temp: 22.7°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN7427; ConvF(7, 7, 7) @ 2560 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 7, Head SAR, Front side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset
Stainless Steel, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.28 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.581 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR00MQ60V

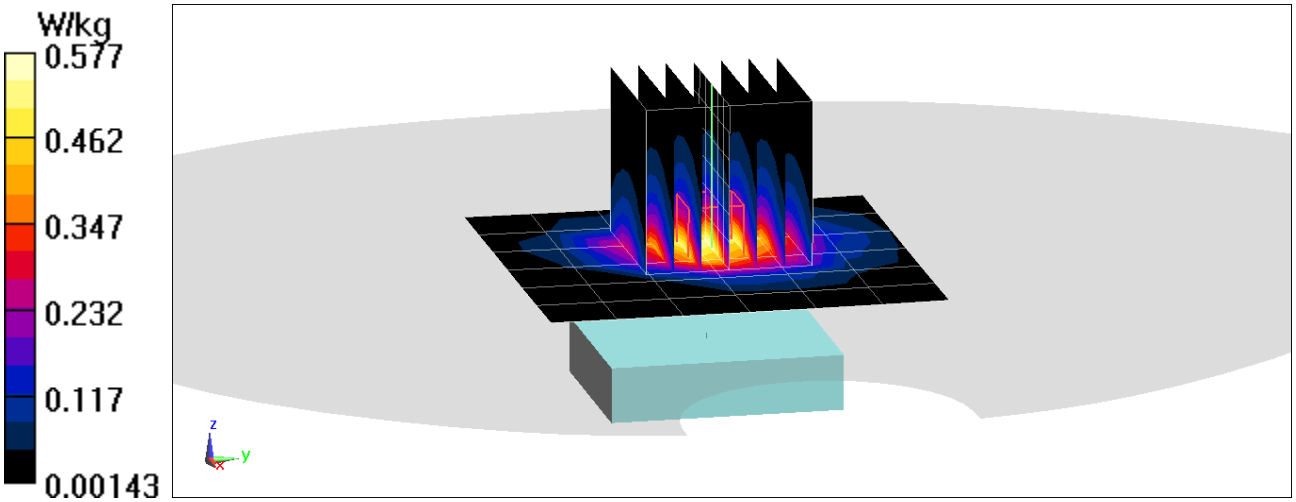
Communication System: UID 0, LTE Band 41 (Class 3); Frequency: 2680 MHz; Duty Cycle: 1:1.58
Medium: 2450 MHz Head Medium parameters used (interpolated):
f = 2680 MHz; σ = 1.981 S/m; ε_r = 38.51; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-06-2020; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7427; ConvF(7, 7, 7) @ 2680 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41, Head SAR, Front side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset
Titanium, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.48 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.713 W/kg
SAR(1 g) = 0.375 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01JQ604

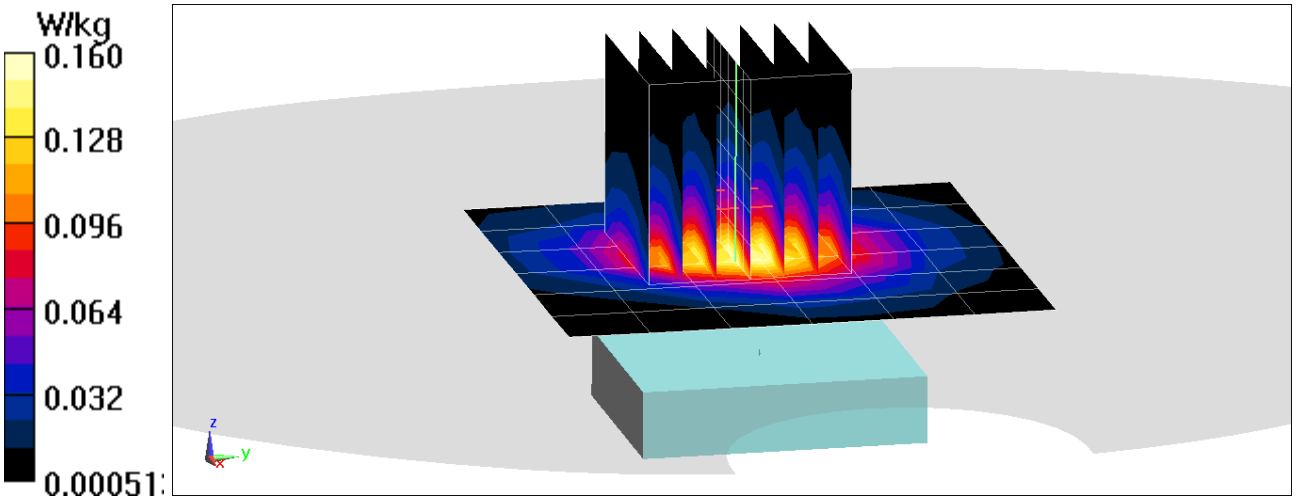
Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.864 S/m; ε_r = 38.646; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-22-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7490; ConvF(7.84, 7.84, 7.84) @ 2437 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: Twin-SAM V4.0 SUB use; Type: QD 000 P40 CC; Serial: 1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11b, 22 MHz Bandwidth,
Head SAR, Ch 6, 1 Mbps, Front Side
Aluminum, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.082 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.107 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01PQ60V

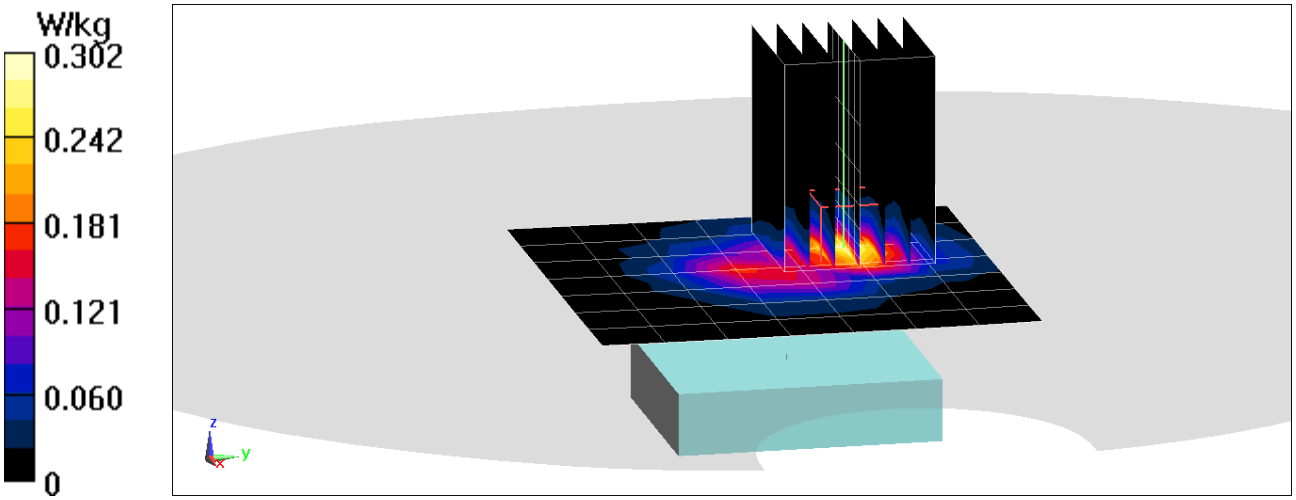
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.96 S/m; ε_r = 34.335; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7427; ConvF(4.61, 4.61, 4.61) @ 5600 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, UNII-2C, 20 MHz Bandwidth,
Head SAR, Ch 120, 6 Mbps, Front Side,
Titanium, Metal Loop Wrist Band

Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 5.303 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.513 W/kg
SAR(1 g) = 0.124 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR003Q60H

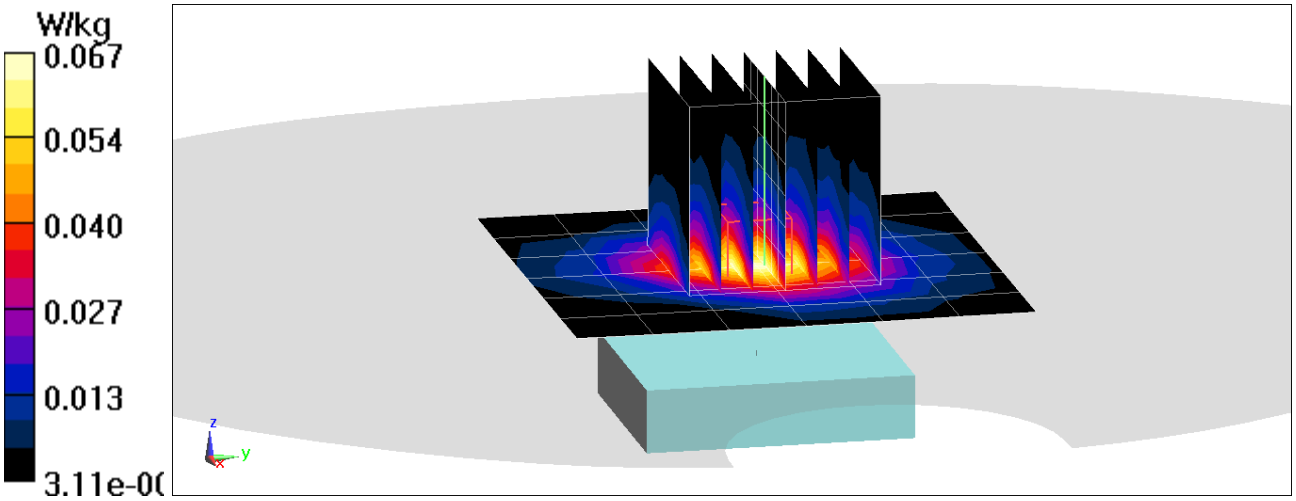
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used (interpolated):
f = 2480 MHz; σ = 1.878 S/m; ε_r = 38.282; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-26-2020; Ambient Temp: 21.1°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7490; ConvF(7.84, 7.84, 7.84) @ 2480 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: Twin-SAM V4.0 SUB use; Type: QD 000 P40 CC; Serial: 1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Bluetooth, Head SAR, Ch 78, 1 Mbps, Front Side
Stainless Steel, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.118 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.0840 W/kg
SAR(1 g) = 0.044 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01JQ604

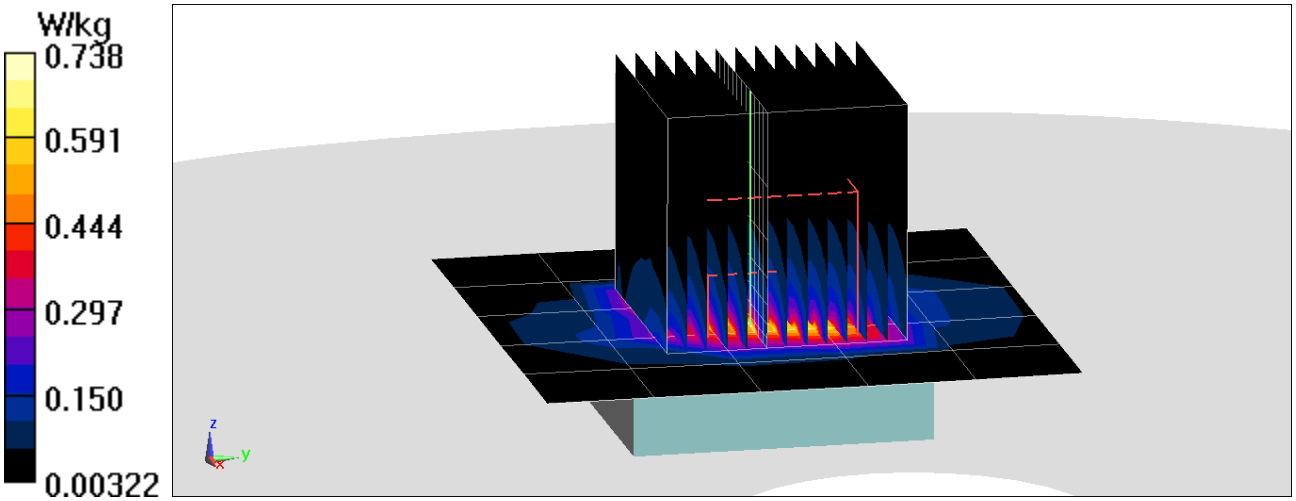
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 MHz Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.646; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-10-2020; Ambient Temp: 19.9°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 836.6 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 850, Extremity SAR, Back side, Mid.ch
Aluminum, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.8mm, dy=2.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 11.25 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(10 g) = 0.125 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ024Q604

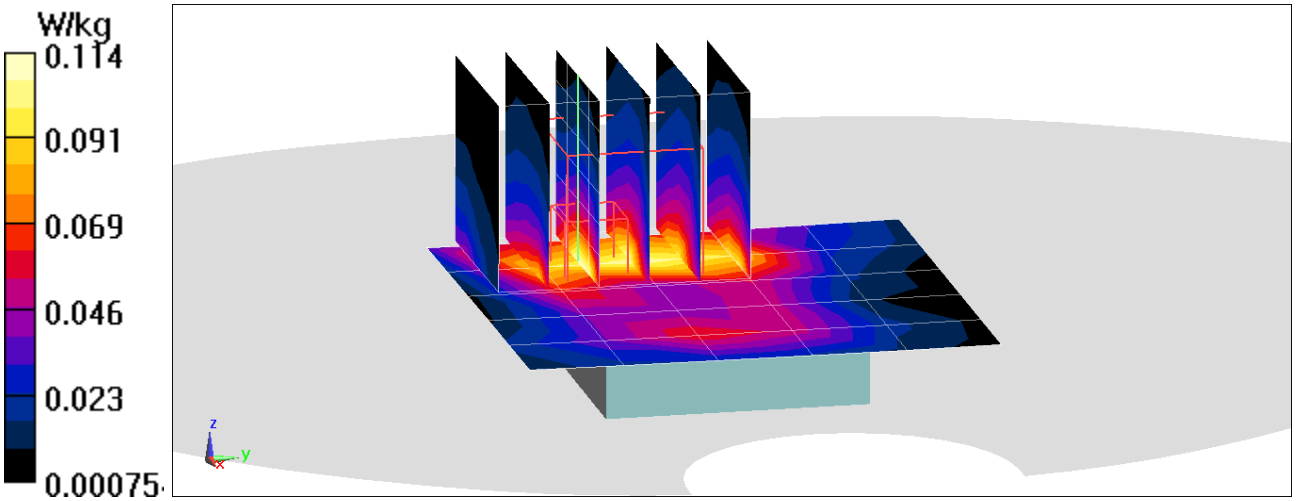
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.467 S/m; ε_r = 52.151; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-02-2020; Ambient Temp: 21.4°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN3837; ConvF(7.88, 7.88, 7.88) @ 1732.4 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Extremity SAR, Back side, Mid.ch
Aluminum, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.632 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.140 W/kg
SAR(10 g) = 0.049 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ024Q604

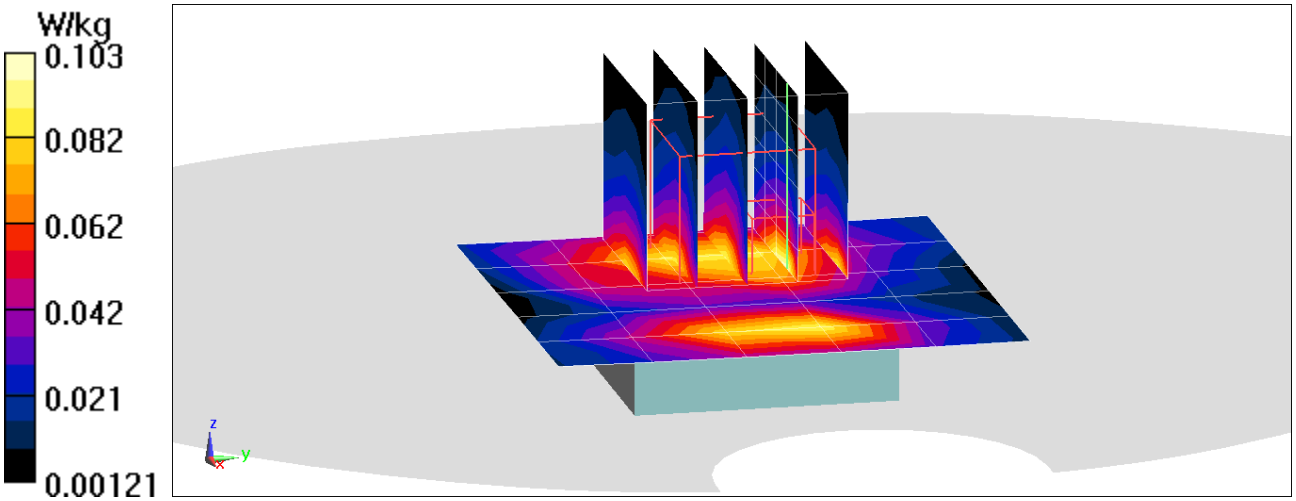
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Body Medium parameters used:
f = 1880 MHz; σ = 1.567 S/m; ε_r = 51.876; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-02-2020; Ambient Temp: 21.4°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN3837; ConvF(7.68, 7.68, 7.68) @ 1880 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Extremity SAR, Back side, Mid.ch
Aluminum, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.690 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.128 W/kg
SAR(10 g) = 0.042 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR00NQ60H

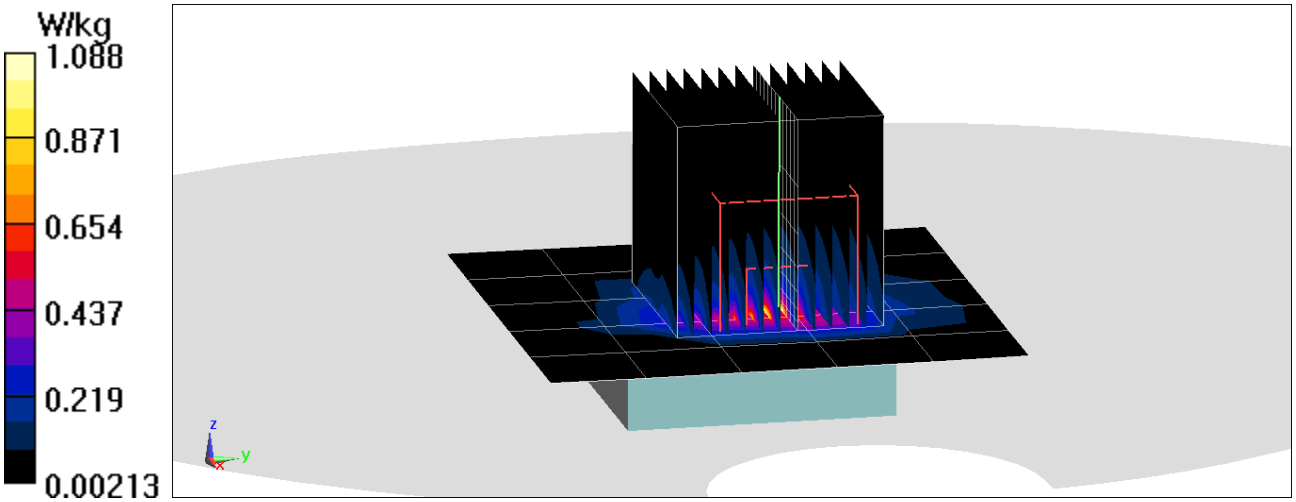
Communication System: UID 0, _LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 850 MHz Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.963 S/m; ε_r = 53.164; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-06-2020; Ambient Temp: 21.1°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 831.5 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Extremity SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset
Stainless Steel, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.7mm, dy=2.7mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 16.63 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.37 W/kg
SAR(10 g) = 0.139 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR00NQ60H

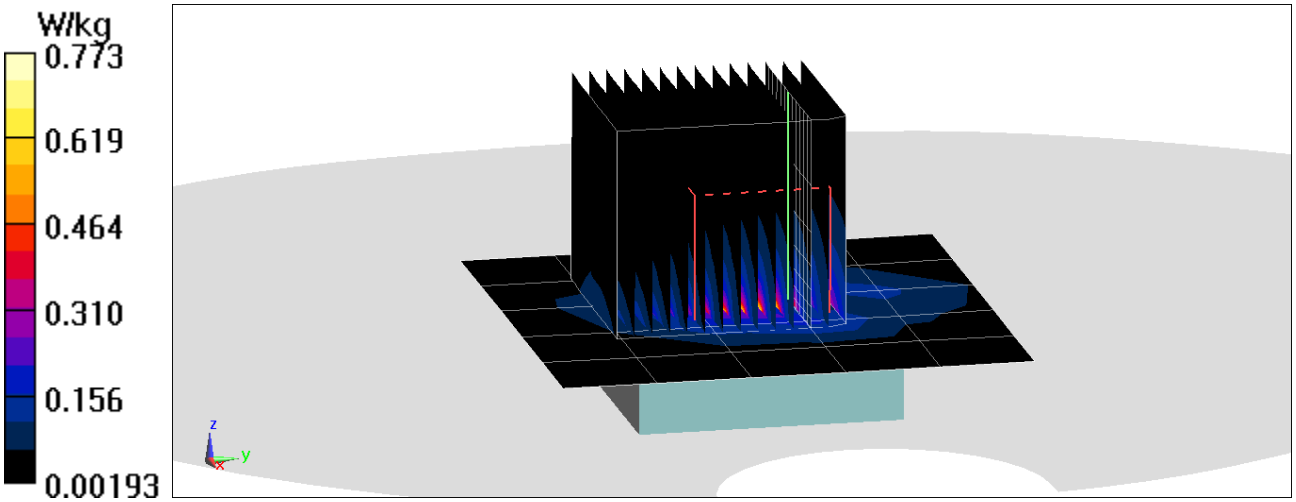
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 850 MHz Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.972 S/m; ε_r = 52.871; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-25-2020; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 836.5 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 5 (Cell.), Extremity SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset
Stainless Steel, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (13x14x8)/Cube 0: Measurement grid: dx=2.8mm, dy=2.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 14.88 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(10 g) = 0.140 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ00MQ604

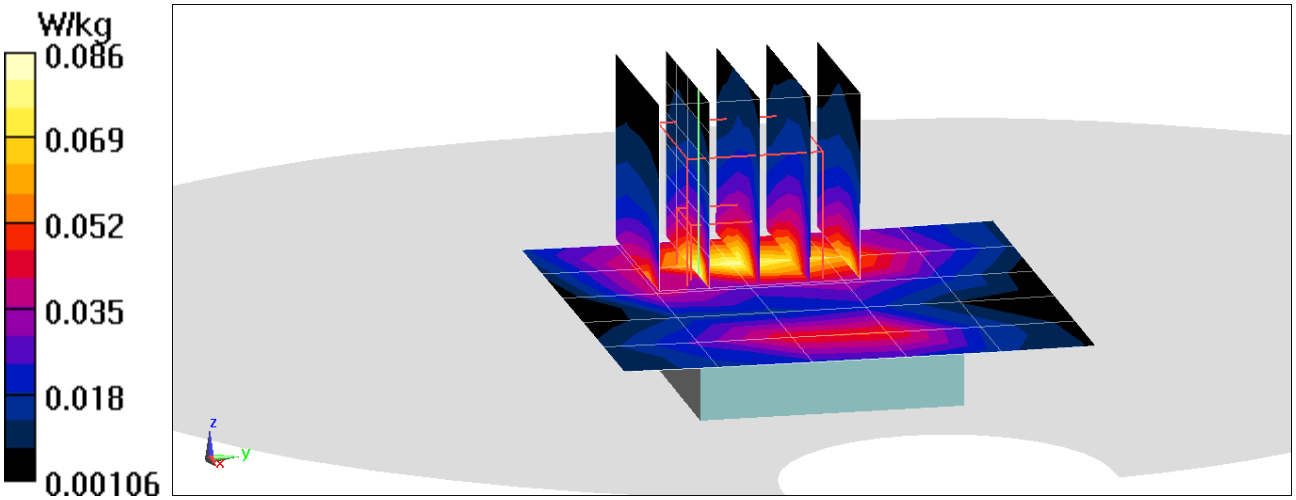
Communication System: UID 0, _LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Body Medium parameters used (interpolated):
f = 1720 MHz; σ = 1.447 S/m; ε_r = 51.27; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-26-2020; Ambient Temp: 23.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN3837; ConvF(7.88, 7.88, 7.88) @ 1720 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 66 (AWS), Extremity SAR, Back side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset
Aluminum, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.375 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.105 W/kg
SAR(10 g) = 0.035 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR00NQ60H

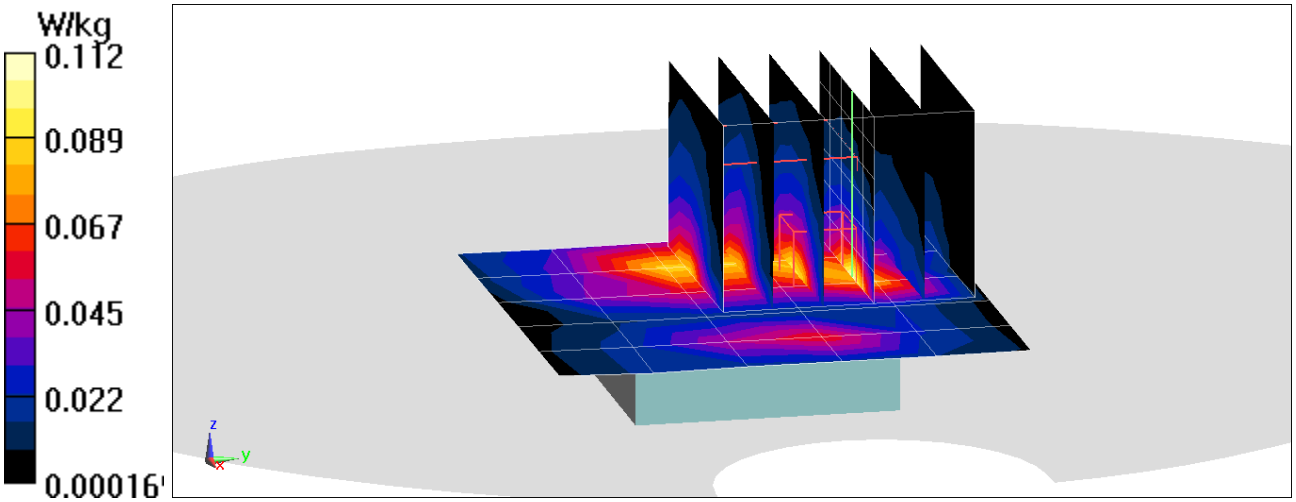
Communication System: UID 0, _LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Body Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.578 S/m; ε_r = 51.072; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-26-2020; Ambient Temp: 23.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN3837; ConvF(7.68, 7.68, 7.68) @ 1905 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 25 (PCS), Extremity SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset
Stainless Steel, Metal Links Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.961 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(10 g) = 0.040 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CQ00KQ604

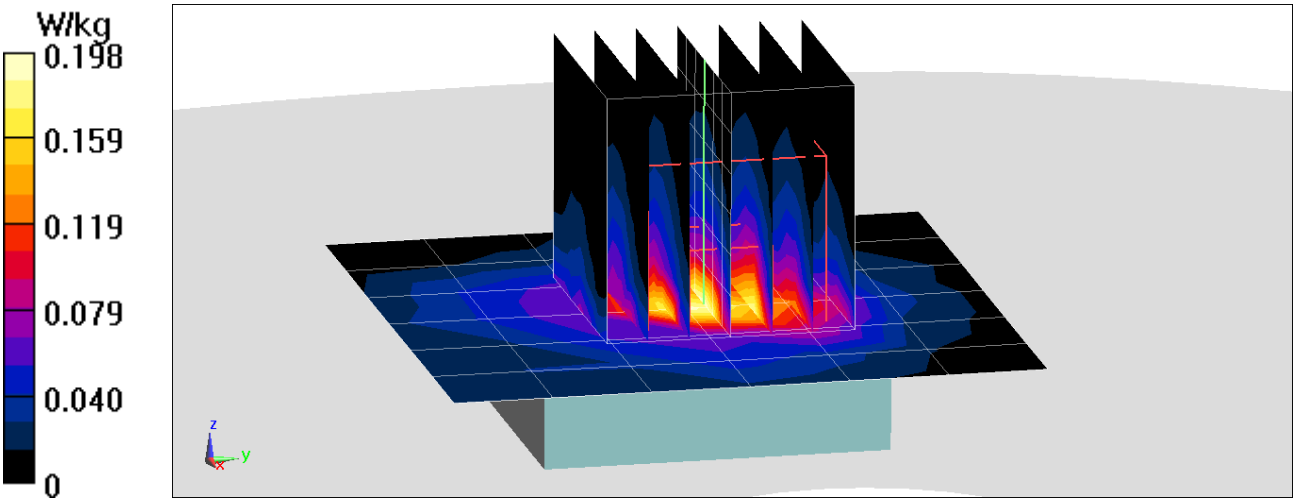
Communication System: UID 0, _LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2560 MHz; σ = 2.151 S/m; ε_r = 50.829; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-17-2020; Ambient Temp: 22.7°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7416; ConvF(7.23, 7.23, 7.23) @ 2560 MHz; Calibrated: 6/22/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn701; Calibrated: 6/11/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

LTE Band 7, Extremity SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset
Aluminum, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.017 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(10 g) = 0.058 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR01CQ60H

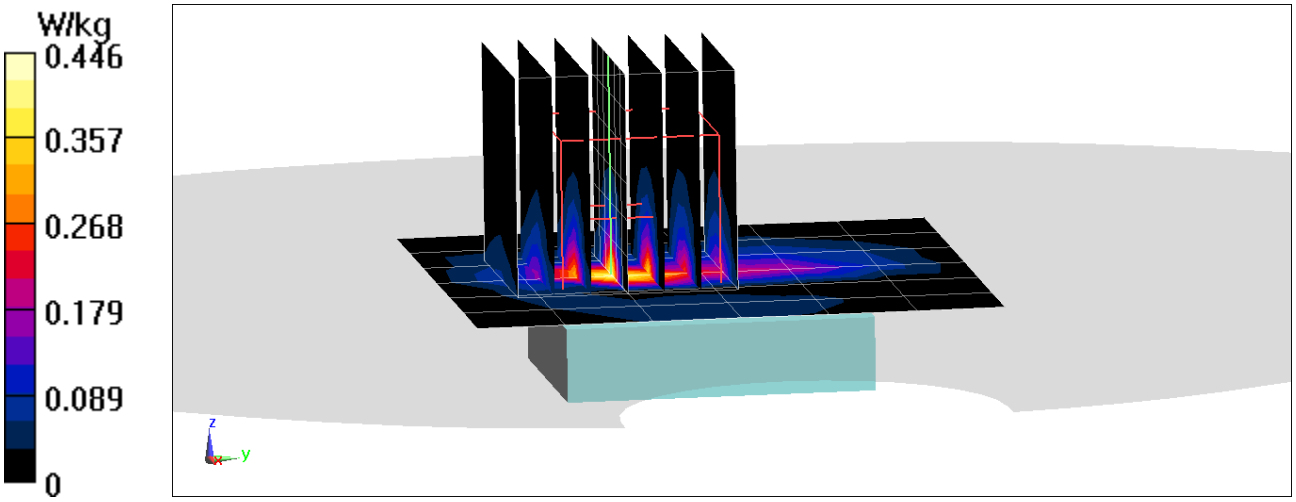
Communication System: UID 0, LTE Band 41 (Class 3); Frequency: 2680 MHz; Duty Cycle: 1:1.58
Medium: 2300-2600 MHz Medium parameters used (interpolated):
f = 2680 MHz; σ = 2.347 S/m; ε_r = 50.59; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-28-2020; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7491; ConvF(7.45, 7.45, 7.45) @ 2680 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1402; Calibrated: 7/10/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 41, Extremity SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset
Stainless Steel, Metal Links Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.82 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.597 W/kg
SAR(10 g) = 0.071 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR013Q60V

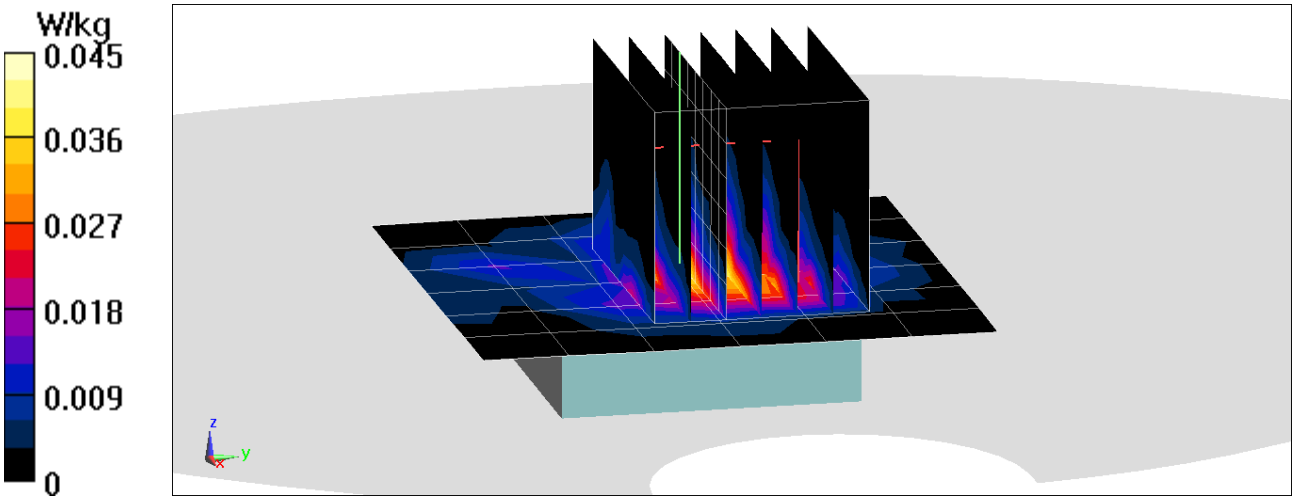
Communication System: UID 0, IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.982 S/m; ε_r = 51.528; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-22-2020; Ambient Temp: 23.1 °C; Tissue Temp: 22.8 °C

Probe: EX3DV4 - SN3949; ConvF(7.75, 7.75, 7.75) @ 2437 MHz; Calibrated: 8/29/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/12/2019
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1596
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11b, 22 MHz Bandwidth,
Extremity SAR, Ch 6, 1 Mbps, Back Side
Titanium, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (9x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.485 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.143 W/kg
SAR(10 g) = 0.013 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR013Q60H

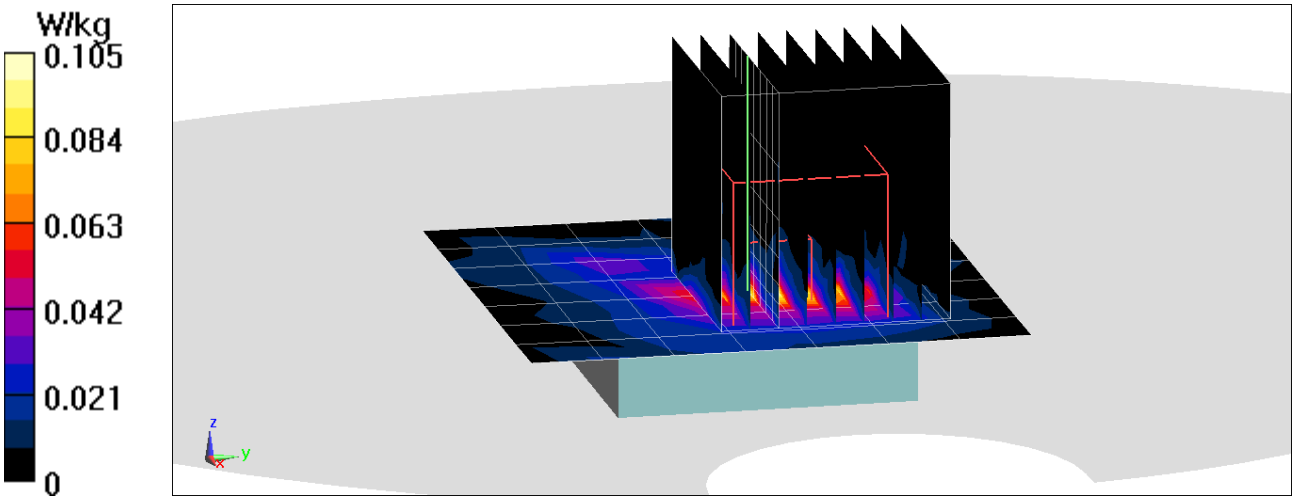
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5280 MHz; σ = 5.476 S/m; ε_r = 47.479; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-21-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(4.7, 4.7, 4.7) @ 5280 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, UNII-2A, 20 MHz Bandwidth,
Extremity SAR, Ch 56, 6 Mbps, Back Side,
Stainless Steel, Sport Wrist Band

Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 2.642 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(10 g) = 0.013 W/kg



PCTEST

DUT: BCG-A2375; Type: Watch; Serial: GY6CR003Q60V

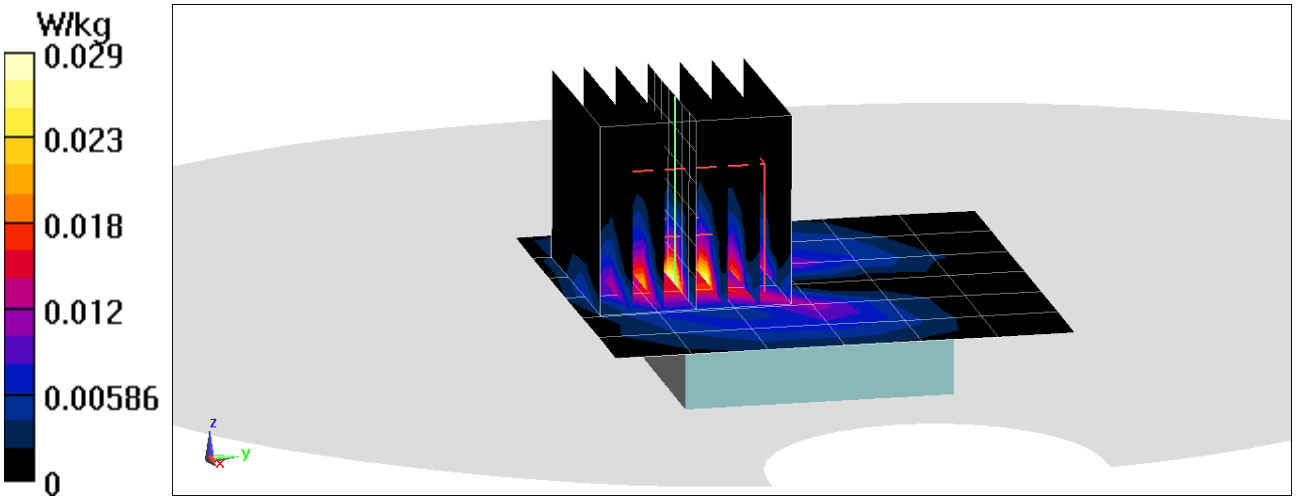
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2480 MHz; σ = 2.055 S/m; ε_r = 51.138; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-27-2020; Ambient Temp: 23.3 °C; Tissue Temp: 22.9 °C

Probe: EX3DV4 - SN3949; ConvF(7.75, 7.75, 7.75) @ 2480 MHz; Calibrated: 8/29/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/12/2019
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1596
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Bluetooth, Extremity SAR, Ch 78, 1 Mbps, Back Side
Titanium, Metal Links Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.014 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.0510 W/kg
(10 g) = 0.00547 W/kg



APPENDIX B: SYSTEM VERIFICATION

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PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1009

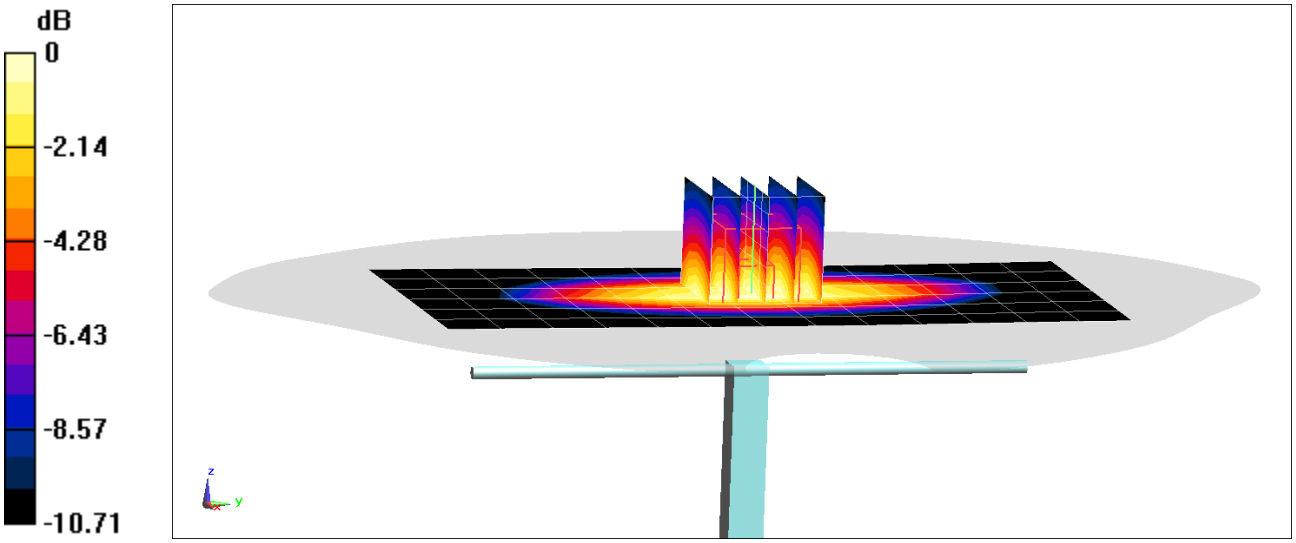
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used:
f = 850 MHz; σ = 0.908 S/m; ε_r = 40.748; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2020; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 850 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 1.93 W/kg
Deviation(1 g) = -3.50%



0 dB = 2.52 W/kg = 4.01 dBW/kg

PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1009

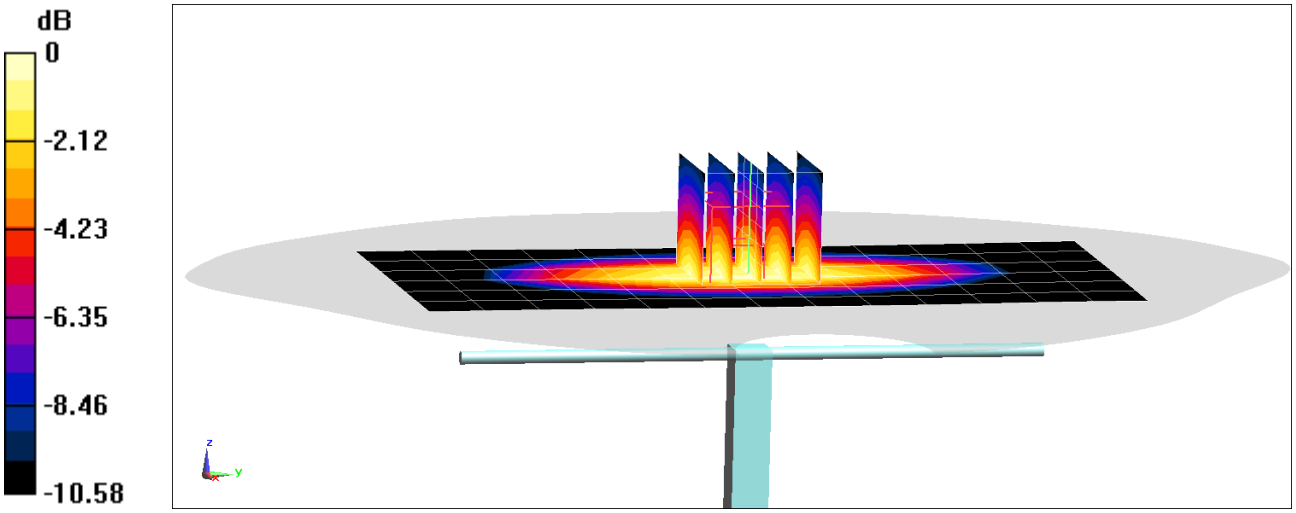
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used:
f = 850 MHz; σ = 0.878 S/m; ε_r = 40.425; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-29-2020; Ambient Temp: 23.1°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 850 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 1.92 W/kg
Deviation(1 g) = -4.00%



0 dB = 2.52 W/kg = 4.01 dBW/kg

PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1010

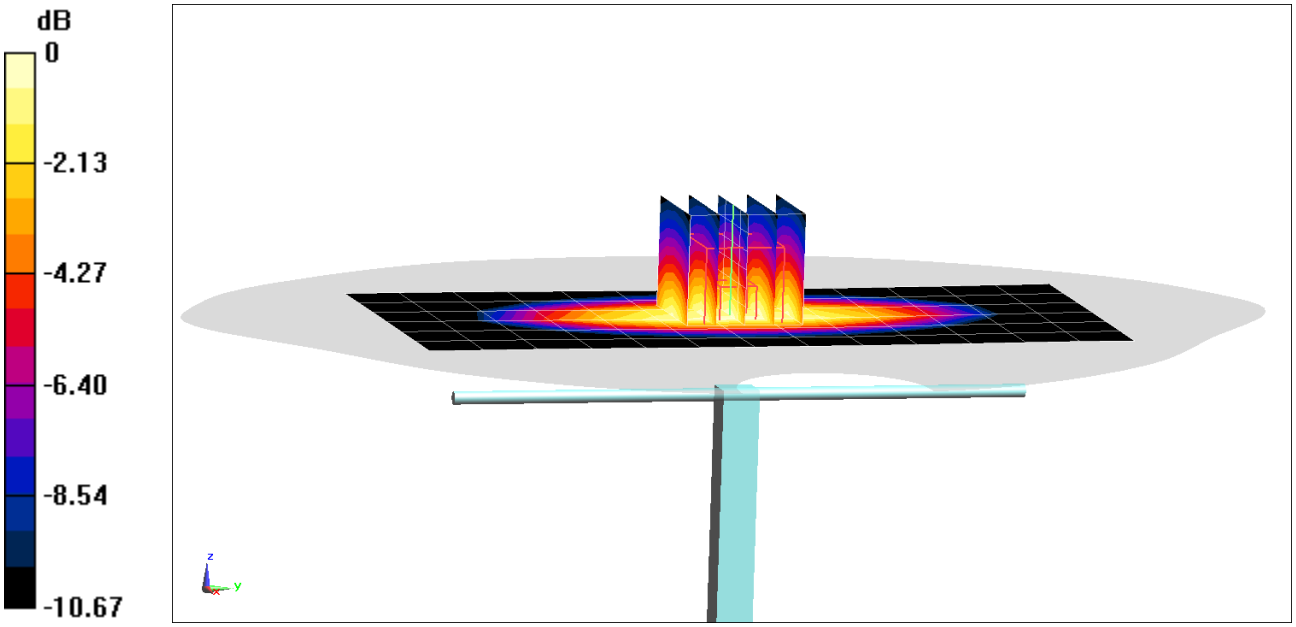
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used:
f = 850 MHz; σ = 0.895 S/m; ε_r = 40.86; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-01-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7427; ConvF(9.58, 9.58, 9.58) @ 850 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.81 W/kg
SAR(1 g) = 1.93 W/kg
Deviation(1 g) = -2.82%



0 dB = 2.54 W/kg = 4.05 dBW/kg

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1104

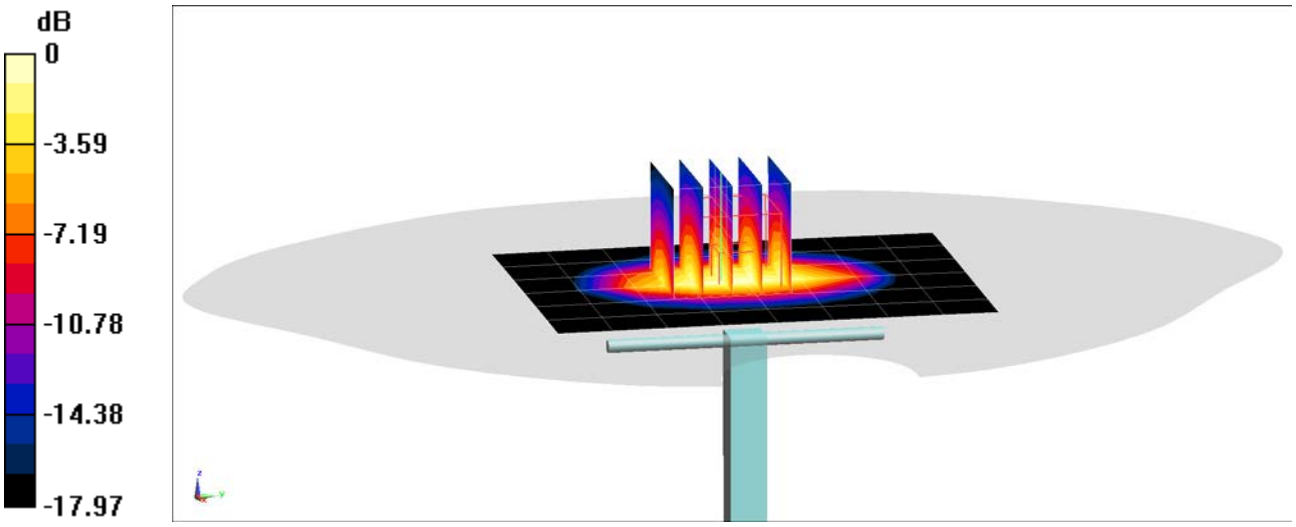
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Head Medium parameters used:
f = 1750 MHz; σ = 1.359 S/m; ε_r = 39.227; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7532; ConvF(8.46, 8.46, 8.46) @ 1750 MHz; Calibrated: 4/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn501; Calibrated: 4/15/2020
Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.02 W/kg
SAR(1 g) = 3.76 W/kg
Deviation(1 g) = 3.30%



0 dB = 5.74 W/kg = 7.59 dBW/kg

PCTEST

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d026

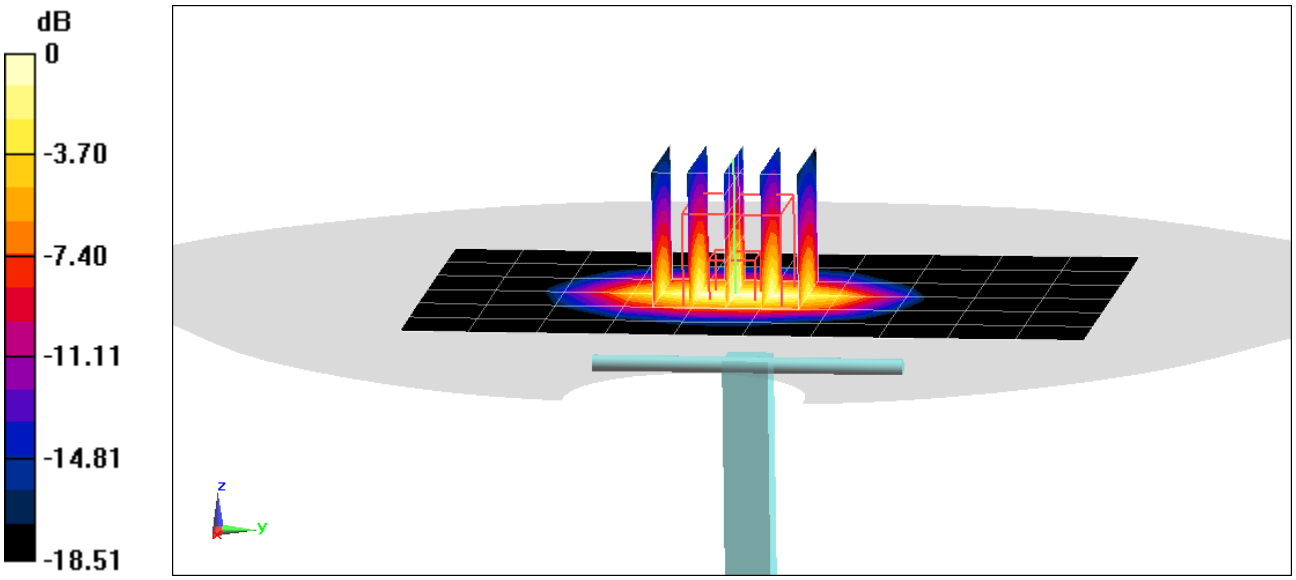
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.427 S/m; ε_r = 38.936; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2020; Ambient Temp: 20.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7490; ConvF(8.27, 8.27, 8.27) @ 1900 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.17 W/kg
SAR(1 g) = 3.86 W/kg
Deviation(1 g) = -3.98%



0 dB = 6.04 W/kg = 7.81 dBW/kg

PCTEST

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d026

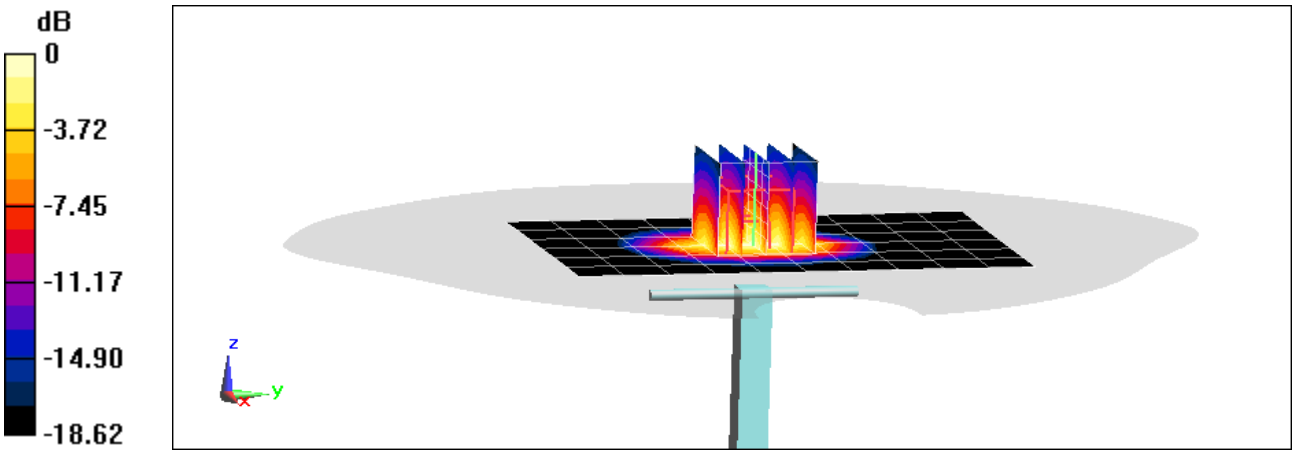
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.448 S/m; ε_r = 38.803; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-26-2020; Ambient Temp: 22.3°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7490; ConvF(8.27, 8.27, 8.27) @ 1900 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.14 W/kg
SAR(1 g) = 3.85 W/kg
Deviation(1 g) = -4.23%



0 dB = 6.06 W/kg = 7.82 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 945

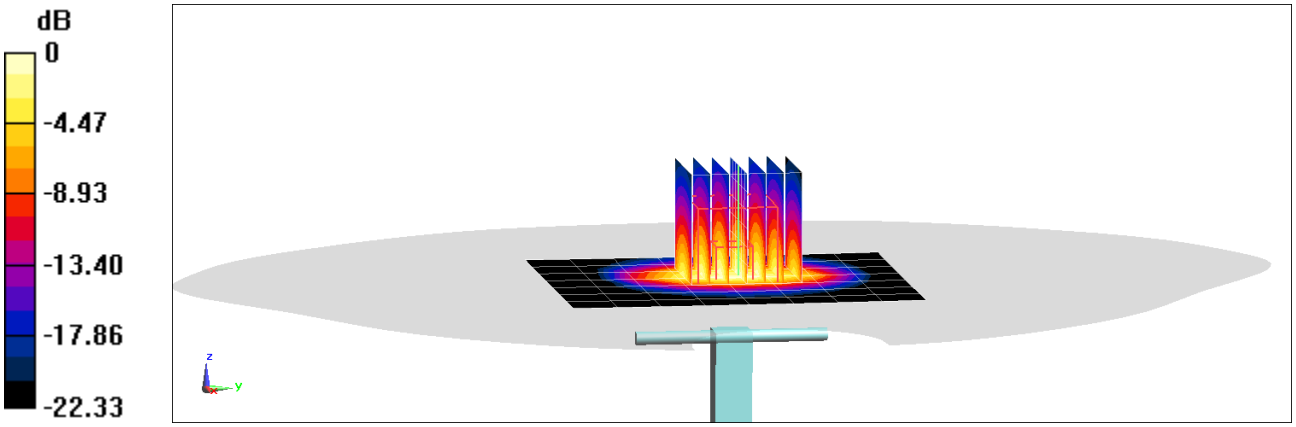
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used:
f = 2450 MHz; σ = 1.792 S/m; ε_r = 38.906; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-06-2020; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7427; ConvF(7.22, 7.22, 7.22) @ 2450 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.2 W/kg
SAR(1 g) = 5.39 W/kg
Deviation(1 g) = 5.69%



0 dB = 9.02 W/kg = 9.55 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 945

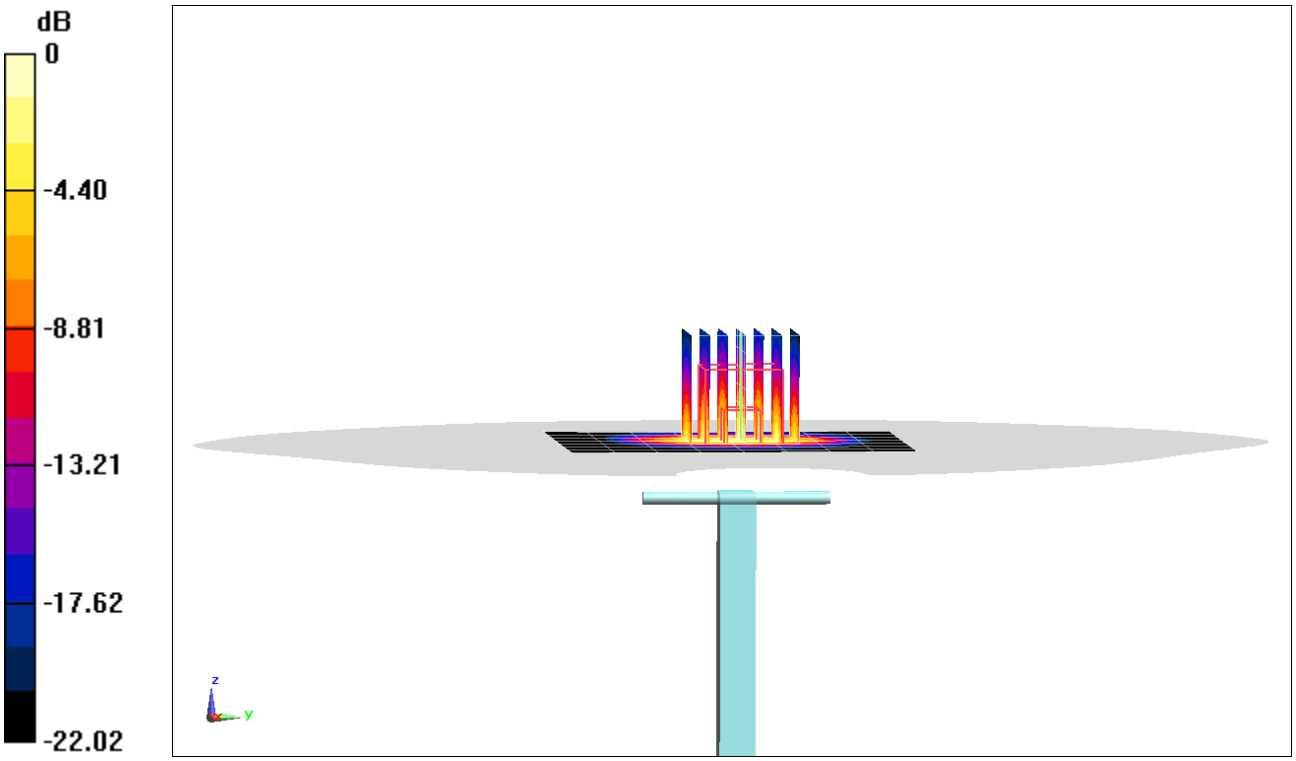
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used:
f = 2450 MHz; σ = 1.798 S/m; ε_r = 38.815; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-16-2020; Ambient Temp: 22.7°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN7427; ConvF(7.22, 7.22, 7.22) @ 2450 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.4 W/kg
SAR(1 g) = 5.45 W/kg
Deviation(1 g) = 6.86%



0 dB = 9.20 W/kg = 9.64 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 921

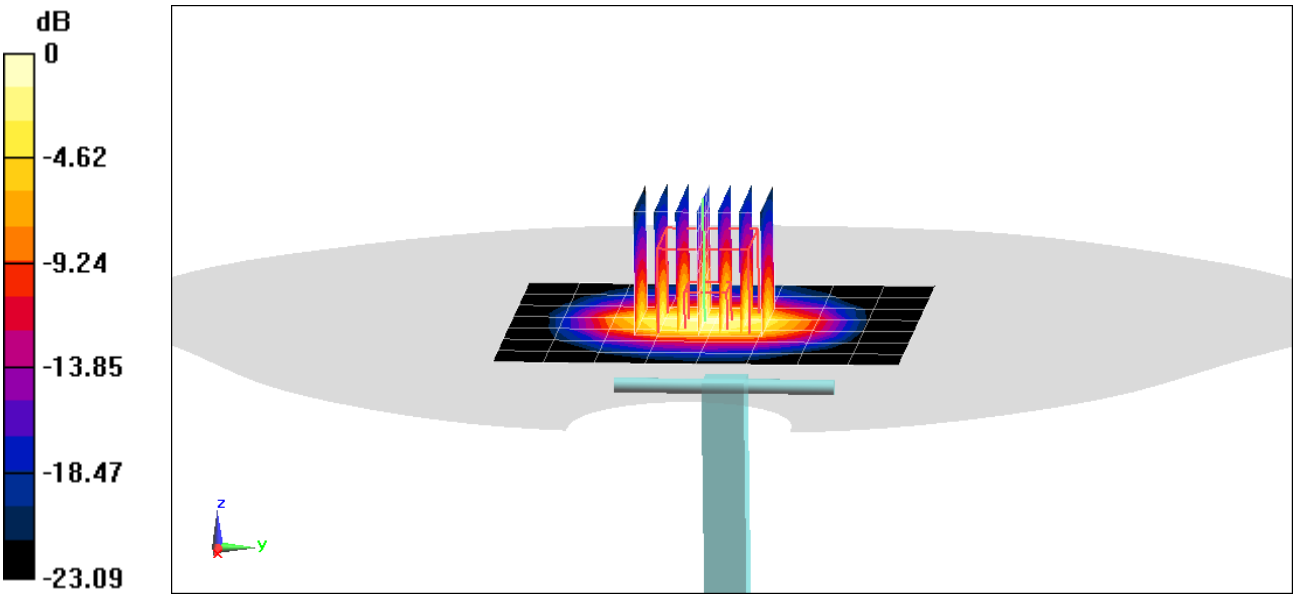
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used:
f = 2450 MHz; σ = 1.877 S/m; ε_r = 38.603; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-22-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7490; ConvF(7.84, 7.84, 7.84) @ 2450 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: Twin-SAM V4.0 SUB use; Type: QD 000 P40 CC; Serial: 1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.0 W/kg
SAR(1 g) = 5.17 W/kg
Deviation(1 g) = -2.64%



0 dB = 8.75 W/kg = 9.42 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 945

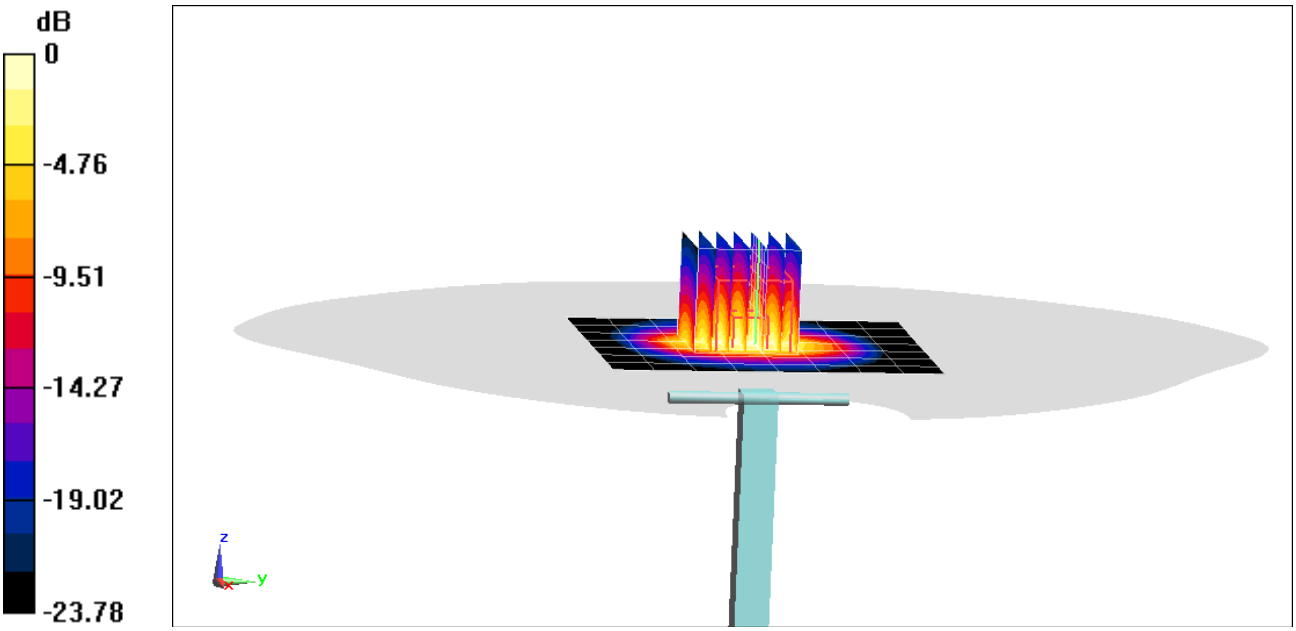
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450MHz Head Medium parameters used:
f = 2450 MHz; σ = 1.845 S/m; ε_r = 38.397; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-26-2020; Ambient Temp: 21.1°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7490; ConvF(7.84, 7.84, 7.84) @ 2450 MHz; Calibrated: 12/13/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1532; Calibrated: 12/5/2019
Phantom: Twin-SAM V4.0 SUB use; Type: QD 000 P40 CC; Serial: 1403
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.2 W/kg
SAR(1 g) = 5.03 W/kg
Deviation(1 g) = -1.37%



0 dB = 8.44 W/kg = 9.26 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1009

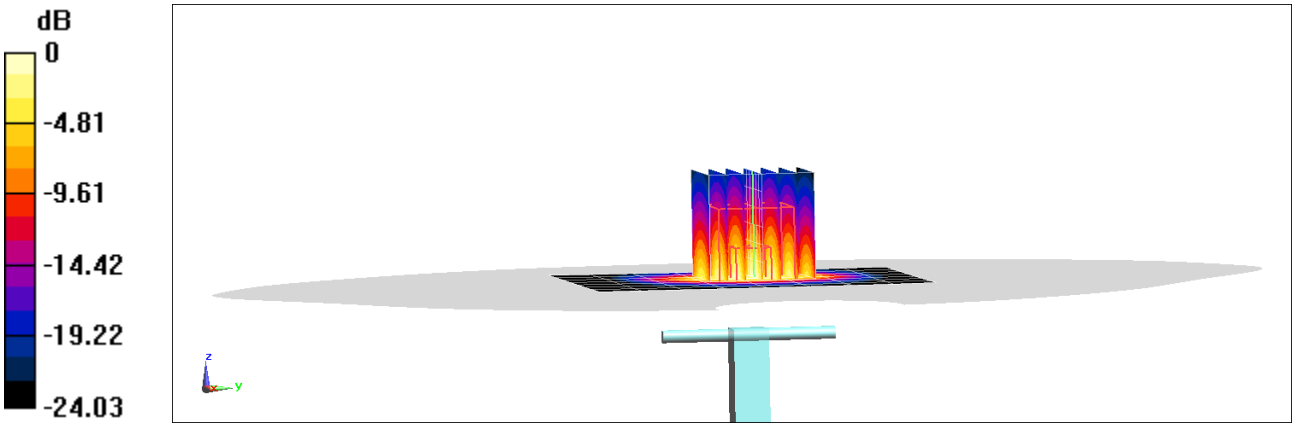
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used:
f = 2600 MHz; σ = 1.917 S/m; ε_r = 38.667; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-06-2020; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7427; ConvF(7, 7, 7) @ 2600 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.8 W/kg
SAR(1 g) = 5.93 W/kg
Deviation(1 g) = 6.27%



0 dB = 10.2 W/kg = 10.09 dBW/kg

PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1009

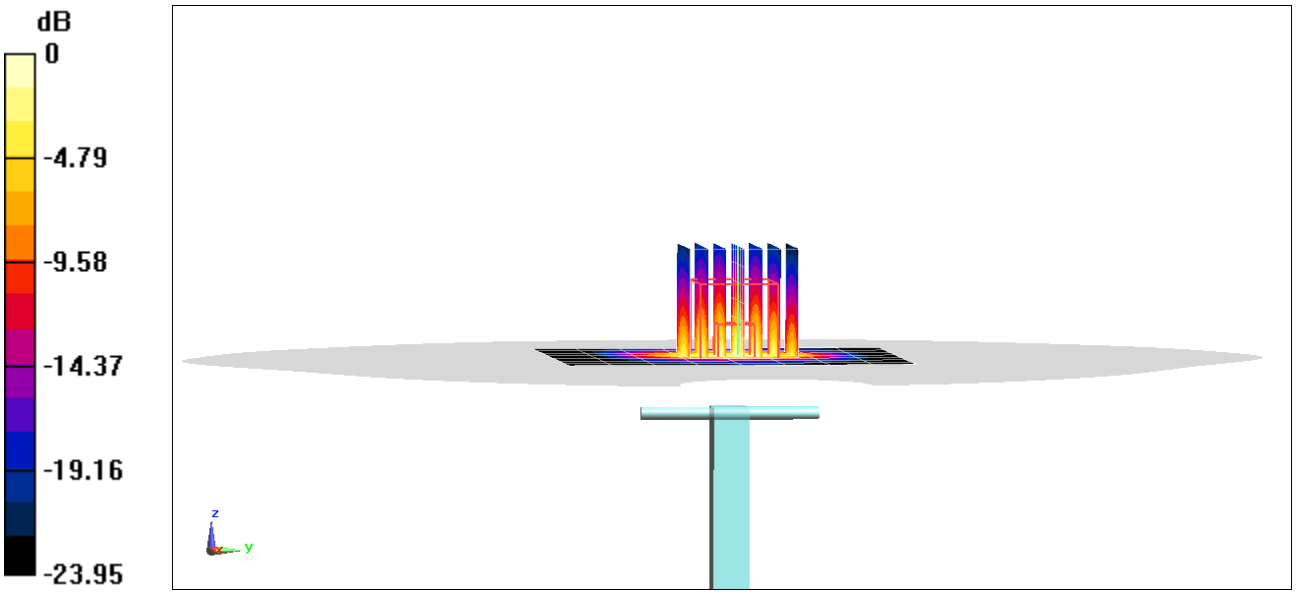
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Head Medium parameters used:
f = 2600 MHz; σ = 1.913 S/m; ε_r = 38.583; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-16-2020; Ambient Temp: 22.7°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN7427; ConvF(7, 7, 7) @ 2600 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 13.0 W/kg
SAR(1 g) = 5.94 W/kg
Deviation(1 g) = 6.45%



0 dB = 10.3 W/kg = 10.13 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1163

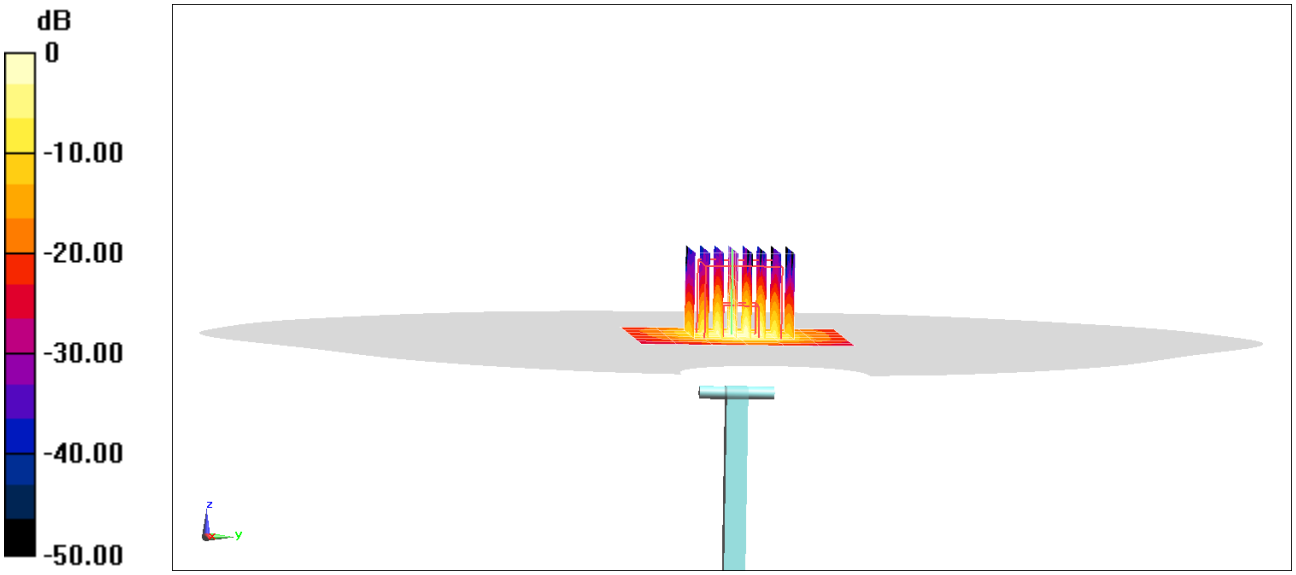
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5250 MHz; σ = 4.56 S/m; ε_r = 34.921; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7427; ConvF(5.05, 5.05, 5.05) @ 5250 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 15.2 W/kg
SAR(1 g) = 3.81 W/kg
Deviation(1 g) = -5.46%



0 dB = 8.75 W/kg = 9.42 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1163

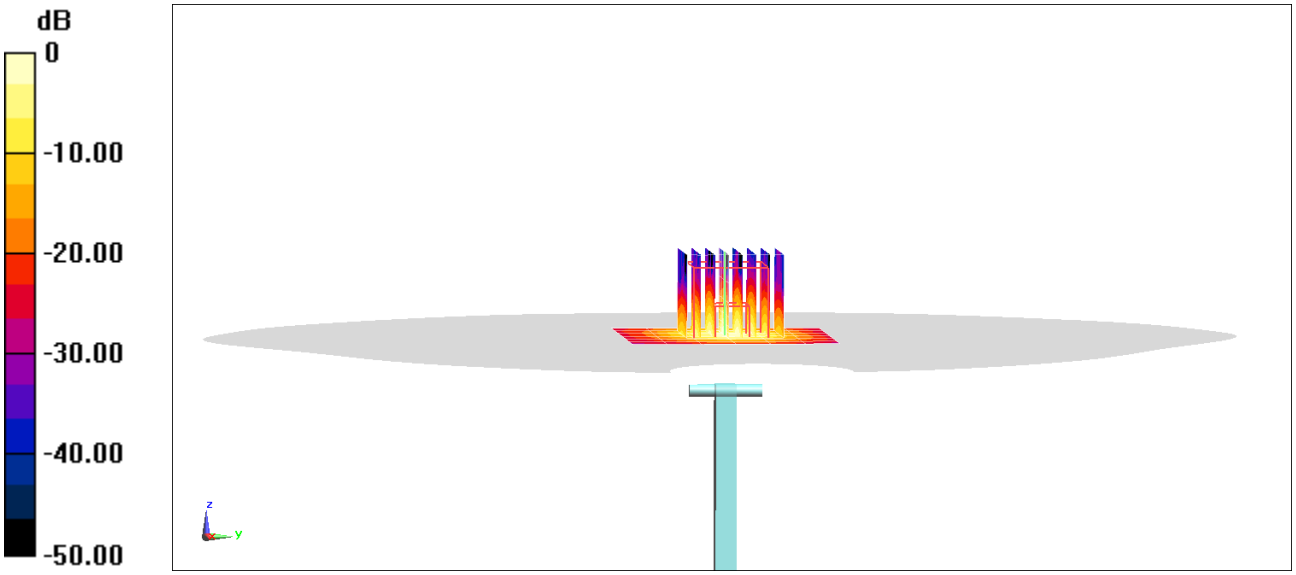
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.96 S/m; ε_r = 34.335; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7427; ConvF(4.61, 4.61, 4.61) @ 5600 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 3.95 W/kg
Deviation(1 g) = -5.73%



0 dB = 9.64 W/kg = 9.84 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1163

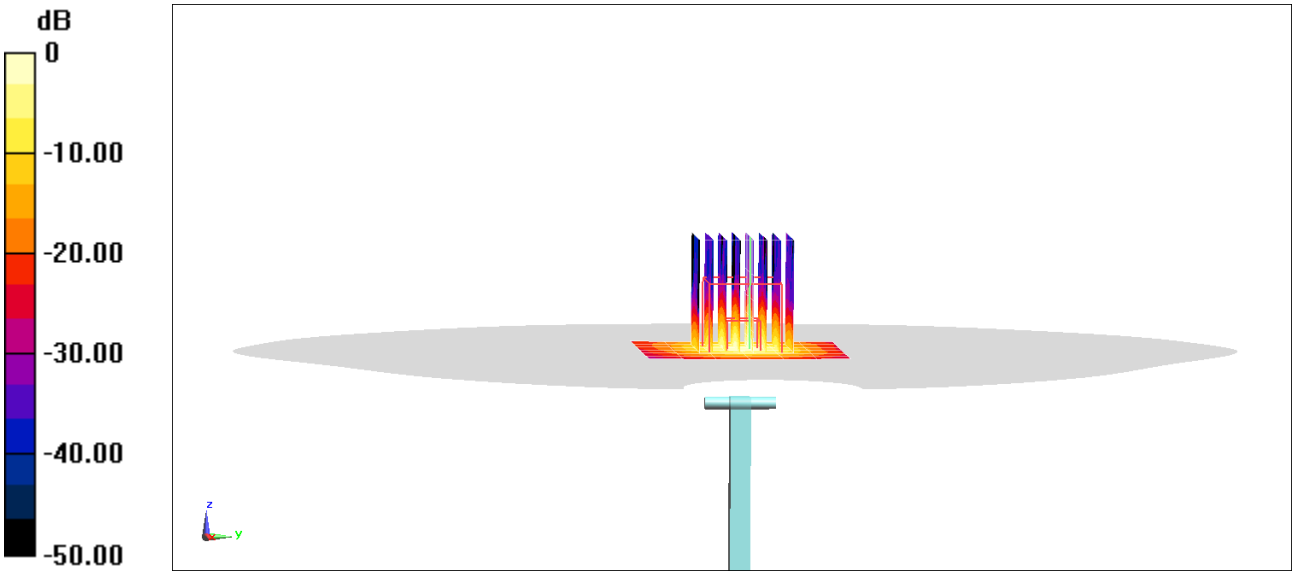
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5750 MHz; σ = 5.126 S/m; ε_r = 34.028; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7427; ConvF(4.7, 4.7, 4.7) @ 5750 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 3.79 W/kg
Deviation(1 g) = -6.54%



0 dB = 9.12 W/kg = 9.60 dBW/kg

PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1010

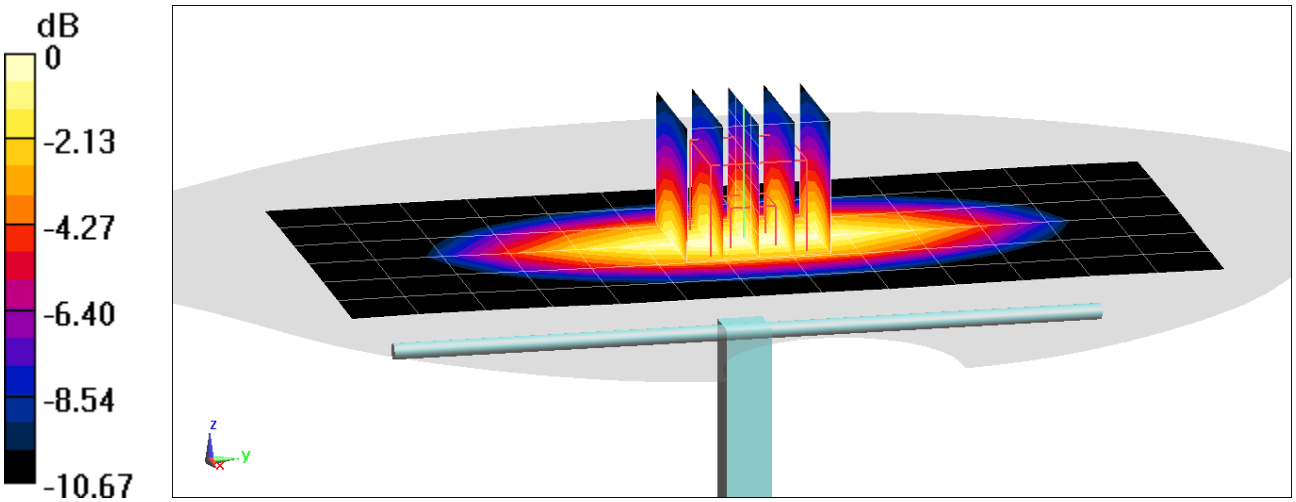
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 850 MHz Body Medium parameters used:
f = 850 MHz; σ = 0.985 S/m; ε_r = 52.741; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2020; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 850 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.19 W/kg
SAR(10 g) = 1.41 W/kg
Deviation(10 g) = 5.54%



0 dB = 2.85 W/kg = 4.55 dBW/kg

PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1010

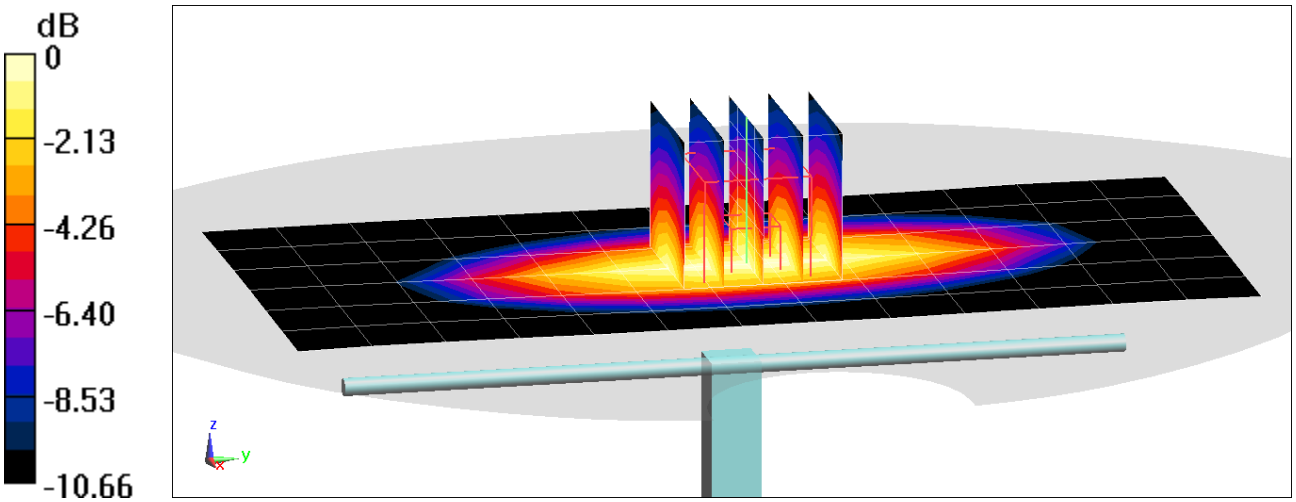
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 850 Body Medium parameters used:
f = 850 MHz; σ = 0.981 S/m; ε_r = 52.989; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-06-2020; Ambient Temp: 21.1°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 850 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.24 W/kg
SAR(10 g) = 1.44 W/kg
Deviation(10 g) = 7.78%



0 dB = 2.92 W/kg = 4.65 dBW/kg

PCTEST

DUT: Dipole 850 MHz; Type: D850V2; Serial: 1010

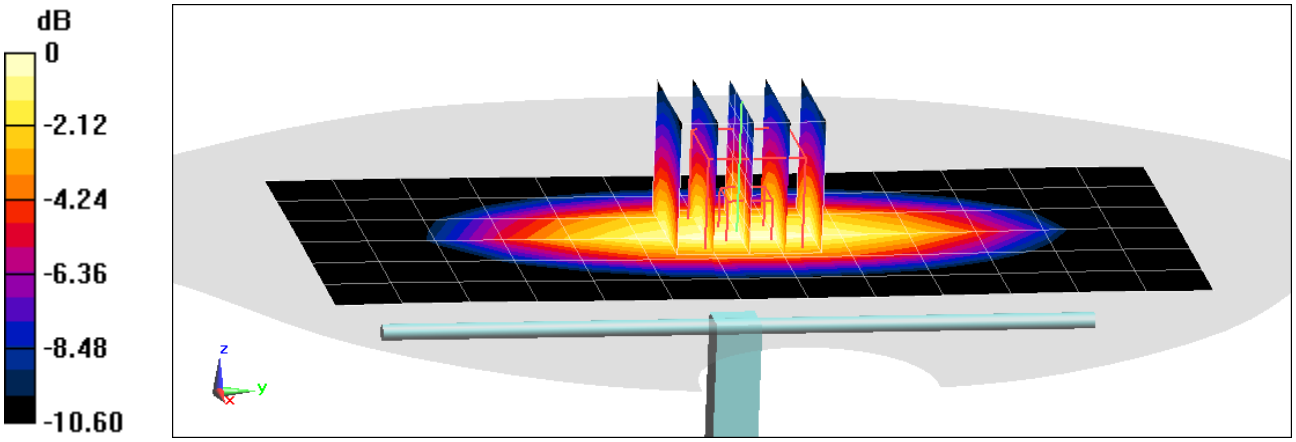
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 MHz Body Medium parameters used:
f = 850 MHz; σ = 0.992 S/m; ε_r = 53.522; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-10-2020; Ambient Temp: 19.9°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7421; ConvF(9.42, 9.42, 9.42) @ 850 MHz; Calibrated: 3/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn604; Calibrated: 3/19/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

850 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.17 W/kg
SAR(10 g) = 1.42 W/kg
Deviation(10 g) = 6.29%



0 dB = 2.85 W/kg = 4.55 dBW/kg

PCTEST

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1083

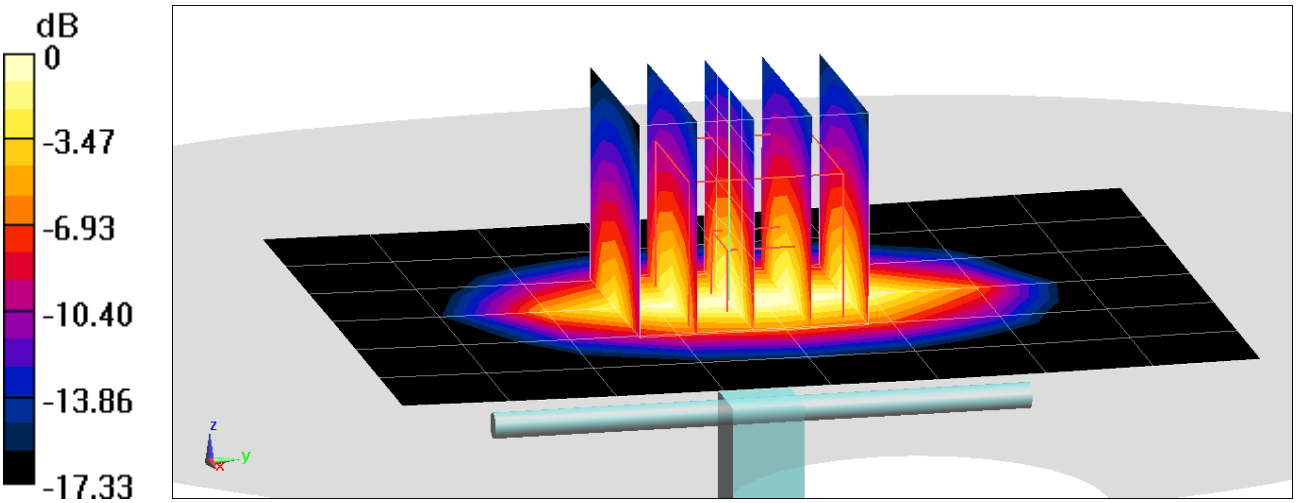
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Body Medium parameters used:
f = 1750 MHz; σ = 1.467 S/m; ε_r = 51.256; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-26-2020; Ambient Temp: 23.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN3837; ConvF(7.88, 7.88, 7.88) @ 1750 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.06 W/kg
SAR(10 g) = 2.08 W/kg
Deviation(10 g) = 5.58%



0 dB = 5.91 W/kg = 7.72 dBW/kg

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1092

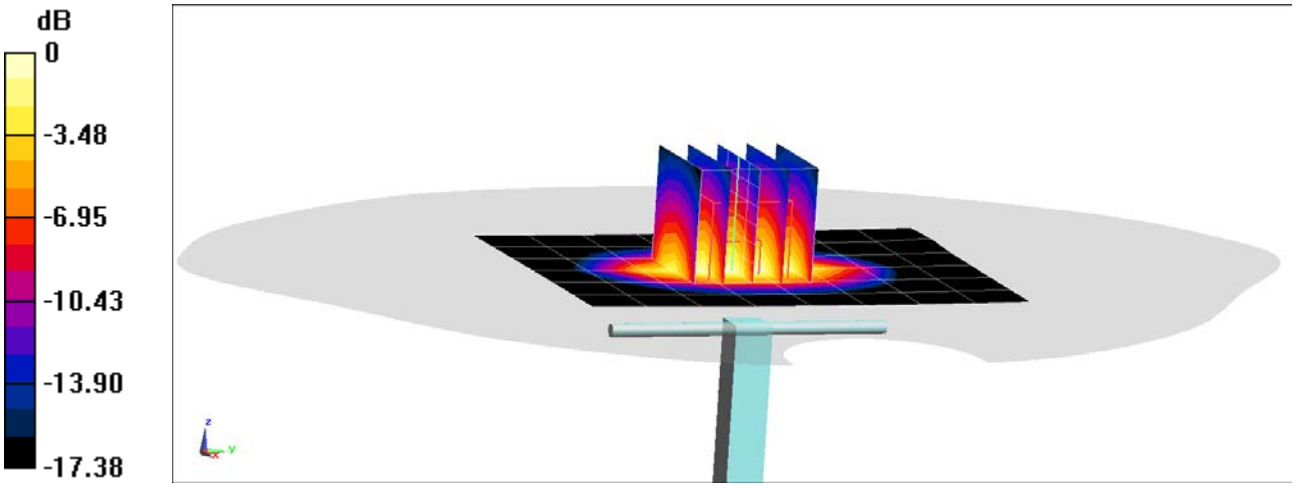
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 MHz Body Medium parameters used:
f = 1750 MHz; σ = 1.479 S/m; ε_r = 52.125; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-02-2020; Ambient Temp: 21.4°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN3837; ConvF(7.88, 7.88, 7.88) @ 1750 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.16 W/kg
SAR(10 g) = 2 W/kg
Deviation(10 g) = 3.09%



0 dB = 5.94 W/kg = 7.74 dBW/kg

PCTEST

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d030

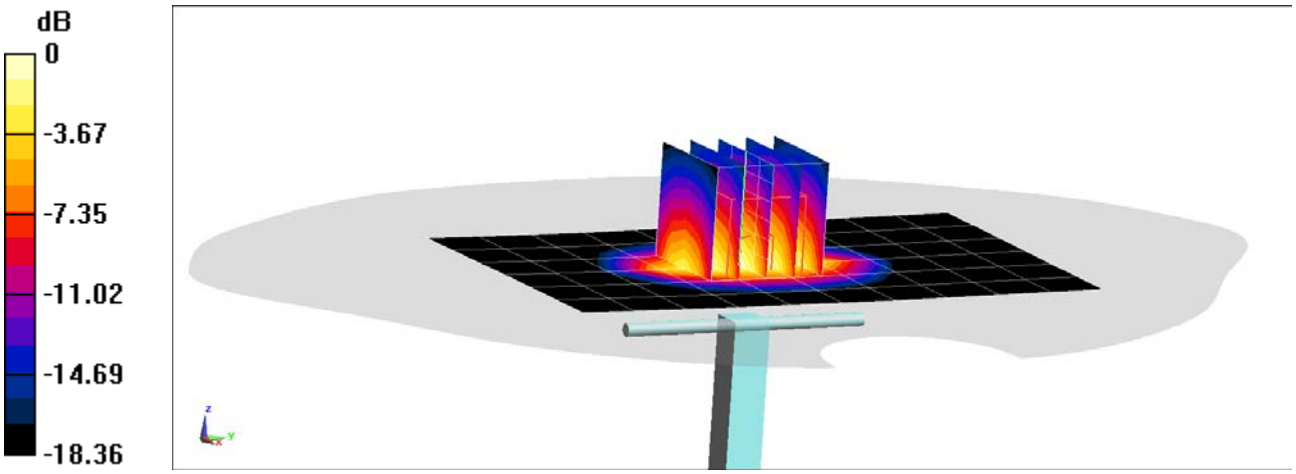
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.575 S/m; ε_r = 51.078; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-26-2020; Ambient Temp: 23.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN3837; ConvF(7.68, 7.68, 7.68) @ 1900 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.73 W/kg
SAR(10 g) = 2.17 W/kg
Deviation(10 g) = 2.84%



0 dB = 6.52 W/kg = 8.14 dBW/kg

PCTEST

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d181

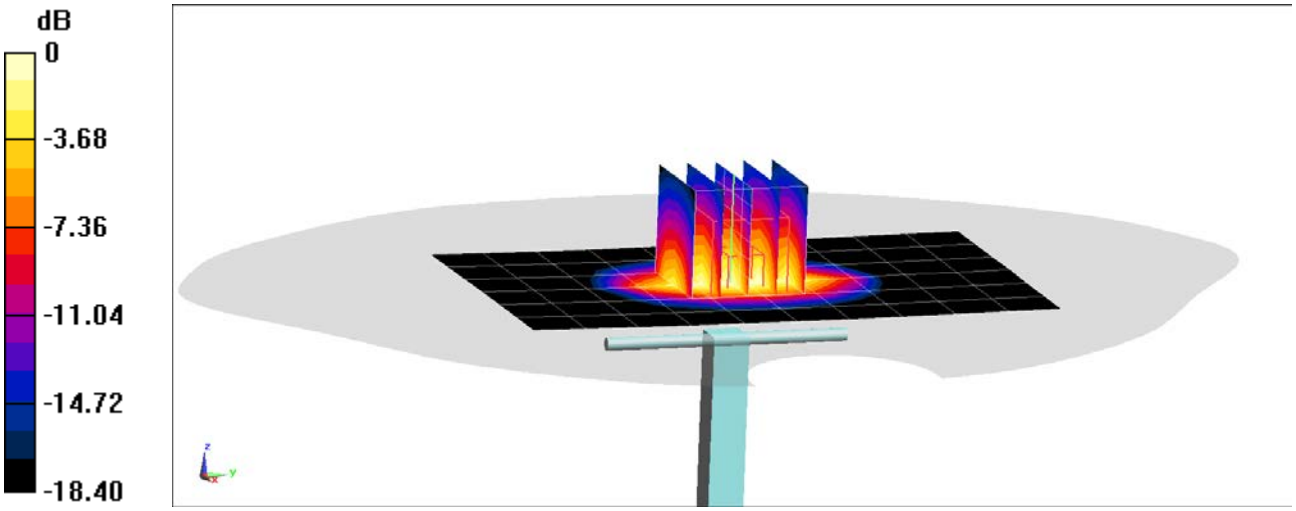
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.58 S/m; ε_r = 51.854; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-02-2020; Ambient Temp: 21.4°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN3837; ConvF(7.68, 7.68, 7.68) @ 1900 MHz; Calibrated: 1/20/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn793; Calibrated: 1/14/2020
Phantom: Twin-SAM V4.0 Main; Type: QD 000 P40 CC; Serial: 1114
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.82 W/kg
SAR(10 g) = 2.19 W/kg
Deviation(10 g) = 4.78%



0 dB = 6.55 W/kg = 8.16 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 921

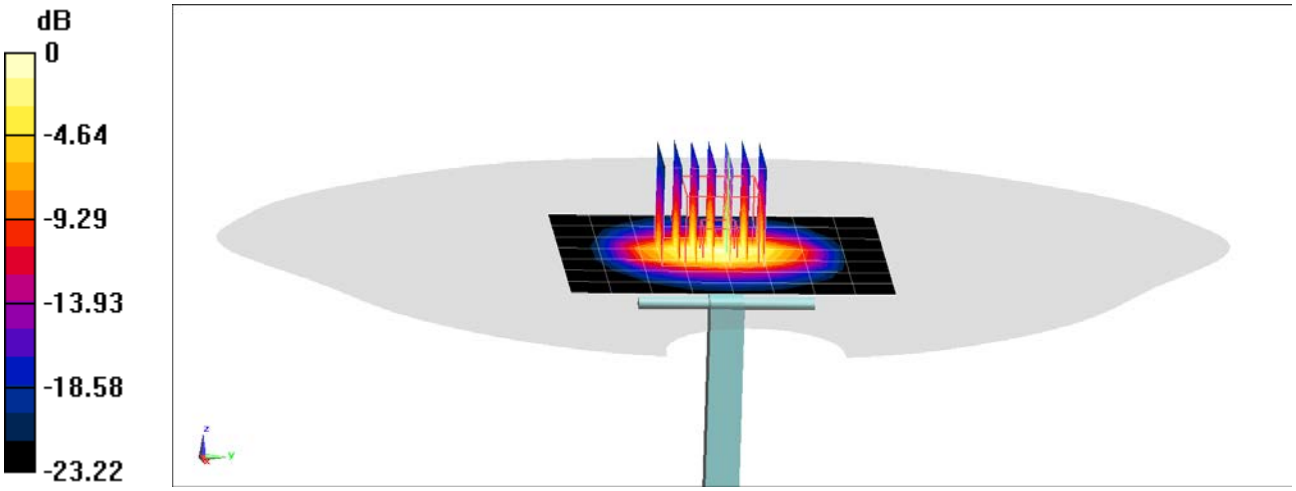
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2450 MHz; σ = 2.015 S/m; ε_r = 51.449; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2020; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7491; ConvF(7.57, 7.57, 7.57) @ 2450 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1402; Calibrated: 7/10/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.9 W/kg
SAR(10 g) = 2.33 W/kg
Deviation(10 g) = -2.10%



0 dB = 8.62 W/kg = 9.36 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 945

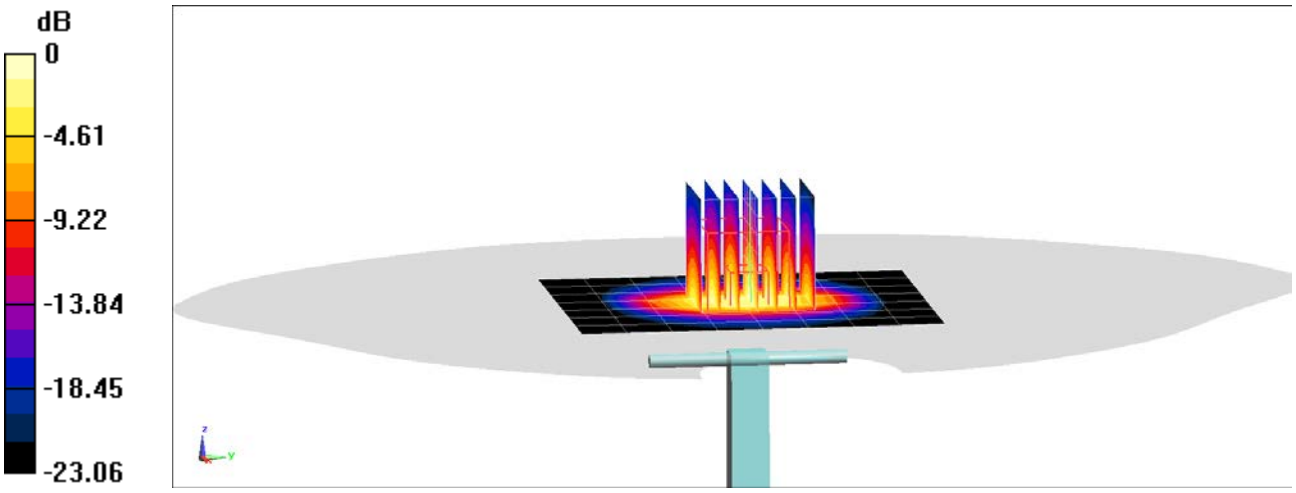
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2450 MHz; σ = 2.005 S/m; ε_r = 51.256; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-17-2020; Ambient Temp: 22.7°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7416; ConvF(7.28, 7.28, 7.28) @ 2450 MHz; Calibrated: 6/22/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn701; Calibrated: 6/11/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.9 W/kg
SAR(10 g) = 2.38 W/kg
Deviation(10 g) = 2.59%



0 dB = 8.74 W/kg = 9.42 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 750

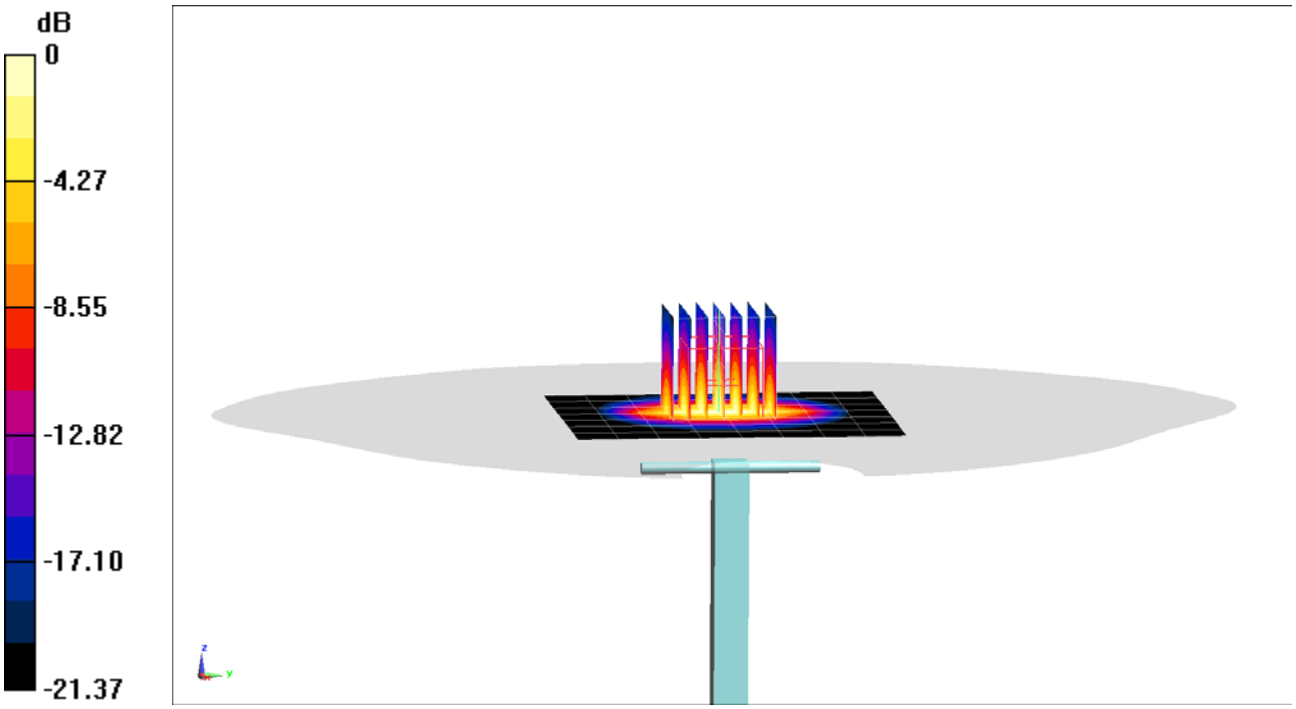
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2450 MHz; σ = 1.999 S/m; ε_r = 51.483; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-22-2020; Ambient Temp: 23.1 °C; Tissue Temp: 22.8 °C

Probe: EX3DV4 - SN3949; ConvF(7.75, 7.75, 7.75) @ 2450 MHz; Calibrated: 8/29/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/12/2019
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1596
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.9 W/kg
SAR(10 g) = 2.53 W/kg
Deviation(10 g) =4.98%



0 dB = 8.92 W/kg = 9.50 dBW/kg

PCTEST

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 750

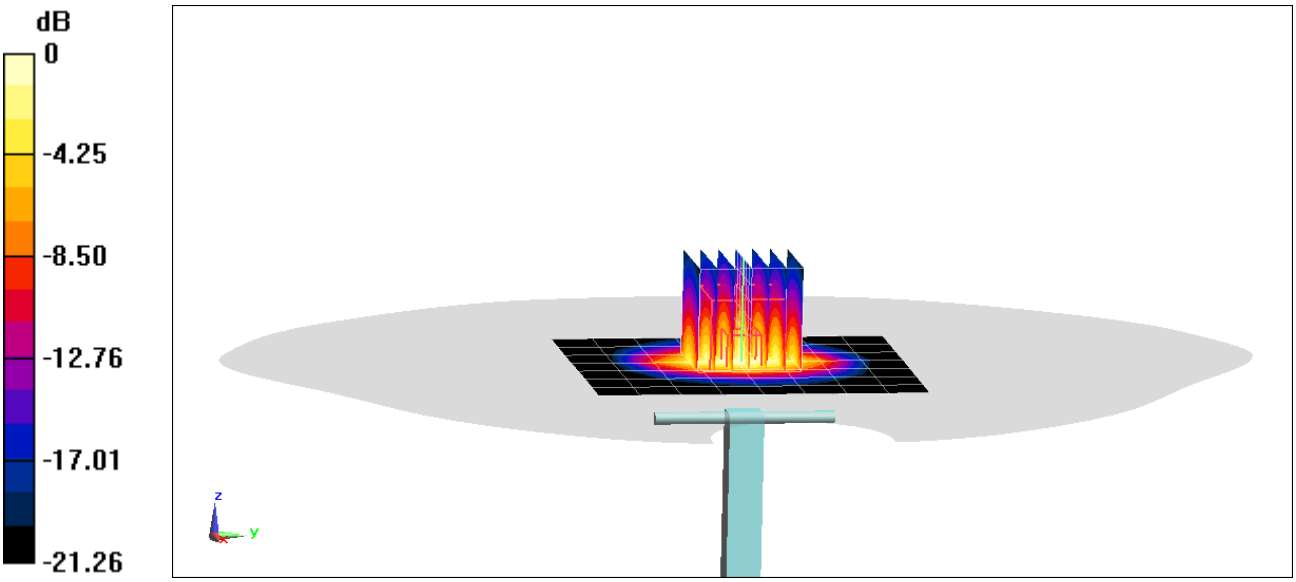
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2450 MHz; σ = 2.011 S/m; ε_r = 51.251; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2020; Ambient Temp: 23.3 °C; Tissue Temp: 22.9 °C

Probe: EX3DV4 - SN3949; ConvF(7.75, 7.75, 7.75) @ 2450 MHz; Calibrated: 8/29/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/12/2019
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1596
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 9.96 W/kg
SAR(10 g) = 2.25 W/kg
Deviation(10 g) = -6.64%



0 dB = 8.05 W/kg = 9.06 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1069

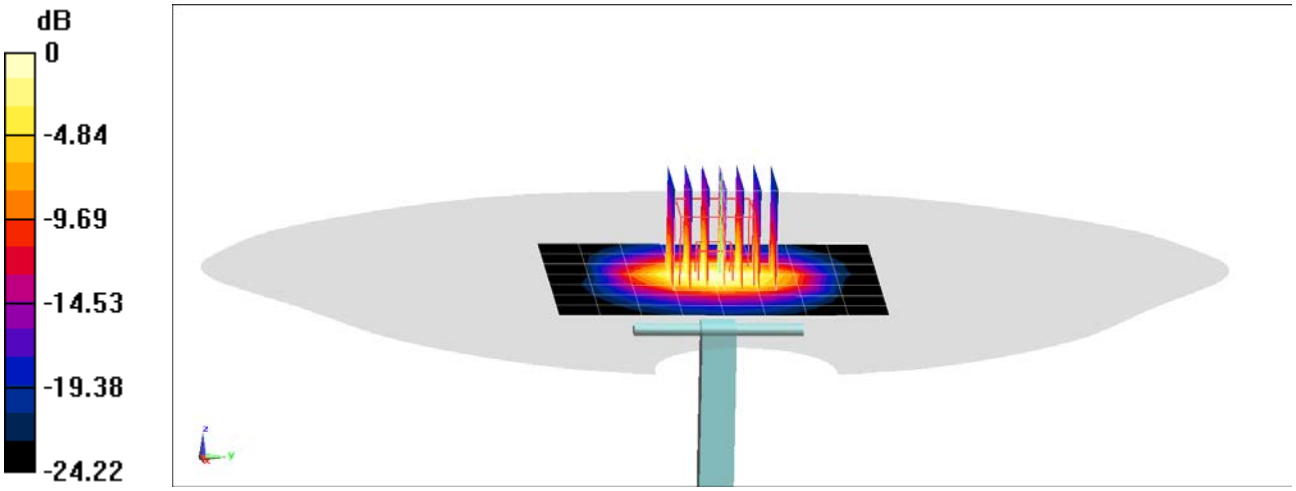
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2600 MHz; σ = 2.232 S/m; ε_r = 50.901; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2020; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7491; ConvF(7.45, 7.45, 7.45) @ 2600 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1402; Calibrated: 7/10/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.7 W/kg
SAR(10 g) = 2.37 W/kg
Deviation(10 g) = -4.44%



0 dB = 8.60 W/kg = 9.34 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1009

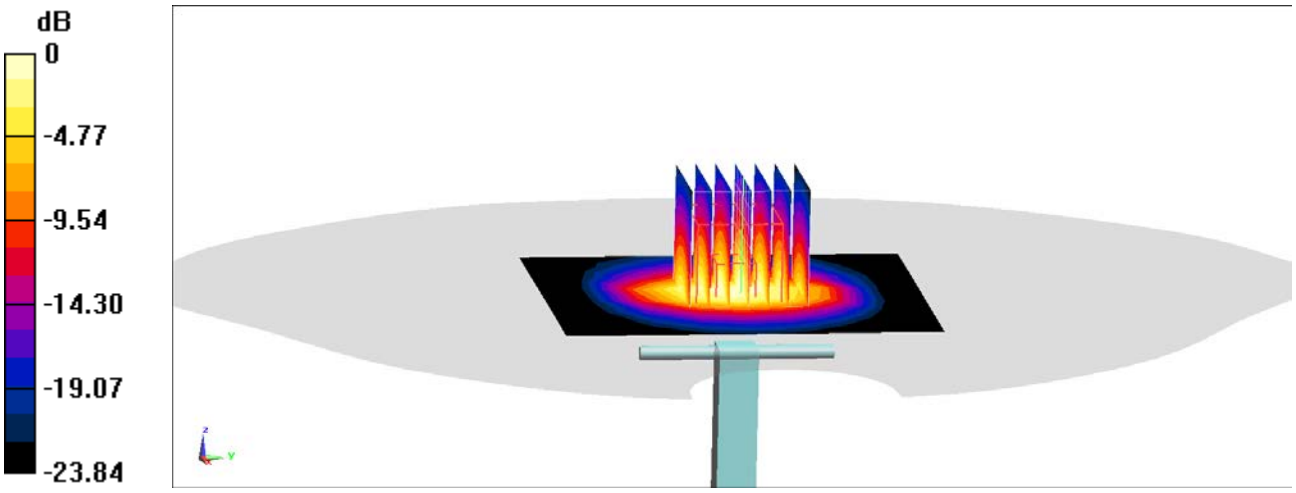
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2600 MHz; σ = 2.209 S/m; ε_r = 50.701; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-17-2020; Ambient Temp: 22.7°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7416; ConvF(7.23, 7.23, 7.23) @ 2600 MHz; Calibrated: 6/22/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn701; Calibrated: 6/11/2020
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.5 W/kg
SAR(10 g) = 2.41 W/kg
Deviation(10 g) = -3.60%



0 dB = 7.95 W/kg = 9.00 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1123

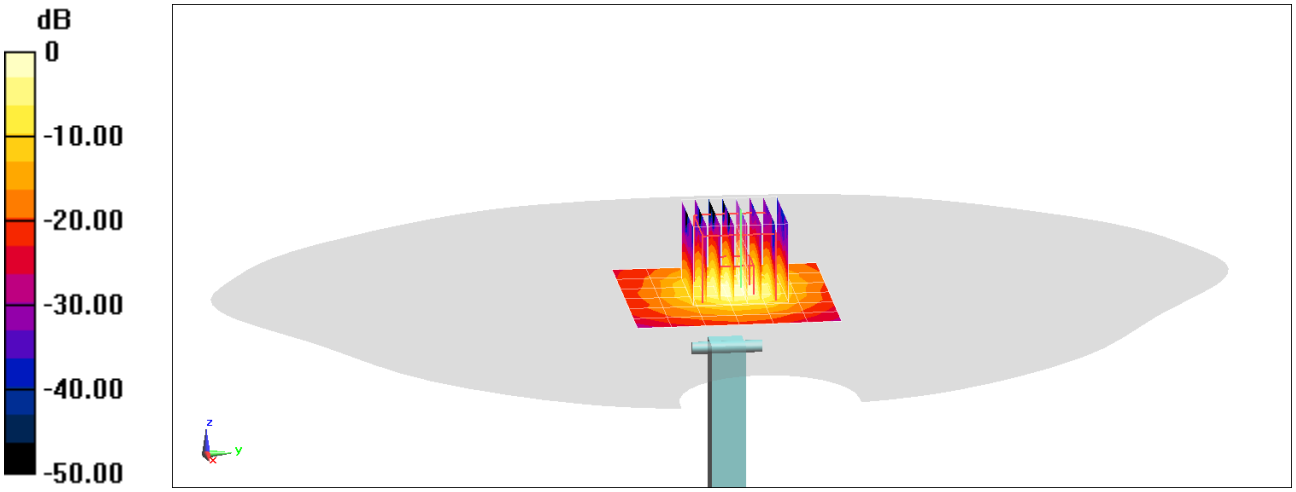
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
f = 5250 MHz; σ = 5.439 S/m; ε_r = 47.523; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-21-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(4.7, 4.7, 4.7) @ 5250 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 13.9 W/kg
SAR(10 g) = 0.955 W/kg
Deviation(10 g) = -7.28%



0 dB = 8.20 W/kg = 9.14 dBW/kg

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DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1123

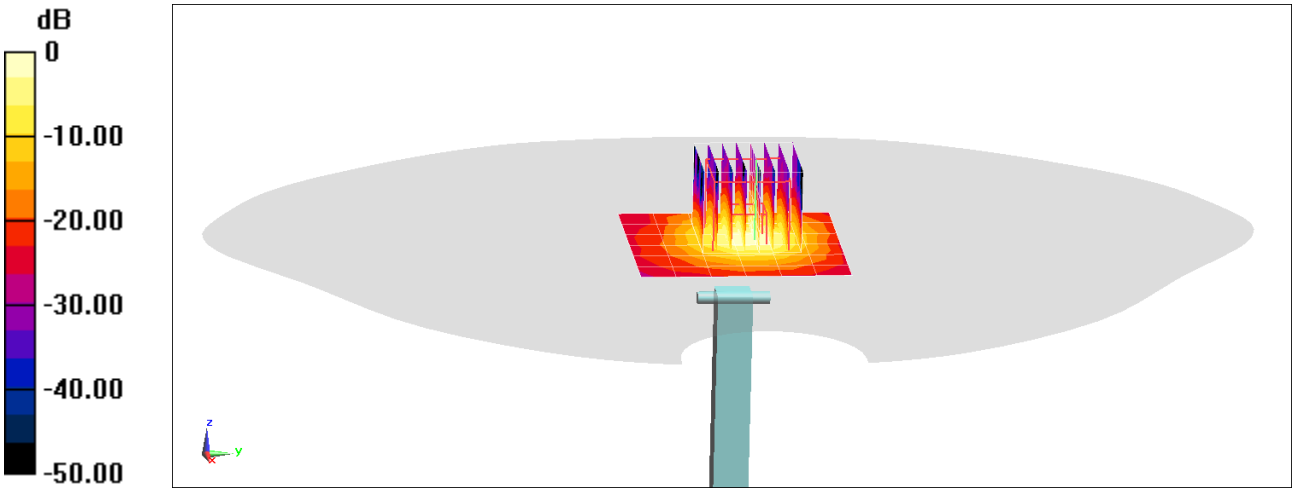
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5600 MHz; σ = 5.895 S/m; ε_r = 46.92; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-21-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(4.24, 4.24, 4.24) @ 5600 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 18.0 W/kg
SAR(10 g) = 1.12 W/kg
Deviation(10 g) = 3.23%



0 dB = 9.94 W/kg = 9.97 dBW/kg

PCTEST

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1123

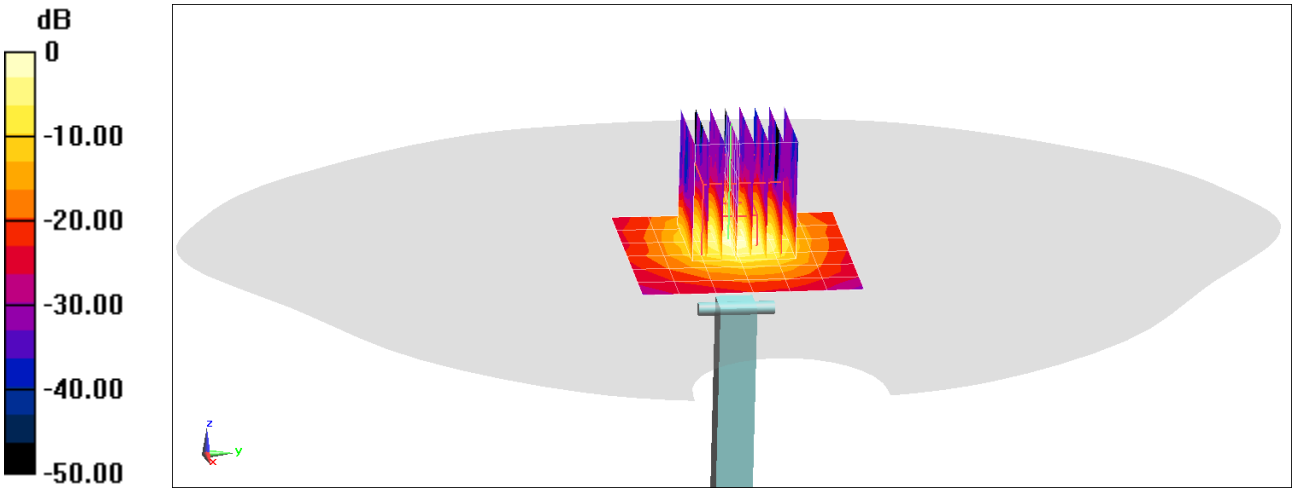
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
f = 5750 MHz; σ = 6.102 S/m; ε_r = 46.727; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-21-2020; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(4.31, 4.31, 4.31) @ 5750 MHz; Calibrated: 2/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/13/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CD; Serial: 1736
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 16.6 W/kg
SAR(10 g) = 0.979 W/kg
Deviation(10 g) = -5.87%



0 dB = 9.15 W/kg = 9.61 dBW/kg

APPENDIX C: SAR TISSUE SPECIFICATIONS

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Measurement Procedure for Tissue verification:

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
3) The complex admittance with respect to the probe aperture was measured
4) The complex relative permittivity ε' can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\varepsilon_r\varepsilon_0}{\left[\ln(b/a)\right]^2}\int_a^b\int_a^b\int_0^\pi \cos\phi' \frac{\exp\left[-j\omega r(\mu_0\varepsilon_r'\varepsilon_0)^{1/2}\right]}{r} d\phi' d\rho' d\rho$$

where Y is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

3 Composition / Information on ingredients

3.2 Mixtures
Description: Aqueous solution with surfactants and inhibitors
Declarable, or hazardous components:

CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28-0000	**Ethanediol** STOT RE 2, H373; Acute Tox. 4, H302	>1.0-4.9%
CAS: 68608-26-4 EINECS: 271-781-5 Reg.nr.: 01-2119527859-22-0000	**Sodium petroleum sulfonate** Eye Irrit. 2, H319	< 2.9%
CAS: 107-41-5 EINECS: 203-489-0 Reg.nr.: 01-2119539582-35-0000	**Hexylene Glycol / 2-Methyl-pentane-2,4-diol** Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.9%
CAS: 68920-66-1 NLP: 500-236-9 Reg.nr.: 01-2119489407-26-0000	**Alkoxylated alcohol, > C_{16}** Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.0%

Additional information:
For the wording of the listed risk phrases refer to section 16.
Not mentioned CAS-, EINECS- or registration numbers are to be regarded as Proprietary/Confidential.
The specific chemical identity and/or exact percentage concentration of proprietary components is withheld as a trade secret.

Figure C-1

Note: Liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

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Measurement Certificate / Material Test

Item Name	**Body Tissue Simulating Liquid (MBBL600-6000V6)**
Product No.	SL AAM U16 BC (Batch: 181029-1)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the KDB 865664 compliance standard.

Test Condition

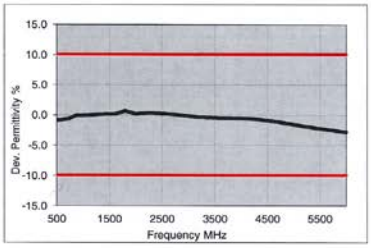
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	30-Oct-18
Operator	CL

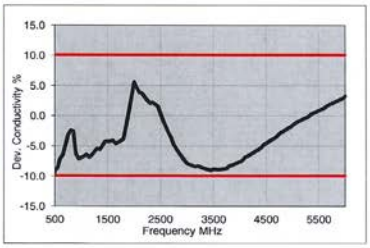
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
800	55.1	21.3	0.95	55.3	0.97	-0.4	-2.1
825	55.1	20.8	0.96	55.2	0.98	-0.3	-2.0
835	55.1	20.6	0.96	55.1	0.99	0.0	-2.5
850	55.1	20.4	0.96	55.2	0.99	-0.1	-3.0
900	55.0	19.7	0.98	55.0	1.05	0.0	-6.7
1400	54.2	15.6	1.22	54.1	1.28	0.2	-4.7
1450	54.1	15.4	1.24	54.0	1.30	0.2	-4.6
1500	54.1	15.3	1.27	53.9	1.33	0.3	-4.5
1550	54.0	15.1	1.30	53.9	1.36	0.2	-4.4
1600	53.9	15.0	1.33	53.8	1.39	0.2	-4.3
1625	53.9	14.9	1.35	53.8	1.41	0.3	-4.3
1640	53.9	14.9	1.36	53.7	1.42	0.3	-4.2
1650	53.8	14.9	1.36	53.7	1.43	0.2	-4.9
1700	53.8	14.8	1.40	53.6	1.46	0.4	-4.1
1750	53.7	14.7	1.43	53.4	1.49	0.5	-4.0
1800	53.7	14.6	1.46	53.3	1.52	0.8	-3.9
1810	53.7	14.6	1.47	53.3	1.52	0.8	-3.3
1825	53.7	14.6	1.48	53.3	1.52	0.8	-2.6
1850	53.6	14.5	1.50	53.3	1.52	0.6	-1.3
1900	53.5	14.5	1.53	53.3	1.52	0.4	0.7
1950	53.5	14.5	1.57	53.3	1.52	0.4	3.3
2000	53.4	14.4	1.60	53.3	1.52	0.2	5.3
2050	53.4	14.4	1.64	53.2	1.57	0.3	4.5
2100	53.3	14.4	1.68	53.2	1.62	0.2	3.7
2150	53.3	14.4	1.72	53.1	1.66	0.4	3.6
2200	53.2	14.4	1.76	53.0	1.71	0.3	2.9
2250	53.1	14.4	1.81	53.0	1.76	0.2	2.8
2300	53.1	14.4	1.85	52.9	1.81	0.4	2.2
2350	53.0	14.5	1.89	52.8	1.85	0.3	2.2
2400	52.9	14.5	1.94	52.8	1.90	0.2	2.1
2450	52.9	14.5	1.98	52.7	1.95	0.4	1.5
2500	52.8	14.6	2.03	52.6	2.02	0.3	0.5
2550	52.7	14.6	2.07	52.6	2.09	0.2	-1.0
2600	52.6	14.7	2.12	52.5	2.16	0.2	-1.9





3500	51.1	15.5	3.02	51.3	3.31	-0.4	-8.8
3700	50.8	15.7	3.24	51.1	3.55	-0.5	-8.8
5200	48.1	18.2	5.27	49.0	5.30	-1.8	-0.6
5250	48.0	18.3	5.34	49.0	5.36	-1.9	-0.4
5300	47.9	18.4	5.41	48.9	5.42	-2.0	-0.2
5500	47.5	18.6	5.70	48.6	5.65	-2.2	0.8
5600	47.3	18.8	5.84	48.5	5.77	-2.3	1.3
5700	47.1	18.9	5.99	48.3	5.88	-2.5	1.8
5800	47.0	19.0	6.14	48.2	6.00	-2.6	2.3

TSL Dielectric Parameters 1

Figure C-2
600 – 5800 MHz Body Tissue Equivalent Matter

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Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL600-10000V6)**
Product No.	SL AAH U16 BC (Batch: 181031-2)
Manufacturer	SPEAG

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

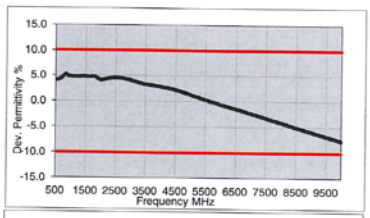
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	31-Oct-18
Operator	CL

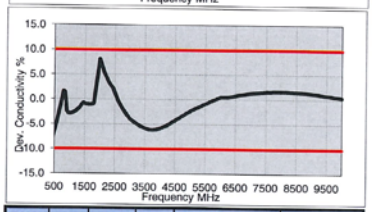
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
800	43.8	20.5	0.91	41.7	0.90	5.1	1.4
825	43.8	20.1	0.92	41.6	0.91	5.3	1.5
835	43.8	19.9	0.93	41.5	0.91	5.4	2.0
850	43.7	19.7	0.93	41.5	0.92	5.3	1.5
900	43.5	18.9	0.95	41.5	0.97	4.8	-2.1
1400	42.5	15.0	1.17	40.6	1.18	4.7	-0.8
1450	42.5	14.8	1.19	40.5	1.20	4.9	-0.8
1600	42.2	14.3	1.27	40.3	1.28	4.7	-1.1
1625	42.2	14.2	1.29	40.3	1.30	4.8	-0.7
1640	42.2	14.2	1.30	40.3	1.31	4.8	-0.5
1650	42.1	14.2	1.30	40.2	1.31	4.6	-1.0
1700	42.1	14.0	1.33	40.2	1.34	4.8	-0.9
1750	42.0	13.9	1.36	40.1	1.37	4.8	-0.8
1800	41.9	13.9	1.39	40.0	1.40	4.7	-0.7
1810	41.9	13.8	1.40	40.0	1.40	4.7	0.0
1825	41.9	13.8	1.41	40.0	1.40	4.7	0.7
1850	41.8	13.8	1.42	40.0	1.40	4.5	1.4
1900	41.8	13.7	1.45	40.0	1.40	4.5	3.6
1950	41.7	13.7	1.48	40.0	1.40	4.3	5.7
2000	41.6	13.6	1.51	40.0	1.40	4.0	7.9
2050	41.6	13.6	1.55	39.9	1.44	4.2	7.3
2100	41.5	13.5	1.58	39.8	1.49	4.2	6.1
2150	41.4	13.5	1.62	39.7	1.53	4.2	5.7
2200	41.4	13.5	1.65	39.6	1.58	4.4	4.6
2250	41.3	13.5	1.69	39.6	1.62	4.4	4.2
2300	41.2	13.5	1.72	39.5	1.67	4.4	3.2
2350	41.1	13.5	1.76	39.4	1.71	4.4	2.9
2400	41.1	13.5	1.80	39.3	1.76	4.6	2.5
2450	41.0	13.5	1.84	39.2	1.80	4.6	2.2
2500	40.9	13.5	1.88	39.1	1.85	4.5	1.4
2550	40.8	13.5	1.92	39.1	1.91	4.4	0.6
2600	40.8	13.6	1.96	39.0	1.96	4.6	-0.2
3500	39.2	14.1	2.74	37.9	2.91	3.3	-5.8
3700	38.9	14.2	2.93	37.7	3.12	3.1	-6.1





5200	36.3	15.8	4.57	36.0	4.66	0.9	-1.7
5250	36.2	15.9	4.63	35.9	4.71	0.8	-1.6
5300	36.1	15.9	4.69	35.9	4.76	0.7	-1.4
5500	35.8	16.1	4.92	35.6	4.96	0.3	-0.9
5600	35.6	16.2	5.04	35.5	5.07	0.1	-0.6
5700	35.4	16.2	5.15	35.4	5.17	0.0	-0.3
5800	35.2	16.3	5.27	35.3	5.27	-0.2	0.0
6000	34.9	16.5	5.50	35.1	5.48	-0.6	0.5
6500	34.0	16.9	6.12	34.5	6.07	-1.4	0.9
7000	33.1	17.3	6.74	33.9	6.65	-2.3	1.3
7500	32.2	17.6	7.36	33.3	7.24	-3.2	1.6
8000	31.4	17.9	7.97	32.7	7.84	-4.1	1.7
8500	30.5	18.2	8.59	32.1	8.45	-5.0	1.6
9000	29.7	18.4	9.20	31.5	9.08	-5.9	1.3
9500	28.9	18.5	9.80	31.0	9.71	-6.8	0.9
10000	28.1	18.7	10.40	30.4	10.36	-7.6	0.4

Figure C-3
600 – 5800 MHz Head Tissue Equivalent Matter

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APPENDIX D: SAR SYSTEM VALIDATION

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Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table D-1
SAR System Validation Summary – 1g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE CAL. POINT		COND. (σ)	PERM. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
AM1	835	3/12/2020	7427	835	Head	0.887	41.650	PASS	PASS	PASS	GMSK	PASS	N/A
AM8	1750	6/25/2020	7532	1750	Head	1.324	40.239	PASS	PASS	PASS	N/A	N/A	N/A
AM7	1900	5/20/2020	7490	1900	Head	1.417	39.614	PASS	PASS	PASS	GMSK	PASS	N/A
AM1	2450	3/13/2020	7427	2450	Head	1.788	38.750	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM7	2450	5/22/2020	7490	2450	Head	1.788	38.887	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM1	2600	3/13/2020	7427	2600	Head	1.902	38.470	PASS	PASS	PASS	TDD	PASS	N/A
AM1	5250	4/17/2020	7427	5250	Head	4.645	36.201	PASS	PASS	PASS	OFDM	N/A	PASS
AM1	5600	4/17/2020	7427	5600	Head	5.043	35.570	PASS	PASS	PASS	OFDM	N/A	PASS
AM1	5750	4/17/2020	7427	5750	Head	5.220	35.300	PASS	PASS	PASS	OFDM	N/A	PASS

Table D-2
SAR System Validation Summary – 10g

SAR SYSTEM #	FREQ. [MHz]	DATE	PROBE SN	PROBE CAL. POINT		COND. (σ)	PERM. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
AM4	835	4/22/2020	7421	835	Body	0.992	54.556	PASS	PASS	PASS	GMSK	PASS	N/A
AM6	1750	3/4/2020	3837	1750	Body	1.452	52.122	PASS	PASS	PASS	N/A	N/A	N/A
AM6	1900	3/4/2020	3837	1900	Body	1.583	51.67	PASS	PASS	PASS	GMSK	PASS	N/A
AM5	2450	8/14/2019	7491	2450	Body	1.972	51.904	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM5	2450	7/6/2020	7416	2450	Body	1.996	51.99	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM3	2450	9/4/2019	3949	2450	Body	1.955	52.22	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM5	2600	8/13/2019	7491	2600	Body	2.11	51.64	PASS	PASS	PASS	TDD	PASS	N/A
AM5	2600	7/6/2020	7416	2600	Body	2.226	51.419	PASS	PASS	PASS	TDD	PASS	N/A
AM1	5250	4/13/2020	7427	5250	Body	5.476	48.905	PASS	PASS	PASS	OFDM	N/A	PASS
AM1	5600	4/13/2020	7427	5600	Body	5.981	48.23	PASS	PASS	PASS	OFDM	N/A	PASS
AM1	5750	4/13/2020	7427	5750	Body	6.21	47.975	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.

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