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SAR EVALUATION REPORT

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

Date of Testing:
06/22/2021 – 08/15/2021
Test Site/Location:
PCTEST Lab, Morgan Hill, CA, USA
Document Serial No.:
1C2106070046-22.BCG (Rev 1)

FCC ID:	**BCG-A2478**
APPLICANT:	**APPLE, INC.**

DUT Type:	Watch
Application Type:	Certification
FCC Rule Part(s):	CFR §2.1093
Model:	A2478

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	0.15
PCT	UMTS 1750	1712.4 - 1752.6 MHz	0.34	< 0.1
PCT	UMTS 1900	1852.4 - 1907.6 MHz	0.43	< 0.1
PCT	LTE Band 26 (Cell)	814.7 - 848.3 MHz	< 0.1	0.12
PCT	LTE Band 5 (Cell)	824.7 - 848.3 MHz	< 0.1	0.19
PCT	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.32	< 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	0.69	< 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	0.96	< 0.1
PCT	LTE Band 41	2498.5 - 2687.5 MHz	0.40	< 0.1
DTS	2.4 GHz WLAN	2412 - 2472 MHz	0.36	< 0.1
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.10	< 0.1
NII	U-NII-2C	5500 - 5720 MHz	0.11	< 0.1
NII	U-NII-3	5745 - 5825 MHz	0.13	< 0.1
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.10	< 0.1
Simultaneous SAR per KDB 690783 D01v01r03:			1.32	0.21

Note: This revised Test Report 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

The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sartick@mwfai.info.

TABLE OF CONTENTS

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
UWB	Data	6489.6 - 7987.2 MHz

1.2 Power Reduction for SAR

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

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 Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
UMTS Band 5 (850 MHz)	Max allowed power	**25.00**	**25.00**	**24.00**
	Nominal	**24.00**	**24.00**	**23.00**
UMTS Band 4 (1750 MHz)	Max allowed power	**24.00**	**24.00**	**23.00**
	Nominal	**23.00**	**23.00**	**22.00**
UMTS Band 2 (1900 MHz)	Max allowed power	**24.00**	**24.00**	**23.00**
	Nominal	**23.00**	**23.00**	**22.00**

1.3.2 Maximum Output Power – LTE Mode

Mode / Band		Modulated Average Output Power (in dBm)
LTE FDD Band 26	Max allowed power	**25.50**
	Nominal	**24.50**
LTE FDD Band 5	Max allowed power	**25.50**
	Nominal	**24.50**
LTE FDD Band 4	Max allowed power	**24.50**
	Nominal	**23.50**
LTE FDD Band 66	Max allowed power	**24.50**
	Nominal	**23.50**
LTE FDD Band 2	Max allowed power	**24.50**
	Nominal	**23.50**
LTE FDD Band 25	Max allowed power	**24.50**
	Nominal	**23.50**
LTE FDD Band 7	Max allowed power	**23.50**
	Nominal	**22.50**
LTE TDD Band 41 (PC3)	Max allowed power	**23.50**
	Nominal	**22.50**

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	18.00	17.00	18.00	17.00
		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	14.00	13.00	14.00	13.00
		12	18.00	17.00	13.00	12.00	13.00	12.00
		13	15.00	14.00	2.50	1.50	2.50	1.50

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	17.00	16.00	17.00	16.00
		40	17.00	16.00	17.00	16.00
		44	17.00	16.00	17.00	16.00
		48	17.00	16.00	17.00	16.00
		52	17.00	16.00	17.00	16.00
		56	17.00	16.00	17.00	16.00
		60	17.00	16.00	17.00	16.00
		64	17.00	16.00	17.00	16.00
		100	17.00	16.00	17.00	16.00
		104	17.00	16.00	17.00	16.00
		108	17.00	16.00	17.00	16.00
		112	17.00	16.00	17.00	16.00
		116	17.00	16.00	17.00	16.00
		120	17.00	16.00	17.00	16.00
		124	17.00	16.00	17.00	16.00
		128	17.00	16.00	17.00	16.00
		132	17.00	16.00	17.00	16.00
		136	16.00	15.00	16.00	15.00
		140	13.50	12.50	13.50	12.50
		144	17.00	16.00	17.00	16.00
		149	17.00	16.00	17.00	16.00
		153	17.00	16.00	17.00	16.00
		157	17.00	16.00	17.00	16.00
		161	17.00	16.00	17.00	16.00
		165	17.00	16.00	17.00	16.00

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.

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 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.

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.

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)
- IEEE 1528-2013

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.

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.				

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]

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

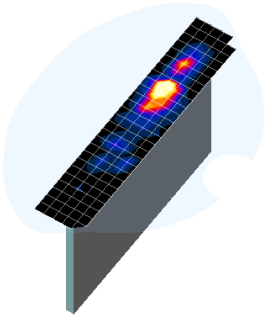

Figure 4-1
Sample SAR Area Scan

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

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.

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.

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.

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.

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

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.

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, and 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). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8 RF CONDUCTED POWERS

8.1 UMTS Conducted Powers

Table 8-1
Maximum Conducted Powers

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	24.14	24.11	23.95	23.03	23.05	22.96	23.05	23.08	22.94	-
99		12.2 kbps AMR	24.13	24.07	23.96	23.10	23.04	22.93	23.07	23.05	22.93	-
6	HSDPA	Subtest 1	24.43	24.46	24.25	23.40	23.28	23.35	23.31	23.29	23.33	0
6		Subtest 2	23.42	23.42	23.27	22.48	22.52	22.55	22.47	22.47	22.41	0
6		Subtest 3	22.89	22.92	22.76	22.03	21.98	22.02	21.95	21.96	21.98	0.5
6		Subtest 4	22.62	22.60	22.53	21.75	21.70	21.77	21.75	21.73	21.73	0.5
6	HSUPA	Subtest 1	22.46	22.11	22.30	22.57	22.49	22.51	22.68	22.65	22.66	0
6		Subtest 2	20.24	20.21	20.02	20.27	20.24	20.26	20.67	20.69	20.67	2
6		Subtest 3	21.07	21.03	21.00	21.04	21.02	21.05	21.41	21.43	21.46	1
6		Subtest 4	20.42	20.54	20.14	20.39	20.48	20.51	20.88	20.90	20.87	2
6		Subtest 5	22.44	22.43	22.30	22.56	22.43	22.52	22.85	22.88	22.85	0

This device does not support DC-HSDPA.

Figure 8-1
Power Measurement Setup

8.2 LTE Conducted Powers

Per FCC KDB Publication 941225 D05v02r05, LTE SAR for the lower bandwidths was not required for testing 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. Lower bandwidth conducted powers for all LTE bands can be found in appendix F.

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)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.39	24.40	24.50	0	0
	1	25	**24.51**	24.36	24.36		0
	1	49	24.48	24.44	24.36		0
	25	0	23.54	23.41	23.62	0-1	1
	25	12	23.57	23.42	23.54		1
	25	25	**23.65**	23.43	23.50		1
	50	0	23.63	23.49	23.46		1
	15	0	23.45	23.46	23.64		1
	15	17	23.56	23.45	23.54		1
	15	35	23.63	23.53	23.46		1
	27	0	23.54	23.44	23.62		1
	27	12	23.62	23.45	23.53		1
	27	23	23.65	23.47	23.50		1
16QAM	1	0	23.88	23.71	23.91	0-1	1
	1	25	23.94	23.69	23.83		1
	1	49	23.93	23.75	23.78		1
	25	0	22.53	22.48	22.66	0-2	2
	25	12	22.56	22.51	22.55		2
	25	25	22.64	22.52	22.51		2
	15	0	22.47	22.51	22.69		2
	15	17	22.65	22.52	22.59		2
	15	35	22.66	22.54	22.48		2
	27	0	22.53	22.49	22.63		2
	27	12	22.59	22.53	22.57		2
	27	23	22.65	22.55	22.50		2

8.2.2 LTE Band 5

Table 8-3
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]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.10	0	0
	1	25	24.15		0
	1	49	**24.20**		0
	25	0	23.27	0-1	1
	25	12	23.28		1
	25	25	**23.35**		1
	50	0	23.34		1
	15	0	23.20		1
	15	17	23.29		1
	15	35	23.32		1
	27	0	23.27		1
	27	12	23.30		1
	27	23	23.32		1
16QAM	1	0	23.57	0-1	1
	1	25	23.61		1
	1	49	23.64		1
	25	0	22.32	0-2	2
	25	12	22.34		2
	25	25	22.36		2
	15	0	22.28		2
	15	17	22.31		2
	15	35	22.35		2
	27	0	22.29		2
	27	12	22.35		2
	27	23	22.32		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.

8.2.3 LTE Band 66

Table 8-4
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]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.23	23.19	22.90	0	0
	1	50	23.24	23.07	22.96		0
	1	99	**23.27**	23.08	22.85		0
	50	0	**22.59**	22.34	22.36	0-1	1
	50	25	22.50	22.31	22.44		1
	50	50	22.49	22.23	22.29		1
	100	0	22.57	22.50	22.58		1
	15	0	22.87	22.79	22.76	0	0
	15	42	22.84	22.85	22.75		0
	15	85	22.85	22.87	22.71		0
	27	0	22.14	22.10	22.06	0-1	1
	27	37	22.10	22.12	22.11		1
	27	73	22.06	22.08	22.13		1
16QAM	1	0	22.43	22.53	22.41	0-1	1
	1	50	22.25	22.40	22.42		1
	1	99	22.44	22.45	22.35		1
	15	0	22.12	22.14	22.15		1
	15	42	22.05	22.18	22.03		1
	15	85	22.15	22.18	22.10		1
	27	0	21.26	21.31	21.40	0-2	2
	27	37	21.28	21.17	21.45		2
	27	73	21.34	21.15	21.30		2

8.2.4 LTE Band 25

Table 8-5
LTE Band 25 (PCS) 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)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.10	23.32	23.25	0	0
	1	50	23.27	**23.38**	23.30		0
	1	99	23.24	23.25	23.28		0
	50	0	22.42	22.31	22.28	0-1	1
	50	25	22.50	22.40	22.31		1
	50	50	**22.65**	22.36	22.39		1
	100	0	22.63	22.58	22.64		1
	15	0	23.32	23.37	23.24	0	0
	15	42	23.42	23.43	23.30		0
	15	85	23.42	23.34	23.27		0
	27	0	22.31	22.35	22.18	0-1	1
	27	37	22.42	22.42	22.29		1
	27	73	22.46	22.32	22.28		1
16QAM	1	0	22.36	22.98	22.23	0-1	1
	1	50	22.29	22.46	22.13		1
	1	99	22.41	22.21	22.17		1
	15	0	22.21	22.27	22.02		1
	15	42	22.16	22.11	22.02		1
	15	85	22.19	22.20	22.10		1
	27	0	21.08	21.26	21.10	0-2	2
	27	37	21.16	21.16	21.18		2
	27	73	21.14	21.11	21.06		2

8.2.5 LTE Band 7

Table 8-6
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)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.11	22.29	22.31	0	0
	1	50	22.30	22.27	22.38		0
	1	99	22.34	22.39	**22.70**		0
	50	0	21.39	21.24	21.37	0-1	1
	50	25	21.43	21.27	21.40		1
	50	50	21.43	21.26	**21.65**		1
	100	0	21.59	21.48	21.63		1
	15	0	22.26	22.20	22.25	0	0
	15	42	22.42	22.30	22.38		0
	15	85	22.43	22.27	22.64		0
	27	0	21.27	21.19	21.26	0-1	1
	27	37	21.36	21.26	21.36		1
	27	73	21.38	21.20	21.55		1
16QAM	1	0	21.34	21.55	21.71	0-1	1
	1	50	21.53	21.44	21.73		1
	1	99	21.60	21.66	21.88		1
	15	0	20.78	21.07	21.06		1
	15	42	21.09	21.05	21.10		1
	15	85	21.24	20.97	21.34		1
	27	0	19.74	20.06	19.98	0-2	2
	27	37	20.07	20.07	20.06		2
	27	73	20.15	19.96	20.28		2

8.2.6 LTE Band 41

Table 8-7
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)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	22.38	22.33	22.58	22.52	22.37	0	0
	1	50	22.48	22.43	**22.70**	22.59	22.38		0
	1	99	22.40	22.34	22.63	22.56	22.25		0
	50	0	21.37	21.28	21.54	21.38	21.19	0-1	1
	50	25	21.41	21.33	21.58	21.37	21.20		1
	50	50	21.47	21.31	**21.60**	21.38	21.15		1
	100	0	21.44	21.39	21.59	21.39	21.31		1
	15	0	22.08	22.40	22.65	22.35	22.36	0	0
	15	42	22.31	22.40	22.66	22.34	22.33		0
	15	85	22.51	22.36	22.53	22.32	22.19		0
	27	0	21.06	21.41	21.56	21.30	21.31	0-1	1
	27	37	21.33	21.45	21.59	21.31	21.29		1
	27	73	21.46	21.39	21.48	21.26	21.12		1
16QAM	1	0	21.08	21.51	21.58	21.31	21.38	0-1	1
	1	50	21.44	21.46	21.53	21.40	21.33		1
	1	99	21.55	21.45	21.33	21.42	21.22		1
	15	0	21.05	21.40	21.62	21.31	21.33		1
	15	42	21.30	21.41	21.63	21.29	21.30		1
	15	85	21.50	21.37	21.49	21.28	21.16		1
	27	0	20.02	20.35	20.58	20.27	20.27	0-2	2
	27	37	20.33	20.36	20.59	20.28	20.22		2
	27	73	20.45	20.30	20.46	20.25	20.07		2

8.3 WLAN Conducted Powers

Table 8-8
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	17.91	16.03	16.09
2422	3		17.50	17.48
2437	6	17.83	17.41	17.54
2452	9		17.51	17.56
2462	11	17.95	13.00	12.96

Table 8-9
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	15.87	15.93
5200	40	16.09	16.04
5220	44	16.05	15.94
5240	48	15.92	15.87
5260	52	16.04	15.95
5280	56	15.82	15.90
5300	60	16.12	16.07
5320	64	16.03	16.01
5500	100	15.90	16.06
5600	120	15.97	16.07
5620	124	15.90	16.06
5720	144	15.96	16.02
5745	149	15.96	16.07
5785	157	16.07	16.00
5825	165	16.02	16.03

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.
- 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.

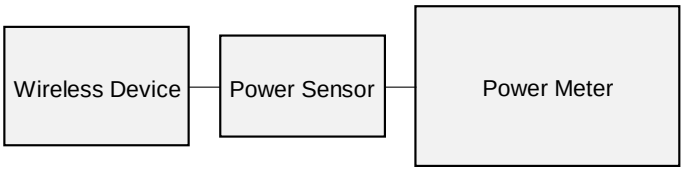

Figure 8-2
Power Measurement Setup

8.4 Bluetooth Conducted Powers

Table 8-10
Bluetooth Average RF Power

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.85	15.311
2441	GFSK	1.0	39	12.23	16.711
2480	GFSK	1.0	78	11.83	15.241

Note 1: Bluetooth was evaluated with a test mode with 100% transmission duty factor.

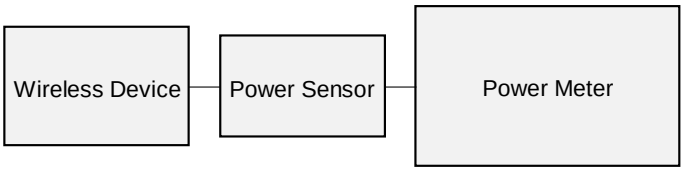

Figure 8-3
Power Measurement Setup

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
07/23/2021	835 Head	20.6	815	0.929	41.314	0.898	41.594	3.45%	-0.67%
			820	0.931	41.300	0.899	41.578	3.56%	-0.67%
			835	0.937	41.258	0.900	41.500	4.11%	-0.58%
			850	0.942	41.222	0.916	41.500	2.84%	-0.67%
07/25/2021	835 Head	19.7	815	0.914	39.655	0.898	41.594	1.78%	-4.66%
			820	0.916	39.642	0.899	41.578	1.89%	-4.66%
			835	0.922	39.601	0.900	41.500	2.44%	-4.58%
			850	0.927	39.554	0.916	41.500	1.20%	-4.69%
07/27/2021	835 Head	20.6	815	0.932	40.128	0.898	41.594	3.79%	-3.52%
			820	0.933	40.078	0.899	41.578	3.78%	-3.61%
			835	0.939	40.050	0.900	41.500	4.33%	-3.49%
			850	0.945	40.010	0.916	41.500	3.17%	-3.59%
06/22/2021	1750 Head	21.3	1710	1.354	39.716	1.348	40.142	0.45%	-1.06%
			1720	1.359	39.699	1.354	40.126	0.37%	-1.06%
			1745	1.375	39.656	1.368	40.087	0.51%	-1.08%
			1750	1.378	39.648	1.371	40.079	0.51%	-1.08%
			1770	1.389	39.615	1.383	40.047	0.43%	-1.08%
			1790	1.400	39.575	1.394	40.016	0.43%	-1.10%
07/20/2021	1750 Head	21.3	1710	1.351	39.243	1.348	40.142	0.22%	-2.24%
			1720	1.357	39.227	1.354	40.126	0.22%	-2.24%
			1745	1.372	39.200	1.368	40.087	0.29%	-2.21%
			1750	1.375	39.194	1.371	40.079	0.29%	-2.21%
			1770	1.386	39.173	1.383	40.047	0.22%	-2.18%
			1790	1.398	39.142	1.394	40.016	0.29%	-2.18%
06/22/2021	1900 Head	21.7	1850	1.423	39.072	1.400	40.000	1.64%	-2.32%
			1860	1.427	39.057	1.400	40.000	1.93%	-2.36%
			1880	1.439	39.023	1.400	40.000	2.79%	-2.44%
			1900	1.451	38.990	1.400	40.000	3.64%	-2.52%
			1905	1.453	38.991	1.400	40.000	3.79%	-2.52%
			1910	1.457	38.985	1.400	40.000	4.07%	-2.54%
07/21/2021	1900 Head	21.4	1850	1.432	39.214	1.400	40.000	2.29%	-1.97%
			1860	1.438	39.197	1.400	40.000	2.71%	-2.01%
			1880	1.451	39.160	1.400	40.000	3.64%	-2.10%
			1900	1.463	39.131	1.400	40.000	4.50%	-2.17%
			1905	1.466	39.127	1.400	40.000	4.71%	-2.18%
			1910	1.469	39.121	1.400	40.000	4.93%	-2.20%
06/28/2021	2450 Head	21.5	2400	1.802	39.177	1.756	39.289	2.62%	-0.29%
			2450	1.858	39.001	1.800	39.200	3.22%	-0.51%
			2480	1.888	38.906	1.833	39.162	3.00%	-0.65%
			2500	1.910	38.809	1.855	39.136	2.96%	-0.84%
			2510	1.921	38.780	1.866	39.123	2.95%	-0.88%
			2535	1.949	38.707	1.893	39.092	2.96%	-0.98%
			2550	1.963	38.657	1.909	39.073	2.83%	-1.06%
			2560	1.977	38.623	1.920	39.060	2.97%	-1.12%
			2600	2.020	38.480	1.964	39.009	2.85%	-1.36%
			2650	2.078	38.309	2.018	38.945	2.97%	-1.63%
			2680	2.109	38.190	2.051	38.907	2.83%	-1.84%
			2700	2.131	38.124	2.073	38.882	2.80%	-1.95%

Table 9-2
Measured Head Tissue Properties (Cont.)

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
08/09/2021	2450 Head	22.3	2400	1.760	40.469	1.756	39.289	0.23%	3.00%
			2450	1.800	40.410	1.800	39.200	0.00%	3.09%
			2480	1.821	40.367	1.833	39.162	-0.65%	3.08%
			2500	1.837	40.333	1.855	39.136	-0.97%	3.06%
			2510	1.846	40.318	1.866	39.123	-1.07%	3.05%
08/15/2021	2450 Head	20.8	2400	1.758	38.528	1.756	39.289	0.11%	-1.94%
			2450	1.799	38.472	1.800	39.200	-0.06%	-1.86%
			2480	1.819	38.419	1.833	39.162	-0.76%	-1.90%
			2500	1.836	38.382	1.855	39.136	-1.02%	-1.93%
			2510	1.845	38.370	1.866	39.123	-1.13%	-1.92%
08/09/2021	5200-5800 Head	22.5	5180	4.442	36.148	4.635	36.009	-4.16%	0.39%
			5190	4.456	36.142	4.645	35.998	-4.07%	0.40%
			5200	4.467	36.131	4.655	35.986	-4.04%	0.40%
			5210	4.474	36.122	4.666	35.975	-4.11%	0.41%
			5220	4.481	36.104	4.676	35.963	-4.17%	0.39%
			5240	4.497	36.016	4.696	35.940	-4.24%	0.21%
			5250	4.505	35.962	4.706	35.929	-4.27%	0.09%
			5260	4.516	35.935	4.717	35.917	-4.26%	0.05%
			5270	4.529	35.918	4.727	35.906	-4.19%	0.03%
			5280	4.541	35.895	4.737	35.894	-4.14%	0.00%
			5290	4.550	35.873	4.748	35.883	-4.17%	-0.03%
			5300	4.558	35.863	4.758	35.871	-4.20%	-0.02%
			5310	4.568	35.857	4.768	35.860	-4.19%	-0.01%
			5320	4.582	35.836	4.778	35.849	-4.10%	-0.04%
			5500	4.803	35.535	4.963	35.643	-3.22%	-0.30%
			5510	4.819	35.524	4.973	35.632	-3.10%	-0.30%
			5520	4.835	35.516	4.983	35.620	-2.97%	-0.29%
			5530	4.847	35.514	4.994	35.609	-2.94%	-0.27%
			5540	4.857	35.512	5.004	35.597	-2.94%	-0.24%
			5550	4.870	35.504	5.014	35.586	-2.87%	-0.23%
			5560	4.884	35.496	5.024	35.574	-2.79%	-0.22%
			5580	4.908	35.470	5.045	35.551	-2.72%	-0.23%
			5600	4.930	35.447	5.065	35.529	-2.67%	-0.23%
			5610	4.939	35.436	5.076	35.518	-2.70%	-0.23%
			5620	4.949	35.430	5.086	35.506	-2.69%	-0.21%
			5640	4.974	35.407	5.106	35.483	-2.59%	-0.21%
			5660	4.991	35.366	5.127	35.460	-2.65%	-0.27%
			5670	4.997	35.341	5.137	35.449	-2.73%	-0.30%
			5680	5.000	35.316	5.147	35.437	-2.86%	-0.34%
			5690	5.004	35.283	5.158	35.426	-2.99%	-0.40%
			5700	5.014	35.262	5.168	35.414	-2.98%	-0.43%
			5710	5.026	35.247	5.178	35.403	-2.94%	-0.44%
			5720	5.036	35.224	5.188	35.391	-2.93%	-0.47%
			5745	5.052	35.160	5.214	35.363	-3.11%	-0.57%
			5750	5.057	35.148	5.219	35.357	-3.10%	-0.59%
			5755	5.063	35.140	5.224	35.351	-3.08%	-0.60%
			5765	5.072	35.101	5.234	35.340	-3.10%	-0.68%
			5775	5.079	35.056	5.245	35.329	-3.16%	-0.77%
			5785	5.087	35.024	5.255	35.317	-3.20%	-0.83%
			5795	5.099	34.997	5.265	35.305	-3.15%	-0.87%
			5800	5.106	34.989	5.270	35.300	-3.11%	-0.88%
			5800	5.106	34.989	5.270	35.300	-3.11%	-0.88%
			5805	5.114	34.978	5.275	35.294	-3.05%	-0.90%
			5825	5.132	34.933	5.296	35.271	-3.10%	-0.96%

Table 9-3
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
07/29/2021	835 Body	21.5	815	0.964	52.996	0.968	55.271	-0.41%	-4.12%
			820	0.970	52.918	0.969	55.258	0.10%	-4.23%
			835	0.985	52.779	0.970	55.200	1.55%	-4.39%
			850	1.000	52.636	0.988	55.154	1.21%	-4.57%
08/09/2021	835 Body	20.0	815	0.947	53.316	0.968	55.271	-2.17%	-3.54%
			820	0.949	53.302	0.969	55.258	-2.06%	-3.54%
			835	0.955	53.263	0.970	55.200	-1.55%	-3.51%
			850	0.960	53.234	0.988	55.154	-2.83%	-3.48%
08/11/2021	835 Body	20.3	815	0.987	53.415	0.968	55.271	1.96%	-3.36%
			820	0.989	53.399	0.969	55.258	2.06%	-3.36%
			835	0.995	53.352	0.970	55.200	2.58%	-3.35%
			850	1.000	53.309	0.988	55.154	1.21%	-3.35%
06/24/2021	1750 Body	21.4	1710	1.442	53.668	1.463	53.537	-1.44%	0.24%
			1720	1.448	53.651	1.469	53.511	-1.43%	0.26%
			1745	1.464	53.630	1.485	53.445	-1.41%	0.35%
			1750	1.466	53.627	1.488	53.432	-1.48%	0.36%
			1770	1.479	53.609	1.501	53.379	-1.47%	0.43%
			1790	1.493	53.581	1.514	53.326	-1.39%	0.48%
07/08/2021	1750 Body	20.4	1710	1.463	51.723	1.463	53.537	0.00%	-3.39%
			1720	1.472	51.688	1.469	53.511	0.20%	-3.41%
			1745	1.496	51.614	1.485	53.445	0.74%	-3.43%
			1750	1.500	51.600	1.488	53.432	0.81%	-3.43%
			1770	1.519	51.541	1.501	53.379	1.20%	-3.44%
			1790	1.538	51.475	1.514	53.326	1.59%	-3.47%
06/28/2021	1900 Body	21.9	1850	1.550	53.799	1.520	53.300	1.97%	0.94%
			1860	1.557	53.779	1.520	53.300	2.43%	0.90%
			1880	1.570	53.744	1.520	53.300	3.29%	0.83%
			1900	1.585	53.720	1.520	53.300	4.28%	0.79%
			1905	1.588	53.717	1.520	53.300	4.47%	0.78%
			1910	1.591	53.713	1.520	53.300	4.67%	0.77%
07/22/2021	1900 Body	23.1	1850	1.492	51.600	1.520	53.300	-1.84%	-3.19%
			1860	1.501	51.558	1.520	53.300	-1.25%	-3.27%
			1880	1.521	51.481	1.520	53.300	0.07%	-3.41%
			1900	1.541	51.430	1.520	53.300	1.38%	-3.51%
			1905	1.546	51.422	1.520	53.300	1.71%	-3.52%
			1910	1.551	51.411	1.520	53.300	2.04%	-3.54%
06/28/2021	2450 Body	21.0	2400	1.931	50.549	1.902	52.767	1.52%	-4.20%
			2450	1.977	50.489	1.950	52.700	1.38%	-4.20%
			2480	2.002	50.441	1.993	52.662	0.45%	-4.22%
			2500	2.021	50.409	2.021	52.636	0.00%	-4.23%
			2510	2.031	50.399	2.035	52.623	-0.20%	-4.23%
			2535	2.054	50.376	2.071	52.592	-0.82%	-4.21%
			2550	2.067	50.356	2.092	52.573	-1.20%	-4.22%
			2560	2.076	50.339	2.106	52.560	-1.42%	-4.23%
			2600	2.115	50.273	2.163	52.509	-2.22%	-4.26%
			2650	2.164	50.200	2.234	52.445	-3.13%	-4.28%
			2680	2.194	50.139	2.277	52.407	-3.65%	-4.33%
			2700	2.213	50.098	2.305	52.382	-3.99%	-4.36%
07/18/2021	2450 Body	21.4	2400	1.975	52.530	1.902	52.767	3.84%	-0.45%
			2450	2.025	52.517	1.950	52.700	3.85%	-0.35%
			2480	2.054	52.486	1.993	52.662	3.06%	-0.33%
			2500	2.075	52.461	2.021	52.636	2.67%	-0.33%
			2510	2.085	52.453	2.035	52.623	2.46%	-0.32%
			2535	2.111	52.444	2.071	52.592	1.93%	-0.28%
			2550	2.126	52.439	2.092	52.573	1.63%	-0.25%
			2560	2.136	52.430	2.106	52.560	1.42%	-0.25%
			2600	2.179	52.374	2.163	52.509	0.74%	-0.26%
			2650	2.230	52.310	2.234	52.445	-0.18%	-0.26%
			2680	2.259	52.265	2.277	52.407	-0.79%	-0.27%
			2700	2.281	52.234	2.305	52.382	-1.04%	-0.28%
08/02/2021	2450 Body	20.1	2400	1.911	51.663	1.902	52.767	0.47%	-2.09%
			2450	1.958	51.597	1.950	52.700	0.41%	-2.09%
			2480	1.982	51.536	1.993	52.662	-0.55%	-2.14%
			2500	2.001	51.497	2.021	52.636	-0.99%	-2.16%
			2510	2.011	51.480	2.035	52.623	-1.18%	-2.17%

Table 9-4
Measured Body Tissue Properties (Cont.)

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
08/13/2021	2450 Body	21.1	2400	1.921	51.648	1.902	52.767	1.00%	-2.12%
			2450	1.969	51.592	1.950	52.700	0.97%	-2.10%
			2480	1.994	51.539	1.993	52.662	0.05%	-2.13%
			2500	2.015	51.501	2.021	52.636	-0.30%	-2.16%
			2510	2.025	51.489	2.035	52.623	-0.49%	-2.15%
07/23/2021	5200-5800 Body	22.4	5180	5.311	48.378	5.276	49.041	0.66%	-1.35%
			5190	5.327	48.362	5.288	49.028	0.74%	-1.36%
			5200	5.340	48.349	5.299	49.014	0.77%	-1.36%
			5210	5.353	48.341	5.311	49.001	0.79%	-1.35%
			5220	5.368	48.325	5.323	48.987	0.85%	-1.35%
			5240	5.395	48.270	5.346	48.960	0.92%	-1.41%
			5250	5.410	48.246	5.358	48.947	0.97%	-1.43%
			5260	5.425	48.225	5.369	48.933	1.04%	-1.45%
			5270	5.441	48.220	5.381	48.919	1.12%	-1.43%
			5280	5.456	48.202	5.393	48.906	1.17%	-1.44%
			5290	5.469	48.181	5.404	48.892	1.20%	-1.45%
			5300	5.481	48.157	5.416	48.879	1.20%	-1.48%
			5310	5.492	48.136	5.428	48.865	1.18%	-1.49%
			5320	5.507	48.120	5.439	48.851	1.25%	-1.50%
			5500	5.765	47.778	5.650	48.607	2.04%	-1.71%
			5510	5.780	47.748	5.661	48.594	2.10%	-1.74%
			5520	5.795	47.731	5.673	48.580	2.15%	-1.75%
			5530	5.810	47.710	5.685	48.566	2.20%	-1.76%
			5540	5.827	47.699	5.696	48.553	2.30%	-1.76%
			5550	5.841	47.679	5.708	48.539	2.33%	-1.77%
			5560	5.855	47.658	5.720	48.526	2.36%	-1.79%
			5580	5.886	47.623	5.743	48.499	2.49%	-1.81%
			5600	5.917	47.582	5.766	48.471	2.62%	-1.83%
			5610	5.930	47.561	5.778	48.458	2.63%	-1.85%
			5620	5.944	47.548	5.790	48.444	2.66%	-1.85%
			5640	5.977	47.513	5.813	48.417	2.82%	-1.87%
			5660	6.005	47.483	5.837	48.390	2.88%	-1.87%
			5670	6.019	47.459	5.848	48.376	2.92%	-1.90%
			5680	6.030	47.430	5.860	48.363	2.90%	-1.93%
			5690	6.042	47.403	5.872	48.349	2.90%	-1.96%
			5700	6.059	47.390	5.883	48.336	2.99%	-1.96%
			5710	6.077	47.382	5.895	48.322	3.09%	-1.95%
			5720	6.096	47.359	5.907	48.309	3.20%	-1.97%
			5745	6.131	47.331	5.936	48.275	3.29%	-1.96%
			5750	6.140	47.325	5.942	48.268	3.33%	-1.95%
			5755	6.150	47.317	5.947	48.261	3.41%	-1.96%
			5765	6.165	47.289	5.959	48.248	3.46%	-1.99%
			5775	6.178	47.259	5.971	48.234	3.47%	-2.02%
			5785	6.190	47.245	5.982	48.220	3.48%	-2.02%
			5795	6.204	47.228	5.994	48.207	3.50%	-2.03%
			5800	6.211	47.222	6.000	48.200	3.52%	-2.03%
			5805	6.220	47.216	6.006	48.193	3.56%	-2.03%
			5825	6.249	47.172	6.029	48.166	3.65%	-2.06%

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.

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 D.

Table 9-5
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)	$Deviation_{1g}$ (%)
AM10	850	HEAD	07/23/2021	22.7	20.5	0.200	1010	7639	2.050	9.840	10.250	4.17%
AM10	850	HEAD	07/25/2021	19.5	19.4	0.200	1010	7639	2.070	9.840	10.350	5.18%
AM10	850	HEAD	07/27/2021	23.7	21.4	0.200	1010	7639	2.090	9.840	10.450	6.20%
AM5	1750	HEAD	06/22/2021	22.5	21.1	0.100	1083	3949	3.820	36.100	38.200	5.82%
AM4b	1750	HEAD	07/20/2021	23.3	21.4	0.100	1083	7640	3.800	36.100	38.000	5.26%
AM4a	1900	HEAD	06/22/2021	22.9	21.6	0.100	5d181	7427	4.280	40.100	42.800	6.73%
AM10	1900	HEAD	07/21/2021	23.2	22.9	0.100	5d181	7639	4.010	40.100	40.100	0.00%
AM1	2450	HEAD	06/28/2021	21.1	21.3	0.100	750	3837	5.110	53.100	51.100	-3.77%
AM8	2450	HEAD	08/09/2021	22.7	22.0	0.100	750	7558	5.130	53.100	51.300	-3.39%
AM8	2450	HEAD	08/15/2021	21.4	20.4	0.100	750	7558	5.420	53.100	54.200	2.07%
AM1	2600	HEAD	06/28/2021	21.1	21.3	0.100	1042	3837	5.970	57.700	59.700	3.47%
AM8	5250	HEAD	08/09/2021	23.5	21.8	0.050	1123	7558	3.880	82.200	77.600	-5.60%
AM8	5600	HEAD	08/09/2021	23.5	21.8	0.050	1123	7558	4.110	84.500	82.200	-2.72%
AM8	5750	HEAD	08/09/2021	23.5	21.8	0.050	1123	7558	3.820	81.300	76.400	-6.03%

Table 9-6
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)	$Deviation_{10g}$ (%)
AM10	850	BODY	07/29/2021	20.8	20.5	0.200	1010	7639	1.380	6.560	6.900	5.18%
AM10	835	BODY	08/09/2021	22.2	20.3	0.200	4d040	7639	1.230	6.240	6.150	-1.44%
AM6	835	BODY	08/11/2021	22.0	20.5	0.200	4d040	7416	1.310	6.240	6.550	4.97%
AM10	1750	BODY	06/24/2021	22.2	21.1	0.100	1083	7639	1.890	19.700	18.900	-4.06%
AM7	1750	BODY	07/08/2021	20.8	20.5	0.100	1083	7420	2.000	19.700	20.000	1.52%
AM4b	1900	BODY	06/28/2021	22.7	21.4	0.100	5d030	7640	2.150	21.100	21.500	1.90%
AM7	1900	BODY	07/22/2021	22.5	21.7	0.100	5d030	7420	1.950	21.100	19.500	-7.58%
AM2	2450	BODY	06/28/2021	21.1	20.7	0.100	750	7532	2.330	24.100	23.300	-3.32%
AM8	2450	BODY	07/18/2021	22.7	22.5	0.100	750	7558	2.360	24.100	23.600	-2.07%
AM7	2450	BODY	08/02/2021	21.4	19.8	0.100	750	7420	2.290	24.100	22.900	-4.98%
AM2	2450	BODY	08/13/2021	22.3	21.3	0.100	750	7532	2.260	24.100	22.600	-6.22%
AM2	2600	BODY	06/28/2021	21.1	20.7	0.100	1042	7532	2.680	24.900	26.800	7.63%
AM8	2600	BODY	07/18/2021	22.7	22.5	0.100	1042	7558	2.570	24.900	25.700	3.21%
AM9	5250	BODY	07/23/2021	21.5	20.4	0.050	1123	7638	1.070	20.300	21.400	5.42%
AM9	5600	BODY	07/23/2021	21.5	20.4	0.050	1123	7638	1.130	21.200	22.600	6.60%
AM9	5750	BODY	07/23/2021	21.5	20.4	0.050	1123	7638	1.080	20.100	21.600	7.46%

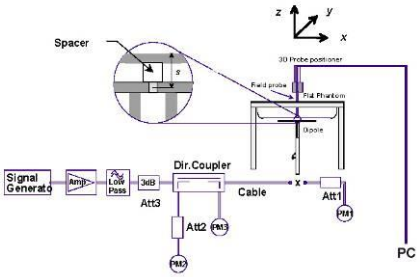

Figure 9-1
System Verification Setup Diagram

Figure 9-2
System Verification Setup Photo

REV 21.4 M
09/11/2019

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]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.15	front	10 mm	Aluminum	Sport	JM7609M9LK	1:1	0.000	1.219	0.000	A1
826.40	4132	UMTS 850	RMC	25.00	24.14	0.14	front	10 mm	Aluminum	Metal Links	JM7609M9LK	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.10	front	10 mm	Aluminum	Metal Loop	JM7609M9LK	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.13	front	10 mm	Stainless Steel	Sport	RX9PM2TLQX	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.10	front	10 mm	Stainless Steel	Metal Links	RX9PM2TLQX	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.20	front	10 mm	Stainless Steel	Metal Loop	RX9PM2TLQX	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.10	front	10 mm	Titanium	Sport	D4RCJK7FHC	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.15	front	10 mm	Titanium	Metal Links	D4RCJK7FHC	1:1	0.000	1.219	0.000	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.19	front	10 mm	Titanium	Metal Loop	D4RCJK7FHC	1:1	0.000	1.219	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]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.03	front	10 mm	Aluminum	Sport	P9XFGY9GCR	1:1	0.127	1.245	0.158	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.01	front	10 mm	Aluminum	Metal Links	P9XFGY9GCR	1:1	0.178	1.245	0.222	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.02	front	10 mm	Aluminum	Metal Loop	P9XFGY9GCR	1:1	0.194	1.245	0.242	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.06	front	10 mm	Stainless Steel	Sport	DL02HXH75L	1:1	0.146	1.245	0.182	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	-0.02	front	10 mm	Stainless Steel	Metal Links	DL02HXH75L	1:1	0.221	1.245	0.275	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.02	front	10 mm	Stainless Steel	Metal Loop	DL02HXH75L	1:1	0.276	1.245	0.344	A2
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.03	front	10 mm	Titanium	Sport	6GX146L4DR2	1:1	0.144	1.245	0.179	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.02	front	10 mm	Titanium	Metal Links	6GX146L4DR2	1:1	0.207	1.245	0.258	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	-0.04	front	10 mm	Titanium	Metal Loop	6GX146L4DR2	1:1	0.264	1.245	0.329	
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 10-3
UMTS 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.13	front	10 mm	Aluminum	Sport	CF2RTXK3YK	1:1	0.161	1.236	0.199	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.07	front	10 mm	Aluminum	Metal Links	CF2RTXK3YK	1:1	0.298	1.236	0.368	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.04	front	10 mm	Aluminum	Metal Loop	CF2RTXK3YK	1:1	0.351	1.236	0.434	A3
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.10	front	10 mm	Stainless Steel	Sport	DJYF2493XX	1:1	0.174	1.236	0.215	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.03	front	10 mm	Stainless Steel	Metal Links	DJYF2493XX	1:1	0.295	1.236	0.365	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.09	front	10 mm	Stainless Steel	Metal Loop	DJYF2493XX	1:1	0.328	1.236	0.405	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.03	front	10 mm	Titanium	Sport	D4RCJK7FHC	1:1	0.214	1.236	0.265	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.03	front	10 mm	Titanium	Metal Links	D4RCJK7FHC	1:1	0.325	1.236	0.402	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.03	front	10 mm	Titanium	Metal Loop	D4RCJK7FHC	1:1	0.330	1.236	0.408	
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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.10	0	front	10 mm	Aluminum	QPSK	1	25	JR496N6HNG	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.12	1	front	10 mm	Aluminum	QPSK	25	25	JR496N6HNG	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	-0.10	0	front	10 mm	Aluminum	QPSK	1	25	JR496N6HNG	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	-0.12	1	front	10 mm	Aluminum	QPSK	25	25	JR496N6HNG	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	-0.19	0	front	10 mm	Aluminum	QPSK	1	25	JR496N6HNG	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	-0.20	1	front	10 mm	Aluminum	QPSK	25	25	JR496N6HNG	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.10	0	front	10 mm	Stainless Steel	QPSK	1	25	RX9PM2TLQX	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.15	1	front	10 mm	Stainless Steel	QPSK	25	25	RX9PM2TLQX	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	0.11	0	front	10 mm	Stainless Steel	QPSK	1	25	RX9PM2TLQX	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	-0.15	1	front	10 mm	Stainless Steel	QPSK	25	25	RX9PM2TLQX	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	-0.13	0	front	10 mm	Stainless Steel	QPSK	1	25	RX9PM2TLQX	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	0.10	1	front	10 mm	Stainless Steel	QPSK	25	25	RX9PM2TLQX	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.15	0	front	10 mm	Titanium	QPSK	1	25	YW4YJ2HTX4	1:1	0.000	1.256	0.000	A4
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.10	1	front	10 mm	Titanium	QPSK	25	25	YW4YJ2HTX4	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	0.17	0	front	10 mm	Titanium	QPSK	1	25	YW4YJ2HTX4	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	0.10	1	front	10 mm	Titanium	QPSK	25	25	YW4YJ2HTX4	1:1	0.000	1.216	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	0.20	0	front	10 mm	Titanium	QPSK	1	25	YW4YJ2HTX4	1:1	0.000	1.256	0.000	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	-0.10	1	front	10 mm	Titanium	QPSK	25	25	YW4YJ2HTX4	1:1	0.000	1.216	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 10-5
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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	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	25.50	24.20	0.12	0	front	10 mm	Aluminum	QPSK	1	49	JM7609M9LK	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	0.11	1	front	10 mm	Aluminum	QPSK	25	25	JM7609M9LK	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	0.13	0	front	10 mm	Aluminum	QPSK	1	49	JM7609M9LK	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	-0.20	1	front	10 mm	Aluminum	QPSK	25	25	JM7609M9LK	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	0.18	0	front	10 mm	Aluminum	QPSK	1	49	JM7609M9LK	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	-0.13	1	front	10 mm	Aluminum	QPSK	25	25	JM7609M9LK	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.50	24.20	-0.10	0	front	10 mm	Stainless Steel	QPSK	1	49	RH7G4KV43X	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	0.12	1	front	10 mm	Stainless Steel	QPSK	25	25	RH7G4KV43X	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	-0.10	0	front	10 mm	Stainless Steel	QPSK	1	49	RH7G4KV43X	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	0.20	1	front	10 mm	Stainless Steel	QPSK	25	25	RH7G4KV43X	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	-0.13	0	front	10 mm	Stainless Steel	QPSK	1	49	RH7G4KV43X	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	0.20	1	front	10 mm	Stainless Steel	QPSK	25	25	RH7G4KV43X	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.50	24.20	0.20	0	front	10 mm	Titanium	QPSK	1	49	GX146L4DR2	1:1	0.001	1.349	0.001	A5
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	0.15	1	front	10 mm	Titanium	QPSK	25	25	GX146L4DR2	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	0.19	0	front	10 mm	Titanium	QPSK	1	49	GX146L4DR2	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	0.20	1	front	10 mm	Titanium	QPSK	25	25	GX146L4DR2	1:1	0.000	1.303	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	0.12	0	front	10 mm	Titanium	QPSK	1	49	GX146L4DR2	1:1	0.000	1.349	0.000	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	0.15	1	front	10 mm	Titanium	QPSK	25	25	GX146L4DR2	1:1	0.000	1.303	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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	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	24.50	23.27	0.02	0	front	10 mm	Aluminum	QPSK	1	99	JR496N6HNG	1:1	0.147	1.327	0.195	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	0.03	1	front	10 mm	Aluminum	QPSK	50	0	JR496N6HNG	1:1	0.115	1.233	0.142	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	-0.03	0	front	10 mm	Aluminum	QPSK	1	99	JR496N6HNG	1:1	0.213	1.327	0.283	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	0.03	1	front	10 mm	Aluminum	QPSK	50	0	JR496N6HNG	1:1	0.182	1.233	0.224	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	-0.02	0	front	10 mm	Aluminum	QPSK	1	99	JR496N6HNG	1:1	0.243	1.327	0.322	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	-0.01	1	front	10 mm	Aluminum	QPSK	50	0	JR496N6HNG	1:1	0.200	1.233	0.247	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.50	23.27	0.02	0	front	10 mm	Stainless Steel	QPSK	1	99	DL02HXH75L	1:1	0.121	1.327	0.161	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	0.03	1	front	10 mm	Stainless Steel	QPSK	50	0	DL02HXH75L	1:1	0.102	1.233	0.126	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	0.04	0	front	10 mm	Stainless Steel	QPSK	1	99	DL02HXH75L	1:1	0.230	1.327	0.305	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	-0.02	1	front	10 mm	Stainless Steel	QPSK	50	0	DL02HXH75L	1:1	0.199	1.233	0.245	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	-0.08	0	front	10 mm	Stainless Steel	QPSK	1	99	DL02HXH75L	1:1	0.244	1.327	0.324	A6
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	0.04	1	front	10 mm	Stainless Steel	QPSK	50	0	DL02HXH75L	1:1	0.210	1.233	0.259	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.50	23.27	-0.03	0	front	10 mm	Titanium	QPSK	1	99	D4RCJK7FHC	1:1	0.126	1.327	0.167	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	-0.05	1	front	10 mm	Titanium	QPSK	50	0	D4RCJK7FHC	1:1	0.110	1.233	0.136	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	-0.03	0	front	10 mm	Titanium	QPSK	1	99	D4RCJK7FHC	1:1	0.199	1.327	0.264	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	0.04	1	front	10 mm	Titanium	QPSK	50	0	D4RCJK7FHC	1:1	0.167	1.233	0.206	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	0.01	0	front	10 mm	Titanium	QPSK	1	99	D4RCJK7FHC	1:1	0.223	1.327	0.296	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	0.04	1	front	10 mm	Titanium	QPSK	50	0	D4RCJK7FHC	1:1	0.194	1.233	0.239	
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 10-7
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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	-0.02	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1	0.253	1.294	0.327	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	-0.05	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1	0.175	1.216	0.213	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	0.04	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1	0.296	1.294	0.383	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	-0.01	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1	0.218	1.216	0.265	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	0.00	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1	0.395	1.294	0.511	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	0.04	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1	0.281	1.216	0.342	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	-0.03	0	front	10 mm	Stainless Steel	QPSK	1	50	CYV16CW9PD	1:1	0.260	1.294	0.336	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	-0.03	1	front	10 mm	Stainless Steel	QPSK	50	50	CYV16CW9PD	1:1	0.189	1.216	0.230	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	0.02	0	front	10 mm	Stainless Steel	QPSK	1	50	CYV16CW9PD	1:1	0.419	1.294	0.542	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	0.04	1	front	10 mm	Stainless Steel	QPSK	50	50	CYV16CW9PD	1:1	0.312	1.216	0.379	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.27	0.01	0	front	10 mm	Stainless Steel	QPSK	1	50	CYV16CW9PD	1:1	0.438	1.327	0.581	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	0.08	0	front	10 mm	Stainless Steel	QPSK	1	50	CYV16CW9PD	1:1	0.531	1.294	0.687	A7
1905.00	26590	High	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.30	-0.01	0	front	10 mm	Stainless Steel	QPSK	1	50	CYV16CW9PD	1:1	0.481	1.318	0.634	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	0.04	1	front	10 mm	Stainless Steel	QPSK	50	50	CYV16CW9PD	1:1	0.322	1.216	0.392	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	-0.05	0	front	10 mm	Titanium	QPSK	1	50	JVP9M54053	1:1	0.265	1.294	0.343	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	-0.09	1	front	10 mm	Titanium	QPSK	50	50	JVP9M54053	1:1	0.187	1.216	0.227	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	0.02	0	front	10 mm	Titanium	QPSK	1	50	JVP9M54053	1:1	0.345	1.294	0.446	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	0.01	1	front	10 mm	Titanium	QPSK	50	50	JVP9M54053	1:1	0.261	1.216	0.317	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	-0.01	0	front	10 mm	Titanium	QPSK	1	50	JVP9M54053	1:1	0.445	1.294	0.576	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	-0.03	1	front	10 mm	Titanium	QPSK	50	50	JVP9M54053	1:1	0.344	1.216	0.418	
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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	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	23.50	22.70	0.06	0	front	10 mm	Aluminum	QPSK	1	99	YH796D9TMX	1:1	0.535	1.202	0.643	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	-0.05	1	front	10 mm	Aluminum	QPSK	50	50	YH796D9TMX	1:1	0.439	1.216	0.534	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	-0.05	0	front	10 mm	Aluminum	QPSK	1	99	YH796D9TMX	1:1	0.401	1.202	0.482	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	-0.02	1	front	10 mm	Aluminum	QPSK	50	50	YH796D9TMX	1:1	0.314	1.216	0.382	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	-0.05	0	front	10 mm	Aluminum	QPSK	1	99	YH796D9TMX	1:1	0.402	1.202	0.483	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	-0.05	1	front	10 mm	Aluminum	QPSK	50	50	YH796D9TMX	1:1	0.313	1.216	0.381	
2560.00	21350	High	LTE Band 7	20	Sport	23.50	22.70	0.09	0	front	10 mm	Stainless Steel	QPSK	1	99	RH7G4KV43X	1:1	0.468	1.202	0.563	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	-0.03	1	front	10 mm	Stainless Steel	QPSK	50	50	RH7G4KV43X	1:1	0.386	1.216	0.469	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	-0.13	0	front	10 mm	Stainless Steel	QPSK	1	99	RH7G4KV43X	1:1	0.425	1.202	0.511	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	-0.02	1	front	10 mm	Stainless Steel	QPSK	50	50	RH7G4KV43X	1:1	0.321	1.216	0.390	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	-0.02	0	front	10 mm	Stainless Steel	QPSK	1	99	RH7G4KV43X	1:1	0.399	1.202	0.480	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	-0.04	1	front	10 mm	Stainless Steel	QPSK	50	50	RH7G4KV43X	1:1	0.306	1.216	0.372	
2510.00	20850	Low	LTE Band 7	20	Sport	23.50	22.34	-0.03	0	front	10 mm	Titanium	QPSK	1	99	YW4YJ2HTX4	1:1	0.733	1.306	**0.957**	A8
2535.00	21100	Mid	LTE Band 7	20	Sport	23.50	22.39	-0.04	0	front	10 mm	Titanium	QPSK	1	99	YW4YJ2HTX4	1:1	0.629	1.291	0.812	
2560.00	21350	High	LTE Band 7	20	Sport	23.50	22.70	-0.02	0	front	10 mm	Titanium	QPSK	1	99	YW4YJ2HTX4	1:1	0.568	1.202	0.683	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	0.00	1	front	10 mm	Titanium	QPSK	50	50	YW4YJ2HTX4	1:1	0.437	1.216	0.531	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.63	-0.05	1	front	10 mm	Titanium	QPSK	100	0	YW4YJ2HTX4	1:1	0.476	1.222	0.582	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	-0.09	0	front	10 mm	Titanium	QPSK	1	99	YW4YJ2HTX4	1:1	0.341	1.202	0.410	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	-0.01	1	front	10 mm	Titanium	QPSK	50	50	YW4YJ2HTX4	1:1	0.267	1.216	0.325	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	-0.05	0	front	10 mm	Titanium	QPSK	1	99	YW4YJ2HTX4	1:1	0.448	1.202	0.538	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	-0.15	1	front	10 mm	Titanium	QPSK	50	50	YW4YJ2HTX4	1:1	0.341	1.216	0.415	
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 10-9
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]	Side	Test Position	Housing Type	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	-0.03	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1.58	0.299	1.202	0.359	
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	-0.06	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1.58	0.229	1.230	0.282	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	-0.03	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1.58	0.225	1.202	0.270	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	-0.07	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1.58	0.178	1.230	0.219	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	0.06	0	front	10 mm	Aluminum	QPSK	1	50	YLW92RY7D9	1:1.58	0.275	1.202	0.331	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	0.03	1	front	10 mm	Aluminum	QPSK	50	50	YLW92RY7D9	1:1.58	0.218	1.230	0.268	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	-0.09	0	front	10 mm	Stainless Steel	QPSK	1	50	H34RF9VGT7	1:1.58	0.310	1.202	0.373	
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	-0.10	1	front	10 mm	Stainless Steel	QPSK	50	50	H34RF9VGT7	1:1.58	0.241	1.230	0.296	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	0.00	0	front	10 mm	Stainless Steel	QPSK	1	50	H34RF9VGT7	1:1.58	0.230	1.202	0.276	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	-0.08	1	front	10 mm	Stainless Steel	QPSK	50	50	H34RF9VGT7	1:1.58	0.179	1.230	0.220	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	0.00	0	front	10 mm	Stainless Steel	QPSK	1	50	H34RF9VGT7	1:1.58	0.239	1.202	0.287	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	-0.07	1	front	10 mm	Stainless Steel	QPSK	50	50	H34RF9VGT7	1:1.58	0.187	1.230	0.230	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	0.03	0	front	10 mm	Titanium	QPSK	1	50	GX146L4DR2	1:1.58	0.336	1.202	0.404	A9
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	-0.03	1	front	10 mm	Titanium	QPSK	50	50	GX146L4DR2	1:1.58	0.237	1.230	0.292	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	-0.04	0	front	10 mm	Titanium	QPSK	1	50	GX146L4DR2	1:1.58	0.250	1.202	0.301	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	-0.08	1	front	10 mm	Titanium	QPSK	50	50	GX146L4DR2	1:1.58	0.188	1.230	0.231	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	-0.05	0	front	10 mm	Titanium	QPSK	1	50	GX146L4DR2	1:1.58	0.281	1.202	0.338	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	-0.04	1	front	10 mm	Titanium	QPSK	50	50	GX146L4DR2	1:1.58	0.217	1.230	0.267	
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]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	19.00	17.95	-0.03	front	10 mm	Aluminum	Sport	CF2RTXK3YK	1	99.7	0.275	1.274	1.003	0.351	
2462	11	802.11b	DSSS	22	19.00	17.95	-0.02	front	10 mm	Aluminum	Metal Links	CF2RTXK3YK	1	99.7	0.178	1.274	1.003	0.227	
2462	11	802.11b	DSSS	22	19.00	17.95	0.01	front	10 mm	Aluminum	Metal Loop	CF2RTXK3YK	1	99.7	0.250	1.274	1.003	0.319	
2462	11	802.11b	DSSS	22	19.00	17.95	0.15	front	10 mm	Stainless Steel	Sport	DJYF2493XX	1	99.7	0.265	1.274	1.003	0.339	
2462	11	802.11b	DSSS	22	19.00	17.95	0.12	front	10 mm	Stainless Steel	Metal Links	DJYF2493XX	1	99.7	0.184	1.274	1.003	0.235	
2462	11	802.11b	DSSS	22	19.00	17.95	-0.04	front	10 mm	Stainless Steel	Metal Loop	DJYF2493XX	1	99.7	0.210	1.274	1.003	0.268	
2462	11	802.11b	DSSS	22	19.00	17.95	-0.03	front	10 mm	Titanium	Sport	JVP9M54053	1	99.7	0.280	1.274	1.003	**0.358**	A10
2462	11	802.11b	DSSS	22	19.00	17.95	0.04	front	10 mm	Titanium	Metal Links	JVP9M54053	1	99.7	0.195	1.274	1.003	0.249	
2462	11	802.11b	DSSS	22	19.00	17.95	0.03	front	10 mm	Titanium	Metal Loop	JVP9M54053	1	99.7	0.175	1.274	1.003	0.224	
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 10-11
5 GHz WLAN Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	17.00	16.12	0.00	front	10 mm	Aluminum	Sport	YLW92RY7D9	6	97.5	0.079	1.225	1.026	0.099	
5300	60	802.11a	OFDM	20	17.00	16.12	0.20	front	10 mm	Aluminum	Metal Links	YLW92RY7D9	6	97.5	0.071	1.225	1.026	0.089	
5300	60	802.11a	OFDM	20	17.00	16.12	0.18	front	10 mm	Aluminum	Metal Loop	YLW92RY7D9	6	97.5	0.081	1.225	1.026	0.102	
5300	60	802.11a	OFDM	20	17.00	16.12	0.12	front	10 mm	Stainless Steel	Sport	CYV16CW9PD	6	97.5	0.062	1.225	1.026	0.078	
5300	60	802.11a	OFDM	20	17.00	16.12	0.14	front	10 mm	Stainless Steel	Metal Links	CYV16CW9PD	6	97.5	0.066	1.225	1.026	0.083	
5300	60	802.11a	OFDM	20	17.00	16.12	0.15	front	10 mm	Stainless Steel	Metal Loop	CYV16CW9PD	6	97.5	0.065	1.225	1.026	0.082	
5300	60	802.11a	OFDM	20	17.00	16.12	0.00	front	10 mm	Titanium	Sport	JVP9M54053	6	97.5	0.072	1.225	1.026	0.090	
5300	60	802.11a	OFDM	20	17.00	16.12	0.20	front	10 mm	Titanium	Metal Links	JVP9M54053	6	97.5	0.060	1.225	1.026	0.075	
5300	60	802.11a	OFDM	20	17.00	16.12	0.03	front	10 mm	Titanium	Metal Loop	JVP9M54053	6	97.5	0.061	1.225	1.026	0.077	
5600	120	802.11a	OFDM	20	17.00	15.97	-0.12	front	10 mm	Aluminum	Sport	JR496N6HNG	6	97.5	0.056	1.268	1.026	0.073	
5600	120	802.11a	OFDM	20	17.00	15.97	-0.13	front	10 mm	Aluminum	Metal Links	JR496N6HNG	6	97.5	0.054	1.268	1.026	0.070	
5600	120	802.11a	OFDM	20	17.00	15.97	0.18	front	10 mm	Aluminum	Metal Loop	JR496N6HNG	6	97.5	0.053	1.268	1.026	0.069	
5600	120	802.11a	OFDM	20	17.00	15.97	0.15	front	10 mm	Stainless Steel	Sport	H34RF9VGT7	6	97.5	0.077	1.268	1.026	0.100	
5600	120	802.11a	OFDM	20	17.00	15.97	-0.18	front	10 mm	Stainless Steel	Metal Links	H34RF9VGT7	6	97.5	0.078	1.268	1.026	0.101	
5600	120	802.11a	OFDM	20	17.00	15.97	0.13	front	10 mm	Stainless Steel	Metal Loop	H34RF9VGT7	6	97.5	0.078	1.268	1.026	0.101	
5600	120	802.11a	OFDM	20	17.00	15.97	0.16	front	10 mm	Titanium	Sport	JVP9M54053	6	97.5	0.081	1.268	1.026	0.105	
5600	120	802.11a	OFDM	20	17.00	15.97	0.14	front	10 mm	Titanium	Metal Links	JVP9M54053	6	97.5	0.073	1.268	1.026	0.095	
5600	120	802.11a	OFDM	20	17.00	15.97	0.11	front	10 mm	Titanium	Metal Loop	JVP9M54053	6	97.5	0.041	1.268	1.026	0.053	
5785	157	802.11a	OFDM	20	17.00	16.07	0.14	front	10 mm	Aluminum	Sport	YLW92RY7D9	6	97.5	0.081	1.239	1.026	0.103	
5785	157	802.11a	OFDM	20	17.00	16.07	0.12	front	10 mm	Aluminum	Metal Links	YLW92RY7D9	6	97.5	0.092	1.239	1.026	0.117	
5785	157	802.11a	OFDM	20	17.00	16.07	0.11	front	10 mm	Aluminum	Metal Loop	YLW92RY7D9	6	97.5	0.080	1.239	1.026	0.102	
5785	157	802.11a	OFDM	20	17.00	16.07	0.18	front	10 mm	Stainless Steel	Sport	CYV16CW9PD	6	97.5	0.073	1.239	1.026	0.093	
5785	157	802.11a	OFDM	20	17.00	16.07	0.16	front	10 mm	Stainless Steel	Metal Links	CYV16CW9PD	6	97.5	0.082	1.239	1.026	0.104	
5785	157	802.11a	OFDM	20	17.00	16.07	0.04	front	10 mm	Stainless Steel	Metal Loop	CYV16CW9PD	6	97.5	0.103	1.239	1.026	**0.131**	A11
5785	157	802.11a	OFDM	20	17.00	16.07	0.15	front	10 mm	Titanium	Sport	R2122T7H96	6	97.5	0.047	1.239	1.026	0.060	
5785	157	802.11a	OFDM	20	17.00	16.07	0.20	front	10 mm	Titanium	Metal Links	R2122T7H96	6	97.5	0.056	1.239	1.026	0.071	
5785	157	802.11a	OFDM	20	17.00	16.07	0.15	front	10 mm	Titanium	Metal Loop	R2122T7H96	6	97.5	0.051	1.239	1.026	0.065	
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]	Side	Test Position	Housing Type	Wristband Type	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.09	front	10 mm	Aluminum	Sport	RWWQGF44M4	1	100	0.079	1.194	1.000	0.094	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.05	front	10 mm	Aluminum	Metal Links	RWWQGF44M4	1	100	0.049	1.194	1.000	0.059	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.10	front	10 mm	Aluminum	Metal Loop	RWWQGF44M4	1	100	0.061	1.194	1.000	0.073	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.16	front	10 mm	Stainless Steel	Sport	DJYF2493XX	1	100	0.055	1.194	1.000	0.066	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.18	front	10 mm	Stainless Steel	Metal Links	DJYF2493XX	1	100	0.047	1.194	1.000	0.056	
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.07	front	10 mm	Stainless Steel	Metal Loop	DJYF2493XX	1	100	0.064	1.194	1.000	0.076	
2441.00	39	Bluetooth	FHSS	13.00	12.23	-0.08	front	10 mm	Titanium	Sport	YW4YJ2HTX4	1	100	0.082	1.194	1.000	**0.098**	A12
2441.00	39	Bluetooth	FHSS	13.00	12.23	0.06	front	10 mm	Titanium	Metal Links	YW4YJ2HTX4	1	100	0.056	1.194	1.000	0.067	
2441.00	39	Bluetooth	FHSS	13.00	12.23	-0.01	front	10 mm	Titanium	Metal Loop	YW4YJ2HTX4	1	100	0.052	1.194	1.000	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram											

10.2 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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.													(W/kg)	(W/kg)	
826.40	4132	UMTS 850	RMC	25.00	24.14	-0.08	0 mm	Aluminum	Sport	YLW92RY7D9	1:1	back	1.219	0.065	0.079	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.08	0 mm	Aluminum	Metal Links	YLW92RY7D9	1:1	back	1.219	0.104	0.127	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.05	0 mm	Aluminum	Metal Loop	YLW92RY7D9	1:1	back	1.219	0.093	0.113	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.15	0 mm	Stainless Steel	Sport	DL02HXH75L	1:1	back	1.219	0.060	0.073	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.19	0 mm	Stainless Steel	Metal Links	DL02HXH75L	1:1	back	1.219	0.121	0.147	
826.40	4132	UMTS 850	RMC	25.00	24.14	0.19	0 mm	Stainless Steel	Metal Loop	DL02HXH75L	1:1	back	1.219	0.089	0.108	
826.40	4132	UMTS 850	RMC	25.00	24.14	-0.20	0 mm	Titanium	Sport	PT2MW4N699	1:1	back	1.219	0.058	0.071	
826.40	4132	UMTS 850	RMC	25.00	24.14	-0.05	0 mm	Titanium	Metal Links	PT2MW4N699	1:1	back	1.219	0.123	0.150	A13
826.40	4132	UMTS 850	RMC	25.00	24.14	0.18	0 mm	Titanium	Metal Loop	PT2MW4N699	1:1	back	1.219	0.074	0.090	
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.													(W/kg)	(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.12	0 mm	Aluminum	Sport	YLW92RY7D9	1:1	back	1.245	0.026	0.032	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.08	0 mm	Aluminum	Metal Links	YLW92RY7D9	1:1	back	1.245	0.034	0.042	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	-0.16	0 mm	Aluminum	Metal Loop	YLW92RY7D9	1:1	back	1.245	0.033	0.041	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.04	0 mm	Stainless Steel	Sport	RX9PM2TLQX	1:1	back	1.245	0.022	0.027	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.18	0 mm	Stainless Steel	Metal Links	RX9PM2TLQX	1:1	back	1.245	0.042	0.052	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.00	0 mm	Stainless Steel	Metal Loop	RX9PM2TLQX	1:1	back	1.245	0.030	0.037	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	-0.01	0 mm	Titanium	Sport	6GX146L4DR2	1:1	back	1.245	0.029	0.036	
1732.40	1412	UMTS 1750	RMC	24.00	23.05	0.07	0 mm	Titanium	Metal Links	6GX146L4DR2	1:1	back	1.245	0.042	0.052	A14
1732.40	1412	UMTS 1750	RMC	24.00	23.05	-0.08	0 mm	Titanium	Metal Loop	6GX146L4DR2	1:1	back	1.245	0.021	0.026	
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 10-15
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.													(W/kg)	(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.20	0 mm	Aluminum	Sport	RWWQGF44M4	1:1	back	1.236	0.035	0.043	A15
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.09	0 mm	Aluminum	Metal Links	RWWQGF44M4	1:1	back	1.236	0.029	0.036	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.12	0 mm	Aluminum	Metal Loop	RWWQGF44M4	1:1	back	1.236	0.030	0.037	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.20	0 mm	Stainless Steel	Sport	DL02HXH75L	1:1	back	1.236	0.032	0.040	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.04	0 mm	Stainless Steel	Metal Links	DL02HXH75L	1:1	back	1.236	0.018	0.022	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.20	0 mm	Stainless Steel	Metal Loop	DL02HXH75L	1:1	back	1.236	0.010	0.012	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.05	0 mm	Titanium	Sport	V142269H3Q	1:1	back	1.236	0.017	0.021	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	-0.12	0 mm	Titanium	Metal Links	V142269H3Q	1:1	back	1.236	0.032	0.040	
1880.00	9400	UMTS 1900	RMC	24.00	23.08	0.18	0 mm	Titanium	Metal Loop	V142269H3Q	1:1	back	1.236	0.024	0.030	
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.10	0	Aluminum	JM7609M9LK	QPSK	1	25	0 mm	back	1:1	1.256	0.056	0.070	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.20	1	Aluminum	JM7609M9LK	QPSK	25	25	0 mm	back	1:1	1.216	0.046	0.056	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	0.11	0	Aluminum	JM7609M9LK	QPSK	1	25	0 mm	back	1:1	1.256	0.085	0.107	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	0.14	1	Aluminum	JM7609M9LK	QPSK	25	25	0 mm	back	1:1	1.216	0.076	0.092	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	0.12	0	Aluminum	JM7609M9LK	QPSK	1	25	0 mm	back	1:1	1.256	0.067	0.084	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	0.16	1	Aluminum	JM7609M9LK	QPSK	25	25	0 mm	back	1:1	1.216	0.057	0.069	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.18	0	Stainless Steel	RH7G4KV43X	QPSK	1	25	0 mm	back	1:1	1.256	0.061	0.077	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.16	1	Stainless Steel	RH7G4KV43X	QPSK	25	25	0 mm	back	1:1	1.216	0.049	0.060	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	-0.19	0	Stainless Steel	RH7G4KV43X	QPSK	1	25	0 mm	back	1:1	1.256	0.097	0.122	A16
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	-0.16	1	Stainless Steel	RH7G4KV43X	QPSK	25	25	0 mm	back	1:1	1.216	0.083	0.101	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	0.19	0	Stainless Steel	RH7G4KV43X	QPSK	1	25	0 mm	back	1:1	1.256	0.088	0.111	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	0.19	1	Stainless Steel	RH7G4KV43X	QPSK	25	25	0 mm	back	1:1	1.216	0.076	0.092	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	25.50	24.51	0.10	0	Titanium	GX146L4DR2	QPSK	1	25	0 mm	back	1:1	1.256	0.056	0.070	
819.00	26740	Low	LTE Band 26 (Cell)	10	Sport	24.50	23.65	0.12	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.216	0.047	0.057	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	25.50	24.51	0.16	0	Titanium	GX146L4DR2	QPSK	1	25	0 mm	back	1:1	1.256	0.083	0.104	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Links	24.50	23.65	0.17	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.216	0.071	0.086	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	25.50	24.51	-0.13	0	Titanium	GX146L4DR2	QPSK	1	25	0 mm	back	1:1	1.256	0.074	0.093	
819.00	26740	Low	LTE Band 26 (Cell)	10	Metal Loop	24.50	23.65	0.13	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.216	0.064	0.078	
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 10-17
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.50	24.20	-0.11	0	Aluminum	JR496N6HNG	QPSK	1	49	0 mm	back	1:1	1.349	0.059	0.080	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	-0.07	1	Aluminum	JR496N6HNG	QPSK	25	25	0 mm	back	1:1	1.303	0.047	0.061	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	-0.11	0	Aluminum	JR496N6HNG	QPSK	1	49	0 mm	back	1:1	1.349	0.110	0.148	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	-0.08	1	Aluminum	JR496N6HNG	QPSK	25	25	0 mm	back	1:1	1.303	0.092	0.120	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	0.00	0	Aluminum	JR496N6HNG	QPSK	1	49	0 mm	back	1:1	1.349	0.101	0.136	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	0.09	1	Aluminum	JR496N6HNG	QPSK	25	25	0 mm	back	1:1	1.303	0.088	0.115	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.50	24.20	-0.20	0	Stainless Steel	RX9PM2TLQX	QPSK	1	49	0 mm	back	1:1	1.349	0.074	0.100	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	-0.09	1	Stainless Steel	RX9PM2TLQX	QPSK	25	25	0 mm	back	1:1	1.303	0.061	0.079	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	-0.01	0	Stainless Steel	RX9PM2TLQX	QPSK	1	49	0 mm	back	1:1	1.349	0.140	**0.189**	A17
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	-0.04	1	Stainless Steel	RX9PM2TLQX	QPSK	25	25	0 mm	back	1:1	1.303	0.113	0.147	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	-0.06	0	Stainless Steel	RX9PM2TLQX	QPSK	1	49	0 mm	back	1:1	1.349	0.099	0.134	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	-0.05	1	Stainless Steel	RX9PM2TLQX	QPSK	25	25	0 mm	back	1:1	1.303	0.078	0.102	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	25.50	24.20	-0.14	0	Titanium	GX146L4DR2	QPSK	1	49	0 mm	back	1:1	1.349	0.079	0.107	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Sport	24.50	23.35	-0.11	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.303	0.062	0.081	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	25.50	24.20	-0.09	0	Titanium	GX146L4DR2	QPSK	1	49	0 mm	back	1:1	1.349	0.108	0.146	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Links	24.50	23.35	-0.15	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.303	0.084	0.109	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	25.50	24.20	0.03	0	Titanium	GX146L4DR2	QPSK	1	49	0 mm	back	1:1	1.349	0.090	0.121	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Metal Loop	24.50	23.35	0.03	1	Titanium	GX146L4DR2	QPSK	25	25	0 mm	back	1:1	1.303	0.072	0.094	
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.50	23.27	-0.04	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.327	0.028	0.037	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	-0.18	1	Aluminum	P9XFGY9GCR	QPSK	50	0	0 mm	back	1:1	1.233	0.018	0.022	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	-0.10	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.327	0.046	0.061	A18
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	0.12	1	Aluminum	P9XFGY9GCR	QPSK	50	0	0 mm	back	1:1	1.233	0.036	0.044	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	0.15	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.327	0.020	0.027	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	-0.14	1	Aluminum	P9XFGY9GCR	QPSK	50	0	0 mm	back	1:1	1.233	0.012	0.015	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.50	23.27	-0.15	0	Stainless Steel	CYV16CW9PD	QPSK	1	99	0 mm	back	1:1	1.327	0.021	0.028	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	-0.14	1	Stainless Steel	CYV16CW9PD	QPSK	50	0	0 mm	back	1:1	1.233	0.013	0.016	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	0.06	0	Stainless Steel	CYV16CW9PD	QPSK	1	99	0 mm	back	1:1	1.327	0.029	0.038	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	0.10	1	Stainless Steel	CYV16CW9PD	QPSK	50	0	0 mm	back	1:1	1.233	0.022	0.027	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	0.16	0	Stainless Steel	CYV16CW9PD	QPSK	1	99	0 mm	back	1:1	1.327	0.011	0.015	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	0.15	1	Stainless Steel	CYV16CW9PD	QPSK	50	0	0 mm	back	1:1	1.233	0.006	0.007	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	24.50	23.27	0.19	0	Titanium	FH91YQL6QJ	QPSK	1	99	0 mm	back	1:1	1.327	0.022	0.029	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Sport	23.50	22.59	0.15	1	Titanium	FH91YQL6QJ	QPSK	50	0	0 mm	back	1:1	1.233	0.015	0.018	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	24.50	23.27	0.21	0	Titanium	FH91YQL6QJ	QPSK	1	99	0 mm	back	1:1	1.327	0.033	0.044	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Links	23.50	22.59	0.01	1	Titanium	FH91YQL6QJ	QPSK	50	0	0 mm	back	1:1	1.233	0.028	0.035	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	24.50	23.27	0.18	0	Titanium	FH91YQL6QJ	QPSK	1	99	0 mm	back	1:1	1.327	0.013	0.017	
1720.00	132072	Low	LTE Band 66 (AWS)	20	Metal Loop	23.50	22.59	0.10	1	Titanium	FH91YQL6QJ	QPSK	50	0	0 mm	back	1:1	1.233	0.010	0.012	
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 10-19
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	0.20	0	Aluminum	D9695D4CL4	QPSK	1	50	0 mm	back	1:1	1.294	0.040	0.052	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	-0.12	1	Aluminum	D9695D4CL4	QPSK	50	50	0 mm	back	1:1	1.216	0.026	0.032	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	-0.01	0	Aluminum	D9695D4CL4	QPSK	1	50	0 mm	back	1:1	1.294	0.025	0.032	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	0.15	1	Aluminum	D9695D4CL4	QPSK	50	50	0 mm	back	1:1	1.216	0.021	0.026	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	-0.20	0	Aluminum	D9695D4CL4	QPSK	1	50	0 mm	back	1:1	1.294	0.027	0.035	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	-0.17	1	Aluminum	D9695D4CL4	QPSK	50	50	0 mm	back	1:1	1.216	0.024	0.029	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	0.21	0	Stainless Steel	CYV16CW9PD	QPSK	1	50	0 mm	back	1:1	1.294	0.033	0.043	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	0.18	1	Stainless Steel	CYV16CW9PD	QPSK	50	50	0 mm	back	1:1	1.216	0.026	0.032	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	0.20	0	Stainless Steel	CYV16CW9PD	QPSK	1	50	0 mm	back	1:1	1.294	0.017	0.022	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	0.19	1	Stainless Steel	CYV16CW9PD	QPSK	50	50	0 mm	back	1:1	1.216	0.014	0.017	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	0.15	0	Stainless Steel	CYV16CW9PD	QPSK	1	50	0 mm	back	1:1	1.294	0.042	0.054	A19
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	0.10	1	Stainless Steel	CYV16CW9PD	QPSK	50	50	0 mm	back	1:1	1.216	0.035	0.043	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Sport	24.50	23.38	0.13	0	Titanium	GX146L4DR2	QPSK	1	50	0 mm	back	1:1	1.294	0.039	0.050	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Sport	23.50	22.65	0.13	1	Titanium	GX146L4DR2	QPSK	50	50	0 mm	back	1:1	1.216	0.031	0.038	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Links	24.50	23.38	0.10	0	Titanium	GX146L4DR2	QPSK	1	50	0 mm	back	1:1	1.294	0.017	0.022	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Links	23.50	22.65	0.16	1	Titanium	GX146L4DR2	QPSK	50	50	0 mm	back	1:1	1.216	0.014	0.017	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	Metal Loop	24.50	23.38	0.02	0	Titanium	GX146L4DR2	QPSK	1	50	0 mm	back	1:1	1.294	0.006	0.008	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Metal Loop	23.50	22.65	-0.20	1	Titanium	GX146L4DR2	QPSK	50	50	0 mm	back	1:1	1.216	0.006	0.007	
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
2560.00	21350	High	LTE Band 7	20	Sport	23.50	22.70	0.16	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.202	0.004	0.005	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	0.13	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1	1.216	0.003	0.004	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	-0.08	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.202	0.004	0.005	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	0.20	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1	1.216	0.001	0.001	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	0.06	0	Aluminum	P9XFGY9GCR	QPSK	1	99	0 mm	back	1:1	1.202	0.007	0.008	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	-0.13	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1	1.216	0.002	0.002	
2560.00	21350	High	LTE Band 7	20	Sport	23.50	22.70	0.12	0	Stainless Steel	RX9PM2TLQX	QPSK	1	99	0 mm	back	1:1	1.202	0.011	0.013	
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	0.21	1	Stainless Steel	RX9PM2TLQX	QPSK	50	50	0 mm	back	1:1	1.216	0.009	0.011	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	0.10	0	Stainless Steel	RX9PM2TLQX	QPSK	1	99	0 mm	back	1:1	1.202	0.005	0.006	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	0.03	1	Stainless Steel	RX9PM2TLQX	QPSK	50	50	0 mm	back	1:1	1.216	0.003	0.004	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	0.17	0	Stainless Steel	RX9PM2TLQX	QPSK	1	99	0 mm	back	1:1	1.202	0.003	0.004	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	0.21	1	Stainless Steel	RX9PM2TLQX	QPSK	50	50	0 mm	back	1:1	1.216	0.002	0.002	
2560.00	21350	High	LTE Band 7	20	Sport	23.50	22.70	0.20	0	Titanium	YW4YJ2HTX4	QPSK	1	99	0 mm	back	1:1	1.202	0.017	0.020	A20
2560.00	21350	High	LTE Band 7	20	Sport	22.50	21.65	0.20	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1	1.216	0.012	0.015	
2560.00	21350	High	LTE Band 7	20	Metal Links	23.50	22.70	-0.13	0	Titanium	YW4YJ2HTX4	QPSK	1	99	0 mm	back	1:1	1.202	0.006	0.007	
2560.00	21350	High	LTE Band 7	20	Metal Links	22.50	21.65	-0.15	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1	1.216	0.003	0.004	
2560.00	21350	High	LTE Band 7	20	Metal Loop	23.50	22.70	0.20	0	Titanium	YW4YJ2HTX4	QPSK	1	99	0 mm	back	1:1	1.202	0.003	0.004	
2560.00	21350	High	LTE Band 7	20	Metal Loop	22.50	21.65	-0.05	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1	1.216	0.001	0.001	
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 10-21
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	Scaling Factor	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																		(W/kg)	(W/kg)	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	0.12	0	Aluminum	P9XFGY9GCR	QPSK	1	50	0 mm	back	1:1.58	1.202	0.006	0.007	
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	0.20	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1.58	1.230	0.003	0.004	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	0.20	0	Aluminum	P9XFGY9GCR	QPSK	1	50	0 mm	back	1:1.58	1.202	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	0.15	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1.58	1.230	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	0.19	0	Aluminum	P9XFGY9GCR	QPSK	1	50	0 mm	back	1:1.58	1.202	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	0.20	1	Aluminum	P9XFGY9GCR	QPSK	50	50	0 mm	back	1:1.58	1.230	0.003	0.004	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	0.10	0	Stainless Steel	RH7G4KV43X	QPSK	1	50	0 mm	back	1:1.58	1.202	0.001	0.001	
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	0.21	1	Stainless Steel	RH7G4KV43X	QPSK	50	50	0 mm	back	1:1.58	1.230	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	-0.20	0	Stainless Steel	RH7G4KV43X	QPSK	1	50	0 mm	back	1:1.58	1.202	0.001	0.001	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	0.19	1	Stainless Steel	RH7G4KV43X	QPSK	50	50	0 mm	back	1:1.58	1.230	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	0.12	0	Stainless Steel	RH7G4KV43X	QPSK	1	50	0 mm	back	1:1.58	1.202	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	0.14	1	Stainless Steel	RH7G4KV43X	QPSK	50	50	0 mm	back	1:1.58	1.230	0.000	0.000	
2593.00	40620	Mid	LTE Band 41	20	Sport	23.5	22.70	-0.20	0	Titanium	YW4YJ2HTX4	QPSK	1	50	0 mm	back	1:1.58	1.202	0.006	0.007	
2593.00	40620	Mid	LTE Band 41	20	Sport	22.5	21.60	-0.12	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1.58	1.230	0.003	0.004	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	23.5	22.70	-0.18	0	Titanium	YW4YJ2HTX4	QPSK	1	50	0 mm	back	1:1.58	1.202	0.006	0.007	
2593.00	40620	Mid	LTE Band 41	20	Metal Links	22.5	21.60	0.10	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1.58	1.230	0.004	0.005	
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	23.5	22.70	-0.20	0	Titanium	YW4YJ2HTX4	QPSK	1	50	0 mm	back	1:1.58	1.202	0.007	0.008	A21
2593.00	40620	Mid	LTE Band 41	20	Metal Loop	22.5	21.60	0.10	1	Titanium	YW4YJ2HTX4	QPSK	50	50	0 mm	back	1:1.58	1.230	0.006	0.007	
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 (%)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)	(W/kg)	
2462	11	802.11b	DSSS	22	19.00	17.95	0.20	0 mm	Aluminum	Sport	JM7609M9LK	1	back	99.7	1.274	1.003	0.007	0.009	
2462	11	802.11b	DSSS	22	19.00	17.95	0.12	0 mm	Aluminum	Metal Links	JM7609M9LK	1	back	99.7	1.274	1.003	0.001	0.001	
2462	11	802.11b	DSSS	22	19.00	17.95	0.16	0 mm	Aluminum	Metal Loop	JM7609M9LK	1	back	99.7	1.274	1.003	0.001	0.001	
2462	11	802.11b	DSSS	22	19.00	17.95	-0.10	0 mm	Stainless Steel	Sport	DJYF2493XX	1	back	99.7	1.274	1.003	0.009	**0.012**	A22
2462	11	802.11b	DSSS	22	19.00	17.95	0.13	0 mm	Stainless Steel	Metal Links	DJYF2493XX	1	back	99.7	1.274	1.003	0.002	0.003	
2462	11	802.11b	DSSS	22	19.00	17.95	0.20	0 mm	Stainless Steel	Metal Loop	DJYF2493XX	1	back	99.7	1.274	1.003	0.002	0.003	
2462	11	802.11b	DSSS	22	19.00	17.95	0.21	0 mm	Titanium	Sport	YW4YJ2HTX4	1	back	99.7	1.274	1.003	0.005	0.006	
2462	11	802.11b	DSSS	22	19.00	17.95	0.06	0 mm	Titanium	Metal Links	YW4YJ2HTX4	1	back	99.7	1.274	1.003	0.005	0.006	
2462	11	802.11b	DSSS	22	19.00	17.95	0.13	0 mm	Titanium	Metal Loop	YW4YJ2HTX4	1	back	99.7	1.274	1.003	0.002	0.003	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Extremity
Spatial Peak	4.0 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 10 grams

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 (%)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)	(W/kg)	
5300	60	802.11a	OFDM	20	17.00	16.12	0.21	0 mm	Aluminum	Sport	P9XFGY9GCR	6	back	97.5	1.225	1.026	0.007	0.009	
5300	60	802.11a	OFDM	20	17.00	16.12	0.20	0 mm	Aluminum	Metal Links	P9XFGY9GCR	6	back	97.5	1.225	1.026	0.010	0.013	
5300	60	802.11a	OFDM	20	17.00	16.12	0.19	0 mm	Aluminum	Metal Loop	P9XFGY9GCR	6	back	97.5	1.225	1.026	0.009	0.011	
5300	60	802.11a	OFDM	20	17.00	16.12	0.15	0 mm	Stainless Steel	Sport	Y47YVW1V2L	6	back	97.5	1.225	1.026	0.003	0.004	
5300	60	802.11a	OFDM	20	17.00	16.12	0.16	0 mm	Stainless Steel	Metal Links	Y47YVW1V2L	6	back	97.5	1.225	1.026	0.010	0.013	
5300	60	802.11a	OFDM	20	17.00	16.12	0.19	0 mm	Stainless Steel	Metal Loop	Y47YVW1V2L	6	back	97.5	1.225	1.026	0.008	0.010	
5300	60	802.11a	OFDM	20	17.00	16.12	0.01	0 mm	Titanium	Sport	JVP9M54053	6	back	97.5	1.225	1.026	0.004	0.005	
5300	60	802.11a	OFDM	20	17.00	16.12	0.20	0 mm	Titanium	Metal Links	JVP9M54053	6	back	97.5	1.225	1.026	0.006	0.008	
5300	60	802.11a	OFDM	20	17.00	16.12	0.12	0 mm	Titanium	Metal Loop	JVP9M54053	6	back	97.5	1.225	1.026	0.006	0.008	
5600	120	802.11a	OFDM	20	17.00	15.97	0.15	0 mm	Aluminum	Sport	P9XFGY9GCR	6	back	97.5	1.268	1.026	0.011	0.014	
5600	120	802.11a	OFDM	20	17.00	15.97	0.13	0 mm	Aluminum	Metal Links	P9XFGY9GCR	6	back	97.5	1.268	1.026	0.009	0.012	
5600	120	802.11a	OFDM	20	17.00	15.97	0.16	0 mm	Aluminum	Metal Loop	P9XFGY9GCR	6	back	97.5	1.268	1.026	0.012	0.016	
5600	120	802.11a	OFDM	20	17.00	15.97	0.16	0 mm	Stainless Steel	Sport	Y47YVW1V2L	6	back	97.5	1.268	1.026	0.010	0.013	
5600	120	802.11a	OFDM	20	17.00	15.97	0.14	0 mm	Stainless Steel	Metal Links	Y47YVW1V2L	6	back	97.5	1.268	1.026	0.012	0.016	
5600	120	802.11a	OFDM	20	17.00	15.97	0.10	0 mm	Stainless Steel	Metal Loop	Y47YVW1V2L	6	back	97.5	1.268	1.026	0.011	0.014	
5600	120	802.11a	OFDM	20	17.00	15.97	0.13	0 mm	Titanium	Sport	R2122T7H96	6	back	97.5	1.268	1.026	0.001	0.001	
5600	120	802.11a	OFDM	20	17.00	15.97	0.21	0 mm	Titanium	Metal Links	R2122T7H96	6	back	97.5	1.268	1.026	0.006	0.008	
5600	120	802.11a	OFDM	20	17.00	15.97	0.20	0 mm	Titanium	Metal Loop	R2122T7H96	6	back	97.5	1.268	1.026	0.003	0.004	
5785	157	802.11a	OFDM	20	17.00	16.07	0.20	0 mm	Aluminum	Sport	P9XFGY9GCR	6	back	97.5	1.239	1.026	0.006	0.008	
5785	157	802.11a	OFDM	20	17.00	16.07	0.20	0 mm	Aluminum	Metal Links	P9XFGY9GCR	6	back	97.5	1.239	1.026	0.011	0.014	
5785	157	802.11a	OFDM	20	17.00	16.07	0.19	0 mm	Aluminum	Metal Loop	P9XFGY9GCR	6	back	97.5	1.239	1.026	0.008	0.010	
5785	157	802.11a	OFDM	20	17.00	16.07	0.19	0 mm	Stainless Steel	Sport	Y47YVW1V2L	6	back	97.5	1.239	1.026	0.007	0.009	
5785	157	802.11a	OFDM	20	17.00	16.07	0.16	0 mm	Stainless Steel	Metal Links	Y47YVW1V2L	6	back	97.5	1.239	1.026	0.014	0.018	
5785	157	802.11a	OFDM	20	17.00	16.07	0.18	0 mm	Stainless Steel	Metal Loop	Y47YVW1V2L	6	back	97.5	1.239	1.026	0.015	**0.019**	A23
5785	157	802.11a	OFDM	20	17.00	16.07	0.10	0 mm	Titanium	Sport	JVP9M54053	6	back	97.5	1.239	1.026	0.007	0.009	
5785	157	802.11a	OFDM	20	17.00	16.07	0.21	0 mm	Titanium	Metal Links	JVP9M54053	6	back	97.5	1.239	1.026	0.011	0.014	
5785	157	802.11a	OFDM	20	17.00	16.07	0.19	0 mm	Titanium	Metal Loop	JVP9M54053	6	back	97.5	1.239	1.026	0.008	0.010	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Extremity
Spatial Peak	4.0 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 10 grams

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 (%)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)	(W/kg)	
2441	39	Bluetooth	FHSS	13.00	12.23	0.10	0 mm	Aluminum	Sport	RWWQGF44M4	1	back	100	1.194	1.000	0.001	**0.001**	A24
2441	39	Bluetooth	FHSS	13.00	12.23	0.16	0 mm	Aluminum	Metal Links	RWWQGF44M4	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	0.13	0 mm	Aluminum	Metal Loop	RWWQGF44M4	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	0.18	0 mm	Stainless Steel	Sport	RX9PM2TLQX	1	back	100	1.194	1.000	0.001	0.001	
2441	39	Bluetooth	FHSS	13.00	12.23	0.21	0 mm	Stainless Steel	Metal Links	RX9PM2TLQX	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	-0.20	0 mm	Stainless Steel	Metal Loop	RX9PM2TLQX	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	0.20	0 mm	Titanium	Sport	D4RCJK7FHC	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	0.20	0 mm	Titanium	Metal Links	D4RCJK7FHC	1	back	100	1.194	1.000	0.000	0.000	
2441	39	Bluetooth	FHSS	13.00	12.23	0.12	0 mm	Titanium	Metal Loop	D4RCJK7FHC	1	back	100	1.194	1.000	0.000	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Extremity** **4.0 W/kg (mW/g)** averaged over 10 grams										

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.
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.
9. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.

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 and ≤ 2.0 W/kg for 10g SAR 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.

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) 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.

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.

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 (Head at 1.0 cm)

Exposure Condition	Mode	3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	UMTS 850	0.000	0.358	0.358
	UMTS 1750	0.344	0.358	0.702
	UMTS 1900	0.434	0.358	0.792
	LTE Band 26 (Cell)	0.000	0.358	0.358
	LTE Band 5 (Cell)	0.001	0.358	0.359
	LTE Band 66 (AWS)	0.324	0.358	0.682
	LTE Band 25 (PCS)	0.687	0.358	1.045
	LTE Band 7	0.957	0.358	**1.315**
	LTE Band 41	0.404	0.358	0.762

Table 11-2
Simultaneous Transmission Scenario with Bluetooth, and 5 GHz WLAN (Head at 1.0 cm)

Exposure Condition	Mode	3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	UMTS 850	0.000	0.098	0.131	0.098	0.131	0.229
	UMTS 1750	0.344	0.098	0.131	0.442	0.475	0.573
	UMTS 1900	0.434	0.098	0.131	0.532	0.565	0.663
	LTE Band 26 (Cell)	0.000	0.098	0.131	0.098	0.131	0.229
	LTE Band 5 (Cell)	0.001	0.098	0.131	0.099	0.132	0.230
	LTE Band 66 (AWS)	0.324	0.098	0.131	0.422	0.455	0.553
	LTE Band 25 (PCS)	0.687	0.098	0.131	0.785	0.818	0.916
	LTE Band 7	0.957	0.098	0.131	1.055	1.088	**1.186**
	LTE Band 41	0.404	0.098	0.131	0.502	0.535	0.633

Table 11-3
Simultaneous Transmission Scenario with Bluetooth and WLAN (Head at 1.0 cm)

Exposure Condition	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
	2	3	1+2
Head SAR	0.098	0.131	**0.229**

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 11-4
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Extremity at 0.0 cm)

Exposure Condition	Mode	3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Extremity SAR	UMTS 850	0.150	0.012	0.162
	UMTS 1750	0.052	0.012	0.064
	UMTS 1900	0.043	0.012	0.055
	LTE Band 26 (Cell)	0.122	0.012	0.134
	LTE Band 5 (Cell)	0.189	0.012	**0.201**
	LTE Band 66 (AWS)	0.061	0.012	0.073
	LTE Band 25 (PCS)	0.054	0.012	0.066
	LTE Band 7	0.020	0.012	0.032
	LTE Band 41	0.008	0.012	0.020

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

Exposure Condition	Mode	3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	UMTS 850	0.150	0.001	0.019	0.151	0.169	0.170
	UMTS 1750	0.052	0.001	0.019	0.053	0.071	0.072
	UMTS 1900	0.043	0.001	0.019	0.044	0.062	0.063
	LTE Band 26 (Cell)	0.122	0.001	0.019	0.123	0.141	0.142
	LTE Band 5 (Cell)	0.189	0.001	0.019	0.190	0.208	**0.209**
	LTE Band 66 (AWS)	0.061	0.001	0.019	0.062	0.080	0.081
	LTE Band 25 (PCS)	0.054	0.001	0.019	0.055	0.073	0.074
	LTE Band 7	0.020	0.001	0.019	0.021	0.039	0.040
	LTE Band 41	0.008	0.001	0.019	0.009	0.027	0.028

Table 11-6
Simultaneous Transmission Scenario with Bluetooth and WLAN (Extremity at 0.0 cm)

Exposure Condition	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
	2	3	1+2
Extremity SAR	0.001	0.019	**0.020**

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 .

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 < 0.8 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 and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis was not required.

13 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	4/14/2021	Annual	4/14/2022	US39170118
Agilent	E4438C	ESG Vector Signal Generator	9/29/2020	Annual	9/29/2021	MY45093852
Agilent	E4438C	ESG Vector Signal Generator	12/2/2020	Annual	12/2/2021	MY42081752
Agilent	E4440A	PSA Series Spectrum Analyzer	1/29/2021	Annual	1/29/2022	MY46186272
Agilent	N5182A	MXG Vector Signal Generator	9/25/2020	Annual	9/25/2021	US46240505
Agilent	N5182A	MXG Vector Signal Generator	12/1/2020	Annual	12/1/2021	MY47420837
Agilent	N9020A	MXA Signal Analyzer	12/21/2020	Annual	12/21/2021	MY50200571
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343971
Anritsu	MA24106A	USB Power Sensor	9/15/2020	Annual	9/15/2021	1244515
Anritsu	MA24106A	USB Power Sensor	9/15/2020	Annual	9/15/2021	1248508
Anritsu	MA2411B	Pulse Power Sensor	3/8/2021	Annual	3/8/2022	1339007
Anritsu	ML2495A	Power Meter	11/3/2020	Annual	11/3/2021	1039008
Anritsu	ML2496A	Power Meter	2/19/2021	Annual	2/19/2022	1138001
Anritsu	MT8820C	Radio Communication Analyzer	9/30/2020	Annual	9/30/2021	6201240328
Anritsu	MT8821C	Radio Communication Analyzer	5/21/2021	Annual	5/21/2022	6201144419
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670623
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670633
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670635
Control Company	4040	Therm./ Clock/ Humidity Monitor	3/12/2021	Biennial	3/12/2023	210202151
Control Company	4040	Therm./ Clock/ Humidity Monitor	2/19/2021	Biennial	2/19/2023	210114805
HEWLETT PACKARD	8753E	Network Analyzer	12/10/2020	Annual	12/10/2021	US38161081
MCL	BW-N10W5+	10dB Attenuator	CBT	N/A	CBT	1611
MCL	BW-N3W5+	3dB Attenuator	CBT	N/A	CBT	1812
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	N/A
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
Mini-Circuits	ZHDC-16-63-S+	50-6000MHz Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	10/16/2020	Annual	10/16/2021	101699
Rohde & Schwarz	CMW500	Radio Communication Tester	10/16/2020	Annual	10/16/2021	106578
Rohde & Schwarz	CMW500	Radio Communication Tester	10/27/2020	Annual	10/27/2021	108843
Rohde & Schwarz	CMW500	Radio Communication Tester	4/13/2021	Annual	4/13/2022	167284
Rohde & Schwarz	FSP-7	Spectrum Analyzer	1/9/2020	Biennial	1/9/2022	100990
Seekonk	NC-100	Torque Wrench	9/24/2020	Biennial	9/24/2022	22216
Seekonk	NC-100	Torque Wrench	7/30/2020	Biennial	7/30/2022	22217
SPEAG	D850V2	850 MHz SAR Dipole	9/8/2020	Annual	9/8/2021	1010
SPEAG	D835V2	835 MHz SAR Dipole	6/20/2019	Triennial	6/20/2022	4d040
SPEAG	D1750V2	1750 MHz SAR Dipole	6/19/2019	Triennial	6/19/2022	1083
SPEAG	D1900V2	1900 MHz SAR Dipole	9/10/2020	Annual	9/10/2021	5d181
SPEAG	D1900V2	1900 MHz SAR Dipole	6/19/2019	Triennial	6/19/2022	5d030
SPEAG	D2450V2	2450 MHz SAR Dipole	6/14/2019	Triennial	6/14/2022	750
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Triennial	6/14/2022	1042
SPEAG	D5GHzV2	5 GHz SAR Dipole	3/10/2021	Annual	3/10/2022	1123
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/11/2021	Annual	1/11/2022	1646
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/13/2020	Annual	9/13/2021	1408
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/11/2021	Annual	1/11/2022	1645
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/11/2021	Annual	2/11/2022	1403
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2021	Annual	1/13/2022	793
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/12/2020	Annual	10/12/2021	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/11/2021	Annual	5/11/2022	701
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/12/2020	Annual	10/12/2021	1213
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/13/2021	Annual	4/13/2022	501
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/11/2021	Annual	1/11/2022	1644
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2021	Annual	5/12/2022	1070
SPEAG	EX3DV4	SAR Probe	3/3/2021	Annual	3/3/2022	7639
SPEAG	EX3DV4	SAR Probe	8/19/2020	Annual	8/19/2021	3949
SPEAG	EX3DV4	SAR Probe	3/3/2021	Annual	3/3/2022	7640
SPEAG	EX3DV4	SAR Probe	2/17/2021	Annual	2/17/2022	7427
SPEAG	EX3DV4	SAR Probe	1/18/2021	Annual	1/18/2022	3837
SPEAG	EX3DV4	SAR Probe	10/21/2020	Annual	10/21/2021	7558
SPEAG	EX3DV4	SAR Probe	5/18/2021	Annual	5/18/2022	7416
SPEAG	EX3DV4	SAR Probe	10/21/2020	Annual	10/21/2021	7420
SPEAG	EX3DV4	SAR Probe	4/19/2021	Annual	4/19/2022	7532
SPEAG	EX3DV4	SAR Probe	3/3/2021	Annual	3/3/2022	7638
SPEAG	MAIA	Modulation and Audio Interference Analyzer	CBT	N/A	CBT	1237

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. Each equipment item was used solely within its respective calibration period.

14 MEASUREMENT UNCERTAINTIES

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c_i 1gm	c_i 10 gms	1gm u_i (± %)	10gms u_i (± %)	v_i
Measurement System									
Probe Calibration	E.2.1	7	N	1	1	1	7.0	7.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	E.2.3	2	R	1.732	1	1	1.2	1.2	∞
Linearity	E.2.4	0.3	N	1	1	1	0.3	0.3	∞
System Detection Limits	E.2.4	0.25	R	1.732	1	1	0.1	0.1	∞
Modulation Response	E.2.5	4.8	R	1.732	1	1	2.8	2.8	∞
Readout Electronics	E.2.6	0.3	N	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	R	1.732	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.732	1	1	0.5	0.5	∞
Probe Positioning w/ respect to Phantom	E.6.3	6.7	R	1.732	1	1	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	4	R	1.732	1	1	2.3	2.3	∞
Test Sample Related									
Test Sample Positioning	E.4.2	3.12	N	1	1	1	3.1	3.1	35
Device Holder Uncertainty	E.4.1	1.67	N	1	1	1	1.7	1.7	5
Output Power Variation - SAR drift measurement	E.2.9	5	R	1.732	1	1	2.9	2.9	∞
SAR Scaling	E.6.5	0	R	1.732	1	1	0.0	0.0	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	E.3.3	4.3	N	1	0.78	0.71	3.3	3.0	76
Liquid Permittivity - measurement uncertainty	E.3.3	4.2	N	1	0.23	0.26	1.0	1.1	75
Liquid Conductivity - Temperature Uncertainty	E.3.4	3.4	R	1.732	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	E.3.4	0.6	R	1.732	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)			RSS				12.2	12.0	191
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.4	24.0	

The above measurement uncertainties are according to IEEE Std. 1528-2013

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

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: JM7609M9LK

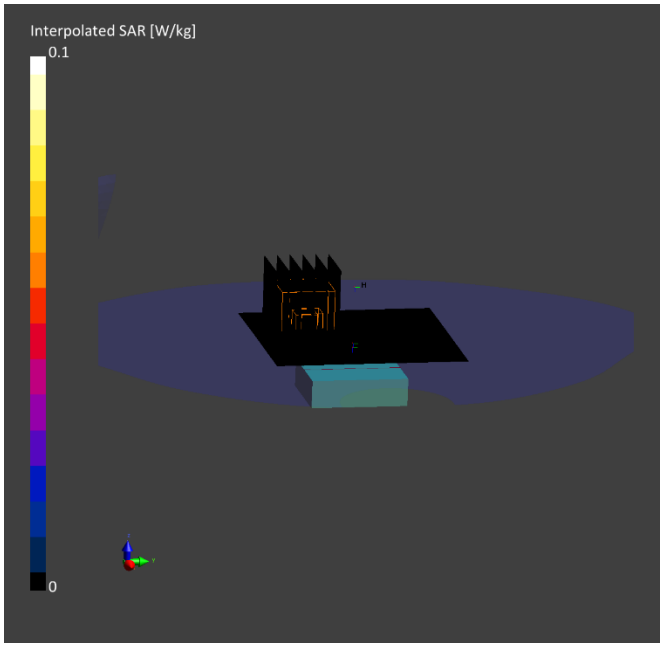
Communication System: UID:10011-CAB, WCDMA; MAIA: Y; Frequency: 826.4 MHz
Medium: 835 Head; Medium parameters used:
f = 826.4 MHz; cond = 0.93 S/m; perm = 41.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/23/2021; Ambient Temp: 22.7°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7639; ConvF:(10.56,10.56,10.56); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: UMTS 850, Head SAR. Front side, Low. Ch, Aluminum, Sport Wrist Band

Area Scan (90.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.00 W/kg; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.1 W/kg
SAR(1 g) = 0 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 68.5 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: DL02HXH75L

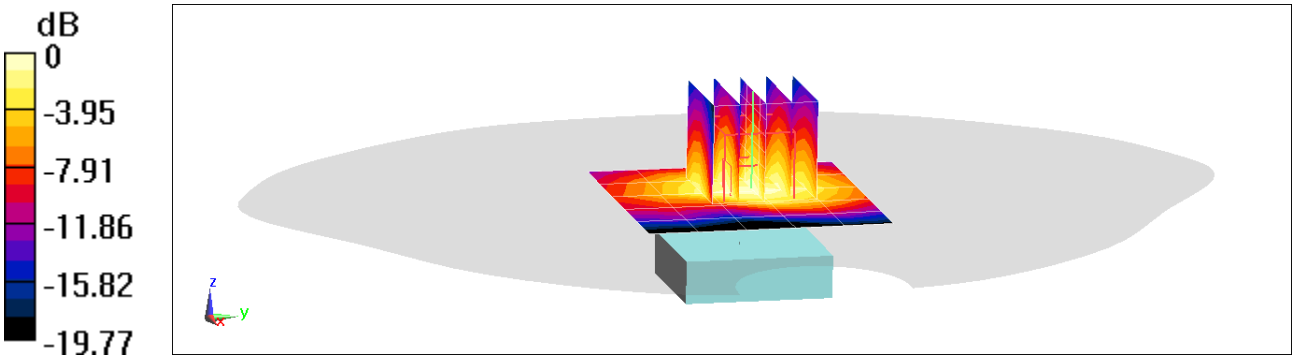
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.4 MHz
Medium: 1750 Head; Medium parameters used (interpolated):
$f = 1732.4$ MHz; $\sigma = 1.364$ S/m; $\varepsilon_r = 39.214$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/20/2021; Ambient Temp: 23.3°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7640; ConvF(9.49, 9.49, 9.49) @ 1732.4 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1645; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2034
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Head SAR, Front side, Mid.ch,
Stainless Steel, 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 = 14.62 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.445 W/kg
SAR(1 g) = 0.276 W/kg
Smallest distance from peaks to all points 3 dB below = 12.5 mm
Ratio of SAR at M2 to SAR at M1 = 63.7%



0 dB = 0.377 W/kg = -4.24 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: CF2RTXK3YK

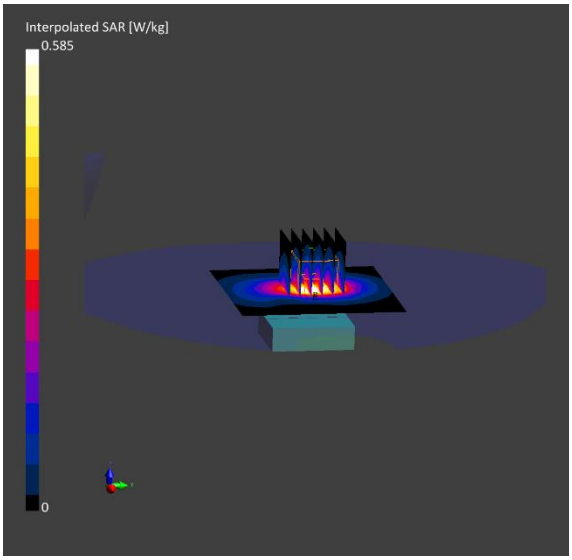
Communication System: UID:10011-CAB, WCDMA; MAIA: Y; Frequency: 1880.0 MHz
Medium: 750 Head; Medium parameters used:
f = 1880.0 MHz; cond = 1.45 S/m; perm = 39.2; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/21/2021; Ambient Temp: 23.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN7639; ConvF:(8.86,8.86,8.86); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: UMTS 1900, Head SAR. Front side, Mid. Ch, Aluminum, Metal Loop Wrist Band

Area Scan (90.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.42 W/kg; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.585W/kg
SAR(1 g) = 0.351 W/kg
Smallest distance from peaks to all points 3 dB below is 10.8 mm
Ratio of SAR at M2 to SAR at M1 = 82.7 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: YW4YJ2HTX4

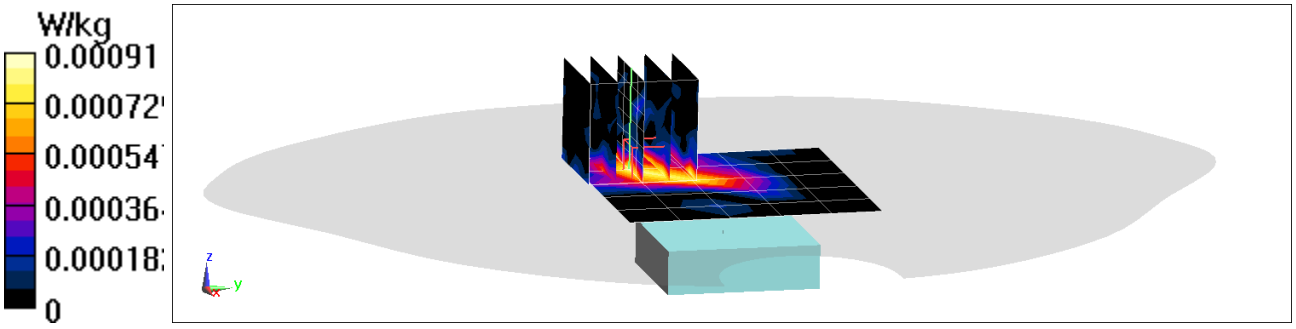
Communication System: UID 10175 - CAG,
LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 819 MHz
Medium: 835 Head; Medium parameters used (interpolated):
$f = 819$ MHz; $\sigma = 0.933$ S/m; $\varepsilon_r = 40.088$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/27/2021; Ambient Temp: 23.7°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7639; ConvF(10.56, 10.56, 10.56) @ 819 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Head SAR, Front side, Low.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset, Titanium, 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 = 0.6830 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.00187 W/kg
SAR(1 g) = 0.000296 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = N/A



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: GX146L4DR2

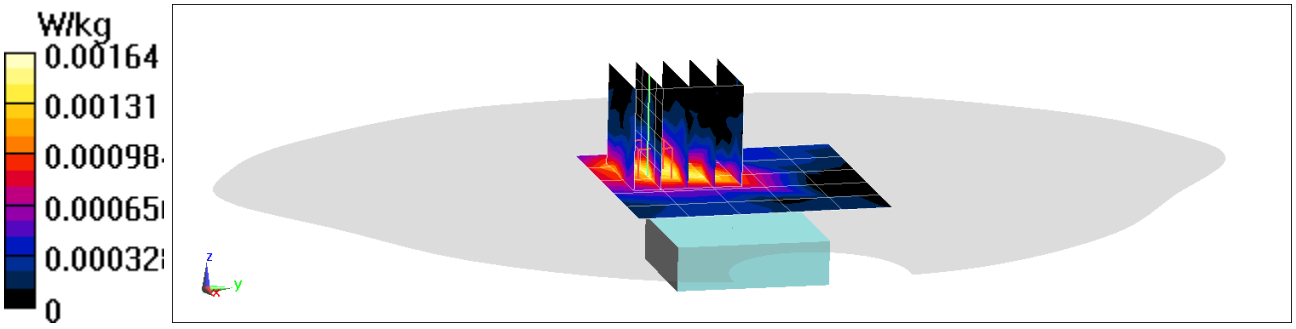
Communication System: UID 10175 - CAG,
LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.922 S/m; ε_r = 39.596; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/25/2021; Ambient Temp: 19.5°C; Tissue Temp: 19.4°C

Probe: EX3DV4 - SN7639; ConvF(10.56, 10.56, 10.56) @ 836.5 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
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, 49 RB Offset, Titanium, 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 = 1.064 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.00310 W/kg
SAR(1 g) = 0.000649 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 54.2%



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: DL02HXH75L

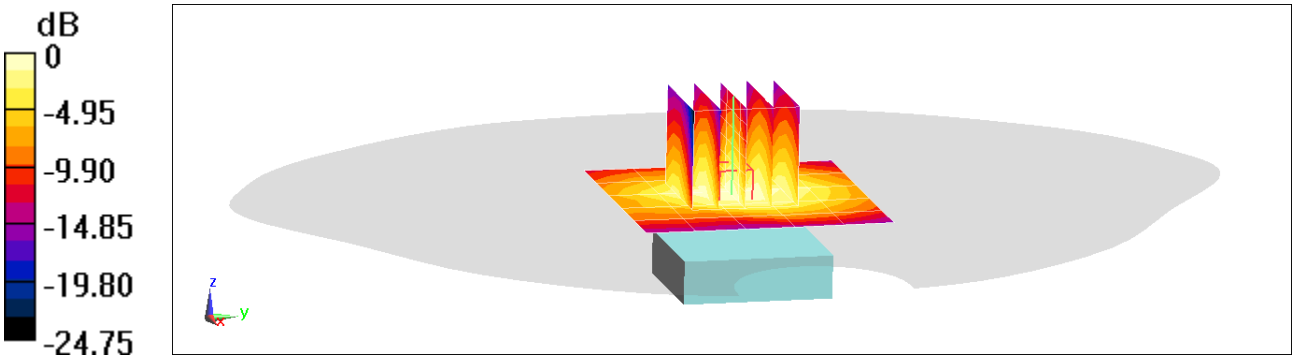
Communication System: UID 10169 - CAE,
LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1720 MHz
Medium: 1750 Head; Medium parameters used:
f = 1720 MHz; σ = 1.359 S/m; ε_r = 39.699; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 06/22/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3949; ConvF(8.83, 8.83, 8.83) @ 1720 MHz; Calibrated: 8/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/13/2020
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)

Mode: LTE Band 66 (AWS), Head SAR, Front side, Low.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset, Stainless Steel, 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 = 14.15 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.374 W/kg
SAR(1 g) = 0.244 W/kg
Smallest distance from peaks to all points 3 dB below = 12.8 mm
Ratio of SAR at M2 to SAR at M1 = 68.3%



0 dB = 0.330 W/kg = -4.81 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: CYV16CW9PD

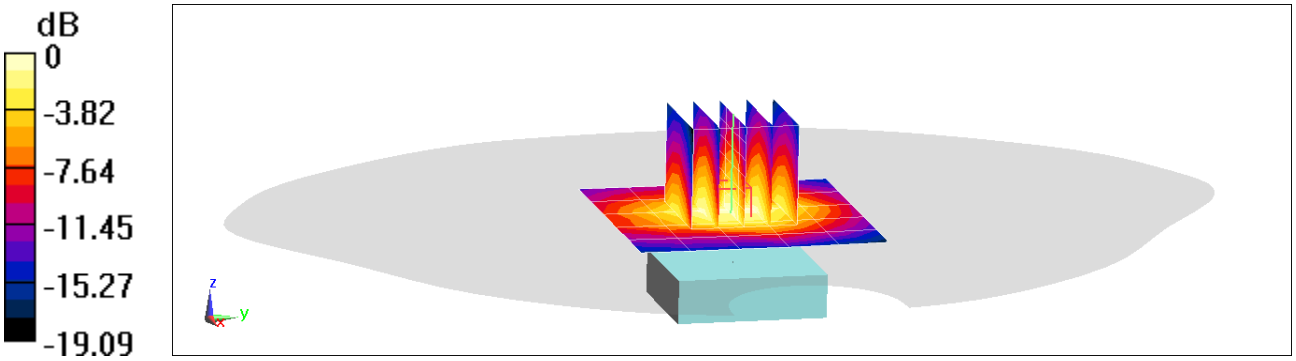
Communication System: UID 10169 - CAE,
LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1882.5 MHz
Medium: 1900 Head; Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.441 S/m; ε_r = 39.019; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 06/22/2021; Ambient Temp: 22.9°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(8.25, 8.25, 8.25) @ 1882.5 MHz; Calibrated: 2/17/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/11/2021
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 25 (PCS), Head SAR, Front side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset, Stainless Steel, 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 = 19.91 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.865 W/kg
SAR(1 g) = 0.531 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 64.7%



0 dB = 0.737 W/kg = -1.33 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: YW4YJ2HTX4

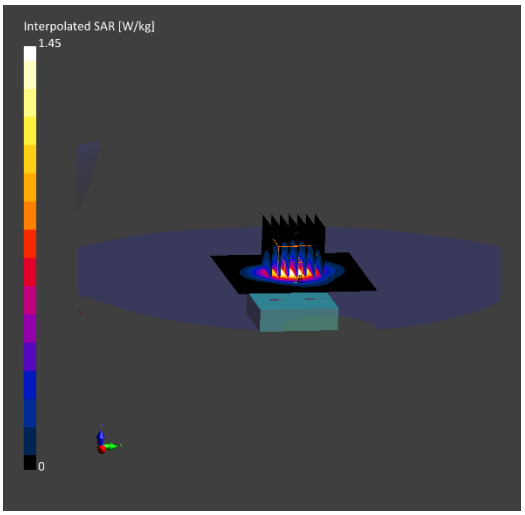
Communication System: UID:10169-CAE, LTE-FDD; MAIA: Y; Frequency: 2510.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2510.0 MHz; cond = 1.92 S/m; perm = 38.8; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3837; ConvF:(7.39,7.39,7.39); Calibrated: 2021-01-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn793; Calibrated: 2021-01-13
Phantom: Main; Serial: 1736
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: LTE Band 7, Head SAR, Front Side, 20 MHz Bandwidth, Low.ch, QPSK, 1 RB, 99 RB Offset, Titanium, Sport Wrist Band

Area Scan (80.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.90 W/kg; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.45W/kg
SAR(1 g) = 0.733 W/kg
Smallest distance from peaks to all points 3 dB below is 10.4 mm
Ratio of SAR at M2 to SAR at M1 = 79.5 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: GX146L4DR2

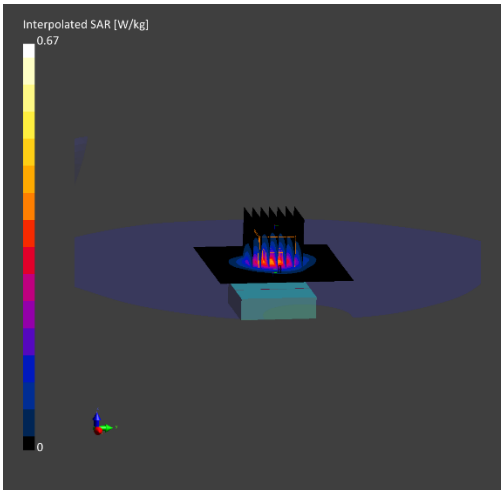
Communication System: UID:10435-AAF, LTE-TDD; MAIA: Y; Frequency: 2593.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2593.0 MHz; cond = 2.01 S/m; perm = 38.5; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3837; ConvF:(7.13,7.13,7.13); Calibrated: 2021-01-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn793; Calibrated: 2021-01-13
Phantom: Main; Serial: 1736
Measurement SW: cDASY6 Module SAR V6.14.0.959

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

Area Scan (80.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.42 W/kg; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.67 W/kg
SAR(1 g) = 0.336 W/kg
Smallest distance from peaks to all points 3 dB below is 11.0 mm
Ratio of SAR at M2 to SAR at M1 = 79.7 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: JVP9M54053

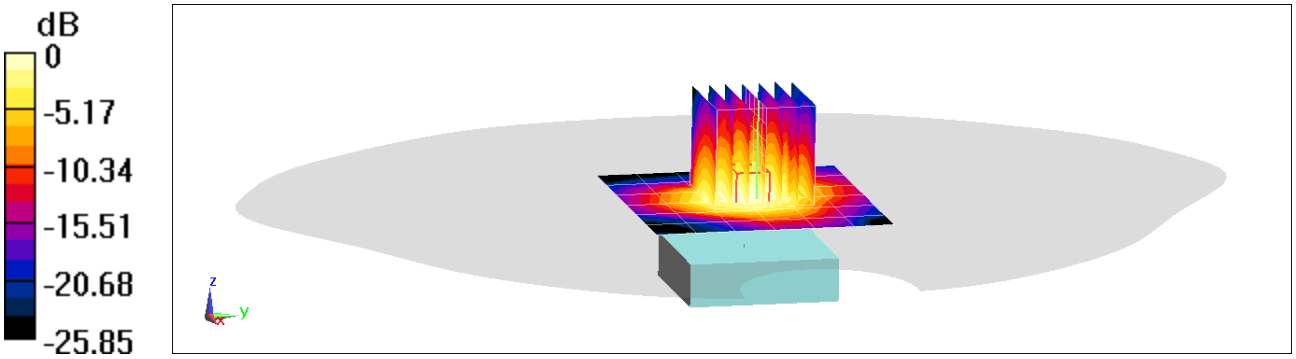
Communication System: UID 10415 - AAA,
IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle); Frequency: 2462 MHz
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.808 S/m; ε_r = 40.393; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 22.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7558; ConvF(7.62, 7.62, 7.62) @ 2462 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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, Head SAR,
Ch 11, 1 Mbps, Front Side, 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 = 12.86 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.502 W/kg
SAR(1 g) = 0.280 W/kg
Smallest distance from peaks to all points 3 dB below = 9.2 mm
Ratio of SAR at M2 to SAR at M1 = 57%



0 dB = 0.410 W/kg = -3.87 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: CYV16CW9PD

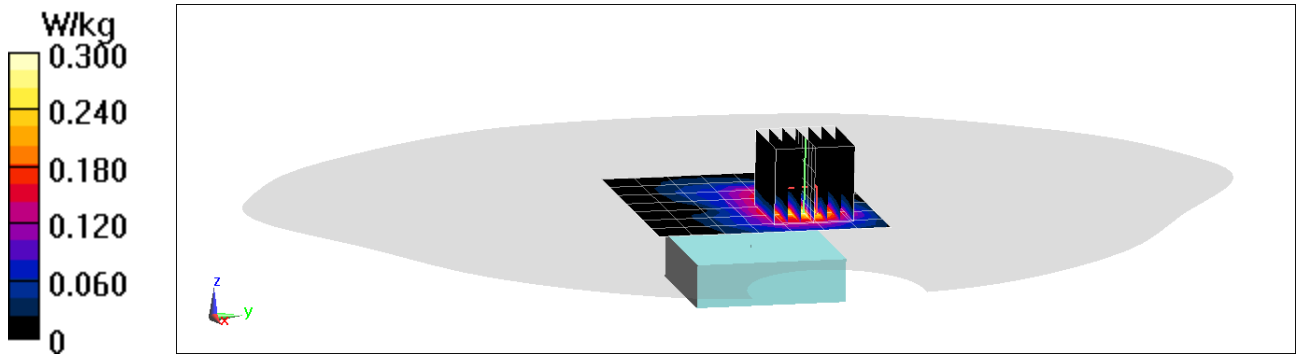
Communication System: UID 10417 - AAC,
IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle); Frequency: 5785 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5785 MHz; σ = 5.087 S/m; ε_r = 35.024; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 23.5°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7558; ConvF(4.88, 4.88, 4.88) @ 5785 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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 802.11a, UNII-3, 20 MHz Bandwidth, Head SAR, Ch 157, 6 Mbps, Front Side, Stainless Steel, Metal Loop Wrist Band

Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 4.782 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.462 W/kg
SAR(1 g) = 0.103 W/kg
Smallest distance from peaks to all points 3 dB below > 4 mm
Ratio of SAR at M2 to SAR at M1 = 57%



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: YW4YJ2HTX4

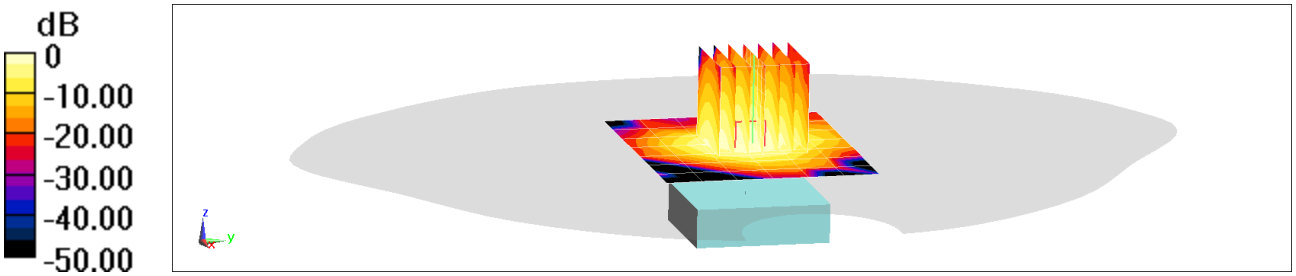
Communication System: UID 10032 - CAA,
IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.792 S/m; ε_r = 38.482; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/15/2021; Ambient Temp: 21.4°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7558; ConvF(7.62, 7.62, 7.62) @ 2441 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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, Head SAR, Ch 39, 1 Mbps, Front Side, Titanium, Sport Wrist Band

Area Scan (8x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.218 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.082 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 56.3%



0 dB = 0.123 W/kg = -9.10 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: PT2MW4N699

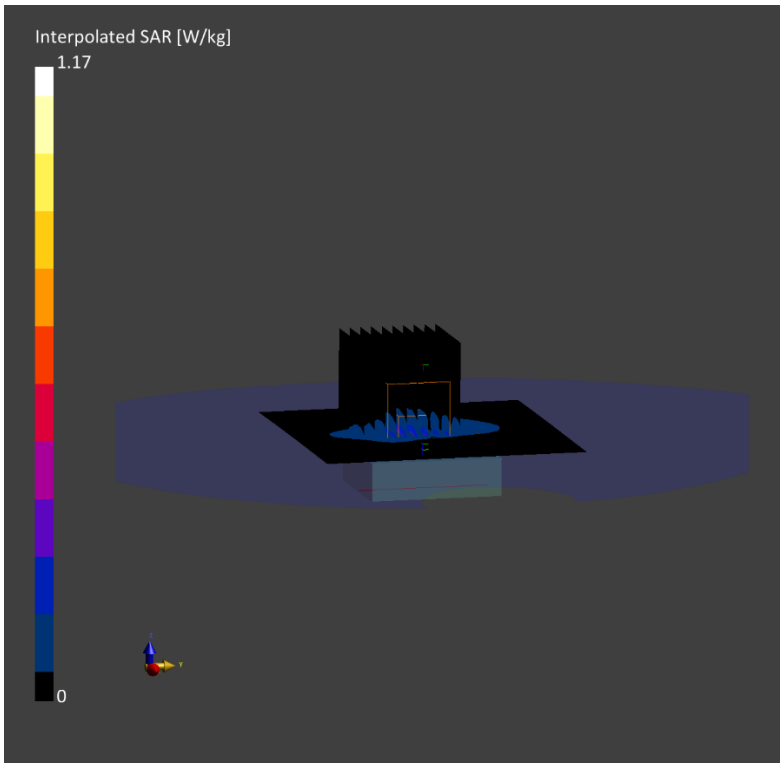
Communication System: UID:10011-CAB, WCDMA; MAIA: Y; Frequency: 826.4 MHz
Medium: 835 Body; Medium parameters used:
f = 826.4 MHz; cond = 0.95 S/m; perm = 53.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 0 mm

Test Date: 08/09/2021; Ambient Temp: 22.2°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7639; ConvF:(10.53,10.53,10.53); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: UMTS 850, Extremity SAR. Back side, Low. Ch, Titanium, Metal Links Wrist Band

Area Scan (90.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=3.7 mm, dy=3.7 mm, dz=1.4 mm; Graded Ratio: 1.4
Reference Value = 0.35 W/kg; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(10 g) = 0.123 W/kg
Smallest distance from peaks to all points 3 dB below is 4.3 mm
Ratio of SAR at M2 to SAR at M1 = 56.4 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: 6GX146L4DR2

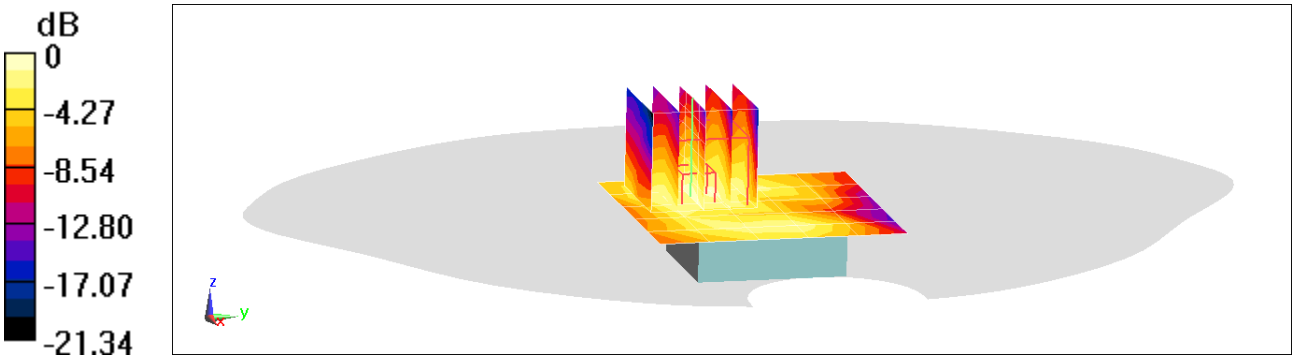
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1732.4 MHz
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.484 S/m; ε_r = 51.651; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 07/08/2021; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7420; ConvF(8.09, 8.09, 8.09) @ 1732.4 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1750, Extremity SAR, Back side, Mid.ch, Titanium, 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 = 7.257 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.107 W/kg
SAR(10 g) = 0.042 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 66.9%



0 dB = 0.0946 W/kg = -10.24 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: RWWQGF44M4

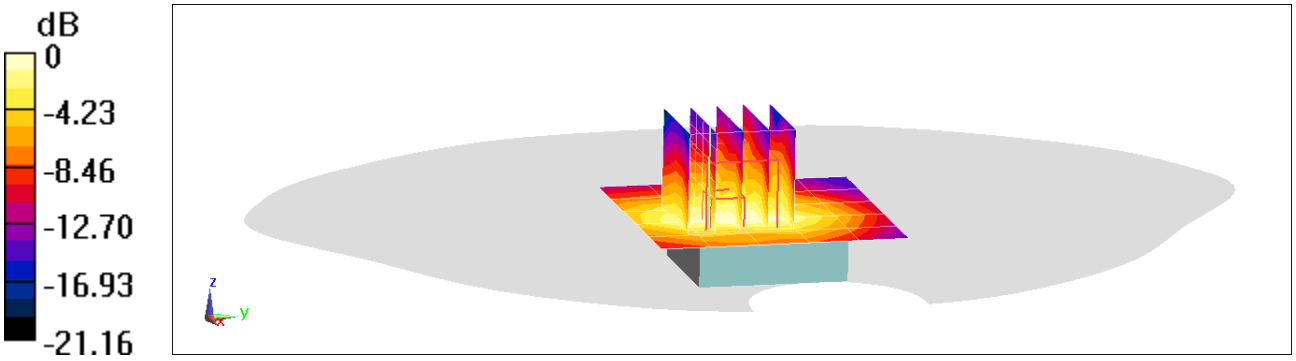
Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.521 S/m; ε_r = 51.481; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 07/22/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7420; ConvF(7.76, 7.76, 7.76) @ 1880 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: UMTS 1900, Extremity SAR, Back side, Mid.ch, 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 = 6.622 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.116 W/kg
SAR(10 g) = 0.035 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 56.2%



0 dB = 0.0913 W/kg = -10.40 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: RH7G4KV43X

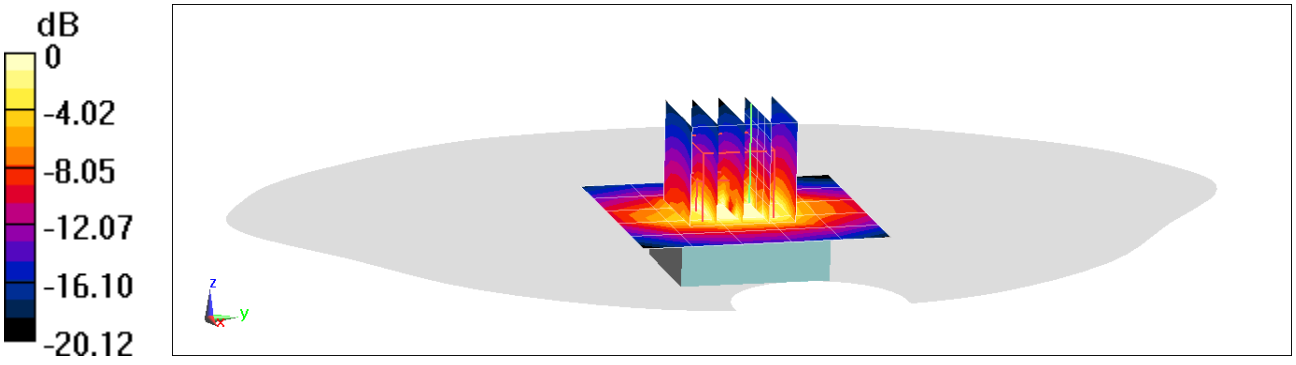
Communication System: UID 10175 - CAG,
LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 819 MHz
Medium: 835 Body; Medium parameters used (interpolated):
$f = 819$ MHz; $\sigma = 0.969$ S/m; $\varepsilon_r = 52.934$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 07/29/2021; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7639; ConvF(10.53, 10.53, 10.53) @ 819 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 26 (Cell.), Extremity SAR, Back side, Low.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 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.920 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.718 W/kg
SAR(10 g) = 0.097 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1: N/A



0 dB = 0.466 W/kg = -3.32 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: RX9PM2TLQX

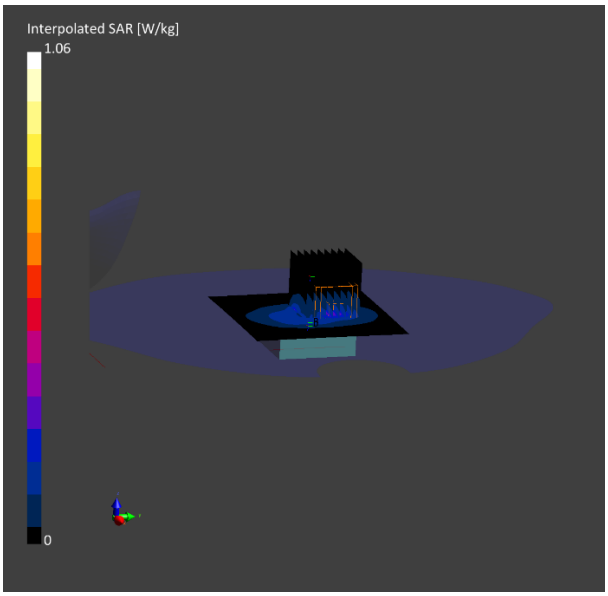
Communication System: UID:10175-CAG, LTE-FDD; MAIA: Y; Frequency: 836.5 MHz
Medium: 835 Body; Medium parameters used:
f = 836.5 MHz; cond = 1.00 S/m; perm = 53.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 0.00 mm

Test Date: 08/11/2021; Ambient Temp: 22.0°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7416; ConvF:(9.66,9.66,9.66); Calibrated: 2021-05-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn701; Calibrated: 2021-05-11
Phantom: Twin-SAM V4.0; Serial: 1357
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: LTE Band 5, Extremity SAR, Back Side, 10 MHz Bandwidth, Mid.ch, QPSK, 1 RB, 49 RB Offset, Stainless Steel, Metal Links Wrist Band

Area Scan (90.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded Ratio: 1.4
Reference Value = 0.31 W/kg; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(10 g) = 0.140 W/kg
Smallest distance from peaks to all points 3 dB below is 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 60.5 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: P9XFGY9GCR

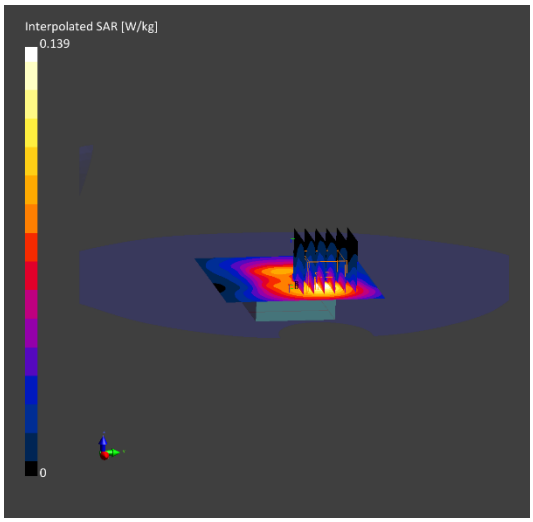
Communication System: UID:10169-CAE, LTE-FDD; MAIA: Y; Frequency: 1720.0 MHz
Medium: 750 Body; Medium parameters used:
f = 1720.0 MHz; cond = 1.45 S/m; perm = 53.7; density = 1000 kg/m3
Phantom Section: Flat; Space: 0 mm

Test Date: 06/24/2021; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7639; ConvF:(9.29,9.29,9.29); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: LTE Band 66, Extremity SAR, Back Side, 20 MHz Bandwidth, Low.ch, QPSK, 1 RB, 99 RB Offset, Aluminum, Metal Links Wrist Band

Area Scan (90.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.11 W/kg; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.139 W/kg
SAR(10 g) = 0.046 W/kg
Smallest distance from peaks to all points 3 dB below is 8.5 mm
Ratio of SAR at M2 to SAR at M1 = 83.6 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: CYV16CW9PD

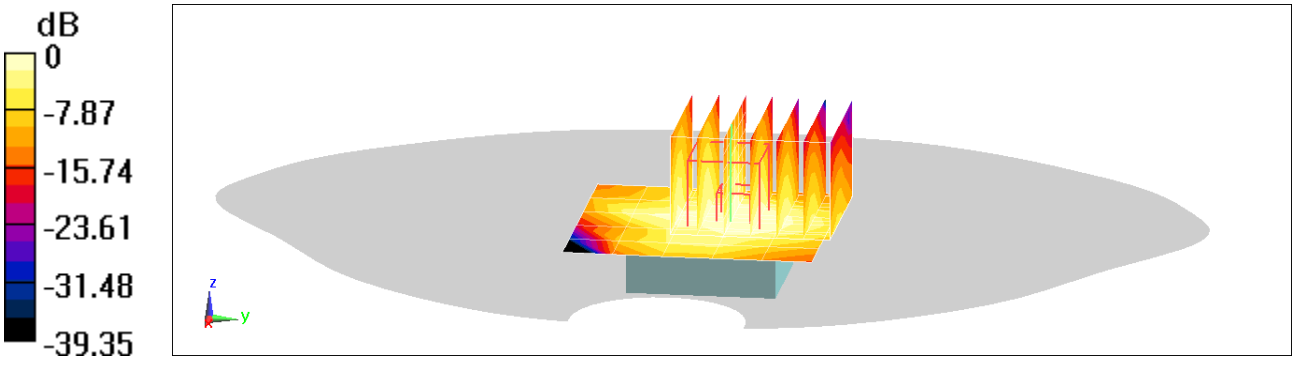
Communication System: UID 10169 - CAE,
LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1882.5 MHz
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.572 S/m; ε_r = 53.741; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 06/28/2021; Ambient Temp: 22.7°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7640; ConvF(9.06, 9.06, 9.06) @ 1882.5 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1645; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2034
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: LTE Band 25 (PCS), Extremity SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset, Stainless Steel, Metal Loop Wrist Band

Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.719 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.120 W/kg
SAR(10 g) = 0.042 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 53.8%



0 dB = 0.0982 W/kg = -10.08 dBW/kg

PCTEST

DUT: BCG-A2478; Type: Watch; Serial: YW4YJ2HTX4

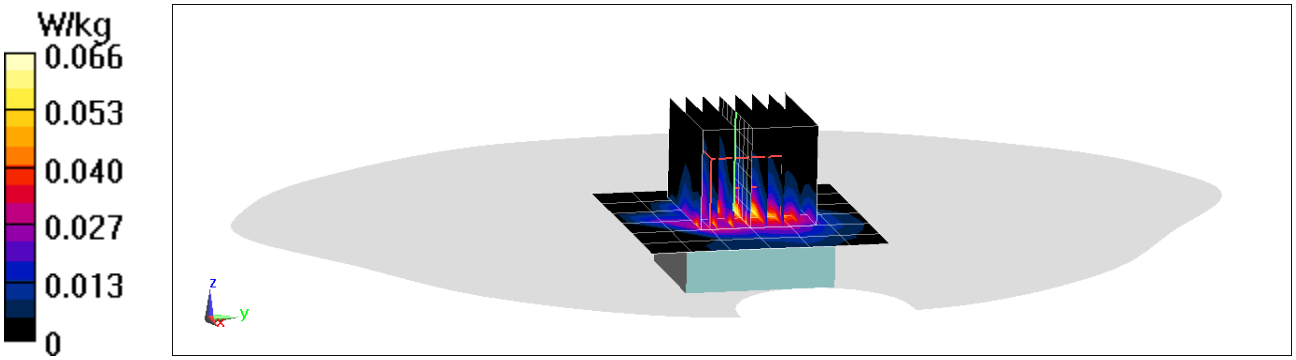
Communication System: UID 10169 - CAE,
LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2560 MHz
Medium: 2450 Body; Medium parameters used:
f = 2560 MHz; σ = 2.136 S/m; ε_r = 52.43; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 07/18/2021; Ambient Temp: 22.7°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN7558; ConvF(7.46, 7.46, 7.46) @ 2560 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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: LTE Band 7, Extremity SAR, Back side, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset, Titanium, Sport Wrist Band

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (9x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.854 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.0910 W/kg
SAR(10 g) = 0.017 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 44.1%



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: YW4YJ2HTX4

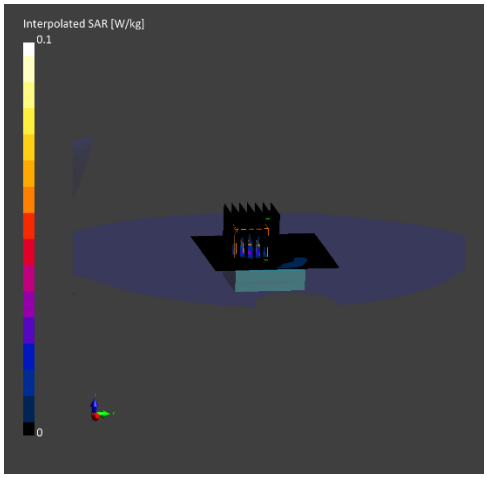
Communication System: UID:10435-AAF, LTE-TDD; MAIA: Y; Frequency: 2593.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2593.0 MHz; cond = 2.11 S/m; perm = 50.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 0 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7532; ConvF:(7.28,7.28,7.28); Calibrated: 2021-04-19
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn501; Calibrated: 2021-04-13
Phantom: Left; Serial: 1275
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: LTE Band 41, Extremity SAR, Back Side, 20 MHz Bandwidth, Mid.ch, QPSK, 1 RB, 50 RB Offset, Titanium, Metal Loop Wrist Band

Area Scan (80.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.03 W/kg; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.1 W/kg
SAR(10 g) = 0.007 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 78.7 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: DJYF2493XX

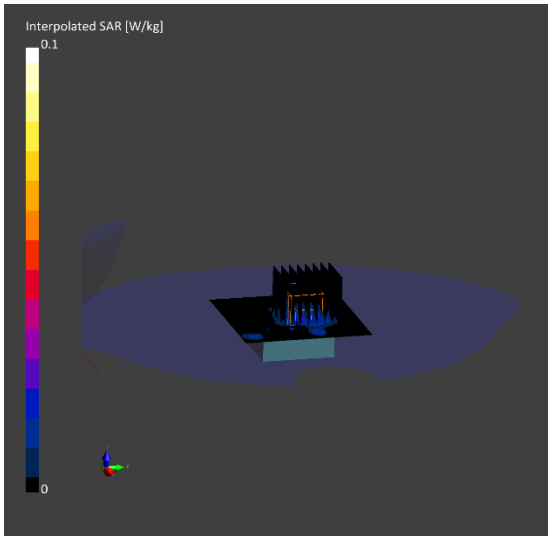
Communication System: UID:10415-AAA, WLAN; MAIA: Y; Frequency: 2462.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2462.0 MHz; cond = 1.98 S/m; perm = 51.6; density = 1000 kg/m3
Phantom Section: Flat; Space: 0.00 mm

Test Date: 08/13/2021; Ambient Temp: 22.3°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7532; ConvF:(7.64,7.64,7.64); Calibrated: 2021-04-19
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn501; Calibrated: 2021-04-13
Phantom: Twin-SAM V4.0; Serial: 1275
Measurement SW: cDASY6 Module SAR V6.14.0.959

Mode: IEEE 802.11b, 22 MHz Bandwidth, Extremity SAR.
Back side, Ch. 11, 1 Mbps, Stainless Steel, Sport Wrist Band

Area Scan (80.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Reference Value = 0.03 W/kg; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.1 W/kg
SAR(10 g) = 0.009 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = 79.5 %



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: Y47YVW1V2L

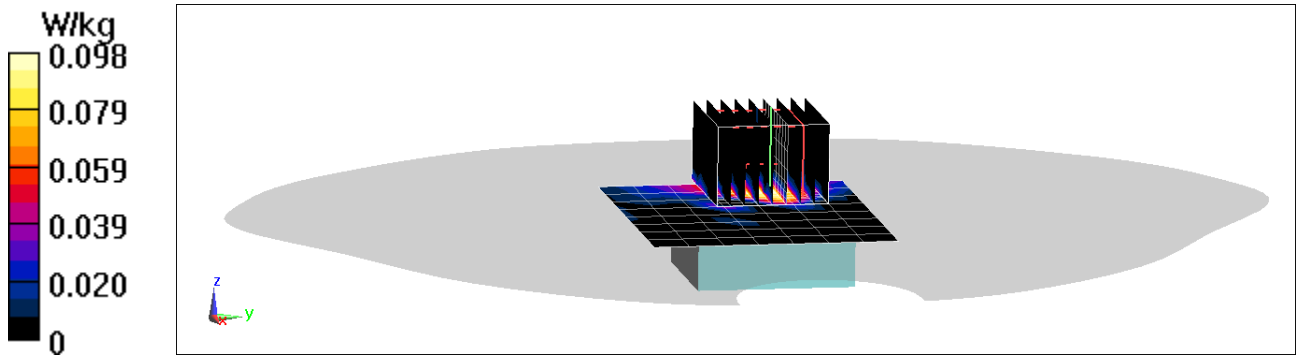
Communication System: UID 10417 - AAC,
IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle); Frequency: 5785 MHz
Medium: 5200-5800 Body; Medium parameters used:
f = 5785 MHz; σ = 6.19 S/m; ε_r = 47.245; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 cm

Test Date: 07/23/2021; Ambient Temp: 21.5°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7638; ConvF(4.32, 4.32, 4.32) @ 5785 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1644; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2027
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Extremity SAR, Ch 157, 6 Mbps, Back Side, Stainless Steel, Metal Loop Wrist Band

Area Scan (9x8x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (10x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 2.130 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.550 W/kg
SAR(10 g) = 0.015 W/kg
Smallest distance from peaks to all points 3 dB below = 6.8 mm
Ratio of SAR at M2 to SAR at M1 = 61%



PCTEST

DUT: BCG-A2478; Type: Watch; Serial: RWWQGF44M4

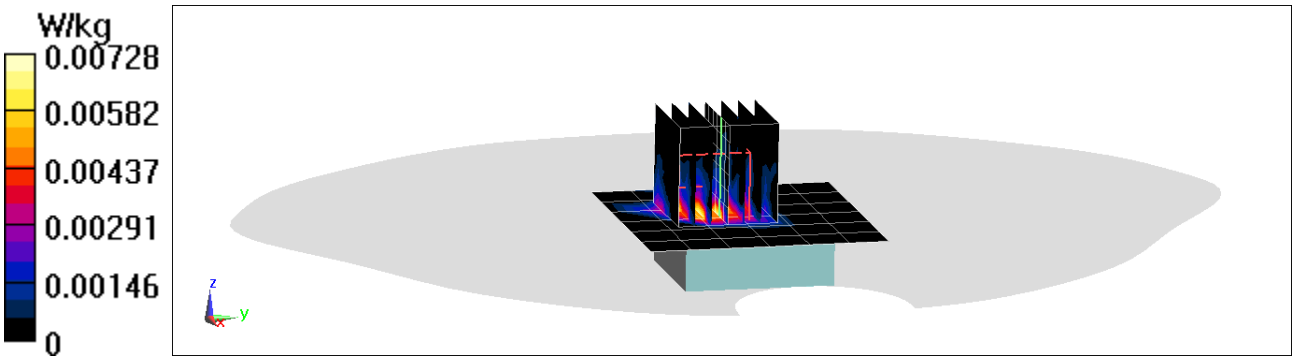
Communication System: UID 10032 - CAA,
IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.95 S/m; ε_r = 51.609; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0 mm

Test Date: 08/02/2021; Ambient Temp: 21.4°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7420; ConvF(7.52, 7.52, 7.52) @ 2441 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Mode: Bluetooth, Extremity SAR, Ch 39, 1 Mbps, Back 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 = 1.887 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.0140 W/kg
SAR(10 g) = 0.00108 W/kg
Smallest distance from peaks to all points 3 dB below: N/A
Ratio of SAR at M2 to SAR at M1 = N/A



APPENDIX B: SYSTEM VERIFICATION

PCTEST

DUT: Dipole 850.0 MHz; Type: D850V2; Serial: 1010

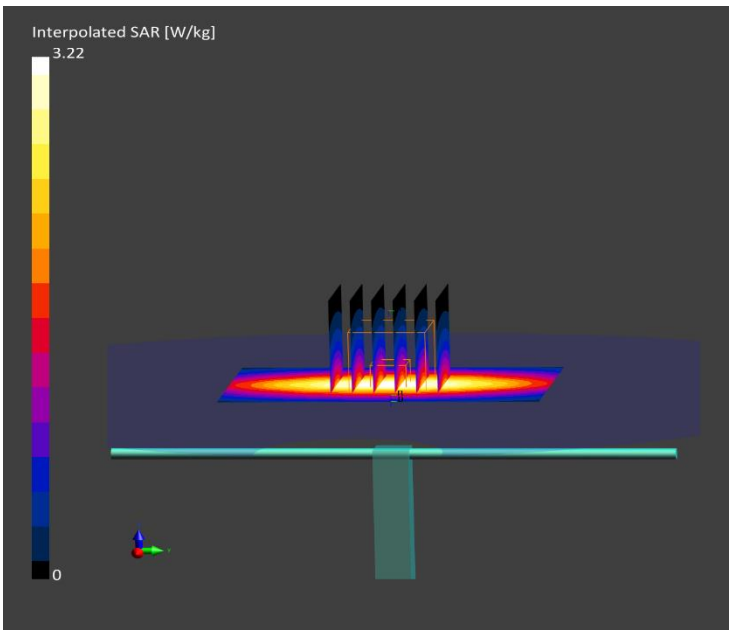
Communication System: UID: 0, CW; Frequency: 850.0 MHz
Medium: 835 Head; Medium parameters used:
f = 850.0 MHz; cond = 0.94 S/m; perm = 41.2; density = 1000 kg/m3
Phantom Section: Flat; Space: 15 mm

Test Date: 07/23/2021; Ambient Temp: 22.7°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7639; ConvF:(10.56,10.56,10.56); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

850.0 MHz System Verification at 23.0 dBm

Area Scan (60.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.05 W/kg
Deviation (1 g) = 4.17%



PCTEST

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

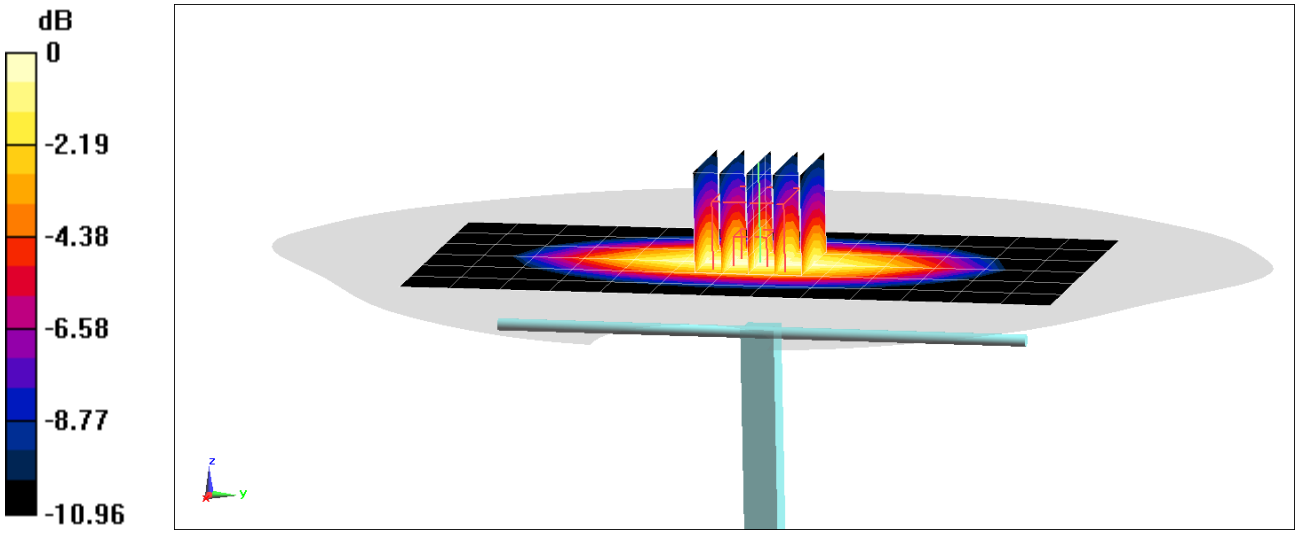
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 850 MHz; σ = 0.927 S/m; ε_r = 39.554; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 15 mm

Test Date: 07/25/2021; Ambient Temp: 19.5°C; Tissue Temp: 19.4°C

Probe: EX3DV4 - SN7639; ConvF(10.56, 10.56, 10.56) @ 850 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
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) = 3.18 W/kg
SAR(1 g) = 2.07 W/kg
Deviation(1 g) = 5.18%



0 dB = 2.79 W/kg = 4.45 dBW/kg

PCTEST

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

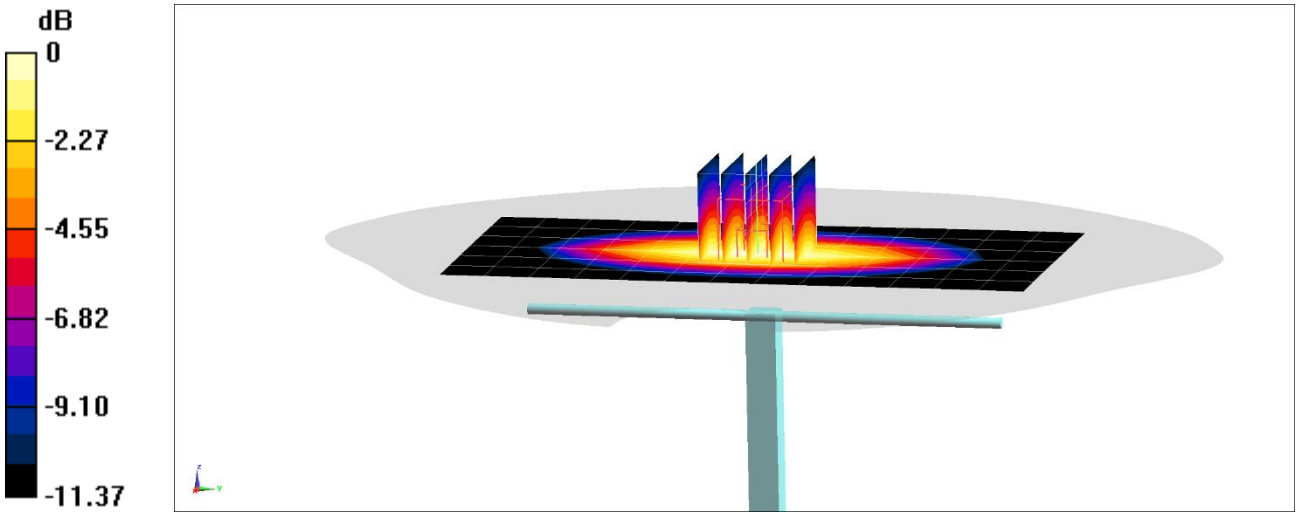
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 850 MHz; σ = 0.945 S/m; ε_r = 40.01; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 15 mm

Test Date: 07/27/2021; Ambient Temp: 23.7°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7639; ConvF(10.56, 10.56, 10.56) @ 850 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
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) = 3.36 W/kg
SAR(1 g) = 2.09 W/kg
Deviation(1 g) = 6.20%



0 dB = 2.90 W/kg = 4.62 dBW/kg

PCTEST

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

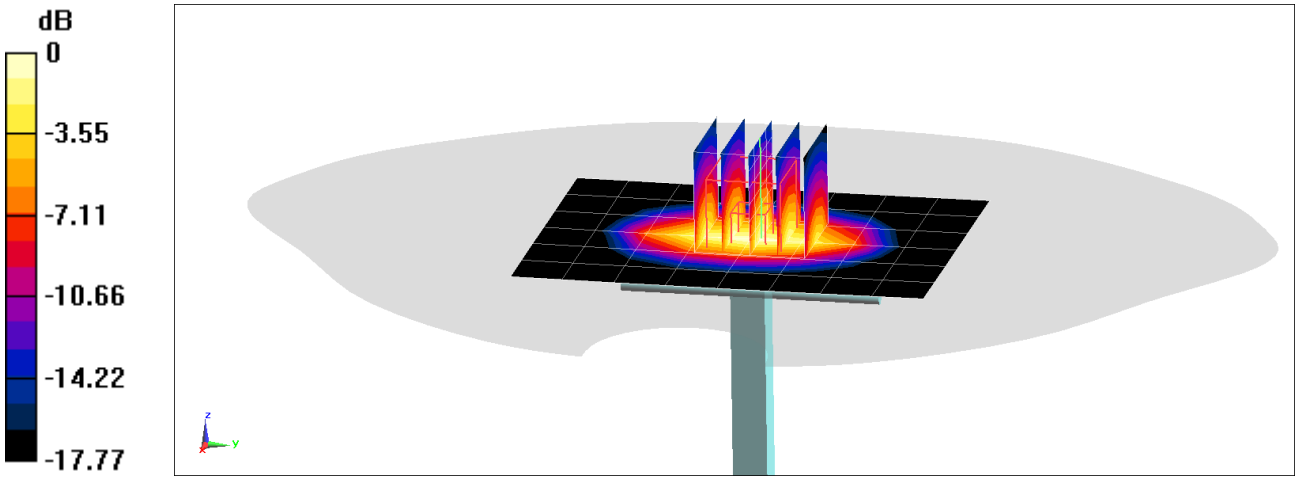
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used
f = 1750 MHz; σ = 1.378 S/m; ε_r = 39.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 06/22/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3949; ConvF(8.83, 8.83, 8.83) @ 1750 MHz; Calibrated: 8/19/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 8/13/2020
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)

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) = 7.00 W/kg
SAR(1 g) = 3.82 W/kg
Deviation(1 g) = 5.82%



0 dB = 5.86 W/kg = 7.68 dBW/kg

PCTEST

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

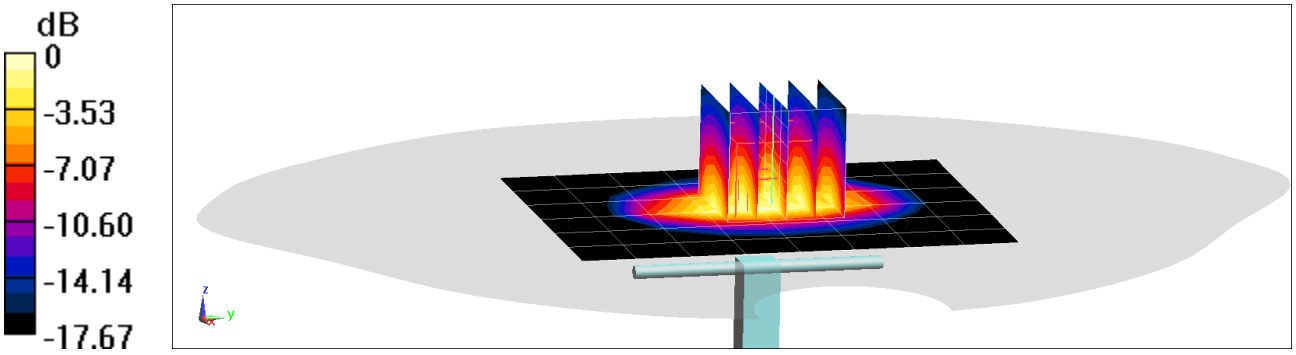
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1750 MHz; σ = 1.375 S/m; ε_r = 39.194; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/20/2021; Ambient Temp: 23.3°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7640; ConvF(9.49, 9.49, 9.49) @ 1750 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1645; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2034
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(1 g) = 3.8 W/kg
Deviation(1 g) = 5.26%



0 dB = 5.93 W/kg = 7.73 dBW/kg

PCTEST

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

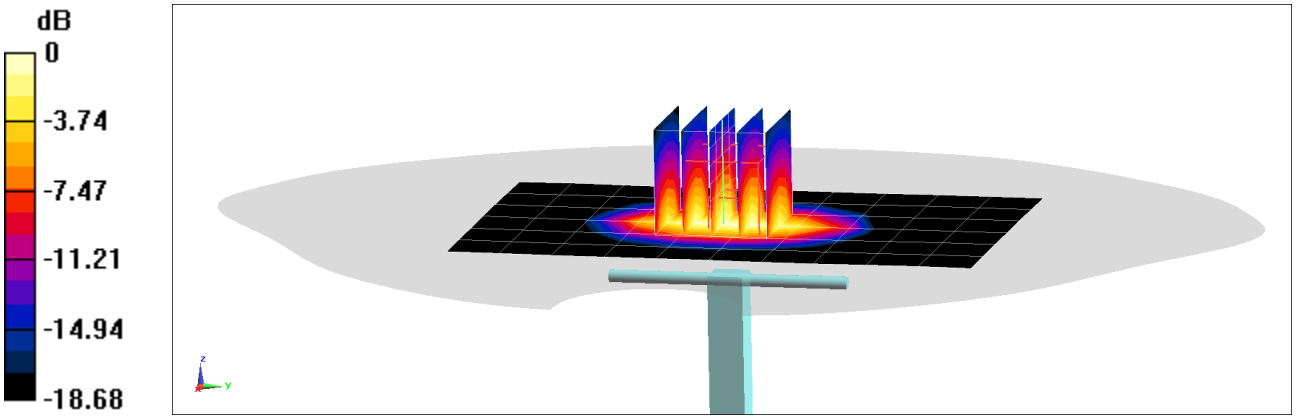
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1900 MHz; σ = 1.451 S/m; ε_r = 38.99; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 06/22/2021; Ambient Temp: 22.9°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(8.25, 8.25, 8.25) @ 1900 MHz; Calibrated: 2/17/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1403; Calibrated: 2/11/2021
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)

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) = 8.14 W/kg
SAR(1 g) = 4.28 W/kg
Deviation(1 g) = 6.73%



0 dB = 6.78 W/kg = 8.31 dBW/kg

PCTEST

DUT: Dipole 1900.0 MHz; Type: D1900V2; Serial: 5d181

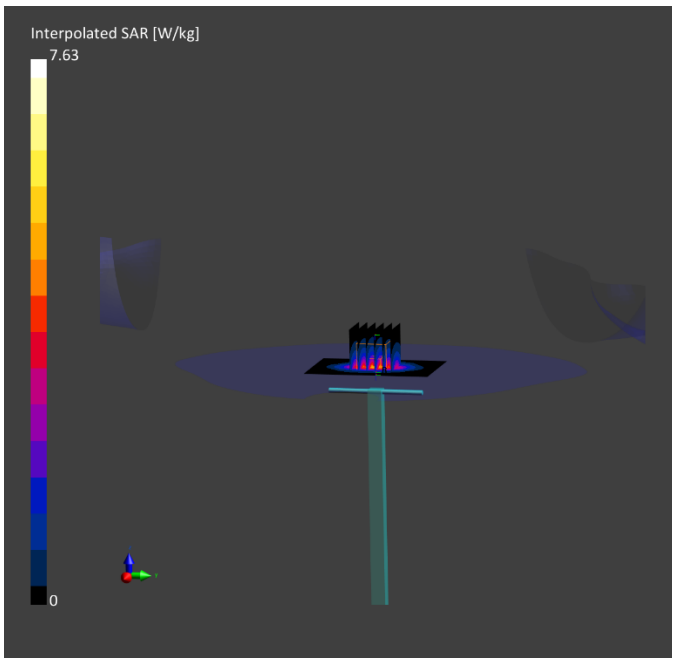
Communication System: UID: 0, CW; Frequency: 1900.0 MHz
Medium: 1900 Head; Medium parameters used:
f = 1900.0 MHz; cond = 1.46 S/m; perm = 39.1; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/21/2021; Ambient Temp: 23.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN7639; ConvF:(8.86,8.86,8.86); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

1900.0 MHz System Verification at 20.0 dBm

Area Scan (60.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 7.63 W/kg
SAR(1 g) = 4.01 W/kg
Deviation (1 g) = 0.00%



PCTEST

DUT: Dipole 2450.0 MHz; Type: D2450V2; Serial: 750

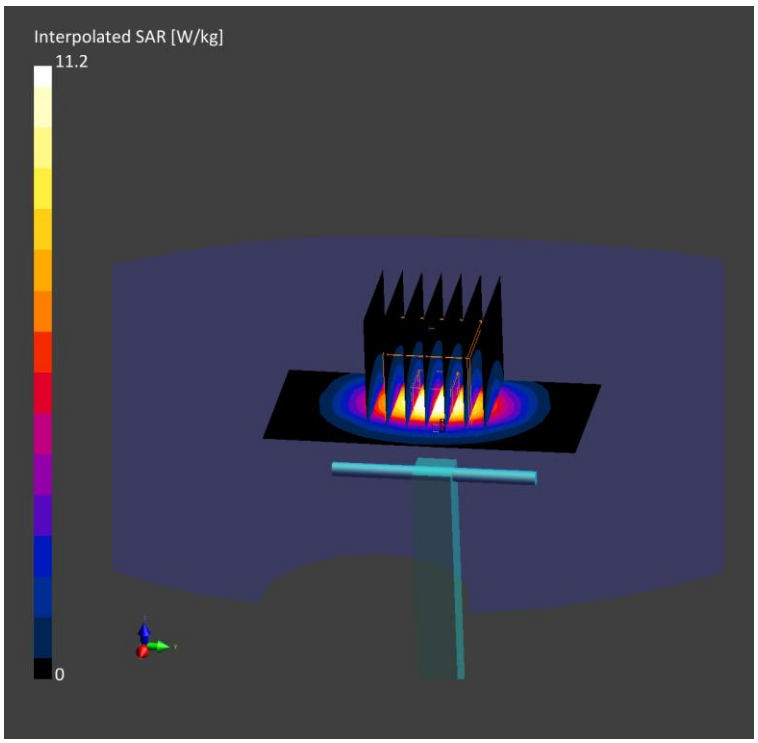
Communication System: UID: 0--, CW; Frequency: 2450.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.0 MHz; cond = 1.86 S/m; perm = 39.0; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3837; ConvF:(7.39,7.39,7.39); Calibrated: 2021-01-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn793; Calibrated: 2021-01-13
Phantom: Main; Serial: 1736
Measurement SW: cDASY6 Module SAR V6.14.0.959

2450.0 MHz System Verification at 20.0 dBm

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0mm, dy=10.0mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0mm, dy=5.0mm, dz=1.5mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 11.2 W/kg
SAR(1 g) = 5.11 W/kg
Deviation (1 g) = -3.77%



PCTEST

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

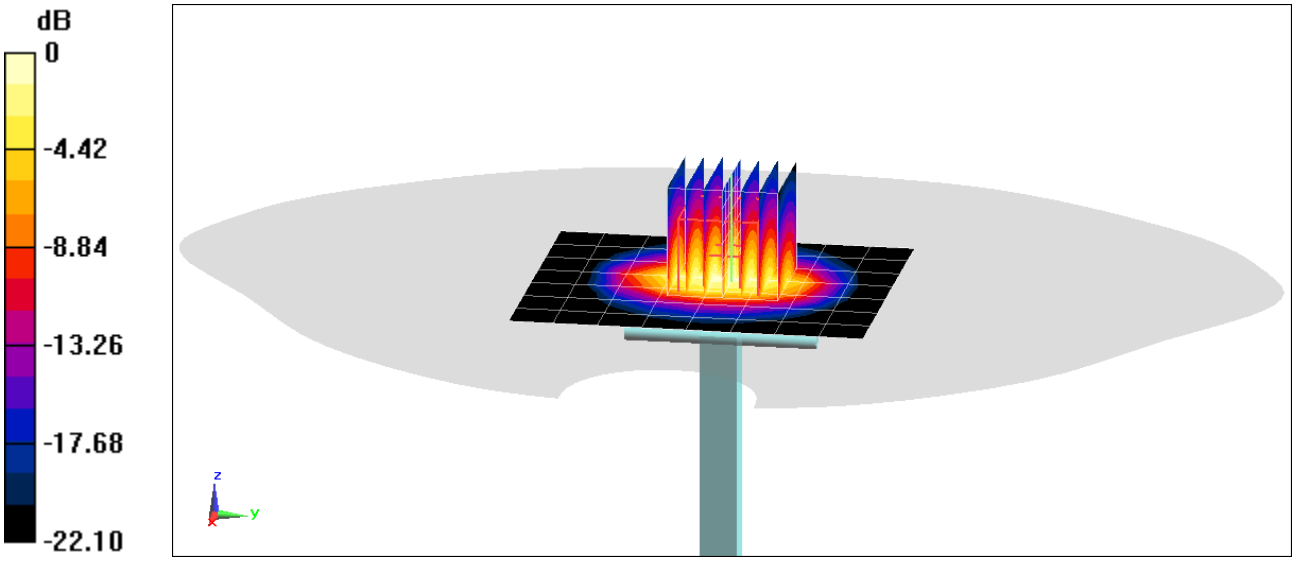
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used
f = 2450 MHz; σ = 1.8 S/m; ε_r = 40.41; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 22.7°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7558; ConvF(7.62, 7.62, 7.62) @ 2450 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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) = 10.6 W/kg
SAR(1 g) = 5.13 W/kg
Deviation(1 g) = -3.39%



0 dB = 8.56 W/kg = 9.32 dBW/kg

PCTEST

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

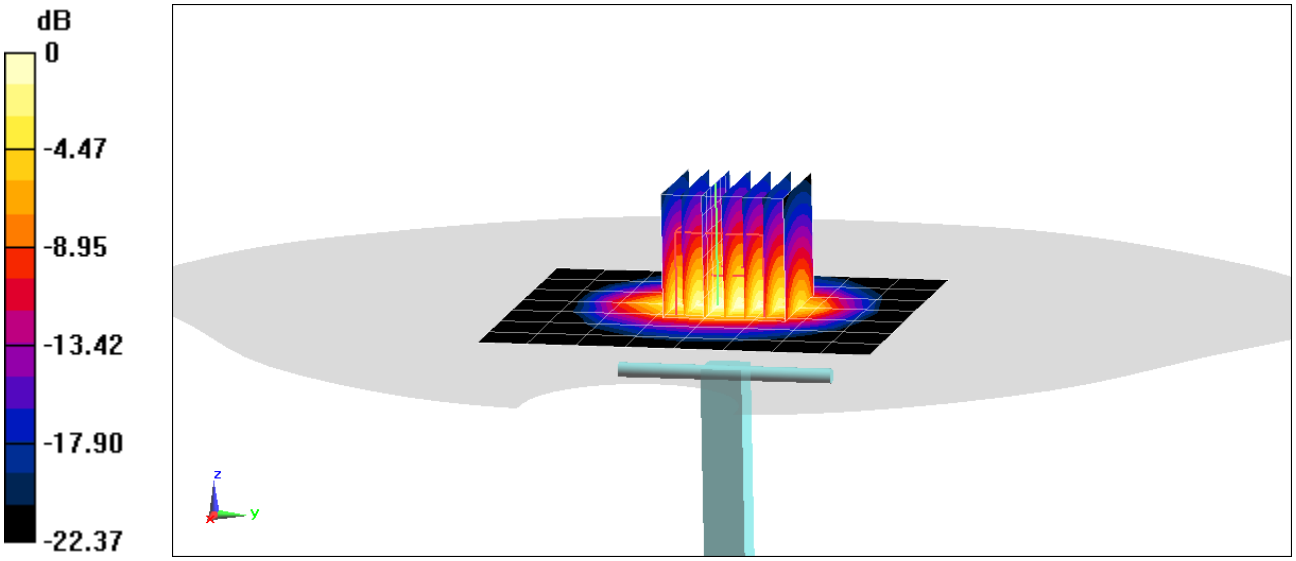
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.799 S/m; ε_r = 38.472; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/15/2021; Ambient Temp: 21.4°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7558; ConvF(7.62, 7.62, 7.62) @ 2450 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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) = 11.2 W/kg
SAR(1 g) = 5.42 W/kg
Deviation(1 g) = 2.07%



0 dB = 8.96 W/kg = 9.52 dBW/kg

PCTEST

DUT: Dipole 2600.0 MHz; Type: D2600V2; Serial: 1042

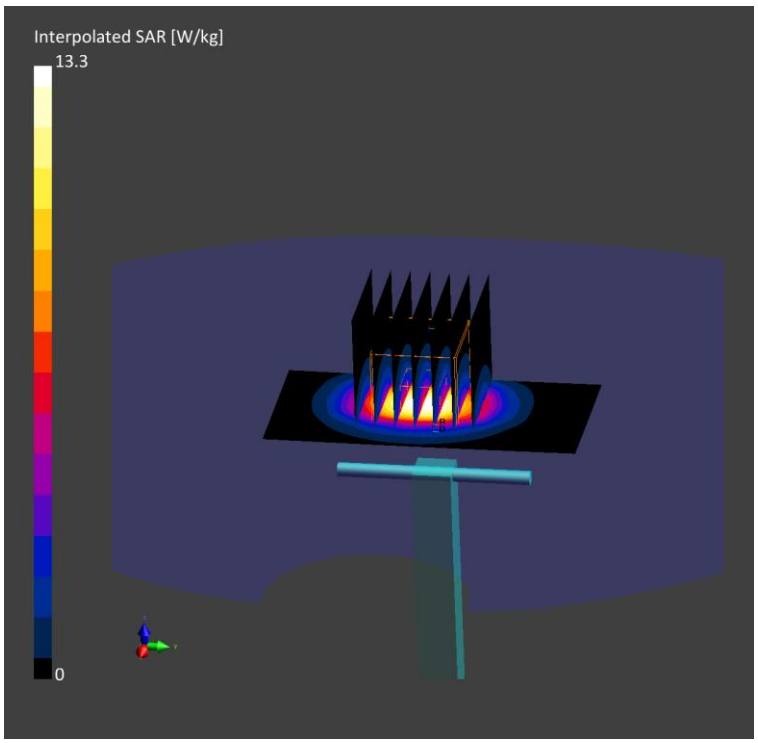
Communication System: UID: 0--, CW; Frequency: 2600.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2600.0 MHz; cond = 2.02 S/m; perm = 38.5; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3837; ConvF:(7.13,7.13,7.13); Calibrated: 2021-01-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn793; Calibrated: 2021-01-13
Phantom: Main; Serial: 1736
Measurement SW: cDASY6 Module SAR V6.14.0.959

2600.0 MHz System Verification at 20.0 dBm

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0mm, dy=10.0mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0mm, dy=5.0mm, dz=1.5mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 13.3 W/kg
SAR(1 g) = 5.97 W/kg
Deviation (1 g) = 3.47%



PCTEST

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

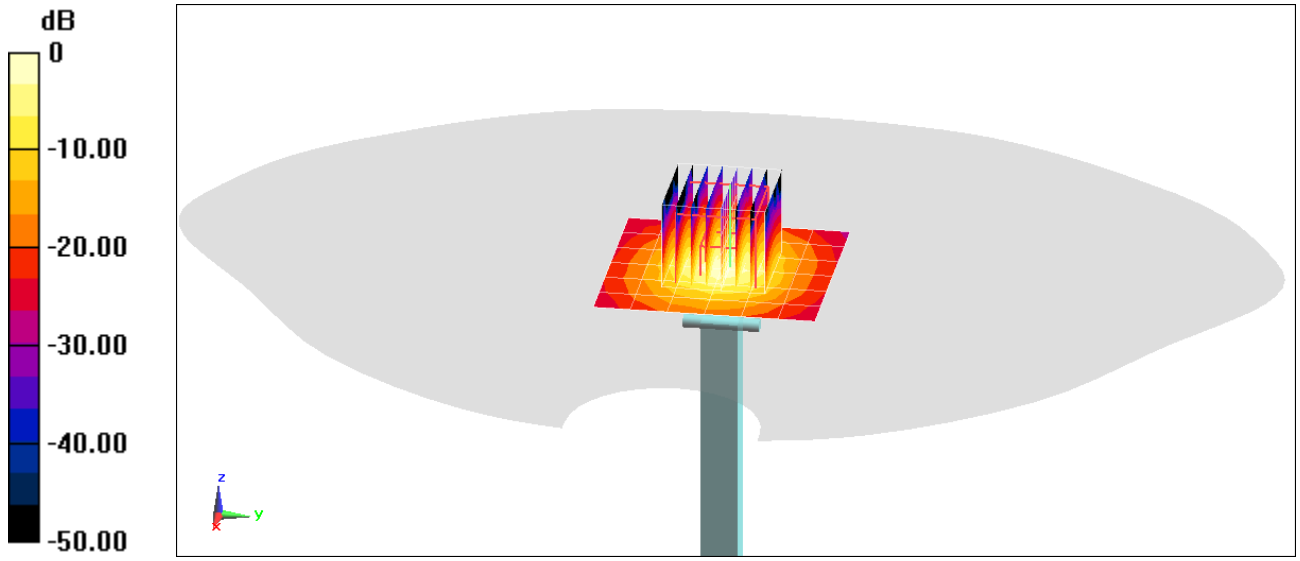
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used
f = 5250 MHz; σ = 4.505 S/m; ε_r = 35.962; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 23.5°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7558; ConvF(5.33, 5.33, 5.33) @ 5250 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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)

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) = 15.1 W/kg
SAR(1 g) = 3.88 W/kg
Deviation(1 g) = -5.60%



0 dB = 9.00 W/kg = 9.54 dBW/kg

PCTEST

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

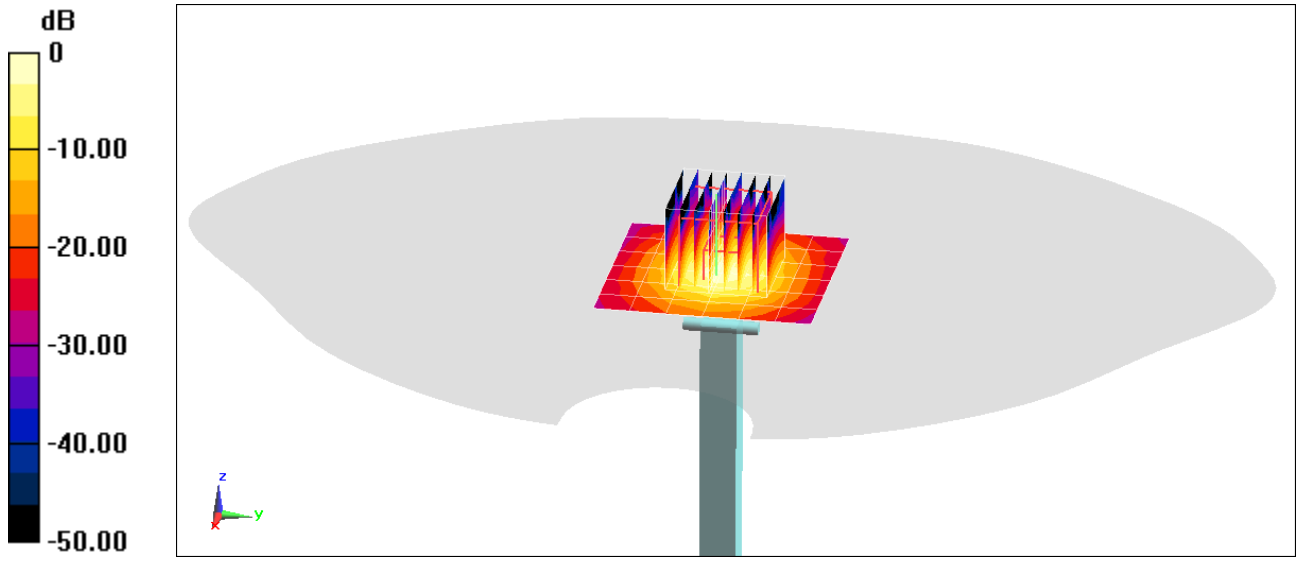
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used
f = 5600 MHz; σ = 4.93 S/m; ε_r = 35.447; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 23.5°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7558; ConvF(4.81, 4.81, 4.81) @ 5600 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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)

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) = 17.7 W/kg
SAR(1 g) = 4.11 W/kg
Deviation(1 g) = -2.72%



0 dB = 9.91 W/kg = 9.96 dBW/kg

PCTEST

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

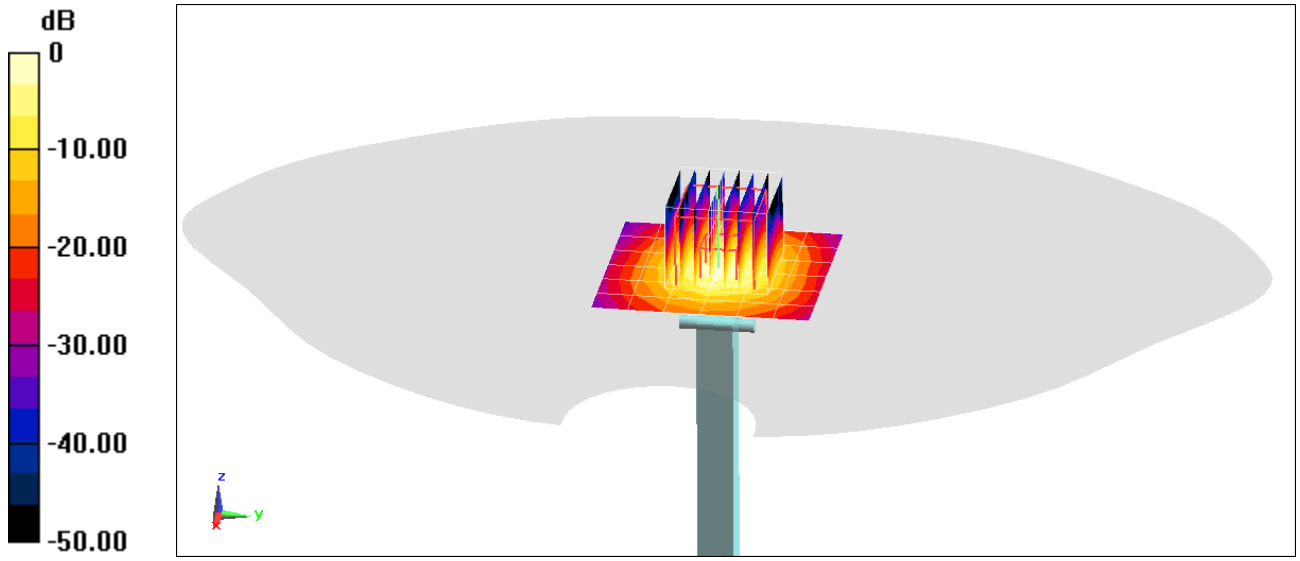
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used
f = 5750 MHz; σ = 5.057 S/m; ε_r = 35.148; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/09/2021; Ambient Temp: 23.5°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7558; ConvF(4.88, 4.88, 4.88) @ 5750 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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)

5750 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) = 17.1 W/kg
SAR(1 g) = 3.82 W/kg
Deviation(1 g) = -6.03%



0 dB = 9.45 W/kg = 9.75 dBW/kg

PCTEST

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

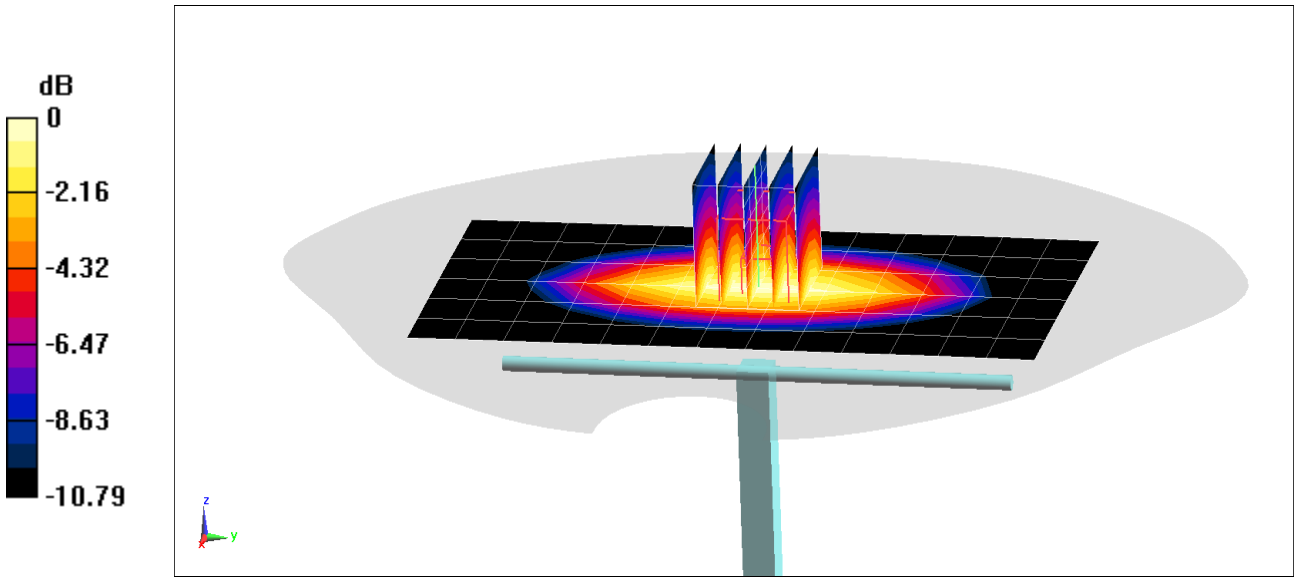
Communication System: UID 0, CW; Frequency: 850 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 850 MHz; σ = 1 S/m; ε_r = 52.636; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 15 mm

Test Date: 07/29/2021; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7639; ConvF(10.53, 10.53, 10.53) @ 850 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1646; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2129
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) = 3.31 W/kg
SAR(10 g) = 1.38 W/kg
Deviation(10 g) = 5.18%



0 dB = 2.88 W/kg = 4.59 dBW/kg

PCTEST

DUT: Dipole 835.0 MHz; Type: D835V2; Serial: 4d040

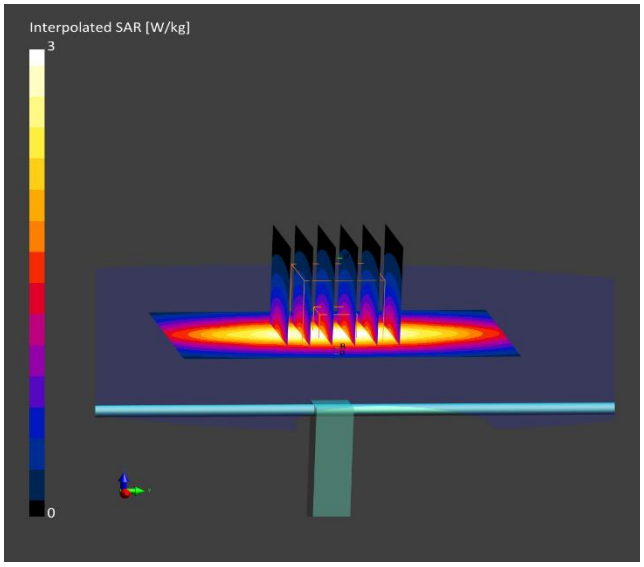
Communication System: UID: 0, CW; Frequency: 835.0 MHz
Medium: 835 Body; Medium parameters used:
f = 835.0 MHz; cond = 0.95 S/m; perm = 53.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 15 mm

Test Date: 08/09/2021; Ambient Temp: 22.2°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7639; ConvF:(10.53,10.53,10.53); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

835.0 MHz System Verification at 23.0 dBm

Area Scan (60.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 3.0 W/kg
SAR(10 g) = 1.23 W/kg
Deviation (10 g) = -1.44%



PCTEST

DUT: Dipole 835.0 MHz; Type: D835V2; Serial: 4d040

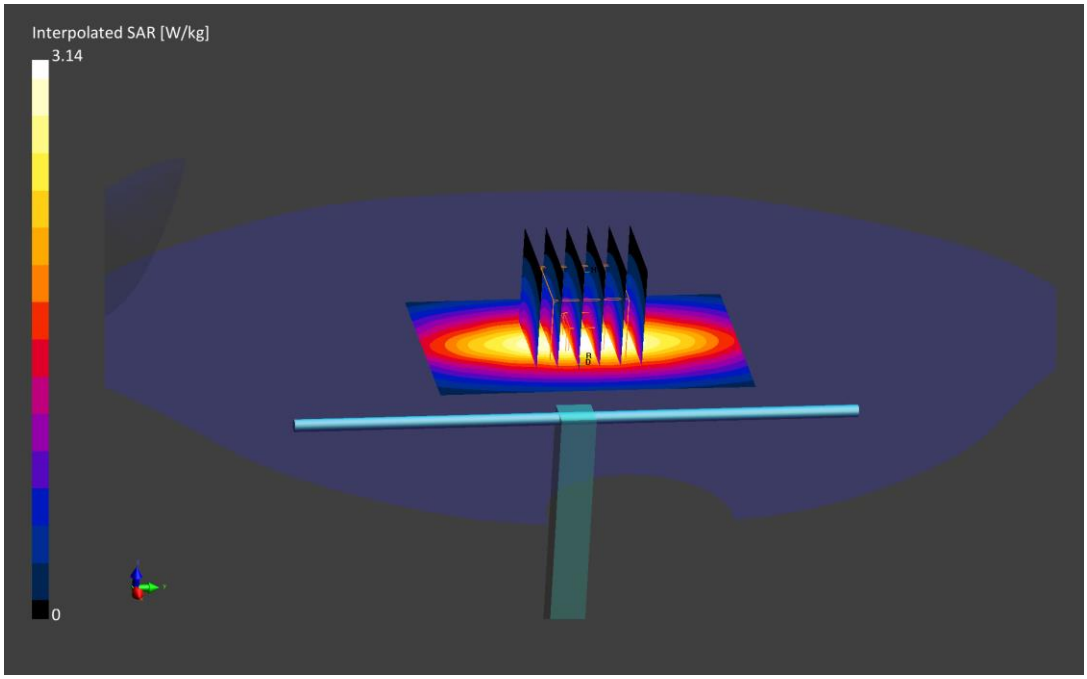
Communication System: UID: 0, CW; Frequency: 835.0 MHz
Medium: 835 Body; Medium parameters used:
f = 835.0 MHz; cond = 0.99 S/m; perm = 53.4; density = 1000 kg/m3
Phantom Section: Flat; Space: 15 mm

Test Date: 08/11/2021; Ambient Temp: 22.0°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7416; ConvF:(9.66,9.66,9.66); Calibrated: 2021-05-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn701; Calibrated: 2021-05-11
Phantom: Twin-SAM V4.0; Serial: 1357
Measurement SW: cDASY6 Module SAR V6.14.0.959

835.0 MHz System Verification at 23.0 dBm

Area Scan (60.0 x 90.0): Measurement grid: dx=15.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 3.14 W/kg
SAR(10 g) = 1.31 W/kg
Deviation (10 g) = 4.97%



PCTEST

DUT: Dipole 1750.0 MHz; Type: D1750V2; Serial: 1083

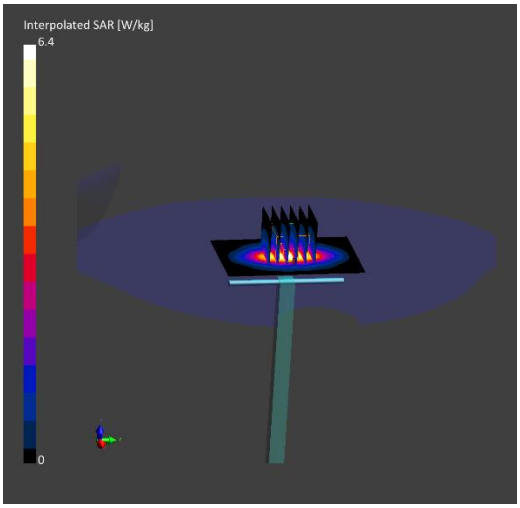
Communication System: UID: 0--, CW; Frequency: 1750.0 MHz
Medium: 750 Body; Medium parameters used:
f = 1750.0 MHz; cond = 1.47 S/m; perm = 53.6; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/24/2021; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7639; ConvF:(9.29,9.29,9.29); Calibrated: 2021-03-03
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1646; Calibrated: 2021-01-11
Phantom: Twin-SAM V8.0; Serial: 2029
Measurement SW: cDASY6 Module SAR V6.14.0.959

1750.0 MHz System Verification at 20.0 dBm

Area Scan (60.0 x 90.0): Measurement grid: dx=15.0mm, dy=15.0mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0mm, dy=6.0mm, dz=1.5mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 6.4 W/kg
SAR(10 g) = 1.89 W/kg
Deviation (10 g) = -4.06%



PCTEST

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

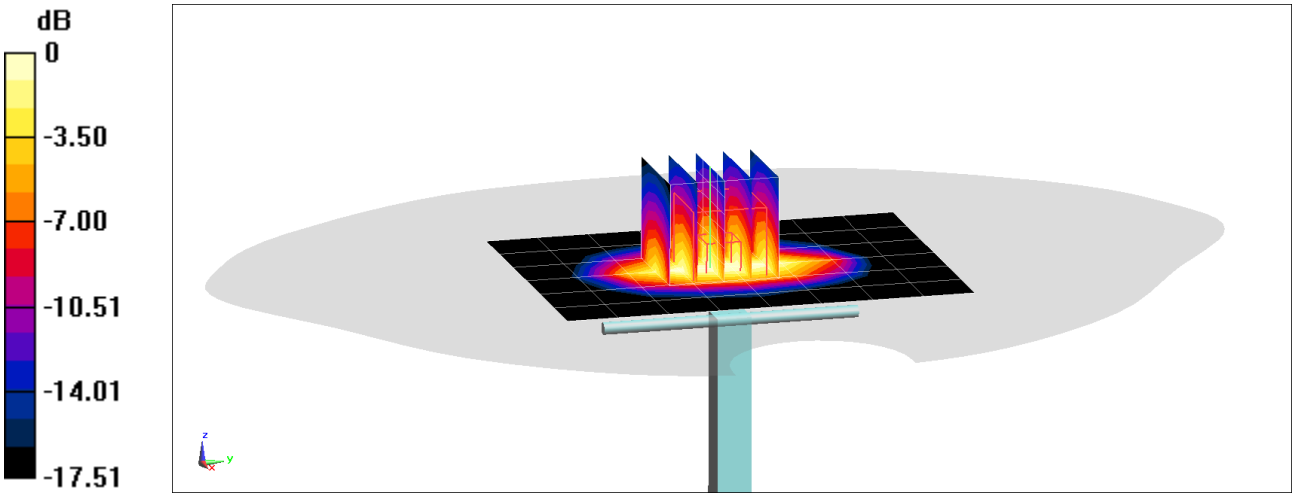
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.5 S/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/08/2021; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7420; ConvF(8.09, 8.09, 8.09) @ 1750 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
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) = 6.43 W/kg
SAR(10 g) = 2 W/kg
Deviation(10 g) = 1.52%



0 dB = 5.51 W/kg = 7.41 dBW/kg

PCTEST

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

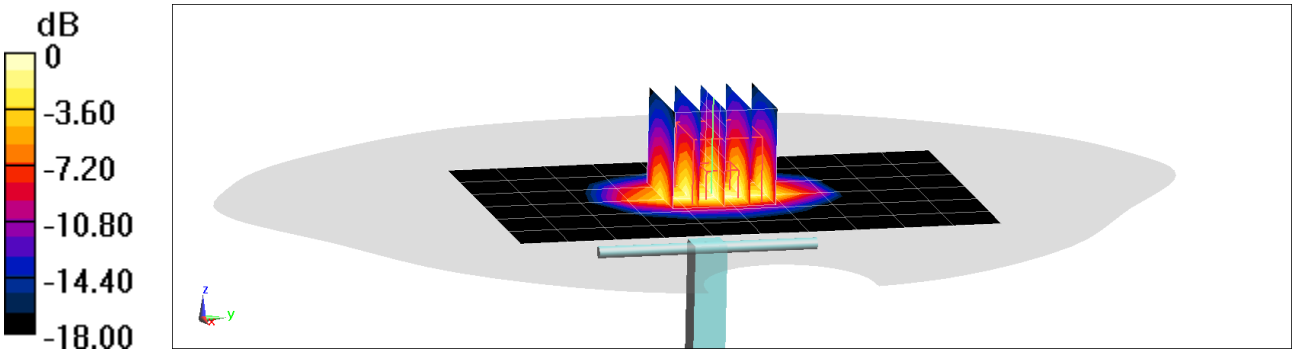
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1900 MHz; σ = 1.585 S/m; ε_r = 53.72; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 22.7°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7640; ConvF(9.06, 9.06, 9.06) @ 1900 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1645; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2034
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) = 7.66 W/kg
SAR(10 g) = 2.15 W/kg
Deviation(10 g) = 1.90%



0 dB = 6.42 W/kg = 8.08 dBW/kg

PCTEST

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

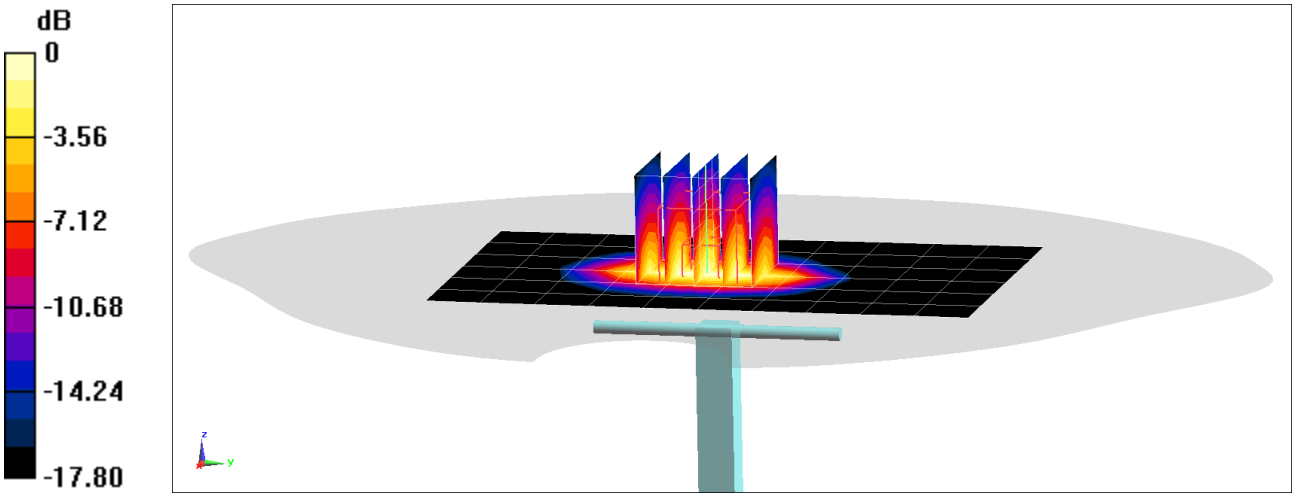
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1900 MHz; σ = 1.541 S/m; ε_r = 51.43; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/22/2021; Ambient Temp: 22.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7420; ConvF(7.76, 7.76, 7.76) @ 1900 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
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) = 6.54 W/kg
SAR(10 g) = 1.95 W/kg
Deviation(10 g) = -7.58%



0 dB = 5.62 W/kg = 7.50 dBW/kg

PCTEST

DUT: Dipole 2450.0 MHz; Type: D2450V2; Serial: 750

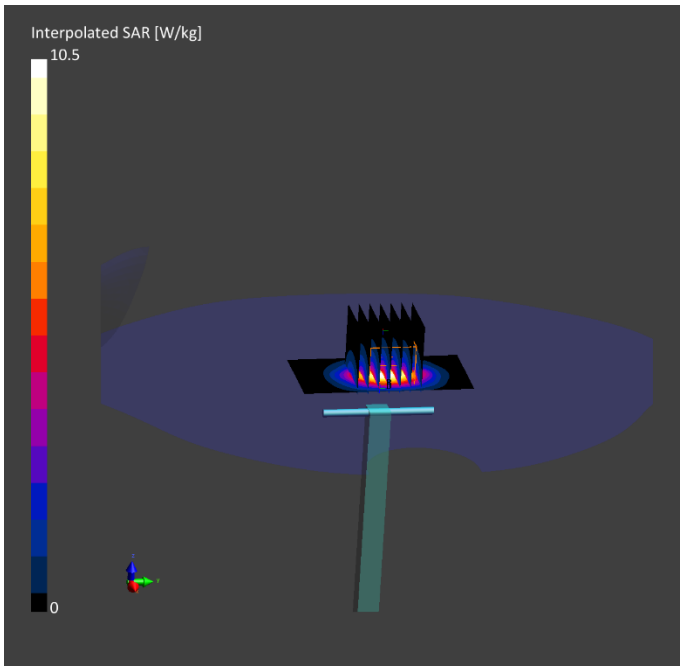
Communication System: UID: 0--, CW; Frequency: 2450.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2450.0 MHz; cond = 1.98 S/m; perm = 50.5; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7532; ConvF:(7.64,7.64,7.64); Calibrated: 2021-04-19
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn501; Calibrated: 2021-04-13
Phantom: Left; Serial: 1275
Measurement SW: cDASY6 Module SAR V6.14.0.959

2450.0 MHz System Verification at 20.0 dBm

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0mm, dy=10.0mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0mm, dy=5.0mm, dz=1.5mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 10.5 W/kg
SAR(10 g) = 2.33 W/kg
Deviation (10 g) = -3.32%



PCTEST

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

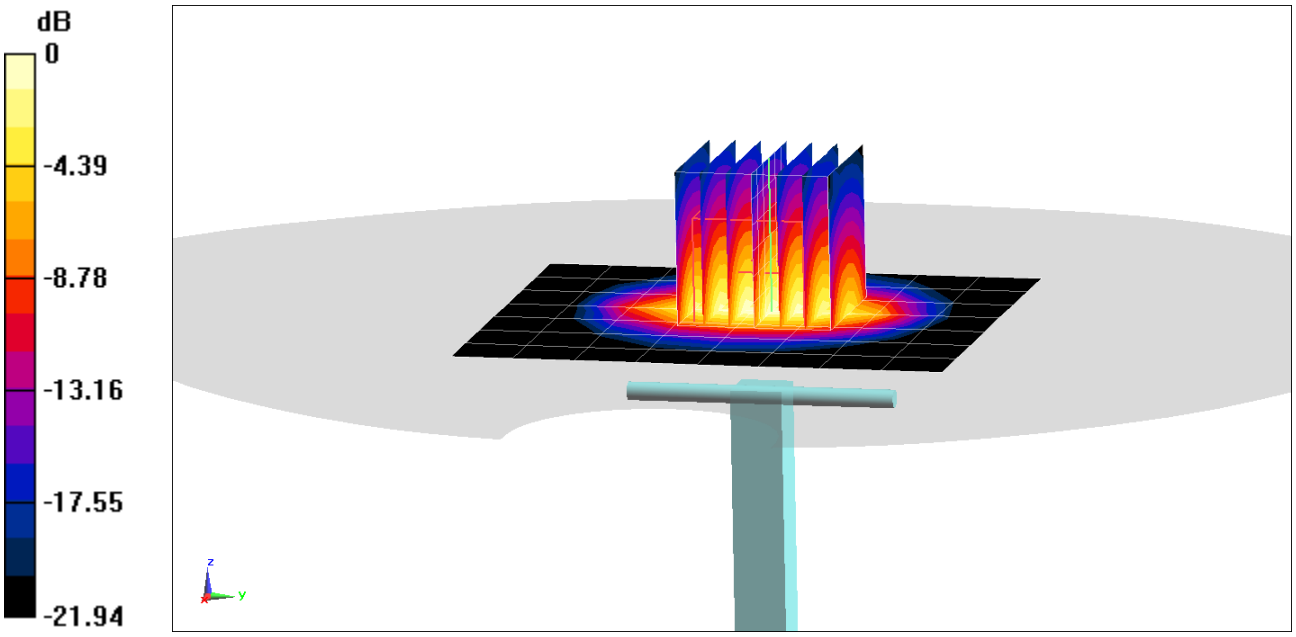
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.025 S/m; ε_r = 52.517; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/18/2021; Ambient Temp: 22.7°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN7558; ConvF(7.64, 7.64, 7.64) @ 2450 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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) = 10.3 W/kg
SAR(10 g) = 2.36 W/kg
Deviation(10 g) = -2.07%



0 dB = 8.37 W/kg = 9.23 dBW/kg

PCTEST

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

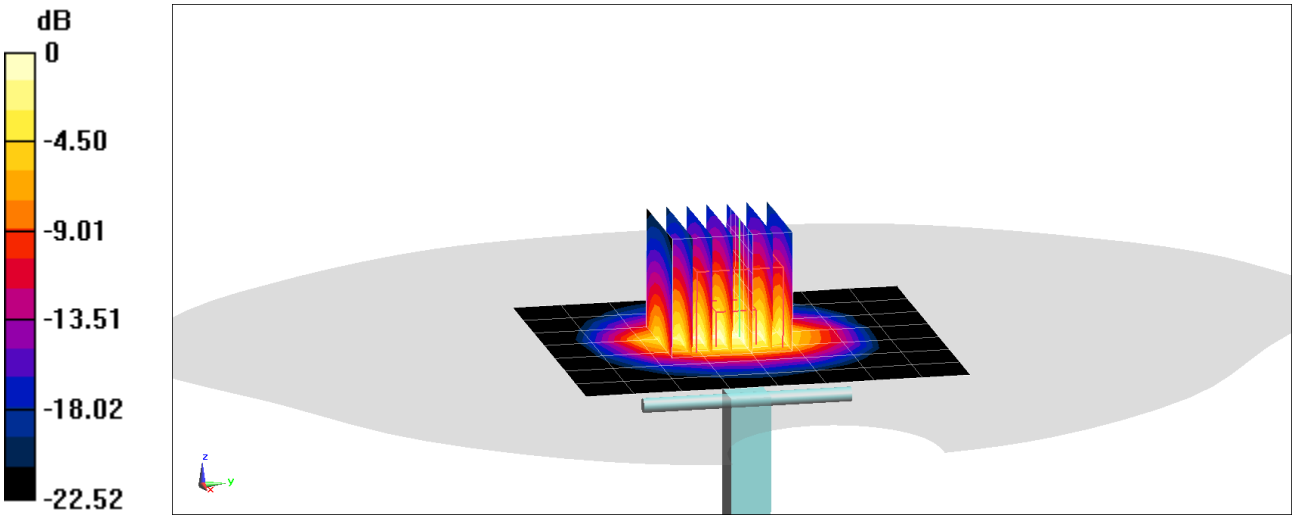
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 1.958 S/m; ε_r = 51.597; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 08/02/2021; Ambient Temp: 21.4°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7420; ConvF(7.52, 7.52, 7.52) @ 2450 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1213; Calibrated: 10/12/2020
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 81923
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) = 10.8 W/kg
SAR(10 g) = 2.29 W/kg
Deviation(10 g) = -4.98%



0 dB = 8.14 W/kg = 9.11 dBW/kg

PCTEST

DUT: Dipole 2450.0 MHz; Type: D2450V2; Serial: 750

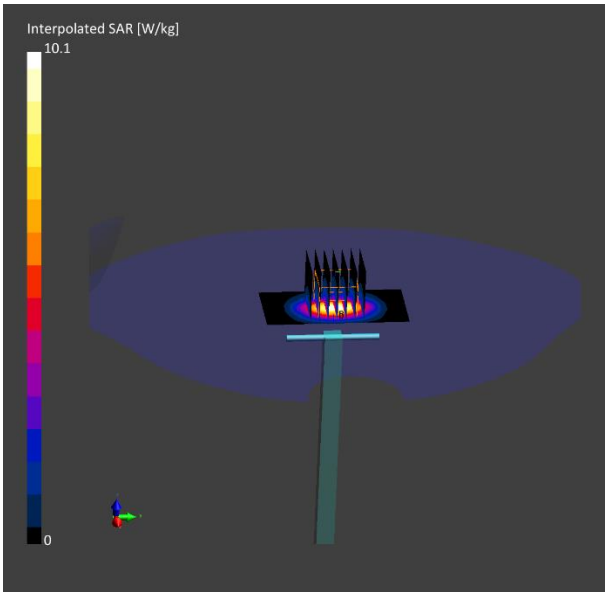
Communication System: UID: 0, CW; Frequency: 2450.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2450.0 MHz; cond = 1.97 S/m; perm = 51.6; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 08/13/2021; Ambient Temp: 22.3°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7532; ConvF:(7.64,7.64,7.64); Calibrated: 2021-04-19
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn501; Calibrated: 2021-04-13
Phantom: Twin-SAM V4.0; Serial: 1275
Measurement SW: cDASY6 Module SAR V6.14.0.959

2450.0 MHz System Verification at 20.0 dBm

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 10.1 W/kg
SAR(10 g) = 2.26 W/kg
Deviation (10 g) = -6.22%



PCTEST

DUT: Dipole 2600.0 MHz; Type: D2600V2; Serial: 1042

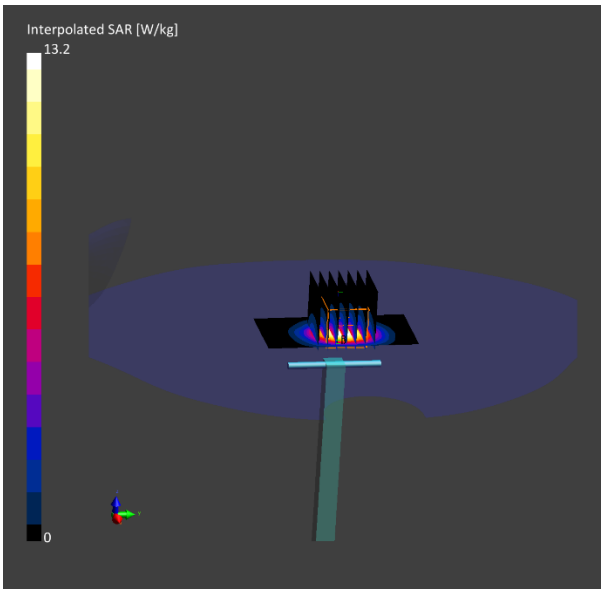
Communication System: UID: 0--, CW; Frequency: 2600.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2600.0 MHz; cond = 2.12 S/m; perm = 50.3; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 06/28/2021; Ambient Temp: 21.1°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7532; ConvF:(7.28,7.28,7.28); Calibrated: 2021-04-19
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn501; Calibrated: 2021-04-13
Phantom: Left; Serial: 1275
Measurement SW: cDASY6 Module SAR V6.14.0.959

2600.0 MHz System Verification at 20.0 dBm

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0mm, dy=10.0mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0mm, dy=5.0mm, dz=1.5mm; Graded Ratio: 1.5
Peak SAR (extrapolated) = 13.2 W/kg
SAR(10 g) = 2.68 W/kg
Deviation (10 g) = 7.63%



PCTEST

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1042

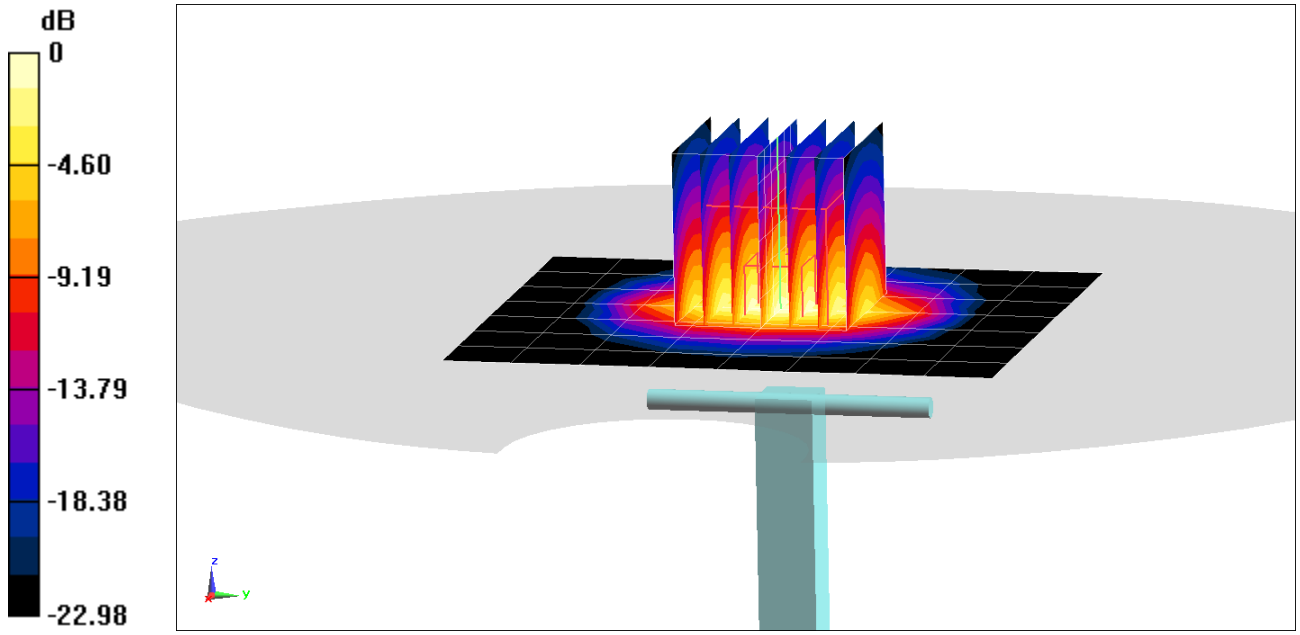
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.179 S/m; ε_r = 52.374; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/18/2021; Ambient Temp: 22.7°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN7558; ConvF(7.46, 7.46, 7.46) @ 2600 MHz; Calibrated: 10/21/2020
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 10/12/2020
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)

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) = 12.3 W/kg
SAR(10 g) = 2.57 W/kg
Deviation(10 g) = 3.21%



0 dB = 9.86 W/kg = 9.94 dBW/kg

PCTEST

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

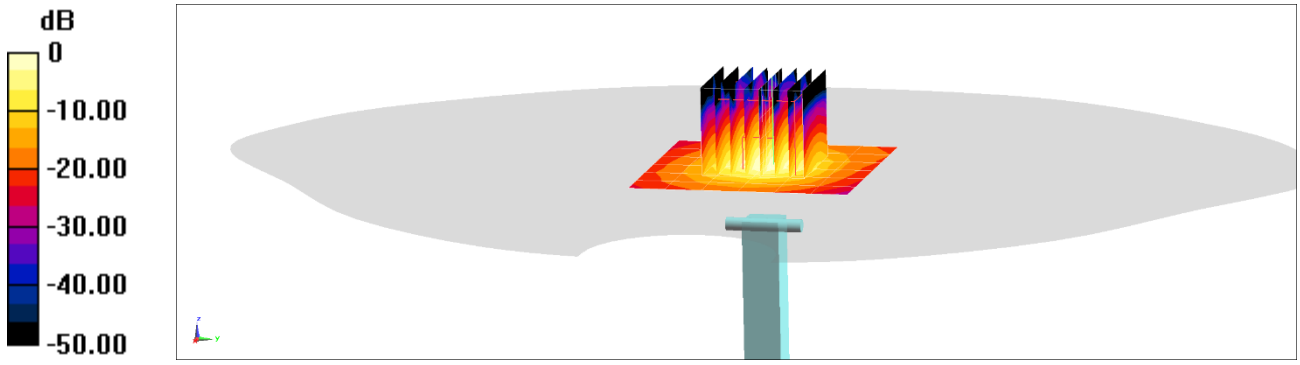
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body Medium parameters used:
f = 5250 MHz; σ = 5.41 S/m; ε_r = 48.246; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/23/2021; Ambient Temp: 21.5°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7638; ConvF(4.76, 4.76, 4.76) @ 5250 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1644; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2027
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) = 15.8 W/kg
SAR(10 g) = 1.07 W/kg
Deviation(10 g) = 5.42%



0 dB = 9.16 W/kg = 9.62 dBW/kg

PCTEST

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

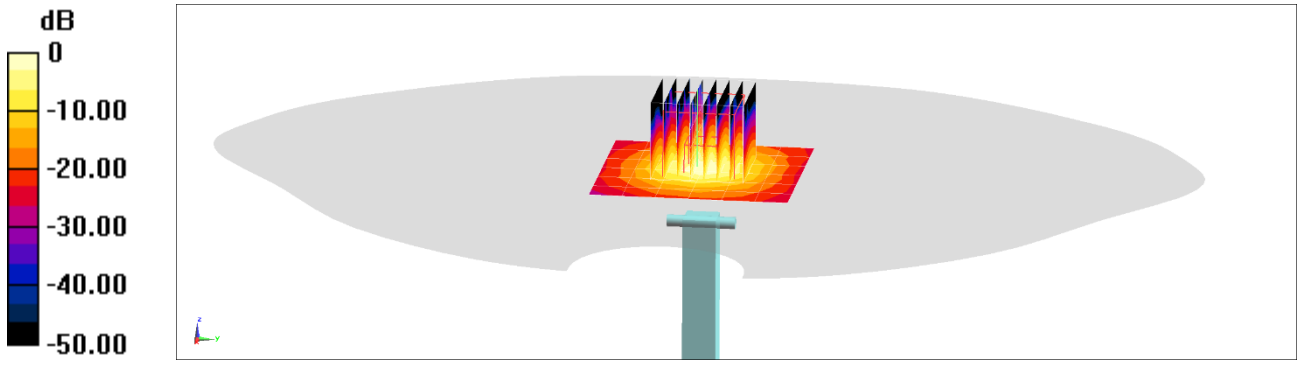
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
5200-5800 Body Medium parameters used:
f = 5600 MHz; σ = 5.917 S/m; ε_r = 47.582; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/23/2021; Ambient Temp: 21.5°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7638; ConvF(4.24, 4.24, 4.24) @ 5600 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1644; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2027
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) = 19.0 W/kg
SAR(10 g) = 1.13 W/kg
Deviation(10 g) = 6.60%



0 dB = 10.0 W/kg = 10.00 dBW/kg

PCTEST

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

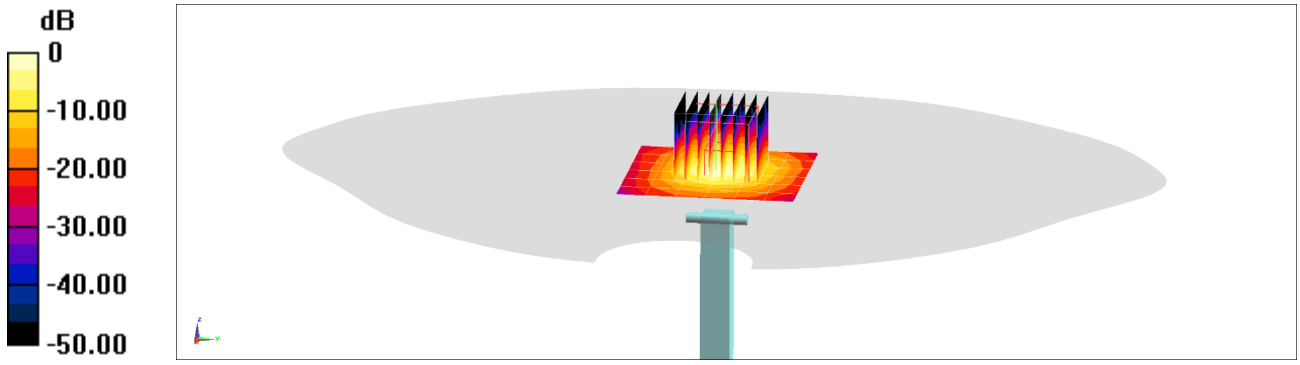
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
5200-5800 Body Medium parameters used:
f = 5750 MHz; σ = 6.14 S/m; ε_r = 47.325; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 10 mm

Test Date: 07/23/2021; Ambient Temp: 21.5°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7638; ConvF(4.32, 4.32, 4.32) @ 5750 MHz; Calibrated: 3/3/2021
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1644; Calibrated: 1/11/2021
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 2027
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 (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 18.7 W/kg
SAR(10 g) = 1.08 W/kg
Deviation(10 g) = 7.46%



0 dB = 10.1 W/kg = 10.04 dBW/kg

APPENDIX C: SAR TISSUE SPECIFICATIONS

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_r' 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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s p e a g

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Measurement Certificate / Material Test

Item Name	**Body Tissue Simulating Liquid (MBBL600-6000V6)**
Product No.	SL AAM U16 BC (Batch: 200803-1)
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

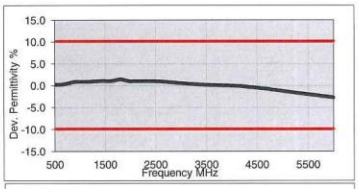
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	6-Aug-20
Operator	CL

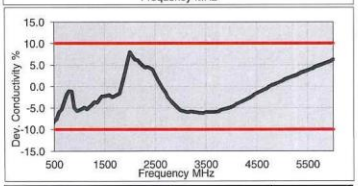
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	56.3	26.8	0.89	56.1	0.95	0.3	-6.3
750	55.8	22.6	0.94	55.5	0.96	0.5	-2.1
800	55.7	21.6	0.96	55.3	0.97	0.7	-1.0
825	55.7	21.1	0.97	55.2	0.98	0.8	-1.0
835	55.7	20.9	0.98	55.1	0.99	1.0	-0.5
850	55.6	20.7	0.98	55.2	0.99	0.8	-1.0
900	55.5	19.9	1.00	55.0	1.05	0.9	-4.8
1400	54.7	15.9	1.24	54.1	1.28	1.1	-3.1
1450	54.6	15.8	1.27	54.0	1.30	1.1	-2.3
1600	54.4	15.3	1.36	53.8	1.39	1.1	-2.2
1625	54.4	15.3	1.38	53.8	1.41	1.2	-2.1
1640	54.4	15.2	1.39	53.7	1.42	1.3	-2.1
1650	54.3	15.2	1.39	53.7	1.43	1.1	-2.8
1700	54.2	15.1	1.43	53.6	1.46	1.2	-2.1
1750	54.2	15.0	1.46	53.4	1.49	1.4	-2.0
1800	54.1	14.9	1.50	53.3	1.52	1.5	-1.3
1810	54.1	14.9	1.51	53.3	1.52	1.5	-0.7
1825	54.1	14.9	1.52	53.3	1.52	1.5	0.0
1850	54.0	14.9	1.53	53.3	1.52	1.3	0.7
1900	54.0	14.8	1.57	53.3	1.52	1.3	3.3
1950	53.9	14.8	1.60	53.3	1.52	1.1	5.3
2000	53.8	14.8	1.64	53.3	1.52	0.9	7.9
2050	53.8	14.7	1.68	53.2	1.57	1.1	7.0
2100	53.7	14.7	1.72	53.2	1.62	1.0	6.2
2150	53.7	14.7	1.76	53.1	1.66	1.1	6.0
2200	53.6	14.7	1.80	53.0	1.71	1.1	5.3
2250	53.5	14.8	1.85	53.0	1.76	1.0	5.1
2300	53.5	14.8	1.89	52.9	1.81	1.1	4.4
2350	53.4	14.8	1.94	52.8	1.85	1.1	4.9
2400	53.3	14.8	1.98	52.8	1.90	1.0	4.2
2450	53.3	14.9	2.03	52.7	1.95	1.1	4.1
2500	53.2	14.9	2.07	52.6	2.02	1.1	2.5
2550	53.1	15.0	2.12	52.6	2.09	1.0	1.4
2600	53.0	15.0	2.17	52.5	2.16	0.9	0.5





3500	51.4	16.0	3.11	51.3	3.31	0.2	-6.0
3700	51.1	16.2	3.34	51.1	3.55	0.1	-5.9
5200	48.3	18.7	5.42	49.0	5.30	-1.5	2.3
5250	48.2	18.8	5.50	49.0	5.36	-1.6	2.5
5300	48.1	18.9	5.57	48.9	5.42	-1.7	2.8
5500	47.7	19.2	5.86	48.6	5.65	-2.0	3.8
5600	47.5	19.3	6.01	48.5	5.77	-2.1	4.2
5700	47.3	19.4	6.16	48.3	5.88	-2.3	4.8
5800	47.0	19.6	6.32	48.2	6.00	-2.4	5.3
6000	46.6	19.8	6.62	47.9	6.23	-2.7	6.3
6500							
7000							
7500							
8000							
8500							
9000							
9500							
10000							

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

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s p e a g

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Measurement Certificate / Material Test

Item Name	**Head Tissue Simulating Liquid (HBBL600-10000V6)**
Product No.	SL AAH U16 BC (Batch: 200805-4)
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

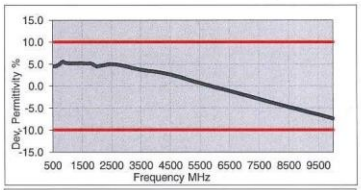
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	6-Aug-20
Operator	CL

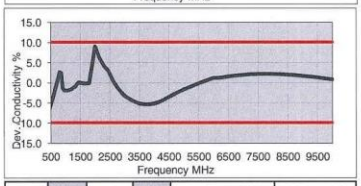
Additional Information

TSL Density
TSL Heat-capacity

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	ε'	ε''	sigma	eps	sigma	Δ-eps	Δ-sigma
600	44.7	25.7	0.86	42.7	0.88	4.6	-2.5
750	44.1	21.7	0.90	41.9	0.89	5.1	0.7
800	44.0	20.7	0.92	41.7	0.90	5.6	2.5
825	43.9	20.3	0.93	41.6	0.91	5.6	2.6
835	43.9	20.1	0.94	41.5	0.91	5.7	3.1
850	43.8	19.9	0.94	41.5	0.92	5.5	2.6
900	43.7	19.1	0.96	41.5	0.97	5.3	-1.0
1400	42.7	15.1	1.18	40.6	1.18	5.2	0.0
1450	42.6	14.9	1.20	40.5	1.20	5.2	0.0
1600	42.4	14.4	1.28	40.3	1.28	5.2	-0.3
1625	42.4	14.4	1.30	40.3	1.30	5.3	0.1
1640	42.4	14.3	1.31	40.3	1.31	5.3	0.3
1650	42.3	14.3	1.31	40.2	1.31	5.1	-0.2
1700	42.2	14.2	1.34	40.2	1.34	5.1	-0.2
1750	42.2	14.1	1.37	40.1	1.37	5.3	-0.1
1800	42.1	14.0	1.40	40.0	1.40	5.3	0.0
1810	42.1	14.0	1.41	40.0	1.40	5.3	0.7
1825	42.1	13.9	1.42	40.0	1.40	5.3	1.4
1850	42.0	13.9	1.43	40.0	1.40	5.0	2.1
1900	41.9	13.8	1.46	40.0	1.40	4.7	4.3
1950	41.9	13.8	1.49	40.0	1.40	4.7	6.4
2000	41.8	13.7	1.53	40.0	1.40	4.5	9.3
2050	41.7	13.7	1.56	39.9	1.44	4.5	8.0
2100	41.7	13.7	1.60	39.8	1.49	4.7	7.5
2150	41.6	13.6	1.63	39.7	1.53	4.7	6.3
2200	41.5	13.6	1.67	39.6	1.58	4.7	5.8
2250	41.5	13.6	1.70	39.6	1.62	4.9	4.8
2300	41.4	13.6	1.74	39.5	1.67	4.9	4.4
2350	41.3	13.6	1.78	39.4	1.71	4.9	4.0
2400	41.2	13.6	1.82	39.3	1.76	4.9	3.7
2450	41.2	13.6	1.85	39.2	1.80	5.1	2.8
2500	41.1	13.6	1.89	39.1	1.85	5.0	1.9
2550	41.0	13.7	1.94	39.1	1.91	4.9	1.6
2600	40.9	13.7	1.98	39.0	1.96	4.8	0.8





3500	39.4	14.2	2.77	37.9	2.91	3.7	-5.1
3700	39.0	14.3	2.95	37.7	3.12	3.5	-5.3
5200	36.4	15.9	4.61	36.0	4.66	1.3	-1.0
5250	36.4	16.0	4.67	35.9	4.71	1.2	-0.9
5300	36.3	16.0	4.72	35.9	4.76	1.1	-0.7
5500	35.9	16.2	4.96	35.6	4.96	0.7	-0.1
5600	35.7	16.3	5.07	35.5	5.07	0.5	0.2
5700	35.5	16.4	5.19	35.4	5.17	0.3	0.4
5800	35.4	16.5	5.31	35.3	5.27	0.1	0.7
6000	35.0	16.6	5.54	35.1	5.48	-0.2	1.2
6500	34.1	17.1	6.17	34.5	6.07	-1.1	1.6
7000	33.2	17.4	6.78	33.9	6.65	-2.0	2.0
7500	32.3	17.7	7.40	33.3	7.24	-2.9	2.2
8000	31.5	18.0	8.01	32.7	7.84	-3.8	2.2
8500	30.6	18.2	8.63	32.1	8.45	-4.7	2.1
9000	29.8	18.4	9.24	31.5	9.08	-5.6	1.8
9500	29.0	18.6	9.84	31.0	9.71	-6.5	1.3
10000	28.1	18.8	10.44	30.4	10.36	-7.4	0.8

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

APPENDIX D: SAR SYSTEM VALIDATION

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
AM10	cDASY6	835	05/24/2021	7639	835	Head	0.940	42.700	PASS	PASS	PASS	GMSK	PASS	N/A
AM10	DASY52	835	05/11/2021	7639	835	Head	0.924	41.182	PASS	PASS	PASS	GMSK	PASS	N/A
AM5	DASY52	1750	10/15/2020	3949	1750	Head	1.328	40.910	PASS	PASS	PASS	N/A	N/A	N/A
AM4b	DASY52	1750	05/12/2021	7640	1750	Head	1.358	39.190	PASS	PASS	PASS	N/A	N/A	N/A
AM4a	DASY52	1900	03/30/2021	7427	1900	Head	1.434	39.556	PASS	PASS	PASS	GMSK	PASS	N/A
AM10	cDASY6	1900	05/24/2021	7639	1900	Head	1.430	38.100	PASS	PASS	PASS	GMSK	PASS	N/A
AM1	cDASY6	2450	04/27/2021	3837	2450	Head	1.844	40.206	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM8	DASY52	2450	12/03/2020	7558	2450	Head	1.819	38.600	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM1	cDASY6	2600	06/16/2021	3837	2600	Head	2.008	38.286	PASS	PASS	PASS	TDD	PASS	N/A
AM8	DASY52	5250	12/07/2020	7558	5250	Head	4.476	34.870	PASS	PASS	PASS	OFDM	N/A	PASS
AM8	DASY52	5600	12/07/2020	7558	5600	Head	4.855	34.300	PASS	PASS	PASS	OFDM	N/A	PASS
AM8	DASY52	5750	12/07/2020	7558	5750	Head	5.036	34.018	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
AM10	DASY52	835	04/28/2021	7639	835	Body	1.010	53.310	PASS	PASS	PASS	GMSK	PASS	N/A
AM10	cDASY6	835	05/17/2021	7639	835	Body	0.990	53.700	PASS	PASS	PASS	GMSK	PASS	N/A
AM6	cDASY6	835	06/02/2021	7416	835	Body	0.990	54.000	PASS	PASS	PASS	GMSK	PASS	N/A
AM10	cDASY6	1750	05/17/2021	7639	1750	Body	1.480	52.200	PASS	PASS	PASS	N/A	N/A	N/A
AM7	DASY52	1750	11/12/2020	7420	1750	Body	1.466	51.894	PASS	PASS	PASS	N/A	N/A	N/A
AM4b	DASY52	1900	05/10/2021	7640	1900	Body	1.584	52.310	PASS	PASS	PASS	GMSK	PASS	N/A
AM7	DASY52	1900	11/12/2020	7420	1900	Body	1.520	53.300	PASS	PASS	PASS	GMSK	PASS	N/A
AM2	cDASY6	2450	05/17/2021	7532	2450	Body	2.031	51.888	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM8	DASY52	2450	12/03/2020	7558	2450	Body	2.029	51.960	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM7	DASY52	2450	11/16/2020	7420	2450	Body	1.950	52.700	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM2	cDASY6	2600	05/17/2021	7532	2600	Body	2.165	51.687	PASS	PASS	PASS	TDD	PASS	N/A
AM8	DASY52	2600	12/03/2020	7558	2600	Body	2.173	51.749	PASS	PASS	PASS	TDD	PASS	N/A
AM9	DASY52	5250	05/11/2021	7638	5250	Body	5.412	47.566	PASS	PASS	PASS	OFDM	N/A	PASS
AM9	DASY52	5600	05/11/2021	7638	5600	Body	5.925	46.935	PASS	PASS	PASS	OFDM	N/A	PASS
AM9	DASY52	5750	05/11/2021	7638	5750	Body	6.129	46.600	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals. 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.