TEST REPORT

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1. Report No : DRRFCC1904-0042(3)
2. Customer
   - Name : LG Electronics USA, Inc.
   - Address : 1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : Mobile Phone / LM-V500EM
   FCC ID : ZNFV500EM
5. Test Method Used : IEEE 1528-2013, FCC SAR KDB Publications (Details in test report)
   Test Specification : CFR §2.1093
6. Date of Test : 2019.02.28 ~ 2019.03.12
7. Testing Environment : Refer to appended test report.
8. Test Result : Refer to attached test report.

Affirmation	Tested by Name : ChangWon Lee (Signature)	Reviewed by Name : HakMin Kim (Signature)

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Test Report Version

Test Report No.	Date	Description
DRRFCC1904-0042	Apr. 12, 2019	Initial issue
DRRFCC1904-0042(1)	Apr. 19, 2019	Revise of SAR Summary Table
DRRFCC1904-0042(2)	Apr. 23, 2019	Revise of Section 11
DRRFCC1904-0042(3)	Apr. 25, 2019	Revise of Table 11.1.10

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1. DESCRIPTION OF DEVICE

1.1 General Information

EUT type	Mobile Phone				
FCC ID	ZNFV500EM				
Equipment model name	LM-V500EM				
Equipment add model name	LMV500EM, V500EM				
Equipment serial no.	Identical prototype				
Mode(s) of Operation	GSM 850, GSM 1900, WCDMA 850, WCDMA 1900, LTE Band 12, 17, 5, 4, 2, 2.4 G W-LAN (802.11b/g/n-HT20/ac-VHT20), 5 G W-LAN (802.11a/n-HT20/n-HT40/ac-VHT20/ac-VHT40/ac-VHT80), Bluetooth				
	Band	**Mode**	**Operating Modes**	**Bandwidth**	**Frequency**
TX Frequency Range	GSM 850	GSM/GPRS/EDGE	Voice/Data	-	824.2 ~ 848.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1850.2 ~ 1909.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	826.4 ~ 846.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1852.4 ~ 1907.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	699.7 ~ 715.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	706.5 ~ 713.5 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	824.7 ~ 848.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1710.7 ~ 1754.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1850.7 ~ 1909.3 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2412 ~ 2472 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5180 ~ 5240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5190 ~ 5230 MHz
		802.11ac	Voice/Data	VHT80	5210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5260 ~ 5320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5270 ~ 5310 MHz
		802.11ac	Voice/Data	VHT80	5290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5500 ~ 5720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5510 ~ 5710 MHz
		802.11ac	Voice/Data	VHT80	5530 ~ 5690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5745 ~ 5825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5755 ~ 5795 MHz
		802.11ac	Voice/Data	VHT80	5775 MHz
	Bluetooth	-	Data	-	2402 ~ 2480 MHz
RX Frequency Range	GSM 850	GSM/GPRS/EDGE	Voice/Data	-	869.2 ~ 893.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1930.2 ~ 1989.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	871.4 ~ 891.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1932.4 ~ 1987.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	729.7 ~ 745.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	736.5 ~ 743.5 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	869.7 ~ 893.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	2110.7 ~ 2154.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1930.7 ~ 1989.3 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2412 ~ 2472 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5180 ~ 5240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5190 ~ 5230 MHz
		802.11ac	Voice/Data	VHT80	5210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT200	5260 ~ 5320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5270 ~ 5310 MHz
		802.11ac	Voice/Data	VHT80	5290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5500 ~ 5720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5510 ~ 5710 MHz
		802.11ac	Voice/Data	VHT80	5530 ~ 5690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5745 ~ 5825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5755 ~ 5795 MHz
		802.11ac	Voice/Data	VHT80	5775 MHz
	Bluetooth	-	Data	-	2402 ~ 2480 MHz

SAR Summary Table

Equipment Class	Band	Reported SAR			
		1g SAR (W/kg)			10g SAR (W/kg)
		Head	Body-Worn	Hotspot	Phablet
PCE	GSM 850	< 0.1	0.64	-	-
PCE	GPRS 850	0.12	0.73	0.73	-
PCE	GSM 1900	< 0.1	0.29	-	-
PCE	GPRS 1900	< 0.1	0.32	0.50	-
PCE	WCDMA 850	0.16	**0.87**	0.87	-
PCE	WCDMA 1900	0.15	0.56	0.86	-
PCE	LTE Band 12	0.11	0.47	0.47	-
PCE	LTE Band 17	-	-	-	-
PCE	LTE Band 5	0.19	0.59	0.59	-
PCE	LTE Band 4	0.12	0.47	0.65	-
PCE	LTE Band 2	0.16	0.52	**1.06**	-
DTS(SISO)	2.4 GHz W-LAN	0.43	0.17	0.17	-
DTS(MIMO)	2.4 GHz W-LAN	0.54	0.27	0.27	-
U-NII-1(SISO)	5.2 GHz W-LAN	-	-	0.20	-
U-NII-1(MIMO)	5.2 GHz W-LAN	-	-	0.20	-
U-NII-2A(SISO)	5.3 GHz W-LAN	**0.93**	0.24	-	1.14
U-NII-2A(MIMO)	5.3 GHz W-LAN	0.75	0.25	-	1.07
U-NII-2C(SISO)	5.6 GHz W-LAN	0.53	0.30	-	1.26
U-NII-2C(MIMO)	5.6 GHz W-LAN	0.43	0.30	-	1.07
U-NII-3(SISO)	5.8 GHz W-LAN	0.55	0.38	0.38	**1.37**
U-NII-3(MIMO)	5.8 GHz W-LAN	0.48	0.33	0.33	1.21
DSS	Bluetooth	0.16	< 0.1	< 0.1	-
Simultaneous SAR per KDB 690783 D01v01r03		**1.22**	**1.34**	**1.34**	-

FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter(DSS) Digital Transmission System(DTS) Unlicensed National Information Infrastructure (UNII)
Date(s) of Tests	2019.02.28 ~ 2019.03.12
Antenna Type	Internal Antenna
Functions	● GSM/GPRS/EDGE (GPRS/EDGE Class: 33) supported. * DTM not supported. ● No simultaneous transmission between BT & 2.4GHz WLAN ● Simultaneous transmission between [GSM, WCDMA voice & WLAN], [GPRS, WCDMA & WLAN], [LTE & WLAN]. ● VoIP is supported. ● W-LAN 2.4GHz is supported Hotspot. ● W-LAN 5 GHz is supported Hotspot in UNII B1, B3.

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

The Nominal and Maximum Output Power Specifications are in section 9 of this test report.

1.4 DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 cm. A diagram showing the location of the device of the device antenna can be found in ZNFV500EM_Antenna Location. Since the diagonal dimension of this device is > 160 mm and < 200 mm. it is considered a “phablet”.

The SAR tests of the device with 60 GHz dual display accessory were performed by reference to FCC KDB Inquiry (**Tracking No. 372568**) at the worst SAR for each position.

Mode	Device Sides for SAR Testing					
	Top	Bottom	Front	Rear	Right	Left
GSM/GPRS/EDGE 850	X	O	O	O	O	X
GSM/GPRS/EDGE 1900	X	O	O	O	X	O
WCDMA 850	X	O	O	O	O	X
WCDMA 1900	X	O	O	O	X	O
LTE Band 12	X	O	O	O	O	X
LTE Band 17	X	O	O	O	O	X
LTE Band 5	X	O	O	O	O	X
LTE Band 4	X	O	O	O	X	O
LTE Band 2	X	O	O	O	X	O
2.4G W-LAN Ant.1	O	X	O	O	O	X
2.4G W-LAN Ant.2	O	X	O	O	O	X
2.4G W-LAN MIMO	O	X	O	O	O	X
5G W-LAN Ant.1	O Note 2	X	O	O	O Note 2	X
5G W-LAN Ant.2	O Note 2	X	O	O	O Note 2	X
5G W-LAN MIMO	O Note 2	X	O	O	O Note 2	X
Bluetooth	O	X	O	O	O	X

Note 1: Particular DUT edges were not required to be evaluated for Hotspot SAR or Phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 648474 D04v01r03.The antenna document shows the distances between the transmit antennas and the edges of the device.
Note 2: WLAN Hotspot UNII-1, 3 supported.
Note 3: O - Test / X - Not test.
Note 4: This DUT has NFC operations. The NFC antenna is integrated into the back side.
The SAR tests were performed with NFC antenna already incorporated.
A diagram showing the location of the device antenna can be found in ZNFV500EM_Antenna Location.

1.5 Simultaneous Transmission Capabilities

The Simultaneous Transmission Capabilities are in section 12 of this test report.

1.6 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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.

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A & U-NII-2C WIFI, only 2.4GHz, U-NII-1, U-NII-3 WIFI Hotspot SAR tests and combinations are considered for SAR with respect to Wireless Router configurations according to FCC KDB 941225 D06v02r01.

Per FCC KDB 447498 D01v06, the 1g SAR exclusion threshold for distances < 50 mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, body-worn and hotspot **Bluetooth SAR were not required; [(18/10)*√2.480] = 2.8 (< 3.0)**. Per KDB Publication 447498 D01 v06, the maximum power of the channel was rounded to the nearest mW before calculation.

Per FCC KDB 447498 D01v06, the 10g SAR exclusion threshold for distance < 50 mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 7.5$$

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, phablet **Bluetooth SAR was not required; [(18/5)*√2.480] = 5.6 (< 7.5)**. Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a “phablet” since the diagonal dimension is greater than 160 mm and less than 200 mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-2A & U-NII-2C & U-NII-3 WLAN(CH 165), phablet SAR tests were performed.

(B) Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

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.

Per FCC KDB Publication 648474 D04 v01r03, this device is considered a “phablet” since the diagonal dimension is greater than 160 mm and less than 200 mm. There fore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.

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 lager transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

1.7 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01 (3G SAR Procedures)
- FCC KDB Publication 941225 D05v02r05 (SAR for LTE Devices)
- FCC KDB Publication 941225 D05Av01r02 (LTE Rel.10 KDB Inquiry Sheet)
- FCC KDB Publication 941225 D06v02r01(Hotspot Mode)
- FCC KDB Publication 248227 D01v02r02 (802.11 Wi-Fi SAR)
- FCC KDB Publication 447498 D01v06 (General RF Exposure Guidance)
- FCC KDB Publication 648474 D04v01r03 (Handset SAR)
- FCC KDB Publication 690783 D01v01r03 (SAR Listings on Grants)
- FCC KDB Publication 865664 D01v01r04 (SAR Measurement 100 MHz to 6 GHz)
- FCC KDB Publication 865664 D02v01r02 (RF Exposure Reporting)
- October 2013 TCB Workshop Notes (GPRS testing criteria)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- FCC KDB Inquiry (Tracking No. 372568)

1.8 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 11.

2. LTE INFORMATION

LTE Information					
FCC ID	**ZNFV500EM**				
Form Factor	Mobile Phone				
Frequency Range of each LTE transmission Band	LTE Band 12 (699.7 ~ 715.3 MHz) LTE Band 17 (706.5 ~ 713.5 MHz) LTE Band 5 (Cell) (824.7 ~ 848.3 MHz) LTE Band 4 (AWS) (1710.7 ~ 1754.3 MHz) LTE Band 2 (PCS) (1850.7 ~ 1909.3 MHz)				
Channel Bandwidths	LTE Band 12 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 17 : 5 MHz, 10 MHz LTE Band 5 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 4 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 2 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Number and Frequencies(MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)	N/A	707.5 (23095)	N/A	715.3 (23173)
LTE Band 12: 3 MHz	700.5 (23025)	N/A	707.5 (23095)	N/A	714.5 (23165)
LTE Band 12: 5 MHz	701.5 (23035)	N/A	707.5 (23095)	N/A	713.5 (23155)
LTE Band 12: 10 MHz	704.0 (23060)	N/A	**707.5 (23095)**[Note1]	N/A	711.0 (23130)
LTE Band 17: 5 MHz	706.5(23755)	N/A	710.0(23790)	N/A	713.5(23825)
LTE Band 17: 10 MHz	709.0(23780)	N/A	710.0(23790)	N/A	711.0(23800)
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)	N/A	836.5 (20525)	N/A	848.3 (20643)
LTE Band 5 (Cell): 3 MHz	825.5 (20415)	N/A	836.5 (20525)	N/A	847.5 (20635)
LTE Band 5 (Cell): 5 MHz	826.5 (20425)	N/A	836.5 (20525)	N/A	846.5 (20625)
LTE Band 5 (Cell): 10 MHz	829.0 (20450)	N/A	**836.5 (20525)**[Note2]	N/A	844.0 (20600)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	N/A	1732.5 (20175)	N/A	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	N/A	1732.5 (20175)	N/A	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	N/A	1732.5 (20175)	N/A	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715.0 (20000)	N/A	1732.5 (20175)	N/A	1750.0 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	N/A	1732.5 (20175)	N/A	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720.0 (20050)	N/A	**1732.5 (20175)** [Note3]	N/A	1745.0 (20300)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)	N/A	1880.0 (18900)	N/A	1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)	N/A	1880.0 (18900)	N/A	1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)	N/A	1880.0 (18900)	N/A	1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855.0 (18650)	N/A	1880.0 (18900)	N/A	1905.0 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)	N/A	1880.0 (18900)	N/A	1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	**1860.0 (18700)**	N/A	**1880.0 (18900)**	N/A	**1900.0 (19100)**
UE Category	15				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
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 Carrier Aggregation Possible Combinations	LTE Carrier Aggregation is not supported.				
LTE Additional Information	This device does not support CA features on 3GPP Release 15. All uplink communications are identical to the Release 8 Specifications. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WIFI Offloading, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

Note(s)
1. LTE B12 can not contain three non-overlapping channels of 10 MHz bandwidth.
   Per KDB 941225 D05v02r05, 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.
2. LTE B5(Cell) can not contain three non-overlapping channels of 10 MHz bandwidth.
   Per KDB 941225 D05v02r05, 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.
3. LTE B4 (AWS) can not contain three non-overlapping channels of 20 MHz bandwidth.
   Per KDB 941225 D05v02r05, 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.

3. INTROCUCTION

The FCC and Industry 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.

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. 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. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave is used for guidance in measuring 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 National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. 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.

SAR Definition

Specific Absorption Rate (SAR) 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 Fig. 3.1)

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

Fig. 3.1 SAR Mathematical Equation

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 relations 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.

4. DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

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) and IEEE1528-2013.

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.

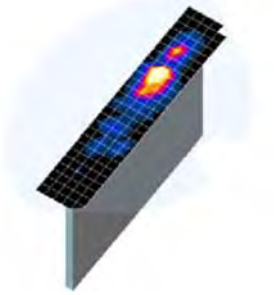

Figure 4.1
Sample SAR Area Scan

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) and IEEE 1528-2013. 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.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	½·δ·ln(2) mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

Table 4.1 Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

5. DEFINITION OF REFERENCE POINTS

5.1 Ear Reference Point

Figure 5.1 shows the front, back and side views of the SAM Twin Phantom. The point"M" is the reference point for the center of the mouth, "LE" is the left ear reference point(ERP), and "RE" is the right ERP. The ERPs are 15 mm posterior to the entrance to the Ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5.1. The plane Passing, through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck- Front) is perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 5.1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning.

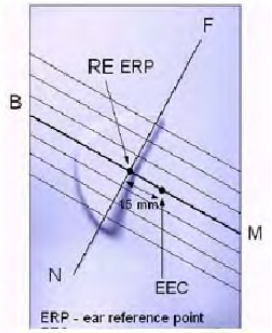

Figure 5.1 Close-up side view of ERP

5.2 Handset Reference Points

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point" (See Fig. 5.3). The "test device reference point" was than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline" was bisecting the front surface of the handset at it's top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.

Figure 5.2 Front, back and side view SAM Twin Phantom

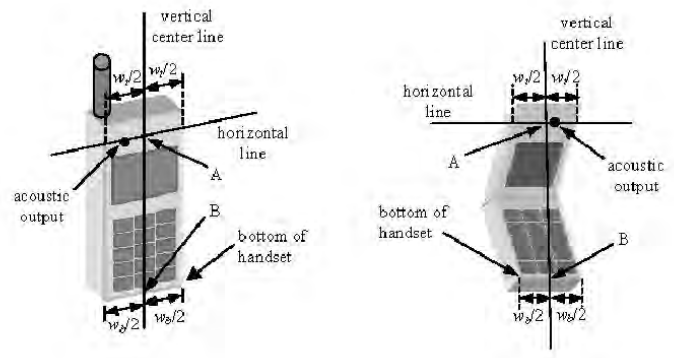

Figure 5.3 Handset Vertical Center & Horizontal Line Reference Points

6. TEST CONFIGURATION POSITIONS FOR HANDSETS

6.1 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.

6.2 Positioning for Cheek/Touch

1. The test device was positioned with the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6.1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

Figure 6.1 Front, Side and Top View of Cheek/Touch Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the ear.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the plane normal to MB-NF including the line MB (reference plane).
4. The phone was hen rotated around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, the handset was rotated about the line NF until any point on the handset made contact with a phantom point below the ear (cheek). (See Figure 6.2)

6.3 Positioning for Ear / 15 ° Tilt

With the test device aligned in the “Cheek/Touch Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15 degree.
2. The phone was then rotated around the horizontal line by 15 degree.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the phone touches the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. The tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 6.3).

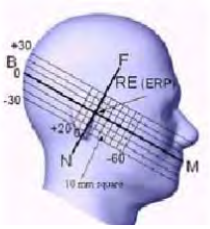

Figure 6.2 Side view w/relevant markings

Figure 6.3 Front, Side and Top View of Ear/15° Position

6.4 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6.4). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

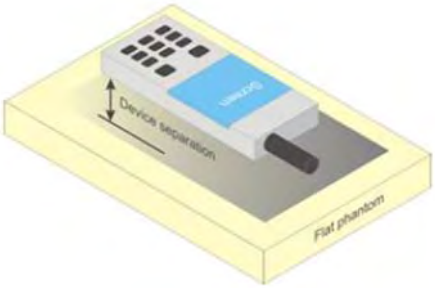

Figure 6.4 Sample Body-Worn Diagram

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

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.
Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.5 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. The 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

Per KDB Publication 447498 D01v06, Cell phones (handsets) are not normally designed to be used on extremities or operated in extremity only exposure conditions. The maximum output power levels of handsets generally do not require extremity SAR testing to show compliance. Therefore, extremity SAR was not evaluated for this device.

6.6 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front the front, rear and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative test separation distance configuration may be used to support both SAR conditions.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitter often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each KDB Publication 447498 D01v06 procedures. The “Portable Hotspot” feature on the handset was not activated during SAR assessment, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

6.7 Phablet Configurations

For smart phones with a display diagonal > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna ≤ 25mm from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 mm is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

7. RF EXPOSURE LIMITS

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.

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 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 8.1.SAR Human Exposure Specified in ANSI/IEEE C95.1-1992

	HUMAN EXPOSURE LIMITS	
	General Public Exposure (W/kg) or (mW/g)	Occupational Exposure (W/kg) or (mW/g)
SPATIAL PEAK SAR * (Brain)	1.60	8.00
SPATIAL AVERAGE SAR ** (Whole Body)	0.08	0.40
SPATIAL PEAK SAR *** (Hands / Feet / Ankle / Wrist)	4.00	20.0

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.

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

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).

8. FCC MEASUREMENT PROCEDURES

Power measurements were performed using a base station simulator under digital average power.

8.1 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.

8.2 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01.

The device was 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 were 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 was 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 deviated by more than 5%, the SAR test and drift measurements were repeated.

8.3 SAR Measurement Conditions for WCDMA (UMTS)

8.3.1 Output Power Verification

Maximum output power is measured on the High, Middle and Low channels for each applicable transmission band according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1s”.

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 (release 5), 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.

8.3.2 Head SAR Measurements for Handsets

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 in12.2 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.

8.3.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all“1s”.

8.3.4 Release 5 HSDPA Data Devices

The following procedures are applicable to HSDPA data devices operating under 3GPP Release 5. SAR is required for devices in body-worn accessory and other body exposure conditions, including handsets and data modems operating in various electronic devices. HSDPA operates in conjunction with WCDMA and requires an active DPCCH. The default test configuration is to measure SAR in WCDMA with HSDPA remain inactive, to establish a radio link between the test device and a communication test set using a 12.2 kbps RMC configured in Test Loop Mode 1. SAR for HSDPA is selectively measured using the highest reported SAR configuration in WCDMA, with an FRC in H-set 1 and a 12.2 kbps RMC. SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCHn) according to exposure conditions, device operating capabilities and maximum output power specified for production units, including tune-up tolerance by applying the 3G SAR test reduction procedures. Maximum output power is verified according to the applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements in KDB Publication 447498, with respect to the UE Categories, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

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

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.
Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Figure 9.1 Table 1

8.3.5 Release 6 HSUPA Data Devices

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. SAR is required for devices in body-worn accessory and other body exposure conditions, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations with HSPA remain inactive. The default test configuration is to establish a radio link between the test device and a communication test set to configure a 12.2 kbps RMC in Test Loop Mode 1. SAR for HSPA is selectively measured with HS-DPCCH, E-DPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest reported SAR configuration in WCDMA with 12.2 kbps RMC only.
An FRC is configured according to HS-DPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Sub-test 5 requirements. SAR for other HSPA sub-test configurations is confirmed selectively according to exposure conditions, E-DCH UE Category and maximum output power of production units, including tune-up tolerance by applying the 3G SAR test reduction procedure. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements in KDB Publication 447498, with respect to the UE Categories for HS-DPCCH and HSPA, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔ β_{hs}= 30/15 *β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

Figure 9.2 Table 2

8.3.6 SAR Measurement Conditions for DC-HSDPA

In the following DB 941225 D01v03r01 procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

8.4 SAR Measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05v02r05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The call simulator was used for LTE output power measurement 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).

8.4.1 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.

8.4.2 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.

8.4.3 A-MPR

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

8.4.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r05:

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 channel 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. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
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 0.5 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

8.4.5 64QAM uplink

(1) Per KDB 941225 D05 V02r05, we'll measure conducted powers per Section 5.1 for all uplink modulations (QPSK, 16QAM, 64QAM) and include in the test report.

(2) From these power measurements, we will apply the procedures in Section 5.2.4 ("Higher Order Modulations") to determine SAR test reduction for 16QAM and 64QAM test cases.

8.5 SAR Testing with 802.11 Transmitters

The normal network operating configurations are not suitable for measuring the SAR of 802.11 b/g/n transmitters. 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 248227D01v02r02 for more details.

8.5.1 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. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the 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.

8.5.2 U-NII and U-NII-2A

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following, with respect to the highest reported SAR and maximum output power specified for production units. The procedures are applied independently to each exposure configuration; for example, head, body, hotspot mode etc.

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.

8.5.3 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 Rader (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. When band gap channels are disabled, each band is tested independently according to the normally required OFDM SAR measurements and probe calibration frequency points requirements.

8.5.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all position in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is ≤ 0.8 W/kg or all test position are measured.

8.5.5 2.4 GHz SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a 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 exposure configuration 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.

8.5.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz bands, 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 80211n or 802.11g then 802.11n is used for SAR measurement. When the maximum output power ware 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.

8.5.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, 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 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, and lowest data rate. 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.

8.5.8 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 applicable. When the highest reported SAR for the initial test configuration, adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power is ≤ 1.2 W/kg, no additional SAR testing for the subsequent test configurations is required.

8.5.9 MIMO SAR Considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

9. RF CONDUCTED POWERS

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

9.1 GSM Nominal and Maximum Output Power Spec and Conducted Powers

Band & Mode		Voice[dBm]	Burst Average GMSK [dBm]				Burst Average 8-PSK [dBm]			
		1 TX Slot	1 TX Slot	2 TX Slot	3 TX Slot	4 TX Slot	1 TX Slot	2 TX Slot	3 TX Slot	4 TX Slot
GSM/GPRS/EDGE 850	Maximum	33.7	33.7	31.2	27.2	25.7	27.2	26.7	25.7	24.7
	Nominal	33.2	33.2	30.7	26.7	25.2	26.7	26.2	25.2	24.2
GSM/GPRSEDGE 1900	Maximum	30.7	30.7	29.2	27.2	25.7	26.2	25.7	24.7	23.7
	Nominal	30.2	30.2	28.7	26.7	25.2	25.7	25.2	24.2	23.2

Table 9.1.1 GSM Nominal and Maximum Output Power Spec

Band	Channel	Maximum Burst-Averaged Output Power(dBm)								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
GSM850	128	33.2	33.2	30.8	26.8	25.4	26.7	26.0	25.3	24.2
	190	33.4	33.4	30.7	26.7	25.2	26.6	26.1	25.1	24.2
	251	33.4	33.4	30.7	26.6	25.4	26.6	26.0	25.1	24.1
PCS 1900	512	30.1	30.1	28.7	26.7	25.3	25.5	25.0	24.0	23.1
	661	30.1	30.1	28.7	26.7	25.3	25.6	25.0	24.0	23.1
	810	30.2	30.2	28.7	26.7	25.3	25.5	25.1	24.1	23.1
Band	Channel	Calculated Maximum Frame-Averaged Output Power(dBm)								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
GSM850	128	24.17	24.17	24.78	22.54	22.39	17.67	19.98	21.04	21.19
	190	24.37	24.37	24.68	22.44	22.19	17.57	20.08	20.84	21.19
	251	24.37	24.37	24.68	22.34	22.39	17.57	19.98	20.84	21.09
PCS 1900	512	21.07	21.07	22.68	22.44	22.29	16.47	18.98	19.74	20.09
	661	21.07	21.07	22.68	22.44	22.29	16.57	18.98	19.74	20.09
	810	21.17	21.17	22.68	22.44	22.29	16.47	19.08	19.84	20.09
GSM850	Frame Avg. Targets:	24.17	24.17	24.68	22.44	22.19	17.67	20.18	20.94	21.19
PCS 1900		21.17	21.17	22.68	22.44	22.19	16.67	19.18	19.94	20.19

Table 9.1.2 GSM Conducted Power

Note:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. GPRS (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
3. EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK modulation do not have an impact on output power.

GPRS Multislot class: 33 (max 4 TX Uplink slots)
EDGE Multislot class: 33 (max 4 TX Uplink slots)
DTM Multislot Class: N/A

Figure 9.1 Power Measurement Setup

9.2 WCDMA Nominal and Maximum Output Power Spec and Conducted Powers

3GPP Release Version	Mode			Cellular Band (dBm)	PCS Band (dBm)	3GPP MPR (dB)
99	WCDMA	Voice	Maximum	25.5	23.7	-
			Nominal	25.0	23.2	
5	HSDPA	Subtest 1	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
5		Subtest 2	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
5		Subtest 3	Maximum	25.0	23.2	0.5
			Nominal	24.5	22.7	
5		Subtest 4	Maximum	25.0	23.2	0.5
			Nominal	24.5	22.7	
6	HSUPA	Subtest 1	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
6		Subtest 2	Maximum	23.5	21.7	2
			Nominal	23.0	21.2	
6		Subtest 3	Maximum	24.5	22.7	1
			Nominal	24.0	22.2	
6		Subtest 4	Maximum	23.5	21.7	2
			Nominal	23.0	21.2	
6		Subtest 5	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
8	DC-HSDPA	Subtest 1	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
8		Subtest 2	Maximum	25.5	23.7	0
			Nominal	25.0	23.2	
8		Subtest 3	Maximum	25.0	23.2	0.5
			Nominal	24.5	22.7	
8		Subtest 4	Maximum	25.0	23.2	0.5
			Nominal	24.5	22.7	

Table 9.2.1 WCDMA Nominal and Maximum Output Power Spec

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band (dBm)			PCS Band (dBm)			3GPP MPR (dB)
			4132	4183	4233	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	25.16	25.19	25.09	22.60	22.67	22.70	-
99		12.2 kbps AMR	25.15	25.18	25.08	22.59	22.65	22.68	-
5	HSDPA	Subtest 1	24.16	24.17	24.11	21.65	21.63	21.69	0
5		Subtest 2	24.13	24.13	24.04	21.63	21.63	21.65	0
5		Subtest 3	23.63	23.65	23.55	21.05	21.13	21.09	0.5
5		Subtest 4	23.61	23.62	23.55	21.05	21.14	21.10	0.5
6	HSUPA	Subtest 1	24.15	24.17	24.10	21.59	21.68	21.66	0
6		Subtest 2	22.14	22.17	22.08	19.62	19.70	19.63	2
6		Subtest 3	23.15	23.14	23.07	20.59	20.68	20.62	1
6		Subtest 4	22.14	22.18	22.08	19.60	19.68	19.64	2
6		Subtest 5	24.18	24.20	24.13	21.66	21.72	21.68	0
8	DC-HSDPA	Subtest 1	24.14	24.15	24.10	21.62	21.62	21.66	0
8		Subtest 2	24.12	24.11	24.02	21.61	21.62	21.64	0
8		Subtest 3	23.62	23.62	23.52	21.04	21.11	21.08	0.5
8		Subtest 4	23.60	23.61	23.51	21.04	21.10	21.07	0.5

Table 9.2.2 WCDMA Conducted Power

WCDMA SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.

The manufacturer declares that the HSDPA, HSUPA and DC-HSDPA transmitter's power will not exceed the R99 maximum transmit power in devices based on Qualcomm's HSPA chipset solutions.

DC-HSDPA considerations

- 3GPP Specification 34.121-1 Release 8 Ver 8.10.0 was used for DC-HSDPA guidance.
- H-Set 12 (QPSK) was confirmed to be used during DC-HSDPA measurements.
- The DUT supports UE category 24 for HSDPA.

Figure 9.2 Power Measurement Setup

9.3 LTE Nominal and Maximum Output Power Spec and Conducted Powers

Band & Mode		Modulated Average[dBm]
LTE Band 12	Maximum	25.5
	Nominal	25.0

Table 9.3.1.1 Nominal and Maximum Output Power Spec

1) LTE Band 12

LTE Band 12 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23095 (707.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	25.05	≤ 1	0
	1	**25**	**25.28**		
	1	49	25.11		
	25	0	24.14		1
	25	**12**	**24.19**		
	25	25	24.10		
	50	0	24.17		1
16QAM	1	0	24.23	≤ 1	1
	1	25	24.39		
	1	49	24.28		
	25	0	23.20	≤ 2	2
	25	12	23.22		
	25	25	23.20		
	50	0	23.19		2
64QAM	1	0	23.20	≤ 2	2
	1	25	23.35		
	1	49	23.25		
	25	0	22.19	≤ 3	3
	25	12	22.21		
	25	25	22.20		
	50	0	22.12		3

Table 9.3.1.2 LTE Conducted Power

Note : LTE B12 can not contain three non-overlapping channels of 10 MHz bandwidth.
Per KDB 941225 D05v02r05, 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.

LTE Band 12 Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	25.02	25.00	25.01	≤ 1	0
	1	12	25.15	25.11	25.08		
	1	24	25.04	25.02	25.01		
	12	0	24.09	24.15	24.08		1
	12	6	24.22	24.21	24.14		
	12	13	24.19	24.13	24.07		
	25	0	24.15	24.17	24.06		1
16QAM	1	0	24.21	24.18	24.15	≤ 1	1
	1	12	24.33	24.24	24.28		
	1	24	24.22	24.17	24.15		
	12	0	23.13	23.20	23.13	≤ 2	2
	12	6	23.27	23.25	23.22		
	12	13	23.23	23.17	23.10		
	25	0	23.19	23.20	23.14		2
64QAM	1	0	23.15	23.15	23.11	≤ 2	2
	1	12	23.34	23.27	23.25		
	1	24	23.19	23.11	23.15		
	12	0	22.17	22.24	22.13	≤ 3	3
	12	6	22.30	22.27	22.23		
	12	13	22.24	22.21	22.14		
	15	0	22.17	22.19	22.11		3

Table 9.3.1.3 LTE Conducted Power

LTE Band 12 Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	25.12	25.06	25.07	≤ 1	0
	1	7	25.13	25.11	25.06		
	1	14	25.14	25.12	25.11		
	8	0	24.16	24.14	24.10		1
	8	4	24.22	24.19	24.13		
	8	7	24.21	24.16	24.13		
	15	0	24.16	24.14	24.11		1
16QAM	1	0	24.29	24.25	24.25	≤ 1	1
	1	7	24.30	24.27	24.22		
	1	14	24.31	24.31	24.28		
	8	0	23.29	23.27	23.22	≤ 2	2
	8	4	23.35	23.30	23.23		
	8	7	23.32	23.28	23.23		
	15	0	23.26	23.22	23.16		2
64QAM	1	0	23.27	23.20	23.17	≤ 2	2
	1	7	23.30	23.23	23.17		
	1	14	23.29	23.25	23.25		
	8	0	22.25	22.21	22.22	≤ 3	3
	8	4	22.30	22.29	22.24		
	8	7	22.31	22.23	22.23		
	15	0	22.20	22.17	22.12		3

Table 9.3.1.4 LTE Conducted Power

LTE Band 12 Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	25.13	25.06	25.03	≤ 1	0
	1	2	25.27	25.25	25.15		
	1	5	25.14	25.09	25.04		
	3	0	25.23	25.14	25.12		0
	3	2	25.26	25.21	25.19		
	3	3	25.22	25.18	25.16		
	6	0	24.23	24.18	24.17		1
16QAM	1	0	24.26	24.26	24.20	≤ 1	1
	1	2	24.41	24.37	24.32		
	1	5	24.30	24.28	24.17		
	3	0	24.24	24.19	24.12		1
	3	2	24.28	24.25	24.22		
	3	3	24.26	24.26	24.18		
	6	0	23.33	23.32	23.26	≤ 2	2
64QAM	1	0	23.26	23.23	23.16	≤ 2	2
	1	2	23.40	23.32	23.29		
	1	5	23.27	23.20	23.20		
	3	0	23.39	23.31	23.29		2
	3	2	23.45	23.32	23.36		
	3	3	23.39	23.31	23.32		
	6	0	22.26	22.21	22.17	≤ 3	3

Table 9.3.1.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 5	Maximum	25.5
	Nominal	25.0

Table 9.3.2.1 Nominal and Maximum Output Power Spec

2) LTE Band 5 (Cell)

LTE Band 5 (Cell) Conducted Power– 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	25.00	≤ 1	0
	1	**25**	**25.11**		
	1	49	24.84		
	25	0	24.09		1
	25	**12**	**24.15**		
	25	25	23.99		
	50	0	24.08		1
16QAM	1	0	24.03	≤ 1	1
	1	25	24.23		
	1	49	23.90		
	25	0	23.13	≤ 2	2
	25	12	23.17		
	25	25	23.03		
	50	0	23.08		2
64QAM	1	0	22.99	≤ 2	2
	1	25	23.19		
	1	49	22.92		
	25	0	22.13	≤ 3	3
	25	12	22.18		
	25	25	22.02		
	50	0	22.08		3

Table 9.3.2.2 LTE Conducted Power

Note : LTE B5(Cell) can not contain three non-overlapping channels of 10 MHz bandwidth.
Per KDB 941225 D05v02r05, 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.

LTE Band 5 (Cell) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	24.87	24.82	24.81	≤ 1	0
	1	12	25.00	25.00	24.93		
	1	24	24.89	24.86	24.86		
	12	0	23.94	24.05	23.96		1
	12	6	24.13	24.15	24.10		
	12	13	24.01	23.97	23.95		
	25	0	23.98	24.02	23.96		1
16QAM	1	0	23.92	23.99	23.84	≤ 1	1
	1	12	24.18	24.14	24.08		
	1	24	23.96	23.88	23.92		
	12	0	22.93	23.03	22.95	≤ 2	2
	12	6	23.12	23.18	23.09		
	12	13	22.98	22.99	22.93		
	25	0	23.02	23.05	22.94		2
64QAM	1	0	22.95	22.93	22.84	≤ 2	2
	1	12	23.19	23.13	23.12		
	1	24	22.94	22.89	22.91		
	12	0	21.98	22.10	22.00	≤ 3	3
	12	6	22.18	22.23	22.15		
	12	13	22.07	22.05	22.01		
	25	0	22.03	22.07	21.98		3

Table 9.3.2.3 LTE Conducted Power

LTE Band 5 (Cell) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.88	24.93	24.87	≤ 1	0
	1	7	24.99	25.00	24.93		
	1	14	24.91	24.89	24.86		
	8	0	23.95	24.00	23.94		1
	8	4	24.12	24.12	24.09		
	8	7	23.98	23.98	23.96		
	15	0	23.99	23.99	24.01		1
16QAM	1	0	24.08	24.12	23.99	≤ 1	1
	1	7	24.14	24.18	24.10		
	1	14	24.06	24.09	24.03		
	8	0	23.04	23.06	23.00	≤ 2	2
	8	4	23.19	23.17	23.16		
	8	7	23.03	23.07	23.00		
	15	0	22.98	23.05	22.98		2
64QAM	1	0	23.06	23.12	22.97	≤ 2	2
	1	7	23.16	23.18	23.08		
	1	14	23.06	23.07	23.00		
	8	0	22.05	22.10	22.00	≤ 3	3
	8	4	22.21	22.22	22.16		
	8	7	22.05	22.09	22.06		
	15	0	21.96	22.02	21.97		3

Table 9.3.2.4 LTE Conducted Power

LTE Band 5 (Cell) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.87	24.87	24.88	≤ 1	0
	1	2	25.07	25.09	25.06		
	1	5	24.88	24.85	24.87		
	3	0	24.95	24.96	24.91		0
	3	2	25.09	25.06	25.05		
	3	3	24.97	24.96	24.97		
	6	0	24.04	24.06	24.02		1
16QAM	1	0	24.06	24.07	23.94	≤ 1	1
	1	2	24.25	24.29	24.24		
	1	5	24.02	24.01	23.97		
	3	0	23.95	23.98	23.91		1
	3	2	24.11	24.12	24.07		
	3	3	23.99	23.99	23.91		
	6	0	23.07	23.10	23.06	≤ 2	2
64QAM	1	0	23.05	23.05	22.96	≤ 2	2
	1	2	23.22	23.19	23.23		
	1	5	23.05	23.03	22.95		
	3	0	23.13	23.13	23.10		2
	3	2	23.23	23.25	23.17		
	3	3	23.11	23.10	23.09		
	6	0	22.05	22.05	22.00	≤ 3	3

Table 9.3.2.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 4	Maximum	24.2
	Nominal	23.7

Table 9.3.3.1 Nominal and Maximum Output Power Spec

3) LTE Band 4

LTE Band 4 (AWS) Conducted Power– 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20175 (1732.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	23.83	≤ 1	0
	1	**50**	**23.99**		
	1	99	23.82		
	50	0	22.86		1
	50	**25**	**22.95**		
	50	50	22.88		
	100	0	22.88		1
16QAM	1	0	23.02	≤ 1	1
	1	50	23.18		
	1	99	22.88		
	50	0	21.82	≤ 2	2
	50	25	21.92		
	50	50	21.88		
	100	0	21.88		2
64QAM	1	0	21.99	≤ 2	2
	1	50	22.10		
	1	99	21.83		
	50	0	20.88	≤ 3	3
	50	25	20.98		
	50	50	20.90		
	100	0	20.88		3

Table 9.3.3.2 LTE Conducted Power

Note: LTE B4 (AWS) can not contain three non-overlapping channels of 20 MHz bandwidth.
Per KDB 941225 D05v02r05, 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.

LTE Band 4 (AWS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20025 (1717.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20325 (1747.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.84	23.88	23.82	≤ 1	0
	1	36	23.85	23.89	23.83		
	1	74	23.82	23.82	23.82		
	36	0	22.93	22.90	22.91		1
	36	18	22.95	22.88	22.86		
	36	37	22.95	22.85	22.87		
	75	0	22.95	22.85	22.86		1
16QAM	1	0	22.90	22.93	22.89	≤ 1	1
	1	36	22.99	22.92	22.97		
	1	74	22.91	22.91	22.85		
	36	0	21.89	21.88	21.91	≤ 2	2
	36	18	21.91	21.86	21.87		
	36	37	21.89	21.83	21.87		
	75	0	21.92	21.85	21.90		2
64QAM	1	0	22.00	21.94	21.93	≤ 2	2
	1	36	22.04	21.95	21.94		
	1	74	21.85	21.82	21.84		
	36	0	20.94	20.92	20.93	≤ 3	3
	36	18	20.97	20.91	20.92		
	36	37	20.96	20.88	20.90		
	75	0	20.93	20.86	20.92		3

Table 9.3.3.3 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20000 (1715.0 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20350 (1750.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.88	23.83	23.83	≤ 1	0
	1	25	23.96	23.86	23.87		
	1	49	23.90	23.84	23.86		
	25	0	22.94	22.90	22.91		1
	25	12	22.95	22.89	22.90		
	25	25	22.98	22.85	22.92		
	50	0	22.95	22.88	22.90		1
16QAM	1	0	22.99	22.95	22.96	≤ 1	1
	1	25	23.10	22.96	23.03		
	1	49	22.94	22.84	22.91		
	25	0	21.93	21.91	21.89	≤ 2	2
	25	12	21.95	21.88	21.93		
	25	25	21.97	21.82	21.93		
	50	0	21.95	21.89	21.89		2
64QAM	1	0	22.00	21.95	21.96	≤ 2	2
	1	25	22.10	22.04	22.04		
	1	49	21.95	21.84	21.94		
	25	0	20.98	20.91	20.94	≤ 3	3
	25	12	20.98	20.92	20.95		
	25	25	20.98	20.89	20.99		
	50	0	20.99	20.89	20.94		3

Table 9.3.3.4 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19975 (1712.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20375 (1752.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.84	23.83	23.84	≤ 1	0
	1	12	23.94	23.88	23.84		
	1	24	23.83	23.84	23.82		
	12	0	22.93	22.86	22.89		1
	12	6	23.01	22.91	22.96		
	12	13	22.92	22.83	22.88		
	25	0	22.96	22.87	22.92		1
16QAM	1	0	23.00	22.84	22.90	≤ 1	1
	1	12	23.07	22.97	23.02		
	1	24	22.93	22.83	22.88		
	12	0	21.93	21.84	21.91	≤ 2	2
	12	6	22.02	21.90	21.98		
	12	13	21.93	21.82	21.89		
	25	0	21.98	21.88	21.91		2
64QAM	1	0	21.96	21.87	21.83	≤ 2	2
	1	12	22.12	21.96	21.93		
	1	24	21.92	21.88	21.90		
	12	0	21.00	20.91	20.97	≤ 3	3
	12	6	21.11	20.94	21.03		
	12	13	20.98	20.90	20.97		
	25	0	21.00	20.88	20.94		3

Table 9.3.3.5 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19965 (1711.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20385 (1753.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.88	23.86	23.82	≤ 1	0
	1	7	23.90	23.89	23.85		
	1	14	23.89	23.85	23.83		
	8	0	22.95	22.84	22.89		1
	8	4	23.00	22.87	22.92		
	8	7	22.96	22.83	22.89		
	15	0	23.00	22.85	22.90		1
16QAM	1	0	23.04	22.94	22.93	≤ 1	1
	1	7	23.03	22.94	22.98		
	1	14	23.07	22.88	22.93		
	8	0	22.04	21.92	21.99	≤ 2	2
	8	4	22.08	21.92	21.99		
	8	7	22.05	21.90	21.95		
	15	0	22.00	21.87	21.94		2
64QAM	1	0	22.07	21.92	21.98	≤ 2	2
	1	7	22.06	21.92	22.01		
	1	14	22.05	21.92	21.99		
	8	0	21.09	20.95	21.00	≤ 3	3
	8	4	21.11	20.97	21.02		
	8	7	21.08	20.91	20.99		
	15	0	21.00	20.86	20.92		3

Table 9.3.3.6 LTE Conducted Power

TE Band 4 (AWS) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19957 (1710.7 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20393 (1754.3 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.84	23.83	23.85	≤ 1	0
	1	2	23.98	23.87	23.90		
	1	5	23.83	23.83	23.86		
	3	0	23.97	23.83	23.89		0
	3	2	23.98	23.85	23.90		
	3	3	23.94	23.82	23.88		
	6	0	22.99	22.88	22.91		1
16QAM	1	0	22.95	22.88	22.86	≤ 1	1
	1	2	23.11	22.98	23.08		
	1	5	22.99	22.88	22.90		
	3	0	22.94	22.84	22.85		1
	3	2	22.98	22.84	22.90		
	3	3	22.97	22.82	22.88		
	6	0	22.13	21.93	22.00	≤ 2	2
64QAM	1	0	21.98	21.90	21.85	≤ 2	2
	1	2	22.10	22.01	22.06		
	1	5	21.98	21.90	21.94		
	3	0	22.07	22.02	22.00		2
	3	2	22.10	22.00	22.07		
	3	3	22.02	21.98	21.98		
	6	0	21.05	20.89	20.97	≤ 3	3

Table 9.3.3.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 2(PCS)	Maximum	24.2
	Nominal	23.7

Table 9.3.4.1 Nominal and Maximum Output Power Spec

4) LTE Band 2 (PCS)

LTE Band 2 (PCS) Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	**1**	**0**	**23.86**	**23.84**	**23.72**	≤ 1	0
	1	50	23.72	23.76	23.63		
	1	99	23.54	23.59	23.57		
	50	**0**	**23.03**	**23.01**	**22.96**		1
	50	25	22.70	22.76	22.60		
	50	50	22.69	22.61	22.57		
	100	**0**	**22.69**	**22.68**	**22.52**		1
16QAM	1	0	23.00	22.98	22.85	≤ 1	1
	1	50	22.89	22.85	22.78		
	1	99	22.61	22.58	22.54		
	50	0	21.97	21.95	21.95	≤ 2	2
	50	25	21.69	21.73	21.61		
	50	50	21.68	21.57	21.53		
	100	0	21.66	21.59	21.51		2
64QAM	1	0	21.94	22.03	21.75	≤ 2	2
	1	50	21.86	21.79	21.74		
	1	99	21.62	21.57	21.53		
	50	0	20.94	20.93	20.88	≤ 3	3
	50	25	20.67	20.69	20.57		
	50	50	20.65	20.54	20.55		
	100	0	20.65	20.56	20.52		3

Table 9.3.4.2 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18675 (1857.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19125 (1902.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.81	23.82	23.74	≤ 1	0
	1	36	23.64	23.67	23.50		
	1	74	23.50	23.59	23.50		
	36	0	22.96	23.02	22.90		1
	36	18	22.67	22.72	22.55		
	36	37	22.66	22.71	22.55		
	75	0	22.68	22.70	22.52		1
16QAM	1	0	22.93	22.96	22.92	≤ 1	1
	1	36	22.77	22.79	22.68		
	1	74	22.65	22.62	22.57		
	36	0	21.96	21.96	21.89	≤ 2	2
	36	18	21.68	21.68	21.54		
	36	37	21.64	21.62	21.53		
	75	0	21.71	21.67	21.51		2
64QAM	1	0	22.00	21.96	21.91	≤ 2	2
	1	36	21.75	21.77	21.66		
	1	74	21.68	21.63	21.54		
	36	0	20.95	20.98	20.88	≤ 3	3
	36	18	20.67	20.69	20.55		
	36	37	20.65	20.64	20.52		
	75	0	20.66	20.64	20.59		3

Table 9.3.4.3 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18650 (1855.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19150 (1905.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.80	23.80	23.77	≤ 1	0
	1	25	23.67	23.71	23.51		
	1	49	23.56	23.59	23.50		
	25	0	22.97	23.02	22.86		1
	25	12	22.65	22.74	22.50		
	25	25	22.65	22.70	22.53		
	50	0	22.67	22.71	22.54		1
16QAM	1	0	22.95	22.98	22.90	≤ 1	1
	1	25	22.78	22.87	22.62		
	1	49	22.75	22.78	22.55		
	25	0	21.97	22.00	21.88	≤ 2	2
	25	12	21.67	21.72	21.51		
	25	25	21.68	21.67	21.50		
	50	0	21.67	21.69	21.55		2
64QAM	1	0	21.95	21.94	21.88	≤ 2	2
	1	25	21.77	21.87	21.61		
	1	49	21.73	21.71	21.55		
	25	0	20.96	20.98	20.83	≤ 3	3
	25	12	20.66	20.73	20.57		
	25	25	20.65	20.65	20.52		
	50	0	20.63	20.68	20.51		3

Table 9.3.4.4 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18625 (1852.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19175 (1907.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.83	23.82	23.62	≤ 1	0
	1	12	23.59	23.65	23.51		
	1	24	23.56	23.55	23.51		
	12	0	22.95	22.99	22.79		1
	12	6	22.69	22.74	22.51		
	12	13	22.64	22.68	22.51		
	25	0	22.64	22.71	22.50		1
16QAM	1	0	23.00	22.98	22.82	≤ 1	1
	1	12	22.78	22.76	22.58		
	1	24	22.61	22.74	22.50		
	12	0	21.93	21.95	21.82	≤ 2	2
	12	6	21.69	21.70	21.54		
	12	13	21.63	21.67	21.51		
	25	0	21.66	21.69	21.50		2
64QAM	1	0	21.94	21.98	21.74	≤ 2	2
	1	12	21.72	21.83	21.52		
	1	24	21.60	21.69	21.51		
	12	0	20.98	21.00	20.80	≤ 3	3
	12	6	20.71	20.74	20.52		
	12	13	20.66	20.68	20.54		
	25	0	20.65	20.68	20.50		3

Table 9.3.4.5 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18615 (1851.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19185 (1908.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.82	23.81	23.70	≤ 1	0
	1	7	23.62	23.65	23.52		
	1	14	23.58	23.63	23.51		
	8	0	22.94	22.97	22.72		1
	8	4	22.65	22.68	22.57		
	8	7	22.62	22.64	22.53		
	15	0	22.64	22.68	22.54		1
16QAM	1	0	22.95	22.96	22.87	≤ 1	1
	1	7	22.75	22.80	22.59		
	1	14	22.74	22.75	22.60		
	8	0	22.02	22.00	21.81	≤ 2	2
	8	4	21.73	21.75	21.55		
	8	7	21.69	21.70	21.52		
	15	0	21.66	21.67	21.50		2
64QAM	1	0	21.91	21.94	21.81	≤ 2	2
	1	7	21.72	21.82	21.61		
	1	14	21.68	21.78	21.57		
	8	0	21.02	21.01	20.80	≤ 3	3
	8	4	20.72	20.73	20.54		
	8	7	20.70	20.69	20.51		
	15	0	20.64	20.66	20.53		3

Table 9.3.4.6 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18607 (1850.7 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19193 (1909.3 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.78	23.82	23.58	≤ 1	0
	1	2	23.59	23.64	23.52		
	1	5	23.58	23.52	23.51		
	3	0	23.80	23.80	23.68		0
	3	2	23.61	23.63	23.50		
	3	3	23.57	23.64	23.51		
	6	0	22.59	22.64	22.52		1
16QAM	1	0	22.97	22.95	22.76	≤ 1	1
	1	2	22.78	22.82	22.57		
	1	5	22.64	22.71	22.56		
	3	0	22.87	22.88	22.71		1
	3	2	22.60	22.60	22.52		
	3	3	22.56	22.57	22.56		
	6	0	21.72	21.71	21.58	≤ 2	2
64QAM	1	0	21.93	21.98	21.72	≤ 2	2
	1	2	21.70	21.75	21.56		
	1	5	21.60	21.68	21.52		
	3	0	21.99	21.98	21.79		2
	3	2	21.74	21.70	21.58		
	3	3	21.70	21.66	21.56		
	6	0	20.60	20.61	20.52	≤ 3	3

Table 9.3.4.7 LTE Conducted Power

9.4 WLAN Nominal and Maximum Output Power Spec and Conducted Powers

Band (GHz)	Mode	Ch	Modulated Average[dBm]					
			Ant.1		Ant.2		MIMO(CDD/SDM)	
			Maximum	Nominal	Maximum	Nominal	Maximum	Nominal
2.4	802.11b	1~2	16.5	15.5	16.5	15.5	-	-
		3~9	16.5	15.5	16.5	15.5	-	-
		10~11	16.5	15.5	16.5	15.5	-	-
		12	3.0	2.0	3.0	2.0	-	-
		13	2.0	1.0	2.0	1.0	-	-
	802.11g	1~2	16.5	15.5	16.5	15.5	19.5	18.5
		3~9	16.5	15.5	16.5	15.5	19.5	18.5
		10~11	16.5	15.5	16.5	15.5	19.5	18.5
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0
	802.11n	1~2	15.0	14.0	15.0	14.0	18.0	17.0
		3~9	15.0	14.0	15.0	14.0	18.0	17.0
		10~11	15.0	14.0	15.0	14.0	18.0	17.0
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0
	802.11ac	1~2	15.0	14.0	15.0	14.0	18.0	17.0
		3~9	15.0	14.0	15.0	14.0	18.0	17.0
		10~11	15.0	14.0	15.0	14.0	18.0	17.0
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0

Table 9.4.1 Nominal and Maximum Output Power Spec

Mode	Freq. (MHz)	Channel	IEEE 802.11 (2.4 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11b	**2412**	**1**	15.67	15.89	-	-
	2437	6	15.51	15.60	-	-
	2462	11	15.59	15.74	-	-
	2467	12	2.29	2.21	-	-
	2472	13	0.68	0.75	-	-
802.11g	**2412**	**1**	15.56	16.05	18.82	-
	2437	6	15.56	15.81	18.52	-
	2462	11	15.62	15.84	18.74	-
	2467	12	2.19	1.99	5.10	-
	2472	13	0.90	0.55	3.74	-
802.11n (HT-20)	2412	1	13.71	14.08	16.91	17.10
	2437	6	13.83	14.12	16.99	17.05
	2462	11	13.73	14.17	16.97	16.98
	2467	12	2.08	1.86	4.98	5.01
	2472	13	0.85	0.64	3.76	3.72
802.11ac (VHT-20)	2412	1	13.78	14.12	16.96	17.12
	2437	6	13.72	14.07	16.91	17.19
	2462	11	13.78	14.10	16.95	17.05
	2467	12	1.98	1.74	4.87	4.98
	2472	13	0.69	0.53	3.62	3.82

Table 9.4.2 IEEE 802.11 Average RF Power

Band (GHz)	Mode	Ch	Modulated Average[dBm]					
			Ant.1		Ant.2		MIMO(CDD/SDM)	
			Maximum	Nominal	Maximum	Nominal	Maximum	Nominal
5 (UNII)	802.11a	36-165	16.0	15.0	16.0	15.0	19.0	18.0
	802.11n/ac (20MHz)	36-165	15.0	14.0	15.0	14.0	18.0	17.0
	802.11n/ac (40MHz)	38-54	15.0	14.0	15.0	14.0	18.0	17.0
		62	13.5	12.5	13.5	12.5	16.5	15.5
		102-159	15.0	14.0	15.0	14.0	18.0	17.0
	802.11ac (80MHz)	42	15.0	14.0	15.0	14.0	18.0	17.0
		58	13.5	12.5	13.5	12.5	16.5	15.5
		106-155	15.0	14.0	15.0	14.0	18.0	17.0

Table 9.4.3 Nominal and Maximum Output Power Spec

Mode	Freq. (MHz)	Channel	IEEE 802.11a (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11a	5180	36	15.95	15.72	18.85	-
	5200	40	15.88	15.80	18.85	-
	5220	44	15.86	15.88	18.88	-
	5240	48	15.94	15.91	18.94	-
	5260	52	15.93	15.94	18.95	-
	5280	56	16.00	15.87	18.95	-
	5300	60	15.94	15.93	18.95	-
	5320	64	15.95	15.95	18.96	-
	5500	100	15.71	15.84	18.79	-
	5600	120	15.82	15.95	18.90	-
	5660	132	15.78	15.89	18.85	-
	5720	144	15.91	15.78	18.86	-
	5745	149	15.99	15.88	18.95	-
	5785	157	15.88	15.94	18.92	-
	5825	165	15.93	15.63	18.79	-

Table 9.4.4 IEEE 802.11a Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11n HT20 (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11n (HT-20)	5180	36	14.62	14.53	17.59	17.80
	5200	40	14.79	14.51	17.66	17.80
	5220	44	14.75	14.81	17.79	17.84
	5240	48	14.59	14.62	17.62	17.81
	5260	52	14.74	14.67	17.72	17.81
	5280	56	14.79	14.60	17.71	17.78
	5300	60	14.70	14.67	17.70	17.77
	5320	64	14.66	14.65	17.67	17.75
	5500	100	14.87	14.78	17.84	17.83
	5600	120	14.63	14.95	17.80	17.76
	5660	132	14.74	14.86	17.81	17.83
	5720	144	14.93	14.68	17.82	17.78
	5745	149	14.73	14.65	17.70	17.76
	5785	157	14.66	14.83	17.76	17.85
	5825	165	14.64	14.62	17.64	17.59

Table 9.4.5 IEEE 802.11n HT20 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT20 (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11ac (VHT-20)	5180	36	14.79	14.50	17.66	17.66
	5200	40	14.78	14.46	17.63	17.83
	5220	44	14.81	14.67	17.75	17.84
	5240	48	14.75	14.65	17.71	17.74
	5260	52	14.85	14.61	17.74	17.69
	5280	56	14.74	14.50	17.63	17.79
	5300	60	14.69	14.65	17.68	17.78
	5320	64	14.67	14.63	17.66	17.80
	5500	100	14.65	14.77	17.72	17.77
	5600	120	14.64	14.96	17.81	17.81
	5660	132	14.71	14.91	17.82	17.83
	5720	144	14.54	14.65	17.61	17.71
	5745	149	14.69	14.58	17.65	17.72
	5785	157	14.60	14.76	17.69	17.85
	5825	165	14.58	14.44	17.52	17.62

Table 9.4.6 IEEE 802.11ac VHT20 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11n HT40 (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11n (HT-40)	5190	38	14.82	14.63	17.74	17.76
	5230	46	14.86	14.81	17.85	17.84
	5270	54	14.97	14.78	17.89	17.86
	5310	62	13.43	13.42	16.44	16.47
	5510	102	14.82	14.76	17.80	17.86
	5590	118	14.63	14.82	17.74	17.82
	5670	134	14.85	14.96	17.92	17.89
	5710	142	14.66	14.70	17.69	17.79
	5755	151	14.94	14.83	17.90	17.86
	5795	159	14.99	14.87	17.94	17.83

Table 9.4.7 IEEE 802.11n HT40 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT40 (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11ac (VHT-40)	5190	38	14.81	14.79	17.81	17.86
	5230	46	14.86	14.78	17.83	17.88
	5270	54	14.83	14.82	17.84	17.88
	5310	62	13.45	13.40	16.44	16.46
	5510	102	14.77	14.93	17.86	17.77
	5590	118	14.55	14.96	17.77	17.79
	5670	134	14.75	14.92	17.85	17.90
	5710	142	14.68	14.86	17.78	17.75
	5755	151	14.90	14.83	17.88	17.89
	5795	159	14.89	14.90	17.91	17.87

Table 9.4.8 IEEE 802.11ac VHT40 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT80 (5 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11ac (VHT-80)	5210	42	14.94	14.64	17.80	17.74
	5290	58	13.32	13.27	16.31	16.32
	5530	106	14.72	14.83	17.79	17.82
	5610	122	14.46	14.95	17.72	17.72
	5690	138	14.51	14.58	17.56	17.58
	5775	155	14.69	14.61	17.66	17.72

Table 9.4.9 IEEE 802.11ac VHT80 Average RF Power

Justification for reduced test configurations for WIFI channels 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, duo to an even number of channels, both channels were measured.
- Output Power and SAR is not required for 802.11 g/n HT20/ac VHT20 channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjust SAR is ≤ 1.2 W/kg.
- The underlined data rate and channel above were tested for SAR.

The average output powers of this device were tested by below configuration.

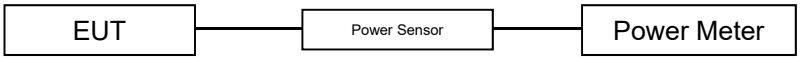

Figure 9.4 Power Measurement Setup

9.5 Bluetooth Conducted Powers

Burst Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	12.5
	Nominal	11.5
Bluetooth 2 Mbps	Maximum	12.5
	Nominal	11.5
Bluetooth 3 Mbps	Maximum	12.5
	Nominal	11.5
Bluetooth LE	Maximum	7.0
	Nominal	6.0

Table 9.5.1 Nominal and Maximum Output Power Spec (Burst)

Frame Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	11.35
	Nominal	10.35
Bluetooth 2 Mbps	Maximum	11.35
	Nominal	10.35
Bluetooth 3 Mbps	Maximum	11.35
	Nominal	10.35
Bluetooth (LE / 1Mbps)	Maximum	6.31
	Nominal	5.31
Bluetooth (LE / 2Mbps)	Maximum	4.59
	Nominal	3.59

Table 9.5.2 Nominal and Maximum Output Power Spec (Frame)

Channel	Frequency	Burst AVG Output Power (1Mbps)	Frame AVG Output Power (1Mbps)	Burst AVG Output Power (2Mbps)	Frame AVG Output Power (2Mbps)	Burst AVG Output Power (3Mbps)	Frame AVG Output Power (3Mbps)
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
Low	2402	11.96	10.81	11.43	10.28	11.43	10.28
Mid	2441	11.94	10.79	11.44	10.29	11.44	10.29
High	2480	11.43	10.28	10.90	9.75	10.89	9.74

Table 9.5.3 Bluetooth Burst and Frame Average RF Power

Channel	Frequency	Burst AVG Output Power(LE / 1Mbps)	Frame AVG Output Power(LE / 1Mbps)	Burst AVG Output Power(LE / 2Mbps)	Frame AVG Output Power(LE / 2Mbps)
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
Low	2402	5.74	5.05	5.74	3.33
Mid	2440	5.62	4.93	5.66	3.25
High	2480	5.59	4.90	5.57	3.16

Table 9.5.4 Bluetooth LE Burst and Frame Average RF Power

- **Bluetooth Conducted Powers procedures**

1. Bluetooth (BDR, EDR)
   1) Enter DUT mode in EUT and operate it.
   When it operating, The EUT is transmitting at maximum power level and duty cycle fixed.
   2) Instruments and EUT were connected like Figure 9.5.1(A).
   3) The maximum output powers of BDR(1 Mbps), EDR(2, 3 Mbps) and each frequency were set by a Bluetooth Tester.
   4) Power levels were measured by a Power Meter.

2. Bluetooth (LE)
   1) Enter LE mode in EUT and operate it.
   When it operating, The EUT is transmitting at maximum power level and duty cycle fixed.
   2) Instruments and EUT were connected like Figure 9.5.1(B).
   3) The average conducted output powers of LE and each frequency can measurement according to setting program in EUT.
   4) Power levels were measured by a Power Meter.

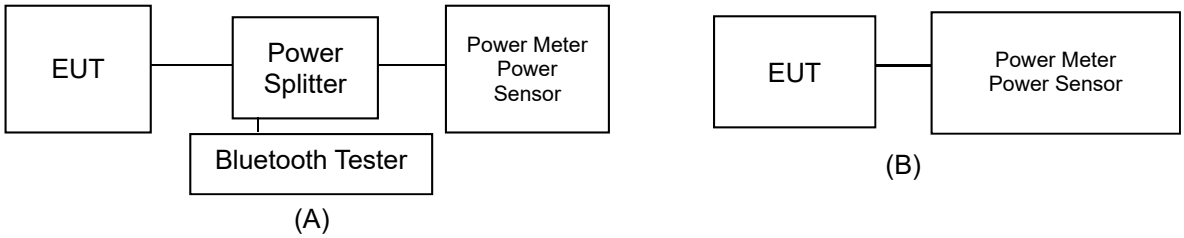

Figure 9.5.1 Average Power Measurement Setup

- **Bluetooth Transmission Plot**

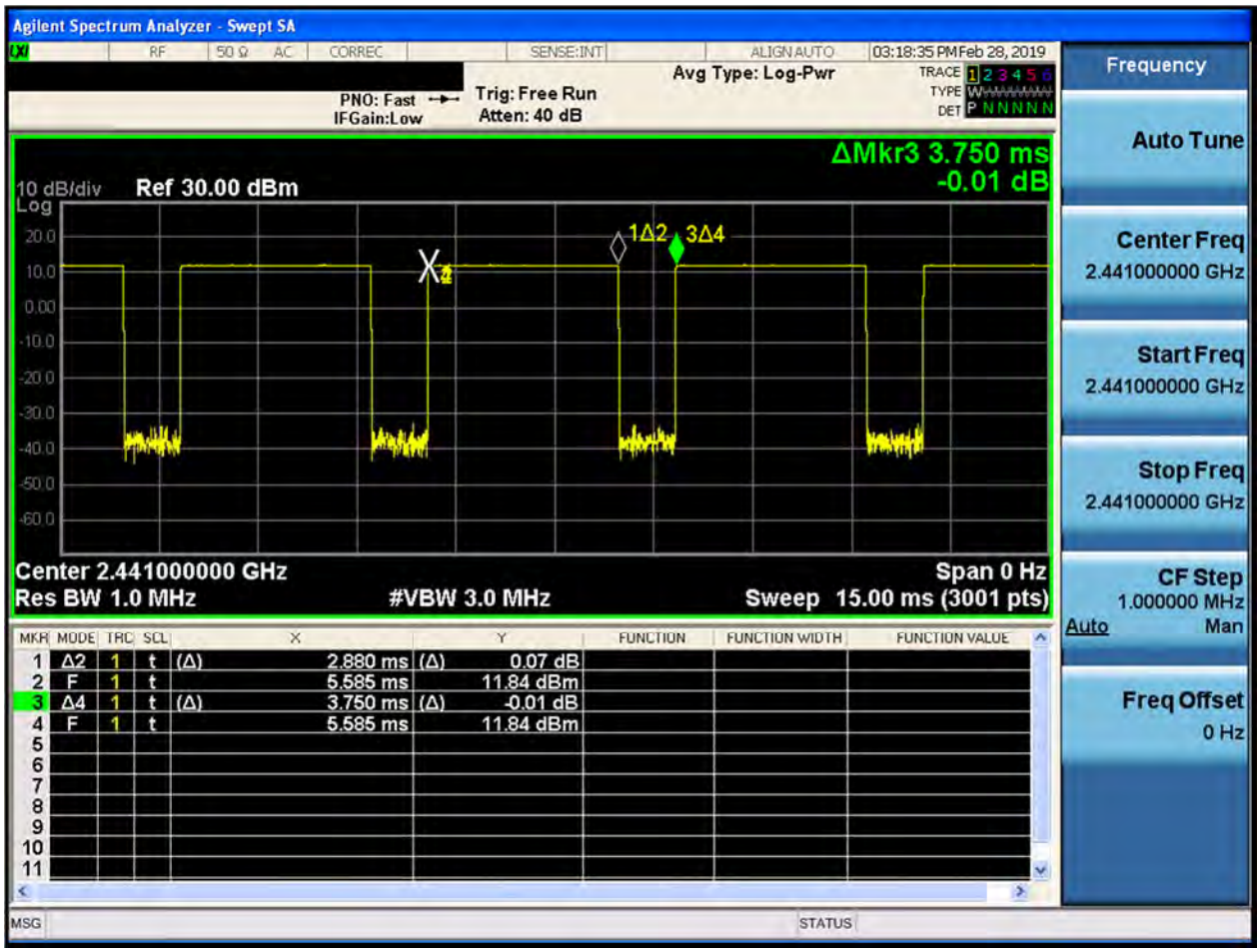

Figure 9.5.2 Bluetooth Transmission Plot

- **Bluetooth Duty Cycle Calculation**

Duty Cycle = Pulse/Period * 100% = (2.880/3.750) * 100 = 76.8%

10. SYSTEM VERIFICATION

10.1 Tissue Verification

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Mar. 11. 2019	750 Head	21.5	21.2	707.5	42.129	0.887	41.371	0.892	-1.80	0.56
				750.0	41.900	0.890	40.806	0.924	-2.61	3.82
Mar. 11. 2019	750 Body	21.5	21.4	707.5	55.699	0.960	56.231	0.932	0.96	-2.92
				750.0	55.531	0.963	55.910	0.968	0.68	0.52
Mar. 01. 2019	835 Head	21.4	21.1	824.2	41.552	0.899	41.825	0.890	0.66	-1.00
				835.0	41.500	0.900	41.696	0.900	0.47	0.00
				836.6	41.500	0.901	41.678	0.901	0.43	0.00
				848.8	41.500	0.914	41.506	0.911	0.01	-0.33
Mar. 01. 2019	835 Body	21.4	21.3	824.2	55.243	0.969	54.720	0.979	-0.95	1.03
				835.0	55.200	0.970	54.641	0.990	-1.01	2.06
				836.6	55.197	0.971	54.626	0.992	-1.03	2.16
				848.8	55.160	0.986	54.532	1.007	-1.14	2.13
Mar. 04. 2019	835 Head	21.1	21.5	826.4	41.542	0.899	41.625	0.884	0.20	-1.67
				835.0	41.500	0.900	41.522	0.892	0.05	-0.89
				836.6	41.500	0.901	41.500	0.894	0.00	-0.78
				846.6	41.500	0.912	41.362	0.903	-0.33	-0.99
Mar. 04. 2019	835 Body	21.1	21.2	826.4	55.235	0.969	54.711	0.981	-0.95	1.24
				835.0	55.200	0.970	54.645	0.990	-1.01	2.06
				836.6	55.197	0.971	54.627	0.992	-1.03	2.16
				846.6	55.166	0.984	54.552	1.003	-1.11	1.93
Mar. 08. 2019	835 Head	21.3	22.0	829.0	41.528	0.899	41.614	0.886	0.21	-1.45
				835.0	41.500	0.900	41.538	0.892	0.09	-0.89
				836.5	41.500	0.901	41.529	0.893	0.07	-0.89
				844.0	41.500	0.910	41.416	0.900	-0.20	-1.10
Mar. 08. 2019	835 Body	21.3	21.7	829.0	55.223	0.970	54.586	0.981	-1.15	1.13
				835.0	55.200	0.970	54.539	0.988	-1.20	1.86
				836.5	55.197	0.971	54.526	0.990	-1.22	1.96
				844.0	55.172	0.981	54.469	0.999	-1.27	1.83
Mar. 07. 2019	1800 Head	21.4	21.7	1720.0	40.114	1.354	41.213	1.311	2.74	-3.18
				1732.5	40.097	1.361	41.159	1.323	2.65	-2.79
				1745.0	40.079	1.369	41.102	1.335	2.55	-2.48
				1800.0	40.000	1.400	40.855	1.385	2.14	-1.07
Mar. 07. 2019	1800 Body	21.4	21.3	1720.0	53.580	1.469	55.499	1.464	3.58	-0.34
				1732.5	53.556	1.477	55.472	1.473	3.58	-0.27
				1745.0	53.530	1.485	55.425	1.483	3.54	-0.13
				1800.0	53.300	1.520	55.245	1.529	3.65	0.59

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Mar. 02. 2019	1900 Head	21.2	21.3	1850.2	40.000	1.400	39.590	1.355	-1.02	-3.21
				1880.0	40.000	1.400	39.478	1.382	-1.31	-1.29
				1900.0	40.000	1.400	39.374	1.399	-1.56	-0.07
				1909.8	40.000	1.400	39.327	1.407	-1.68	0.50
Mar. 02. 2019	1900 Body	21.2	21.5	1850.2	53.300	1.520	54.642	1.482	2.52	-2.50
				1880.0	53.300	1.520	54.564	1.507	2.37	-0.86
				1900.0	53.300	1.520	54.492	1.522	2.24	0.13
				1909.8	53.300	1.520	54.466	1.529	2.19	0.59
Mar. 05. 2019	1900 Head	21.3	21.7	1852.4	40.000	1.400	39.915	1.358	-0.21	-3.00
				1880.0	40.000	1.400	39.756	1.384	-0.61	-1.14
				1900.0	40.000	1.400	39.618	1.401	-0.95	0.07
				1907.6	40.000	1.400	39.571	1.407	-1.07	0.50
Mar. 05. 2019	1900 Body	21.3	21.5	1852.4	53.300	1.520	55.334	1.490	3.82	-1.97
				1880.0	53.300	1.520	55.227	1.514	3.62	-0.39
				1900.0	53.300	1.520	55.124	1.529	3.42	0.59
				1907.6	53.300	1.520	55.090	1.534	3.36	0.92
Mar. 06. 2019	1900 Head	21.2	21.6	1860.0	40.000	1.400	39.522	1.370	-1.20	-2.14
				1880.0	40.000	1.400	39.406	1.389	-1.49	-0.79
				1900.0	40.000	1.400	39.279	1.405	-1.80	0.36
Mar. 06. 2019	1900 Body	21.2	21.4	1860.0	53.300	1.520	55.312	1.494	3.77	-1.71
				1880.0	53.300	1.520	55.222	1.510	3.61	-0.66
				1900.0	53.300	1.520	55.120	1.524	3.41	0.26
Mar. 12. 2019	2450 Head	21.2	21.5	2402.0	39.282	1.757	39.996	1.752	1.82	-0.28
				2412.0	39.265	1.766	39.975	1.766	1.81	0.00
				2437.0	39.222	1.788	39.961	1.799	1.88	0.62
				2441.0	39.215	1.792	39.957	1.804	1.89	0.67
				2450.0	39.200	1.800	39.943	1.813	1.90	0.72
				2462.0	39.184	1.813	39.920	1.824	1.88	0.61
				2467.0	39.177	1.818	39.902	1.828	1.85	0.55
				2472.0	39.171	1.823	39.876	1.833	1.80	0.55
				2480.0	39.160	1.832	39.829	1.839	1.71	0.38
Mar. 12. 2019	2450 Body	21.2	21.3	2402.0	52.764	1.904	53.577	1.901	1.54	-0.16
				2412.0	52.751	1.914	53.560	1.918	1.53	0.21
				2437.0	52.717	1.938	53.551	1.958	1.58	1.03
				2441.0	52.712	1.941	53.548	1.963	1.59	1.13
				2450.0	52.700	1.950	53.541	1.972	1.60	1.13
				2462.0	52.685	1.967	53.525	1.980	1.59	0.66
				2467.0	52.678	1.974	53.510	1.983	1.58	0.46
				2472.0	52.672	1.981	53.490	1.986	1.55	0.25
				2480.0	52.662	1.993	53.455	1.992	1.51	-0.05

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Mar. 04. 2019	5200 Body	20.5	20.7	5180.0	49.041	5.276	48.925	5.168	-0.24	-2.05
				5190.0	49.028	5.288	48.897	5.180	-0.27	-2.04
				5200.0	49.014	5.299	48.865	5.194	-0.30	-1.98
				5210.0	49.001	5.311	48.847	5.208	-0.31	-1.94
				5220.0	48.987	5.323	48.823	5.221	-0.33	-1.92
				5230.0	48.974	5.334	48.804	5.233	-0.35	-1.89
				5240.0	48.960	5.346	48.785	5.245	-0.36	-1.89
Mar. 05. 2019	5300 Head	20.2	20.5	5260.0	35.940	4.720	36.099	4.837	0.44	2.48
				5270.0	35.930	4.730	36.092	4.855	0.45	2.64
				5280.0	35.920	4.740	36.096	4.868	0.49	2.70
				5290.0	35.910	4.750	36.094	4.874	0.51	2.61
				5300.0	35.900	4.760	36.072	4.879	0.48	2.50
				5310.0	35.890	4.770	36.041	4.886	0.42	2.43
				5320.0	35.880	4.780	36.013	4.891	0.37	2.32
Mar. 05. 2019	5300 Body	20.4	20.6	5260.0	48.933	5.369	49.246	5.573	0.64	3.80
				5270.0	48.919	5.381	49.215	5.587	0.61	3.83
				5280.0	48.906	5.393	49.196	5.601	0.59	3.86
				5290.0	48.892	5.404	49.171	5.613	0.57	3.87
				5300.0	48.879	5.416	49.144	5.627	0.54	3.90
				5310.0	48.865	5.428	49.118	5.645	0.52	4.00
				5320.0	48.851	5.439	49.108	5.660	0.53	4.06
Mar. 06. 2019	5600 Head	20.5	21.0	5500.0	35.650	4.965	35.302	4.954	-0.98	-0.22
				5510.0	35.635	4.976	35.286	4.963	-0.98	-0.26
				5530.0	35.605	4.997	35.235	4.985	-1.04	-0.24
				5550.0	35.575	5.018	35.208	5.007	-1.03	-0.22
				5580.0	35.530	5.049	35.138	5.038	-1.10	-0.22
				5600.0	35.500	5.070	35.102	5.064	-1.12	-0.12
				5660.0	35.440	5.130	35.002	5.124	-1.24	-0.12
				5670.0	35.430	5.140	34.983	5.131	-1.26	-0.18
				5690.0	35.410	5.160	34.934	5.155	-1.34	-0.10
				5710.0	35.390	5.180	34.906	5.179	-1.37	-0.02
				5720.0	35.380	5.190	34.898	5.187	-1.36	-0.06
				5800.0	35.300	5.270	34.734	5.270	-1.60	0.00
Mar. 06. 2019	5600 Body	20.6	20.8	5500.0	48.607	5.650	49.810	5.643	2.47	-0.12
				5510.0	48.594	5.661	49.787	5.652	2.46	-0.16
				5530.0	48.566	5.685	49.687	5.671	2.31	-0.25
				5550.0	48.539	5.708	49.603	5.687	2.19	-0.37
				5580.0	48.499	5.743	49.406	5.705	1.87	-0.66
				5600.0	48.471	5.766	49.294	5.725	1.70	-0.71
				5660.0	48.390	5.836	49.054	5.783	1.37	-0.91
				5670.0	48.376	5.848	49.009	5.789	1.31	-1.01
				5690.0	48.349	5.872	48.939	5.808	1.22	-1.09
				5710.0	48.322	5.895	48.880	5.831	1.15	-1.09
				5720.0	48.309	5.907	48.850	5.840	1.12	-1.13
				5800.0	48.200	6.000	48.671	5.939	0.98	-1.02

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Mar. 07. 2019	5800 Head	20.2	20.6	5745.0	35.355	5.215	34.776	5.217	-1.64	0.04
				5755.0	35.345	5.225	34.763	5.230	-1.65	0.10
				5775.0	35.325	5.245	34.738	5.248	-1.66	0.06
				5785.0	35.315	5.255	34.714	5.256	-1.70	0.02
				5795.0	35.305	5.265	34.689	5.268	-1.74	0.06
				5800.0	35.300	5.270	34.676	5.274	-1.77	0.08
				5825.0	35.275	5.296	34.650	5.304	-1.77	0.15
Mar. 07. 2019	5800 Body	20.3	20.5	5745.0	48.275	5.936	48.764	5.911	1.01	-0.42
				5755.0	48.261	5.947	48.788	5.924	1.09	-0.39
				5775.0	48.234	5.971	48.756	5.948	1.08	-0.39
				5785.0	48.220	5.982	48.744	5.955	1.09	-0.45
				5795.0	48.207	5.994	48.728	5.963	1.08	-0.52
				5800.0	48.200	6.000	48.722	5.973	1.08	-0.45
				5825.0	48.166	6.029	48.683	5.997	1.07	-0.53

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 865664 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

Measurement Procedure for Tissue verification:

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the sample which 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 , for example from the below equation (Pournaropoulos and Misra):

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

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 $j = \sqrt{-1}$.

10.2 Test System Verification

Prior to assessment, the system is verified to the ± 10 % of the specifications at using the SAR Dipole kit(s). (Graphic Plots Attached)

Table 10.2.1 System Verification Results (1g)

SYSTEM DIPOLE VERIFICATION TARGET & MEASURED												
SAR System #	Freq. [MHz]	SAR Dipole kits	Date(s)	Tissue Type	Ambient Temp. [°C]	Liquid Temp. [°C]	Probe S/N	Input Power (mW)	1 W Target SAR_{1g} (W/kg)	Measured SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	Deviation [%]
C	750	D750V3, SN:1049	Mar. 11. 2019	Head	21.5	21.2	3327	250	8.38	2.18	8.72	4.06
C	750	D750V3, SN:1049	Mar. 11. 2019	Body	21.5	21.4	3327	250	8.70	2.26	9.04	3.91
C	835	D835V2, SN:4d159	Mar. 01. 2019	Head	21.4	21.1	3327	250	9.36	2.46	9.84	5.13
C	835	D835V2, SN:4d159	Mar. 01. 2019	Body	21.4	21.3	3327	250	9.56	2.52	10.08	5.44
C	835	D835V2, SN:4d159	Mar. 04. 2019	Head	21.1	21.5	3327	250	9.36	2.45	9.80	4.70
C	835	D835V2, SN:4d159	Mar. 04. 2019	Body	21.1	21.2	3327	250	9.56	2.52	10.08	5.44
C	835	D835V2, SN:4d159	Mar. 08. 2019	Head	21.3	22.0	3327	250	9.36	2.41	9.64	2.99
C	835	D835V2, SN:4d159	Mar. 08. 2019	Body	21.3	21.7	3327	250	9.56	2.46	9.84	2.93
C	1800	D1800V2, SN:2d202	Mar. 07. 2019	Head	21.4	21.7	3327	100	38.7	3.79	37.90	-2.07
C	1800	D1800V2, SN:2d202	Mar. 07. 2019	Body	21.4	21.3	3327	100	38.8	3.81	38.10	-1.80
C	1900	D1900V2, SN:5d176	Mar. 02. 2019	Head	21.2	21.3	3327	100	40.7	4.02	40.20	-1.23
C	1900	D1900V2, SN:5d176	Mar. 02. 2019	Body	21.2	21.5	3327	100	39.7	3.98	39.80	0.25
C	1900	D1900V2, SN:5d176	Mar. 05. 2019	Head	21.3	21.7	3327	100	40.7	4.04	40.40	-0.74
C	1900	D1900V2, SN:5d176	Mar. 05. 2019	Body	21.3	21.5	3327	100	39.7	4.01	40.10	1.01
C	1900	D1900V2, SN:5d176	Mar. 06. 2019	Head	21.2	21.6	3327	100	40.7	4.01	40.10	-1.47
C	1900	D1900V2, SN:5d176	Mar. 06. 2019	Body	21.2	21.4	3327	100	39.7	3.95	39.50	-0.50
C	2450	D2450V2, SN: 920	Mar. 12. 2019	Head	21.2	21.5	3327	100	51.9	4.88	48.80	-5.97
C	2450	D2450V2, SN: 920	Mar. 12. 2019	Body	21.2	21.3	3327	100	52.1	5.35	53.50	2.69
A	5200	D5GHzV2, SN:1103	Mar. 04. 2019	Body	20.5	20.7	3930	100	75.5	7.23	72.30	-4.24
F	5300	D5GHzV2, SN:1103	Mar. 05. 2019	Head	20.2	20.5	3930	100	82.4	7.96	79.60	-3.40
A	5300	D5GHzV2, SN:1103	Mar. 05. 2019	Body	20.4	20.6	3930	100	74.4	7.51	75.10	0.94
F	5500	D5GHzV2, SN:1103	Mar. 06. 2019	Head	20.5	21.0	3930	100	84.0	8.16	81.60	-2.86
A	5500	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	79.6	7.78	77.80	-2.26
F	5600	D5GHzV2, SN:1103	Mar. 06. 2019	Head	20.5	21.0	3930	100	84.0	8.23	82.30	-2.02
A	5600	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	79.7	8.06	80.60	1.13
F	5800	D5GHzV2, SN:1103	Mar. 06. 2019	Head	20.5	21.0	3930	100	81.4	7.73	77.30	-5.04
A	5800	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	74.8	7.72	77.20	3.21
F	5800	D5GHzV2, SN:1103	Mar. 07. 2019	Head	20.2	20.6	3930	100	81.4	7.79	77.90	-4.30
A	5800	D5GHzV2, SN:1103	Mar. 07. 2019	Body	20.3	20.5	3930	100	74.8	7.70	77.00	2.94

Table 10.2.2 System Verification Results (10g)

SYSTEM DIPOLE VERIFICATION TARGET & MEASURED												
SAR System #	Freq. [MHz]	SAR Dipole kits	Date(s)	Tissue Type	Ambient Temp. [°C]	Liquid Temp. [°C]	Probe S/N	Input Power (mW)	1 W Target SAR_{10g} (W/kg)	Measured SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	Deviation [%]
A	5300	D5GHzV2, SN:1103	Mar. 05. 2019	Body	20.4	20.6	3930	100	20.9	2.09	20.90	0.00
A	5500	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	22.1	2.15	21.50	-2.71
A	5600	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	22.3	2.22	22.20	-0.45
A	5800	D5GHzV2, SN:1103	Mar. 06. 2019	Body	20.6	20.8	3930	100	20.9	2.14	21.40	2.39
A	5800	D5GHzV2, SN:1103	Mar. 07. 2019	Body	20.3	20.5	3930	100	20.9	2.13	21.30	1.91

Note1 : System Verification was measured with input 250 mW, 100 mW and normalized to 1W.
Note2 : Full system validation status and results can be found in Appendix D.

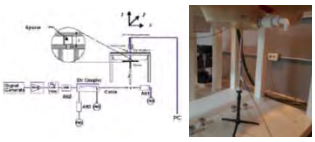

Figure 10.1 Dipole Verification Test Setup Diagram & Photo

11. SAR TEST RESULTS

11.1 Head SAR Results

Table 11.1.1 GSM/GPRS 850 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch														
836.6	190	GSM850	-	GSM	33.70	33.40	0.040	Left Touch	FCC #1	1	1:8.3	0.083	1.072	**0.089**	A1
836.6	190	GSM850	-	GSM	33.70	33.40	0.070	Right Touch	FCC #1	1	1:8.3	0.070	1.072	0.075	
836.6	190	GSM850	-	GSM	33.70	33.40	0.050	Left Tilt	FCC #1	1	1:8.3	0.038	1.072	0.041	
836.6	190	GSM850	-	GSM	33.70	33.40	0.110	Right Tilt	FCC #1	1	1:8.3	0.044	1.072	0.047	
836.6	190	GSM850	-	GPRS	31.20	30.70	0.190	Left Touch	FCC #1	2	1:4.15	0.109	1.122	**0.122**	A2
836.6	190	GSM850	-	GPRS	31.20	30.70	0.100	Right Touch	FCC #1	2	1:4.15	0.091	1.122	0.102	
836.6	190	GSM850	-	GPRS	31.20	30.70	0.090	Left Tilt	FCC #1	2	1:4.15	0.052	1.122	0.058	
836.6	190	GSM850	-	GPRS	31.20	30.70	0.160	Right Tilt	FCC #1	2	1:4.15	0.057	1.122	0.064	
836.6	190	GSM850	#4	GPRS	31.20	30.70	0.100	Left Touch	FCC #1	2	1:4.15	0.082	1.122	0.092	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.2 PCS/GPRS 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch														
1880.0	661	PCS1900	-	PCS	30.70	30.10	0.170	Left Touch	FCC #1	1	1:8.3	0.047	1.148	0.054	
1880.0	661	PCS1900	-	PCS	30.70	30.10	0.120	Right Touch	FCC #1	1	1:8.3	0.061	1.148	**0.070**	A3
1880.0	661	PCS1900	-	PCS	30.70	30.10	0.180	Left Tilt	FCC #1	1	1:8.3	0.036	1.148	0.041	
1880.0	661	PCS1900	-	PCS	30.70	30.10	0.150	Right Tilt	FCC #1	1	1:8.3	0.036	1.148	0.041	
1880.0	661	PCS1900	-	GPRS	27.20	26.70	0.190	Left Touch	FCC #1	3	1:2.77	0.054	1.122	0.061	
1880.0	661	PCS1900	-	GPRS	27.20	26.70	0.180	Right Touch	FCC #1	3	1:2.77	0.063	1.122	**0.071**	A4
1880.0	661	PCS1900	-	GPRS	27.20	26.70	0.190	Left Tilt	FCC #1	3	1:2.77	0.040	1.122	0.045	
1880.0	661	PCS1900	-	GPRS	27.20	26.70	0.190	Right Tilt	FCC #1	3	1:2.77	0.042	1.122	0.047	
1880.0	661	PCS1900	#4	GPRS	27.20	26.70	0.160	Right Touch	FCC #1	3	1:2.77	0.050	1.122	0.056	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.3 WCDMA 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch													
836.6	4183	WCDMA 850	-	RMC	25.50	25.19	0.090	Left Touch	FCC #1	1:1	0.146	1.074	**0.157**	A5
836.6	4183	WCDMA 850	-	RMC	25.50	25.19	0.130	Right Touch	FCC #1	1:1	0.127	1.074	0.136	
836.6	4183	WCDMA 850	-	RMC	25.50	25.19	0.130	Left Tilt	FCC #1	1:1	0.071	1.074	0.076	
836.6	4183	WCDMA 850	-	RMC	25.50	25.19	0.080	Right Tilt	FCC #1	1:1	0.080	1.074	0.086	
836.6	4183	WCDMA 850	#4	RMC	25.50	25.19	0.170	Left Touch	FCC #1	1:1	0.103	1.074	0.111	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.4 WCDMA 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch													
1880.0	9400	WCDMA 1900	-	RMC	23.70	22.67	0.170	Left Touch	FCC #1	1:1	0.114	1.268	0.145	
1880.0	9400	WCDMA 1900	-	RMC	23.70	22.67	0.170	Right Touch	FCC #1	1:1	0.115	1.268	**0.146**	A6
1880.0	9400	WCDMA 1900	-	RMC	23.70	22.67	0.160	Left Tilt	FCC #1	1:1	0.064	1.268	0.081	
1880.0	9400	WCDMA 1900	-	RMC	23.70	22.67	0.110	Right Tilt	FCC #1	1:1	0.066	1.268	0.084	
1880.0	9400	WCDMA 1900	#4	RMC	23.70	22.67	0.070	Right Touch	FCC #1	1:1	0.102	1.268	0.129	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.5 LTE Band 12 Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
707.5	23095	LTE B12	-	10	25.50	25.28	-0.060	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.107	1.052	**0.113**	A7
707.5	23095	LTE B12	-	10	24.50	24.19	0.170	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.081	1.074	0.087	
707.5	23095	LTE B12	-	10	25.50	25.28	-0.180	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.088	1.052	0.093	
707.5	23095	LTE B12	-	10	24.50	24.19	0.130	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.071	1.074	0.076	
707.5	23095	LTE B12	-	10	25.50	25.28	0.080	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.047	1.052	0.049	
707.5	23095	LTE B12	-	10	24.50	24.19	0.130	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.038	1.074	0.041	
707.5	23095	LTE B12	-	10	25.50	25.28	0.170	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.057	1.052	0.060	
707.5	23095	LTE B12	-	10	24.50	24.19	0.120	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.056	1.074	0.060	
707.5	23095	LTE B12	#4	10	25.50	25.28	0.180	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.101	1.052	0.106	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.6 LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
836.5	20525	LTE B5	-	10	25.50	25.11	0.110	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.169	1.094	**0.185**	A8
836.5	20525	LTE B5	-	10	24.50	24.15	0.150	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.110	1.084	0.119	
836.5	20525	LTE B5	-	10	25.50	25.11	0.130	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.125	1.094	0.137	
836.5	20525	LTE B5	-	10	24.50	24.15	0.190	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.080	1.084	0.087	
836.5	20525	LTE B5	-	10	25.50	25.11	0.070	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.088	1.094	0.096	
836.5	20525	LTE B5	-	10	24.50	24.15	0.080	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.056	1.084	0.061	
836.5	20525	LTE B5	-	10	25.50	25.11	0.080	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.098	1.094	0.107	
836.5	20525	LTE B5	-	10	24.50	24.15	0.180	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.061	1.084	0.066	
836.5	20525	LTE B5	#4	10	25.50	25.11	0.070	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.117	1.094	0.128	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.7 LTE Band 4 (AWS) Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.120	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.085	1.050	0.089	
1732.5	20175	LTE B4	-	20	23.20	22.95	0.120	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.080	1.059	0.085	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.120	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.117	1.050	**0.123**	A9
1732.5	20175	LTE B4	-	20	23.20	22.95	0.140	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.106	1.059	0.112	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.160	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.085	1.050	0.089	
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.020	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.072	1.059	0.076	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.080	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.074	1.050	0.078	
1732.5	20175	LTE B4	-	20	23.20	22.95	0.060	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.078	1.059	0.083	
1732.5	20175	LTE B4	#4	20	24.20	23.99	0.190	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.087	1.050	0.091	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.8 LTE Band 2 (PCS) Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
1860.0	18700	LTE B2	-	20	24.20	23.86	0.100	0	Left Touch	FCC #1	QPSK	1	0	1:1	0.110	1.081	0.119	
1860.0	18700	LTE B2	-	20	23.20	23.03	0.110	1	Left Touch	FCC #1	QPSK	50	0	1:1	0.087	1.040	0.090	
1860.0	18700	LTE B2	-	20	24.20	23.86	0.150	0	Right Touch	FCC #1	QPSK	1	0	1:1	0.146	1.081	**0.158**	A10
1860.0	18700	LTE B2	-	20	23.20	23.03	0.120	1	Right Touch	FCC #1	QPSK	50	0	1:1	0.109	1.040	0.113	
1860.0	18700	LTE B2	-	20	24.20	23.86	0.090	0	Left Tilt	FCC #1	QPSK	1	0	1:1	0.060	1.081	0.065	
1860.0	18700	LTE B2	-	20	23.20	23.03	0.090	1	Left Tilt	FCC #1	QPSK	50	0	1:1	0.040	1.040	0.042	
1860.0	18700	LTE B2	-	20	24.20	23.86	0.030	0	Right Tilt	FCC #1	QPSK	1	0	1:1	0.065	1.081	0.070	
1860.0	18700	LTE B2	-	20	23.20	23.03	-0.040	1	Right Tilt	FCC #1	QPSK	50	0	1:1	0.039	1.040	0.041	
1860.0	18700	LTE B2	#4	20	24.20	23.86	0.160	0	Right Touch	FCC #1	QPSK	1	0	1:1	0.092	1.081	0.099	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.9 DTS Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode (Antenna)	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.160	Left Touch	FCC #2	0.260	1	99.2	0.263	1.211	1.008	0.321	
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.100	Right Touch	FCC #2	0.133	1	99.2	0.139	1.211	1.008	0.170	
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.140	Left Tilt	FCC #2	0.277	1	99.2	0.286	1.211	1.008	**0.349**	A11
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	-0.120	Right Tilt	FCC #2	0.123	1	99.2	0.128	1.211	1.008	0.156	
2412.0	1	802.11b (Ant.1)	#4	16.50	15.67	-0.030	Left Tilt	FCC #2	0.265	1	99.2	0.229	1.211	1.008	0.280	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.150	Left Touch	FCC #2	0.340	1	99.2	0.368	1.151	1.008	**0.427**	A12
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	-0.150	Right Touch	FCC #2	0.112	1	99.2	0.114	1.151	1.008	0.132	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.150	Left Tilt	FCC #2	0.131	1	99.2	0.129	1.151	1.008	0.150	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	-0.020	Right Tilt	FCC #2	0.064	1	99.2	0.066	1.151	1.008	0.077	
2412.0	1	802.11b (Ant.2)	#4	16.50	15.89	-0.110	Left Touch	FCC #2	0.329	1	99.2	0.339	1.151	1.008	0.393	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	-0.150	Left Touch	FCC #2	0.419	1	98.1	0.440	1.211	1.019	**0.543**	A13
2412.0	1	802.11g (MIMO)	-	19.50	18.82	-0.030	Right Touch	FCC #2	0.189	1	98.1	0.163	1.211	1.019	0.201	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.180	Left Tilt	FCC #2	0.384	1	98.1	0.390	1.211	1.019	0.481	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.150	Right Tilt	FCC #2	0.186	1	98.1	0.182	1.211	1.019	0.225	
2412.0	1	802.11g (MIMO)	#4	19.50	18.82	0.100	Left Touch	FCC #2	0.401	1	98.1	0.419	1.211	1.019	0.517	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Adjusted SAR results for OFDM SAR												
FREQUENCY		Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm	Ratio of OFDM to DSSS	1g Adjusted SAR (W/kg)	Determine OFDM SAR
MHz	Ch											
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.349	2437	802.11g	OFDM	16.5	1.000	**0.349**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.349	2437	802.11n	OFDM	15.0	0.708	**0.247**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.349	2437	802.11ac	OFDM	15.0	0.708	**0.247**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.427	2437	802.11g	OFDM	16.5	1.000	**0.427**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.427	2437	802.11n	OFDM	15.0	0.708	**0.302**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.427	2437	802.11ac	OFDM	15.0	0.708	**0.302**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.543	2437	802.11n	OFDM	18.0	0.708	**0.384**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.543	2437	802.11ac	OFDM	18.0	0.708	**0.384**	X
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note: SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Table 11.1.10 UNII Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode (Antenna)	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.060	Left Touch	FCC #2	0.728	6	98.1	0.891	1.000	1.019	0.908	
5320.0	64	802.11a (Ant.1)	-	16.00	15.95	0.100	Left Touch	FCC #2	0.763	6	98.1	0.898	1.012	1.019	**0.926**	A14
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.190	Right Touch	FCC #2	0.337	6	98.1	0.394	1.000	1.019	0.402	
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	-0.150	Left Tilt	FCC #2	0.589	6	98.1	0.680	1.000	1.019	0.693	
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	-0.080	Right Tilt	FCC #2	0.366	6	98.1	0.459	1.000	1.019	0.468	
5320.0	64	802.11a (Ant.1)	#1	16.00	15.95	-0.050	Left Touch	FCC #2	0.151	6	98.1	0.151	1.012	1.019	0.156	
5320.0	64	802.11a (Ant.1)	#2	16.00	15.95	-0.170	Left Touch	FCC #2	0.563	6	98.1	0.661	1.012	1.019	0.682	
5320.0	64	802.11a (Ant.1)	#3	16.00	15.95	0.160	Left Touch	FCC #2	0.566	6	98.1	0.659	1.012	1.019	0.680	
5320.0	64	802.11a (Ant.1)	#4	16.00	15.95	0.070	Left Touch	FCC #2	0.585	6	98.1	0.621	1.012	1.019	0.641	
5320.0	64	802.11a (Ant.1)	-	16.00	15.95	0.070	Left Touch	FCC #2	0.653	6	98.1	0.780	1.012	1.019	0.805	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.160	Left Touch	FCC #2	0.205	6	98.1	0.179	1.012	1.019	**0.185**	A15
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	0.000	Right Touch	FCC #2	0.031	6	98.1	0.031	1.012	1.019	0.032	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.080	Left Tilt	FCC #2	0.066	6	98.1	0.080	1.012	1.019	0.083	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	0.000	Right Tilt	FCC #2	0.029	6	98.1	0.025	1.012	1.019	0.026	
5320.0	64	802.11a (Ant.2)	#4	16.00	15.95	-0.160	Left Touch	FCC #2	0.120	6	98.1	0.107	1.012	1.019	0.110	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.180	Left Touch	FCC #2	0.633	6	98.1	0.691	1.012	1.019	0.713	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	-0.080	Right Touch	FCC #2	0.168	6	98.1	0.179	1.012	1.019	0.185	
5260.0	52	802.11a (MIMO)	-	19.00	18.95	0.030	Left Tilt	FCC #2	0.609	6	98.1	0.688	1.012	1.019	0.710	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.170	Left Tilt	FCC #2	0.664	6	98.1	0.730	1.012	1.019	**0.753**	A16
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.080	Right Tilt	FCC #2	0.178	6	98.1	0.203	1.012	1.019	0.209	
5320.0	64	802.11a (MIMO)	#4	19.00	18.96	0.030	Left Tilt	FCC #2	0.555	6	98.1	0.641	1.012	1.019	0.661	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Head 1.6 W/kg (mW/g) averaged over 1 gram**							

Note(s):
1. Blue entries represent additional Head SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Purple entries represent additional Head SAR Test Position (#2: DD angle: 104 degree) with the worst case position.
   The intended user usage configuration of 104 degree can not be physically setup on the head phantom.
   So SAR tests for 104 degree were performed at a degree that the sub display is touched to the phantom as close as possible instead of 104 degree.
3. Green entries represent additional Head SAR Test Position (#3: DD angle: 180 degree) with the worst case position.
4. Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.
5. Yellow entries represent variability measurements.

Adjusted SAR results for UNII-1 and UNII-2A SAR												
FREQUENCY		Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm	Adjusted Factor	1g Adjusted SAR (W/kg)	SAR for the band with lower maximum output power
MHz	Ch											
5320.0	64	802.11a (Ant.1)	OFDM	16.0	0.926	5180	802.11a	OFDM	16.0	1.000	**0.926**	X
5320.0	64	802.11a (Ant.2)	OFDM	16.0	0.185	5240	802.11a	OFDM	16.0	1.000	**0.185**	X
5320.0	64	802.11a (MIMO)	OFDM	19.0	0.753	5240	802.11a	OFDM	19.0	1.000	**0.753**	X
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						**Head 1.6 W/kg (mW/g) averaged over 1 gram**						

Note: U-NII-1 and U-NII-2A Bands: When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

Table 11.1.11 UNII Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode (Antenna)	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	-0.160	Left Touch	FCC #2	0.448	6	98.1	0.510	1.021	1.019	**0.531**	A17
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	0.100	Right Touch	FCC #2	0.187	6	98.1	0.238	1.021	1.019	0.248	
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	-0.110	Left Tilt	FCC #2	0.377	6	98.1	0.418	1.021	1.019	0.435	
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	0.100	Right Tilt	FCC #2	0.199	6	98.1	0.254	1.021	1.019	0.264	
5720.0	144	802.11a (Ant.1)	#4	16.00	15.91	0.190	Left Touch	FCC #2	0.371	6	98.1	0.384	1.021	1.019	0.400	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	-0.070	Left Touch	FCC #2	0.226	6	98.1	0.205	1.012	1.019	**0.211**	A18
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.000	Right Touch	FCC #2	0.046	6	98.1	0.045	1.012	1.019	0.046	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.110	Left Tilt	FCC #2	0.073	6	98.1	0.070	1.012	1.019	0.073	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.000	Right Tilt	FCC #2	0.031	6	98.1	0.024	1.012	1.019	0.025	
5600.0	120	802.11a (Ant.2)	#4	16.00	15.95	0.000	Left Touch	FCC #2	0.141	6	98.1	0.146	1.012	1.019	0.151	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.170	Left Touch	FCC #2	0.361	6	98.1	0.411	1.023	1.019	**0.429**	A19
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.130	Right Touch	FCC #2	0.116	6	98.1	0.128	1.023	1.019	0.133	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	-0.170	Left Tilt	FCC #2	0.368	6	98.1	0.404	1.023	1.019	0.421	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.070	Right Tilt	FCC #2	0.125	6	98.1	0.127	1.023	1.019	0.132	
5600.0	120	802.11a (MIMO)	#4	19.00	18.90	0.040	Left Touch	FCC #2	0.307	6	98.1	0.355	1.023	1.019	0.370	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	-0.020	Left Touch	FCC #2	0.447	6	98.1	0.534	1.002	1.019	**0.545**	A20
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.180	Right Touch	FCC #2	0.188	6	98.1	0.228	1.002	1.019	0.233	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.160	Left Tilt	FCC #2	0.393	6	98.1	0.431	1.002	1.019	0.440	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.100	Right Tilt	FCC #2	0.204	6	98.1	0.257	1.002	1.019	0.263	
5745.0	149	802.11a (Ant.1)	#4	16.00	15.99	0.110	Left Touch	FCC #2	0.324	6	98.1	0.364	1.002	1.019	0.372	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.130	Left Touch	FCC #2	0.250	6	98.1	0.246	1.014	1.019	**0.254**	A21
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.000	Right Touch	FCC #2	0.068	6	98.1	0.064	1.014	1.019	0.066	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.000	Left Tilt	FCC #2	0.084	6	98.1	0.101	1.014	1.019	0.104	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.000	Right Tilt	FCC #2	0.052	6	98.1	0.063	1.014	1.019	0.065	
5785.0	157	802.11a (Ant.2)	#4	16.00	15.94	0.000	Left Touch	FCC #2	0.198	6	98.1	0.203	1.014	1.019	0.210	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	-0.080	Left Touch	FCC #2	0.370	6	98.1	0.428	1.014	1.019	0.442	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.190	Right Touch	FCC #2	0.133	6	98.1	0.146	1.014	1.019	0.151	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	-0.030	Left Tilt	FCC #2	0.409	6	98.1	0.461	1.014	1.019	**0.477**	A22
5745.0	149	802.11a (MIMO)	-	19.00	18.95	-0.030	Right Tilt	FCC #2	0.137	6	98.1	0.152	1.014	1.019	0.157	
5745.0	149	802.11a (MIMO)	#4	19.00	18.95	-0.170	Left Tilt	FCC #2	0.336	6	98.1	0.363	1.014	1.019	0.375	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Head 1.6 W/kg (mW/g) averaged over 1 gram**							

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.1.12 Bluetooth Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Rate [Mbps]	Duty Cycle (%)	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch														
2441.0	39	Bluetooth	-	11.35	10.79	0.100	Left Touch	FCC #2	1	76.8	0.070	1.138	1.302	0.104	
2441.0	39	Bluetooth	-	11.35	10.79	0.040	Right Touch	FCC #2	1	76.8	0.035	1.138	1.302	0.052	
2441.0	39	Bluetooth	-	11.35	10.79	-0.100	Left Tilt	FCC #2	1	76.8	0.106	1.138	1.302	**0.157**	A23
2441.0	39	Bluetooth	-	11.35	10.79	-0.010	Right Tilt	FCC #2	1	76.8	0.047	1.138	1.302	0.070	
2441.0	39	Bluetooth	#4	11.35	10.79	0.180	Left Tilt	FCC #2	1	76.8	0.083	1.138	1.302	0.123	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Head 1.6 W/kg (mW/g) averaged over 1 gram**							

Note: Orange entries represent additional Head SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

11.2 Standalone Body-Worn SAR Worn SAR Results

Table 11.2.1 GSM/PCS/GPRS/WCDMA Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY MHz	FREQUENCY Ch	Mode/ Band	60GHz Dual Display Accessory Configuration	Each half of surface separately due to fold angle	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Spacing [Side]	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
836.6	190	GSM850	-	N/A	GSM	33.70	33.40	-0.070	10 mm [Front]	FCC #1	1	1:8.3	0.405	1.072	0.434	
836.6	190	GSM850	-	N/A	GSM	33.70	33.40	-0.020	10 mm [Rear]	FCC #1	1	1:8.3	0.599	1.072	**0.642**	A24
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	-0.010	10 mm [Front]	FCC #1	2	1:4.15	0.431	1.122	0.484	
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	-0.090	10 mm [Rear]	FCC #1	2	1:4.15	0.647	1.122	**0.726**	A25
836.6	190	GSM850	#1	N/A	GPRS	31.20	30.70	-0.040	10 mm [Rear]	FCC #1	2	1:4.15	0.507	1.122	0.569	
1880.0	661	PCS1900	-	N/A	PCS	30.70	30.10	-0.030	10 mm [Front]	FCC #1	1	1:8.3	0.251	1.148	**0.288**	A26
1880.0	661	PCS1900	-	N/A	PCS	30.70	30.10	0.020	10 mm [Rear]	FCC #1	1	1:8.3	0.205	1.148	0.235	
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	-0.010	10 mm [Front]	FCC #1	3	1:2.77	0.287	1.122	**0.322**	A27
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	-0.070	10 mm [Rear]	FCC #1	3	1:2.77	0.242	1.122	0.272	
1880.0	661	PCS1900	#4	N/A	GPRS	27.20	26.70	0.000	10 mm [Front]	FCC #1	3	1:2.77	0.251	1.122	0.282	
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.000	10 mm [Front]	FCC #1	N/A	1:1	0.603	1.074	0.648	
826.4	4132	WCDMA 850	-	N/A	RMC	25.50	25.16	0.040	10 mm [Rear]	FCC #1	N/A	1:1	0.770	1.081	0.832	
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.030	10 mm [Rear]	FCC #1	N/A	1:1	0.797	1.074	0.856	
846.6	4233	WCDMA 850	-	N/A	RMC	25.50	25.09	0.050	10 mm [Rear]	FCC #1	N/A	1:1	0.794	1.099	**0.873**	A28
846.6	4233	WCDMA 850	#1	N/A	RMC	25.50	25.09	0.020	10 mm [Rear]	FCC #1	N/A	1:1	0.572	1.099	0.629	
846.6	4233	WCDMA 850	#2	Main display	RMC	25.50	25.09	-0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.734	1.099	0.807	
846.6	4233	WCDMA 850	#2	Sub display	RMC	25.50	25.09	0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.096	1.099	0.106	
846.6	4233	WCDMA 850	#3	N/A	RMC	25.50	25.09	0.080	10 mm [Rear]	FCC #1	N/A	1:1	0.711	1.099	0.781	
846.6	4233	WCDMA 850	#4	N/A	RMC	25.50	25.09	-0.010	10 mm [Rear]	FCC #1	N/A	1:1	0.185	1.099	0.203	
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	-0.000	10 mm [Front]	FCC #1	N/A	1:1	0.439	1.268	**0.557**	A29
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	0.050	10 mm [Rear]	FCC #1	N/A	1:1	0.382	1.268	0.484	
1880.0	9400	WCDMA 1900	#4	N/A	RMC	23.70	22.67	-0.050	10 mm [Front]	FCC #1	N/A	1:1	0.386	1.268	0.489	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note(s):
1. Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Purple entries represent additional Body-Worn SAR Test Position (#2: DD angle: 104 degree) with the worst case position.
3. Green entries represent additional Body-Worn SAR Test Position (#3: DD angle: 180 degree) with the worst case position.
4. Orange entries represent additional Body-Worn SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.2.2 LTE B12, B5, B4 Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY MHz	FREQUENCY Ch	Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
707.5	23095	LTE B12	-	10	25.50	25.28	0.010	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.306	1.052	0.322	
707.5	23095	LTE B12	-	10	24.50	24.19	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.249	1.074	0.267	
707.5	23095	LTE B12	-	10	25.50	25.28	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.447	1.052	**0.470**	A30
707.5	23095	LTE B12	-	10	24.50	24.19	0.000	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.365	1.074	0.392	
707.5	23095	LTE B12	#1	10	25.50	25.28	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.370	1.052	0.389	
836.5	20525	LTE B5	-	10	25.50	25.11	-0.020	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.520	1.094	0.569	
836.5	20525	LTE B5	-	10	24.50	24.15	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.335	1.084	0.363	
836.5	20525	LTE B5	-	10	25.50	25.11	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.540	1.094	**0.591**	A31
836.5	20525	LTE B5	-	10	24.50	24.15	0.020	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.426	1.084	0.462	
836.5	20525	LTE B5	#1	10	25.50	25.11	-0.040	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.477	1.094	0.522	
1732.5	20175	LTE B4	-	20	24.20	23.99	-0.010	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.450	1.050	**0.473**	A32
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.010	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.372	1.059	0.394	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.448	1.050	0.470	
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.020	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.369	1.059	0.391	
1732.5	20175	LTE B4	#4	20	24.20	23.99	-0.010	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.410	1.050	0.431	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Orange entries represent additional Body-Worn d SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.2.3 LTE B2 Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY MHz	FREQUENCY Ch	Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
1860.0	18700	LTE B2	-	20	24.20	23.86	-0.030	0	10 mm [Front]	FCC #1	QPSK	1	0	1:1	0.483	1.081	**0.522**	A33
1860.0	18700	LTE B2	-	20	23.20	23.03	-0.020	1	10 mm [Front]	FCC #1	QPSK	50	0	1:1	0.382	1.040	0.397	
1860.0	18700	LTE B2	-	20	24.20	23.86	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.458	1.081	0.495	
1860.0	18700	LTE B2	-	20	23.20	23.03	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.343	1.040	0.357	
1860.0	18700	LTE B2	#4	20	24.20	23.86	0.010	0	10 mm [Front]	FCC #1	QPSK	1	0	1:1	0.422	1.081	0.456	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Orange entries represent additional Body-Worn SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.2.4 DTS Body-Worn SAR

MEASUREMENT RESULTS

FREQUENCY MHz	Ch	Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	SAR (W/kg)	Plots #
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	-0.030	10 mm [Front]	FCC #2	0.030	1	99.2	0.031	1.211	1.008	0.038	
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.060	10 mm [Rear]	FCC #2	0.076	1	99.2	0.071	1.211	1.008	**0.087**	A34
2412.0	1	802.11b (Ant.1)	#1	16.50	15.67	-0.040	10 mm [Rear]	FCC #2	0.057	1	99.2	0.059	1.211	1.008	0.072	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.070	10 mm [Front]	FCC #2	0.054	1	99.2	0.050	1.151	1.008	0.058	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.110	10 mm [Rear]	FCC #2	0.133	1	99.2	0.145	1.151	1.008	**0.168**	A35
2412.0	1	802.11b (Ant.2)	#1	16.50	15.89	0.170	10 mm [Rear]	FCC #2	0.116	1	99.2	0.097	1.151	1.008	0.113	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.110	10 mm [Front]	FCC #2	0.055	1	98.1	0.055	1.211	1.019	0.068	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.160	10 mm [Rear]	FCC #2	0.197	1	98.1	0.219	1.211	1.019	**0.270**	A36
2412.0	1	802.11g (MIMO)	#1	19.50	18.82	-0.030	10 mm [Rear]	FCC #2	0.157	1	98.1	0.165	1.211	1.019	0.204	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Adjusted SAR results for OFDM SAR

FREQUENCY MHz	Ch	Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm]	Ratio of OFDM to DSSS	1g Adjusted SAR (W/kg)	Determine OFDM SAR
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11g	OFDM	16.5	1.000	**0.087**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11n	OFDM	15.0	0.708	**0.062**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11ac	OFDM	15.0	0.708	**0.062**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11g	OFDM	16.5	1.000	**0.168**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11n	OFDM	15.0	0.708	**0.119**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11ac	OFDM	15.0	0.708	**0.119**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.270	2437	802.11n	OFDM	18.0	0.708	**0.191**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.270	2437	802.11ac	OFDM	18.0	0.708	**0.191**	X
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Table 11.2.5 UNII Body-Worn SAR

MEASUREMENT RESULTS

FREQUENCY MHz	Ch	Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	-0.070	10 mm [Front]	FCC #2	0.089	6	98.1	0.073	1.000	1.019	0.074	
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	-0.090	10 mm [Rear]	FCC #2	0.205	6	98.1	0.205	1.000	1.019	**0.209**	A37
5280.0	56	802.11a (Ant.1)	#1	16.00	16.00	-0.100	10 mm [Rear]	FCC #2	0.179	6	98.1	0.177	1.000	1.019	0.180	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.010	10 mm [Front]	FCC #2	0.004	6	98.1	0.008	1.012	1.019	0.008	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	0.040	10 mm [Rear]	FCC #2	0.210	6	98.1	0.228	1.012	1.019	**0.235**	A38
5320.0	64	802.11a (Ant.2)	#1	16.00	15.95	-0.190	10 mm [Rear]	FCC #2	0.208	6	98.1	0.210	1.012	1.019	0.217	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	-0.080	10 mm [Front]	FCC #2	0.080	6	98.1	0.062	1.012	1.019	0.064	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.090	10 mm [Rear]	FCC #2	0.225	6	98.1	0.245	1.012	1.019	**0.253**	A39
5320.0	64	802.11a (MIMO)	#1	19.00	18.96	0.100	10 mm [Rear]	FCC #2	0.240	6	98.1	0.209	1.012	1.019	0.216	
ANSI / IEEE C95.1-2005– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Adjusted SAR results for UNII-1 and UNII-2A SAR

FREQUENCY MHz	Ch	Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm]	Adjusted Factor	1g Adjusted SAR (W/kg)	SAR for the band with lower maximum output power
5280.0	56	802.11a (Ant.1)	OFDM	16.0	0.209	5180	802.11a	OFDM	16.0	1.000	**0.209**	X
5320.0	64	802.11a (Ant.2)	OFDM	16.0	0.235	5240	802.11a	OFDM	16.0	1.000	**0.235**	X
5320.0	64	802.11a (MIMO)	OFDM	19.0	0.253	5240	802.11a	OFDM	19.0	1.000	**0.253**	X
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: U-NII-1 and U-NII-2A Bands: When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

Table 11.2.6 UNII Body-Worn SAR

MEASUREMENT RESULTS

FREQUENCY MHz	Ch	Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	-0.060	10 mm [Front]	FCC #2	0.064	6	98.1	0.056	1.021	1.019	0.058	
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	-0.180	10 mm [Rear]	FCC #2	0.113	6	98.1	0.110	1.021	1.019	**0.114**	A40
5720.0	144	802.11a (Ant.1)	#1	16.00	15.91	-0.120	10 mm [Rear]	FCC #2	0.081	6	98.1	0.064	1.021	1.019	0.067	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	-0.140	10 mm [Front]	FCC #2	0.031	6	98.1	0.018	1.012	1.019	0.018	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.040	10 mm [Rear]	FCC #2	0.257	6	98.1	0.289	1.012	1.019	**0.298**	A41
5600.0	120	802.11a (Ant.2)	#1	16.00	15.95	-0.150	10 mm [Rear]	FCC #2	0.226	6	98.1	0.232	1.012	1.019	0.239	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.110	10 mm [Front]	FCC #2	0.058	6	98.1	0.034	1.023	1.019	0.035	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.000	10 mm [Rear]	FCC #2	0.261	6	98.1	0.283	1.023	1.019	**0.295**	A42
5600.0	120	802.11a (MIMO)	#1	19.00	18.90	-0.140	10 mm [Rear]	FCC #2	0.224	6	98.1	0.254	1.023	1.019	0.265	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.160	10 mm [Front]	FCC #2	0.054	6	98.1	0.035	1.002	1.019	0.036	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.020	10 mm [Rear]	FCC #2	0.071	6	98.1	0.066	1.002	1.019	**0.067**	A43
5745.0	149	802.11a (Ant.1)	#1	16.00	15.99	-0.100	10 mm [Rear]	FCC #2	0.080	6	98.1	0.062	1.002	1.019	0.064	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.060	10 mm [Front]	FCC #2	0.042	6	98.1	0.032	1.014	1.019	0.033	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	-0.020	10 mm [Rear]	FCC #2	0.353	6	98.1	0.369	1.014	1.019	**0.381**	A44
5785.0	157	802.11a (Ant.2)	#1	16.00	15.94	-0.070	10 mm [Rear]	FCC #2	0.337	6	98.1	0.355	1.014	1.019	0.367	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.120	10 mm [Front]	FCC #2	0.040	6	98.1	0.026	1.014	1.019	0.027	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.190	10 mm [Rear]	FCC #2	0.291	6	98.1	0.315	1.014	1.019	**0.326**	A45
5745.0	149	802.11a (MIMO)	#1	19.00	18.95	0.090	10 mm [Rear]	FCC #2	0.336	6	98.1	0.249	1.014	1.019	0.257	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Table 11.2.7 Bluetooth Body-Worn SAR

MEASUREMENT RESULTS

FREQUENCY MHz	Ch	Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Rate [Mbps]	Duty Cycle (%)	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
2441.0	39	Bluetooth	-	11.35	10.79	0.000	10 mm [Front]	FCC #2	1	76.8	0.008	1.138	1.302	0.012	
2441.0	39	Bluetooth	-	11.35	10.79	0.000	10 mm [Rear]	FCC #2	1	76.8	0.022	1.138	1.302	**0.033**	A46
2441.0	39	Bluetooth	#1	11.35	10.79	0.060	10 mm [Rear]	FCC #2	1	76.8	0.019	1.138	1.302	0.028	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue entries represent additional Body-Worn SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

11.3 Standalone Hotspot SAR Results

Table 11.3.1 GPRS/WCDMA Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Each half of surface separately due to fold angle	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Spacing [Side]	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	0.110	10 mm [Bottom]	FCC #1	2	1:4.15	0.205	1.122	0.230	
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	-0.010	10 mm [Front]	FCC #1	2	1:4.15	0.431	1.122	0.484	
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	-0.090	10 mm [Rear]	FCC #1	2	1:4.15	0.647	1.122	**0.726**	A25
836.6	190	GSM850	-	N/A	GPRS	31.20	30.70	0.130	10 mm [Right]	FCC #1	2	1:4.15	0.349	1.122	0.392	
836.6	190	GSM850	#1	N/A	GPRS	31.20	30.70	-0.040	10 mm [Rear]	FCC #1	2	1:4.15	0.507	1.122	0.569	
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	-0.190	10 mm [Bottom]	FCC #1	3	1:2.77	0.442	1.122	**0.496**	A47
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	-0.010	10 mm [Front]	FCC #1	3	1:2.77	0.287	1.122	0.322	
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	-0.070	10 mm [Rear]	FCC #1	3	1:2.77	0.242	1.122	0.272	
1880.0	661	PCS1900	-	N/A	GPRS	27.20	26.70	0.070	10 mm [Left]	FCC #1	3	1:2.77	0.080	1.122	0.090	
1880.0	661	PCS1900	#1	N/A	GPRS	27.20	26.70	-0.100	10 mm [Bottom]	FCC #1	3	1:2.77	0.324	1.122	0.364	
1880.0	661	PCS1900	#4	N/A	GPRS	27.20	26.70	0.110	10 mm [Bottom]	FCC #1	3	1:2.77	0.320	1.122	0.359	
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.100	10 mm [Bottom]	FCC #1	N/A	1:1	0.282	1.074	0.303	
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.000	10 mm [Front]	FCC #1	N/A	1:1	0.603	1.074	0.648	
826.4	4132	WCDMA 850	-	N/A	RMC	25.50	25.16	0.040	10 mm [Rear]	FCC #1	N/A	1:1	0.770	1.081	0.832	
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.030	10 mm [Rear]	FCC #1	N/A	1:1	0.797	1.074	0.856	
846.6	4233	WCDMA 850	-	N/A	RMC	25.50	25.09	0.050	10 mm [Rear]	FCC #1	N/A	1:1	0.794	1.099	**0.873**	A28
836.6	4183	WCDMA 850	-	N/A	RMC	25.50	25.19	0.010	10 mm [Right]	FCC #1	N/A	1:1	0.527	1.074	0.566	
846.6	4233	WCDMA 850	#1	N/A	RMC	25.50	25.09	0.020	10 mm [Rear]	FCC #1	N/A	1:1	0.572	1.099	0.629	
846.6	4233	WCDMA 850	#2	Main display	RMC	25.50	25.09	-0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.734	1.099	0.807	
846.6	4233	WCDMA 850	#2	Sub display	RMC	25.50	25.09	0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.096	1.099	0.106	
846.6	4233	WCDMA 850	#3	N/A	RMC	25.50	25.09	0.080	10 mm [Rear]	FCC #1	N/A	1:1	0.711	1.099	0.781	
846.6	4233	WCDMA 850	#4	N/A	RMC	25.50	25.09	-0.010	10 mm [Rear]	FCC #1	N/A	1:1	0.185	1.099	0.203	
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	-0.050	10 mm [Bottom]	FCC #1	N/A	1:1	0.679	1.268	**0.861**	A48
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	-0.000	10 mm [Front]	FCC #1	N/A	1:1	0.439	1.268	0.557	
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	0.050	10 mm [Rear]	FCC #1	N/A	1:1	0.382	1.268	0.484	
1880.0	9400	WCDMA 1900	-	N/A	RMC	23.70	22.67	-0.160	10 mm [Left]	FCC #1	N/A	1:1	0.175	1.268	0.222	
1880.0	9400	WCDMA 1900	#1	N/A	RMC	23.70	22.67	-0.080	10 mm [Bottom]	FCC #1	N/A	1:1	0.497	1.268	0.630	
1880.0	9400	WCDMA 1900	#4	N/A	RMC	23.70	22.67	0.100	10 mm [Bottom]	FCC #1	N/A	1:1	0.515	1.268	0.653	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										**Body 1.6 W/kg (mW/g) averaged over 1 gram**						

Note(s):
1. Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Purple entries represent additional Hotspot SAR Test Position (#2: DD angle: 104 degree) with the worst case position.
3. Green entries represent additional Hotspot SAR Test Position (#3: DD angle: 180 degree) with the worst case position.
4. Orange entries represent additional Hotspot SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.3.2 LTE B12, B5 Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
707.5	23095	LTE B12	-	10	25.50	25.28	-0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.098	1.052	0.103	
707.5	23095	LTE B12	-	10	24.50	24.19	-0.010	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.079	1.074	0.085	
707.5	23095	LTE B12	-	10	25.50	25.28	0.010	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.306	1.052	0.322	
707.5	23095	LTE B12	-	10	24.50	24.19	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.249	1.074	0.267	
707.5	23095	LTE B12	-	10	25.50	25.28	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.447	1.052	**0.470**	A30
707.5	23095	LTE B12	-	10	24.50	24.19	0.000	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.365	1.074	0.392	
707.5	23095	LTE B12	-	10	25.50	25.28	-0.190	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.203	1.052	0.214	
707.5	23095	LTE B12	-	10	24.50	24.19	-0.190	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.172	1.074	0.185	
707.5	23095	LTE B12	#1	10	25.50	25.28	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.370	1.052	0.389	
836.5	20525	LTE B5	-	10	25.50	25.11	0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.254	1.094	0.278	
836.5	20525	LTE B5	-	10	24.50	24.15	-0.000	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.164	1.084	0.178	
836.5	20525	LTE B5	-	10	25.50	25.11	-0.020	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.520	1.094	0.569	
836.5	20525	LTE B5	-	10	24.50	24.15	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.335	1.084	0.363	
836.5	20525	LTE B5	-	10	25.50	25.11	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.540	1.094	**0.591**	A31
836.5	20525	LTE B5	-	10	24.50	24.15	0.020	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.426	1.084	0.462	
836.5	20525	LTE B5	-	10	25.50	25.11	0.140	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.392	1.094	0.429	
836.5	20525	LTE B5	-	10	24.50	24.15	0.140	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.252	1.084	0.273	
836.5	20525	LTE B5	#1	10	25.50	25.11	-0.040	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.477	1.094	0.522	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										**Body 1.6 W/kg (mW/g) averaged over 1 gram**								

Note: Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Table 11.3.3 LTE B4 Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																	
1732.5	20175	LTE B4	-	20	24.20	23.99	-0.080	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.615	1.050	**0.646**	A49
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.110	1	10 mm [Bottom]	FCC #1	QPSK	50	25	1:1	0.485	1.059	0.514	
1732.5	20175	LTE B4	-	20	24.20	23.99	-0.010	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.450	1.050	0.473	
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.010	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.372	1.059	0.394	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.448	1.050	0.470	
1732.5	20175	LTE B4	-	20	23.20	22.95	-0.020	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.369	1.059	0.391	
1732.5	20175	LTE B4	-	20	24.20	23.99	0.000	0	10 mm [Left]	FCC #1	QPSK	1	50	1:1	0.163	1.050	0.171	
1732.5	20175	LTE B4	-	20	23.20	22.95	0.000	1	10 mm [Left]	FCC #1	QPSK	50	25	1:1	0.135	1.059	0.143	
1732.5	20175	LTE B4	#1	20	24.20	23.99	-0.100	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.498	1.050	0.523	
1732.5	20175	LTE B4	#4	20	24.20	23.99	0.180	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.452	1.050	0.475	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										**Body 1.6 W/kg (mW/g) averaged over 1 gram**								

Note(s):
1. Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Orange entries represent additional Hotspot SAR Test Position (#4: DD angle: 360 degree) with the worst case position.

Table 11.3.4 LTE B2 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode/ Band	60GHz Dual Display Accessory Configuration	Each half of surface separately due to fold angle	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																		
1860.0	18700	LTE B2	-	N/A	20	24.20	23.86	-0.140	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.962	1.081	1.040	
1860.0	18700	LTE B2	-	N/A	20	23.20	23.03	-0.130	1	10 mm [Bottom]	FCC #1	QPSK	50	0	1:1	0.749	1.040	0.779	
1860.0	18700	LTE B2	-	N/A	20	23.20	22.69	-0.140	1	10 mm [Bottom]	FCC #1	QPSK	100	0	1:1	0.743	1.125	0.836	
1880.0	18900	LTE B2	-	N/A	20	24.20	23.84	-0.120	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.974	1.086	**1.058**	A50
1880.0	18900	LTE B2	-	N/A	20	23.20	23.01	-0.130	1	10 mm [Bottom]	FCC #1	QPSK	50	0	1:1	0.737	1.045	0.770	
1880.0	18900	LTE B2	-	N/A	20	23.20	22.68	-0.140	1	10 mm [Bottom]	FCC #1	QPSK	100	0	1:1	0.710	1.127	0.800	
1900.0	19100	LTE B2	-	N/A	20	24.20	23.72	-0.150	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.923	1.117	1.031	
1900.0	19100	LTE B2	-	N/A	20	23.20	22.96	-0.160	1	10 mm [Bottom]	FCC #1	QPSK	50	0	1:1	0.703	1.057	0.743	
1900.0	19100	LTE B2	-	N/A	20	23.20	22.52	-0.130	1	10 mm [Bottom]	FCC #1	QPSK	100	0	1:1	0.669	1.169	0.782	
1860.0	18700	LTE B2	-	N/A	20	24.20	23.86	-0.030	0	10 mm [Front]	FCC #1	QPSK	1	0	1:1	0.483	1.081	0.522	
1860.0	18700	LTE B2	-	N/A	20	23.20	23.03	-0.020	1	10 mm [Front]	FCC #1	QPSK	50	0	1:1	0.382	1.040	0.397	
1860.0	18700	LTE B2	-	N/A	20	24.20	23.86	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.458	1.081	0.495	
1860.0	18700	LTE B2	-	N/A	20	23.20	23.03	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.343	1.040	0.357	
1860.0	18700	LTE B2	-	N/A	20	24.20	23.86	-0.090	0	10 mm [Left]	FCC #1	QPSK	1	0	1:1	0.169	1.081	0.183	
1860.0	18700	LTE B2	-	N/A	20	23.20	23.03	-0.050	1	10 mm [Left]	FCC #1	QPSK	50	0	1:1	0.130	1.040	0.135	
1880.0	18900	LTE B2	#1	N/A	20	24.20	23.84	0.020	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.709	1.086	0.770	
1880.0	18900	LTE B2	#2	Main display	20	24.20	23.84	-0.140	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.820	1.086	0.891	
1880.0	18900	LTE B2	#2	Sub display	20	24.20	23.84	-0.030	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.796	1.086	0.864	
1880.0	18900	LTE B2	#3	N/A	20	24.20	23.84	-0.120	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.836	1.086	0.908	
1880.0	18900	LTE B2	#4	N/A	20	24.20	23.84	0.070	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.607	1.086	0.659	
1880.0	18900	LTE B2	-	N/A	20	24.20	23.84	-0.120	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.957	1.086	1.039	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure											Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Purple entries represent additional Hotspot SAR Test Position (#2: DD angle: 104 degree) with the worst case position.
3. Green entries represent additional Hotspot SAR Test Position (#3: DD angle: 180 degree) with the worst case position.
4. Orange entries represent additional Hotspot SAR Test Position (#4: DD angle: 360 degree) with the worst case position.
5. Yellow entries represent variability measurements.

Table 11.3.5 DTS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	SAR (W/kg)	Plots #
MHz	Ch															
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.060	10 mm [Top]	FCC #2	0.036	1	99.2	0.040	1.211	1.008	0.049	
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	-0.030	10 mm [Front]	FCC #2	0.030	1	99.2	0.031	1.211	1.008	0.038	
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.060	10 mm [Rear]	FCC #2	0.076	1	99.2	0.071	1.211	1.008	**0.087**	A34
2412.0	1	802.11b (Ant.1)	-	16.50	15.67	0.160	10 mm [Right]	FCC #2	0.027	1	99.2	0.028	1.211	1.008	0.034	
2412.0	1	802.11b (Ant.1)	#1	16.50	15.67	-0.040	10 mm [Rear]	FCC #2	0.057	1	99.2	0.059	1.211	1.008	0.072	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	-0.090	10 mm [Top]	FCC #2	0.017	1	99.2	0.017	1.151	1.008	0.020	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.070	10 mm [Front]	FCC #2	0.054	1	99.2	0.050	1.151	1.008	0.058	
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.110	10 mm [Rear]	FCC #2	0.133	1	99.2	0.145	1.151	1.008	**0.168**	A35
2412.0	1	802.11b (Ant.2)	-	16.50	15.89	0.110	10 mm [Right]	FCC #2	0.096	1	99.2	0.094	1.151	1.008	0.109	
2412.0	1	802.11b (Ant.2)	#1	16.50	15.89	0.170	10 mm [Rear]	FCC #2	0.116	1	99.2	0.097	1.151	1.008	0.113	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	-0.060	10 mm [Top]	FCC #2	0.051	1	98.1	0.053	1.211	1.019	0.065	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.110	10 mm [Front]	FCC #2	0.055	1	98.1	0.055	1.211	1.019	0.068	
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.160	10 mm [Rear]	FCC #2	0.197	1	98.1	0.219	1.211	1.019	**0.270**	A36
2412.0	1	802.11g (MIMO)	-	19.50	18.82	0.060	10 mm [Right]	FCC #2	0.095	1	98.1	0.096	1.211	1.019	0.119	
2412.0	1	802.11g (MIMO)	#1	19.50	18.82	-0.030	10 mm [Rear]	FCC #2	0.157	1	98.1	0.165	1.211	1.019	0.204	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Adjusted SAR results for OFDM SAR												
FREQUENCY		Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm	Ratio of OFDM to DSSS	1g Adjusted SAR (W/kg)	Determine OFDM SAR
MHz	Ch											
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11g	OFDM	16.5	1.000	**0.087**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11n	OFDM	15.0	0.708	**0.062**	X
2412.0	1	802.11b(Ant.1)	DSSS	16.5	0.087	2437	802.11ac	OFDM	15.0	0.708	**0.062**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11g	OFDM	16.5	1.000	**0.168**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11n	OFDM	15.0	0.708	**0.119**	X
2412.0	1	802.11b(Ant.2)	DSSS	16.5	0.168	2437	802.11ac	OFDM	15.0	0.708	**0.119**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.270	2437	802.11n	OFDM	18.0	0.708	**0.191**	X
2412.0	1	802.11g(MIMO)	OFDM	19.5	0.270	2437	802.11ac	OFDM	18.0	0.708	**0.191**	X
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: SAR is not required for the following 2.4 GHz OFDM conditions. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Table 11.3.6 UNII Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5180.0	36	802.11a (Ant.1)	-	16.00	15.95	0.150	10 mm [Top]	FCC #2	0.057	6	98.1	0.054	1.012	1.019	0.056	
5180.0	36	802.11a (Ant.1)	-	16.00	15.95	0.030	10 mm [Front]	FCC #2	0.091	6	98.1	0.088	1.012	1.019	0.091	
5180.0	36	802.11a (Ant.1)	-	16.00	15.95	-0.120	10 mm [Rear]	FCC #2	0.199	6	98.1	0.196	1.012	1.019	**0.202**	A51
5180.0	36	802.11a (Ant.1)	-	16.00	15.95	-0.130	10 mm [Right]	FCC #2	0.176	6	98.1	0.179	1.012	1.019	0.185	
5180.0	36	802.11a (Ant.1)	#1	16.00	15.95	-0.020	10 mm [Rear]	FCC #2	0.181	6	98.1	0.184	1.012	1.019	0.190	
5240.0	48	802.11a (Ant.2)	-	16.00	15.91	0.020	10 mm [Top]	FCC #2	0.002	6	98.1	< 0.001	1.021	1.019	< 0.001	
5240.0	48	802.11a (Ant.2)	-	16.00	15.91	0.120	10 mm [Front]	FCC #2	0.003	6	98.1	0.007	1.021	1.019	0.007	
5240.0	48	802.11a (Ant.2)	-	16.00	15.91	0.070	10 mm [Rear]	FCC #2	0.167	6	98.1	0.179	1.021	1.019	**0.186**	A52
5240.0	48	802.11a (Ant.2)	-	16.00	15.91	0.060	10 mm [Right]	FCC #2	0.049	6	98.1	0.049	1.021	1.019	0.051	
5240.0	48	802.11a (Ant.2)	#1	16.00	15.91	0.120	10 mm [Rear]	FCC #2	0.162	6	98.1	0.157	1.021	1.019	0.163	
5240.0	48	802.11a (MIMO)	-	19.00	18.94	0.060	10 mm [Top]	FCC #2	0.066	6	98.1	0.054	1.021	1.019	0.056	
5240.0	48	802.11a (MIMO)	-	19.00	18.94	0.090	10 mm [Front]	FCC #2	0.086	6	98.1	0.084	1.021	1.019	0.088	
5240.0	48	802.11a (MIMO)	-	19.00	18.94	0.190	10 mm [Rear]	FCC #2	0.169	6	98.1	0.187	1.021	1.019	**0.195**	A53
5240.0	48	802.11a (MIMO)	-	19.00	18.94	0.150	10 mm [Right]	FCC #2	0.176	6	98.1	0.179	1.021	1.019	0.186	
5240.0	48	802.11a (MIMO)	#1	19.00	18.94	-0.090	10 mm [Rear]	FCC #2	0.178	6	98.1	0.181	1.021	1.019	0.188	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

Table 11.3.7 UNII Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.050	10 mm [Top]	FCC #2	0.036	6	98.1	0.024	1.002	1.019	0.024	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.160	10 mm [Front]	FCC #2	0.054	6	98.1	0.035	1.002	1.019	0.036	
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.020	10 mm [Rear]	FCC #2	0.071	6	98.1	0.066	1.002	1.019	**0.067**	A43
5745.0	149	802.11a (Ant.1)	-	16.00	15.99	0.000	10 mm [Right]	FCC #2	0.036	6	98.1	0.021	1.002	1.019	0.021	
5745.0	149	802.11a (Ant.1)	#1	16.00	15.99	-0.100	10 mm [Rear]	FCC #2	0.080	6	98.1	0.062	1.002	1.019	0.064	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.050	10 mm [Top]	FCC #2	0.009	6	98.1	0.006	1.014	1.019	0.006	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.060	10 mm [Front]	FCC #2	0.042	6	98.1	0.032	1.014	1.019	0.033	
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	-0.020	10 mm [Rear]	FCC #2	0.353	6	98.1	0.369	1.014	1.019	**0.381**	A44
5785.0	157	802.11a (Ant.2)	-	16.00	15.94	0.190	10 mm [Right]	FCC #2	0.152	6	98.1	0.158	1.014	1.019	0.163	
5785.0	157	802.11a (Ant.2)	#1	16.00	15.94	-0.070	10 mm [Rear]	FCC #2	0.337	6	98.1	0.355	1.014	1.019	0.367	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.100	10 mm [Top]	FCC #2	0.026	6	98.1	0.017	1.014	1.019	0.017	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.120	10 mm [Front]	FCC #2	0.040	6	98.1	0.026	1.014	1.019	0.027	
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.190	10 mm [Rear]	FCC #2	0.291	6	98.1	0.315	1.014	1.019	**0.326**	A45
5745.0	149	802.11a (MIMO)	-	19.00	18.95	0.160	10 mm [Right]	FCC #2	0.154	6	98.1	0.162	1.014	1.019	0.167	
5745.0	149	802.11a (MIMO)	#1	19.00	18.95	0.090	10 mm [Rear]	FCC #2	0.336	6	98.1	0.249	1.014	1.019	0.257	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Body 1.6 W/kg (mW/g) averaged over 1 gram**							

Note(s):
1. Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. UNII-3 Band CH 165(5825 MHz) is not support Hotspot mode as described on operational description, so other required CHs are tested.

Table 11.3.8 Bluetooth Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Rate [Mbps]	Duty Cycle (%)	1g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	1g Scaled SAR (W/kg)	Plots #
MHz	Ch														
2441.0	39	Bluetooth	-	11.35	10.79	0.140	10 mm [Top]	FCC #2	1	76.8	0.008	1.138	1.302	0.012	
2441.0	39	Bluetooth	-	11.35	10.79	0.000	10 mm [Front]	FCC #2	1	76.8	0.008	1.138	1.302	0.012	
2441.0	39	Bluetooth	-	11.35	10.79	0.000	10 mm [Rear]	FCC #2	1	76.8	0.022	1.138	1.302	**0.033**	A46
2441.0	39	Bluetooth	-	11.35	10.79	0.000	10 mm [Right]	FCC #2	1	76.8	0.005	1.138	1.302	0.007	
2441.0	39	Bluetooth	#1	11.35	10.79	0.060	10 mm [Rear]	FCC #2	1	76.8	0.019	1.138	1.302	0.028	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Body 1.6 W/kg (mW/g) averaged over 1 gram**							

Note: Blue entries represent additional Hotspot SAR Test Position (#1: DD angle: 0 degree) with the worst case position.

11.4 Standalone Phablet SAR Results

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required when Hotspot 1g SAR (scaled to maximum output power including tolerance) < 1.2 W/kg.

Table 11.4.1 UNII Phablet SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	10g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.140	0 mm [Top]	FCC #2	0.167	6	98.1	0.193	1.000	1.019	0.197	
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.040	0 mm [Front]	FCC #2	0.290	6	98.1	0.366	1.000	1.019	0.373	
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.010	0 mm [Rear]	FCC #2	0.529	6	98.1	0.588	1.000	1.019	**0.599**	A54
5280.0	56	802.11a (Ant.1)	-	16.00	16.00	0.020	0 mm [Right]	FCC #2	0.515	6	98.1	0.583	1.000	1.019	0.594	
5280.0	56	802.11a (Ant.1)	#1	16.00	16.00	-0.010	0 mm [Rear]	FCC #2	0.401	6	98.1	0.419	1.000	1.019	0.427	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	0.160	0 mm [Top]	FCC #2	0.015	6	98.1	0.013	1.012	1.019	0.013	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.010	0 mm [Front]	FCC #2	0.102	6	98.1	0.095	1.012	1.019	0.098	
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.190	0 mm [Rear]	FCC #2	0.852	6	98.1	1.100	1.012	1.019	**1.135**	A55
5320.0	64	802.11a (Ant.2)	-	16.00	15.95	-0.050	0 mm [Right]	FCC #2	0.156	6	98.1	0.203	1.012	1.019	0.209	
5320.0	64	802.11a (Ant.2)	#1	16.00	15.95	-0.050	0 mm [Rear]	FCC #2	0.402	6	98.1	0.567	1.012	1.019	0.585	
5320.0	64	802.11a (Ant.2)	#3	16.00	15.95	-0.010	0 mm [Rear]	FCC #2	0.499	6	98.1	0.665	1.012	1.019	0.686	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.150	0 mm [Top]	FCC #2	0.162	6	98.1	0.195	1.012	1.019	0.201	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.040	0 mm [Front]	FCC #2	0.412	6	98.1	0.400	1.012	1.019	0.413	
5320.0	64	802.11a (MIMO)	-	19.00	18.96	0.150	0 mm [Rear]	FCC #2	0.946	6	98.1	1.040	1.012	1.019	**1.073**	A56
5320.0	64	802.11a (MIMO)	-	19.00	18.96	-0.030	0 mm [Right]	FCC #2	0.427	6	98.1	0.591	1.012	1.019	0.610	
5320.0	64	802.11a (MIMO)	#1	19.00	18.96	0.040	0 mm [Rear]	FCC #2	0.513	6	98.1	0.627	1.012	1.019	0.647	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Phablet 4.0 W/kg (mW/g) averaged over 10 gram**							

Note(s):
1. Blue entries represent additional Phablet SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Green entries represent additional Phablet SAR Test Position (#3: DD angle: 180 degree) with the worst case position.

Table 11.4.2 UNII Phablet SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	10g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR (W/kg)	Plots #
MHz	Ch															
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	0.170	0 mm [Top]	FCC #2	0.159	6	98.1	0.205	1.021	1.019	0.213	
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	0.310	0 mm [Front]	FCC #2	0.252	6	98.1	0.276	1.021	1.019	0.287	
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	-0.070	0 mm [Rear]	FCC #2	0.384	6	98.1	0.431	1.021	1.019	**0.448**	A57
5720.0	144	802.11a (Ant.1)	-	16.00	15.91	0.180	0 mm [Right]	FCC #2	0.240	6	98.1	0.279	1.021	1.019	0.290	
5720.0	144	802.11a (Ant.1)	#1	16.00	15.91	-0.120	0 mm [Rear]	FCC #2	0.175	6	98.1	0.180	1.021	1.019	0.187	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.030	0 mm [Top]	FCC #2	0.008	6	98.1	0.008	1.012	1.019	0.009	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.090	0 mm [Front]	FCC #2	0.113	6	98.1	0.100	1.012	1.019	0.103	
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	0.140	0 mm [Rear]	FCC #2	1.170	6	98.1	1.220	1.012	1.019	**1.258**	A58
5600.0	120	802.11a (Ant.2)	-	16.00	15.95	-0.030	0 mm [Right]	FCC #2	0.224	6	98.1	0.274	1.012	1.019	0.283	
5600.0	120	802.11a (Ant.2)	#1	16.00	15.95	-0.120	0 mm [Rear]	FCC #2	0.503	6	98.1	0.671	1.012	1.019	0.692	
5600.0	120	802.11a (Ant.2)	#3	16.00	15.95	0.110	0 mm [Rear]	FCC #2	0.553	6	98.1	0.782	1.012	1.019	0.806	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	-0.030	0 mm [Top]	FCC #2	0.144	6	98.1	0.183	1.023	1.019	0.191	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	-0.100	0 mm [Front]	FCC #2	0.225	6	98.1	0.222	1.023	1.019	0.231	
5600.0	120	802.11a (MIMO)	-	19.00	18.90	0.180	0 mm [Rear]	FCC #2	0.895	6	98.1	1.030	1.023	1.019	**1.074**	A59
5600.0	120	802.11a (MIMO)	-	19.00	18.90	-0.180	0 mm [Right]	FCC #2	0.336	6	98.1	0.397	1.023	1.019	0.414	
5600.0	120	802.11a (MIMO)	#1	19.00	18.90	-0.110	0 mm [Rear]	FCC #2	0.608	6	98.1	0.755	1.023	1.019	0.787	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Phablet 4.0 W/kg (mW/g) averaged over 10 gram**							

Note(s):
1. Blue entries represent additional Phablet SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Green entries represent additional Phablet SAR Test Position (#3: DD angle: 180 degree) with the worst case position.

Table 11.4.3 UNII Phablet SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	60GHz Dual Display Accessory Configuration	Each half of surface separately due to fold angle	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Peak SAR of Area Scan	Data Rate [Mbps]	Duty Cycle	10g SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR (W/kg)	Plots #
MHz	Ch																
5825.0	165	802.11a (Ant.1)	-	N/A	16.00	15.93	0.170	0 mm [Top]	FCC #2	0.122	6	98.1	0.146	1.016	1.019	0.151	
5825.0	165	802.11a (Ant.1)	-	N/A	16.00	15.93	0.140	0 mm [Front]	FCC #2	0.170	6	98.1	0.168	1.016	1.019	0.174	
5825.0	165	802.11a (Ant.1)	-	N/A	16.00	15.93	-0.130	0 mm [Rear]	FCC #2	0.214	6	98.1	0.243	1.016	1.019	**0.252**	A60
5825.0	165	802.11a (Ant.1)	-	N/A	16.00	15.93	-0.030	0 mm [Right]	FCC #2	0.088	6	98.1	0.081	1.016	1.019	0.083	
5825.0	165	802.11a (Ant.1)	#1	N/A	16.00	15.93	-0.170	0 mm [Rear]	FCC #2	0.180	6	98.1	0.183	1.016	1.019	0.190	
5825.0	165	802.11a (Ant.2)	-	N/A	16.00	15.63	0.060	0 mm [Top]	FCC #2	0.013	6	98.1	0.015	1.089	1.019	0.017	
5825.0	165	802.11a (Ant.2)	-	N/A	16.00	15.63	-0.020	0 mm [Front]	FCC #2	0.179	6	98.1	0.170	1.089	1.019	0.189	
5825.0	165	802.11a (Ant.2)	-	N/A	16.00	15.63	0.190	0 mm [Rear]	FCC #2	1.120	6	98.1	1.230	1.089	1.019	**1.365**	A61
5825.0	165	802.11a (Ant.2)	-	N/A	16.00	15.63	-0.170	0 mm [Right]	FCC #2	0.304	6	98.1	0.375	1.089	1.019	0.416	
5825.0	165	802.11a (Ant.2)	#1	N/A	16.00	15.63	0.080	0 mm [Rear]	FCC #2	0.655	6	98.1	0.787	1.089	1.019	0.874	
5825.0	165	802.11a (Ant.2)	#2	Main display	16.00	15.63	0.180	0 mm [Rear]	FCC #2	0.678	6	98.1	0.722	1.089	1.019	0.801	
5825.0	165	802.11a (Ant.2)	#2	Sub display	16.00	15.63	0.020	0 mm [Rear]	FCC #2	0.056	6	98.1	0.057	1.089	1.019	0.063	
5825.0	165	802.11a (Ant.2)	#3	N/A	16.00	15.63	0.130	0 mm [Rear]	FCC #2	0.553	6	98.1	0.695	1.089	1.019	0.772	
5825.0	165	802.11a (Ant.2)	#4	N/A	16.00	15.63	0.070	0 mm [Rear]	FCC #2	0.032	6	98.1	0.022	1.089	1.019	0.024	
5825.0	165	802.11a (MIMO)	-	N/A	19.00	18.79	-0.000	0 mm [Top]	FCC #2	0.122	6	98.1	0.156	1.089	1.019	0.173	
5825.0	165	802.11a (MIMO)	-	N/A	19.00	18.79	-0.040	0 mm [Front]	FCC #2	0.200	6	98.1	0.187	1.089	1.019	0.208	
5825.0	165	802.11a (MIMO)	-	N/A	19.00	18.79	-0.170	0 mm [Rear]	FCC #2	1.140	6	98.1	1.090	1.089	1.019	**1.210**	A62
5825.0	165	802.11a (MIMO)	-	N/A	19.00	18.79	0.100	0 mm [Right]	FCC #2	0.517	6	98.1	0.439	1.089	1.019	0.487	
5825.0	165	802.11a (MIMO)	#1	N/A	19.00	18.79	-0.060	0 mm [Rear]	FCC #2	0.602	6	98.1	0.707	1.089	1.019	0.785	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure										**Phablet 4.0 W/kg (mW/g) averaged over 10 gram**							

Note(s):
1. Blue entries represent additional Phablet SAR Test Position (#1: DD angle: 0 degree) with the worst case position.
2. Purple entries represent additional Phablet SAR Test Position (#2: DD angle: 104 degree) with the worst case position.
3. Green entries represent additional Phablet SAR Test Position (#3: DD angle: 180 degree) with the worst case position.
4. Orange entries represent additional Phablet SAR Test Position (#4: DD angle: 360 degree) with the worst case position.
5. UNII-3 Band CH 165 (5825 MHz) is not support Hotspot mode as described on operational description of this device, so phablet SAR is tested on this CH.

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements. A standard battery was used for all 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. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported boy-worn SAR was not > 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were performed.
8. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
9. SAR measurements were performed using the DASY5 automated system. The procedure for spatial peak SAR evaluation has been implemented according to the IEEE 1528 standard. During a maximum search, global and local maxima searches are automatically performed in 2-D after each area scan measurement. The algorithm will find the global maximum and all local maxima within 2 dB of the global maxima for all SAR distributions. All local maxima within 2 dB of the global maximum were searched and passed for the Zoom Scan measurement.

GSM Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. This device supports GSM VOIP in the head and body-worn configurations; therefore GPRS was additionally evaluated for head and body-worn compliance.
3. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR.
4. 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 then testing at the other channels is not required for such test configuration(s). Since the maximum output power variation across the required test channels is not > ½ dB, the middle channel was used for testing.

WCDMA (UMTS) Notes:

1. WCDMA (UMTS) mode in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
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 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 D05v02r05. The general test procedures used for testing can be found in Section 8.4.4.
2. According to FCC KDB 941225 D05v02r05, when the reported SAR is ≤ 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required.
   Otherwise, SAR is required for the remaining required test channels using the 1 RB, 50% RB and 100% RB allocation with highest output power for that channel.
   Only one channel, and as reported SAR values for 1 RB allocation and 50% RB allocation were less than 1.45 W/kg only the highest power RB offset for each allocation was required.
3. 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.
4. A-MPR was disabled for all SAR tests by setting NS=1 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).
5. SAR test reduction is applied using the following criteria:
   Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is > 0.8 W/kg, testing for other channels is performed at the highest output power level for 1 RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg, Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg. Testing for 16QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

WLAN Notes:

1. The initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. 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 duo to the maximum allowed powers and the highest reported DSSS SAR when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output and the adjust SAR is ≤ 1.2 W/kg.
3. 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.
4. When the maximum reported 1g averaged SAR ≤ 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 or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor to determine compliance.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by making a SAR measurement with both antennas transmitting simultaneously.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call with hopping disabled with DH5 operation and Tx test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 100% transmission duty factor to determine compliance. Refer to section 9.5 for the time-domain plot and calculation for the duty factor of the device.
2. Head and hotspot Bluetooth SAR were evaluated for BT tethering applications.

12. FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2,simultaneous transmission SAR test exclusion may be applied when the sum of the sum 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is $\leq$ 1.6 W/kg. The different test positon in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1-g or 10-g SAR.

12.3 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be transmitting 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.

Table 12.3.1 Simultaneous Transmission Scenarios

No.	Capable TX Configuration	GSM 850/1900 (Voice)	GPRS/EDGE 850/1900 (Data)	WCDMA B5/B2 (Voice)	WCDMA B5/B2 (Data)	LTE B12/B17/B5/B4/B2	WIFI 2.4GHz 802.11b/g/n/ac	WIFI 5GHz 802.11a/n/ac	Bluetooth 2.4GHz
1	GSM 850/1900 (Voice)		No	No	No	No	Yes	Yes	Yes
2	GPRS/EDGE 850/1900 (Data)	No		No	No	No	Yes	Yes	Yes
3	WCDMA B5/B2 (Voice)	No	No		No	No	Yes	Yes	Yes
4	WCDMA B5/B2 (Data)	No	No	No		No	Yes	Yes	Yes
5	LTE B12/B17/B5/B4/B2	No	No	No	No		Yes	Yes	Yes
6	WIFI 2.4GHz 802.11b/g/n/ac	Yes	Yes	Yes	Yes	Yes		Yes	No
7	WIFI 5GHz 802.11a/n/ac	Yes	Yes	Yes	Yes	Yes	Yes		Yes
8	Bluetooth 2.4GHz	Yes	Yes	Yes	Yes	Yes	No	Yes	

Table 12.3.2 Simultaneous SAR Cases

No.	Capable Transmit Configuration	Head SAR	Body-Worn SAR	Hotspot SAR	Phablet SAR	Note
1	GSM Voice + Wi-Fi 2.4 GHz	Yes	Yes	N/A	Yes	
2	GSM Voice + Wi-Fi 5 GHz	Yes	Yes	N/A	Yes	
3	GSM Voice + Bluetooth 2.4 GHz	Yes	Yes	N/A	Yes	
4	GSM Voice + Wi-Fi 2.4 GHz MIMO	Yes	Yes	N/A	Yes	
5	GSM Voice + Wi-Fi 5 GHz MIMO	Yes	Yes	N/A	Yes	
6	GSM Voice + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5GHz Ant.2	Yes	Yes	N/A	Yes	
7	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes	Yes	N/A	Yes	
8	WCDMA + Wi-Fi 2.4 GHz	Yes	Yes	Yes	Yes	
9	WCDMA + Wi-Fi 5 GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
10	WCDMA + Bluetooth 2.4 GHz	Yes	Yes	Yes	Yes	
11	WCDMA + Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	
12	WCDMA + Wi-Fi 5 GHz MIMO	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
13	WCMDA + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5GHz Ant.2	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
14	WCMDA + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
15	LTE + Wi-Fi 2.4 GHz	Yes	Yes	Yes	Yes	
16	LTE + Wi-Fi 5 GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
17	LTE + Bluetooth 2.4 GHz	Yes	Yes	Yes	Yes	
18	LTE + Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	
19	LTE + Wi-Fi 5 GHz MIMO	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
20	LTE + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5GHz Ant.2	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
21	LTE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
22	GPRS/EDGE + Wi-Fi 2.4 GHz	Yes	Yes	Yes	Yes	
23	GPRS/EDGE + Wi-Fi 5 GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
24	GPRS/EDGE + Bluetooth 2.4 GHz	Yes	Yes	Yes	Yes	
25	GPRS/EDGE + Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	
26	GPRS/EDGE + Wi-Fi 5 GHz MIMO	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
27	GPRS/EDGE + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5GHz Ant.2	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
28	GPRS/EDGE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes	Yes	Yes*	Yes	* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.

Notes:

1. WiFi 2.4GHz is supported Hotspot and WiFi-Direct(GO/GC).
2. WiFi 5GHz is supported Hotspot in UNII B1,B3 and WiFi-Direct(GO/GC) in UNII B1,B3.
3. LTE, WCDMA, GPRS/EDGE is supported Hotspot.
4. VoIP is supported in LTE, WCDMA, GSM
5. Bluetooth and WiFi can not transmit simultaneously at 2.4G band.
6. GSM, WCDMA and LTE can not transmit simultaneously since they share the same chip.
7. 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 Hotspot scenario.
8. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Simultaneous transmission scenarios involving WIFI direct are included in the above table.

12.4 Head SAR Simultaneous Transmission Analysis

Table 12.4.1 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 + 5.3 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.321	0.185	0.410	0.274	**0.595**
		Right Touch	0.075	0.170	0.032	0.245	0.107	0.277
		Left Tilt	0.041	0.349	0.083	0.390	0.124	0.473
		Right Tilt	0.047	0.156	0.026	0.203	0.073	0.229
	GPRS 850	Left Touch	0.122	0.321	0.185	0.443	0.307	**0.628**
		Right Touch	0.102	0.170	0.032	0.272	0.134	0.304
		Left Tilt	0.058	0.349	0.083	0.407	0.141	0.490
		Right Tilt	0.064	0.156	0.026	0.220	0.090	0.246
	GSM 1900	Left Touch	0.054	0.321	0.185	0.375	0.239	**0.560**
		Right Touch	0.070	0.170	0.032	0.240	0.102	0.272
		Left Tilt	0.041	0.349	0.083	0.390	0.124	0.473
		Right Tilt	0.041	0.156	0.026	0.197	0.067	0.223
	GPRS 1900	Left Touch	0.061	0.321	0.185	0.382	0.246	**0.567**
		Right Touch	0.071	0.170	0.032	0.241	0.103	0.273
		Left Tilt	0.045	0.349	0.083	0.394	0.128	0.477
		Right Tilt	0.047	0.156	0.026	0.203	0.073	0.229
	WCDMA 850	Left Touch	0.157	0.321	0.185	0.478	0.342	**0.663**
		Right Touch	0.136	0.170	0.032	0.306	0.168	0.338
		Left Tilt	0.076	0.349	0.083	0.425	0.159	0.508
		Right Tilt	0.086	0.156	0.026	0.242	0.112	0.268
	WCDMA 1900	Left Touch	0.145	0.321	0.185	0.466	0.329	**0.650**
		Right Touch	0.146	0.170	0.032	0.316	0.178	0.348
		Left Tilt	0.081	0.349	0.083	0.430	0.164	0.513
		Right Tilt	0.084	0.156	0.026	0.240	0.109	0.266
	LTE Band 12	Left Touch	0.113	0.321	0.185	0.434	0.298	**0.619**
		Right Touch	0.093	0.170	0.032	0.263	0.125	0.295
		Left Tilt	0.049	0.349	0.083	0.398	0.132	0.481
		Right Tilt	0.060	0.156	0.026	0.216	0.086	0.242
	LTE Band 5	Left Touch	0.185	0.321	0.185	0.506	0.370	**0.691**
		Right Touch	0.137	0.170	0.032	0.307	0.169	0.339
		Left Tilt	0.096	0.349	0.083	0.445	0.179	0.528
		Right Tilt	0.107	0.156	0.026	0.263	0.133	0.289
	LTE Band 4	Left Touch	0.089	0.321	0.185	0.410	0.274	**0.595**
		Right Touch	0.123	0.170	0.032	0.293	0.155	0.325
		Left Tilt	0.089	0.349	0.083	0.438	0.172	0.521
		Right Tilt	0.083	0.156	0.026	0.239	0.109	0.265
	LTE Band 2	Left Touch	0.119	0.321	0.185	0.440	0.304	**0.625**
		Right Touch	0.158	0.170	0.032	0.328	0.190	0.360
		Left Tilt	0.065	0.349	0.083	0.414	0.148	0.497
		Right Tilt	0.070	0.156	0.026	0.226	0.096	0.252

Table 12.4.2 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1+ 5.6 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.321	0.211	0.410	0.300	**0.621**
		Right Touch	0.075	0.170	0.046	0.245	0.121	0.291
		Left Tilt	0.041	0.349	0.073	0.390	0.114	0.463
		Right Tilt	0.047	0.156	0.025	0.203	0.072	0.228
	GPRS 850	Left Touch	0.122	0.321	0.211	0.443	0.333	**0.654**
		Right Touch	0.102	0.170	0.046	0.272	0.148	0.318
		Left Tilt	0.058	0.349	0.073	0.407	0.131	0.480
		Right Tilt	0.064	0.156	0.025	0.220	0.089	0.245
	GSM 1900	Left Touch	0.054	0.321	0.211	0.375	0.265	**0.586**
		Right Touch	0.070	0.170	0.046	0.240	0.116	0.286
		Left Tilt	0.041	0.349	0.073	0.390	0.114	0.463
		Right Tilt	0.041	0.156	0.025	0.197	0.066	0.222
	GPRS 1900	Left Touch	0.061	0.321	0.211	0.382	0.272	**0.593**
		Right Touch	0.071	0.170	0.046	0.241	0.117	0.287
		Left Tilt	0.045	0.349	0.073	0.394	0.118	0.467
		Right Tilt	0.047	0.156	0.025	0.203	0.072	0.228
	WCDMA 850	Left Touch	0.157	0.321	0.211	0.478	0.368	**0.689**
		Right Touch	0.136	0.170	0.046	0.306	0.182	0.352
		Left Tilt	0.076	0.349	0.073	0.425	0.149	0.498
		Right Tilt	0.086	0.156	0.025	0.242	0.111	0.267
	WCDMA 1900	Left Touch	0.145	0.321	0.211	0.466	0.356	**0.677**
		Right Touch	0.146	0.170	0.046	0.316	0.192	0.362
		Left Tilt	0.081	0.349	0.073	0.430	0.154	0.503
		Right Tilt	0.084	0.156	0.025	0.240	0.109	0.265
	LTE Band 12	Left Touch	0.113	0.321	0.211	0.434	0.324	**0.645**
		Right Touch	0.093	0.170	0.046	0.263	0.139	0.309
		Left Tilt	0.049	0.349	0.073	0.398	0.122	0.471
		Right Tilt	0.060	0.156	0.025	0.216	0.085	0.241
	LTE Band 5	Left Touch	0.185	0.321	0.211	0.506	0.396	**0.717**
		Right Touch	0.137	0.170	0.046	0.307	0.183	0.353
		Left Tilt	0.096	0.349	0.073	0.445	0.169	0.518
		Right Tilt	0.107	0.156	0.025	0.263	0.132	0.288
	LTE Band 4	Left Touch	0.089	0.321	0.211	0.410	0.300	**0.621**
		Right Touch	0.123	0.170	0.046	0.293	0.169	0.339
		Left Tilt	0.089	0.349	0.073	0.438	0.162	0.511
		Right Tilt	0.083	0.156	0.025	0.239	0.108	0.264
	LTE Band 2	Left Touch	0.119	0.321	0.211	0.440	0.330	**0.651**
		Right Touch	0.158	0.170	0.046	0.328	0.204	0.374
		Left Tilt	0.065	0.349	0.073	0.414	0.138	0.487
		Right Tilt	0.070	0.156	0.025	0.226	0.095	0.251

Table 12.4.3 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 + 5.8 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.321	0.254	0.410	0.343	**0.664**
		Right Touch	0.075	0.170	0.066	0.245	0.141	0.311
		Left Tilt	0.041	0.349	0.104	0.390	0.145	0.494
		Right Tilt	0.047	0.156	0.065	0.203	0.112	0.268
	GPRS 850	Left Touch	0.122	0.321	0.254	0.443	0.376	**0.697**
		Right Touch	0.102	0.170	0.066	0.272	0.168	0.338
		Left Tilt	0.058	0.349	0.104	0.407	0.162	0.511
		Right Tilt	0.064	0.156	0.065	0.220	0.129	0.285
	GSM 1900	Left Touch	0.054	0.321	0.254	0.375	0.308	**0.629**
		Right Touch	0.070	0.170	0.066	0.240	0.136	0.306
		Left Tilt	0.041	0.349	0.104	0.390	0.145	0.494
		Right Tilt	0.041	0.156	0.065	0.197	0.106	0.262
	GPRS 1900	Left Touch	0.061	0.321	0.254	0.382	0.315	**0.636**
		Right Touch	0.071	0.170	0.066	0.241	0.137	0.307
		Left Tilt	0.045	0.349	0.104	0.394	0.149	0.498
		Right Tilt	0.047	0.156	0.065	0.203	0.112	0.268
	WCDMA 850	Left Touch	0.157	0.321	0.254	0.478	0.411	**0.732**
		Right Touch	0.136	0.170	0.066	0.306	0.202	0.372
		Left Tilt	0.076	0.349	0.104	0.425	0.180	0.529
		Right Tilt	0.086	0.156	0.065	0.242	0.151	0.307
	WCDMA 1900	Left Touch	0.145	0.321	0.254	0.466	0.399	**0.720**
		Right Touch	0.146	0.170	0.066	0.316	0.212	0.381
		Left Tilt	0.081	0.349	0.104	0.430	0.186	0.535
		Right Tilt	0.084	0.156	0.065	0.240	0.148	0.305
	LTE Band 12	Left Touch	0.113	0.321	0.254	0.434	0.367	**0.688**
		Right Touch	0.093	0.170	0.066	0.263	0.159	0.329
		Left Tilt	0.049	0.349	0.104	0.398	0.153	0.502
		Right Tilt	0.060	0.156	0.065	0.216	0.125	0.281
	LTE Band 5	Left Touch	0.185	0.321	0.254	0.506	0.439	**0.760**
		Right Touch	0.137	0.170	0.066	0.307	0.203	0.373
		Left Tilt	0.096	0.349	0.104	0.445	0.200	0.549
		Right Tilt	0.107	0.156	0.065	0.263	0.172	0.328
	LTE Band 4	Left Touch	0.089	0.321	0.254	0.410	0.343	**0.664**
		Right Touch	0.123	0.170	0.066	0.293	0.189	0.359
		Left Tilt	0.089	0.349	0.104	0.438	0.193	0.542
		Right Tilt	0.083	0.156	0.065	0.239	0.148	0.304
	LTE Band 2	Left Touch	0.119	0.321	0.254	0.440	0.373	**0.694**
		Right Touch	0.158	0.170	0.066	0.328	0.224	0.394
		Left Tilt	0.065	0.349	0.104	0.414	0.169	0.518
		Right Tilt	0.070	0.156	0.065	0.226	0.135	0.291

Table 12.4.4 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.926	0.193	1.015	**1.119**
		Right Touch	0.075	0.052	0.402	0.127	0.477	0.529
		Left Tilt	0.041	0.157	0.693	0.198	0.734	0.891
		Right Tilt	0.047	0.070	0.468	0.117	0.515	0.585
	GPRS 850	Left Touch	0.122	0.104	0.926	0.226	1.048	**1.152**
		Right Touch	0.102	0.052	0.402	0.154	0.504	0.556
		Left Tilt	0.058	0.157	0.693	0.215	0.751	0.908
		Right Tilt	0.064	0.070	0.468	0.134	0.532	0.602
	GSM 1900	Left Touch	0.054	0.104	0.926	0.158	0.980	**1.084**
		Right Touch	0.070	0.052	0.402	0.122	0.472	0.524
		Left Tilt	0.041	0.157	0.693	0.198	0.734	0.891
		Right Tilt	0.041	0.070	0.468	0.111	0.509	0.579
	GPRS 1900	Left Touch	0.061	0.104	0.926	0.165	0.987	**1.091**
		Right Touch	0.071	0.052	0.402	0.123	0.473	0.525
		Left Tilt	0.045	0.157	0.693	0.202	0.738	0.895
		Right Tilt	0.047	0.070	0.468	0.117	0.515	0.585
	WCDMA 850	Left Touch	0.157	0.104	0.926	0.261	1.083	**1.187**
		Right Touch	0.136	0.052	0.402	0.188	0.538	0.590
		Left Tilt	0.076	0.157	0.693	0.233	0.769	0.926
		Right Tilt	0.086	0.070	0.468	0.156	0.554	0.624
	WCDMA 1900	Left Touch	0.145	0.104	0.926	0.248	1.071	**1.175**
		Right Touch	0.146	0.052	0.402	0.198	0.547	0.599
		Left Tilt	0.081	0.157	0.693	0.238	0.774	0.931
		Right Tilt	0.084	0.070	0.468	0.153	0.552	0.621
	LTE Band 12	Left Touch	0.113	0.104	0.926	0.217	1.039	**1.143**
		Right Touch	0.093	0.052	0.402	0.145	0.495	0.547
		Left Tilt	0.049	0.157	0.693	0.206	0.742	0.899
		Right Tilt	0.060	0.070	0.468	0.130	0.528	0.598
	LTE Band 5	**Left Touch**	**0.185**	**0.104**	**0.926**	**0.289**	**1.111**	**1.215**
		Right Touch	0.137	0.052	0.402	0.189	0.539	0.591
		Left Tilt	0.096	0.157	0.693	0.253	0.789	0.946
		Right Tilt	0.107	0.070	0.468	0.177	0.575	0.645
	LTE Band 4	Left Touch	0.089	0.104	0.926	0.193	1.015	**1.119**
		Right Touch	0.123	0.052	0.402	0.175	0.525	0.577
		Left Tilt	0.089	0.157	0.693	0.246	0.782	0.939
		Right Tilt	0.083	0.070	0.468	0.153	0.551	0.621
	LTE Band 2	Left Touch	0.119	0.104	0.926	0.223	1.045	**1.149**
		Right Touch	0.158	0.052	0.402	0.210	0.560	0.612
		Left Tilt	0.065	0.157	0.693	0.222	0.758	0.915
		Right Tilt	0.070	0.070	0.468	0.140	0.538	0.608

Table 12.4.5 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.185	0.193	0.274	**0.378**
		Right Touch	0.075	0.052	0.032	0.127	0.107	0.159
		Left Tilt	0.041	0.157	0.083	0.198	0.124	0.281
		Right Tilt	0.047	0.070	0.026	0.117	0.073	0.143
	GPRS 850	Left Touch	0.122	0.104	0.185	0.226	0.307	**0.411**
		Right Touch	0.102	0.052	0.032	0.154	0.134	0.186
		Left Tilt	0.058	0.157	0.083	0.215	0.141	0.298
		Right Tilt	0.064	0.070	0.026	0.134	0.090	0.160
	GSM 1900	Left Touch	0.054	0.104	0.185	0.158	0.239	**0.343**
		Right Touch	0.070	0.052	0.032	0.122	0.102	0.154
		Left Tilt	0.041	0.157	0.083	0.198	0.124	0.281
		Right Tilt	0.041	0.070	0.026	0.111	0.067	0.137
	GPRS 1900	Left Touch	0.061	0.104	0.185	0.165	0.246	**0.350**
		Right Touch	0.071	0.052	0.032	0.123	0.103	0.155
		Left Tilt	0.045	0.157	0.083	0.202	0.128	0.285
		Right Tilt	0.047	0.070	0.026	0.117	0.073	0.143
	WCDMA 850	Left Touch	0.157	0.104	0.185	0.261	0.342	**0.446**
		Right Touch	0.136	0.052	0.032	0.188	0.168	0.220
		Left Tilt	0.076	0.157	0.083	0.233	0.159	0.316
		Right Tilt	0.086	0.070	0.026	0.156	0.112	0.182
	WCDMA 1900	Left Touch	0.145	0.104	0.185	0.248	0.329	**0.433**
		Right Touch	0.146	0.052	0.032	0.198	0.178	0.230
		Left Tilt	0.081	0.157	0.083	0.238	0.164	0.321
		Right Tilt	0.084	0.070	0.026	0.153	0.109	0.179
	LTE Band 12	Left Touch	0.113	0.104	0.185	0.217	0.298	**0.402**
		Right Touch	0.093	0.052	0.032	0.145	0.125	0.177
		Left Tilt	0.049	0.157	0.083	0.206	0.132	0.289
		Right Tilt	0.060	0.070	0.026	0.130	0.086	0.156
	LTE Band 5	Left Touch	0.185	0.104	0.185	0.289	0.370	**0.474**
		Right Touch	0.137	0.052	0.032	0.189	0.169	0.221
		Left Tilt	0.096	0.157	0.083	0.253	0.179	0.336
		Right Tilt	0.107	0.070	0.026	0.177	0.133	0.203
	LTE Band 4	Left Touch	0.089	0.104	0.185	0.193	0.274	**0.378**
		Right Touch	0.123	0.052	0.032	0.175	0.155	0.207
		Left Tilt	0.089	0.157	0.083	0.246	0.172	0.329
		Right Tilt	0.083	0.070	0.026	0.153	0.109	0.179
	LTE Band 2	Left Touch	0.119	0.104	0.185	0.223	0.304	**0.408**
		Right Touch	0.158	0.052	0.032	0.210	0.190	0.242
		Left Tilt	0.065	0.157	0.083	0.222	0.148	0.305
		Right Tilt	0.070	0.070	0.026	0.140	0.096	0.166

Table 12.4.6 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.713	0.193	0.802	0.906
		Right Touch	0.075	0.052	0.185	0.127	0.260	0.312
		Left Tilt	0.041	0.157	0.753	0.198	0.794	**0.951**
		Right Tilt	0.047	0.070	0.209	0.117	0.256	0.326
	GPRS 850	Left Touch	0.122	0.104	0.713	0.226	0.835	0.939
		Right Touch	0.102	0.052	0.185	0.154	0.287	0.339
		Left Tilt	0.058	0.157	0.753	0.215	0.811	**0.968**
		Right Tilt	0.064	0.070	0.209	0.134	0.273	0.343
	GSM 1900	Left Touch	0.054	0.104	0.713	0.158	0.767	0.871
		Right Touch	0.070	0.052	0.185	0.122	0.255	0.307
		Left Tilt	0.041	0.157	0.753	0.198	0.794	**0.951**
		Right Tilt	0.041	0.070	0.209	0.111	0.250	0.320
	GPRS 1900	Left Touch	0.061	0.104	0.713	0.165	0.774	0.878
		Right Touch	0.071	0.052	0.185	0.123	0.256	0.308
		Left Tilt	0.045	0.157	0.753	0.202	0.798	**0.955**
		Right Tilt	0.047	0.070	0.209	0.117	0.256	0.326
	WCDMA 850	Left Touch	0.157	0.104	0.713	0.261	0.870	0.974
		Right Touch	0.136	0.052	0.185	0.188	0.321	0.373
		Left Tilt	0.076	0.157	0.753	0.233	0.829	**0.986**
		Right Tilt	0.086	0.070	0.209	0.156	0.295	0.365
	WCDMA 1900	Left Touch	0.145	0.104	0.713	0.248	0.857	0.961
		Right Touch	0.146	0.052	0.185	0.198	0.330	0.382
		Left Tilt	0.081	0.157	0.753	0.238	0.834	**0.991**
		Right Tilt	0.084	0.070	0.209	0.153	0.293	0.363
	LTE Band 12	Left Touch	0.113	0.104	0.713	0.217	0.826	0.930
		Right Touch	0.093	0.052	0.185	0.145	0.278	0.330
		Left Tilt	0.049	0.157	0.753	0.206	0.802	**0.959**
		Right Tilt	0.060	0.070	0.209	0.130	0.269	0.339
	LTE Band 5	Left Touch	0.185	0.104	0.713	0.289	0.898	1.002
		Right Touch	0.137	0.052	0.185	0.189	0.322	0.374
		Left Tilt	0.096	0.157	0.753	0.253	0.849	**1.006**
		Right Tilt	0.107	0.070	0.209	0.177	0.316	0.386
	LTE Band 4	Left Touch	0.089	0.104	0.713	0.193	0.802	0.906
		Right Touch	0.123	0.052	0.185	0.175	0.308	0.360
		Left Tilt	0.089	0.157	0.753	0.246	0.842	**0.999**
		Right Tilt	0.083	0.070	0.209	0.153	0.292	0.362
	LTE Band 2	Left Touch	0.119	0.104	0.713	0.223	0.832	0.936
		Right Touch	0.158	0.052	0.185	0.210	0.343	0.395
		Left Tilt	0.065	0.157	0.753	0.222	0.818	**0.975**
		Right Tilt	0.070	0.070	0.209	0.140	0.279	0.349

Table 12.4.7 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.531	0.193	0.620	**0.724**
		Right Touch	0.075	0.052	0.248	0.127	0.323	0.375
		Left Tilt	0.041	0.157	0.435	0.198	0.476	0.633
		Right Tilt	0.047	0.070	0.264	0.117	0.311	0.381
	GPRS 850	Left Touch	0.122	0.104	0.531	0.226	0.653	**0.757**
		Right Touch	0.102	0.052	0.248	0.154	0.350	0.402
		Left Tilt	0.058	0.157	0.435	0.215	0.493	0.650
		Right Tilt	0.064	0.070	0.264	0.134	0.328	0.398
	GSM 1900	Left Touch	0.054	0.104	0.531	0.158	0.585	**0.689**
		Right Touch	0.070	0.052	0.248	0.122	0.318	0.370
		Left Tilt	0.041	0.157	0.435	0.198	0.476	0.633
		Right Tilt	0.041	0.070	0.264	0.111	0.305	0.375
	GPRS 1900	Left Touch	0.061	0.104	0.531	0.165	0.592	**0.696**
		Right Touch	0.071	0.052	0.248	0.123	0.319	0.371
		Left Tilt	0.045	0.157	0.435	0.202	0.480	0.637
		Right Tilt	0.047	0.070	0.264	0.117	0.311	0.381
	WCDMA 850	Left Touch	0.157	0.104	0.531	0.261	0.688	**0.792**
		Right Touch	0.136	0.052	0.248	0.188	0.384	0.436
		Left Tilt	0.076	0.157	0.435	0.233	0.511	0.668
		Right Tilt	0.086	0.070	0.264	0.156	0.350	0.420
	WCDMA 1900	Left Touch	0.145	0.104	0.531	0.248	0.675	**0.779**
		Right Touch	0.146	0.052	0.248	0.198	0.394	0.445
		Left Tilt	0.081	0.157	0.435	0.238	0.516	0.673
		Right Tilt	0.084	0.070	0.264	0.153	0.348	0.418
	LTE Band 12	Left Touch	0.113	0.104	0.531	0.217	0.644	**0.748**
		Right Touch	0.093	0.052	0.248	0.145	0.341	0.393
		Left Tilt	0.049	0.157	0.435	0.206	0.484	0.641
		Right Tilt	0.060	0.070	0.264	0.130	0.324	0.394
	LTE Band 5	Left Touch	0.185	0.104	0.531	0.289	0.716	**0.820**
		Right Touch	0.137	0.052	0.248	0.189	0.385	0.437
		Left Tilt	0.096	0.157	0.435	0.253	0.531	0.688
		Right Tilt	0.107	0.070	0.264	0.177	0.371	0.441
	LTE Band 4	Left Touch	0.089	0.104	0.531	0.193	0.620	**0.724**
		Right Touch	0.123	0.052	0.248	0.175	0.371	0.423
		Left Tilt	0.089	0.157	0.435	0.246	0.524	0.681
		Right Tilt	0.083	0.070	0.264	0.153	0.347	0.417
	LTE Band 2	Left Touch	0.119	0.104	0.531	0.223	0.650	**0.754**
		Right Touch	0.158	0.052	0.248	0.210	0.406	0.458
		Left Tilt	0.065	0.157	0.435	0.222	0.500	0.657
		Right Tilt	0.070	0.070	0.264	0.140	0.334	0.404

Table 12.4.8 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.211	0.193	0.300	**0.404**
		Right Touch	0.075	0.052	0.046	0.127	0.121	0.173
		Left Tilt	0.041	0.157	0.073	0.198	0.114	0.271
		Right Tilt	0.047	0.070	0.025	0.117	0.072	0.142
	GPRS 850	Left Touch	0.122	0.104	0.211	0.226	0.333	**0.437**
		Right Touch	0.102	0.052	0.046	0.154	0.148	0.200
		Left Tilt	0.058	0.157	0.073	0.215	0.131	0.288
		Right Tilt	0.064	0.070	0.025	0.134	0.089	0.159
	GSM 1900	Left Touch	0.054	0.104	0.211	0.158	0.265	**0.369**
		Right Touch	0.070	0.052	0.046	0.122	0.116	0.168
		Left Tilt	0.041	0.157	0.073	0.198	0.114	0.271
		Right Tilt	0.041	0.070	0.025	0.111	0.066	0.136
	GPRS 1900	Left Touch	0.061	0.104	0.211	0.165	0.272	**0.376**
		Right Touch	0.071	0.052	0.046	0.123	0.117	0.169
		Left Tilt	0.045	0.157	0.073	0.202	0.118	0.275
		Right Tilt	0.047	0.070	0.025	0.117	0.072	0.142
	WCDMA 850	Left Touch	0.157	0.104	0.211	0.261	0.368	**0.472**
		Right Touch	0.136	0.052	0.046	0.188	0.182	0.234
		Left Tilt	0.076	0.157	0.073	0.233	0.149	0.306
		Right Tilt	0.086	0.070	0.025	0.156	0.111	0.181
	WCDMA 1900	Left Touch	0.145	0.104	0.211	0.248	0.356	**0.460**
		Right Touch	0.146	0.052	0.046	0.198	0.192	0.244
		Left Tilt	0.081	0.157	0.073	0.238	0.154	0.311
		Right Tilt	0.084	0.070	0.025	0.153	0.109	0.178
	LTE Band 12	Left Touch	0.113	0.104	0.211	0.217	0.324	**0.428**
		Right Touch	0.093	0.052	0.046	0.145	0.139	0.191
		Left Tilt	0.049	0.157	0.073	0.206	0.122	0.279
		Right Tilt	0.060	0.070	0.025	0.130	0.085	0.155
	LTE Band 5	Left Touch	0.185	0.104	0.211	0.289	0.396	**0.500**
		Right Touch	0.137	0.052	0.046	0.189	0.183	0.235
		Left Tilt	0.096	0.157	0.073	0.253	0.169	0.326
		Right Tilt	0.107	0.070	0.025	0.177	0.132	0.202
	LTE Band 4	Left Touch	0.089	0.104	0.211	0.193	0.300	**0.404**
		Right Touch	0.123	0.052	0.046	0.175	0.169	0.221
		Left Tilt	0.089	0.157	0.073	0.246	0.162	0.319
		Right Tilt	0.083	0.070	0.025	0.153	0.108	0.178
	LTE Band 2	Left Touch	0.119	0.104	0.211	0.223	0.330	**0.434**
		Right Touch	0.158	0.052	0.046	0.210	0.204	0.256
		Left Tilt	0.065	0.157	0.073	0.222	0.138	0.295
		Right Tilt	0.070	0.070	0.025	0.140	0.095	0.165

Table 12.4.9 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.429	0.193	0.518	**0.622**
		Right Touch	0.075	0.052	0.133	0.127	0.208	0.260
		Left Tilt	0.041	0.157	0.421	0.198	0.462	0.619
		Right Tilt	0.047	0.070	0.132	0.117	0.179	0.249
	GPRS 850	Left Touch	0.122	0.104	0.429	0.226	0.551	**0.655**
		Right Touch	0.102	0.052	0.133	0.154	0.235	0.287
		Left Tilt	0.058	0.157	0.421	0.215	0.479	0.636
		Right Tilt	0.064	0.070	0.132	0.134	0.196	0.266
	GSM 1900	Left Touch	0.054	0.104	0.429	0.158	0.483	0.587
		Right Touch	0.070	0.052	0.133	0.122	0.203	0.255
		Left Tilt	0.041	0.157	0.421	0.198	0.462	**0.619**
		Right Tilt	0.041	0.070	0.132	0.111	0.173	0.243
	GPRS 1900	Left Touch	0.061	0.104	0.429	0.165	0.490	0.594
		Right Touch	0.071	0.052	0.133	0.123	0.204	0.256
		Left Tilt	0.045	0.157	0.421	0.202	0.466	**0.623**
		Right Tilt	0.047	0.070	0.132	0.117	0.179	0.249
	WCDMA 850	Left Touch	0.157	0.104	0.429	0.261	0.586	**0.690**
		Right Touch	0.136	0.052	0.133	0.188	0.269	0.321
		Left Tilt	0.076	0.157	0.421	0.233	0.497	0.654
		Right Tilt	0.086	0.070	0.132	0.156	0.218	0.288
	WCDMA 1900	Left Touch	0.145	0.104	0.429	0.248	0.573	**0.677**
		Right Touch	0.146	0.052	0.133	0.198	0.279	0.331
		Left Tilt	0.081	0.157	0.421	0.238	0.502	0.660
		Right Tilt	0.084	0.070	0.132	0.153	0.216	0.286
	LTE Band 12	Left Touch	0.113	0.104	0.429	0.217	0.542	**0.646**
		Right Touch	0.093	0.052	0.133	0.145	0.226	0.278
		Left Tilt	0.049	0.157	0.421	0.206	0.470	0.627
		Right Tilt	0.060	0.070	0.132	0.130	0.192	0.262
	LTE Band 5	Left Touch	0.185	0.104	0.429	0.289	0.614	**0.718**
		Right Touch	0.137	0.052	0.133	0.189	0.270	0.322
		Left Tilt	0.096	0.157	0.421	0.253	0.517	0.674
		Right Tilt	0.107	0.070	0.132	0.177	0.239	0.309
	LTE Band 4	Left Touch	0.089	0.104	0.429	0.193	0.518	0.622
		Right Touch	0.123	0.052	0.133	0.175	0.256	0.308
		Left Tilt	0.089	0.157	0.421	0.246	0.510	**0.667**
		Right Tilt	0.083	0.070	0.132	0.153	0.215	0.285
	LTE Band 2	Left Touch	0.119	0.104	0.429	0.223	0.548	**0.652**
		Right Touch	0.158	0.052	0.133	0.210	0.291	0.343
		Left Tilt	0.065	0.157	0.421	0.222	0.486	0.643
		Right Tilt	0.070	0.070	0.132	0.140	0.202	0.272

Table 12.4.10 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.545	0.193	0.634	**0.738**
		Right Touch	0.075	0.052	0.233	0.127	0.308	0.360
		Left Tilt	0.041	0.157	0.440	0.198	0.481	0.638
		Right Tilt	0.047	0.070	0.263	0.117	0.310	0.380
	GPRS 850	Left Touch	0.122	0.104	0.545	0.226	0.667	**0.771**
		Right Touch	0.102	0.052	0.233	0.154	0.335	0.387
		Left Tilt	0.058	0.157	0.440	0.215	0.498	0.655
		Right Tilt	0.064	0.070	0.263	0.134	0.327	0.397
	GSM 1900	Left Touch	0.054	0.104	0.545	0.158	0.599	**0.703**
		Right Touch	0.070	0.052	0.233	0.122	0.303	0.355
		Left Tilt	0.041	0.157	0.440	0.198	0.481	0.638
		Right Tilt	0.041	0.070	0.263	0.111	0.304	0.374
	GPRS 1900	Left Touch	0.061	0.104	0.545	0.165	0.606	**0.710**
		Right Touch	0.071	0.052	0.233	0.123	0.304	0.356
		Left Tilt	0.045	0.157	0.440	0.202	0.485	0.642
		Right Tilt	0.047	0.070	0.263	0.117	0.310	0.380
	WCDMA 850	Left Touch	0.157	0.104	0.545	0.261	0.702	**0.806**
		Right Touch	0.136	0.052	0.233	0.188	0.369	0.421
		Left Tilt	0.076	0.157	0.440	0.233	0.516	0.673
		Right Tilt	0.086	0.070	0.263	0.156	0.349	0.419
	WCDMA 1900	Left Touch	0.145	0.104	0.545	0.248	0.690	**0.794**
		Right Touch	0.146	0.052	0.233	0.198	0.379	0.431
		Left Tilt	0.081	0.157	0.440	0.238	0.521	0.678
		Right Tilt	0.084	0.070	0.263	0.153	0.346	0.416
	LTE Band 12	Left Touch	0.113	0.104	0.545	0.217	0.658	**0.762**
		Right Touch	0.093	0.052	0.233	0.145	0.326	0.378
		Left Tilt	0.049	0.157	0.440	0.206	0.489	0.646
		Right Tilt	0.060	0.070	0.263	0.130	0.323	0.393
	LTE Band 5	Left Touch	0.185	0.104	0.545	0.289	0.730	**0.834**
		Right Touch	0.137	0.052	0.233	0.189	0.370	0.422
		Left Tilt	0.096	0.157	0.440	0.253	0.536	0.693
		Right Tilt	0.107	0.070	0.263	0.177	0.370	0.440
	LTE Band 4	Left Touch	0.089	0.104	0.545	0.193	0.634	**0.738**
		Right Touch	0.123	0.052	0.233	0.175	0.356	0.408
		Left Tilt	0.089	0.157	0.440	0.246	0.529	0.686
		Right Tilt	0.083	0.070	0.263	0.153	0.346	0.416
	LTE Band 2	Left Touch	0.119	0.104	0.545	0.223	0.664	**0.768**
		Right Touch	0.158	0.052	0.233	0.210	0.391	0.443
		Left Tilt	0.065	0.157	0.440	0.222	0.505	0.662
		Right Tilt	0.070	0.070	0.263	0.140	0.333	0.403

Table 12.4.11 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.254	0.193	0.343	**0.447**
		Right Touch	0.075	0.052	0.066	0.127	0.141	0.193
		Left Tilt	0.041	0.157	0.104	0.198	0.145	0.302
		Right Tilt	0.047	0.070	0.065	0.117	0.112	0.182
	GPRS 850	Left Touch	0.122	0.104	0.254	0.226	0.376	**0.480**
		Right Touch	0.102	0.052	0.066	0.154	0.168	0.220
		Left Tilt	0.058	0.157	0.104	0.215	0.162	0.319
		Right Tilt	0.064	0.070	0.065	0.134	0.129	0.199
	GSM 1900	Left Touch	0.054	0.104	0.254	0.158	0.308	**0.412**
		Right Touch	0.070	0.052	0.066	0.122	0.136	0.188
		Left Tilt	0.041	0.157	0.104	0.198	0.145	0.302
		Right Tilt	0.041	0.070	0.065	0.111	0.106	0.176
	GPRS 1900	Left Touch	0.061	0.104	0.254	0.165	0.315	**0.419**
		Right Touch	0.071	0.052	0.066	0.123	0.137	0.189
		Left Tilt	0.045	0.157	0.104	0.202	0.149	0.306
		Right Tilt	0.047	0.070	0.065	0.117	0.112	0.182
	WCDMA 850	Left Touch	0.157	0.104	0.254	0.261	0.411	**0.515**
		Right Touch	0.136	0.052	0.066	0.188	0.202	0.254
		Left Tilt	0.076	0.157	0.104	0.233	0.180	0.337
		Right Tilt	0.086	0.070	0.065	0.156	0.151	0.221
	WCDMA 1900	Left Touch	0.129	0.104	0.254	0.233	0.383	**0.487**
		Right Touch	0.130	0.052	0.066	0.182	0.196	0.248
		Left Tilt	0.072	0.157	0.104	0.229	0.176	0.333
		Right Tilt	0.075	0.070	0.065	0.145	0.140	0.210
	LTE Band 12	Left Touch	0.113	0.104	0.254	0.217	0.367	**0.471**
		Right Touch	0.093	0.052	0.066	0.145	0.159	0.211
		Left Tilt	0.049	0.157	0.104	0.206	0.153	0.310
		Right Tilt	0.060	0.070	0.065	0.130	0.125	0.195
	LTE Band 5	Left Touch	0.185	0.104	0.254	0.289	0.439	**0.543**
		Right Touch	0.137	0.052	0.066	0.189	0.203	0.255
		Left Tilt	0.096	0.157	0.104	0.253	0.200	0.357
		Right Tilt	0.107	0.070	0.065	0.177	0.172	0.242
	LTE Band 4	Left Touch	0.089	0.104	0.254	0.193	0.343	**0.447**
		Right Touch	0.123	0.052	0.066	0.175	0.189	0.241
		Left Tilt	0.089	0.157	0.104	0.246	0.193	0.350
		Right Tilt	0.083	0.070	0.065	0.153	0.148	0.218
	LTE Band 2	Left Touch	0.119	0.104	0.254	0.223	0.373	**0.477**
		Right Touch	0.158	0.052	0.066	0.210	0.224	0.276
		Left Tilt	0.065	0.157	0.104	0.222	0.169	0.326
		Right Tilt	0.070	0.070	0.065	0.140	0.135	0.205

Table 12.4.12 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.089	0.104	0.442	0.193	0.531	0.635
		Right Touch	0.075	0.052	0.151	0.127	0.226	0.278
		Left Tilt	0.041	0.157	0.477	0.198	0.518	**0.675**
		Right Tilt	0.047	0.070	0.157	0.117	0.204	0.274
	GPRS 850	Left Touch	0.122	0.104	0.442	0.226	0.564	0.668
		Right Touch	0.102	0.052	0.151	0.154	0.253	0.305
		Left Tilt	0.058	0.157	0.477	0.215	0.535	**0.692**
		Right Tilt	0.064	0.070	0.157	0.134	0.221	0.291
	GSM 1900	Left Touch	0.054	0.104	0.442	0.158	0.496	0.600
		Right Touch	0.070	0.052	0.151	0.122	0.221	0.273
		Left Tilt	0.041	0.157	0.477	0.198	0.518	**0.675**
		Right Tilt	0.041	0.070	0.157	0.111	0.198	0.268
	GPRS 1900	Left Touch	0.061	0.104	0.442	0.165	0.503	0.607
		Right Touch	0.071	0.052	0.151	0.123	0.222	0.274
		Left Tilt	0.045	0.157	0.477	0.202	0.522	**0.679**
		Right Tilt	0.047	0.070	0.157	0.117	0.204	0.274
	WCDMA 850	Left Touch	0.157	0.104	0.442	0.261	0.599	0.703
		Right Touch	0.136	0.052	0.151	0.188	0.287	0.339
		Left Tilt	0.076	0.157	0.477	0.233	0.553	**0.710**
		Right Tilt	0.086	0.070	0.157	0.156	0.243	0.313
	WCDMA 1900	Left Touch	0.145	0.104	0.442	0.248	0.587	0.691
		Right Touch	0.146	0.052	0.151	0.198	0.297	0.349
		Left Tilt	0.081	0.157	0.477	0.238	0.558	**0.715**
		Right Tilt	0.084	0.070	0.157	0.153	0.241	0.310
	LTE Band 12	Left Touch	0.113	0.104	0.442	0.217	0.555	0.659
		Right Touch	0.093	0.052	0.151	0.145	0.244	0.296
		Left Tilt	0.049	0.157	0.477	0.206	0.526	**0.683**
		Right Tilt	0.060	0.070	0.157	0.130	0.217	0.287
	LTE Band 5	Left Touch	0.185	0.104	0.442	0.289	0.627	**0.731**
		Right Touch	0.137	0.052	0.151	0.189	0.288	0.340
		Left Tilt	0.096	0.157	0.477	0.253	0.573	0.730
		Right Tilt	0.107	0.070	0.157	0.177	0.264	0.334
	LTE Band 4	Left Touch	0.089	0.104	0.442	0.193	0.531	0.635
		Right Touch	0.123	0.052	0.151	0.175	0.274	0.326
		Left Tilt	0.089	0.157	0.477	0.246	0.566	**0.723**
		Right Tilt	0.083	0.070	0.157	0.153	0.240	0.310
	LTE Band 2	Left Touch	0.119	0.104	0.442	0.223	0.561	0.665
		Right Touch	0.158	0.052	0.151	0.210	0.309	0.361
		Left Tilt	0.065	0.157	0.477	0.222	0.542	**0.699**
		Right Tilt	0.070	0.070	0.157	0.140	0.227	0.297

Table 12.4.13 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.321	**0.410**
		Right Touch	0.075	0.170	0.245
		Left Tilt	0.041	0.349	0.390
		Right Tilt	0.047	0.156	0.203
	GPRS 850	Left Touch	0.122	0.321	**0.443**
		Right Touch	0.102	0.170	0.272
		Left Tilt	0.058	0.349	0.407
		Right Tilt	0.064	0.156	0.220
	GSM 1900	Left Touch	0.054	0.321	0.375
		Right Touch	0.070	0.170	0.240
		Left Tilt	0.041	0.349	**0.390**
		Right Tilt	0.041	0.156	0.197
	GPRS 1900	Left Touch	0.061	0.321	0.382
		Right Touch	0.071	0.170	0.241
		Left Tilt	0.045	0.349	**0.394**
		Right Tilt	0.047	0.156	0.203
	WCDMA 850	Left Touch	0.157	0.321	**0.478**
		Right Touch	0.136	0.170	0.306
		Left Tilt	0.076	0.349	0.425
		Right Tilt	0.086	0.156	0.242
	WCDMA 1900	Left Touch	0.145	0.321	**0.466**
		Right Touch	0.146	0.170	0.316
		Left Tilt	0.081	0.349	0.430
		Right Tilt	0.084	0.156	0.240
	LTE Band 12	Left Touch	0.113	0.321	**0.434**
		Right Touch	0.093	0.170	0.263
		Left Tilt	0.049	0.349	0.398
		Right Tilt	0.060	0.156	0.216
	LTE Band 5	Left Touch	0.185	0.321	**0.506**
		Right Touch	0.137	0.170	0.307
		Left Tilt	0.096	0.349	0.445
		Right Tilt	0.107	0.156	0.263
	LTE Band 4	Left Touch	0.089	0.321	0.410
		Right Touch	0.123	0.170	0.293
		Left Tilt	0.089	0.349	**0.438**
		Right Tilt	0.083	0.156	0.239
	LTE Band 2	Left Touch	0.119	0.321	**0.440**
		Right Touch	0.158	0.170	0.328
		Left Tilt	0.065	0.349	0.414
		Right Tilt	0.070	0.156	0.226

Table 12.4.14 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.427	**0.516**
		Right Touch	0.075	0.132	0.207
		Left Tilt	0.041	0.150	0.191
		Right Tilt	0.047	0.077	0.124
	GPRS 850	Left Touch	0.122	0.427	**0.549**
		Right Touch	0.102	0.132	0.234
		Left Tilt	0.058	0.150	0.208
		Right Tilt	0.064	0.077	0.141
	GSM 1900	Left Touch	0.054	0.427	**0.481**
		Right Touch	0.070	0.132	0.202
		Left Tilt	0.041	0.150	0.191
		Right Tilt	0.041	0.077	0.118
	GPRS 1900	Left Touch	0.061	0.427	**0.488**
		Right Touch	0.071	0.132	0.203
		Left Tilt	0.045	0.150	0.195
		Right Tilt	0.047	0.077	0.124
	WCDMA 850	Left Touch	0.157	0.427	**0.584**
		Right Touch	0.136	0.132	0.268
		Left Tilt	0.076	0.150	0.226
		Right Tilt	0.086	0.077	0.163
	WCDMA 1900	Left Touch	0.145	0.427	**0.572**
		Right Touch	0.146	0.132	0.278
		Left Tilt	0.081	0.150	0.231
		Right Tilt	0.084	0.077	0.160
	LTE Band 12	Left Touch	0.113	0.427	**0.540**
		Right Touch	0.093	0.132	0.225
		Left Tilt	0.049	0.150	0.199
		Right Tilt	0.060	0.077	0.137
	LTE Band 5	Left Touch	0.185	0.427	**0.612**
		Right Touch	0.137	0.132	0.269
		Left Tilt	0.096	0.150	0.246
		Right Tilt	0.107	0.077	0.184
	LTE Band 4	Left Touch	0.089	0.427	**0.516**
		Right Touch	0.123	0.132	0.255
		Left Tilt	0.089	0.150	0.239
		Right Tilt	0.083	0.077	0.160
	LTE Band 2	Left Touch	0.119	0.427	**0.546**
		Right Touch	0.158	0.132	0.290
		Left Tilt	0.065	0.150	0.215
		Right Tilt	0.070	0.077	0.147

Table 12.4.15 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.543	**0.632**
		Right Touch	0.075	0.201	0.276
		Left Tilt	0.041	0.481	0.522
		Right Tilt	0.047	0.225	0.272
	GPRS 850	Left Touch	0.122	0.543	**0.665**
		Right Touch	0.102	0.201	0.303
		Left Tilt	0.058	0.481	0.539
		Right Tilt	0.064	0.225	0.289
	GSM 1900	Left Touch	0.054	0.543	**0.597**
		Right Touch	0.070	0.201	0.271
		Left Tilt	0.041	0.481	0.522
		Right Tilt	0.041	0.225	0.266
	GPRS 1900	Left Touch	0.061	0.543	**0.604**
		Right Touch	0.071	0.201	0.272
		Left Tilt	0.045	0.481	0.526
		Right Tilt	0.047	0.225	0.272
	WCDMA 850	Left Touch	0.157	0.543	**0.700**
		Right Touch	0.136	0.201	0.337
		Left Tilt	0.076	0.481	0.557
		Right Tilt	0.086	0.225	0.311
	WCDMA 1900	Left Touch	0.145	0.543	**0.688**
		Right Touch	0.146	0.201	0.347
		Left Tilt	0.081	0.481	0.563
		Right Tilt	0.084	0.225	0.308
	LTE Band 12	Left Touch	0.113	0.543	**0.656**
		Right Touch	0.093	0.201	0.294
		Left Tilt	0.049	0.481	0.530
		Right Tilt	0.060	0.225	0.285
	LTE Band 5	Left Touch	0.185	0.543	**0.728**
		Right Touch	0.137	0.201	0.338
		Left Tilt	0.096	0.481	0.577
		Right Tilt	0.107	0.225	0.332
	LTE Band 4	Left Touch	0.089	0.543	**0.632**
		Right Touch	0.123	0.201	0.324
		Left Tilt	0.089	0.481	0.570
		Right Tilt	0.083	0.225	0.308
	LTE Band 2	Left Touch	0.119	0.543	**0.662**
		Right Touch	0.158	0.201	0.359
		Left Tilt	0.065	0.481	0.546
		Right Tilt	0.070	0.225	0.295

Table 12.4.16 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.926	**1.015**
		Right Touch	0.075	0.402	0.477
		Left Tilt	0.041	0.693	0.734
		Right Tilt	0.047	0.468	0.515
	GPRS 850	Left Touch	0.122	0.926	**1.048**
		Right Touch	0.102	0.402	0.504
		Left Tilt	0.058	0.693	0.751
		Right Tilt	0.064	0.468	0.532
	GSM 1900	Left Touch	0.054	0.926	**0.980**
		Right Touch	0.070	0.402	0.472
		Left Tilt	0.041	0.693	0.734
		Right Tilt	0.041	0.468	0.509
	GPRS 1900	Left Touch	0.061	0.926	**0.987**
		Right Touch	0.071	0.402	0.473
		Left Tilt	0.045	0.693	0.738
		Right Tilt	0.047	0.468	0.515
	WCDMA 850	Left Touch	0.157	0.926	**1.083**
		Right Touch	0.136	0.402	0.538
		Left Tilt	0.076	0.693	0.769
		Right Tilt	0.086	0.468	0.554
	WCDMA 1900	Left Touch	0.145	0.926	**1.071**
		Right Touch	0.146	0.402	0.547
		Left Tilt	0.081	0.693	0.774
		Right Tilt	0.084	0.468	0.552
	LTE Band 12	Left Touch	0.113	0.926	**1.039**
		Right Touch	0.093	0.402	0.495
		Left Tilt	0.049	0.693	0.742
		Right Tilt	0.060	0.468	0.528
	LTE Band 5	Left Touch	0.185	0.926	**1.111**
		Right Touch	0.137	0.402	0.539
		Left Tilt	0.096	0.693	0.789
		Right Tilt	0.107	0.468	0.575
	LTE Band 4	Left Touch	0.089	0.926	**1.015**
		Right Touch	0.123	0.402	0.525
		Left Tilt	0.089	0.693	0.782
		Right Tilt	0.083	0.468	0.551
	LTE Band 2	Left Touch	0.119	0.926	**1.045**
		Right Touch	0.158	0.402	0.560
		Left Tilt	0.065	0.693	0.758
		Right Tilt	0.070	0.468	0.538

Table 12.4.17 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.185	**0.274**
		Right Touch	0.075	0.032	0.107
		Left Tilt	0.041	0.083	0.124
		Right Tilt	0.047	0.026	0.073
	GPRS 850	Left Touch	0.122	0.185	**0.307**
		Right Touch	0.102	0.032	0.134
		Left Tilt	0.058	0.083	0.141
		Right Tilt	0.064	0.026	0.090
	GSM 1900	Left Touch	0.054	0.185	**0.239**
		Right Touch	0.070	0.032	0.102
		Left Tilt	0.041	0.083	0.124
		Right Tilt	0.041	0.026	0.067
	GPRS 1900	Left Touch	0.061	0.185	**0.246**
		Right Touch	0.071	0.032	0.103
		Left Tilt	0.045	0.083	0.128
		Right Tilt	0.047	0.026	0.073
	WCDMA 850	Left Touch	0.157	0.185	**0.342**
		Right Touch	0.136	0.032	0.168
		Left Tilt	0.076	0.083	0.159
		Right Tilt	0.086	0.026	0.112
	WCDMA 1900	Left Touch	0.145	0.185	**0.329**
		Right Touch	0.146	0.032	0.178
		Left Tilt	0.081	0.083	0.164
		Right Tilt	0.084	0.026	0.109
	LTE Band 12	Left Touch	0.113	0.185	**0.298**
		Right Touch	0.093	0.032	0.125
		Left Tilt	0.049	0.083	0.132
		Right Tilt	0.060	0.026	0.086
	LTE Band 5	Left Touch	0.185	0.185	**0.370**
		Right Touch	0.137	0.032	0.169
		Left Tilt	0.096	0.083	0.179
		Right Tilt	0.107	0.026	0.133
	LTE Band 4	Left Touch	0.089	0.185	**0.274**
		Right Touch	0.123	0.032	0.155
		Left Tilt	0.089	0.083	0.172
		Right Tilt	0.083	0.026	0.109
	LTE Band 2	Left Touch	0.119	0.185	**0.304**
		Right Touch	0.158	0.032	0.190
		Left Tilt	0.065	0.083	0.148
		Right Tilt	0.070	0.026	0.096

Table 12.4.18 Simultaneous Transmission Scenario: 2G/3G/4G + 5.3 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.713	**0.802**
		Right Touch	0.075	0.185	0.260
		Left Tilt	0.041	0.753	0.794
		Right Tilt	0.047	0.209	0.256
	GPRS 850	Left Touch	0.122	0.713	**0.835**
		Right Touch	0.102	0.185	0.287
		Left Tilt	0.058	0.753	0.811
		Right Tilt	0.064	0.209	0.273
	GSM 1900	Left Touch	0.054	0.713	0.767
		Right Touch	0.070	0.185	0.255
		Left Tilt	0.041	0.753	**0.794**
		Right Tilt	0.041	0.209	0.250
	GPRS 1900	Left Touch	0.061	0.713	0.774
		Right Touch	0.071	0.185	0.256
		Left Tilt	0.045	0.753	**0.798**
		Right Tilt	0.047	0.209	0.256
	WCDMA 850	Left Touch	0.157	0.713	**0.870**
		Right Touch	0.136	0.185	0.321
		Left Tilt	0.076	0.753	0.829
		Right Tilt	0.086	0.209	0.295
	WCDMA 1900	Left Touch	0.145	0.713	**0.857**
		Right Touch	0.146	0.185	0.330
		Left Tilt	0.081	0.753	0.834
		Right Tilt	0.084	0.209	0.293
	LTE Band 12	Left Touch	0.113	0.713	**0.826**
		Right Touch	0.093	0.185	0.278
		Left Tilt	0.049	0.753	0.802
		Right Tilt	0.060	0.209	0.269
	LTE Band 5	Left Touch	0.185	0.713	**0.898**
		Right Touch	0.137	0.185	0.322
		Left Tilt	0.096	0.753	0.849
		Right Tilt	0.107	0.209	0.316
	LTE Band 4	Left Touch	0.089	0.713	0.802
		Right Touch	0.123	0.185	0.308
		Left Tilt	0.089	0.753	**0.842**
		Right Tilt	0.083	0.209	0.292
	LTE Band 2	Left Touch	0.119	0.713	**0.832**
		Right Touch	0.158	0.185	0.343
		Left Tilt	0.065	0.753	0.818
		Right Tilt	0.070	0.209	0.279

Table 12.4.19 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.531	**0.620**
		Right Touch	0.075	0.248	0.323
		Left Tilt	0.041	0.435	0.476
		Right Tilt	0.047	0.264	0.311
	GPRS 850	Left Touch	0.122	0.531	**0.653**
		Right Touch	0.102	0.248	0.350
		Left Tilt	0.058	0.435	0.493
		Right Tilt	0.064	0.264	0.328
	GSM 1900	Left Touch	0.054	0.531	**0.585**
		Right Touch	0.070	0.248	0.318
		Left Tilt	0.041	0.435	0.476
		Right Tilt	0.041	0.264	0.305
	GPRS 1900	Left Touch	0.061	0.531	**0.592**
		Right Touch	0.071	0.248	0.319
		Left Tilt	0.045	0.435	0.480
		Right Tilt	0.047	0.264	0.311
	WCDMA 850	Left Touch	0.157	0.531	**0.688**
		Right Touch	0.136	0.248	0.384
		Left Tilt	0.076	0.435	0.511
		Right Tilt	0.086	0.264	0.350
	WCDMA 1900	Left Touch	0.145	0.531	**0.675**
		Right Touch	0.146	0.248	0.394
		Left Tilt	0.081	0.435	0.516
		Right Tilt	0.084	0.264	0.348
	LTE Band 12	Left Touch	0.113	0.531	**0.644**
		Right Touch	0.093	0.248	0.341
		Left Tilt	0.049	0.435	0.484
		Right Tilt	0.060	0.264	0.324
	LTE Band 5	Left Touch	0.185	0.531	**0.716**
		Right Touch	0.137	0.248	0.385
		Left Tilt	0.096	0.435	0.531
		Right Tilt	0.107	0.264	0.371
	LTE Band 4	Left Touch	0.089	0.531	**0.620**
		Right Touch	0.123	0.248	0.371
		Left Tilt	0.089	0.435	0.524
		Right Tilt	0.083	0.264	0.347
	LTE Band 2	Left Touch	0.119	0.531	**0.650**
		Right Touch	0.158	0.248	0.406
		Left Tilt	0.065	0.435	0.500
		Right Tilt	0.070	0.264	0.334

Table 12.4.20 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.211	**0.300**
		Right Touch	0.075	0.046	0.121
		Left Tilt	0.041	0.073	0.114
		Right Tilt	0.047	0.025	0.072
	GPRS 850	Left Touch	0.122	0.211	**0.333**
		Right Touch	0.102	0.046	0.148
		Left Tilt	0.058	0.073	0.131
		Right Tilt	0.064	0.025	0.089
	GSM 1900	Left Touch	0.054	0.211	**0.265**
		Right Touch	0.070	0.046	0.116
		Left Tilt	0.041	0.073	0.114
		Right Tilt	0.041	0.025	0.066
	GPRS 1900	Left Touch	0.061	0.211	**0.272**
		Right Touch	0.071	0.046	0.117
		Left Tilt	0.045	0.073	0.118
		Right Tilt	0.047	0.025	0.072
	WCDMA 850	Left Touch	0.157	0.211	**0.368**
		Right Touch	0.136	0.046	0.182
		Left Tilt	0.076	0.073	0.149
		Right Tilt	0.086	0.025	0.111
	WCDMA 1900	Left Touch	0.145	0.211	**0.356**
		Right Touch	0.146	0.046	0.192
		Left Tilt	0.081	0.073	0.154
		Right Tilt	0.084	0.025	0.109
	LTE Band 12	Left Touch	0.113	0.211	**0.324**
		Right Touch	0.093	0.046	0.139
		Left Tilt	0.049	0.073	0.122
		Right Tilt	0.060	0.025	0.085
	LTE Band 5	Left Touch	0.185	0.211	**0.396**
		Right Touch	0.137	0.046	0.183
		Left Tilt	0.096	0.073	0.169
		Right Tilt	0.107	0.025	0.132
	LTE Band 4	Left Touch	0.089	0.211	**0.300**
		Right Touch	0.123	0.046	0.169
		Left Tilt	0.089	0.073	0.162
		Right Tilt	0.083	0.025	0.108
	LTE Band 2	Left Touch	0.119	0.211	**0.330**
		Right Touch	0.158	0.046	0.204
		Left Tilt	0.065	0.073	0.138
		Right Tilt	0.070	0.025	0.095

Table 12.4.21 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.429	**0.518**
		Right Touch	0.075	0.133	0.208
		Left Tilt	0.041	0.421	0.462
		Right Tilt	0.047	0.132	0.179
	GPRS 850	Left Touch	0.122	0.429	**0.551**
		Right Touch	0.102	0.133	0.235
		Left Tilt	0.058	0.421	0.479
		Right Tilt	0.064	0.132	0.196
	GSM 1900	Left Touch	0.054	0.429	**0.483**
		Right Touch	0.070	0.133	0.203
		Left Tilt	0.041	0.421	0.462
		Right Tilt	0.041	0.132	0.173
	GPRS 1900	Left Touch	0.061	0.429	**0.490**
		Right Touch	0.071	0.133	0.204
		Left Tilt	0.045	0.421	0.466
		Right Tilt	0.047	0.132	0.179
	WCDMA 850	Left Touch	0.157	0.429	**0.586**
		Right Touch	0.136	0.133	0.269
		Left Tilt	0.076	0.421	0.497
		Right Tilt	0.086	0.132	0.218
	WCDMA 1900	Left Touch	0.145	0.429	**0.573**
		Right Touch	0.146	0.133	0.279
		Left Tilt	0.081	0.421	0.502
		Right Tilt	0.084	0.132	0.216
	LTE Band 12	Left Touch	0.113	0.429	**0.542**
		Right Touch	0.093	0.133	0.226
		Left Tilt	0.049	0.421	0.470
		Right Tilt	0.060	0.132	0.192
	LTE Band 5	Left Touch	0.185	0.429	**0.614**
		Right Touch	0.137	0.133	0.270
		Left Tilt	0.096	0.421	0.517
		Right Tilt	0.107	0.132	0.239
	LTE Band 4	Left Touch	0.089	0.429	**0.518**
		Right Touch	0.123	0.133	0.256
		Left Tilt	0.089	0.421	0.510
		Right Tilt	0.083	0.132	0.215
	LTE Band 2	Left Touch	0.119	0.429	**0.548**
		Right Touch	0.158	0.133	0.291
		Left Tilt	0.065	0.421	0.486
		Right Tilt	0.070	0.132	0.202

Table 12.4.22 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.545	**0.634**
		Right Touch	0.075	0.233	0.308
		Left Tilt	0.041	0.440	0.481
		Right Tilt	0.047	0.263	0.310
	GPRS 850	Left Touch	0.122	0.545	**0.667**
		Right Touch	0.102	0.233	0.335
		Left Tilt	0.058	0.440	0.498
		Right Tilt	0.064	0.263	0.327
	GSM 1900	Left Touch	0.054	0.545	**0.599**
		Right Touch	0.070	0.233	0.303
		Left Tilt	0.041	0.440	0.481
		Right Tilt	0.041	0.263	0.304
	GPRS 1900	Left Touch	0.061	0.545	**0.606**
		Right Touch	0.071	0.233	0.304
		Left Tilt	0.045	0.440	0.485
		Right Tilt	0.047	0.263	0.310
	WCDMA 850	Left Touch	0.157	0.545	**0.702**
		Right Touch	0.136	0.233	0.369
		Left Tilt	0.076	0.440	0.516
		Right Tilt	0.086	0.263	0.349
	WCDMA 1900	Left Touch	0.145	0.545	**0.690**
		Right Touch	0.146	0.233	0.379
		Left Tilt	0.081	0.440	0.521
		Right Tilt	0.084	0.263	0.346
	LTE Band 12	Left Touch	0.113	0.545	**0.658**
		Right Touch	0.093	0.233	0.326
		Left Tilt	0.049	0.440	0.489
		Right Tilt	0.060	0.263	0.323
	LTE Band 5	Left Touch	0.185	0.545	**0.730**
		Right Touch	0.137	0.233	0.370
		Left Tilt	0.096	0.440	0.536
		Right Tilt	0.107	0.263	0.370
	LTE Band 4	Left Touch	0.089	0.545	**0.634**
		Right Touch	0.123	0.233	0.356
		Left Tilt	0.089	0.440	0.529
		Right Tilt	0.083	0.263	0.346
	LTE Band 2	Left Touch	0.119	0.545	**0.664**
		Right Touch	0.158	0.233	0.391
		Left Tilt	0.065	0.440	0.505
		Right Tilt	0.070	0.263	0.333

Table 12.4.23 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.254	**0.343**
		Right Touch	0.075	0.066	0.141
		Left Tilt	0.041	0.104	0.145
		Right Tilt	0.047	0.065	0.112
	GPRS 850	Left Touch	0.122	0.254	**0.376**
		Right Touch	0.102	0.066	0.168
		Left Tilt	0.058	0.104	0.162
		Right Tilt	0.064	0.065	0.129
	GSM 1900	Left Touch	0.054	0.254	**0.308**
		Right Touch	0.070	0.066	0.136
		Left Tilt	0.041	0.104	0.145
		Right Tilt	0.041	0.065	0.106
	GPRS 1900	Left Touch	0.061	0.254	**0.315**
		Right Touch	0.071	0.066	0.137
		Left Tilt	0.045	0.104	0.149
		Right Tilt	0.047	0.065	0.112
	WCDMA 850	Left Touch	0.157	0.254	**0.411**
		Right Touch	0.136	0.066	0.202
		Left Tilt	0.076	0.104	0.180
		Right Tilt	0.086	0.065	0.151
	WCDMA 1900	Left Touch	0.145	0.254	**0.399**
		Right Touch	0.146	0.066	0.212
		Left Tilt	0.081	0.104	0.186
		Right Tilt	0.084	0.065	0.148
	LTE Band 12	Left Touch	0.113	0.254	**0.367**
		Right Touch	0.093	0.066	0.159
		Left Tilt	0.049	0.104	0.153
		Right Tilt	0.060	0.065	0.125
	LTE Band 5	Left Touch	0.185	0.254	**0.439**
		Right Touch	0.137	0.066	0.203
		Left Tilt	0.096	0.104	0.200
		Right Tilt	0.107	0.065	0.172
	LTE Band 4	Left Touch	0.089	0.254	**0.343**
		Right Touch	0.123	0.066	0.189
		Left Tilt	0.089	0.104	0.193
		Right Tilt	0.083	0.065	0.148
	LTE Band 2	Left Touch	0.119	0.254	**0.373**
		Right Touch	0.158	0.066	0.224
		Left Tilt	0.065	0.104	0.169
		Right Tilt	0.070	0.065	0.135

Table 12.4.24 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.442	**0.531**
		Right Touch	0.075	0.151	0.226
		Left Tilt	0.041	0.477	0.518
		Right Tilt	0.047	0.157	0.204
	GPRS 850	Left Touch	0.122	0.442	**0.564**
		Right Touch	0.102	0.151	0.253
		Left Tilt	0.058	0.477	0.535
		Right Tilt	0.064	0.157	0.221
	GSM 1900	Left Touch	0.054	0.442	0.496
		Right Touch	0.070	0.151	0.221
		Left Tilt	0.041	0.477	**0.518**
		Right Tilt	0.041	0.157	0.198
	GPRS 1900	Left Touch	0.061	0.442	0.503
		Right Touch	0.071	0.151	0.222
		Left Tilt	0.045	0.477	**0.522**
		Right Tilt	0.047	0.157	0.204
	WCDMA 850	Left Touch	0.157	0.442	**0.599**
		Right Touch	0.136	0.151	0.287
		Left Tilt	0.076	0.477	0.553
		Right Tilt	0.086	0.157	0.243
	WCDMA 1900	Left Touch	0.145	0.442	**0.587**
		Right Touch	0.146	0.151	0.297
		Left Tilt	0.081	0.477	0.558
		Right Tilt	0.084	0.157	0.241
	LTE Band 12	Left Touch	0.113	0.442	**0.555**
		Right Touch	0.093	0.151	0.244
		Left Tilt	0.049	0.477	0.526
		Right Tilt	0.060	0.157	0.217
	LTE Band 5	Left Touch	0.185	0.442	**0.627**
		Right Touch	0.137	0.151	0.288
		Left Tilt	0.096	0.477	0.573
		Right Tilt	0.107	0.157	0.264
	LTE Band 4	Left Touch	0.089	0.442	0.531
		Right Touch	0.123	0.151	0.274
		Left Tilt	0.089	0.477	**0.566**
		Right Tilt	0.083	0.157	0.240
	LTE Band 2	Left Touch	0.119	0.442	**0.561**
		Right Touch	0.158	0.151	0.309
		Left Tilt	0.065	0.477	0.542
		Right Tilt	0.070	0.157	0.227

Table 12.4.25 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.089	0.104	0.193
		Right Touch	0.075	0.052	0.127
		Left Tilt	0.041	0.157	**0.198**
		Right Tilt	0.047	0.070	0.117
	GPRS 850	Left Touch	0.122	0.104	**0.226**
		Right Touch	0.102	0.052	0.154
		Left Tilt	0.058	0.157	0.215
		Right Tilt	0.064	0.070	0.134
	GSM 1900	Left Touch	0.054	0.104	0.158
		Right Touch	0.070	0.052	0.122
		Left Tilt	0.041	0.157	**0.198**
		Right Tilt	0.041	0.070	0.111
	GPRS 1900	Left Touch	0.061	0.104	0.165
		Right Touch	0.071	0.052	0.123
		Left Tilt	0.045	0.157	**0.202**
		Right Tilt	0.047	0.070	0.117
	WCDMA 850	Left Touch	0.157	0.104	**0.261**
		Right Touch	0.136	0.052	0.188
		Left Tilt	0.076	0.157	0.233
		Right Tilt	0.086	0.070	0.156
	WCDMA 1900	Left Touch	0.145	0.104	**0.248**
		Right Touch	0.146	0.052	0.198
		Left Tilt	0.081	0.157	0.238
		Right Tilt	0.084	0.070	0.153
	LTE Band 12	Left Touch	0.113	0.104	**0.217**
		Right Touch	0.093	0.052	0.145
		Left Tilt	0.049	0.157	0.206
		Right Tilt	0.060	0.070	0.130
	LTE Band 5	Left Touch	0.185	0.104	**0.289**
		Right Touch	0.137	0.052	0.189
		Left Tilt	0.096	0.157	0.253
		Right Tilt	0.107	0.070	0.177
	LTE Band 4	Left Touch	0.089	0.104	0.193
		Right Touch	0.123	0.052	0.175
		Left Tilt	0.089	0.157	**0.246**
		Right Tilt	0.083	0.070	0.153
	LTE Band 2	Left Touch	0.119	0.104	**0.223**
		Right Touch	0.158	0.052	0.210
		Left Tilt	0.065	0.157	0.222
		Right Tilt	0.070	0.070	0.140

Table 12.4.26 Simultaneous Transmission Scenario : 2.4 GHz W-LAN Ant.1 + 5 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	2.4G W-LAN Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	5.3G W-LAN Ant.2	Left Touch	0.321	0.185	**0.506**
		Right Touch	0.170	0.032	0.202
		Left Tilt	0.349	0.083	0.432
		Right Tilt	0.156	0.026	0.182
	5.6G W-LAN Ant.2	Left Touch	0.321	0.211	**0.532**
		Right Touch	0.170	0.046	0.216
		Left Tilt	0.349	0.073	0.422
		Right Tilt	0.156	0.025	0.181
	5.8G W-LAN Ant.2	Left Touch	0.321	0.254	**0.575**
		Right Touch	0.170	0.066	0.236
		Left Tilt	0.349	0.104	0.453
		Right Tilt	0.156	0.065	0.221

Table 12.4.27 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.1 (Held to Ear)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	5.3G W-LAN Ant.1	Left Touch	0.104	0.926	**1.030**
		Right Touch	0.052	0.402	0.454
		Left Tilt	0.157	0.693	0.850
		Right Tilt	0.070	0.468	0.538
	5.6G W-LAN Ant.1	Left Touch	0.104	0.531	**0.635**
		Right Touch	0.052	0.248	0.300
		Left Tilt	0.157	0.435	0.592
		Right Tilt	0.070	0.264	0.334
	5.8G W-LAN Ant.1	Left Touch	0.104	0.545	**0.649**
		Right Touch	0.052	0.233	0.285
		Left Tilt	0.157	0.440	0.597
		Right Tilt	0.070	0.263	0.333

Table 12.4.28 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	5.3G W-LAN Ant.2	Left Touch	0.104	0.185	**0.289**
		Right Touch	0.052	0.032	0.084
		Left Tilt	0.157	0.083	0.240
		Right Tilt	0.070	0.026	0.096
	5.6G W-LAN Ant.2	Left Touch	0.104	0.211	**0.315**
		Right Touch	0.052	0.046	0.098
		Left Tilt	0.157	0.073	0.230
		Right Tilt	0.070	0.025	0.095
	5.8G W-LAN Ant.2	Left Touch	0.104	0.254	**0.358**
		Right Touch	0.052	0.066	0.118
		Left Tilt	0.157	0.104	0.261
		Right Tilt	0.070	0.065	0.135

Table 12.4.29 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN MIMO (Held to Ear)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	5.3G W-LAN MIMO	Left Touch	0.104	0.713	0.817
		Right Touch	0.052	0.185	0.237
		Left Tilt	0.157	0.753	**0.910**
		Right Tilt	0.070	0.209	0.279
	5.6G W-LAN MIMO	Left Touch	0.104	0.429	0.533
		Right Touch	0.052	0.133	0.185
		Left Tilt	0.157	0.421	**0.578**
		Right Tilt	0.070	0.132	0.202
	5.8G W-LAN MIMO	Left Touch	0.104	0.442	**0.546**
		Right Touch	0.052	0.477	0.529
		Left Tilt	0.157	0.151	0.308
		Right Tilt	0.070	0.157	0.227

12.5 Body-Worn Simultaneous Transmission Analysis

Table 12.5.1 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 + 5.3 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.038	0.008	0.472	0.442	0.480
		Rear	0.642	0.087	0.235	0.729	0.877	**0.964**
	GPRS 850	Front	0.484	0.038	0.008	0.521	0.492	0.530
		Rear	0.726	0.087	0.235	0.813	0.961	**1.048**
	GSM 1900	Front	0.288	0.038	0.008	0.326	0.296	0.334
		Rear	0.235	0.087	0.235	0.322	0.471	**0.557**
	GPRS 1900	Front	0.322	0.038	0.008	0.360	0.330	0.368
		Rear	0.272	0.087	0.235	0.358	0.507	**0.594**
	WCDMA 850	Front	0.648	0.038	0.008	0.685	0.656	0.694
		Rear	0.873	0.087	0.235	0.959	1.108	**1.195**
	WCDMA 1900	Front	0.557	0.038	0.008	0.594	0.565	0.602
		Rear	0.484	0.087	0.235	0.571	0.720	**0.806**
	LTE Band 12	Front	0.322	0.038	0.008	0.360	0.330	0.368
		Rear	0.470	0.087	0.235	0.557	0.705	**0.792**
	LTE Band 5	Front	0.569	0.038	0.008	0.607	0.577	0.615
		Rear	0.591	0.087	0.235	0.677	0.826	**0.913**
	LTE Band 4	Front	0.473	0.038	0.008	0.510	0.480	0.519
		Rear	0.470	0.087	0.235	0.557	0.706	**0.792**
	LTE Band 2	Front	0.522	0.038	0.008	0.560	0.530	0.568
		Rear	0.495	0.087	0.235	0.582	0.730	**0.817**

Table 12.5.2 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1+ 5.6 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.038	0.018	0.472	0.452	0.490
		Rear	0.642	0.087	0.298	0.729	0.940	**1.027**
	GPRS 850	Front	0.484	0.038	0.018	0.522	0.502	0.540
		Rear	0.726	0.087	0.298	0.813	1.024	**1.111**
	GSM 1900	Front	0.288	0.038	0.018	0.326	0.306	0.344
		Rear	0.235	0.087	0.298	0.322	0.533	**0.620**
	GPRS 1900	Front	0.322	0.038	0.018	0.360	0.340	0.378
		Rear	0.272	0.087	0.298	0.359	0.570	**0.657**
	WCDMA 850	Front	0.648	0.038	0.018	0.686	0.666	0.704
		Rear	0.873	0.087	0.298	0.960	1.171	**1.258**
	WCDMA 1900	Front	0.557	0.038	0.018	0.594	0.575	0.613
		Rear	0.484	0.087	0.298	0.571	0.783	**0.869**
	LTE Band 12	Front	0.322	0.038	0.018	0.360	0.340	0.378
		Rear	0.470	0.087	0.298	0.557	0.768	**0.855**
	LTE Band 5	Front	0.569	0.038	0.018	0.607	0.587	0.625
		Rear	0.591	0.087	0.298	0.678	0.889	**0.976**
	LTE Band 4	Front	0.473	0.038	0.018	0.511	0.491	0.529
		Rear	0.470	0.087	0.298	0.557	0.768	**0.855**
	LTE Band 2	Front	0.522	0.038	0.018	0.560	0.540	0.578
		Rear	0.495	0.087	0.298	0.582	0.793	**0.880**

Table 12.5.3 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 + 5.8 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.038	0.033	0.472	0.467	0.505
		Rear	0.642	0.087	0.381	0.729	1.023	**1.110**
	GPRS 850	Front	0.484	0.038	0.033	0.522	0.517	0.555
		Rear	0.726	0.087	0.381	0.813	1.107	**1.194**
	GSM 1900	Front	0.288	0.038	0.033	0.326	0.321	0.359
		Rear	0.235	0.087	0.381	0.322	0.616	**0.703**
	GPRS 1900	Front	0.322	0.038	0.033	0.360	0.355	0.393
		Rear	0.272	0.087	0.381	0.359	0.653	**0.740**
	WCDMA 850	Front	0.648	0.038	0.033	0.686	0.681	0.719
		Rear	**0.873**	**0.087**	**0.381**	**0.960**	**1.254**	1.341
	WCDMA 1900	Front	0.557	0.038	0.033	0.594	0.589	0.627
		Rear	0.484	0.087	0.381	0.571	0.866	**0.952**
	LTE Band 12	Front	0.322	0.038	0.033	0.360	0.355	0.393
		Rear	0.470	0.087	0.381	0.557	0.851	**0.938**
	LTE Band 5	Front	0.569	0.038	0.033	0.607	0.602	0.640
		Rear	0.591	0.087	0.381	0.678	0.972	**1.059**
	LTE Band 4	Front	0.473	0.038	0.033	0.511	0.506	0.544
		Rear	0.470	0.087	0.381	0.557	0.851	**0.938**
	LTE Band 2	Front	0.522	0.038	0.033	0.560	0.555	0.593
		Rear	0.495	0.087	0.381	0.582	0.876	**0.963**

Table 12.5.4 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.074	0.446	0.508	0.520
		Rear	0.642	0.033	0.209	0.675	0.851	**0.884**
	GPRS 850	Front	0.484	0.012	0.074	0.496	0.558	0.570
		Rear	0.726	0.033	0.209	0.759	0.935	**0.968**
	GSM 1900	Front	0.288	0.012	0.074	0.300	0.362	0.374
		Rear	0.235	0.033	0.209	0.268	0.444	**0.477**
	GPRS 1900	Front	0.322	0.012	0.074	0.334	0.396	0.408
		Rear	0.272	0.033	0.209	0.305	0.481	**0.514**
	WCDMA 850	Front	0.648	0.012	0.074	0.660	0.722	0.734
		Rear	0.873	0.033	0.209	0.906	1.082	**1.115**
	WCDMA 1900	Front	0.557	0.012	0.074	0.569	0.631	0.643
		Rear	0.484	0.028	0.209	0.513	0.693	**0.722**
	LTE Band 12	Front	0.322	0.012	0.074	0.334	0.396	0.408
		Rear	0.470	0.033	0.209	0.503	0.679	**0.712**
	LTE Band 5	Front	0.569	0.012	0.074	0.581	0.643	0.655
		Rear	0.591	0.033	0.209	0.624	0.800	**0.833**
	LTE Band 4	Front	0.473	0.012	0.074	0.485	0.547	0.559
		Rear	0.470	0.033	0.209	0.503	0.679	**0.712**
	LTE Band 2	Front	0.522	0.012	0.074	0.534	0.596	0.608
		Rear	0.495	0.033	0.209	0.528	0.704	**0.737**

Table 12.5.5 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.008	0.446	0.442	0.454
		Rear	0.642	0.033	0.235	0.675	0.877	**0.910**
	GPRS 850	Front	0.484	0.012	0.008	0.496	0.492	0.504
		Rear	0.726	0.033	0.235	0.759	0.961	**0.994**
	GSM 1900	Front	0.288	0.012	0.008	0.300	0.296	0.308
		Rear	0.235	0.033	0.235	0.268	0.470	**0.503**
	GPRS 1900	Front	0.322	0.012	0.008	0.334	0.330	0.342
		Rear	0.272	0.033	0.235	0.305	0.507	**0.540**
	WCDMA 850	Front	0.648	0.012	0.008	0.660	0.656	0.668
		Rear	0.873	0.033	0.235	0.906	1.108	**1.141**
	WCDMA 1900	Front	0.557	0.012	0.008	0.569	0.565	0.576
		Rear	0.484	0.028	0.235	0.513	0.720	**0.748**
	LTE Band 12	Front	0.322	0.012	0.008	0.334	0.330	0.342
		Rear	0.470	0.033	0.235	0.503	0.705	**0.738**
	LTE Band 5	Front	0.569	0.012	0.008	0.581	0.577	0.589
		Rear	0.591	0.033	0.235	0.624	0.826	**0.859**
	LTE Band 4	Front	0.473	0.012	0.008	0.485	0.481	0.493
		Rear	0.470	0.033	0.235	0.503	0.705	**0.738**
	LTE Band 2	Front	0.522	0.012	0.008	0.534	0.530	0.542
		Rear	0.495	0.033	0.235	0.528	0.730	**0.763**

Table 12.5.6 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.3 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.3G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.064	0.446	0.498	0.510
		Rear	0.642	0.033	0.253	0.675	0.895	**0.928**
	GPRS 850	Front	0.484	0.012	0.064	0.496	0.548	0.560
		Rear	0.726	0.033	0.253	0.759	0.979	**1.012**
	GSM 1900	Front	0.288	0.012	0.064	0.300	0.352	0.364
		Rear	0.235	0.033	0.253	0.268	0.488	**0.521**
	GPRS 1900	Front	0.322	0.012	0.064	0.334	0.386	0.398
		Rear	0.272	0.033	0.253	0.305	0.525	**0.558**
	WCDMA 850	Front	0.648	0.012	0.064	0.660	0.712	0.724
		Rear	0.873	0.033	0.253	0.906	1.126	**1.159**
	WCDMA 1900	Front	0.557	0.012	0.064	0.569	0.621	0.633
		Rear	0.484	0.028	0.253	0.513	0.737	**0.765**
	LTE Band 12	Front	0.322	0.012	0.064	0.334	0.386	0.398
		Rear	0.470	0.033	0.253	0.503	0.723	**0.756**
	LTE Band 5	Front	0.569	0.012	0.064	0.581	0.633	0.645
		Rear	0.591	0.033	0.253	0.624	0.844	**0.877**
	LTE Band 4	Front	0.473	0.012	0.064	0.485	0.537	0.549
		Rear	0.470	0.033	0.253	0.503	0.723	**0.756**
	LTE Band 2	Front	0.522	0.012	0.064	0.534	0.586	0.598
		Rear	0.495	0.033	0.253	0.528	0.748	**0.781**

Table 12.5.7 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.058	0.446	0.492	0.504
		Rear	0.642	0.033	0.114	0.675	0.756	**0.789**
	GPRS 850	Front	0.484	0.012	0.058	0.496	0.542	0.554
		Rear	0.726	0.033	0.114	0.759	0.840	**0.873**
	GSM 1900	Front	0.288	0.012	0.058	0.300	0.346	0.358
		Rear	0.235	0.033	0.114	0.268	0.349	**0.382**
	GPRS 1900	Front	0.322	0.012	0.058	0.334	0.380	0.392
		Rear	0.272	0.033	0.114	0.305	0.386	**0.419**
	WCDMA 850	Front	0.648	0.012	0.058	0.660	0.706	0.718
		Rear	0.873	0.033	0.114	0.906	0.987	**1.020**
	WCDMA 1900	Front	0.557	0.012	0.058	0.569	0.614	0.626
		Rear	0.484	0.028	0.114	0.513	0.599	**0.627**
	LTE Band 12	Front	0.322	0.012	0.058	0.334	0.380	0.392
		Rear	0.470	0.033	0.114	0.503	0.584	**0.617**
	LTE Band 5	Front	0.569	0.012	0.058	0.581	0.627	0.639
		Rear	0.591	0.033	0.114	0.624	0.705	**0.738**
	LTE Band 4	Front	0.473	0.012	0.058	0.485	0.531	0.543
		Rear	0.470	0.033	0.114	0.503	0.584	**0.617**
	LTE Band 2	Front	0.522	0.012	0.058	0.534	0.580	0.592
		Rear	0.495	0.033	0.114	0.528	0.609	**0.642**

Table 12.5.8 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.018	0.446	0.452	0.464
		Rear	0.642	0.033	0.298	0.675	0.940	**0.973**
	GPRS 850	Front	0.484	0.012	0.018	0.496	0.502	0.514
		Rear	0.726	0.033	0.298	0.759	1.024	**1.057**
	GSM 1900	Front	0.288	0.012	0.018	0.300	0.306	0.318
		Rear	0.235	0.033	0.298	0.268	0.533	**0.566**
	GPRS 1900	Front	0.322	0.012	0.018	0.334	0.340	0.352
		Rear	0.272	0.033	0.298	0.305	0.570	**0.603**
	WCDMA 850	Front	0.648	0.012	0.018	0.660	0.666	0.678
		Rear	0.873	0.033	0.298	0.906	1.171	**1.204**
	WCDMA 1900	Front	0.557	0.012	0.018	0.569	0.575	0.587
		Rear	0.484	0.028	0.298	0.513	0.783	**0.811**
	LTE Band 12	Front	0.322	0.012	0.018	0.334	0.340	0.352
		Rear	0.470	0.033	0.298	0.503	0.768	**0.801**
	LTE Band 5	Front	0.569	0.012	0.018	0.581	0.587	0.599
		Rear	0.591	0.033	0.298	0.624	0.889	**0.922**
	LTE Band 4	Front	0.473	0.012	0.018	0.485	0.491	0.503
		Rear	0.470	0.033	0.298	0.503	0.768	**0.801**
	LTE Band 2	Front	0.522	0.012	0.018	0.534	0.540	0.552
		Rear	0.495	0.033	0.298	0.528	0.793	**0.826**

Table 12.5.9 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.6 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.6G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.035	0.446	0.469	0.481
		Rear	0.642	0.033	0.295	0.675	0.937	**0.970**
	GPRS 850	Front	0.484	0.012	0.035	0.496	0.519	0.531
		Rear	0.726	0.033	0.295	0.759	1.021	**1.054**
	GSM 1900	Front	0.288	0.012	0.035	0.300	0.323	0.335
		Rear	0.235	0.033	0.295	0.268	0.530	**0.563**
	GPRS 1900	Front	0.322	0.012	0.035	0.334	0.357	0.369
		Rear	0.272	0.033	0.295	0.305	0.567	**0.600**
	WCDMA 850	Front	0.648	0.012	0.035	0.660	0.683	0.695
		Rear	0.873	0.033	0.295	0.906	1.168	**1.201**
	WCDMA 1900	Front	0.557	0.012	0.035	0.569	0.592	0.604
		Rear	0.484	0.028	0.295	0.513	0.779	**0.808**
	LTE Band 12	Front	0.322	0.012	0.035	0.334	0.357	0.369
		Rear	0.470	0.033	0.295	0.503	0.765	**0.798**
	LTE Band 5	Front	0.569	0.012	0.035	0.581	0.604	0.616
		Rear	0.591	0.033	0.295	0.624	0.886	**0.919**
	LTE Band 4	Front	0.473	0.012	0.035	0.485	0.508	0.520
		Rear	0.470	0.033	0.295	0.503	0.765	**0.798**
	LTE Band 2	Front	0.522	0.012	0.035	0.534	0.557	0.569
		Rear	0.495	0.033	0.295	0.528	0.790	**0.823**

Table 12.5.10 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.036	0.446	0.470	0.482
		Rear	0.642	0.033	0.067	0.675	0.709	**0.742**
	GPRS 850	Front	0.484	0.012	0.036	0.496	0.520	0.532
		Rear	0.726	0.033	0.067	0.759	0.793	**0.826**
	GSM 1900	Front	0.288	0.012	0.036	0.300	0.324	**0.336**
		Rear	0.235	0.033	0.067	0.268	0.302	0.335
	GPRS 1900	Front	0.322	0.012	0.036	0.334	0.358	0.370
		Rear	0.272	0.033	0.067	0.305	0.339	**0.372**
	WCDMA 850	Front	0.648	0.012	0.036	0.660	0.684	0.696
		Rear	0.873	0.033	0.067	0.906	0.940	**0.973**
	WCDMA 1900	Front	0.557	0.012	0.036	0.569	0.593	**0.605**
		Rear	0.484	0.028	0.067	0.513	0.551	0.579
	LTE Band 12	Front	0.322	0.012	0.036	0.334	0.358	0.370
		Rear	0.470	0.033	0.067	0.503	0.537	**0.570**
	LTE Band 5	Front	0.569	0.012	0.036	0.581	0.605	0.617
		Rear	0.591	0.033	0.067	0.624	0.658	**0.691**
	LTE Band 4	Front	0.473	0.012	0.036	0.485	0.509	0.521
		Rear	0.470	0.033	0.067	0.503	0.537	**0.570**
	LTE Band 2	Front	0.522	0.012	0.036	0.534	0.558	0.570
		Rear	0.495	0.033	0.067	0.528	0.562	**0.595**

Table 12.5.11 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.033	0.446	0.467	0.479
		Rear	0.642	0.033	0.381	0.675	1.023	**1.056**
	GPRS 850	Front	0.484	0.012	0.033	0.496	0.517	0.529
		Rear	0.726	0.033	0.381	0.759	1.107	**1.140**
	GSM 1900	Front	0.288	0.012	0.033	0.300	0.321	0.333
		Rear	0.235	0.033	0.381	0.268	0.616	**0.649**
	GPRS 1900	Front	0.322	0.012	0.033	0.334	0.355	0.367
		Rear	0.272	0.033	0.381	0.305	0.653	**0.686**
	WCDMA 850	Front	0.648	0.012	0.033	0.660	0.681	0.693
		Rear	0.873	0.033	0.381	0.906	1.254	**1.287**
	WCDMA 1900	Front	0.557	0.012	0.033	0.569	0.589	0.601
		Rear	0.484	0.028	0.381	0.513	0.866	**0.894**
	LTE Band 12	Front	0.322	0.012	0.033	0.334	0.355	0.367
		Rear	0.470	0.033	0.381	0.503	0.851	**0.884**
	LTE Band 5	Front	0.569	0.012	0.033	0.581	0.602	0.614
		Rear	0.591	0.033	0.381	0.624	0.972	**1.005**
	LTE Band 4	Front	0.473	0.012	0.033	0.485	0.506	0.518
		Rear	0.470	0.033	0.381	0.503	0.851	**0.884**
	LTE Band 2	Front	0.522	0.012	0.033	0.534	0.555	0.567
		Rear	0.495	0.033	0.381	0.528	0.876	**0.909**

Table 12.5.12 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.027	0.446	0.461	0.473
		Rear	0.642	0.033	0.326	0.675	0.968	**1.001**
	GPRS 850	Front	0.484	0.012	0.027	0.496	0.511	0.523
		Rear	0.726	0.033	0.326	0.759	1.052	**1.085**
	GSM 1900	Front	0.288	0.012	0.027	0.300	0.315	0.327
		Rear	0.235	0.033	0.326	0.268	0.561	**0.594**
	GPRS 1900	Front	0.322	0.012	0.027	0.334	0.349	0.361
		Rear	0.272	0.033	0.326	0.305	0.598	**0.631**
	WCDMA 850	Front	0.648	0.012	0.027	0.660	0.675	0.687
		Rear	0.873	0.033	0.326	0.906	1.199	**1.232**
	WCDMA 1900	Front	0.557	0.012	0.027	0.569	0.583	0.595
		Rear	0.484	0.028	0.326	0.513	0.810	**0.838**
	LTE Band 12	Front	0.322	0.012	0.027	0.334	0.349	0.361
		Rear	0.470	0.033	0.326	0.503	0.796	**0.829**
	LTE Band 5	Front	0.569	0.012	0.027	0.581	0.596	0.608
		Rear	0.591	0.033	0.326	0.624	0.917	**0.950**
	LTE Band 4	Front	0.473	0.012	0.027	0.485	0.500	0.512
		Rear	0.470	0.033	0.326	0.503	0.796	**0.829**
	LTE Band 2	Front	0.522	0.012	0.027	0.534	0.549	0.561
		Rear	0.495	0.033	0.326	0.528	0.821	**0.854**

Table 12.5.13 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.038	0.472
		Rear	0.642	0.087	**0.729**
	GPRS 850	Front	0.484	0.038	0.522
		Rear	0.726	0.087	**0.813**
	GSM 1900	Front	0.288	0.038	**0.326**
		Rear	0.235	0.087	0.322
	GPRS 1900	Front	0.322	0.038	0.360
		Rear	0.272	0.087	*0.359*
	WCDMA 850	Front	0.648	0.038	0.686
		Rear	0.873	0.087	*0.960*
	WCDMA 1900	Front	0.557	0.038	**0.594**
		Rear	0.484	0.087	0.571
	LTE Band 12	Front	0.322	0.038	0.360
		Rear	0.470	0.087	**0.557**
	LTE Band 5	Front	0.569	0.038	0.607
		Rear	0.591	0.087	**0.678**
	LTE Band 4	Front	0.473	0.038	0.511
		Rear	0.470	0.087	**0.557**
	LTE Band 2	Front	0.522	0.038	0.560
		Rear	0.495	0.087	**0.582**

Table 12.5.14 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.058	0.492
		Rear	0.642	0.168	**0.810**
	GPRS 850	Front	0.484	0.058	0.542
		Rear	0.726	0.168	**0.894**
	GSM 1900	Front	0.288	0.058	0.346
		Rear	0.235	0.168	**0.403**
	GPRS 1900	Front	0.322	0.058	0.380
		Rear	0.272	0.168	**0.440**
	WCDMA 850	Front	0.648	0.058	0.706
		Rear	0.873	0.168	**1.041**
	WCDMA 1900	Front	0.557	0.058	0.615
		Rear	0.484	0.168	**0.653**
	LTE Band 12	Front	0.322	0.058	0.380
		Rear	0.470	0.168	**0.638**
	LTE Band 5	Front	0.569	0.058	**0.627**
		Rear	0.591	0.168	0.759
	LTE Band 4	Front	0.473	0.058	0.531
		Rear	0.470	0.168	**0.638**
	LTE Band 2	Front	0.522	0.058	0.580
		Rear	0.495	0.168	**0.663**

Table 12.5.15 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.068	0.502
		Rear	0.642	0.270	**0.912**
	GPRS 850	Front	0.484	0.068	0.552
		Rear	0.726	0.270	**0.996**
	GSM 1900	Front	0.288	0.068	0.356
		Rear	0.235	0.270	**0.505**
	GPRS 1900	Front	0.322	0.068	0.390
		Rear	0.272	0.270	**0.542**
	WCDMA 850	Front	0.648	0.068	0.716
		Rear	0.873	0.270	**1.143**
	WCDMA 1900	Front	0.557	0.068	0.625
		Rear	0.484	0.270	**0.755**
	LTE Band 12	Front	0.322	0.068	0.390
		Rear	0.470	0.270	**0.740**
	LTE Band 5	Front	0.569	0.068	0.637
		Rear	0.591	0.270	**0.861**
	LTE Band 4	Front	0.473	0.068	0.541
		Rear	0.470	0.270	**0.740**
	LTE Band 2	Front	0.522	0.068	0.590
		Rear	0.495	0.270	**0.765**

Table 12.5.16 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.074	0.508
		Rear	0.642	0.209	**0.851**
	GPRS 850	Front	0.484	0.074	0.558
		Rear	0.726	0.209	**0.935**
	GSM 1900	Front	0.288	0.074	0.362
		Rear	0.235	0.209	**0.444**
	GPRS 1900	Front	0.322	0.074	0.396
		Rear	0.272	0.209	**0.481**
	WCDMA 850	Front	0.648	0.074	0.722
		Rear	0.873	0.209	**1.082**
	WCDMA 1900	Front	0.557	0.074	0.631
		Rear	0.484	0.209	**0.693**
	LTE Band 12	Front	0.322	0.074	0.396
		Rear	0.470	0.209	**0.679**
	LTE Band 5	Front	0.569	0.074	0.643
		Rear	0.591	0.209	**0.800**
	LTE Band 4	Front	0.473	0.074	0.547
		Rear	0.470	0.209	**0.679**
	LTE Band 2	Front	0.522	0.074	0.596
		Rear	0.495	0.209	**0.704**

Table 12.5.17 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.008	0.442
		Rear	0.642	0.235	**0.877**
	GPRS 850	Front	0.484	0.008	0.492
		Rear	0.726	0.235	**0.961**
	GSM 1900	Front	0.288	0.008	0.296
		Rear	0.235	0.235	**0.470**
	GPRS 1900	Front	0.322	0.008	0.330
		Rear	0.272	0.235	**0.507**
	WCDMA 850	Front	0.648	0.008	0.656
		Rear	0.873	0.235	**1.108**
	WCDMA 1900	Front	0.557	0.008	0.565
		Rear	0.484	0.235	**0.720**
	LTE Band 12	Front	0.322	0.008	0.330
		Rear	0.470	0.235	**0.705**
	LTE Band 5	Front	0.569	0.008	0.577
		Rear	0.591	0.235	**0.826**
	LTE Band 4	Front	0.473	0.008	0.481
		Rear	0.470	0.235	**0.705**
	LTE Band 2	Front	0.522	0.008	0.530
		Rear	0.495	0.235	**0.730**

Table 12.5.18 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.064	0.498
		Rear	0.642	0.253	**0.895**
	GPRS 850	Front	0.484	0.064	0.548
		Rear	0.726	0.253	**0.979**
	GSM 1900	Front	0.288	0.064	0.352
		Rear	0.235	0.253	**0.488**
	GPRS 1900	Front	0.322	0.064	0.386
		Rear	0.272	0.253	**0.525**
	WCDMA 850	Front	0.648	0.064	0.712
		Rear	0.873	0.253	**1.126**
	WCDMA 1900	Front	0.557	0.064	0.621
		Rear	0.484	0.253	**0.737**
	LTE Band 12	Front	0.322	0.064	0.386
		Rear	0.470	0.253	**0.723**
	LTE Band 5	Front	0.569	0.064	0.633
		Rear	0.591	0.253	**0.844**
	LTE Band 4	Front	0.473	0.064	0.537
		Rear	0.470	0.253	**0.723**
	LTE Band 2	Front	0.522	0.064	0.586
		Rear	0.495	0.253	**0.748**

Table 12.5.19 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.058	0.492
		Rear	0.642	0.114	**0.756**
	GPRS 850	Front	0.484	0.058	0.542
		Rear	0.726	0.114	**0.840**
	GSM 1900	Front	0.288	0.058	0.346
		Rear	0.235	0.114	**0.349**
	GPRS 1900	Front	0.322	0.058	0.380
		Rear	0.272	0.114	**0.386**
	WCDMA 850	Front	0.648	0.058	0.706
		Rear	0.873	0.114	**0.987**
	WCDMA 1900	Front	0.557	0.058	**0.614**
		Rear	0.484	0.114	0.599
	LTE Band 12	Front	0.322	0.058	0.380
		Rear	0.470	0.114	**0.584**
	LTE Band 5	Front	0.569	0.058	0.627
		Rear	0.591	0.114	**0.705**
	LTE Band 4	Front	0.473	0.058	0.531
		Rear	0.470	0.114	**0.584**
	LTE Band 2	Front	0.522	0.058	0.580
		Rear	0.495	0.114	**0.609**

Table 12.5.20 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.018	0.452
		Rear	0.642	0.298	**0.940**
	GPRS 850	Front	0.484	0.018	0.502
		Rear	0.726	0.298	**1.024**
	GSM 1900	Front	0.288	0.018	0.306
		Rear	0.235	0.298	**0.533**
	GPRS 1900	Front	0.322	0.018	0.340
		Rear	0.272	0.298	**0.570**
	WCDMA 850	Front	0.648	0.018	0.666
		Rear	0.873	0.298	**1.171**
	WCDMA 1900	Front	0.557	0.018	0.575
		Rear	0.484	0.298	**0.783**
	LTE Band 12	Front	0.322	0.018	0.340
		Rear	0.470	0.298	**0.768**
	LTE Band 5	Front	0.569	0.018	0.587
		Rear	0.591	0.298	**0.889**
	LTE Band 4	Front	0.473	0.018	0.491
		Rear	0.470	0.298	**0.768**
	LTE Band 2	Front	0.522	0.018	0.540
		Rear	0.495	0.298	**0.793**

Table 12.5.21 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.035	0.469
		Rear	0.642	0.295	**0.937**
	GPRS 850	Front	0.484	0.035	0.519
		Rear	0.726	0.295	**1.021**
	GSM 1900	Front	0.288	0.035	0.323
		Rear	0.235	0.295	**0.530**
	GPRS 1900	Front	0.322	0.035	0.357
		Rear	0.272	0.295	**0.567**
	WCDMA 850	Front	0.648	0.035	0.683
		Rear	0.873	0.295	**1.168**
	WCDMA 1900	Front	0.557	0.035	0.592
		Rear	0.484	0.295	**0.779**
	LTE Band 12	Front	0.322	0.035	0.357
		Rear	0.470	0.295	**0.765**
	LTE Band 5	Front	0.569	0.035	0.604
		Rear	0.591	0.295	**0.886**
	LTE Band 4	Front	0.473	0.035	0.508
		Rear	0.470	0.295	**0.765**
	LTE Band 2	Front	0.522	0.035	0.557
		Rear	0.495	0.295	**0.790**

Table 12.5.22 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.036	0.470
		Rear	0.642	0.067	**0.709**
	GPRS 850	Front	0.484	0.036	0.520
		Rear	0.726	0.067	**0.793**
	GSM 1900	Front	0.288	0.036	**0.324**
		Rear	0.235	0.067	0.302
	GPRS 1900	Front	0.322	0.036	**0.358**
		Rear	0.272	0.067	0.339
	WCDMA 850	Front	0.648	0.036	0.684
		Rear	0.873	0.067	**0.940**
	WCDMA 1900	Front	0.557	0.036	**0.593**
		Rear	0.484	0.067	0.551
	LTE Band 12	Front	0.322	0.036	0.358
		Rear	0.470	0.067	**0.537**
	LTE Band 5	Front	0.569	0.036	0.605
		Rear	0.591	0.067	**0.658**
	LTE Band 4	Front	0.473	0.036	0.509
		Rear	0.470	0.067	**0.537**
	LTE Band 2	Front	0.522	0.036	0.558
		Rear	0.495	0.067	**0.562**

Table 12.5.23 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.033	0.467
		Rear	0.642	0.381	**1.023**
	GPRS 850	Front	0.484	0.033	0.517
		Rear	0.726	0.381	**1.107**
	GSM 1900	Front	0.288	0.033	0.321
		Rear	0.235	0.381	**0.616**
	GPRS 1900	Front	0.322	0.033	0.355
		Rear	0.272	0.381	**0.653**
	WCDMA 850	Front	0.648	0.033	0.681
		Rear	0.873	0.381	**1.254**
	WCDMA 1900	Front	0.557	0.033	0.589
		Rear	0.484	0.381	**0.866**
	LTE Band 12	Front	0.322	0.033	0.355
		Rear	0.470	0.381	**0.851**
	LTE Band 5	Front	0.569	0.033	0.602
		Rear	0.591	0.381	**0.972**
	LTE Band 4	Front	0.473	0.033	0.506
		Rear	0.470	0.381	**0.851**
	LTE Band 2	Front	0.522	0.033	0.555
		Rear	0.495	0.381	**0.876**

Table 12.5.24 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.027	0.461
		Rear	0.642	0.326	**0.968**
	GPRS 850	Front	0.484	0.027	0.511
		Rear	0.726	0.326	**1.052**
	GSM 1900	Front	0.288	0.027	0.315
		Rear	0.235	0.326	**0.561**
	GPRS 1900	Front	0.322	0.027	0.349
		Rear	0.272	0.326	**0.598**
	WCDMA 850	Front	0.648	0.027	0.675
		Rear	0.873	0.326	**1.199**
	WCDMA 1900	Front	0.557	0.027	0.583
		Rear	0.484	0.326	**0.810**
	LTE Band 12	Front	0.322	0.027	0.349
		Rear	0.470	0.326	**0.796**
	LTE Band 5	Front	0.569	0.027	0.596
		Rear	0.591	0.326	**0.917**
	LTE Band 4	Front	0.473	0.027	0.500
		Rear	0.470	0.326	**0.796**
	LTE Band 2	Front	0.522	0.027	0.549
		Rear	0.495	0.326	**0.821**

Table 12.5.25 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.434	0.012	0.446
		Rear	0.642	0.033	**0.675**
	GPRS 850	Front	0.484	0.012	0.496
		Rear	0.726	0.033	**0.759**
	GSM 1900	Front	0.288	0.012	**0.300**
		Rear	0.235	0.033	0.268
	GPRS 1900	Front	0.322	0.012	**0.334**
		Rear	0.272	0.033	0.305
	WCDMA 850	Front	0.648	0.012	0.660
		Rear	0.873	0.033	**0.906**
	WCDMA 1900	Front	0.557	0.012	**0.569**
		Rear	0.484	0.028	0.513
	LTE Band 12	Front	0.322	0.012	0.334
		Rear	0.470	0.033	**0.503**
	LTE Band 5	Front	0.569	0.012	0.581
		Rear	0.591	0.033	**0.624**
	LTE Band 4	Front	0.473	0.012	0.485
		Rear	0.470	0.033	**0.503**
	LTE Band 2	Front	0.522	0.012	**0.534**
		Rear	0.495	0.033	0.528

Table 12.5.26 Simultaneous Transmission Scenario : 2.4 GHz W-LAN Ant.1 + 5 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2.4G W-LAN Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	5.3G W-LAN Ant.2	Front	0.038	0.008	0.046
		Rear	0.087	0.235	**0.322**
	5.6G W-LAN Ant.2	Front	0.038	0.018	0.056
		Rear	0.087	0.298	**0.385**
	5.8G W-LAN Ant.2	Front	0.038	0.033	0.071
		Rear	0.087	0.381	**0.468**

Table 12.5.27 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.1 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	5.3G W-LAN Ant.1	Front	0.012	0.074	0.086
		Rear	0.033	0.209	**0.242**
	5.6G W-LAN Ant.1	Front	0.012	0.058	0.070
		Rear	0.033	0.114	**0.147**
	5.8G W-LAN Ant.1	Front	0.012	0.036	0.048
		Rear	0.033	0.067	**0.100**

Table 12.5.28 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	5.3G W-LAN Ant.2	Front	0.012	0.008	0.020
		Rear	0.033	0.235	**0.268**
	5.6G W-LAN Ant.2	Front	0.012	0.018	0.030
		Rear	0.033	0.298	**0.331**
	5.8G W-LAN Ant.2	Front	0.012	0.033	0.045
		Rear	0.033	0.381	**0.414**

Table 12.5.29 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN MIMO (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	5.3G W-LAN MIMO	Front	0.012	0.064	0.076
		Rear	0.033	0.253	**0.286**
	5.6G W-LAN MIMO	Front	0.012	0.035	0.047
		Rear	0.033	0.295	**0.328**
	5.8G W-LAN MIMO	Front	0.012	0.027	0.039
		Rear	0.033	0.326	**0.359**

12.6 Hotspot SAR Simultaneous Transmission Analysis

Per FCC KDB Publication 941225 D06v02r01, the device edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("-").

Table 12.6.1 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1+ 5.2 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.2G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.038	0.007	0.522	0.491	0.529
		Rear	0.726	0.087	0.186	0.813	0.912	**0.999**
		Right	0.392	0.034	0.051	0.426	0.443	0.477
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.038	0.007	0.360	0.329	0.367
		Rear	0.272	0.087	0.186	0.359	0.458	**0.545**
		Right	-	0.034	0.051	0.034	0.051	0.085
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.038	0.007	0.686	0.655	0.693
		Rear	0.873	0.087	0.186	0.960	1.059	**1.146**
		Right	0.566	0.034	0.051	0.600	0.617	0.651
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.038	0.007	0.594	0.564	0.602
		Rear	0.484	0.087	0.186	0.571	0.671	0.757
		Right	-	0.034	0.051	0.034	0.051	0.085
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.038	0.007	0.360	0.329	0.367
		Rear	0.470	0.087	0.186	0.557	0.656	**0.743**
		Right	0.214	0.034	0.051	0.248	0.265	0.299
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.038	0.007	0.607	0.576	0.614
		Rear	0.591	0.087	0.186	0.678	0.777	**0.864**
		Right	0.429	0.034	0.051	0.463	0.480	0.514
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.038	0.007	0.511	0.480	0.518
		Rear	0.470	0.087	0.186	0.557	0.656	**0.743**
		Right	-	0.034	0.051	0.034	0.051	0.085
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.049	< 0.001	0.049	< 0.001	0.049
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.038	0.007	0.560	0.529	0.567
		Rear	0.495	0.087	0.186	0.582	0.681	0.768
		Right	-	0.034	0.051	0.034	0.051	0.085
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.2 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 + 5.8 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.038	0.033	0.522	0.517	0.555
		Rear	0.726	0.087	0.381	0.813	1.107	**1.194**
		Right	0.392	0.034	0.163	0.426	0.555	0.589
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.038	0.033	0.360	0.355	0.393
		Rear	0.272	0.087	0.381	0.359	0.653	**0.740**
		Right	-	0.034	0.163	0.034	0.163	0.197
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.038	0.033	0.686	0.681	0.719
		Rear	**0.873**	**0.087**	**0.381**	**0.960**	**1.254**	**1.341**
		Right	0.566	0.034	0.163	0.600	0.729	0.763
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.861	-	-	0.861	0.861	0.861
		Front	0.557	0.038	0.033	0.594	0.589	0.627
		Rear	0.484	0.087	0.381	0.571	0.866	**0.952**
		Right	-	0.034	0.163	0.034	0.163	0.197
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.038	0.033	0.360	0.355	0.393
		Rear	0.470	0.087	0.381	0.557	0.851	**0.938**
		Right	0.214	0.034	0.163	0.248	0.377	0.411
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.038	0.033	0.607	0.602	0.640
		Rear	0.591	0.087	0.381	0.678	0.972	**1.059**
		Right	0.429	0.034	0.163	0.463	0.592	0.626
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.038	0.033	0.511	0.506	0.544
		Rear	0.470	0.087	0.381	0.557	0.851	**0.938**
		Right	-	0.034	0.163	0.034	0.163	0.197
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.049	0.006	0.049	0.006	0.055
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.038	0.033	0.560	0.555	0.593
		Rear	0.495	0.087	0.381	0.582	0.876	0.963
		Right	-	0.034	0.163	0.034	0.163	0.197
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.3 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.2 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.2G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.091	0.496	0.575	0.587
		Rear	0.726	0.033	0.202	0.759	0.928	**0.961**
		Right	0.392	0.007	0.185	0.399	0.577	0.584
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.012	0.091	0.334	0.413	0.425
		Rear	0.272	0.033	0.202	0.305	0.474	**0.507**
		Right	-	0.007	0.185	0.007	0.185	0.192
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.091	0.660	0.739	0.751
		Rear	0.873	0.033	0.202	0.906	1.075	**1.108**
		Right	0.566	0.007	0.185	0.573	0.751	0.758
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	0.056	0.012	0.056	0.067
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.012	0.091	0.569	0.647	0.659
		Rear	0.484	0.033	0.202	0.517	0.687	0.719
		Right	-	0.007	0.185	0.007	0.185	0.192
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.091	0.334	0.413	0.425
		Rear	0.470	0.033	0.202	0.503	0.672	**0.705**
		Right	0.214	0.007	0.185	0.221	0.399	0.406
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.091	0.581	0.660	0.672
		Rear	0.591	0.033	0.202	0.624	0.793	**0.826**
		Right	0.429	0.007	0.185	0.436	0.614	0.621
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.012	0.091	0.485	0.564	0.576
		Rear	0.470	0.033	0.202	0.503	0.672	**0.705**
		Right	-	0.007	0.185	0.007	0.185	0.192
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.091	0.534	0.613	0.625
		Rear	0.495	0.033	0.202	0.528	0.697	0.730
		Right	-	0.007	0.185	0.007	0.185	0.192
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.4 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.2 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.2G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.007	0.496	0.491	0.503
		Rear	0.726	0.033	0.186	0.759	0.912	**0.945**
		Right	0.392	0.007	0.051	0.399	0.443	0.450
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.496	-	-	0.496	0.496	**0.496**
		Front	0.322	0.012	0.007	0.334	0.329	0.341
		Rear	0.272	0.033	0.186	0.305	0.458	0.491
		Right	-	0.007	0.051	0.007	0.051	0.058
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.007	0.660	0.655	0.667
		Rear	0.873	0.033	0.186	0.906	1.059	**1.092**
		Right	0.566	0.007	0.051	0.573	0.617	0.624
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.012	0.007	0.569	0.564	0.576
		Rear	0.484	0.033	0.186	0.517	0.671	0.703
		Right	-	0.007	0.051	0.007	0.051	0.058
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.007	0.334	0.329	0.341
		Rear	0.470	0.033	0.186	0.503	0.656	**0.689**
		Right	0.214	0.007	0.051	0.221	0.265	0.272
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.007	0.581	0.576	0.588
		Rear	0.591	0.033	0.186	0.624	0.777	**0.810**
		Right	0.429	0.007	0.051	0.436	0.480	0.487
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.012	0.007	0.485	0.480	0.492
		Rear	0.470	0.033	0.186	0.503	0.656	**0.689**
		Right	-	0.007	0.051	0.007	0.051	0.058
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	< 0.001	0.012	< 0.001	0.012
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.007	0.534	0.529	0.541
		Rear	0.495	0.033	0.186	0.528	0.681	0.714
		Right	-	0.007	0.051	0.007	0.051	0.058
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.5 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.2 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.2G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.088	0.496	0.572	0.584
		Rear	0.726	0.033	0.195	0.759	0.921	**0.954**
		Right	0.392	0.007	0.186	0.399	0.578	0.585
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.012	0.088	0.334	0.410	0.422
		Rear	0.272	0.033	0.195	0.305	0.467	**0.500**
		Right	-	0.007	0.186	0.007	0.186	0.193
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.088	0.660	0.736	0.748
		Rear	0.873	0.033	0.195	0.906	1.068	**1.101**
		Right	0.566	0.007	0.186	0.573	0.752	0.759
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.012	0.088	0.569	0.644	0.656
		Rear	0.484	0.033	0.195	0.517	0.679	0.712
		Right	-	0.007	0.186	0.007	0.186	0.193
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.088	0.334	0.410	0.422
		Rear	0.470	0.033	0.195	0.503	0.665	**0.698**
		Right	0.214	0.007	0.186	0.221	0.400	0.407
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.088	0.581	0.657	0.669
		Rear	0.591	0.033	0.195	0.624	0.786	**0.819**
		Right	0.429	0.007	0.186	0.436	0.615	0.622
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.012	0.088	0.485	0.561	0.573
		Rear	0.470	0.033	0.195	0.503	0.665	**0.698**
		Right	-	0.007	0.186	0.007	0.186	0.193
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	0.056	0.012	0.056	0.068
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.088	0.534	0.610	0.622
		Rear	0.495	0.033	0.195	0.528	0.690	0.723
		Right	-	0.007	0.186	0.007	0.186	0.193
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.6 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.036	0.496	0.520	0.532
		Rear	0.726	0.033	0.067	0.759	0.793	**0.826**
		Right	0.392	0.007	0.021	0.399	0.413	0.420
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.496	-	-	0.496	0.496	**0.496**
		Front	0.322	0.012	0.036	0.334	0.358	0.370
		Rear	0.272	0.033	0.067	0.305	0.339	0.372
		Right	-	0.007	0.021	0.007	0.021	0.028
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.036	0.660	0.684	0.696
		Rear	0.873	0.033	0.067	0.906	0.940	**0.973**
		Right	0.566	0.007	0.021	0.573	0.587	0.594
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.012	0.036	0.569	0.593	0.605
		Rear	0.484	0.033	0.067	0.517	0.551	0.584
		Right	-	0.007	0.021	0.007	0.021	0.028
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.036	0.334	0.358	0.370
		Rear	0.470	0.033	0.067	0.503	0.537	**0.570**
		Right	0.214	0.007	0.021	0.221	0.235	0.242
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.036	0.581	0.605	0.617
		Rear	0.591	0.033	0.067	0.624	0.658	**0.691**
		Right	0.429	0.007	0.021	0.436	0.450	0.457
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	0.646	-	-	0.646	0.646	**0.646**
		Front	0.473	0.012	0.036	0.485	0.509	0.521
		Rear	0.470	0.033	0.067	0.503	0.537	0.570
		Right	-	0.007	0.021	0.007	0.021	0.028
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	0.024	0.012	0.024	0.036
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.036	0.534	0.558	0.570
		Rear	0.495	0.033	0.067	0.528	0.562	0.595
		Right	-	0.007	0.021	0.007	0.021	0.028
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.7 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.033	0.496	0.517	0.529
		Rear	0.726	0.033	0.381	0.759	1.107	**1.140**
		Right	0.392	0.007	0.163	0.399	0.555	0.562
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.012	0.033	0.334	0.355	0.367
		Rear	0.272	0.033	0.381	0.305	0.653	**0.686**
		Right	-	0.007	0.163	0.007	0.163	0.170
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.033	0.660	0.681	0.693
		Rear	0.873	0.033	0.381	0.906	1.254	**1.287**
		Right	0.566	0.007	0.163	0.573	0.729	0.736
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.861	-	-	0.861	0.861	0.861
		Front	0.557	0.012	0.033	0.569	0.589	0.601
		Rear	0.484	0.033	0.381	0.517	0.866	**0.898**
		Right	-	0.007	0.163	0.007	0.163	0.170
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.033	0.334	0.355	0.367
		Rear	0.470	0.033	0.381	0.503	0.851	**0.884**
		Right	0.214	0.007	0.163	0.221	0.377	0.384
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.033	0.581	0.602	0.614
		Rear	0.591	0.033	0.381	0.624	0.972	**1.005**
		Right	0.429	0.007	0.163	0.436	0.592	0.599
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.012	0.033	0.485	0.506	0.518
		Rear	0.470	0.033	0.381	0.503	0.851	**0.884**
		Right	-	0.007	0.163	0.007	0.163	0.170
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	0.006	0.012	0.006	0.018
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.033	0.534	0.555	0.567
		Rear	0.495	0.033	0.381	0.528	0.876	0.909
		Right	-	0.007	0.163	0.007	0.163	0.170
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.8 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 5.8 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.230	-	-	0.230	0.230	0.230
		Front	0.484	0.012	0.027	0.496	0.511	0.523
		Rear	0.726	0.033	0.326	0.759	1.052	**1.085**
		Right	0.392	0.007	0.167	0.399	0.559	0.566
		Left	-	-	-	-	-	-
	GPRS 1900	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.496	-	-	0.496	0.496	0.496
		Front	0.322	0.012	0.027	0.334	0.349	0.361
		Rear	0.272	0.033	0.326	0.305	0.598	**0.631**
		Right	-	0.007	0.167	0.007	0.167	0.173
		Left	0.090	-	-	0.090	0.090	0.090
	WCDMA 850	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.303	-	-	0.303	0.303	0.303
		Front	0.648	0.012	0.027	0.660	0.675	0.687
		Rear	0.873	0.033	0.326	0.906	1.199	**1.232**
		Right	0.566	0.007	0.167	0.573	0.733	0.740
		Left	-	-	-	-	-	-
	WCDMA 1900	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.861	-	-	0.861	0.861	**0.861**
		Front	0.557	0.012	0.027	0.569	0.583	0.595
		Rear	0.484	0.033	0.257	0.517	0.742	0.774
		Right	-	0.007	0.167	0.007	0.167	0.173
		Left	0.222	-	-	0.222	0.222	0.222
	LTE Band 12	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.103	-	-	0.103	0.103	0.103
		Front	0.322	0.012	0.027	0.334	0.349	0.361
		Rear	0.470	0.033	0.326	0.503	0.796	**0.829**
		Right	0.214	0.007	0.167	0.221	0.381	0.388
		Left	-	-	-	-	-	-
	LTE Band 5	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.278	-	-	0.278	0.278	0.278
		Front	0.569	0.012	0.027	0.581	0.596	0.608
		Rear	0.591	0.033	0.326	0.624	0.917	**0.950**
		Right	0.429	0.007	0.167	0.436	0.596	0.603
		Left	-	-	-	-	-	-
	LTE Band 4	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	0.646	-	-	0.646	0.646	0.646
		Front	0.473	0.012	0.027	0.485	0.500	0.512
		Rear	0.470	0.033	0.326	0.503	0.796	**0.829**
		Right	-	0.007	0.167	0.007	0.167	0.173
		Left	0.171	-	-	0.171	0.171	0.171
	LTE Band 2	Top	-	0.012	0.017	0.012	0.017	0.029
		Bottom	1.058	-	-	1.058	1.058	**1.058**
		Front	0.522	0.012	0.027	0.534	0.549	0.561
		Rear	0.495	0.033	0.326	0.528	0.821	0.854
		Right	-	0.007	0.167	0.007	0.167	0.173
		Left	0.183	-	-	0.183	0.183	0.183

Table 12.6.9 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.049	0.049
		Bottom	0.230	-	0.230
		Front	0.484	0.038	0.522
		Rear	0.726	0.087	**0.813**
		Right	0.392	0.034	0.426
		Left	-	-	-
	GPRS 1900	Top	-	0.049	0.049
		Bottom	0.496	-	**0.496**
		Front	0.322	0.038	0.360
		Rear	0.272	0.087	0.359
		Right	-	0.034	0.034
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.049	0.049
		Bottom	0.303	-	0.303
		Front	0.648	0.038	0.686
		Rear	0.873	0.087	**0.960**
		Right	0.566	0.034	0.600
		Left	-	-	-
	WCDMA 1900	Top	-	0.049	0.049
		Bottom	0.861	-	**0.861**
		Front	0.557	0.038	0.594
		Rear	0.484	0.087	0.571
		Right	-	0.034	0.034
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.049	0.049
		Bottom	0.103	-	0.103
		Front	0.322	0.038	0.360
		Rear	0.470	0.087	**0.557**
		Right	0.214	0.034	0.248
		Left	-	-	-
	LTE Band 5	Top	-	0.049	0.049
		Bottom	0.278	-	0.278
		Front	0.569	0.038	0.607
		Rear	0.591	0.087	**0.678**
		Right	0.429	0.034	0.463
		Left	-	-	-
	LTE Band 4	Top	-	0.049	0.049
		Bottom	0.646	-	**0.646**
		Front	0.473	0.038	0.511
		Rear	0.470	0.087	0.557
		Right	-	0.034	0.034
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.049	0.049
		Bottom	1.058	-	**1.058**
		Front	0.522	0.038	0.560
		Rear	0.495	0.087	0.582
		Right	-	0.034	0.034
		Left	0.183	-	0.183

Table 12.6.10 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.020	0.020
		Bottom	0.230	-	0.230
		Front	0.484	0.058	0.542
		Rear	0.726	0.168	**0.894**
		Right	0.392	0.109	0.501
		Left	-	-	-
	GPRS 1900	Top	-	0.020	0.020
		Bottom	0.496	-	**0.496**
		Front	0.322	0.058	0.380
		Rear	0.272	0.168	0.440
		Right	-	0.109	0.109
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.020	0.020
		Bottom	0.303	-	0.303
		Front	0.648	0.058	0.706
		Rear	0.873	0.168	**1.041**
		Right	0.566	0.109	0.675
		Left	-	-	-
	WCDMA 1900	Top	-	0.020	0.020
		Bottom	0.861	-	**0.861**
		Front	0.557	0.058	0.615
		Rear	0.484	0.168	0.653
		Right	-	0.109	0.109
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.020	0.020
		Bottom	0.103	-	0.103
		Front	0.322	0.058	0.380
		Rear	0.470	0.168	**0.638**
		Right	0.214	0.109	0.323
		Left	-	-	-
	LTE Band 5	Top	-	0.020	0.020
		Bottom	0.278	-	0.278
		Front	0.569	0.058	0.627
		Rear	0.591	0.168	**0.759**
		Right	0.429	0.109	0.538
		Left	-	-	-
	LTE Band 4	Top	-	0.020	0.020
		Bottom	0.646	-	**0.646**
		Front	0.473	0.058	0.531
		Rear	0.470	0.168	0.638
		Right	-	0.109	0.109
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.020	0.020
		Bottom	1.058	-	**1.058**
		Front	0.522	0.058	0.580
		Rear	0.495	0.168	0.663
		Right	-	0.109	0.109
		Left	0.183	-	0.183

Table 12.6.11 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.065	0.065
		Bottom	0.230	-	0.230
		Front	0.484	0.068	0.552
		Rear	0.726	0.270	**0.996**
		Right	0.392	0.119	0.511
		Left	-	-	-
	GPRS 1900	Top	-	0.065	0.065
		Bottom	0.496	-	0.496
		Front	0.322	0.068	0.390
		Rear	0.272	0.270	**0.542**
		Right	-	0.119	0.119
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.065	0.065
		Bottom	0.303	-	0.303
		Front	0.648	0.068	0.716
		Rear	0.873	0.270	**1.143**
		Right	0.566	0.119	0.685
		Left	-	-	-
	WCDMA 1900	Top	-	0.065	0.065
		Bottom	0.861	-	**0.861**
		Front	0.557	0.068	0.625
		Rear	0.484	0.270	0.755
		Right	-	0.119	0.119
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.065	0.065
		Bottom	0.103	-	0.103
		Front	0.322	0.068	0.390
		Rear	0.470	0.270	**0.740**
		Right	0.214	0.119	0.333
		Left	-	-	-
	LTE Band 5	Top	-	0.065	0.065
		Bottom	0.278	--	0.278
		Front	0.569	0.068	0.637
		Rear	0.591	0.270	**0.861**
		Right	0.429	0.119	0.548
		Left	-	-	-
	LTE Band 4	Top	-	0.065	0.065
		Bottom	0.646	-	0.646
		Front	0.473	0.068	0.541
		Rear	0.470	0.270	**0.740**
		Right	-	0.119	0.119
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.065	0.065
		Bottom	1.058	-	**1.058**
		Front	0.522	0.068	0.590
		Rear	0.495	0.270	0.765
		Right	-	0.119	0.119
		Left	0.183	-	0.183

Table 12.6.12 Simultaneous Transmission Scenario : 2G/3G/4G + 5.2 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.2G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.056	0.056
		Bottom	0.230	-	0.230
		Front	0.484	0.091	0.575
		Rear	0.726	0.202	**0.928**
		Right	0.392	0.185	0.577
		Left	-	-	-
	GPRS 1900	Top	-	0.056	0.056
		Bottom	0.496	-	**0.496**
		Front	0.322	0.091	0.413
		Rear	0.272	0.202	0.474
		Right	-	0.185	0.185
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.056	0.056
		Bottom	0.303	-	0.303
		Front	0.648	0.091	0.739
		Rear	0.873	0.202	**1.075**
		Right	0.566	0.185	0.751
		Left	-	-	-
	WCDMA 1900	Top	-	0.056	0.056
		Bottom	0.861	-	**0.861**
		Front	0.557	0.091	0.647
		Rear	0.484	0.202	0.687
		Right	-	0.185	0.185
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.056	0.056
		Bottom	0.103	-	0.103
		Front	0.322	0.091	0.413
		Rear	0.470	0.202	**0.672**
		Right	0.214	0.185	0.399
		Left	-	-	-
	LTE Band 5	Top	-	0.056	0.056
		Bottom	0.278	-	0.278
		Front	0.569	0.091	0.660
		Rear	0.591	0.202	**0.793**
		Right	0.429	0.185	0.614
		Left	-	-	-
	LTE Band 4	Top	-	0.056	0.056
		Bottom	0.646	-	0.646
		Front	0.473	0.091	0.564
		Rear	0.470	0.202	**0.672**
		Right	-	0.185	0.185
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.056	0.056
		Bottom	1.058	-	**1.058**
		Front	0.522	0.091	0.613
		Rear	0.495	0.202	0.697
		Right	-	0.185	0.185
		Left	0.183	-	0.183

Table 12.6.13 Simultaneous Transmission Scenario : 2G/3G/4G + 5.2 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.2G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	< 0.001	< 0.001
		Bottom	0.230	-	0.230
		Front	0.484	0.007	0.491
		Rear	0.726	0.186	**0.912**
		Right	0.392	0.051	0.443
		Left	-	-	-
	GPRS 1900	Top	-	< 0.001	< 0.001
		Bottom	0.496	-	**0.496**
		Front	0.322	0.007	0.329
		Rear	0.272	0.186	0.458
		Right	-	0.051	0.051
		Left	0.090	-	0.090
	WCDMA 850	Top	-	< 0.001	< 0.001
		Bottom	0.303	-	0.303
		Front	0.648	0.007	0.655
		Rear	0.873	0.186	**1.059**
		Right	0.566	0.051	0.617
		Left	-	-	-
	WCDMA 1900	Top	-	< 0.001	< 0.001
		Bottom	0.861	-	**0.861**
		Front	0.557	0.007	0.564
		Rear	0.484	0.186	0.671
		Right	-	0.051	0.051
		Left	0.222	-	0.222
	LTE Band 12	Top	-	< 0.001	< 0.001
		Bottom	0.103	-	0.103
		Front	0.322	0.007	0.329
		Rear	0.470	0.186	**0.656**
		Right	0.214	0.051	0.265
		Left	-	-	-
	LTE Band 5	Top	-	< 0.001	< 0.001
		Bottom	0.278	-	0.278
		Front	0.569	0.007	0.576
		Rear	0.591	0.186	**0.777**
		Right	0.429	0.051	0.480
		Left	-	-	-
	LTE Band 4	Top	-	< 0.001	< 0.001
		Bottom	0.646	-	0.646
		Front	0.473	0.007	0.480
		Rear	0.470	0.186	**0.656**
		Right	-	0.051	0.051
		Left	0.171	-	0.171
	LTE Band 2	Top	-	< 0.001	< 0.001
		Bottom	1.058	-	**1.058**
		Front	0.522	0.007	0.529
		Rear	0.495	0.186	0.681
		Right	-	0.051	0.051
		Left	0.183	-	0.183

Table 12.6.14 Simultaneous Transmission Scenario : 2G/3G/4G + 5.2 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.2G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.056	0.056
		Bottom	0.230	-	0.230
		Front	0.484	0.088	0.572
		Rear	0.726	0.195	**0.921**
		Right	0.392	0.186	0.578
		Left	-	-	-
	GPRS 1900	Top	-	0.056	0.056
		Bottom	0.496	-	**0.496**
		Front	0.322	0.088	0.410
		Rear	0.272	0.195	0.467
		Right	-	0.186	0.186
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.056	0.056
		Bottom	0.303	-	0.303
		Front	0.648	0.088	0.736
		Rear	0.873	0.195	**1.068**
		Right	0.566	0.186	0.752
		Left	-	-	-
	WCDMA 1900	Top	-	0.056	0.056
		Bottom	0.861	-	**0.767**
		Front	0.557	0.088	0.584
		Rear	0.484	0.195	0.627
		Right	-	0.186	0.186
		Left	0.222	-	0.198
	LTE Band 12	Top	-	0.056	0.056
		Bottom	0.103	-	0.103
		Front	0.322	0.088	0.410
		Rear	0.470	0.195	**0.665**
		Right	0.214	0.186	0.400
		Left	-	-	-
	LTE Band 5	Top	-	0.056	0.056
		Bottom	0.278	-	0.278
		Front	0.569	0.088	0.657
		Rear	0.591	0.195	**0.786**
		Right	0.429	0.186	0.615
		Left	-	-	-
	LTE Band 4	Top	-	0.056	0.056
		Bottom	0.646	-	0.646
		Front	0.473	0.088	0.561
		Rear	0.470	0.195	**0.665**
		Right	-	0.186	0.186
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.056	0.056
		Bottom	1.058	-	**1.058**
		Front	0.522	0.088	0.610
		Rear	0.495	0.195	0.690
		Right	-	0.186	0.186
		Left	0.183	-	0.183

Table 12.6.15 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.024	0.024
		Bottom	0.230	-	0.230
		Front	0.484	0.036	0.520
		Rear	0.726	0.067	**0.793**
		Right	0.392	0.021	0.413
		Left	-	-	-
	GPRS 1900	Top	-	0.024	0.024
		Bottom	0.496	-	**0.496**
		Front	0.322	0.036	0.358
		Rear	0.272	0.067	0.339
		Right	-	0.021	0.021
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.024	0.024
		Bottom	0.303	-	0.303
		Front	0.648	0.036	0.684
		Rear	0.873	0.067	**0.940**
		Right	0.566	0.021	0.587
		Left	-	-	-
	WCDMA 1900	Top	-	0.024	0.024
		Bottom	0.861	-	**0.861**
		Front	0.557	0.036	0.593
		Rear	0.484	0.067	0.551
		Right	-	0.021	0.021
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.024	0.024
		Bottom	0.103	-	0.103
		Front	0.322	0.036	0.358
		Rear	0.470	0.067	**0.537**
		Right	0.214	0.021	0.235
		Left	-	-	-
	LTE Band 5	Top	-	0.024	0.024
		Bottom	0.278	-	0.278
		Front	0.569	0.036	0.605
		Rear	0.591	0.067	**0.658**
		Right	0.429	0.021	0.450
		Left	-	-	-
	LTE Band 4	Top	-	0.024	0.024
		Bottom	0.646	-	**0.646**
		Front	0.473	0.036	0.509
		Rear	0.470	0.067	0.537
		Right	-	0.021	0.021
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.024	0.024
		Bottom	1.058	-	**1.058**
		Front	0.522	0.036	0.558
		Rear	0.495	0.067	0.562
		Right	-	0.021	0.021
		Left	0.183	-	0.183

Table 12.6.16 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.006	0.006
		Bottom	0.230	-	0.230
		Front	0.484	0.033	0.517
		Rear	0.726	0.381	**1.107**
		Right	0.392	0.163	0.555
		Left	-	-	-
	GPRS 1900	Top	-	0.006	0.006
		Bottom	0.496	-	0.496
		Front	0.322	0.033	0.355
		Rear	0.272	0.381	**0.653**
		Right	-	0.163	0.163
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.006	0.006
		Bottom	0.303	-	0.303
		Front	0.648	0.033	0.681
		Rear	0.873	0.381	**1.254**
		Right	0.566	0.163	0.729
		Left	-	-	-
	WCDMA 1900	Top	-	0.006	0.006
		Bottom	0.861	-	0.861
		Front	0.557	0.033	0.589
		Rear	0.484	0.381	**0.866**
		Right	-	0.163	0.163
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.006	0.006
		Bottom	0.103	-	0.103
		Front	0.322	0.033	0.355
		Rear	0.470	0.381	**0.851**
		Right	0.214	0.163	0.377
		Left	-	-	-
	LTE Band 5	Top	-	0.006	0.006
		Bottom	0.278	-	0.278
		Front	0.569	0.033	0.602
		Rear	0.591	0.381	**0.972**
		Right	0.429	0.163	0.592
		Left	-	-	-
	LTE Band 4	Top	-	0.006	0.006
		Bottom	0.646	-	0.646
		Front	0.473	0.033	0.506
		Rear	0.470	0.381	**0.851**
		Right	-	0.163	0.163
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.006	0.006
		Bottom	1.058	-	**1.058**
		Front	0.522	0.033	0.555
		Rear	0.495	0.381	0.876
		Right	-	0.163	0.163
		Left	0.183	-	0.183

Table 12.6.17 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.017	0.017
		Bottom	0.230	-	0.230
		Front	0.484	0.027	0.511
		Rear	0.726	0.326	**1.052**
		Right	0.392	0.167	0.559
		Left	-	-	-
	GPRS 1900	Top	-	0.017	0.017
		Bottom	0.496	-	0.496
		Front	0.322	0.027	0.349
		Rear	0.272	0.326	**0.598**
		Right	-	0.167	0.167
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.017	0.017
		Bottom	0.303	-	0.303
		Front	0.648	0.027	0.675
		Rear	0.873	0.326	**1.199**
		Right	0.566	0.167	0.733
		Left	-	-	-
	WCDMA 1900	Top	-	0.017	0.017
		Bottom	0.861	-	**0.861**
		Front	0.557	0.027	0.583
		Rear	0.484	0.257	0.742
		Right	-	0.167	0.167
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.017	0.017
		Bottom	0.103	-	0.103
		Front	0.322	0.027	0.349
		Rear	0.470	0.326	**0.796**
		Right	0.214	0.167	0.381
		Left	-	-	-
	LTE Band 5	Top	-	0.017	0.017
		Bottom	0.278	-	0.278
		Front	0.569	0.027	0.596
		Rear	0.591	0.326	**0.917**
		Right	0.429	0.167	0.596
		Left	-	-	-
	LTE Band 4	Top	-	0.017	0.017
		Bottom	0.646	-	0.646
		Front	0.473	0.027	0.500
		Rear	0.470	0.326	**0.796**
		Right	-	0.167	0.167
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.017	0.017
		Bottom	1.058	-	**1.058**
		Front	0.522	0.027	0.549
		Rear	0.495	0.326	0.821
		Right	-	0.167	0.167
		Left	0.183	-	0.183

Table 12.6.18 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.012	0.012
		Bottom	0.230	-	0.230
		Front	0.484	0.012	0.496
		Rear	0.726	0.033	**0.759**
		Right	0.392	0.007	0.399
		Left	-	-	-
	GPRS 1900	Top	-	0.012	0.012
		Bottom	0.496	-	**0.496**
		Front	0.322	0.012	0.334
		Rear	0.272	0.033	0.305
		Right	-	0.007	0.007
		Left	0.090	-	0.090
	WCDMA 850	Top	-	0.012	0.012
		Bottom	0.303	-	0.303
		Front	0.648	0.012	0.660
		Rear	0.873	0.033	**0.906**
		Right	0.566	0.007	0.573
		Left	-	-	-
	WCDMA 1900	Top	-	0.012	0.012
		Bottom	0.861	-	**0.861**
		Front	0.557	0.012	0.569
		Rear	0.484	0.033	0.517
		Right	-	0.007	0.007
		Left	0.222	-	0.222
	LTE Band 12	Top	-	0.012	0.012
		Bottom	0.103	-	0.103
		Front	0.322	0.012	0.334
		Rear	0.470	0.033	**0.503**
		Right	0.214	0.007	0.221
		Left	-	-	-
	LTE Band 5	Top	-	0.012	0.012
		Bottom	0.278	-	0.278
		Front	0.569	0.012	0.581
		Rear	0.591	0.033	**0.624**
		Right	0.429	0.007	0.436
		Left	-	-	-
	LTE Band 4	Top	-	0.012	0.012
		Bottom	0.646	-	**0.646**
		Front	0.473	0.012	0.485
		Rear	0.470	0.033	0.503
		Right	-	0.007	0.007
		Left	0.171	-	0.171
	LTE Band 2	Top	-	0.012	0.012
		Bottom	1.058	-	**1.058**
		Front	0.522	0.012	0.534
		Rear	0.495	0.033	0.528
		Right	-	0.007	0.007
		Left	0.183	-	0.183

Table 12.6.19 Simultaneous Transmission Scenario : 2.4 GHz W-LAN Ant.1+ 5 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2.4G W-LAN Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	5.2G W-LAN Ant.2	Top	0.049	< 0.001	< 0.001
		Bottom	-	-	-
		Front	0.038	0.007	0.045
		Rear	0.087	0.186	**0.273**
		Right	0.034	0.051	0.085
		Left	-	-	-
	5.8G W-LAN Ant.2	Top	0.049	0.006	0.055
		Bottom	-	-	-
		Front	0.038	0.033	0.071
		Rear	0.087	0.381	**0.468**
		Right	0.034	0.163	0.197
		Left	-	-	-

Table 12.6.20 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.1 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.1 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	5.2G W-LAN Ant.1	Top	0.012	0.056	0.068
		Bottom	-	-	-
		Front	0.012	0.091	0.103
		Rear	0.033	0.202	**0.235**
		Right	0.007	0.185	0.192
		Left	-	-	-
	5.8G W-LAN Ant.1	Top	0.012	0.024	0.036
		Bottom	-	-	-
		Front	0.012	0.036	0.048
		Rear	0.033	0.067	**0.100**
		Right	0.007	0.021	0.028
		Left	-	-	-

Table 12.6.21 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	5.2G W-LAN Ant.2	Top	0.012	< 0.001	0.012
		Bottom	-	-	-
		Front	0.012	0.007	0.019
		Rear	0.033	0.186	**0.219**
		Right	0.007	0.051	0.058
		Left	-	-	-
	5.8G W-LAN Ant.2	Top	0.012	0.006	0.018
		Bottom	-	-	-
		Front	0.012	0.033	0.045
		Rear	0.033	0.381	**0.414**
		Right	0.007	0.163	0.170
		Left	-	-	-

Table 12.6.22 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 5 GHz W-LAN MIMO (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	5G W-LAN MIMO SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	5.2G W-LAN MIMO	Top	0.012	0.056	0.068
		Bottom	-	-	-
		Front	0.012	0.088	0.100
		Rear	0.033	0.195	**0.228**
		Right	0.007	0.186	0.193
		Left	-	-	-
	5.8G W-LAN MIMO	Top	0.012	0.017	0.029
		Bottom	-	-	-
		Front	0.012	0.027	0.039
		Rear	0.033	0.326	**0.359**
		Right	0.007	0.167	0.174
		Left	-	-	-

12.7 Phablet SAR Simultaneous Transmission Analysis

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required of Hotspot 1g SAR (scaled to maximum output power, including tolerance) < 1.2 W/kg. Therefore no further analysis was required to for Phablet Simultaneous Transmission Analysis.

12.8 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 and IEEE 1528-2013 Section 6.3.4.1.2.

13. SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1. When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2. A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3. A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4. Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
5. The same procedures should be adapted for measurements according to extremity exposure limits by applying a factor of 2.5 for extremity exposure to the corresponding SAR thresholds.

Table 13.1 Head SAR Measurement Variability Results

Frequency		Mode	Service	# of Time Slots	Spacing [Side]	Measured SAR (1g)	1st Repeated SAR(1g)	Ratio	2nd Repeated SAR(1g)	Ratio	3rd Repeated SAR(1g)	Ratio
MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
5320.0	64	802.11a (Ant.1)	-	-	Left Touch	0.898	0.780	1.15	-	-	-	-
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure							Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 13.2 Body SAR Measurement Variability Results

Frequency		Mode	Service	# of Time Slots	Spacing [Side]	Measured SAR (1g)	1st Repeated SAR(1g)	Ratio	2nd Repeated SAR(1g)	Ratio	3rd Repeated SAR(1g)	Ratio
MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1880.0	18900	LTE B2	-	-	10 mm [Bottom]	0.974	0.957	1.02	-	-	-	-
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure							Body 1.6 W/kg (mW/g) averaged over 1 gram					

13.2 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 per IEEE 1528-2013 was not required.

14. EQUIPMENT LIST

Table 15.1.1 Test Equipment Calibration

	Type	Manufacturer	Model	Cal.Date	Next.Cal.Date	S/N
☒	SEMITEC Engineering	SEMITEC	N/A	N/A	N/A	Shield Room
☒	SEMITEC Engineering	SEMITEC	N/A	N/A	N/A	Shield Room
☒	SEMITEC Engineering	SEMITEC	N/A	N/A	N/A	Shield Room
☒	Robot	SPEAG	TX90XL	N/A	N/A	F13/5P9GA1/A/01
☒	Robot	SPEAG	TX60L	N/A	N/A	F12/5LP5A1/A/01
☒	Robot	SCHMID	TX60L	N/A	N/A	F14/5WV5D1/A/01
☒	Robot Controller	SPEAG	CS8C	N/A	N/A	F13/5P9GA1/C/01
☒	Robot Controller	SPEAG	CS8C	N/A	N/A	F12/5LP5A1/C/01
☒	Robot Controller	SCHMID	CS8C	N/A	N/A	F14/5WV3D1/C/01
☒	Joystick	SPEAG	N/A	N/A	N/A	S-12450905
☒	Joystick	SPEAG	N/A	N/A	N/A	S-12030401
☒	Joystick	SPEAG	N/A	N/A	N/A	D21142605A
☒	Intel Core i7-3770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
☒	Intel Core i7-2600 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
☒	Intel Core i7-4770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
☒	Probe Alignment Unit LB	N/A	N/A	N/A	N/A	SE UKS 030 AA
☒	Probe Alignment Unit LB	N/A	N/A	N/A	N/A	SE UKS 030 AA
☒	Probe Alignment Unit LB	N/A	LB5/80	N/A	N/A	SE UKS 030 AA
☒	Device Holder	SPEAG	SD000H01HA	N/A	N/A	N/A
☒	Device Holder	SPEAG	SD000H01HA	N/A	N/A	N/A
☒	Device Holder	SPEAG	SD000H01KA	N/A	N/A	N/A
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1782
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1783
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1679
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1837
☒	Data Acquisition Electronics	SPEAG	DAE3V1	2018-11-16	2019-11-16	520
☒	Data Acquisition Electronics	SPEAG	DAE4V1	2018-07-23	2019-07-23	1335
☒	Dosimetric E-Field Probe	SPEAG	ES3DV3	2018-08-28	2019-08-28	3327
☒	Dosimetric E-Field Probe	SPEAG	EX3DV4	2018-07-26	2019-07-26	3930
☒	750MHz SAR Dipole	SPEAG	D750V3	2019-01-25	2021-01-25	1049
☒	835MHz SAR Dipole	SPEAG	D835V2	2018-08-23	2020-08-23	4d159
☒	1800MHz SAR Dipole	SPEAG	D1800V2	2018-04-26	2020-04-26	2d202
☒	1900MHz SAR Dipole	SPEAG	D1900V2	2018-08-27	2020-08-27	5d176
☒	2450MHz SAR Dipole	SPEAG	D2450V2	2018-08-24	2020-08-24	920
☒	5GHz SAR Dipole	SPEAG	D5GHzV2	2019-02-28	2021-02-28	1103
☒	Network Analyzer	Agilent	E5071C	2018-12-19	2019-12-19	MY46111534
☒	Signal Generator	Agilent	E4438C	2018-07-04	2019-07-04	US41461520
☒	Amplifier	RFBAY.Inc	MPA-40-40	2018-12-20	2019-12-20	21151801
☒	Amplifier	EMPOWER	BBS3Q7ELU	2018-07-10	2019-07-10	1020
☒	High Power RF Amplifier	EMPOWER	BBS3Q8CCJ	2018-07-06	2019-07-06	1005
☒	Power Meter	HP	EPM-442A	2018-12-19	2019-12-19	GB37170267
☒	Power Meter	HP	EPM-442A	2018-12-18	2019-12-18	GB37170413
☒	Power Meter	Anritsu	ML2495A	2018-07-04	2019-07-04	1435003
☒	Power Sensor	Anritsu	MA2490A	2018-07-04	2019-07-04	1409034
☒	Power Sensor	HP	8481A	2018-12-18	2019-12-18	US37294267
☒	Power Sensor	HP	8481A	2018-12-19	2019-12-19	3318A96566
☒	Power Sensor	HP	8481A	2018-12-19	2019-12-19	2702A65976
☒	Dual Directional Coupler	Agilent	778D-012	2018-12-19	2019-12-19	50228
☒	Directional Coupler	HP	772D	2018-07-03	2019-07-03	2889A01064
☒	Low Pass Filter 1GHz	Wainwright Instruments	WLK6-1000-1400-9000-60SS	2018-07-05	2019-07-05	165
☒	Low Pass Filter 1.5GHz	Micro LAB	LA-15N	2018-07-05	2019-07-05	2
☒	Low Pass Filter 3.0GHz	Micro LAB	LA-30N	2018-07-05	2019-07-05	2
☒	Low Pass Filter 6.0GHz	Micro LAB	LA-60N	2018-12-19	2019-12-19	03942
☒	Attenuators(3 dB)	Agilent	8491B	2018-12-19	2019-12-19	MY39260700
☒	Attenuators(10 dB)	WEINSCHEL	23-10-34	2018-12-19	2019-12-19	BP4387
☒	Dielectric Probe kit	SPEAG	DAK-3.5	2018-07-24	2019-07-24	1046
☒	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	2018-07-04	2019-07-04	GB41321164
☒	Wideband Radio Communication Tester	Rohde Schwarz	CMW500	2019-03-06	2020-03-06	127323
☒	Wideband Radio Communication Tester	Rohde Schwarz	CMW500	2018-12-19	2019-12-19	101414
☒	Radio Communication Analyzer	KEYSIGHT	E7515A	2018-07-06	2019-07-06	MY55210201
☒	Radio Communication Analyzer	KEYSIGHT	E7515A	2018-12-19	2019-12-19	MY57270113
☒	Power Splitter	Anritsu	K241B	2018-12-18	2019-12-18	1301183
☒	Bluetooth Tester	TESCOM	TC-3000B	2018-12-18	2019-12-18	3000B770243

NOTE(S):

1. The E-field probe was calibrated by SPEAG, by temperature measurement procedure. Dipole Verification measurement is performed by DT&C before each test. The brain and muscle simulating material are calibrated by DT&C using the dielectric probe system and network analyzer to determine the conductivity and permittivity (dielectric constant) of the brain and muscle-equivalent material. Each equipment item was used solely within its respective calibration period.
2. 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. 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.

15. MEASUREMENT UNCERTAINTIES

750 MHz Head (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.7	Normal	1	0.78	0.71	± 2.9 %	± 2.6 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

750 MHz Body (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.5	Normal	1	0.78	0.71	± 2.7 %	± 2.5 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2%	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.5 %**	**± 11.3 %**	330
Expanded Uncertainty (k=2)						**± 23.0 %**	**± 22.6 %**	

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Head (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.2	Normal	1	0.78	0.71	± 3.3 %	± 3.0 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.9	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2%	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.7 %**	**± 11.5 %**	330
Expanded Uncertainty (k=2)						**± 23.4 %**	**± 23.0 %**	

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Body (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2%	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1800 MHz Head (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1800 MHz Body (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.7	Normal	1	0.78	0.71	± 2.9 %	± 2.6 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.2	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1900 MHz Head (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.3	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1900 MHz Body (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.7	Normal	1	0.78	0.71	± 2.9 %	± 2.6 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.2	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

2450 MHz Head (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.8	Normal	1	0.78	0.71	± 3.0 %	± 2.7 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

2450 MHz Body (SN: 3327)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.2	Normal	1	0.78	0.71	± 3.3 %	± 3.0 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.9	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 2.0	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.7 %**	**± 11.5 %**	330
Expanded Uncertainty (k=2)						**± 23.4 %**	**± 23.0 %**	

The above measurement uncertainties are according to IEEE Std 1528

5200 MHz Head (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.1	Normal	1	0.78	0.71	± 3.2 %	± 2.9 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.9	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5200 MHz Body (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1%	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8%	± 0.7%	∞
Temp. unc. - Permittivity	± 1.7	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5300 MHz Head (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.3	Normal	1	0.78	0.71	± 3.4 %	± 3.1 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.2	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.7	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 12.0 %**	**± 11.8 %**	330
Expanded Uncertainty (k=2)						**± 24.0 %**	**± 23.6 %**	

The above measurement uncertainties are according to IEEE Std 1528

5300 MHz Body (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5500 MHz Head (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.1	Normal	1	0.78	0.71	± 3.2 %	± 2.9 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5500 MHz Body (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.8	Normal	1	0.78	0.71	± 3.0 %	± 2.7 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.9	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.7	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5600 MHz Head (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 2.0	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5600 MHz Body (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5800 MHz Head (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
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RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.1	Normal	1	0.78	0.71	± 3.2 %	± 2.9 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5800 MHz Body (SN: 3930)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

16. CONCLUSION

Measurement Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC. These measurements are taken to simulate the RF effects exposure under the worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The tested device complies with the requirements in respect to all parameters subject to the test. The test results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are every 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 impossible biological effect 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 innumerable factors may interact to determine the specific biological outcome of an exposure to electromagnetic fields, any protection guide shall consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

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APPENDIX A. – Probe Calibration Data

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **DT&C (Dymstec)**

Certificate No: ES3-3327_Aug18

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3327
Calibration procedure(s)	QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	August 28, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 30, 2018

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe ES3DV3

SN:3327

Manufactured: January 10, 2012
Calibrated: August 28, 2018

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

ES3DV3– SN:3327 August 28, 2018

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3327

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.15	1.10	1.03	± 10.1 %
DCP (mV)[B]	104.8	103.1	108.7	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√µV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	197.7	±3.0 %
		Y	0.0	0.0	1.0		199.9	
		Z	0.0	0.0	1.0		193.5	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ES3DV3– SN:3327

August 28, 2018

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3327

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	6.57	6.57	6.57	0.67	1.25	± 12.0 %
835	41.5	0.90	6.35	6.35	6.35	0.80	1.14	± 12.0 %
900	41.5	0.97	6.18	6.18	6.18	0.44	1.51	± 12.0 %
1750	40.1	1.37	5.50	5.50	5.50	0.80	1.30	± 12.0 %
1900	40.0	1.40	5.27	5.27	5.27	0.80	1.25	± 12.0 %
2450	39.2	1.80	4.56	4.56	4.56	0.76	1.33	± 12.0 %
2600	39.0	1.96	4.48	4.48	4.48	0.80	1.35	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

ES3DV3– SN:3327

August 28, 2018

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3327

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	6.38	6.38	6.38	0.80	1.16	± 12.0 %
835	55.2	0.97	6.24	6.24	6.24	0.80	1.15	± 12.0 %
900	55.0	1.05	6.21	6.21	6.21	0.63	1.29	± 12.0 %
1750	53.4	1.49	5.15	5.15	5.15	0.71	1.40	± 12.0 %
1900	53.3	1.52	4.91	4.91	4.91	0.55	1.65	± 12.0 %
2450	52.7	1.95	4.50	4.50	4.50	0.77	1.35	± 12.0 %
2600	52.5	2.16	4.30	4.30	4.30	0.80	1.25	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

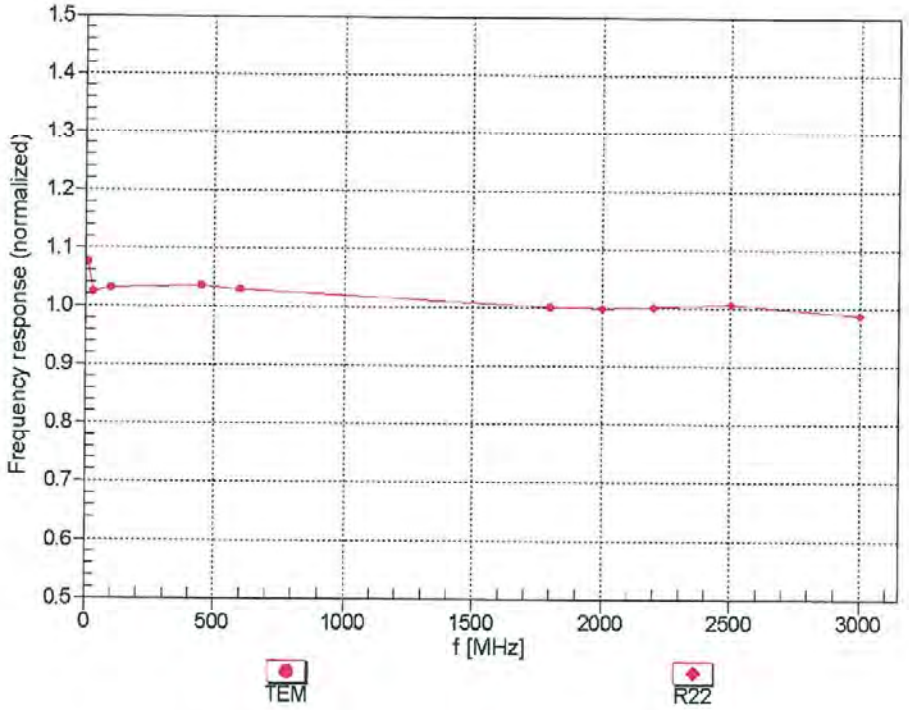
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

ES3DV3– SN:3327

August 28, 2018

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)

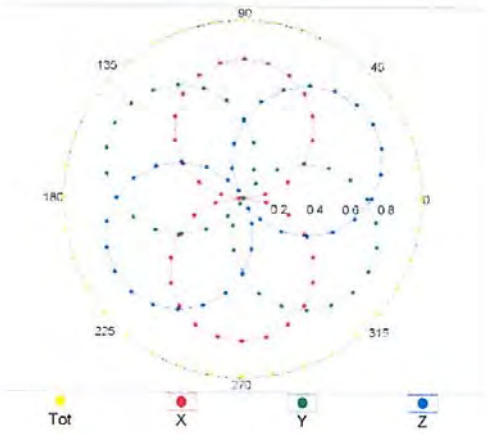


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

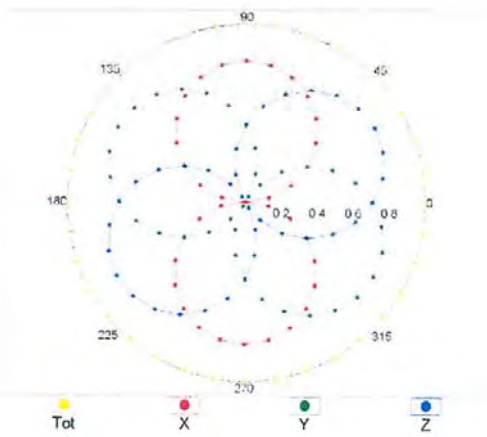
ES3DV3– SN:3327 August 28, 2018

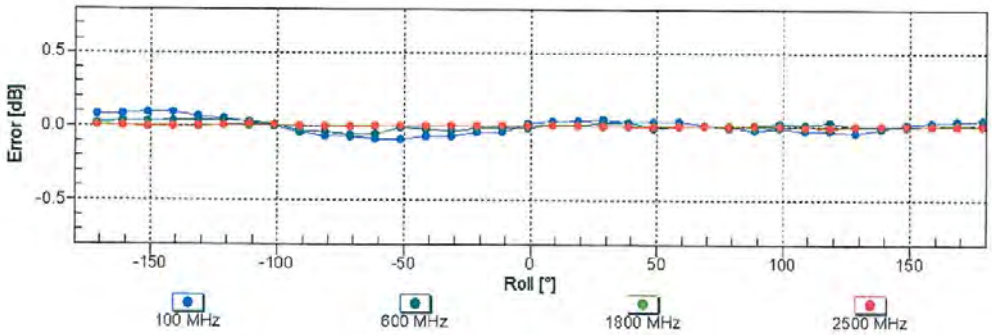
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

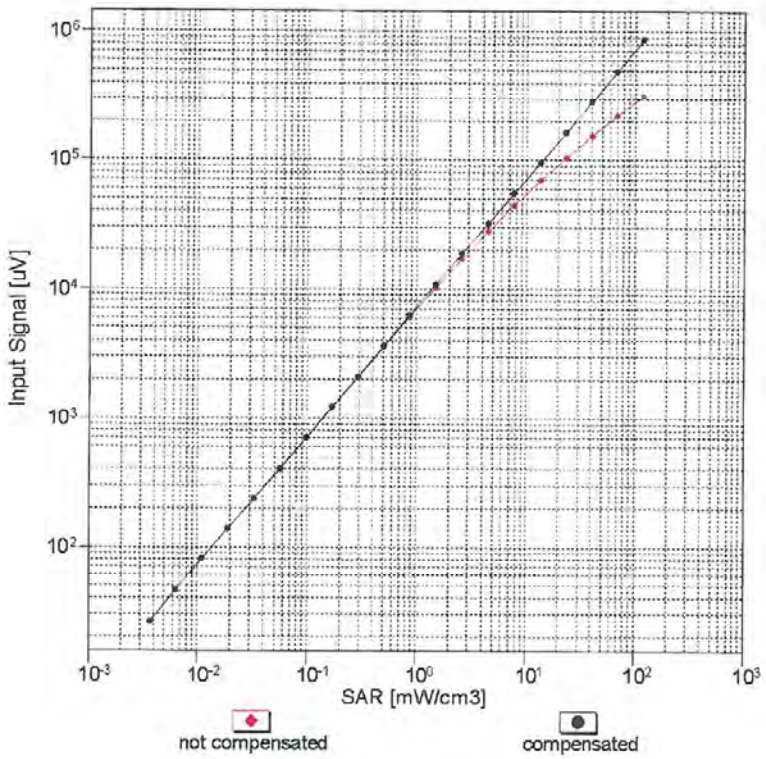


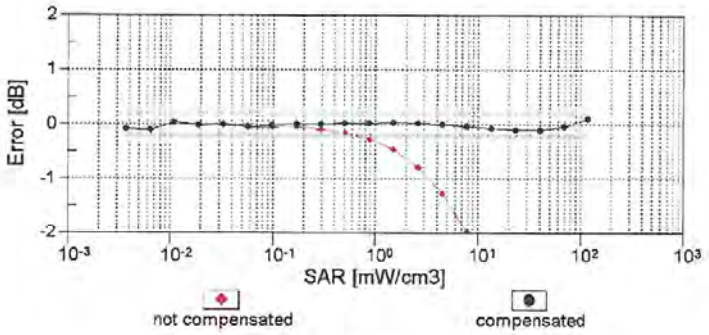


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

ES3DV3– SN:3327 August 28, 2018

Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)

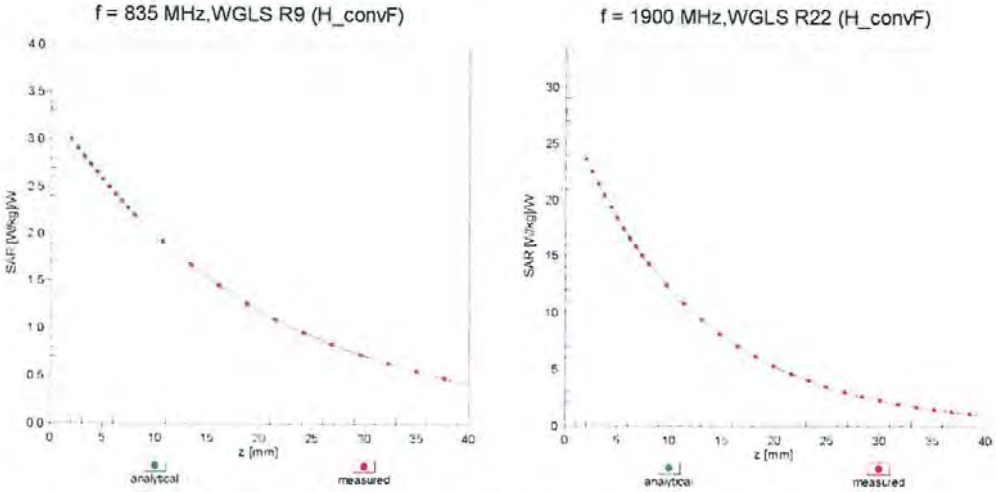




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

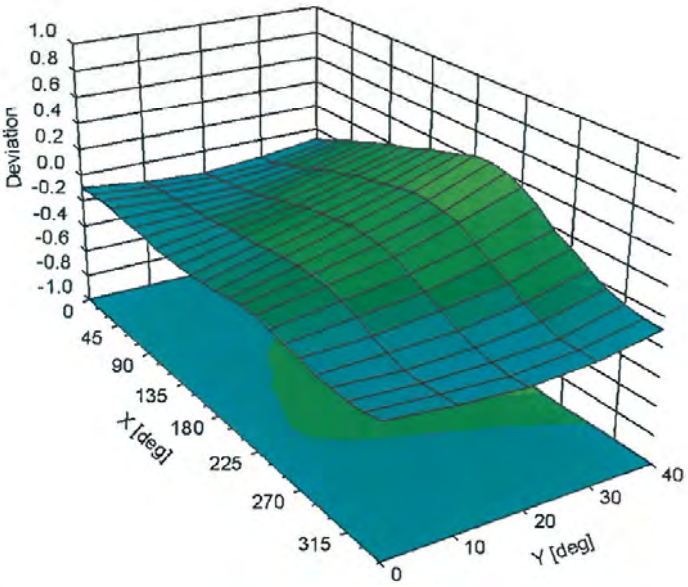
ES3DV3– SN:3327 August 28, 2018

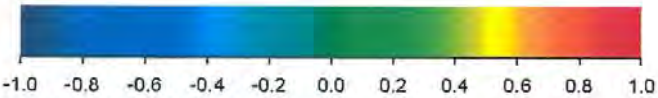
Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3327

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	8.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Swiss Calibration Service

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Accreditation No.: **SCS 0108**

Client **DT&C (Dymstec)**

Certificate No: **EX3-3930_Jul18**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3930
Calibration procedure(s)	QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	July 26, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 28, 2018

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe EX3DV4

SN:3930

Manufactured: July 24, 2013
Calibrated: July 26, 2018

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

EX3DV4– SN:3930

July 26, 2018

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3930

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.41	0.47	0.43	± 10.1 %
DCP (mV)[B]	106.4	99.1	104.4	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	147.9	±3.3 %
		Y	0.0	0.0	1.0		154.7	
		Z	0.0	0.0	1.0		156.4	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4– SN:3930

July 26, 2018

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3930

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
2450	39.2	1.80	7.85	7.85	7.85	0.33	0.92	± 12.0 %
2600	39.0	1.96	7.71	7.71	7.71	0.34	0.92	± 12.0 %
3500	37.9	2.91	7.25	7.25	7.25	0.25	1.20	± 13.1 %
3700	37.7	3.12	7.06	7.06	7.06	0.23	1.20	± 13.1 %
5200	36.0	4.66	5.28	5.28	5.28	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.10	5.10	5.10	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.94	4.94	4.94	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.69	4.69	4.69	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

EX3DV4– SN:3930 July 26, 2018

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3930

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
2450	52.7	1.95	7.89	7.89	7.89	0.29	1.02	± 12.0 %
2600	52.5	2.16	7.65	7.65	7.65	0.32	0.98	± 12.0 %
3500	51.3	3.31	6.87	6.87	6.87	0.23	1.25	± 13.1 %
3700	51.0	3.55	6.93	6.93	6.93	0.25	1.25	± 13.1 %
5200	49.0	5.30	4.61	4.61	4.61	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.47	4.47	4.47	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.19	4.19	4.19	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.09	4.09	4.09	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.14	4.14	4.14	0.50	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

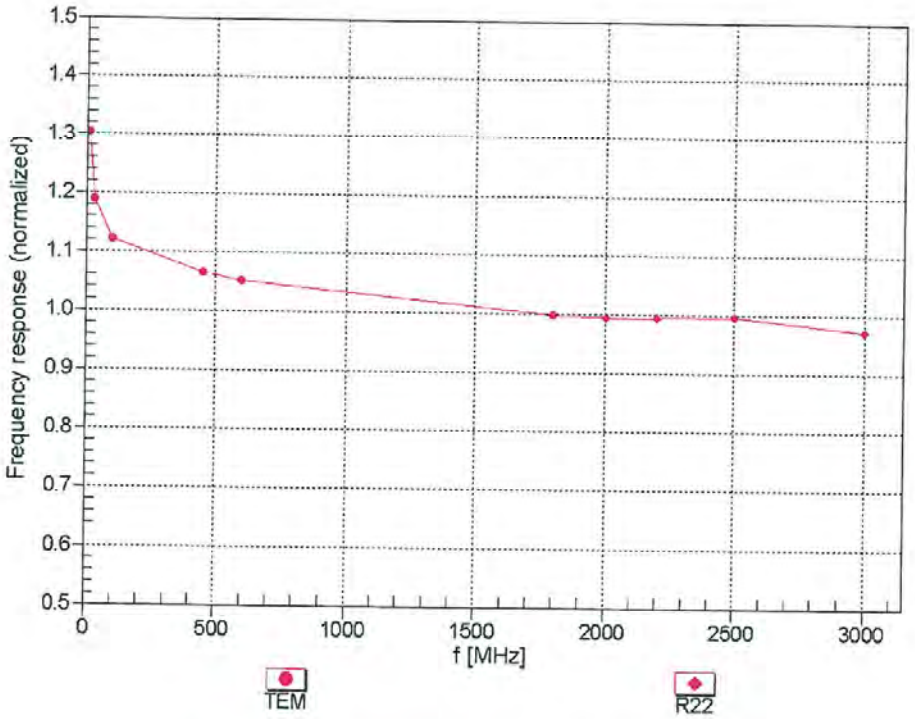
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

EX3DV4– SN:3930

July 26, 2018

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



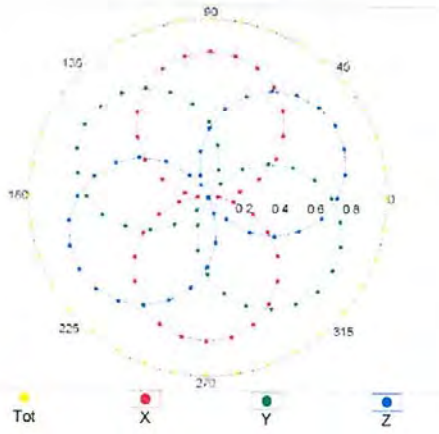
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

EX3DV4– SN:3930

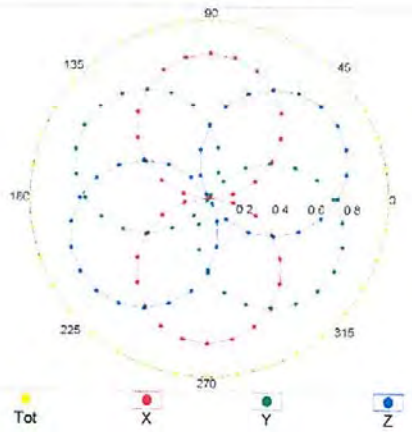
July 26, 2018

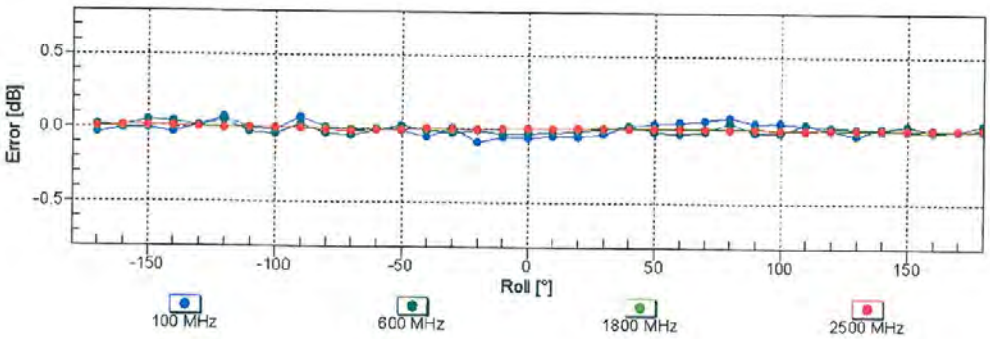
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

EX3DV4– SN:3930

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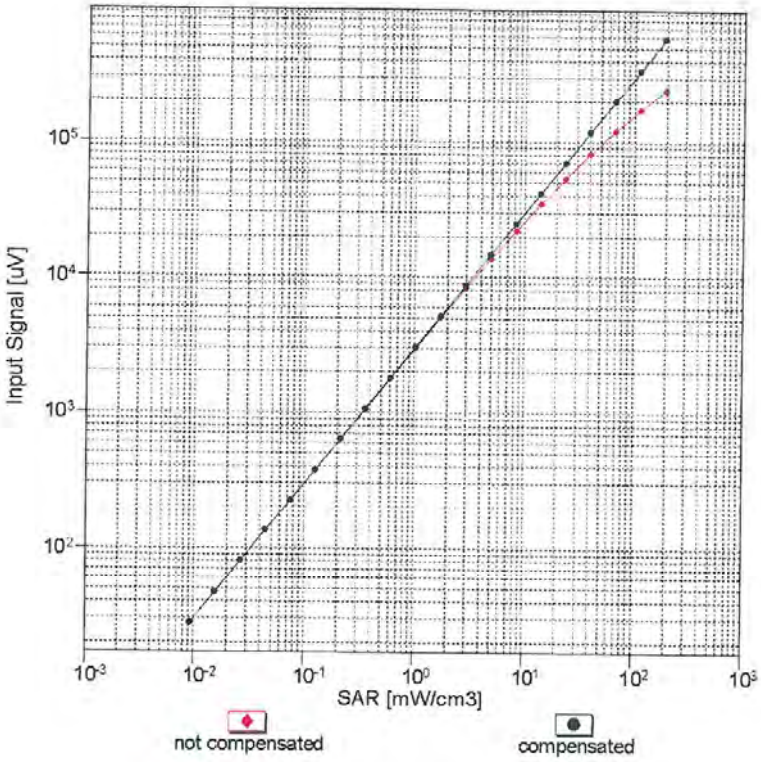
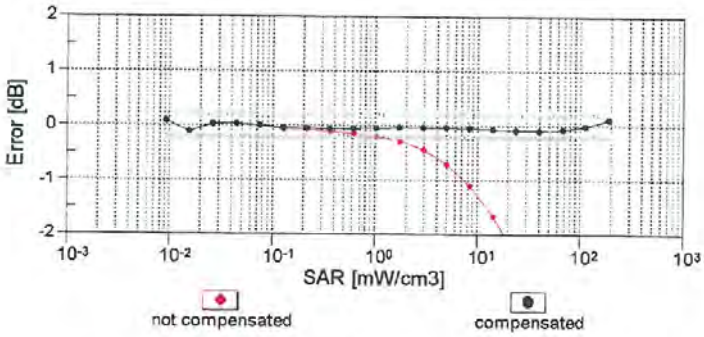
Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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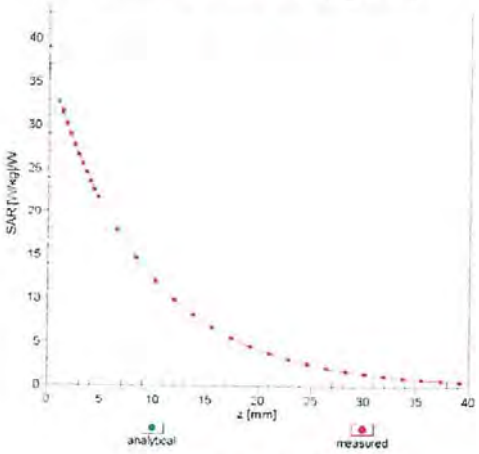
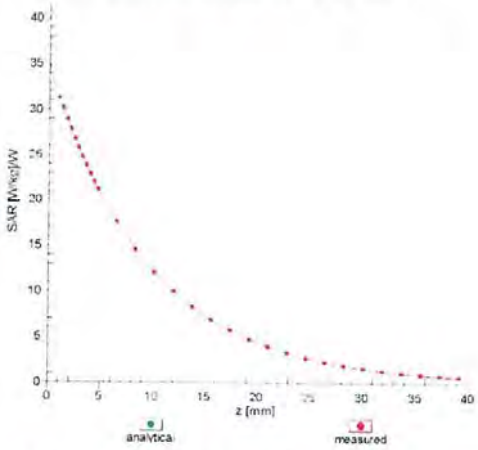
Conversion Factor Assessment

f = 2450 MHz,WGLS R22 (H_convF)

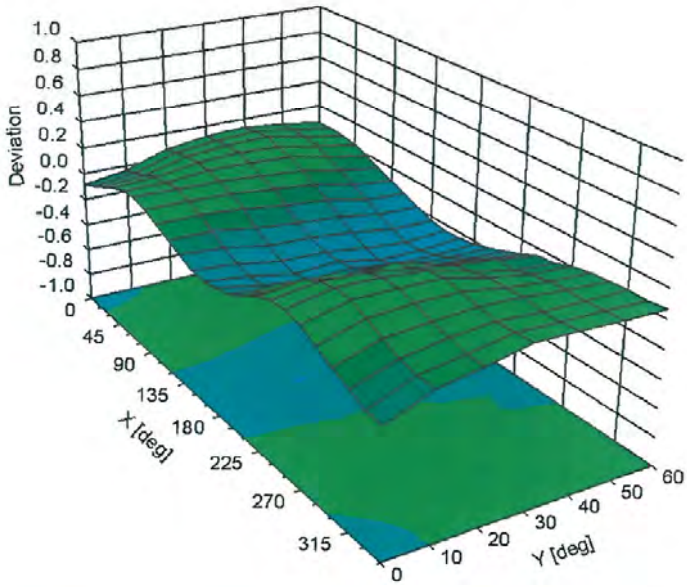


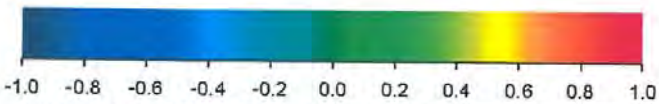
f = 2450 MHz,WGLS R22 (M_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

EX3DV4– SN:3930

July 26, 2018

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3930

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	119.8
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm