TEST REPORT

DT&C Co., Ltd.

42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042

Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRRFCC2009-0088
2. Customer
   - Name : LG Electronics USA, Inc.
   - Address : 111 Sylvan Avenue, North Building Englewood Cliffs, NJ 07632
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : Mobile Phone / OA2007

   FCC ID : ZNFOA2007
5. FCC Regulation(s) : CFR 47 Part 2 subpart 2.1093

   Test Method Used : IEEE 1528-2013, FCC SAR KDB Publications (Details in test report)
6. Date of Test : 2020.08.04 ~ 2020.09.11
7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing
8. Testing Environment : Refer to appended test report.
9. Test Result : Refer to attached test report.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

Affirmation	Tested by Name : BumJun Park (Signature)	Reviewed by Name : HakMin Kim (Signature)

2020 . 09 . 16 .

DT&C Co., Ltd.

Unconnected with KS Q ISO / IEC 17025 and KOLAS accreditation.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

Test Report Version

Test Report No.	Date	Description	Tested by	Reviewed by
DRRFCC2009-0088	Sep. 16, 2020	Initial issue	BumJun Park	HakMin Kim

Table of Contents

1. DESCRIPTION OF DEVICE

1.1 General Information

EUT type	Mobile Phone				
FCC ID	ZNFOA2007				
Equipment model name	OA2007				
Equipment add model name	N/A				
Equipment serial no.	Identical prototype				
Equipment serial no.	Identical prototype				
FCC & ISED MRA Designation No.	KR0034				
Mode(s) of Operation	GSM 850, GSM 1900, WCDMA 850, LTE Band 12, 13, 5, 4, 41, 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				
TX Frequency Range	**Band**	**Mode**	**Operating Modes**	**Bandwidth**	**Frequency**
	GSM 850	GSM/GPRS	Voice/Data	-	824.2 MHz ~ 848.8 MHz
	GSM 1900	GSM/GPRS	Voice/Data	-	1 850.2 MHz ~ 1 909.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	826.4 MHz ~ 846.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	699.7 MHz ~ 715.3 MHz
	LTE Band 13	LTE	Voice/Data	5/10MHz	779.5 MHz ~ 784.5 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	824.7 MHz ~ 848.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1 710.7 MHz ~ 1 754.3 MHz
	LTE Band 41	LTE	Voice/Data	5/10/15/20MHz	2 498.5 MHz ~ 2 687.5 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2 412 MHz ~ 2 472 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 180 MHz ~ 5 240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 190 MHz ~ 5 230 MHz
		802.11ac	Voice/Data	VHT80	5 210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 260 MHz ~ 5 320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 270 MHz ~ 5 310 MHz
		802.11ac	Voice/Data	VHT80	5 290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 500 MHz ~ 5 720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 510 MHz ~ 5 710 MHz
		802.11ac	Voice/Data	VHT80	5 530 MHz ~ 5 690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 745 MHz ~ 5 825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 755 MHz ~ 5 795 MHz
		802.11ac	Voice/Data	VHT80	5 775 MHz
	Bluetooth	-	Data	-	2 402 MHz ~ 2 480 MHz
RX Frequency Range	GSM 850	GSM/GPRS	Voice/Data	-	869.2 MHz ~ 893.8 MHz
	GSM 1900	GSM/GPRS	Voice/Data	-	1 930.2 MHz ~ 1 989.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	871.4 MHz ~ 891.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	729.7 MHz ~ 745.3 MHz
	LTE Band 13	LTE	Voice/Data	5/10MHz	748.5 MHz ~ 753.5 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	869.7 MHz ~ 893.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	2 110.7 MHz ~ 2 154.3 MHz
	LTE Band 41	LTE	Voice/Data	5/10/15/20MHz	2 498.5 MHz ~ 2 687.5 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2 412 MHz ~ 2 472 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 180 MHz ~ 5 240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 190 MHz ~ 5 230 MHz
		802.11ac	Voice/Data	VHT80	5 210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT200	5 260 MHz ~ 5 320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 270 MHz ~ 5 310 MHz
		802.11ac	Voice/Data	VHT80	5 290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 500 MHz ~ 5 720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 510 MHz ~ 5 710 MHz
		802.11ac	Voice/Data	VHT80	5 530 MHz ~ 5 690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5 745 MHz ~ 5 825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5 755 MHz ~ 5 795 MHz
		802.11ac	Voice/Data	VHT80	5 775 MHz
	Bluetooth	-	Data	-	2 402 MHz ~ 2 480 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	0.35	-	-
PCE	GPRS 850	0.12	0.42	0.42	-
PCE	GSM 1900	< 0.1	0.31	-	-
PCE	GPRS 1900	0.11	0.50	0.69	-
PCE	WCDMA 850	**0.17**	0.35	0.42	-
PCE	LTE Band 12	0.17	0.43	0.43	-
PCE	LTE Band 13	0.15	0.73	0.73	-
PCE	LTE Band 5	0.15	**0.77**	0.77	-
PCE	LTE Band 4	< 0.1	0.54	**0.84**	-
PCE	LTE Band 41	< 0.1	0.41	0.59	-
DTS(SISO)	2.4 GHz W-LAN	0.69	0.13	0.16	-
DTS(MIMO)	2.4 GHz W-LAN	**0.73**	0.17	0.22	-
U-NII-1(SISO)	5.2 GHz W-LAN	-	-	0.13	-
U-NII-1(MIMO)	5.2 GHz W-LAN	-	-	0.15	-
U-NII-2A(SISO)	5.3 GHz W-LAN	0.18	0.19	-	0.59
U-NII-2A(MIMO)	5.3 GHz W-LAN	0.19	0.20	-	0.85
U-NII-2C(SISO)	5.6 GHz W-LAN	0.34	0.19	-	0.63
U-NII-2C(MIMO)	5.6 GHz W-LAN	0.45	0.31	-	**1.23**
U-NII-3(SISO)	5.8 GHz W-LAN	0.16	0.27	0.27	0.84
U-NII-3(MIMO)	5.8 GHz W-LAN	0.32	0.32	0.32	1.01
DSS	Bluetooth	0.11	< 0.1	< 0.1	-
Simultaneous SAR per KDB 690783 D01v01r03		**0.87**	**1.12**	**1.12**	-

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	2020.08.04 ~ 2020.09.11
Antenna Type	Internal Antenna
Functions	● GSM/GPRS (GPRS Class: 12) 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 ZNFOA2007_Antenna Location. Since the diagonal dimension of this device is > 160 mm and < 200 mm. it is considered a “phablet”.

Mode	Device Sides for SAR Testing					
	Top	Bottom	Front	Rear	Right	Left
GSM/GPRS 850	X	O	O	O	O	X
GSM/GPRS 1900	X	O	O	O	X	O
WCDMA 850	X	O	O	O	O	X
LTE Band 12	X	O	O	O	O	X
LTE Band 13	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 41	X	X	O	O	X	O
2.4G W-LAN Ant.1	O	X	O	O	X	O
2.4G W-LAN Ant.2	O	X	O	O	X	O
2.4G W-LAN MIMO	O	X	O	O	X	O
5G W-LAN Ant.1	O Note 2	X	O	O	X	O Note 2
5G W-LAN Ant.2	O Note 2	X	O	O	X	O Note 2
5G W-LAN MIMO	O Note 2	X	O	O	X	O Note 2
Bluetooth	O	X	O	O	X	O

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 ZNFOA2007_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; [(13/10)*√2.480] = 2.0 (< 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; [(13/5)*√2.480] = 4.0 (< 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. Phablet SAR was not evaluated for 2.4 GHz WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

(B) Licensed Transmitter(s)

GSM/GPRS 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. Therefore, 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.

1.9 FCC & ISED MRA test lab designation no. : KR0034

2. LTE INFORMATION

LTE Information					
FCC ID	**ZNFOA2007**				
Form Factor	Mobile Phone				
Frequency Range of each LTE transmission Band	LTE Band 12 (699.7 ~ 715.3 MHz) LTE Band 13 (779.5 ~ 784.5 MHz) LTE Band 5 (Cell) (824.7 ~ 848.3 MHz) LTE Band 4 (AWS) (1710.7 ~ 1754.3 MHz) LTE Band 41 (2498.5 ~ 2687.5 MHz)				
Channel Bandwidths	LTE Band 12 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 13 : 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 41: 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 13: 5 MHz	779.5(23205)	N/A	782.0(23230)Note2	N/A	784.5(23255)
LTE Band 13: 10 MHz	N/A	N/A	**782.0(23230)**	N/A	N/A
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)**Note3	N/A	844.0 (20600)
LTE Band 4 (AWS): 1.4 MHz	1 710.7 (19957)	N/A	1 732.5 (20175)	N/A	1 754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1 711.5 (19965)	N/A	1 732.5 (20175)	N/A	1 753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1 712.5 (19975)	N/A	1 732.5 (20175)	N/A	1 752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1 715.0 (20000)	N/A	1 732.5 (20175)	N/A	1 750.0 (20350)
LTE Band 4 (AWS): 15 MHz	1 717.5 (20025)	N/A	1 732.5 (20175)	N/A	1 747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1 720.0 (20050)	N/A	**1 732.5 (20175)** Note4	N/A	1 745.0 (20300)
LTE Band 41: 5 MHz	2 498.5 (39675)	2 545.8 (40148)	2 593.0 (40620)	2 640.3 (41093)	2 687.5 (41565)
LTE Band 41: 10 MHz	2 501.0 (39700)	2 547.0 (40160)	2 593.0 (40620)	2 639.0 (41080)	2 685.0 (41540)
LTE Band 41: 15 MHz	2 503.5 (39725)	2 548.3 (40173)	2 593.0 (40620)	2 637.8 (41068)	2 682.5 (41515)
LTE Band 41: 20 MHz	**2 506.0 (39750)**	**2 549.5 (40185)**	**2 593.0 (40620)**	**2 636.5 (41055)**	**2 680.0 (41490)**
UE Category	LTE Rel.15 DL UE Cat 20, UL UE Cat 13				
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 full 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 B13 can not contain three non-overlapping channels of 5 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 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.
4. 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.

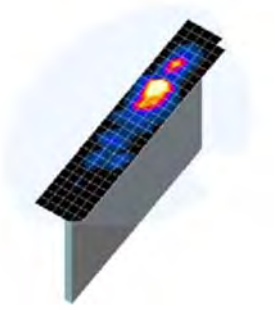


Figure 4.1
Sample SAR Area Scan

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.

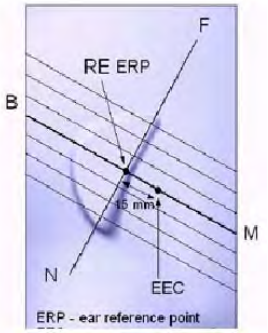


Figure 5.1
Close-up side view of ERP

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

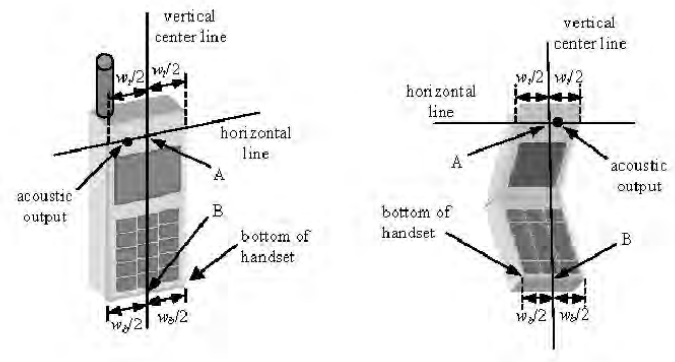


Figure 5.3 Handset Vertical Center & Horizontal Line Reference Points

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).

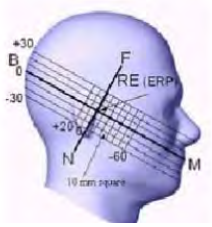


Figure 6.2 Side view w/relevant markings

Figure 6.3 Front, Side and Top View of Ear/15º 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.

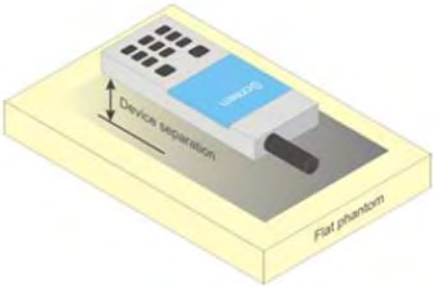


Figure 6.4 Sample Body-Worn Diagram

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.

6.8 Proximity Sensor Configurations

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close the user’s body.

When the device’s antenna is within a certain distance of the user. The sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

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 $\leq$ 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.

8.4.6 LTE TDD Consideration setup for SAR measurement

According to KDB 941225 D05 SAR for LTE Devices v02r05 for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33 %) using Uplink-downlink configuration 0 and Special subframe configuration 6.

LTE TDD Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame and Table 4.2-2 for uplink-downlink configuration and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			-	-	-
8	$24144 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle = Extended cyclic prefix in uplink * (Ts) * # of S + # of U

Ts = 1/(15000 * 2048) seconds

Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = 5120 * [1/(15000 * 2048)] * 2 + 6 ms = 63.33 %

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]			
		1 TX Slot	1 TX Slot	2 TX Slot	3 TX Slot	4 TX Slot
GSM/GPRS 850	Maximum	33.70	33.70	31.70	29.70	28.70
	Nominal	33.20	33.20	31.20	29.20	28.20
GSM/GPRS 1900	Maximum	29.70	29.70	28.70	27.70	25.70
	Nominal	29.20	29.20	28.20	27.20	25.20

Table 9.1.1 GSM Nominal and Maximum Output Power Spec

Band	Channel	Maximum Burst-Averaged Output Power(dBm)				
		Voice	GPRS Data (GMSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot
GSM850	128	33.51	33.51	31.21	28.93	28.25
	190	33.62	33.62	31.25	29.15	28.27
	251	33.45	33.45	31.02	28.82	28.03
PCS 1900	512	29.64	29.64	28.63	27.49	25.45
	661	29.48	29.48	28.68	27.62	25.64
	810	29.65	29.65	28.70	27.53	25.29
Band	Channel	Calculated Maximum Frame-Averaged Output Power(dBm)				
		Voice	GPRS Data (GMSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot
GSM850	128	24.48	24.48	25.19	24.67	25.24
	190	24.59	24.59	25.23	24.89	25.26
	251	24.42	24.42	25.00	24.56	25.02
PCS 1900	512	20.61	20.61	22.61	23.23	22.44
	661	20.45	20.45	22.66	23.36	22.63
	810	20.62	20.62	22.68	23.27	22.28
GSM850	Frame Avg. Targets:	24.17	24.17	25.18	24.94	25.19
PCS 1900		20.17	20.17	22.18	22.94	22.19

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.

GPRS Multislot class: 12 (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)	3GPP MPR (dB)
99	WCDMA	Voice	Maximum	25.5	-
			Nominal	25.0	
5	HSDPA	Subtest 1	Maximum	25.5	0
			Nominal	25.0	
5		Subtest 2	Maximum	25.5	0
			Nominal	25.0	
5		Subtest 3	Maximum	25.0	0.5
			Nominal	24.5	
5		Subtest 4	Maximum	25.0	0.5
			Nominal	24.5	
6	HSUPA	Subtest 1	Maximum	25.5	0
			Nominal	25.0	
6		Subtest 2	Maximum	23.5	2
			Nominal	23.0	
6		Subtest 3	Maximum	24.5	1
			Nominal	24.0	
6		Subtest 4	Maximum	23.5	2
			Nominal	23.0	
6		Subtest 5	Maximum	25.5	0
			Nominal	25.0	

Table 9.2.1 WCDMA Nominal and Maximum Output Power Spec

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band (dBm)			3GPP MPR (dB)
			4132	4183	4233	
99	WCDMA	12.2 kbps RMC	25.17	25.18	25.11	-
99		12.2 kbps AMR	25.16	25.17	25.10	-
5	HSDPA	Subtest 1	25.17	25.17	25.11	0
5		Subtest 2	25.15	25.17	25.10	0
5		Subtest 3	24.64	24.68	24.61	0.5
5		Subtest 4	24.66	24.67	24.58	0.5
6	HSUPA	Subtest 1	25.14	25.15	25.09	0
6		Subtest 2	23.16	23.16	23.11	2
6		Subtest 3	24.15	24.18	24.10	1
6		Subtest 4	23.13	23.19	23.11	2
6		Subtest 5	25.15	25.17	25.11	0

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 and HSUPA transmitter's power will not exceed the R99 maximum transmit power in devices based on Qualcomm's HSPA chipset solutions.

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	25.20	≤ 1	0
	1	**25**	**25.31**		
	1	49	25.23		
	25	0	24.24		1
	25	**12**	**24.37**		
	25	25	24.33		
	50	0	24.35		1
16QAM	1	0	24.37	≤ 1	1
	1	25	24.43		
	1	49	24.39		
	25	0	23.31	≤ 2	2
	25	12	23.38		
	25	25	23.36		
	50	0	23.35		2
64QAM	1	0	23.31	≤ 2	2
	1	25	23.44		
	1	49	23.39		
	25	0	22.26	≤ 3	3
	25	12	22.36		
	25	25	22.33		
	50	0	22.33		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	25.14	25.19	25.09	≤ 1	0
	1	12	25.24	25.26	25.23		
	1	24	25.19	25.23	25.18		
	12	0	24.15	24.18	24.12		1
	12	6	24.32	24.34	24.31		
	12	13	24.27	24.29	24.25		
	25	0	24.25	24.28	24.24		1
16QAM	1	0	24.30	24.32	24.27	≤ 1	1
	1	12	24.36	24.38	24.33		
	1	24	24.33	24.35	24.30		
	12	0	23.19	23.22	23.15	≤ 2	2
	12	6	23.31	23.33	23.28		
	12	13	23.27	23.30	23.25		
	25	0	23.25	23.27	23.24		2
64QAM	1	0	23.33	23.36	23.24	≤ 2	2
	1	12	23.43	23.44	23.41		
	1	24	23.36	23.41	23.35		
	12	0	22.16	22.19	22.14	≤ 3	3
	12	6	22.28	22.30	22.25		
	12	13	22.22	22.27	22.17		
	15	0	22.20	22.25	22.19		3

Table 9.3.1.3 LTE Conducted Power

LTE Band 12 Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.19	25.20	25.17	≤ 1	0
	1	7	25.25	25.26	25.22		
	1	14	25.21	25.22	25.19		
	8	0	24.25	24.27	24.24		1
	8	4	24.32	24.36	24.31		
	8	7	24.28	24.34	24.27		
	15	0	24.24	24.32	24.22		1
16QAM	1	0	24.30	24.31	24.24	≤ 1	1
	1	7	24.41	24.42	24.37		
	1	14	24.37	24.38	24.35		
	8	0	23.34	23.35	23.31	≤ 2	2
	8	4	23.39	23.44	23.35		
	8	7	23.37	23.42	23.33		
	15	0	23.35	23.39	23.27		2
64QAM	1	0	23.30	23.33	23.28	≤ 2	2
	1	7	23.40	23.41	23.38		
	1	14	23.37	23.38	23.36		
	8	0	22.28	22.30	22.27	≤ 3	3
	8	4	22.33	22.34	22.31		
	8	7	22.31	22.32	22.29		
	15	0	22.27	22.33	22.25		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	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.09	25.12	25.07	≤ 1	0
	1	2	25.15	25.20	25.12		
	1	5	25.12	25.17	25.09		
	3	0	25.09	25.10	25.05		0
	3	2	25.13	25.18	25.08		
	3	3	25.11	25.15	25.07		
	6	0	24.18	24.20	24.15		1
16QAM	1	0	24.25	24.27	24.23	≤ 1	1
	1	2	24.33	24.38	24.31		
	1	5	24.31	24.32	24.27		
	3	0	24.20	24.21	24.18		1
	3	2	24.27	24.32	24.26		
	3	3	24.26	24.29	24.22		
	6	0	23.29	23.33	23.27	≤ 2	2
64QAM	1	0	23.25	23.27	23.23	≤ 2	2
	1	2	23.33	23.39	23.29		
	1	5	23.28	23.34	23.25		
	3	0	23.25	23.27	23.21		2
	3	2	23.29	23.36	23.23		
	3	3	23.27	23.30	23.22		
	6	0	22.17	22.21	22.15	≤ 3	3

Table 9.3.1.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 13	Maximum	25.5
	Nominal	25.0

Table 9.3.2.1 Nominal and Maximum Output Power Spec

2) LTE Band 13

LTE Band 13 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	25.25	≤ 1	0
	1	**25**	**25.28**		
	1	49	25.27		
	25	0	24.25		1
	25	**12**	**24.28**		
	25	25	24.26		
	50	0	24.26		1
16QAM	1	0	24.35	≤ 1	1
	1	25	24.38		
	1	49	24.37		
	25	0	23.24	≤ 2	2
	25	12	23.34		
	25	25	23.30		
	50	0	23.29		2
64QAM	1	0	23.37	≤ 2	2
	1	25	23.44		
	1	49	23.41		
	25	0	22.31	≤ 3	3
	25	12	22.38		
	25	25	22.33		
	50	0	22.29		3

Table 9.3.2.2 LTE Conducted Power

LTE Band 13 Conducted Power– 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	25.18	≤ 1	0
	1	12	25.25		
	1	24	25.23		
	12	0	24.17		1
	12	6	24.24		
	12	13	24.21		
	25	0	24.20		1
16QAM	1	0	24.32	≤ 1	1
	1	12	24.37		
	1	24	24.36		
	12	0	23.15	≤ 2	2
	12	6	23.26		
	12	13	23.25		
	25	0	23.23		2
64QAM	1	0	23.32	≤ 2	2
	1	12	23.41		
	1	24	23.35		
	12	0	22.22	≤ 3	3
	12	6	22.33		
	12	13	22.29		
	15	0	22.26		3

Table 9.3.2.3 LTE Conducted Power

Note : LTE B13 can not contain three non-overlapping channels of 5 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.

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

Table 9.3.3.1 Nominal and Maximum Output Power Spec

3) 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	25.25	≤ 1	0
	1	**25**	**25.33**		
	1	49	25.28		
	25	0	24.24		1
	25	**12**	**24.29**		
	25	25	24.25		
	50	0	24.25		1
16QAM	1	0	24.43	≤ 1	1
	1	25	24.46		
	1	49	24.44		
	25	0	23.21	≤ 2	2
	25	12	23.31		
	25	25	23.26		
	50	0	23.29		2
64QAM	1	0	23.41	≤ 2	2
	1	25	23.49		
	1	49	23.47		
	25	0	22.27	≤ 3	3
	25	12	22.35		
	25	25	22.28		
	50	0	22.32		3

Table 9.3.3.2 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	25.13	25.19	25.08	≤ 1	0
	1	12	25.23	25.30	25.18		
	1	24	25.17	25.24	25.12		
	12	0	24.16	24.20	24.13		1
	12	6	24.25	24.27	24.19		
	12	13	24.22	24.26	24.14		
	25	0	24.17	24.20	24.06		1
16QAM	1	0	24.32	24.37	24.26	≤ 1	1
	1	12	24.39	24.49	24.37		
	1	24	24.34	24.41	24.30		
	12	0	23.17	23.21	23.12	≤ 2	2
	12	6	23.27	23.34	23.25		
	12	13	23.25	23.26	23.20		
	25	0	23.19	23.20	23.10		2
64QAM	1	0	23.31	23.32	23.17	≤ 2	2
	1	12	23.37	23.40	23.22		
	1	24	23.35	23.37	23.19		
	12	0	22.26	22.27	22.13	≤ 3	3
	12	6	22.30	22.36	22.20		
	12	13	22.27	22.34	22.17		
	25	0	22.24	22.25	22.12		3

Table 9.3.3.3 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	25.10	25.12	25.08	≤ 1	0
	1	7	25.21	25.24	25.18		
	1	14	25.15	25.16	25.12		
	8	0	24.17	24.19	24.10		1
	8	4	24.21	24.25	24.20		
	8	7	24.18	24.23	24.16		
	15	0	24.15	24.24	24.09		1
16QAM	1	0	24.29	24.31	24.24	≤ 1	1
	1	7	24.32	24.37	24.30		
	1	14	24.31	24.34	24.26		
	8	0	23.28	23.29	23.19	≤ 2	2
	8	4	23.30	23.36	23.28		
	8	7	23.29	23.33	23.24		
	15	0	23.25	23.27	23.16		2
64QAM	1	0	23.29	23.31	23.13	≤ 2	2
	1	7	23.32	23.38	23.29		
	1	14	23.31	23.35	23.20		
	8	0	22.25	22.29	22.03	≤ 3	3
	8	4	22.31	22.38	22.25		
	8	7	22.27	22.32	22.08		
	15	0	22.26	22.32	21.96		3

Table 9.3.3.4 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	25.03	25.05	25.01	≤ 1	0
	1	2	25.10	25.13	25.07		
	1	5	25.04	25.09	25.03		
	3	0	25.01	25.02	24.99		0
	3	2	25.06	25.11	25.04		
	3	3	25.05	25.08	25.02		
	6	0	24.10	24.17	24.08		1
16QAM	1	0	24.15	24.18	24.11	≤ 1	1
	1	2	24.27	24.29	24.25		
	1	5	24.17	24.24	24.16		
	3	0	24.13	24.18	23.92		1
	3	2	24.23	24.28	23.97		
	3	3	24.15	24.26	23.96		
	6	0	23.17	23.25	22.99	≤ 2	2
64QAM	1	0	23.13	23.16	22.91	≤ 2	2
	1	2	23.25	23.29	22.95		
	1	5	23.15	23.21	22.92		
	3	0	23.15	23.18	22.85		2
	3	2	23.20	23.28	22.90		
	3	3	23.17	23.25	22.83		
	6	0	22.17	22.24	21.98	≤ 3	3

Table 9.3.3.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 4	Maximum	23.2
	Nominal	22.7

Table 9.3.4.1 Nominal and Maximum Output Power Spec

4) LTE Band 4

LTE Band 4 (AWS) Conducted Power– 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20175 (1 732.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	23.09	≤ 1	0
	1	**50**	**23.17**		
	1	99	23.03		
	50	0	21.63		1
	50	**25**	**21.71**		
	50	50	21.58		
	100	**0**	**21.61**		1
16QAM	1	0	22.04	≤ 1	1
	1	50	22.09		
	1	99	21.95		
	50	0	20.65	≤ 2	2
	50	25	20.74		
	50	50	20.57		
	100	0	20.61		2
64QAM	1	0	20.98	≤ 2	2
	1	50	21.06		
	1	99	20.87		
	50	0	19.63	≤ 3	3
	50	25	19.71		
	50	50	19.55		
	100	0	19.59		3

Table 9.3.4.2 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 (1 717.5 MHz)	Mid Channel 20175 (1 732.5 MHz)	High Channel 20325 (1 747.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	22.87	22.88	22.85	≤ 1	0
	1	36	23.05	23.08	23.02		
	1	74	22.85	22.86	22.82		
	36	0	21.57	21.59	21.56		1
	36	18	21.62	21.65	21.57		
	36	37	21.54	21.56	21.51		
	75	0	21.56	21.57	21.53		1
16QAM	1	0	21.84	21.87	21.81	≤ 1	1
	1	36	21.98	21.99	21.95		
	1	74	21.76	21.82	21.74		
	36	0	20.58	20.61	20.56	≤ 2	2
	36	18	20.65	20.66	20.60		
	36	37	20.54	20.56	20.53		
	75	0	20.56	20.57	20.53		2
64QAM	1	0	20.74	20.75	20.71	≤ 2	2
	1	36	20.93	20.95	20.87		
	1	74	20.73	20.74	20.70		
	36	0	19.57	19.58	19.55	≤ 3	3
	36	18	19.60	19.63	19.57		
	36	37	19.53	19.55	19.51		
	75	0	19.51	19.55	19.50		3

Table 9.3.4.3 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20000 (1 715.0 MHz)	Mid Channel 20175 (1 732.5 MHz)	High Channel 20350 (1 750.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	22.81	22.87	22.80	≤ 1	0
	1	25	23.06	23.09	23.05		
	1	49	22.74	22.76	22.73		
	25	0	21.53	21.54	21.51		1
	25	12	21.64	21.65	21.63		
	25	25	21.51	21.53	21.50		
	50	0	21.59	21.60	21.52		1
16QAM	1	0	21.63	21.78	21.61	≤ 1	1
	1	25	21.94	21.99	21.91		
	1	49	21.60	21.75	21.58		
	25	0	20.57	20.59	20.55	≤ 2	2
	25	12	20.65	20.66	20.63		
	25	25	20.56	20.57	20.53		
	50	0	20.61	20.62	20.55		2
64QAM	1	0	20.67	20.68	20.63	≤ 2	2
	1	25	20.91	20.93	20.88		
	1	49	20.63	20.65	20.60		
	25	0	19.57	19.58	19.52	≤ 3	3
	25	12	19.62	19.63	19.61		
	25	25	19.53	19.55	19.51		
	50	0	19.57	19.58	19.52		3

Table 9.3.4.4 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			19975 (1 712.5 MHz)	20175 (1 732.5 MHz)	20375 (1 752.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	22.90	22.91	22.89	≤ 1	0
	1	12	23.00	23.01	22.94		
	1	24	22.85	22.87	22.80		
	12	0	21.56	21.61	21.54		1
	12	6	21.61	21.63	21.59		
	12	13	21.52	21.54	21.51		
	25	0	21.56	21.57	21.52		1
16QAM	1	0	21.79	21.80	21.72	≤ 1	1
	1	12	21.82	21.83	21.77		
	1	24	21.71	21.72	21.70		
	12	0	20.59	20.63	20.55	≤ 2	2
	12	6	20.64	20.66	20.61		
	12	13	20.56	20.58	20.54		
	25	0	20.59	20.61	20.57		2
64QAM	1	0	20.80	20.83	20.78	≤ 2	2
	1	12	20.84	20.93	20.82		
	1	24	20.72	20.73	20.67		
	12	0	19.63	19.65	19.59	≤ 3	3
	12	6	19.66	19.68	19.63		
	12	13	19.58	19.61	19.54		
	25	0	19.58	19.60	19.55		3

Table 9.3.4.5 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			19965 (1 711.5 MHz)	20175 (1 732.5 MHz)	20385 (1 753.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	22.78	22.81	22.73	≤ 1	0
	1	7	22.98	23.00	22.95		
	1	14	22.73	22.76	22.70		
	8	0	21.55	21.58	21.53		1
	8	4	21.60	21.61	21.57		
	8	7	21.52	21.55	21.50		
	15	0	21.56	21.57	21.53		1
16QAM	1	0	21.67	21.68	21.66	≤ 1	1
	1	7	21.81	21.83	21.79		
	1	14	21.56	21.58	21.54		
	8	0	20.64	20.68	20.61	≤ 2	2
	8	4	20.69	20.70	20.65		
	8	7	20.60	20.63	20.59		
	15	0	20.59	20.62	20.55		2
64QAM	1	0	20.64	20.65	20.63	≤ 2	2
	1	7	20.81	20.83	20.80		
	1	14	20.61	20.63	20.51		
	8	0	19.64	19.65	19.63	≤ 3	3
	8	4	19.69	19.70	19.68		
	8	7	19.62	19.63	19.61		
	15	0	19.64	19.66	19.59		3

Table 9.3.4.6 LTE Conducted Power

TE Band 4 (AWS) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			19957 (1 710.7 MHz)	20175 (1 732.5 MHz)	20393 (1 754.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	22.88	22.90	22.86	≤ 1	0
	1	2	22.95	22.97	22.93		
	1	5	22.84	22.89	22.83		
	3	0	22.92	22.93	22.89		0
	3	2	22.93	22.94	22.92		
	3	3	22.90	22.92	22.85		
	6	0	21.58	21.60	21.55		1
16QAM	1	0	21.78	21.83	21.75	≤ 1	1
	1	2	21.82	21.86	21.81		
	1	5	21.75	21.77	21.73		
	3	0	21.75	21.80	21.72		1
	3	2	21.80	21.82	21.74		
	3	3	21.73	21.77	21.70		
	6	0	20.60	20.62	20.58	≤ 2	2
64QAM	1	0	20.77	20.80	20.75	≤ 2	2
	1	2	20.85	20.88	20.84		
	1	5	20.75	20.76	20.74		
	3	0	20.78	20.82	20.75		2
	3	2	20.82	20.83	20.79		
	3	3	20.75	20.78	20.74		
	6	0	19.61	19.62	19.57	≤ 3	3

Table 9.3.4.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 41	Maximum	24.2
	Nominal	23.7

Table 9.3.5.1 Nominal and Maximum Output Power Spec

5) LTE Band 41

LTE Band 41 Conducted Power– 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2 506.0 MHz)	Low-Mid Channel 40185 (2 549.5 MHz)	Mid Channel 40620 (2 593.0 MHz)	Mid-High Channel 41055 (2 636.5 MHz)	High Channel 41490 (2 680.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	1	0	24.04	23.99	23.72	23.65	23.61	≤ 1	0
	1	**50**	24.09	24.06	23.94	23.75	23.67		
	1	99	24.00	23.96	23.70	23.59	23.56		
	50	0	23.16	22.96	22.77	22.71	22.67		1
	50	**25**	23.18	23.03	22.89	22.81	22.73		
	50	50	23.15	22.84	22.71	22.69	22.61		
	100	0	23.13	22.98	22.83	22.73	22.63		1
16QAM	1	0	23.13	23.11	22.85	22.81	22.76	≤ 1	1
	1	50	23.16	23.14	23.05	22.93	22.86		
	1	99	23.08	23.07	22.83	22.75	22.64		
	50	0	22.03	22.01	21.81	21.77	21.75	≤ 2	2
	50	25	22.13	22.11	21.99	21.90	21.81		
	50	50	22.00	21.95	21.78	21.73	21.64		
	100	0	22.10	22.09	21.95	21.86	21.76		2
64QAM	1	0	22.06	22.04	21.76	21.71	21.67	≤ 2	2
	1	50	22.15	22.13	22.03	21.94	21.85		
	1	99	22.03	22.01	21.74	21.66	21.55		
	50	0	21.09	21.02	20.91	20.84	20.80	≤ 3	3
	50	25	21.18	21.12	21.04	20.95	20.86		
	50	50	21.07	21.00	20.88	20.83	20.74		
	100	0	21.12	20.98	20.95	20.88	20.81		3

Table 9.3.5.2 LTE Conducted Power

LTE Band 41 Conducted Power– 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39725 (2 503.5 MHz)	Low-Mid Channel 40173 (2 548.3 MHz)	Mid Channel 40620 (2 593.0 MHz)	Mid-High Channel 41068 (2 637.8 MHz)	High Channel 41515 (2 682.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	1	0	23.97	23.89	23.66	23.63	23.61	≤ 1	0
	1	36	24.05	23.90	23.83	23.75	23.69		
	1	74	23.96	23.80	23.63	23.60	23.58		
	36	0	23.03	22.91	22.69	22.65	22.60		1
	36	18	23.10	22.97	22.83	22.77	22.71		
	36	37	23.06	22.92	22.78	22.71	22.63		
	75	0	23.09	22.95	22.81	22.73	22.65		1
16QAM	1	0	23.05	22.99	22.81	22.78	22.75	≤ 1	1
	1	36	23.13	23.09	23.00	22.93	22.86		
	1	74	23.03	22.98	22.79	22.75	22.73		
	36	0	22.05	21.91	21.71	21.68	21.65	≤ 2	2
	36	18	22.13	21.99	21.85	21.78	21.71		
	36	37	22.08	21.95	21.81	21.74	21.67		
	75	0	22.10	21.98	21.82	21.75	21.68		2
64QAM	1	0	21.98	21.94	21.73	21.71	21.69	≤ 2	2
	1	36	22.05	22.03	21.88	21.83	21.78		
	1	74	21.94	21.93	21.68	21.65	21.64		
	36	0	21.01	20.99	20.77	20.74	20.70	≤ 3	3
	36	18	21.20	21.07	20.93	20.85	20.77		
	36	37	21.16	21.01	20.85	20.79	20.73		
	75	0	21.16	21.02	20.87	20.80	20.72		3

Table 9.3.5.3 LTE Conducted Power

LTE Band 41 Conducted Power– 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			39700 (2 501.0 MHz)	40160 (2 547.0 MHz)	40620 (2 593.0 MHz)	41080 (2 639.0 MHz)	41540 (2 685.0 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	23.93	23.74	23.71	23.64	23.57	≤ 1	0
	1	25	24.02	23.93	23.77	23.74	23.69		
	1	49	23.90	23.71	23.69	23.63	23.56		
	25	0	23.03	22.90	22.68	22.65	22.61		1
	25	12	23.09	22.98	22.87	22.80	22.73		
	25	25	23.04	22.91	22.77	22.71	22.65		
	50	0	23.08	22.95	22.82	22.72	22.62		1
16QAM	1	0	23.11	22.93	22.78	22.70	22.68	≤ 1	1
	1	25	23.14	23.10	22.96	22.91	22.88		
	1	49	23.06	22.90	22.66	22.63	22.61		
	25	0	22.13	21.95	21.75	21.71	21.67	≤ 2	2
	25	12	22.16	22.05	21.94	21.87	21.79		
	25	25	22.15	21.99	21.84	21.78	21.71		
	50	0	22.15	22.02	21.88	21.80	21.71		2
64QAM	1	0	22.11	21.85	21.81	21.77	21.74	≤ 2	2
	1	25	22.19	22.01	21.90	21.83	21.75		
	1	49	22.09	21.83	21.57	21.55	21.53		
	25	0	21.13	20.97	20.75	20.71	20.67	≤ 3	3
	25	12	21.19	21.06	20.94	20.87	20.79		
	25	25	21.15	20.99	20.83	20.78	20.72		
	50	0	21.18	21.05	20.90	20.83	20.75		3

Table 9.3.5.4 LTE Conducted Power

LTE Band 41 Conducted Power– 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			39675 (2 498.5 MHz)	40148 (2 545.8 MHz)	40620 (2 593.0 MHz)	41093 (2 640.3 MHz)	41565 (2 687.5 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	23.96	23.83	23.70	23.60	23.50	≤ 1	0
	1	12	24.03	23.91	23.79	23.70	23.65		
	1	24	24.01	23.87	23.74	23.62	23.58		
	12	0	23.11	22.93	22.73	22.68	22.62		1
	12	6	23.15	22.96	22.81	22.75	22.68		
	12	13	23.13	22.94	22.78	22.70	22.66		
	25	0	23.03	22.90	22.77	22.71	22.64		1
16QAM	1	0	23.07	23.01	22.88	22.79	22.68	≤ 1	1
	1	12	23.13	23.07	22.98	22.88	22.82		
	1	24	23.12	23.05	22.90	22.81	22.75		
	12	0	22.04	21.94	21.87	21.73	21.72	≤ 2	2
	12	6	22.12	22.07	21.94	21.86	21.77		
	12	13	22.07	21.95	21.90	21.80	21.73		
	25	0	21.99	21.94	21.80	21.75	21.70		2
64QAM	1	0	22.02	21.95	21.86	21.77	21.68	≤ 2	2
	1	12	22.09	22.01	21.93	21.86	21.79		
	1	24	22.05	21.99	21.88	21.81	21.74		
	12	0	21.10	20.99	20.89	20.86	20.79	≤ 3	3
	12	6	21.13	21.10	20.97	20.91	20.85		
	12	13	21.12	21.01	20.95	20.87	20.83		
	25	0	20.98	20.97	20.83	20.76	20.69		3

Table 9.3.5.5 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	1-11	16.5	15.5	16.5	15.5	-	-
		12-13	4.0	3.0	4.0	3.0	-	-
	802.11g	1-11	15.0	14.0	16.0	15.0	18.5	17.5
		12-13	4.0	3.0	4.0	3.0	7.0	6.0
	802.11n	1-11	14.0	13.0	15.0	14.0	17.5	16.5
		12-13	4.0	3.0	4.0	3.0	7.0	6.0
	802.11ac	1-11	14.0	13.0	15.0	14.0	17.5	16.5
		12-13	4.0	3.0	4.0	3.0	7.0	6.0

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	**2 412**	**1**	14.77	15.52	-	-
	2 437	**6**	15.65	15.17	-	-
	2 462	11	14.87	15.44	-	-
	2 467	12	3.17	3.05	-	-
	2 472	13	3.20	3.30	-	-
802.11g	2 412	1	14.29	15.36	17.87	-
	2 437	**6**	14.94	14.82	17.89	-
	2 462	11	14.30	15.10	17.73	-
	2 467	12	2.14	2.00	5.08	-
	2 472	13	2.63	2.55	5.60	-
802.11n (HT-20)	2 412	1	13.13	14.08	16.64	16.52
	2 437	6	13.85	13.83	16.85	16.90
	2 462	11	13.94	14.04	17.00	16.94
	2 467	12	2.01	2.11	5.07	5.09
	2 472	13	2.38	2.33	5.37	5.31
802.11ac (VHT-20)	2 412	1	12.96	14.00	16.52	16.42
	2 437	6	13.88	13.79	16.85	16.90
	2 462	11	13.30	13.94	16.65	16.62
	2 467	12	2.03	2.03	5.04	5.05
	2 472	13	2.19	2.21	5.21	5.30

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)	38-159	15.0	14.0	15.0	14.0	18.0	17.0
	802.11ac (80MHz)	42-155	15.0	14.0	15.0	14.0	18.0	17.0

Table 9.4.5 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	**5 180**	**36**	15.32	15.03	18.19	-
	5 200	40	15.01	14.97	18.00	-
	5 220	44	15.00	14.98	18.00	-
	5 240	48	15.02	15.00	18.02	-
	5 260	52	14.98	14.91	17.96	-
	5 280	**56**	15.02	14.96	18.00	-
	5 300	**60**	15.04	14.77	17.92	-
	5 320	64	15.02	14.77	17.91	-
	5 500	**100**	15.24	14.77	18.02	-
	5 600	120	15.04	14.43	17.76	-
	5 660	132	15.12	14.44	17.80	-
	5 720	144	14.98	14.60	17.80	-
	5 745	**149**	15.03	14.67	17.86	-
	5 785	157	14.74	14.49	17.63	-
	5 825	**165**	14.65	14.44	17.56	-

Table 9.4.6 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)	5 180	36	13.98	13.88	16.94	17.04
	5 200	40	13.87	13.87	16.88	16.90
	5 220	44	13.69	13.93	16.82	16.93
	5 240	48	13.65	13.71	16.69	16.80
	5 260	52	13.66	13.65	16.67	16.78
	5 280	56	13.78	13.70	16.75	16.89
	5 300	60	13.74	13.68	16.72	16.82
	5 320	64	13.88	13.61	16.76	16.71
	5 500	100	14.19	13.60	16.92	16.90
	5 600	120	14.14	13.28	16.74	16.69
	5 660	132	14.17	13.40	16.81	16.71
	5 720	144	14.12	13.57	16.86	16.73
	5 745	149	14.18	13.69	16.95	16.76
	5 785	157	13.90	13.49	16.71	16.61
	5 825	165	13.82	13.42	16.63	16.48

Table 9.4.7 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)	5 180	36	13.93	13.85	16.90	16.98
	5 200	40	13.81	13.74	16.79	16.90
	5 220	44	13.69	13.96	16.84	16.89
	5 240	48	13.75	13.73	16.75	16.82
	5 260	52	13.68	13.66	16.68	16.75
	5 280	56	13.95	13.71	16.84	16.88
	5 300	60	14.00	13.71	16.87	16.83
	5 320	64	13.73	13.63	16.69	16.67
	5 500	100	14.15	13.57	16.88	16.93
	5 600	120	14.09	13.25	16.70	16.67
	5 660	132	14.16	13.36	16.79	16.73
	5 720	144	14.12	13.45	16.81	16.72
	5 745	149	14.01	13.63	16.83	16.76
	5 785	157	13.85	13.37	16.63	16.60
	5 825	165	13.76	13.45	16.62	16.52

Table 9.4.8 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)	5 190	38	14.19	14.20	17.21	17.23
	5 230	46	13.95	14.17	17.07	17.07
	5 270	54	14.16	14.01	17.10	17.04
	5 310	62	14.24	13.92	17.09	17.07
	5 510	102	14.27	13.69	17.00	17.04
	5 590	118	14.02	13.60	16.83	16.87
	5 670	134	13.94	13.60	16.78	16.84
	5 710	142	14.05	13.58	16.83	16.91
	5 755	151	13.86	13.64	16.76	16.76
	5 795	159	13.68	13.67	16.69	16.73

Table 9.4.9 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)	5 190	38	14.32	14.23	17.29	17.20
	5 230	46	13.98	14.26	17.13	17.03
	5 270	54	14.16	13.99	17.09	17.04
	5 310	62	14.27	13.82	17.06	17.05
	5 510	102	14.26	13.66	16.98	16.97
	5 590	118	13.99	13.64	16.83	16.84
	5 670	134	13.89	13.56	16.74	16.83
	5 710	142	14.16	13.52	16.86	16.88
	5 755	151	13.94	13.64	16.80	16.73
	5 795	159	13.65	13.65	16.66	16.72

Table 9.4.10 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)	5 210	42	13.87	13.95	16.92	16.95
	5 290	58	14.02	13.59	16.82	16.86
	5 530	106	14.08	13.63	16.87	16.86
	5 610	122	13.99	13.23	16.64	16.66
	5 690	138	13.84	13.36	16.62	16.64
	5 775	155	13.48	13.41	16.46	16.58

Table 9.4.11 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.

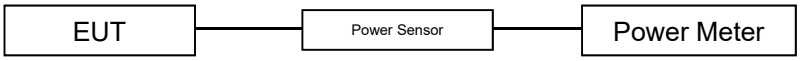


Figure 9.4 Power Measurement Setup

9.5 Bluetooth Conducted Powers

Burst Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	11.0
	Nominal	10.0
Bluetooth 2 Mbps	Maximum	11.0
	Nominal	10.0
Bluetooth 3 Mbps	Maximum	11.0
	Nominal	10.0
Bluetooth LE	Maximum	8.5
	Nominal	7.5

Table 9.5.1 Nominal and Maximum Output Power Spec (Burst)

Frame Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	9.85
	Nominal	8.85
Bluetooth 2 Mbps	Maximum	9.85
	Nominal	8.85
Bluetooth 3 Mbps	Maximum	9.85
	Nominal	8.85
Bluetooth (LE / 1Mbps)	Maximum	7.80
	Nominal	6.80
Bluetooth (LE / 2Mbps)	Maximum	6.09
	Nominal	5.09

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	2 402	9.82	8.67	9.86	8.71	9.84	8.69
Mid	2 441	10.98	9.83	10.94	9.79	10.93	9.78
High	2 480	9.53	8.38	9.45	8.30	9.43	8.28

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	2 402	7.08	6.38	7.11	4.70
Mid	2 440	8.05	7.35	8.05	5.64
High	2 480	7.75	7.05	7.75	5.34

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.

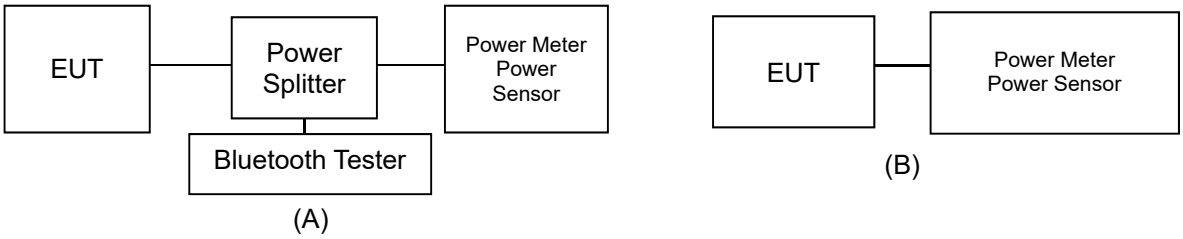


Figure 9.5.1 Average Power Measurement Setup

- **Bluetooth Transmission Plot**

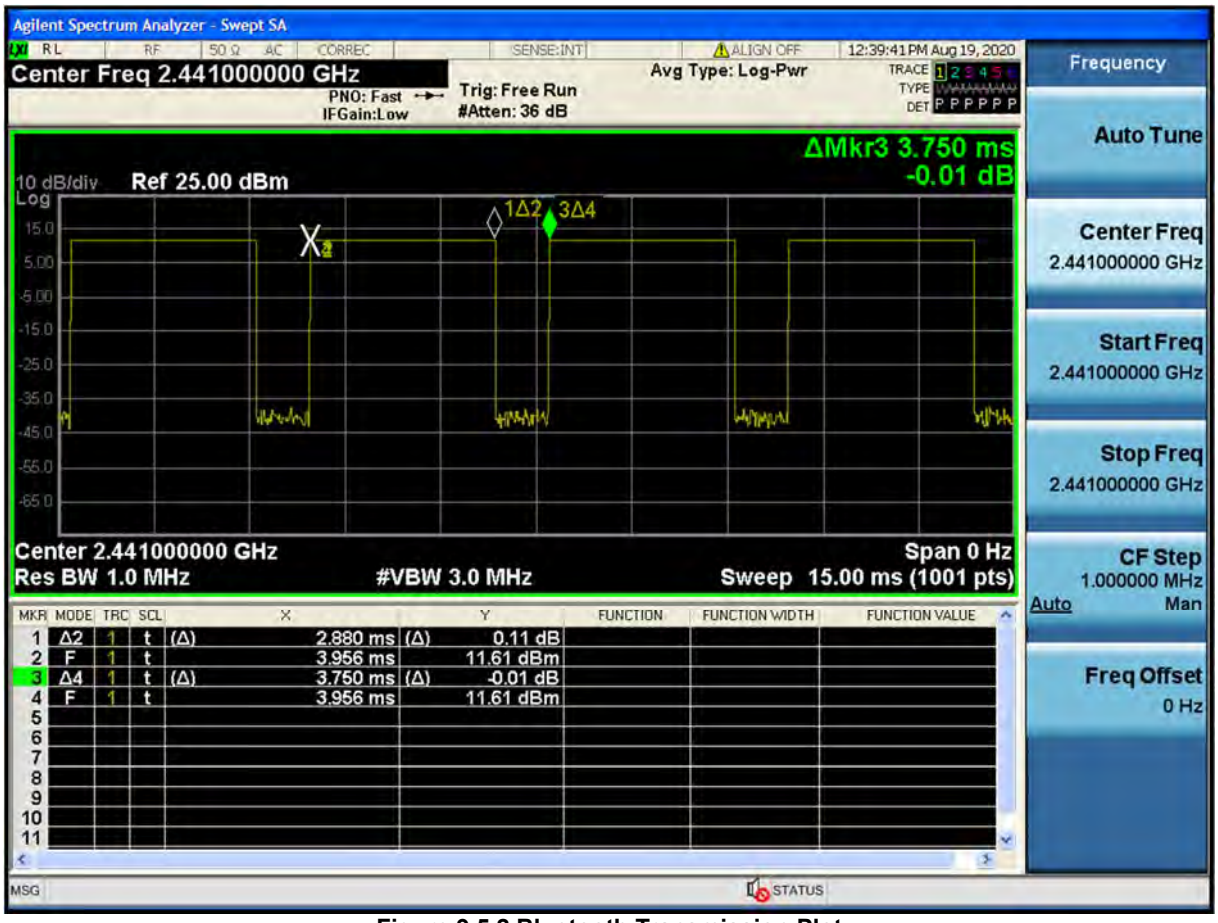


Figure 9.5.2 Bluetooth Transmission Plot

- **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 [%]
Aug. 13. 2020	750 Head	21.6	21.7	707.5	42.129	0.887	41.476	0.862	-1.55	-2.82
				750.0	41.900	0.890	40.870	0.896	-2.46	0.67
				782.0	41.749	0.894	40.466	0.928	-3.07	3.80
Aug. 18. 2020	750 Body	21.2	21.0	707.5	55.672	0.957	56.034	0.925	0.65	-3.34
				750.0	55.500	0.960	55.582	0.967	0.15	0.73
				782.0	55.387	0.964	55.253	1.001	-0.24	3.84
Aug. 6. 2020	835 Head	21.4	21.1	821.5	41.566	0.898	40.986	0.871	-1.40	-3.01
				824.2	41.552	0.899	40.951	0.873	-1.45	-2.89
				826.4	41.542	0.899	40.918	0.875	-1.50	-2.67
				829.0	41.528	0.899	40.883	0.877	-1.55	-2.45
				831.5	41.519	0.900	40.847	0.880	-1.62	-2.22
				835.0	41.500	0.900	40.798	0.883	-1.69	-1.89
				836.5	41.500	0.901	40.779	0.884	-1.74	-1.89
				836.6	41.500	0.901	40.776	0.884	-1.74	-1.89
				841.5	41.500	0.906	40.710	0.888	-1.90	-1.99
				844.0	41.500	0.910	40.680	0.890	-1.98	-2.20
				846.6	41.500	0.912	40.648	0.893	-2.05	-2.08
				848.8	41.500	0.914	40.620	0.895	-2.12	-2.08
Aug. 19. 2020	835 Body	21.6	21.2	821.5	55.255	0.969	53.786	0.997	-2.66	2.89
				824.2	55.243	0.969	53.752	0.999	-2.70	3.10
				826.4	55.235	0.969	53.725	1.001	-2.73	3.30
				829.0	55.223	0.970	53.691	1.003	-2.77	3.40
				831.5	55.216	0.970	53.654	1.006	-2.83	3.71
				835.0	55.200	0.970	53.602	1.008	-2.89	3.92
				836.5	55.197	0.971	53.585	1.009	-2.92	3.91
				836.6	55.197	0.971	53.584	1.009	-2.92	3.91
				841.5	55.182	0.977	53.519	1.015	-3.01	3.89
				844.0	55.172	0.981	53.492	1.017	-3.05	3.67
				846.6	55.166	0.984	53.457	1.020	-3.10	3.66
				848.8	55.160	0.986	53.427	1.022	-3.14	3.65
Aug. 4. 2020	1 800 Head	21.3	21.0	1 712.4	40.126	1.350	40.430	1.336	0.76	-1.04
				1 720.0	40.114	1.354	40.439	1.341	0.81	-0.96
				1 732.4	40.097	1.361	40.409	1.347	0.78	-1.03
				1 732.5	40.097	1.361	40.409	1.347	0.78	-1.03
				1 745.0	40.079	1.369	40.390	1.355	0.78	-1.02
				1 752.6	40.069	1.373	40.383	1.361	0.78	-0.87
				1 770.0	40.043	1.383	40.349	1.374	0.76	-0.65
				1 800.0	40.000	1.400	40.283	1.398	0.71	-0.14
Aug. 26. 2020	1 800 Body	21.8	22.0	1 712.4	53.596	1.464	54.635	1.423	1.94	-2.80
				1 720.0	53.580	1.469	54.626	1.430	1.95	-2.65
				1 732.4	53.556	1.477	54.607	1.444	1.96	-2.23
				1 732.5	53.556	1.477	54.607	1.444	1.96	-2.23
				1 745.0	53.530	1.485	54.588	1.455	1.98	-2.02
				1 752.6	53.516	1.489	54.574	1.463	1.98	-1.75
				1 770.0	53.480	1.501	54.539	1.479	1.98	-1.47
				1 800.0	53.300	1.520	54.471	1.509	2.20	-0.72
Aug. 21. 2020	1 900 Head	21.6	21.4	1 850.2	40.000	1.400	39.812	1.376	-0.47	-1.71
				1 852.4	40.000	1.400	39.810	1.378	-0.47	-1.57
				1 860.0	40.000	1.400	39.800	1.385	-0.50	-1.07
				1 880.0	40.000	1.400	39.754	1.403	-0.62	0.21
				1 900.0	40.000	1.400	39.700	1.422	-0.75	1.57
				1 907.6	40.000	1.400	39.681	1.429	-0.80	2.07
				1 909.8	40.000	1.400	39.676	1.431	-0.81	2.21
Aug. 24. 2020	1 900 Body	21.8	21.9	1 850.2	53.300	1.520	52.356	1.469	-1.77	-3.36
				1 852.4	53.300	1.520	52.348	1.470	-1.79	-3.29
				1 860.0	53.300	1.520	52.331	1.477	-1.82	-2.83
				1 880.0	53.300	1.520	52.288	1.497	-1.90	-1.51
				1 900.0	53.300	1.520	52.255	1.519	-1.96	-0.07
				1 907.6	53.300	1.520	52.246	1.526	-1.98	0.39
				1 909.8	53.300	1.520	52.241	1.529	-1.99	0.59
Aug. 7. 2020	2 450 Head	20.3	20.0	2 402.0	39.282	1.757	38.459	1.713	-2.10	-2.50
				2 412.0	39.265	1.766	38.423	1.726	-2.14	-2.27
				2 437.0	39.222	1.788	38.345	1.756	-2.24	-1.79
				2 441.0	39.215	1.792	38.334	1.760	-2.25	-1.79
				2 450.0	39.200	1.800	38.308	1.770	-2.28	-1.67
				2 462.0	39.184	1.813	38.245	1.782	-2.40	-1.71
				2 467.0	39.177	1.818	38.260	1.787	-2.34	-1.71
				2 472.0	39.171	1.823	38.243	1.792	-2.37	-1.70
				2 480.0	39.160	1.832	38.212	1.800	-2.42	-1.75
Aug. 12. 2020	2 450 Body	20.3	20.4	2 402.0	52.764	1.904	51.508	1.866	-2.38	-2.00
				2 412.0	52.751	1.914	51.478	1.879	-2.41	-1.83
				2 437.0	52.717	1.938	51.420	1.911	-2.46	-1.39
				2 441.0	52.712	1.941	51.411	1.917	-2.47	-1.24
				2 450.0	52.700	1.950	51.395	1.927	-2.48	-1.18
				2 462.0	52.685	1.967	51.376	1.940	-2.48	-1.37
				2 467.0	52.678	1.974	51.363	1.946	-2.50	-1.42
				2 472.0	52.672	1.981	51.354	1.951	-2.50	-1.51
				2 480.0	52.662	1.993	51.328	1.960	-2.53	-1.66

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 [%]
Aug. 10. 2020	2 600 Head	20.2	20.0	2 506.0	39.125	1.860	38.897	1.839	-0.58	-1.13
				2 549.5	39.068	1.906	38.593	1.888	-1.22	-0.94
				2 593.0	39.009	1.953	38.558	1.944	-1.16	-0.46
				2 600.0	39.000	1.960	38.553	1.951	-1.15	-0.46
				2 636.5	38.955	2.000	38.356	1.982	-1.54	-0.90
				2 680.0	38.900	2.048	38.117	2.037	-2.01	-0.54
Sep. 3. 2020	2 600 Body	20.6	20.5	2 506.0	52.629	2.029	51.486	1.999	-2.17	-1.48
				2 549.5	52.574	2.090	51.362	2.057	-2.31	-1.58
				2 593.0	52.518	2.153	51.239	2.106	-2.44	-2.18
				2 600.0	52.509	2.163	51.222	2.113	-2.45	-2.31
				2 636.5	52.463	2.214	51.115	2.155	-2.57	-2.66
				2 680.0	52.407	2.276	50.984	2.219	-2.72	-2.50
Aug. 24. 2020	5 200 Body	20.5	20.3	5 180.0	49.041	5.276	49.548	5.329	1.03	1.00
				5 190.0	49.028	5.288	49.524	5.342	1.01	1.02
				5 200.0	49.014	5.299	49.503	5.358	1.00	1.11
				5 210.0	49.001	5.311	49.488	5.373	0.99	1.17
				5 220.0	48.987	5.323	49.469	5.386	0.98	1.18
				5 230.0	48.974	5.334	49.447	5.399	0.97	1.22
				5 240.0	48.960	5.346	49.425	5.414	0.95	1.27
Sep. 5. 2020	5 300 Head	20.3	20.4	5 260.0	35.940	4.720	34.619	4.831	-3.68	2.35
				5 270.0	35.930	4.730	34.606	4.843	-3.68	2.39
				5 280.0	35.920	4.740	34.599	4.852	-3.68	2.36
				5 290.0	35.910	4.750	34.582	4.860	-3.70	2.32
				5 300.0	35.900	4.760	34.556	4.871	-3.74	2.33
				5 310.0	35.890	4.770	34.536	4.884	-3.77	2.39
				5 320.0	35.880	4.780	34.521	4.896	-3.79	2.43
Sep. 9. 2020	5 300 Body	20.3	20.2	5 260.0	48.933	5.369	49.773	5.489	1.72	2.24
				5 270.0	48.919	5.381	49.760	5.504	1.72	2.29
				5 280.0	48.906	5.393	49.750	5.516	1.73	2.28
				5 290.0	48.892	5.404	49.728	5.528	1.71	2.29
				5 300.0	48.879	5.416	49.702	5.542	1.68	2.33
				5 310.0	48.865	5.428	49.681	5.558	1.67	2.39
				5 320.0	48.851	5.439	49.664	5.571	1.66	2.43
Sep. 6. 2020	5 600 Head	20.5	20.3	5 500.0	35.650	4.965	34.515	5.097	-3.18	2.66
				5 510.0	35.635	4.976	34.493	5.106	-3.20	2.61
				5 530.0	35.605	4.997	34.449	5.128	-3.25	2.62
				5 550.0	35.575	5.018	34.426	5.146	-3.23	2.55
				5 580.0	35.530	5.049	34.372	5.185	-3.26	2.69
				5 600.0	35.500	5.070	34.356	5.210	-3.22	2.76
				5 660.0	35.440	5.130	34.237	5.260	-3.39	2.53
				5 670.0	35.430	5.140	34.209	5.270	-3.45	2.53
				5 690.0	35.410	5.160	34.167	5.302	-3.51	2.75
				5 710.0	35.390	5.180	34.156	5.329	-3.49	2.88
				5 720.0	35.380	5.190	34.144	5.337	-3.49	2.83
Sep. 10. 2020	5 600 Body	20.1	20.2	5 500.0	48.607	5.650	47.432	5.691	-2.42	0.73
				5 510.0	48.594	5.661	47.420	5.701	-2.42	0.71
				5 530.0	48.566	5.685	47.393	5.727	-2.42	0.74
				5 550.0	48.539	5.708	47.374	5.750	-2.40	0.74
				5 580.0	48.499	5.743	47.330	5.791	-2.41	0.84
				5 600.0	48.471	5.766	47.321	5.819	-2.37	0.92
				5 660.0	48.390	5.836	47.245	5.897	-2.37	1.05
				5 670.0	48.376	5.848	47.227	5.910	-2.38	1.06
				5 690.0	48.349	5.872	47.120	5.943	-2.54	1.21
				5 710.0	48.322	5.895	47.181	5.970	-2.36	1.27
				5 720.0	48.309	5.907	47.174	5.981	-2.35	1.25
Sep. 7. 2020	5 800 Head	20.2	20.3	5 745.0	35.355	5.215	34.099	5.363	-3.55	2.84
				5 755.0	35.345	5.225	34.085	5.371	-3.56	2.79
				5 775.0	35.325	5.245	34.042	5.386	-3.63	2.69
				5 785.0	35.315	5.255	34.014	5.399	-3.68	2.74
				5 795.0	35.305	5.265	33.991	5.415	-3.72	2.85
				5 800.0	35.300	5.270	33.982	5.423	-3.73	2.90
				5 825.0	35.275	5.296	33.964	5.453	-3.72	2.96
Sep. 11. 2020	5 800 Body	20.4	20.5	5 745.0	48.275	5.936	48.195	6.122	-0.17	3.13
				5 755.0	48.261	5.947	48.181	6.137	-0.17	3.19
				5 775.0	48.234	5.971	48.154	6.165	-0.17	3.25
				5 785.0	48.220	5.982	48.127	6.181	-0.19	3.33
				5 795.0	48.207	5.994	48.110	6.198	-0.20	3.40
				5 800.0	48.200	6.000	48.103	6.206	-0.20	3.43
				5 825.0	48.166	6.029	48.079	6.237	-0.18	3.45

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 [%]
B	750	D750V3, SN:1049	Aug. 13. 2020	Head	21.6	21.7	3866	250	8.47	2.14	8.56	1.06
B	750	D750V3, SN:1049	Aug. 18. 2020	Body	21.2	21.0	3866	250	8.43	2.16	8.64	2.49
B	835	D835V2, SN:4d159	Aug. 6. 2020	Head	21.4	21.1	7337	250	9.47	2.32	9.28	-2.01
B	835	D835V2, SN:4d159	Aug. 19. 2020	Body	21.6	21.2	3866	250	9.50	2.40	9.60	1.05
B	1 800	D1800V2, SN:2d202	Aug. 4. 2020	Head	21.3	21.0	7337	100	39.6	3.94	39.40	-0.51
B	1 800	D1800V2, SN:2d202	Aug. 26. 2020	Body	21.8	22.0	3328	100	39.0	3.87	38.70	-0.77
B	1 900	D1900V2, SN:5d176	Aug. 21. 2020	Head	21.6	21.4	3328	100	39.3	4.00	40.00	1.78
B	1 900	D1900V2, SN:5d176	Aug. 24. 2020	Body	21.8	21.9	3328	100	38.9	3.83	38.30	-1.54
A	2 450	D2450V2, SN: 726	Aug. 7. 2020	Head	20.3	20.0	3916	100	51.2	5.17	51.70	0.98
A	2 450	D2450V2, SN: 726	Aug. 12. 2020	Body	20.3	20.4	3916	100	52.0	5.34	53.40	2.69
A	2 600	D2600V2, SN: 1103	Aug. 10. 2020	Head	20.2	20.0	3916	100	57.8	5.77	57.70	-0.17
A	2 600	D2600V2, SN: 1103	Sep. 3. 2020	Body	20.6	20.5	3916	100	55.8	5.38	53.80	-3.58
A	5 200	D5GHzV2, SN:1212	Aug. 24. 2020	Body	20.5	20.3	3916	100	72.8	7.55	75.50	3.71
A	5 300	D5GHzV2, SN:1212	Sep. 5. 2020	Head	20.3	20.4	3916	100	81.3	8.23	82.30	1.23
A	5 300	D5GHzV2, SN:1212	Sep. 9. 2020	Body	20.3	20.2	3916	100	72.8	7.37	73.70	1.24
A	5 500	D5GHzV2, SN:1212	Sep. 6. 2020	Head	20.5	20.3	3916	100	86.3	8.65	86.50	0.23
A	5 500	D5GHzV2, SN:1212	Sep. 10. 2020	Body	20.1	20.2	3916	100	78.6	7.94	79.40	1.02
A	5 800	D5GHzV2, SN:1212	Sep. 7. 2020	Head	20.2	20.3	3916	100	81.5	8.14	81.40	-0.12
A	5 800	D5GHzV2, SN:1212	Sep. 11. 2020	Body	20.4	20.5	3916	100	73.7	7.56	75.60	2.58

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	5 300	D5GHzV2, SN:1212	Sep. 9. 2020	Body	20.3	20.2	3916	100	20.2	2.05	20.50	1.49
A	5 500	D5GHzV2, SN:1212	Sep. 10. 2020	Body	20.1	20.2	3916	100	21.6	2.21	22.10	2.31
A	5 800	D5GHzV2, SN:1212	Sep. 11. 2020	Body	20.4	20.5	3916	100	20.2	2.10	21.00	3.96

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.

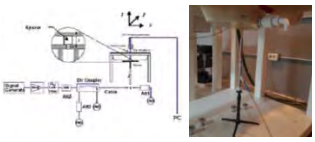


Figure 10.1 Dipole Verification Test Setup Diagram & Photo

11. SAR TEST RESULTS

11.1 Standalone Head SAR Results

Table 11.1.1 GSM/GPRS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	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	33.62	0.060	Left Touch	FCC #1	1	1:8.3	0.074	1.019	**0.075**	A1
836.6	190	GSM850	GSM	33.70	33.62	0.180	Right Touch	FCC #1	1	1:8.3	0.058	1.019	0.059	
836.6	190	GSM850	GSM	33.70	33.62	0.070	Left Tilt	FCC #1	1	1:8.3	0.033	1.019	0.034	
836.6	190	GSM850	GSM	33.70	33.62	0.120	Right Tilt	FCC #1	1	1:8.3	0.037	1.019	0.038	
836.6	190	GSM850	GPRS	28.70	28.27	0.120	Left Touch	FCC #1	4	1:2.075	0.106	1.104	**0.117**	A2
836.6	190	GSM850	GPRS	28.70	28.27	-0.150	Right Touch	FCC #1	4	1:2.075	0.077	1.104	0.085	
836.6	190	GSM850	GPRS	28.70	28.27	0.100	Left Tilt	FCC #1	4	1:2.075	0.044	1.104	0.049	
836.6	190	GSM850	GPRS	28.70	28.27	0.120	Right Tilt	FCC #1	4	1:2.075	0.037	1.104	0.041	
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 11.1.2 PCS/GPRS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	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													
1 880.0	661	PCS1900	PCS	29.70	29.48	0.000	Left Touch	FCC #1	1	1:8.3	0.047	1.052	0.049	
1 880.0	661	PCS1900	PCS	29.70	29.48	0.000	Right Touch	FCC #1	1	1:8.3	0.069	1.052	**0.073**	A3
1 880.0	661	PCS1900	PCS	29.70	29.48	-0.011	Left Tilt	FCC #1	1	1:8.3	0.035	1.052	0.037	
1 880.0	661	PCS1900	PCS	29.70	29.48	0.160	Right Tilt	FCC #1	1	1:8.3	0.024	1.052	0.025	
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.000	Left Touch	FCC #1	3	1:2.77	0.077	1.019	0.078	
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.000	Right Touch	FCC #1	3	1:2.77	0.105	1.019	**0.107**	A4
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.080	Left Tilt	FCC #1	3	1:2.77	0.058	1.019	0.059	
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.030	Right Tilt	FCC #1	3	1:2.77	0.037	1.019	0.038	
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 11.1.3 WCDMA 850 Head SAR

MEASUREMENT RESULTS													
FREQUENCY		Mode/ Band	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	25.18	0.180	Left Touch	FCC #1	1:1	0.155	1.076	**0.167**	A5
836.6	4183	WCDMA 850	-	RMC	25.50	25.18	0.160	Right Touch	FCC #1	1:1	0.127	1.076	0.137	
836.6	4183	WCDMA 850	-	RMC	25.50	25.18	0.100	Left Tilt	FCC #1	1:1	0.056	1.076	0.060	
836.6	4183	WCDMA 850	-	RMC	25.50	25.18	-0.080	Right Tilt	FCC #1	1:1	0.076	1.076	0.082	
836.6	4183	WCDMA 850	#1	RMC	25.50	25.18	-0.040	Left Touch	FCC #1	1:1	0.027	1.076	0.029	
836.6	4183	WCDMA 850	#2	RMC	25.50	25.18	0.190	Left Touch	FCC #1	1:1	0.119	1.076	0.128	
836.6	4183	WCDMA 850	#3	RMC	25.50	25.18	-0.190	Left Touch	FCC #1	1:1	0.142	1.076	0.153	
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. Green entries represent additional Head SAR Test Position (#2: DD angle: 180 degree) with the worst case position.
3. Orange entries represent additional Head SAR Test Position (#3: DD angle: 360 degree) with the worst case position.

Table 11.1.4 LTE Band 12 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	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	25.31	-0.020	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.158	1.045	**0.165**	A6
707.5	23095	LTE B12	10	24.50	24.37	0.150	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.110	1.030	0.113	
707.5	23095	LTE B12	10	25.50	25.31	0.130	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.082	1.045	0.086	
707.5	23095	LTE B12	10	24.50	24.37	0.120	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.071	1.030	0.073	
707.5	23095	LTE B12	10	25.50	25.31	0.130	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.052	1.045	0.054	
707.5	23095	LTE B12	10	24.50	24.37	0.140	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.034	1.030	0.035	
707.5	23095	LTE B12	10	25.50	25.31	0.140	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.076	1.045	0.079	
707.5	23095	LTE B12	10	24.50	24.37	0.090	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.064	1.030	0.066	
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 11.1.5 LTE Band 13 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	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																
782.0	23230	LTE B13	10	25.50	25.28	0.050	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.145	1.052	**0.153**	A7
782.0	23230	LTE B13	10	24.50	24.28	0.190	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.104	1.052	0.109	
782.0	23230	LTE B13	10	25.50	25.28	-0.060	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.131	1.052	0.138	
782.0	23230	LTE B13	10	24.50	24.28	0.080	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.095	1.052	0.100	
782.0	23230	LTE B13	10	25.50	25.28	0.160	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.064	1.052	0.067	
782.0	23230	LTE B13	10	24.50	24.28	-0.010	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.051	1.052	0.054	
782.0	23230	LTE B13	10	25.50	25.28	0.080	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.066	1.052	0.069	
782.0	23230	LTE B13	10	24.50	24.28	-0.170	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.052	1.052	0.055	
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 11.1.6 LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	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	25.33	-0.130	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.145	1.040	**0.151**	A8
836.5	20525	LTE B5	10	24.50	24.29	0.100	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.109	1.050	0.114	
836.5	20525	LTE B5	10	25.50	25.33	-0.010	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.123	1.040	0.128	
836.5	20525	LTE B5	10	24.50	24.29	-0.050	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.084	1.050	0.088	
836.5	20525	LTE B5	10	25.50	25.33	0.040	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.060	1.040	0.062	
836.5	20525	LTE B5	10	24.50	24.29	-0.190	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.040	1.050	0.042	
836.5	20525	LTE B5	10	25.50	25.33	0.150	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.060	1.040	0.062	
836.5	20525	LTE B5	10	24.50	24.29	0.180	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.044	1.050	0.046	
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 11.1.7 LTE Band 4 (AWS) Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	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																
1 732.5	20175	LTE B4	20	23.20	23.17	0.190	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.068	1.007	0.068	
1 732.5	20175	LTE B4	20	22.20	21.71	0.030	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.049	1.119	0.055	
1 732.5	20175	LTE B4	20	23.20	23.17	0.180	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.094	1.007	**0.095**	A9
1 732.5	20175	LTE B4	20	22.20	21.71	0.120	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.075	1.119	0.084	
1 732.5	20175	LTE B4	20	23.20	23.17	-0.100	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.067	1.007	0.067	
1 732.5	20175	LTE B4	20	22.20	21.71	0.180	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.056	1.119	0.063	
1 732.5	20175	LTE B4	20	23.20	23.17	-0.090	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.052	1.007	0.052	
1 732.5	20175	LTE B4	20	22.20	21.71	-0.090	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.042	1.119	0.047	
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 11.1.8 LTE Band 41 Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	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																
2 506.0	39750	LTE B41	20	24.20	24.09	0.000	0	Left Touch	FCC #1	QPSK	1	50	1:1.58	0.063	1.026	**0.065**	A10
2 506.0	39750	LTE B41	20	23.20	23.18	0.000	1	Left Touch	FCC #1	QPSK	50	25	1:1.58	0.041	1.005	0.041	
2 506.0	39750	LTE B41	20	24.20	24.09	-0.060	0	Right Touch	FCC #1	QPSK	1	50	1:1.58	0.043	1.026	0.044	
2 506.0	39750	LTE B41	20	23.20	23.18	0.120	1	Right Touch	FCC #1	QPSK	50	25	1:1.58	0.026	1.005	0.026	
2 506.0	39750	LTE B41	20	24.20	24.09	0.020	0	Left Tilt	FCC #1	QPSK	1	50	1:1.58	0.019	1.026	0.019	
2 506.0	39750	LTE B41	20	23.20	23.18	0.090	1	Left Tilt	FCC #1	QPSK	50	25	1:1.58	0.013	1.005	0.013	
2 506.0	39750	LTE B41	20	24.20	24.09	0.180	0	Right Tilt	FCC #1	QPSK	1	50	1:1.58	0.025	1.026	0.026	
2 506.0	39750	LTE B41	20	23.20	23.18	0.070	1	Right Tilt	FCC #1	QPSK	50	25	1:1.58	0.014	1.005	0.014	
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 11.1.9 DTS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode (Antenna)	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															
2 437.0	6	802.11b (Ant.1)	-	16.50	15.65	0.090	Left Touch	FCC #2	0.086	1	99.3	0.090	1.216	1.007	0.110	
2 437.0	6	802.11b (Ant.1)	-	16.50	15.65	0.060	Right Touch	FCC #2	0.255	1	99.3	0.250	1.216	1.007	0.306	
2 437.0	6	802.11b (Ant.1)	-	16.50	15.65	0.140	Left Tilt	FCC #2	0.109	1	99.3	0.116	1.216	1.007	0.142	
2 437.0	6	802.11b (Ant.1)	-	16.50	15.65	-0.080	Right Tilt	FCC #2	0.252	1	99.3	0.260	1.216	1.007	**0.318**	A11
2 412.0	1	802.11b (Ant.2)	-	16.50	15.52	0.060	Left Touch	FCC #2	0.316	1	99.2	0.331	1.253	1.008	0.418	
2 412.0	1	802.11b (Ant.2)	-	16.50	15.52	0.070	Right Touch	FCC #2	0.498	1	99.2	0.477	1.253	1.008	0.603	
2 412.0	1	802.11b (Ant.2)	-	16.50	15.52	0.150	Left Tilt	FCC #2	0.341	1	99.2	0.348	1.253	1.008	0.440	
2 412.0	1	802.11b (Ant.2)	-	16.50	15.52	0.060	Right Tilt	FCC #2	0.533	1	99.2	0.543	1.253	1.008	**0.686**	A12
2 437.0	6	802.11g (MIMO)	-	18.50	17.89	0.120	Left Touch	FCC #2	0.331	1	99.3	0.333	1.253	1.007	0.420	
2 437.0	6	802.11g (MIMO)	-	18.50	17.89	-0.010	Right Touch	FCC #2	0.601	1	99.3	0.581	1.253	1.007	**0.733**	A13
2 437.0	6	802.11g (MIMO)	-	18.50	17.89	0.030	Left Tilt	FCC #2	0.353	1	99.3	0.349	1.253	1.007	0.440	
2 437.0	6	802.11g (MIMO)	-	18.50	17.89	0.070	Right Tilt	FCC #2	0.589	1	99.3	0.575	1.253	1.007	0.726	
2 437.0	6	802.11g (MIMO)	#1	18.50	17.89	0.170	Right Touch	FCC #2	0.438	1	99.3	0.413	1.253	1.007	0.521	
2 437.0	6	802.11g (MIMO)	#2	18.50	17.89	0.050	Right Touch	FCC #2	0.571	1	99.3	0.553	1.253	1.007	0.698	
2 437.0	6	802.11g (MIMO)	#3	18.50	17.89	0.010	Right Touch	FCC #2	0.589	1	99.3	0.561	1.253	1.007	0.708	
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. Green entries represent additional Head SAR Test Position (#2: DD angle: 180 degree) with the worst case position.
3. Orange entries represent additional Head SAR Test Position (#3: 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											
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.318	2 437.0	802.11g	OFDM	15.0	0.708	**0.225**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.318	2 437.0	802.11n	OFDM	14.0	0.562	**0.179**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.318	2 437.0	802.11ac	OFDM	14.0	0.562	**0.179**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.686	2 412.0	802.11g	OFDM	16.0	0.891	**0.611**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.686	2 412.0	802.11n	OFDM	15.0	0.708	**0.486**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.686	2 412.0	802.11ac	OFDM	15.0	0.708	**0.486**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.733	2 437.0	802.11n	OFDM	17.5	0.794	**0.582**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.733	2 437.0	802.11ac	OFDM	17.5	0.794	**0.582**	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)	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														
5 300.0	60	802.11a (Ant.1)	16.00	15.04	-0.080	Left Touch	FCC #2	0.061	6	98.3	0.047	1.247	1.017	0.060	
5 300.0	60	802.11a (Ant.1)	16.00	15.04	-0.040	Right Touch	FCC #2	0.134	6	98.3	0.140	1.247	1.017	**0.178**	A14
5 300.0	60	802.11a (Ant.1)	16.00	15.04	-0.140	Left Tilt	FCC #2	0.076	6	98.3	0.063	1.247	1.017	0.080	
5 300.0	60	802.11a (Ant.1)	16.00	15.04	-0.170	Right Tilt	FCC #2	0.092	6	98.3	0.095	1.247	1.017	0.121	
5 280.0	56	802.11a (Ant.2)	16.00	14.96	0.030	Left Touch	FCC #2	0.080	6	98.0	0.054	1.271	1.020	0.070	
5 280.0	56	802.11a (Ant.2)	16.00	14.96	-0.140	Right Touch	FCC #2	0.147	6	98.0	0.142	1.271	1.020	**0.184**	A15
5 280.0	56	802.11a (Ant.2)	16.00	14.96	0.000	Left Tilt	FCC #2	0.023	6	98.0	0.020	1.271	1.020	0.026	
5 280.0	56	802.11a (Ant.2)	16.00	14.96	0.000	Right Tilt	FCC #2	0.079	6	98.0	0.086	1.271	1.020	0.112	
5 280.0	56	802.11a (MIMO)	19.00	18.00	0.030	Left Touch	FCC #2	0.032	6	98.3	0.033	1.271	1.017	0.043	
5 280.0	56	802.11a (MIMO)	19.00	18.00	0.090	Right Touch	FCC #2	0.200	6	98.3	0.147	1.271	1.017	**0.190**	A16
5 280.0	56	802.11a (MIMO)	19.00	18.00	0.070	Left Tilt	FCC #2	0.070	6	98.3	0.057	1.271	1.017	0.074	
5 280.0	56	802.11a (MIMO)	19.00	18.00	-0.080	Right Tilt	FCC #2	0.102	6	98.3	0.089	1.271	1.017	0.115	
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							

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											
5 300.0	60	802.11a (Ant.1)	OFDM	16.00	0.178	5 180	802.11a	OFDM	16.00	1.000	**0.178**	X
5 280.0	56	802.11a (Ant.2)	OFDM	16.00	0.184	5 180	802.11a	OFDM	16.00	1.000	**0.184**	X
5 280.0	56	802.11a (MIMO)	OFDM	19.00	0.190	5 180	802.11a	OFDM	19.00	1.000	**0.190**	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)	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														
5 500.0	100	802.11a (Ant.1)	16.00	15.24	-0.150	Left Touch	FCC #2	0.074	6	98.3	0.053	1.191	1.017	0.064	
5 500.0	100	802.11a (Ant.1)	16.00	15.24	0.060	Right Touch	FCC #2	0.129	6	98.3	0.114	1.191	1.017	**0.138**	A17
5 500.0	100	802.11a (Ant.1)	16.00	15.24	-0.020	Left Tilt	FCC #2	0.052	6	98.3	0.047	1.191	1.017	0.057	
5 500.0	100	802.11a (Ant.1)	16.00	15.24	0.170	Right Tilt	FCC #2	0.097	6	98.3	0.089	1.191	1.017	0.108	
5 500.0	100	802.11a (Ant.2)	16.00	14.77	-0.120	Left Touch	FCC #2	0.065	6	98.0	0.043	1.327	1.020	0.058	
5 500.0	100	802.11a (Ant.2)	16.00	14.77	0.060	Right Touch	FCC #2	0.260	6	98.0	0.248	1.327	1.020	**0.336**	A18
5 500.0	100	802.11a (Ant.2)	16.00	14.77	-0.150	Left Tilt	FCC #2	0.036	6	98.0	0.032	1.327	1.020	0.043	
5 500.0	100	802.11a (Ant.2)	16.00	14.77	0.010	Right Tilt	FCC #2	0.178	6	98.0	0.148	1.327	1.020	0.200	
5 500.0	100	802.11a (MIMO)	19.00	18.02	-0.020	Left Touch	FCC #2	0.134	6	98.3	0.123	1.327	1.017	0.166	
5 500.0	100	802.11a (MIMO)	19.00	18.02	-0.150	Right Touch	FCC #2	0.332	6	98.3	0.336	1.327	1.017	**0.454**	A19
5 500.0	100	802.11a (MIMO)	19.00	18.02	0.100	Left Tilt	FCC #2	0.095	6	98.3	0.108	1.327	1.017	0.146	
5 500.0	100	802.11a (MIMO)	19.00	18.02	0.020	Right Tilt	FCC #2	0.259	6	98.3	0.260	1.327	1.017	0.351	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.120	Left Touch	FCC #2	0.087	6	98.3	0.062	1.250	1.017	0.079	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	0.070	Right Touch	FCC #2	0.120	6	98.3	0.117	1.250	1.017	0.149	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	0.070	Left Tilt	FCC #2	0.063	6	98.3	0.060	1.250	1.017	0.076	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.040	Right Tilt	FCC #2	0.107	6	98.3	0.121	1.250	1.017	**0.154**	A20
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.010	Left Touch	FCC #2	0.094	6	98.0	0.085	1.358	1.020	0.118	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.050	Right Touch	FCC #2	0.155	6	98.0	0.117	1.358	1.020	**0.162**	A21
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.020	Left Tilt	FCC #2	0.067	6	98.0	0.065	1.358	1.020	0.090	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.120	Right Tilt	FCC #2	0.096	6	98.0	0.085	1.358	1.020	0.118	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.030	Left Touch	FCC #2	0.087	6	98.3	0.080	1.358	1.017	0.111	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.160	Right Touch	FCC #2	0.249	6	98.3	0.232	1.358	1.017	**0.321**	A22
5 745.0	149	802.11a (MIMO)	19.00	17.86	-0.040	Left Tilt	FCC #2	0.116	6	98.3	0.094	1.358	1.017	0.130	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.180	Right Tilt	FCC #2	0.140	6	98.3	0.136	1.358	1.017	0.188	
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 11.1.12 Bluetooth Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	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													
2 441.0	39	Bluetooth	9.85	9.83	0.070	Left Touch	FCC #2	1	76.8	0.019	1.005	1.302	0.025	
2 441.0	39	Bluetooth	9.85	9.83	-0.010	Right Touch	FCC #2	1	76.8	0.084	1.005	1.302	**0.110**	A23
2 441.0	39	Bluetooth	9.85	9.83	0.120	Left Tilt	FCC #2	1	76.8	0.023	1.005	1.302	0.030	
2 441.0	39	Bluetooth	9.85	9.83	-0.010	Right Tilt	FCC #2	1	76.8	0.052	1.005	1.302	0.068	
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						

11.2 Standalone Body-Worn SAR Worn SAR Results

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

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	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	GSM	33.70	33.62	0.000	10 mm [Front]	FCC #1	1	1:8.3	0.294	1.019	0.300	
836.6	190	GSM850	GSM	33.70	33.62	0.030	10 mm [Rear]	FCC #1	1	1:8.3	0.342	1.019	**0.348**	A24
836.6	190	GSM850	GPRS	28.70	28.27	0.020	10 mm [Front]	FCC #1	4	1:2.075	0.310	1.104	0.342	
836.6	190	GSM850	GPRS	28.70	28.27	0.060	10 mm [Rear]	FCC #1	4	1:2.075	0.382	1.104	**0.422**	A25
1 880.0	661	PCS1900	PCS	29.70	29.48	-0.020	10 mm [Front]	FCC #1	1	1:8.3	0.281	1.052	0.296	
1 880.0	661	PCS1900	PCS	29.70	29.48	0.040	10 mm [Rear]	FCC #1	1	1:8.3	0.296	1.052	**0.311**	A26
1 880.0	661	PCS1900	GPRS	27.70	27.62	-0.020	10 mm [Front]	FCC #1	3	1:2.77	0.391	1.019	0.398	
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.000	10 mm [Rear]	FCC #1	3	1:2.77	0.488	1.019	**0.497**	A27
836.6	4183	WCDMA 850	RMC	25.50	25.18	-0.030	10 mm [Front]	FCC #1	N/A	1:1	0.246	1.076	0.265	
836.6	4183	WCDMA 850	RMC	25.50	25.18	0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.326	1.076	**0.351**	A28
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						

Table 11.2.2 LTE B12, B13, B5, B4 Body-Worn SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	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	25.31	0.040	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.321	1.045	0.335	
707.5	23095	LTE B12	-	10	24.50	24.37	0.040	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.248	1.030	0.255	
707.5	23095	LTE B12	-	10	25.50	25.31	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.407	1.045	**0.425**	A29
707.5	23095	LTE B12	-	10	24.50	24.37	0.010	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.313	1.030	0.322	
782.0	23230	LTE B13	-	10	25.50	25.28	-0.120	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.443	1.052	0.466	
782.0	23230	LTE B13	-	10	24.50	24.28	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.349	1.052	0.367	
782.0	23230	LTE B13	-	10	25.50	25.28	0.080	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.691	1.052	**0.727**	A30
782.0	23230	LTE B13	-	10	24.50	24.28	0.050	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.529	1.052	0.557	
836.5	20525	LTE B5	-	10	25.50	25.33	-0.030	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.537	1.040	0.558	
836.5	20525	LTE B5	-	10	24.50	24.29	-0.040	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.409	1.050	0.429	
836.5	20525	LTE B5	-	10	25.50	25.33	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.736	1.040	**0.765**	A31
836.5	20525	LTE B5	-	10	24.50	24.29	0.010	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.569	1.050	0.597	
836.5	20525	LTE B5	#1	10	25.50	25.33	-0.150	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.703	1.040	0.731	
836.5	20525	LTE B5	#2	10	25.50	25.33	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.672	1.040	0.699	
836.5	20525	LTE B5	#3	10	25.50	25.33	0.110	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.634	1.040	0.659	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.090	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.482	1.007	0.485	
1 732.5	20175	LTE B4	-	20	22.20	21.71	0.110	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.360	1.119	0.403	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.020	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.538	1.007	**0.542**	A32
1 732.5	20175	LTE B4	-	20	22.20	21.71	0.010	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.396	1.119	0.443	
2506.0	39750	LTE B41	-	20	24.20	24.09	0.020	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1.58	0.264	1.026	0.271	
2506.0	39750	LTE B41	-	20	23.20	23.18	0.080	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1.58	0.187	1.005	0.188	
2506.0	39750	LTE B41	-	20	24.20	24.09	0.040	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1.58	0.397	1.026	**0.407**	A33
2506.0	39750	LTE B41	-	20	23.20	23.18	-0.000	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1.58	0.258	1.005	0.259	
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. Green entries represent additional Body-Worn SAR Test Position (#2: DD angle: 180 degree) with the worst case position.
3. Orange entries represent additional Body-Worn SAR Test Position (#3: DD angle: 360 degree) with the worst case position.

Table 11.2.3 DTS Body-Worn SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	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														
2 437.0	6	802.11b (Ant.1)	16.50	15.65	0.090	10 mm [Front]	FCC #2	0.043	1	99.3	0.046	1.216	1.007	0.056	
2 437.0	6	802.11b (Ant.1)	16.50	15.65	0.160	10 mm [Rear]	FCC #2	0.064	1	99.3	0.065	1.216	1.007	**0.080**	A34
2 412.0	1	802.11b (Ant.2)	16.50	15.52	-0.080	10 mm [Front]	FCC #2	0.067	1	99.2	0.065	1.253	1.008	0.082	
2 412.0	1	802.11b (Ant.2)	16.50	15.52	0.190	10 mm [Rear]	FCC #2	0.106	1	99.2	0.106	1.253	1.008	**0.134**	A35
2 437.0	6	802.11g (MIMO)	18.50	17.89	0.010	10 mm [Front]	FCC #2	0.102	1	99.3	0.099	1.253	1.007	0.125	
2 437.0	6	802.11g (MIMO)	18.50	17.89	0.020	10 mm [Rear]	FCC #2	0.133	1	99.3	0.133	1.253	1.007	**0.168**	A36
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							

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											
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.080	2 437.0	802.11g	OFDM	15.0	0.708	**0.057**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.080	2 437.0	802.11n	OFDM	14.0	0.562	**0.045**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.080	2 437.0	802.11ac	OFDM	14.0	0.562	**0.045**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.134	2 412.0	802.11g	OFDM	16.0	0.891	**0.119**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.134	2 412.0	802.11n	OFDM	15.0	0.708	**0.095**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.134	2 412.0	802.11ac	OFDM	15.0	0.708	**0.095**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.168	2 437.0	802.11n	OFDM	17.5	0.794	**0.133**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.168	2 437.0	802.11ac	OFDM	17.5	0.794	**0.133**	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 11.2.4 UNII Body-Worn SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	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														
5 300.0	60	802.11a (Ant.1)	16.00	15.04	0.020	10 mm [Front]	FCC #2	0.038	6	98.3	0.032	1.247	1.017	0.041	
5 300.0	60	802.11a (Ant.1)	16.00	15.04	0.000	10 mm [Rear]	FCC #2	0.144	6	98.3	0.151	1.247	1.017	**0.192**	A37
5 280.0	56	802.11a (Ant.2)	16.00	14.96	-0.120	10 mm [Front]	FCC #2	0.045	6	98.0	0.030	1.271	1.020	0.039	
5 280.0	56	802.11a (Ant.2)	16.00	14.96	-0.010	10 mm [Rear]	FCC #2	0.047	6	98.0	0.045	1.271	1.020	**0.058**	A38
5 280.0	56	802.11a (MIMO)	19.00	18.00	0.020	10 mm [Front]	FCC #2	0.103	6	98.3	0.097	1.271	1.017	0.125	
5 280.0	56	802.11a (MIMO)	19.00	18.00	0.050	10 mm [Rear]	FCC #2	0.154	6	98.3	0.152	1.271	1.017	**0.197**	A39
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							

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											
5 300.0	60	802.11a (Ant.1)	OFDM	16.00	0.192	5 180.0	802.11a	OFDM	16.00	1.000	**0.192**	X
5 280.0	56	802.11a (Ant.2)	OFDM	16.00	0.058	5 180.0	802.11a	OFDM	16.00	1.000	**0.058**	X
5 280.0	56	802.11a (MIMO)	OFDM	19.00	0.197	5 180.0	802.11a	OFDM	19.00	1.000	**0.197**	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 11.2.5 UNII Body-Worn SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	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														
5 500.0	100	802.11a (Ant.1)	16.00	15.24	0.120	10 mm [Front]	FCC #2	0.041	6	98.3	0.033	1.191	1.017	0.040	
5 500.0	100	802.11a (Ant.1)	16.00	15.24	-0.100	10 mm [Rear]	FCC #2	0.161	6	98.3	0.156	1.191	1.017	**0.189**	A40
5 500.0	100	802.11a (Ant.2)	16.00	14.77	0.090	10 mm [Front]	FCC #2	0.058	6	98.0	0.055	1.327	1.020	0.074	
5 500.0	100	802.11a (Ant.2)	16.00	14.77	-0.030	10 mm [Rear]	FCC #2	0.135	6	98.0	0.111	1.327	1.020	**0.150**	A41
5 500.0	100	802.11a (MIMO)	19.00	18.02	0.010	10 mm [Front]	FCC #2	0.059	6	98.3	0.058	1.327	1.017	0.078	
5 500.0	100	802.11a (MIMO)	19.00	18.02	0.000	10 mm [Rear]	FCC #2	0.230	6	98.3	0.227	1.327	1.017	**0.306**	A42
5 745.0	149	802.11a (Ant.1)	16.00	15.03	0.050	10 mm [Front]	FCC #2	0.039	6	98.3	0.031	1.250	1.017	0.039	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.130	10 mm [Rear]	FCC #2	0.203	6	98.3	0.212	1.250	1.017	**0.270**	A43
5 745.0	149	802.11a (Ant.2)	16.00	14.67	-0.010	10 mm [Front]	FCC #2	0.032	6	98.0	0.019	1.358	1.020	0.026	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.020	10 mm [Rear]	FCC #2	0.104	6	98.0	0.106	1.358	1.020	**0.147**	A44
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.070	10 mm [Front]	FCC #2	0.047	6	98.3	0.032	1.358	1.017	0.044	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.020	10 mm [Rear]	FCC #2	0.227	6	98.3	0.231	1.358	1.017	**0.319**	A45
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							

Table 11.2.6 Bluetooth Body-Worn SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	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													
2 441.0	39	Bluetooth	9.85	9.83	-0.150	10 mm [Front]	FCC #2	1	76.8	0.016	1.005	1.302	0.021	
2 441.0	39	Bluetooth	9.85	9.83	0.120	10 mm [Rear]	FCC #2	1	76.8	0.024	1.005	1.302	**0.031**	A46
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						

11.3 Standalone Hotspot SAR Results

Table 11.3.1 GPRS/WCDMA Hotspot SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	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	GPRS	28.70	28.27	0.070	10 mm [Bottom]	FCC #1	4	1:2.075	0.206	1.104	0.227	
836.6	190	GSM850	GPRS	28.70	28.27	0.020	10 mm [Front]	FCC #1	4	1:2.075	0.310	1.104	0.342	
836.6	190	GSM850	GPRS	28.70	28.27	0.060	10 mm [Rear]	FCC #1	4	1:2.075	0.382	1.104	**0.422**	A25
836.6	190	GSM850	GPRS	28.70	28.27	-0.150	10 mm [Right]	FCC #1	4	1:2.075	0.157	1.104	0.173	
1 880.0	661	PCS1900	GPRS	27.70	27.62	-0.010	10 mm [Bottom]	FCC #1	3	1:2.77	0.678	1.019	**0.691**	A47
1 880.0	661	PCS1900	GPRS	27.70	27.62	-0.020	10 mm [Front]	FCC #1	3	1:2.77	0.391	1.019	0.398	
1 880.0	661	PCS1900	GPRS	27.70	27.62	0.000	10 mm [Rear]	FCC #1	3	1:2.77	0.488	1.019	0.497	
1 880.0	661	PCS1900	GPRS	27.70	27.62	-0.110	10 mm [Left]	FCC #1	3	1:2.77	0.159	1.019	0.162	
836.6	4183	WCDMA 850	RMC	25.50	25.18	-0.060	10 mm [Bottom]	FCC #1	N/A	1:1	0.387	1.076	**0.416**	A48
836.6	4183	WCDMA 850	RMC	25.50	25.18	-0.030	10 mm [Front]	FCC #1	N/A	1:1	0.246	1.076	0.265	
836.6	4183	WCDMA 850	RMC	25.50	25.18	0.070	10 mm [Rear]	FCC #1	N/A	1:1	0.326	1.076	0.351	
836.6	4183	WCDMA 850	RMC	25.50	25.18	-0.020	10 mm [Right]	FCC #1	N/A	1:1	0.050	1.076	0.054	
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						

Table 11.3.2 LTE B12, B13, B5 Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	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	25.31	-0.090	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.174	1.045	0.182	
707.5	23095	LTE B12	10	24.50	24.37	-0.060	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.134	1.030	0.138	
707.5	23095	LTE B12	10	25.50	25.31	0.040	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.321	1.045	0.335	
707.5	23095	LTE B12	10	24.50	24.37	0.040	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.248	1.030	0.255	
707.5	23095	LTE B12	10	25.50	25.31	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.407	1.045	**0.425**	A29
707.5	23095	LTE B12	10	24.50	24.37	0.010	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.313	1.030	0.322	
707.5	23095	LTE B12	10	25.50	25.31	0.090	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.149	1.045	0.156	
707.5	23095	LTE B12	10	24.50	24.37	0.140	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.111	1.030	0.114	
782.0	23230	LTE B13	10	25.50	25.28	0.030	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.220	1.052	0.231	
782.0	23230	LTE B13	10	24.50	24.28	-0.050	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.174	1.052	0.183	
782.0	23230	LTE B13	10	25.50	25.28	-0.120	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.443	1.052	0.466	
782.0	23230	LTE B13	10	24.50	24.28	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.349	1.052	0.367	
782.0	23230	LTE B13	10	25.50	25.28	0.080	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.691	1.052	**0.727**	A30
782.0	23230	LTE B13	10	24.50	24.28	0.050	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.529	1.052	0.557	
782.0	23230	LTE B13	10	25.50	25.28	0.000	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.163	1.052	0.171	
782.0	23230	LTE B13	10	24.50	24.28	-0.090	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.123	1.052	0.129	
836.5	20525	LTE B5	10	25.50	25.33	-0.110	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.378	1.040	0.393	
836.5	20525	LTE B5	10	24.50	24.29	-0.080	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.293	1.050	0.308	
836.5	20525	LTE B5	10	25.50	25.33	-0.030	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.537	1.040	0.558	
836.5	20525	LTE B5	10	24.50	24.29	-0.040	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.409	1.050	0.429	
836.5	20525	LTE B5	10	25.50	25.33	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.736	1.040	**0.765**	A31
836.5	20525	LTE B5	10	24.50	24.29	0.010	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.569	1.050	0.597	
836.5	20525	LTE B5	10	25.50	25.33	0.180	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.307	1.040	0.319	
836.5	20525	LTE B5	10	24.50	24.29	0.180	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.236	1.050	0.248	
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								

Table 11.3.3 LTE B4 Hotspot SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	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																	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.060	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.829	1.007	**0.835**	A49
1 732.5	20175	LTE B4	-	20	22.20	21.71	0.070	1	10 mm [Bottom]	FCC #1	QPSK	50	25	1:1	0.680	1.119	0.761	
1 732.5	20175	LTE B4	-	20	22.20	21.61	0.090	1	10 mm [Bottom]	FCC #1	QPSK	100	0	1:1	0.660	1.146	0.756	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.090	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.482	1.007	0.485	
1 732.5	20175	LTE B4	-	20	22.20	21.71	0.110	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.360	1.119	0.403	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.020	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.538	1.007	0.542	
1 732.5	20175	LTE B4	-	20	22.20	21.71	0.010	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.396	1.119	0.443	
1 732.5	20175	LTE B4	-	20	23.20	23.17	-0.120	0	10 mm [Left]	FCC #1	QPSK	1	50	1:1	0.225	1.007	0.227	
1 732.5	20175	LTE B4	-	20	22.20	21.71	-0.150	1	10 mm [Left]	FCC #1	QPSK	50	25	1:1	0.167	1.119	0.187	
1 732.5	20175	LTE B4	#1	20	23.20	23.17	0.000	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.637	1.007	0.641	
1 732.5	20175	LTE B4	#2	20	23.20	23.17	-0.020	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.690	1.007	0.695	
1 732.5	20175	LTE B4	#3	20	23.20	23.17	-0.190	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.592	1.007	0.596	
1 732.5	20175	LTE B4	-	20	23.20	23.17	0.080	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.799	1.007	0.805	
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. Green entries represent additional Hotspot SAR Test Position (#2: DD angle: 180 degree) with the worst case position.
3. Orange entries represent additional Hotspot SAR Test Position (#3: DD angle: 360 degree) with the worst case position.
4. Yellow entries represent variability measurements.

Table 11.3.4 LTE B41 Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/ Band	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																
2 506.0	39750	LTE B41	20	24.20	24.09	0.120	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1.58	0.574	1.026	**0.589**	A50
2 506.0	39750	LTE B41	20	23.20	23.18	0.100	1	10 mm [Bottom]	FCC #1	QPSK	50	25	1:1.58	0.446	1.005	0.448	
2 506.0	39750	LTE B41	20	24.20	24.09	0.020	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1.58	0.264	1.026	0.271	
2 506.0	39750	LTE B41	20	23.20	23.18	0.080	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1.58	0.187	1.005	0.188	
2 506.0	39750	LTE B41	20	24.20	24.09	0.040	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1.58	0.397	1.026	0.407	
2 506.0	39750	LTE B41	20	23.20	23.18	-0.000	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1.58	0.258	1.005	0.259	
2 506.0	39750	LTE B41	20	24.20	24.09	-0.140	0	10 mm [Left]	FCC #1	QPSK	1	50	1:1.58	0.073	1.026	0.075	
2 506.0	39750	LTE B41	20	23.20	23.18	-0.070	1	10 mm [Left]	FCC #1	QPSK	50	25	1:1.58	0.052	1.005	0.052	
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								

Table 11.3.5 DTS Hotspot SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	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														
2 437.0	6	802.11b (Ant.1)	16.50	15.65	-0.100	10 mm [Top]	FCC #2	0.060	1	99.3	0.064	1.216	1.007	0.078	
2 437.0	6	802.11b (Ant.1)	16.50	15.65	0.090	10 mm [Front]	FCC #2	0.043	1	99.3	0.046	1.216	1.007	0.056	
2 437.0	6	802.11b (Ant.1)	16.50	15.65	0.160	10 mm [Rear]	FCC #2	0.064	1	99.3	0.065	1.216	1.007	0.080	
2 437.0	6	802.11b (Ant.1)	16.50	15.65	-0.040	10 mm [Left]	FCC #2	0.123	1	99.3	0.127	1.216	1.007	**0.156**	A51
2 412.0	1	802.11b (Ant.2)	16.50	15.52	0.120	10 mm [Top]	FCC #2	0.107	1	99.2	0.111	1.253	1.008	**0.140**	A52
2 412.0	1	802.11b (Ant.2)	16.50	15.52	-0.080	10 mm [Front]	FCC #2	0.067	1	99.2	0.065	1.253	1.008	0.082	
2 412.0	1	802.11b (Ant.2)	16.50	15.52	0.190	10 mm [Rear]	FCC #2	0.106	1	99.2	0.106	1.253	1.008	0.134	
2 412.0	1	802.11b (Ant.2)	16.50	15.52	0.160	10 mm [Left]	FCC #2	0.011	1	99.2	0.009	1.253	1.008	0.011	
2 437.0	6	802.11g (MIMO)	18.50	17.89	0.190	10 mm [Top]	FCC #2	0.122	1	99.3	0.127	1.253	1.007	0.160	
2 437.0	6	802.11g (MIMO)	18.50	17.89	0.010	10 mm [Front]	FCC #2	0.102	1	99.3	0.099	1.253	1.007	0.125	
2 437.0	6	802.11g (MIMO)	18.50	17.89	0.020	10 mm [Rear]	FCC #2	0.133	1	99.3	0.133	1.253	1.007	0.168	
2 437.0	6	802.11g (MIMO)	18.50	17.89	-0.120	10 mm [Left]	FCC #2	0.172	1	99.3	0.173	1.253	1.007	**0.218**	A53
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							

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											
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.156	2 437.0	802.11g	OFDM	15.0	0.708	**0.110**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.156	2 437.0	802.11n	OFDM	14.0	0.562	**0.088**	X
2 437.0	6	802.11b (Ant.1)	DSSS	16.5	0.156	2 437.0	802.11ac	OFDM	14.0	0.562	**0.088**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.140	2 412.0	802.11g	OFDM	16.0	0.891	**0.125**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.140	2 412.0	802.11n	OFDM	15.0	0.708	**0.099**	X
2 412.0	1	802.11b (Ant.2)	DSSS	16.5	0.140	2 412.0	802.11ac	OFDM	15.0	0.708	**0.099**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.218	2 437.0	802.11n	OFDM	17.5	0.794	**0.173**	X
2 437.0	6	802.11g (MIMO)	OFDM	18.5	0.218	2 437.0	802.11ac	OFDM	17.5	0.794	**0.173**	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	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														
5 180.0	36	802.11a (Ant.1)	16.00	15.32	0.060	10 mm [Top]	FCC #2	0.035	6	98.3	0.036	1.169	1.017	0.043	
5 180.0	36	802.11a (Ant.1)	16.00	15.32	0.060	10 mm [Front]	FCC #2	0.034	6	98.3	0.027	1.169	1.017	0.032	
5 180.0	36	802.11a (Ant.1)	16.00	15.32	-0.060	10 mm [Rear]	FCC #2	0.107	6	98.3	0.111	1.169	1.017	**0.132**	A54
5 180.0	36	802.11a (Ant.1)	16.00	15.32	0.070	10 mm [Left]	FCC #2	0.038	6	98.3	0.038	1.169	1.017	0.045	
5 180.0	36	802.11a (Ant.2)	16.00	15.03	-0.110	10 mm [Top]	FCC #2	0.017	6	98.0	0.015	1.250	1.020	0.019	
5 180.0	36	802.11a (Ant.2)	16.00	15.03	-0.140	10 mm [Front]	FCC #2	0.046	6	98.0	0.045	1.250	1.020	**0.057**	A55
5 180.0	36	802.11a (Ant.2)	16.00	15.03	-0.080	10 mm [Rear]	FCC #2	0.041	6	98.0	0.039	1.250	1.020	0.050	
5 180.0	36	802.11a (Ant.2)	16.00	15.03	-0.060	10 mm [Left]	FCC #2	0.032	6	98.0	0.026	1.250	1.020	0.033	
5 180.0	36	802.11a (MIMO)	19.00	18.19	-0.070	10 mm [Top]	FCC #2	0.044	6	98.3	0.035	1.250	1.017	0.045	
5 180.0	36	802.11a (MIMO)	19.00	18.19	0.180	10 mm [Front]	FCC #2	0.065	6	98.3	0.065	1.250	1.017	0.083	
5 180.0	36	802.11a (MIMO)	19.00	18.19	0.020	10 mm [Rear]	FCC #2	0.123	6	98.3	0.119	1.250	1.017	**0.151**	A56
5 180.0	36	802.11a (MIMO)	19.00	18.19	0.180	10 mm [Left]	FCC #2	0.084	6	98.3	0.080	1.250	1.017	0.102	
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							

Table 11.3.7 UNII Hotspot SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	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														
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.100	10 mm [Top]	FCC #2	0.095	6	98.3	0.097	1.250	1.017	0.123	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	0.050	10 mm [Front]	FCC #2	0.039	6	98.3	0.031	1.250	1.017	0.039	
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.130	10 mm [Rear]	FCC #2	0.203	6	98.3	0.212	1.250	1.017	**0.270**	A43
5 745.0	149	802.11a (Ant.1)	16.00	15.03	-0.050	10 mm [Left]	FCC #2	0.110	6	98.3	0.112	1.250	1.017	0.142	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	-0.120	10 mm [Top]	FCC #2	0.030	6	98.0	0.032	1.358	1.020	0.044	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	-0.010	10 mm [Front]	FCC #2	0.032	6	98.0	0.019	1.358	1.020	0.026	
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.020	10 mm [Rear]	FCC #2	0.104	6	98.0	0.106	1.358	1.020	**0.147**	A44
5 745.0	149	802.11a (Ant.2)	16.00	14.67	0.000	10 mm [Left]	FCC #2	0.024	6	98.0	0.017	1.358	1.020	0.024	
5 745.0	149	802.11a (MIMO)	19.00	17.86	-0.040	10 mm [Top]	FCC #2	0.105	6	98.3	0.099	1.358	1.017	0.137	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.070	10 mm [Front]	FCC #2	0.047	6	98.3	0.032	1.358	1.017	0.044	
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.020	10 mm [Rear]	FCC #2	0.227	6	98.3	0.231	1.358	1.017	**0.319**	A45
5 745.0	149	802.11a (MIMO)	19.00	17.86	0.150	10 mm [Left]	FCC #2	0.122	6	98.3	0.125	1.358	1.017	0.173	
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: UNII-3 Band CH 165(5825 MHz) is not support Hotspot mode as described on operational description, so other required CHs are tested.

Table 11.3.13 Bluetooth Hotspot SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	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													
2 441.0	39	Bluetooth	9.85	9.83	0.010	10 mm [Top]	FCC #2	1	76.8	0.024	1.005	1.302	0.031	
2 441.0	39	Bluetooth	9.85	9.83	-0.150	10 mm [Front]	FCC #2	1	76.8	0.016	1.005	1.302	0.021	
2 441.0	39	Bluetooth	9.85	9.83	0.120	10 mm [Rear]	FCC #2	1	76.8	0.024	1.005	1.302	0.031	
2 441.0	39	Bluetooth	9.85	9.83	-0.130	10 mm [Left]	FCC #2	1	76.8	0.048	1.005	1.302	**0.063**	A57
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						

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	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															
5 300.0	60	802.11a (Ant.1)	-	16.00	15.04	-0.180	0 mm [Top]	FCC #2	0.070	6	98.3	0.071	1.247	1.017	0.090	
5 300.0	60	802.11a (Ant.1)	-	16.00	15.04	-0.170	0 mm [Front]	FCC #2	0.075	6	98.3	0.066	1.247	1.017	0.084	
5 300.0	60	802.11a (Ant.1)	-	16.00	15.04	0.190	0 mm [Rear]	FCC #2	0.448	6	98.3	0.464	1.247	1.017	**0.589**	A58
5 300.0	60	802.11a (Ant.1)	-	16.00	15.04	-0.180	0 mm [Left]	FCC #2	0.152	6	98.3	0.159	1.247	1.017	0.202	
5 280.0	56	802.11a (Ant.2)	-	16.00	14.96	-0.190	0 mm [Top]	FCC #2	0.027	6	98.0	0.023	1.271	1.020	0.030	
5 280.0	56	802.11a (Ant.2)	-	16.00	14.96	0.170	0 mm [Front]	FCC #2	0.132	6	98.0	0.106	1.271	1.020	0.137	
5 280.0	56	802.11a (Ant.2)	-	16.00	14.96	-0.170	0 mm [Rear]	FCC #2	0.135	6	98.0	0.123	1.271	1.020	**0.160**	A59
5 280.0	56	802.11a (Ant.2)	-	16.00	14.96	0.190	0 mm [Left]	FCC #2	0.124	6	98.0	0.122	1.271	1.020	0.158	
5 280.0	56	802.11a (MIMO)	-	19.00	18.00	-0.118	0 mm [Top]	FCC #2	0.099	6	98.3	0.095	1.271	1.017	0.123	
5 280.0	56	802.11a (MIMO)	-	19.00	18.00	-0.190	0 mm [Front]	FCC #2	0.195	6	98.3	0.189	1.271	1.017	0.244	
5 280.0	56	802.11a (MIMO)	-	19.00	18.00	0.000	0 mm [Rear]	FCC #2	0.698	6	98.3	0.656	1.271	1.017	**0.848**	A60
5 280.0	56	802.11a (MIMO)	-	19.00	18.00	0.030	0 mm [Left]	FCC #2	0.256	6	98.3	0.260	1.271	1.017	0.336	
5 500.0	100	802.11a (Ant.1)	-	16.00	15.24	-0.110	0 mm [Top]	FCC #2	0.071	6	98.3	0.075	1.191	1.019	0.091	
5 500.0	100	802.11a (Ant.1)	-	16.00	15.24	0.050	0 mm [Front]	FCC #2	0.081	6	98.3	0.085	1.191	1.019	0.103	
5 500.0	100	802.11a (Ant.1)	-	16.00	15.24	-0.090	0 mm [Rear]	FCC #2	0.424	6	98.3	0.521	1.191	1.019	**0.632**	A61
5 500.0	100	802.11a (Ant.1)	-	16.00	15.24	-0.060	0 mm [Left]	FCC #2	0.234	6	98.3	0.214	1.191	1.019	0.260	
5 500.0	100	802.11a (Ant.2)	-	16.00	14.77	-0.030	0 mm [Top]	FCC #2	0.043	6	98.0	0.038	1.327	1.019	0.051	
5 500.0	100	802.11a (Ant.2)	-	16.00	14.77	-0.090	0 mm [Front]	FCC #2	0.128	6	98.0	0.123	1.327	1.019	0.166	
5 500.0	100	802.11a (Ant.2)	-	16.00	14.77	0.130	0 mm [Rear]	FCC #2	0.219	6	98.0	0.218	1.327	1.019	**0.295**	A62
5 500.0	100	802.11a (Ant.2)	-	16.00	14.77	-0.070	0 mm [Left]	FCC #2	0.120	6	98.0	0.108	1.327	1.019	0.146	
5 500.0	100	802.11a (MIMO)	-	19.00	18.02	0.110	0 mm [Top]	FCC #2	0.140	6	98.3	0.127	1.327	1.019	0.172	
5 500.0	100	802.11a (MIMO)	-	19.00	18.02	-0.080	0 mm [Front]	FCC #2	0.168	6	98.3	0.152	1.327	1.019	0.206	
5 500.0	100	802.11a (MIMO)	-	19.00	18.02	0.160	0 mm [Rear]	FCC #2	0.829	6	98.3	0.909	1.327	1.019	**1.229**	A63
5 500.0	100	802.11a (MIMO)	-	19.00	18.02	-0.130	0 mm [Left]	FCC #2	0.329	6	98.3	0.328	1.327	1.019	0.444	
5 500.0	100	802.11a (MIMO)	#1	19.00	18.02	-0.010	0 mm [Rear]	FCC #2	0.796	6	98.3	0.873	1.327	1.019	1.180	
5 500.0	100	802.11a (MIMO)	#2	19.00	18.02	0.110	0 mm [Rear]	FCC #2	0.774	6	98.3	0.849	1.327	1.019	1.148	
5 500.0	100	802.11a (MIMO)	#3	19.00	18.02	0.130	0 mm [Rear]	FCC #2	0.698	6	98.3	0.765	1.327	1.019	1.034	
5 825.0	165	802.11a (Ant.1)	-	16.00	14.65	-0.080	0 mm [Top]	FCC #2	0.137	6	98.3	0.128	1.365	1.017	0.178	
5 825.0	165	802.11a (Ant.1)	-	16.00	14.65	-0.170	0 mm [Front]	FCC #2	0.096	6	98.3	0.071	1.365	1.017	0.099	
5 825.0	165	802.11a (Ant.1)	-	16.00	14.65	-0.090	0 mm [Rear]	FCC #2	0.485	6	98.3	0.602	1.365	1.017	**0.836**	A64
5 825.0	165	802.11a (Ant.1)	-	16.00	14.65	-0.060	0 mm [Left]	FCC #2	0.220	6	98.3	0.227	1.365	1.017	0.315	
5 825.0	165	802.11a (Ant.2)	-	16.00	14.44	-0.120	0 mm [Top]	FCC #2	0.073	6	98.0	0.069	1.432	1.020	0.101	
5 825.0	165	802.11a (Ant.2)	-	16.00	14.44	0.180	0 mm [Front]	FCC #2	0.139	6	98.0	0.104	1.432	1.020	0.152	
5 825.0	165	802.11a (Ant.2)	-	16.00	14.44	0.050	0 mm [Rear]	FCC #2	0.256	6	98.0	0.294	1.432	1.020	**0.430**	A65
5 825.0	165	802.11a (Ant.2)	-	16.00	14.44	0.040	0 mm [Left]	FCC #2	0.091	6	98.0	0.093	1.432	1.020	0.136	
5 825.0	165	802.11a (MIMO)	-	19.00	17.56	-0.130	0 mm [Top]	FCC #2	0.165	6	98.3	0.147	1.432	1.017	0.214	
5 825.0	165	802.11a (MIMO)	-	19.00	17.56	-0.130	0 mm [Front]	FCC #2	0.177	6	98.3	0.128	1.432	1.017	0.186	
5 825.0	165	802.11a (MIMO)	-	19.00	17.56	-0.040	0 mm [Rear]	FCC #2	0.654	6	98.3	0.695	1.432	1.017	**1.012**	A66
5 825.0	165	802.11a (MIMO)	-	19.00	17.56	-0.070	0 mm [Left]	FCC #2	0.314	6	98.3	0.307	1.432	1.017	0.447	
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 (#2: DD angle: 180 degree) with the worst case position.
3. Orange entries represent additional Phablet SAR Test Position (#3: DD angle: 360 degree) with the worst case position.
4. 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. Per KDB Publication 941225 D05Av01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
6. Per FCC KDB Publication 447498 D01v06, when the reported (scaled) for LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
7. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r05. Testing was performed using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633 (cf=1.58).
8. 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 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	^Bluetooth Tethering is considered.
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 5 GHz Ant.2	Yes	Yes	N/A	Yes	
7	GSM Voice + BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.
8	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.
9	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.
10	WCDMA + Wi-Fi 2.4 GHz	Yes	Yes	Yes	Yes	
11	WCDMA + Wi-Fi 5 GHz	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
12	WCDMA + Bluetooth 2.4 GHz	Yes^	Yes	Yes	Yes	^Bluetooth Tethering is considered.
13	WCDMA + Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	
14	WCDMA + Wi-Fi 5 GHz MIMO	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
15	WCMDA + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5 GHz Ant.2	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
16	WCMDA + BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes^	Yes	Yes	Yes	^Bluetooth Tethering is considered.
17	WCMDA + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes^	Yes	Yes`	Yes	^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
18	WCMDA + Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes^	Yes	Yes`	Yes	^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
19	LTE + Wi-Fi 2.4 GHz	Yes	Yes	Yes	Yes	
20	LTE + Wi-Fi 5 GHz	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
21	LTE + Bluetooth 2.4 GHz	Yes^	Yes	Yes	Yes	^Bluetooth Tethering is considered.
22	LTE + Wi-Fi 2.4 GHz MIMO	Yes	Yes	Yes	Yes	
23	LTE + Wi-Fi 5 GHz MIMO	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
24	LTE + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5 GHz Ant.2	Yes	Yes	Yes`	Yes	` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
25	LTE + BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes^	Yes	Yes	Yes	^Bluetooth Tethering is considered.
26	LTE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes^	Yes	Yes`	Yes	^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
27	LTE + Bluetooth 2.4 GHz + Wi-Fi 5GHz MIMO	Yes^	Yes	Yes`	Yes	^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
28	GPRS/EDGE + Wi-Fi 2.4 GHz	Yes*	Yes*	Yes	Yes	*Pre-installed VOIP applications are considered.
29	GPRS/EDGE + Wi-Fi 5 GHz	Yes*	Yes*	Yes`	Yes	*Pre-installed VOIP applications are considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
30	GPRS/EDGE + Bluetooth 2.4 GHz	Yes*^	Yes*	Yes	Yes	*Pre-installed VOIP applications are considered. ^Bluetooth Tethering is considered.
31	GPRS/EDGE + Wi-Fi 2.4 GHz MIMO	Yes*	Yes*	Yes	Yes	*Pre-installed VOIP applications are considered.
32	GPRS/EDGE + Wi-Fi 5 GHz MIMO	Yes*	Yes*	Yes`	Yes	*Pre-installed VOIP applications are considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
33	GPRS/EDGE + Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5 GHz Ant.2	Yes*	Yes*	Yes`	Yes	*Pre-installed VOIP applications are considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
34	GPRS/EDGE + BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes*^	Yes*	Yes	Yes	*Pre-installed VOIP applications are considered. ^Bluetooth Tethering is considered.
35	GPRS/EDGE + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes*^	Yes*	Yes`	Yes	*Pre-installed VOIP applications are considered. ^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
36	GPRS/EDGE + Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes*^	Yes*	Yes`	Yes	*Pre-installed VOIP applications are considered. ^Bluetooth Tethering is considered. ` Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
37	Wi-Fi 2.4 GHz Ant.1 + Wi-Fi 5 GHz Ant.2	Yes	Yes	N/A	Yes	
38	BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.
39	Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.
40	Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered.

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. GSM, WCDMA and LTE can not transmit simultaneously since they share the same chip.
6. WiFi direct and Hotspot cannot transmit simultaneously.
7. 2x2 MIMO(CDD/SDM) Tx for WLAN 802.11a/b/g/n/ac is supported. Each WLAN antenna can transmit together when operating with MIMO and DBS. For details, please refer to the operational description.
8. 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.
9. 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	0.075	0.110	0.070	0.185	0.145	0.255
		Right Touch	0.059	0.306	0.184	0.365	0.243	**0.549**
		Left Tilt	0.034	0.142	0.026	0.176	0.060	0.202
		Right Tilt	0.038	0.318	0.112	0.356	0.150	0.468
	GPRS 850	Left Touch	0.117	0.110	0.070	0.227	0.187	0.297
		Right Touch	0.085	0.306	0.184	0.391	0.269	**0.575**
		Left Tilt	0.049	0.142	0.026	0.191	0.075	0.217
		Right Tilt	0.041	0.318	0.112	0.359	0.153	0.471
	GSM 1900	Left Touch	0.049	0.110	0.070	0.159	0.119	0.229
		Right Touch	0.073	0.306	0.184	0.379	0.257	**0.563**
		Left Tilt	0.037	0.142	0.026	0.179	0.063	0.205
		Right Tilt	0.025	0.318	0.112	0.343	0.137	0.455
	GPRS 1900	Left Touch	0.078	0.110	0.070	0.188	0.148	0.258
		Right Touch	0.107	0.306	0.184	0.413	0.291	**0.597**
		Left Tilt	0.059	0.142	0.026	0.201	0.085	0.227
		Right Tilt	0.038	0.318	0.112	0.356	0.150	0.468
	WCDMA 850	Left Touch	0.167	0.110	0.070	0.277	0.237	0.347
		Right Touch	0.137	0.306	0.184	0.443	0.321	**0.627**
		Left Tilt	0.060	0.142	0.026	0.202	0.086	0.228
		Right Tilt	0.082	0.318	0.112	0.400	0.194	0.512
	LTE Band 12	Left Touch	0.165	0.110	0.070	0.275	0.235	0.345
		Right Touch	0.086	0.306	0.184	0.392	0.270	**0.576**
		Left Tilt	0.054	0.142	0.026	0.196	0.080	0.222
		Right Tilt	0.079	0.318	0.112	0.397	0.191	0.509
	LTE Band 13	Left Touch	0.153	0.110	0.070	0.263	0.223	0.333
		Right Touch	0.138	0.306	0.184	0.444	0.322	**0.628**
		Left Tilt	0.067	0.142	0.026	0.209	0.093	0.235
		Right Tilt	0.069	0.318	0.112	0.387	0.181	0.499
	LTE Band 5	Left Touch	0.151	0.110	0.070	0.261	0.221	0.331
		Right Touch	0.128	0.306	0.184	0.434	0.312	**0.618**
		Left Tilt	0.062	0.142	0.026	0.204	0.088	0.230
		Right Tilt	0.062	0.318	0.112	0.380	0.174	0.492
	LTE Band 4	Left Touch	0.068	0.110	0.070	0.178	0.138	0.248
		Right Touch	0.095	0.306	0.184	0.401	0.279	**0.585**
		Left Tilt	0.067	0.142	0.026	0.209	0.093	0.235
		Right Tilt	0.052	0.318	0.112	0.370	0.164	0.482
	LTE Band 41	Left Touch	0.065	0.110	0.070	0.175	0.135	0.245
		Right Touch	0.044	0.306	0.184	0.350	0.228	**0.534**
		Left Tilt	0.019	0.142	0.026	0.161	0.045	0.187
		Right Tilt	0.026	0.318	0.112	0.344	0.138	0.456

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	0.075	0.110	0.058	0.185	0.133	0.243
		Right Touch	0.059	0.306	0.336	0.365	0.395	**0.701**
		Left Tilt	0.034	0.142	0.043	0.176	0.077	0.219
		Right Tilt	0.038	0.318	0.200	0.356	0.238	0.556
	GPRS 850	Left Touch	0.117	0.110	0.058	0.227	0.175	0.285
		Right Touch	0.085	0.306	0.336	0.391	0.421	**0.727**
		Left Tilt	0.049	0.142	0.043	0.191	0.092	0.234
		Right Tilt	0.041	0.318	0.200	0.359	0.241	0.559
	GSM 1900	Left Touch	0.049	0.110	0.058	0.159	0.107	0.217
		Right Touch	0.073	0.306	0.336	0.379	0.409	**0.715**
		Left Tilt	0.037	0.142	0.043	0.179	0.080	0.222
		Right Tilt	0.025	0.318	0.200	0.343	0.225	0.543
	GPRS 1900	Left Touch	0.078	0.110	0.058	0.188	0.136	0.246
		Right Touch	0.107	0.306	0.336	0.413	0.443	**0.749**
		Left Tilt	0.059	0.142	0.043	0.201	0.102	0.244
		Right Tilt	0.038	0.318	0.200	0.356	0.238	0.556
	WCDMA 850	Left Touch	0.167	0.110	0.058	0.277	0.225	0.335
		Right Touch	0.137	0.306	0.336	0.443	0.473	**0.779**
		Left Tilt	0.060	0.142	0.043	0.202	0.103	0.245
		Right Tilt	0.082	0.318	0.200	0.400	0.282	0.600
	LTE Band 12	Left Touch	0.165	0.110	0.058	0.275	0.223	0.333
		Right Touch	0.086	0.306	0.336	0.392	0.422	**0.728**
		Left Tilt	0.054	0.142	0.043	0.196	0.097	0.239
		Right Tilt	0.079	0.318	0.200	0.397	0.279	0.597
	LTE Band 13	Left Touch	0.153	0.110	0.058	0.263	0.211	0.321
		Right Touch	0.138	0.306	0.336	0.444	0.474	**0.780**
		Left Tilt	0.067	0.142	0.043	0.209	0.110	0.252
		Right Tilt	0.069	0.318	0.200	0.387	0.269	0.587
	LTE Band 5	Left Touch	0.151	0.110	0.058	0.261	0.209	0.319
		Right Touch	0.128	0.306	0.336	0.434	0.464	**0.770**
		Left Tilt	0.062	0.142	0.043	0.204	0.105	0.247
		Right Tilt	0.062	0.318	0.200	0.380	0.262	0.580
	LTE Band 4	Left Touch	0.068	0.110	0.058	0.178	0.126	0.236
		Right Touch	0.095	0.306	0.336	0.401	0.431	**0.737**
		Left Tilt	0.067	0.142	0.043	0.209	0.110	0.252
		Right Tilt	0.052	0.318	0.200	0.370	0.252	0.570
	LTE Band 41	Left Touch	0.065	0.110	0.058	0.175	0.123	0.233
		Right Touch	0.044	0.306	0.336	0.350	0.380	**0.686**
		Left Tilt	0.019	0.142	0.043	0.161	0.062	0.204
		Right Tilt	0.026	0.318	0.200	0.344	0.226	0.544

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	0.075	0.110	0.118	0.185	0.193	0.303
		Right Touch	0.059	0.306	0.162	0.365	0.221	**0.527**
		Left Tilt	0.034	0.142	0.090	0.176	0.124	0.266
		Right Tilt	0.038	0.318	0.118	0.356	0.156	0.474
	GPRS 850	Left Touch	0.117	0.110	0.118	0.227	0.235	0.345
		Right Touch	0.085	0.306	0.162	0.391	0.247	**0.553**
		Left Tilt	0.049	0.142	0.090	0.191	0.139	0.281
		Right Tilt	0.041	0.318	0.118	0.359	0.159	0.477
	GSM 1900	Left Touch	0.049	0.110	0.118	0.159	0.167	0.277
		Right Touch	0.073	0.306	0.162	0.379	0.235	**0.541**
		Left Tilt	0.037	0.142	0.090	0.179	0.127	0.269
		Right Tilt	0.025	0.318	0.118	0.343	0.143	0.461
	GPRS 1900	Left Touch	0.078	0.110	0.118	0.188	0.196	0.306
		Right Touch	0.107	0.306	0.162	0.413	0.269	**0.575**
		Left Tilt	0.059	0.142	0.090	0.201	0.149	0.291
		Right Tilt	0.038	0.318	0.118	0.356	0.156	0.474
	WCDMA 850	Left Touch	0.167	0.110	0.118	0.277	0.285	0.395
		Right Touch	0.137	0.306	0.162	0.443	0.299	**0.605**
		Left Tilt	0.060	0.142	0.090	0.202	0.150	0.292
		Right Tilt	0.082	0.318	0.118	0.400	0.200	0.518
	LTE Band 12	Left Touch	0.165	0.110	0.118	0.275	0.283	0.393
		Right Touch	0.086	0.306	0.162	0.392	0.248	**0.554**
		Left Tilt	0.054	0.142	0.090	0.196	0.144	0.286
		Right Tilt	0.079	0.318	0.118	0.397	0.197	0.515
	LTE Band 13	Left Touch	0.153	0.110	0.118	0.263	0.271	0.381
		Right Touch	0.138	0.306	0.162	0.444	0.300	**0.606**
		Left Tilt	0.067	0.142	0.090	0.209	0.157	0.299
		Right Tilt	0.069	0.318	0.118	0.387	0.187	0.505
	LTE Band 5	Left Touch	0.151	0.110	0.118	0.261	0.269	0.379
		Right Touch	0.128	0.306	0.162	0.434	0.290	**0.596**
		Left Tilt	0.062	0.142	0.090	0.204	0.152	0.294
		Right Tilt	0.062	0.318	0.118	0.380	0.180	0.498
	LTE Band 4	Left Touch	0.068	0.110	0.118	0.178	0.186	0.296
		Right Touch	0.095	0.306	0.162	0.401	0.257	**0.563**
		Left Tilt	0.067	0.142	0.090	0.209	0.157	0.299
		Right Tilt	0.052	0.318	0.118	0.370	0.170	0.488
	LTE Band 41	Left Touch	0.065	0.110	0.118	0.175	0.183	0.293
		Right Touch	0.044	0.306	0.162	0.350	0.206	**0.512**
		Left Tilt	0.019	0.142	0.090	0.161	0.109	0.251
		Right Tilt	0.026	0.318	0.118	0.344	0.144	0.462

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	0.075	0.025	0.060	0.100	0.135	0.160
		Right Touch	0.059	0.110	0.178	0.169	0.237	**0.347**
		Left Tilt	0.034	0.030	0.080	0.064	0.114	0.144
		Right Tilt	0.038	0.068	0.121	0.106	0.159	0.227
	GPRS 850	Left Touch	0.117	0.025	0.060	0.142	0.177	0.202
		Right Touch	0.085	0.110	0.178	0.195	0.263	**0.373**
		Left Tilt	0.049	0.030	0.080	0.079	0.129	0.159
		Right Tilt	0.041	0.068	0.121	0.109	0.162	0.230
	GSM 1900	Left Touch	0.049	0.025	0.060	0.074	0.109	0.134
		Right Touch	0.073	0.110	0.178	0.183	0.251	**0.361**
		Left Tilt	0.037	0.030	0.080	0.067	0.117	0.147
		Right Tilt	0.025	0.068	0.121	0.093	0.146	0.214
	GPRS 1900	Left Touch	0.078	0.025	0.060	0.103	0.138	0.163
		Right Touch	0.107	0.110	0.178	0.217	0.285	**0.395**
		Left Tilt	0.059	0.030	0.080	0.089	0.139	0.169
		Right Tilt	0.038	0.068	0.121	0.106	0.159	0.227
	WCDMA 850	Left Touch	0.167	0.025	0.060	0.192	0.227	0.252
		Right Touch	0.137	0.110	0.178	0.247	0.315	**0.425**
		Left Tilt	0.060	0.030	0.080	0.090	0.140	0.170
		Right Tilt	0.082	0.068	0.121	0.150	0.203	0.271
	LTE Band 12	Left Touch	0.165	0.025	0.060	0.190	0.225	0.250
		Right Touch	0.086	0.110	0.178	0.196	0.264	**0.374**
		Left Tilt	0.054	0.030	0.080	0.084	0.134	0.164
		Right Tilt	0.079	0.068	0.121	0.147	0.200	0.268
	LTE Band 13	Left Touch	0.153	0.025	0.060	0.178	0.213	0.238
		Right Touch	0.138	0.110	0.178	0.248	0.316	**0.426**
		Left Tilt	0.067	0.030	0.080	0.097	0.147	0.177
		Right Tilt	0.069	0.068	0.121	0.137	0.190	0.258
	LTE Band 5	Left Touch	0.151	0.025	0.060	0.176	0.211	0.236
		Right Touch	0.128	0.110	0.178	0.238	0.306	**0.416**
		Left Tilt	0.062	0.030	0.080	0.092	0.142	0.172
		Right Tilt	0.062	0.068	0.121	0.130	0.183	0.251
	LTE Band 4	Left Touch	0.068	0.025	0.060	0.093	0.128	0.153
		Right Touch	0.095	0.110	0.178	0.205	0.273	**0.383**
		Left Tilt	0.067	0.030	0.080	0.097	0.147	0.177
		Right Tilt	0.052	0.068	0.121	0.120	0.173	0.241
	LTE Band 41	Left Touch	0.065	0.025	0.060	0.090	0.125	0.150
		Right Touch	0.044	0.110	0.178	0.154	0.222	**0.332**
		Left Tilt	0.019	0.030	0.080	0.049	0.099	0.129
		Right Tilt	0.026	0.068	0.121	0.094	0.147	0.215

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	0.075	0.025	0.070	0.100	0.145	0.170
		Right Touch	0.059	0.110	0.184	0.169	0.243	**0.353**
		Left Tilt	0.034	0.030	0.026	0.064	0.060	0.090
		Right Tilt	0.038	0.068	0.112	0.106	0.150	0.218
	GPRS 850	Left Touch	0.117	0.025	0.070	0.142	0.187	0.212
		Right Touch	0.085	0.110	0.184	0.195	0.269	**0.379**
		Left Tilt	0.049	0.030	0.026	0.079	0.075	0.105
		Right Tilt	0.041	0.068	0.112	0.109	0.153	0.221
	GSM 1900	Left Touch	0.049	0.025	0.070	0.074	0.119	0.144
		Right Touch	0.073	0.110	0.184	0.183	0.257	**0.367**
		Left Tilt	0.037	0.030	0.026	0.067	0.063	0.093
		Right Tilt	0.025	0.068	0.112	0.093	0.137	0.205
	GPRS 1900	Left Touch	0.078	0.025	0.070	0.103	0.148	0.173
		Right Touch	0.107	0.110	0.184	0.217	0.291	**0.401**
		Left Tilt	0.059	0.030	0.026	0.089	0.085	0.115
		Right Tilt	0.038	0.068	0.112	0.106	0.150	0.218
	WCDMA 850	Left Touch	0.167	0.025	0.070	0.192	0.237	0.262
		Right Touch	0.137	0.110	0.184	0.247	0.321	**0.431**
		Left Tilt	0.060	0.030	0.026	0.090	0.086	0.116
		Right Tilt	0.082	0.068	0.112	0.150	0.194	0.262
	LTE Band 12	Left Touch	0.165	0.025	0.070	0.190	0.235	0.260
		Right Touch	0.086	0.110	0.184	0.196	0.270	**0.380**
		Left Tilt	0.054	0.030	0.026	0.084	0.080	0.110
		Right Tilt	0.079	0.068	0.112	0.147	0.191	0.259
	LTE Band 13	Left Touch	0.153	0.025	0.070	0.178	0.223	0.248
		Right Touch	0.138	0.110	0.184	0.248	0.322	**0.432**
		Left Tilt	0.067	0.030	0.026	0.097	0.093	0.123
		Right Tilt	0.069	0.068	0.112	0.137	0.181	0.249
	LTE Band 5	Left Touch	0.151	0.025	0.070	0.176	0.221	0.246
		Right Touch	0.128	0.110	0.184	0.238	0.312	**0.422**
		Left Tilt	0.062	0.030	0.026	0.092	0.088	0.118
		Right Tilt	0.062	0.068	0.112	0.130	0.174	0.242
	LTE Band 4	Left Touch	0.068	0.025	0.070	0.093	0.138	0.163
		Right Touch	0.095	0.110	0.184	0.205	0.279	**0.389**
		Left Tilt	0.067	0.030	0.026	0.097	0.093	0.123
		Right Tilt	0.052	0.068	0.112	0.120	0.164	0.232
	LTE Band 41	Left Touch	0.065	0.025	0.070	0.090	0.135	0.160
		Right Touch	0.044	0.110	0.184	0.154	0.228	**0.338**
		Left Tilt	0.019	0.030	0.026	0.049	0.045	0.075
		Right Tilt	0.026	0.068	0.112	0.094	0.138	0.206

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	0.075	0.025	0.043	0.100	0.118	0.143
		Right Touch	0.059	0.110	0.190	0.169	0.249	**0.359**
		Left Tilt	0.034	0.030	0.074	0.064	0.108	0.138
		Right Tilt	0.038	0.068	0.115	0.106	0.153	0.221
	GPRS 850	Left Touch	0.117	0.025	0.043	0.142	0.160	0.185
		Right Touch	0.085	0.110	0.190	0.195	0.275	**0.385**
		Left Tilt	0.049	0.030	0.074	0.079	0.123	0.153
		Right Tilt	0.041	0.068	0.115	0.109	0.156	0.224
	GSM 1900	Left Touch	0.049	0.025	0.043	0.074	0.092	0.117
		Right Touch	0.073	0.110	0.190	0.183	0.263	**0.373**
		Left Tilt	0.037	0.030	0.074	0.067	0.111	0.141
		Right Tilt	0.025	0.068	0.115	0.093	0.140	0.208
	GPRS 1900	Left Touch	0.078	0.025	0.043	0.103	0.121	0.146
		Right Touch	0.107	0.110	0.190	0.217	0.297	**0.407**
		Left Tilt	0.059	0.030	0.074	0.089	0.133	0.163
		Right Tilt	0.038	0.068	0.115	0.106	0.153	0.221
	WCDMA 850	Left Touch	0.167	0.025	0.043	0.192	0.210	0.235
		Right Touch	0.137	0.110	0.190	0.247	0.327	**0.437**
		Left Tilt	0.060	0.030	0.074	0.090	0.134	0.164
		Right Tilt	0.082	0.068	0.115	0.150	0.197	0.265
	LTE Band 12	Left Touch	0.165	0.025	0.043	0.190	0.208	0.233
		Right Touch	0.086	0.110	0.190	0.196	0.276	**0.386**
		Left Tilt	0.054	0.030	0.074	0.084	0.128	0.158
		Right Tilt	0.079	0.068	0.115	0.147	0.194	0.262
	LTE Band 13	Left Touch	0.153	0.025	0.043	0.178	0.196	0.221
		Right Touch	0.138	0.110	0.190	0.248	0.328	**0.438**
		Left Tilt	0.067	0.030	0.074	0.097	0.141	0.171
		Right Tilt	0.069	0.068	0.115	0.137	0.184	0.252
	LTE Band 5	Left Touch	0.151	0.025	0.043	0.176	0.194	0.219
		Right Touch	0.128	0.110	0.190	0.238	0.318	**0.428**
		Left Tilt	0.062	0.030	0.074	0.092	0.136	0.166
		Right Tilt	0.062	0.068	0.115	0.130	0.177	0.245
	LTE Band 4	Left Touch	0.068	0.025	0.043	0.093	0.111	0.136
		Right Touch	0.095	0.110	0.190	0.205	0.285	**0.395**
		Left Tilt	0.067	0.030	0.074	0.097	0.141	0.171
		Right Tilt	0.052	0.068	0.115	0.120	0.167	0.235
	LTE Band 41	Left Touch	0.065	0.025	0.043	0.090	0.108	0.133
		Right Touch	0.044	0.110	0.190	0.154	0.234	**0.344**
		Left Tilt	0.019	0.030	0.074	0.049	0.093	0.123
		Right Tilt	0.026	0.068	0.115	0.094	0.141	0.209

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	0.075	0.025	0.064	0.100	0.139	0.164
		Right Touch	0.059	0.110	0.138	0.169	0.197	**0.307**
		Left Tilt	0.034	0.030	0.057	0.064	0.091	0.121
		Right Tilt	0.038	0.068	0.108	0.106	0.146	0.214
	GPRS 850	Left Touch	0.117	0.025	0.064	0.142	0.181	0.206
		Right Touch	0.085	0.110	0.138	0.195	0.223	**0.333**
		Left Tilt	0.049	0.030	0.057	0.079	0.106	0.136
		Right Tilt	0.041	0.068	0.108	0.109	0.149	0.217
	GSM 1900	Left Touch	0.049	0.025	0.064	0.074	0.113	0.138
		Right Touch	0.073	0.110	0.138	0.183	0.211	**0.321**
		Left Tilt	0.037	0.030	0.057	0.067	0.094	0.124
		Right Tilt	0.025	0.068	0.108	0.093	0.133	0.201
	GPRS 1900	Left Touch	0.078	0.025	0.064	0.103	0.142	0.167
		Right Touch	0.107	0.110	0.138	0.217	0.245	**0.355**
		Left Tilt	0.059	0.030	0.057	0.089	0.116	0.146
		Right Tilt	0.038	0.068	0.108	0.106	0.146	0.214
	WCDMA 850	Left Touch	0.167	0.025	0.064	0.192	0.231	0.256
		Right Touch	0.137	0.110	0.138	0.247	0.275	**0.385**
		Left Tilt	0.060	0.030	0.057	0.090	0.117	0.147
		Right Tilt	0.082	0.068	0.108	0.150	0.190	0.258
	LTE Band 12	Left Touch	0.165	0.025	0.064	0.190	0.229	0.254
		Right Touch	0.086	0.110	0.138	0.196	0.224	**0.334**
		Left Tilt	0.054	0.030	0.057	0.084	0.111	0.141
		Right Tilt	0.079	0.068	0.108	0.147	0.187	0.255
	LTE Band 13	Left Touch	0.153	0.025	0.064	0.178	0.217	0.242
		Right Touch	0.138	0.110	0.138	0.248	0.276	**0.386**
		Left Tilt	0.067	0.030	0.057	0.097	0.124	0.154
		Right Tilt	0.069	0.068	0.108	0.137	0.177	0.245
	LTE Band 5	Left Touch	0.151	0.025	0.064	0.176	0.215	0.240
		Right Touch	0.128	0.110	0.138	0.238	0.266	**0.376**
		Left Tilt	0.062	0.030	0.057	0.092	0.119	0.149
		Right Tilt	0.062	0.068	0.108	0.130	0.170	0.238
	LTE Band 4	Left Touch	0.068	0.025	0.064	0.093	0.132	0.157
		Right Touch	0.095	0.110	0.138	0.205	0.233	**0.343**
		Left Tilt	0.067	0.030	0.057	0.097	0.124	0.154
		Right Tilt	0.052	0.068	0.108	0.120	0.160	0.228
	LTE Band 41	Left Touch	0.065	0.025	0.064	0.090	0.129	0.154
		Right Touch	0.044	0.110	0.138	0.154	0.182	**0.292**
		Left Tilt	0.019	0.030	0.057	0.049	0.076	0.106
		Right Tilt	0.026	0.068	0.108	0.094	0.134	0.202

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	0.075	0.025	0.058	0.100	0.133	0.158
		Right Touch	0.059	0.110	0.336	0.169	0.395	**0.505**
		Left Tilt	0.034	0.030	0.043	0.064	0.077	0.107
		Right Tilt	0.038	0.068	0.200	0.106	0.238	0.306
	GPRS 850	Left Touch	0.117	0.025	0.058	0.142	0.175	0.200
		Right Touch	0.085	0.110	0.336	0.195	0.421	**0.531**
		Left Tilt	0.049	0.030	0.043	0.079	0.092	0.122
		Right Tilt	0.041	0.068	0.200	0.109	0.241	0.309
	GSM 1900	Left Touch	0.049	0.025	0.058	0.074	0.107	0.132
		Right Touch	0.073	0.110	0.336	0.183	0.409	**0.519**
		Left Tilt	0.037	0.030	0.043	0.067	0.080	0.110
		Right Tilt	0.025	0.068	0.200	0.093	0.225	0.293
	GPRS 1900	Left Touch	0.078	0.025	0.058	0.103	0.136	0.161
		Right Touch	0.107	0.110	0.336	0.217	0.443	**0.553**
		Left Tilt	0.059	0.030	0.043	0.089	0.102	0.132
		Right Tilt	0.038	0.068	0.200	0.106	0.238	0.306
	WCDMA 850	Left Touch	0.167	0.025	0.058	0.192	0.225	0.250
		Right Touch	0.137	0.110	0.336	0.247	0.473	**0.583**
		Left Tilt	0.060	0.030	0.043	0.090	0.103	0.133
		Right Tilt	0.082	0.068	0.200	0.150	0.282	0.350
	LTE Band 12	Left Touch	0.165	0.025	0.058	0.190	0.223	0.248
		Right Touch	0.086	0.110	0.336	0.196	0.422	**0.532**
		Left Tilt	0.054	0.030	0.043	0.084	0.097	0.127
		Right Tilt	0.079	0.068	0.200	0.147	0.279	0.347
	LTE Band 13	Left Touch	0.153	0.025	0.058	0.178	0.211	0.236
		Right Touch	0.138	0.110	0.336	0.248	0.474	**0.584**
		Left Tilt	0.067	0.030	0.043	0.097	0.110	0.140
		Right Tilt	0.069	0.068	0.200	0.137	0.269	0.337
	LTE Band 5	Left Touch	0.151	0.025	0.058	0.176	0.209	0.234
		Right Touch	0.128	0.110	0.336	0.238	0.464	**0.574**
		Left Tilt	0.062	0.030	0.043	0.092	0.105	0.135
		Right Tilt	0.062	0.068	0.200	0.130	0.262	0.330
	LTE Band 4	Left Touch	0.068	0.025	0.058	0.093	0.126	0.151
		Right Touch	0.095	0.110	0.336	0.205	0.431	**0.541**
		Left Tilt	0.067	0.030	0.043	0.097	0.110	0.140
		Right Tilt	0.052	0.068	0.200	0.120	0.252	0.320
	LTE Band 41	Left Touch	0.065	0.025	0.058	0.090	0.123	0.148
		Right Touch	0.044	0.110	0.336	0.154	0.380	**0.490**
		Left Tilt	0.019	0.030	0.043	0.049	0.062	0.092
		Right Tilt	0.026	0.068	0.200	0.094	0.226	0.294

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	0.075	0.025	0.166	0.100	0.241	0.266
		Right Touch	0.059	0.110	0.454	0.169	0.513	**0.623**
		Left Tilt	0.034	0.030	0.146	0.064	0.180	0.210
		Right Tilt	0.038	0.068	0.351	0.106	0.389	0.457
	GPRS 850	Left Touch	0.117	0.025	0.166	0.142	0.283	0.308
		Right Touch	0.085	0.110	0.454	0.195	0.539	**0.649**
		Left Tilt	0.049	0.030	0.146	0.079	0.195	0.225
		Right Tilt	0.041	0.068	0.351	0.109	0.392	0.460
	GSM 1900	Left Touch	0.049	0.025	0.166	0.074	0.215	0.240
		Right Touch	0.073	0.110	0.454	0.183	0.527	**0.637**
		Left Tilt	0.037	0.030	0.146	0.067	0.183	0.213
		Right Tilt	0.025	0.068	0.351	0.093	0.376	0.444
	GPRS 1900	Left Touch	0.078	0.025	0.166	0.103	0.244	0.269
		Right Touch	0.107	0.110	0.454	0.217	0.561	**0.671**
		Left Tilt	0.059	0.030	0.146	0.089	0.205	0.235
		Right Tilt	0.038	0.068	0.351	0.106	0.389	0.457
	WCDMA 850	Left Touch	0.167	0.025	0.166	0.192	0.333	0.358
		Right Touch	0.137	0.110	0.454	0.247	0.591	**0.701**
		Left Tilt	0.060	0.030	0.146	0.090	0.206	0.236
		Right Tilt	0.082	0.068	0.351	0.150	0.433	0.501
	LTE Band 12	Left Touch	0.165	0.025	0.166	0.190	0.331	0.356
		Right Touch	0.086	0.110	0.454	0.196	0.540	**0.650**
		Left Tilt	0.054	0.030	0.146	0.084	0.200	0.230
		Right Tilt	0.079	0.068	0.351	0.147	0.430	0.498
	LTE Band 13	Left Touch	0.153	0.025	0.166	0.178	0.319	0.344
		Right Touch	0.138	0.110	0.454	0.248	0.592	**0.702**
		Left Tilt	0.067	0.030	0.146	0.097	0.213	0.243
		Right Tilt	0.069	0.068	0.351	0.137	0.420	0.488
	LTE Band 5	Left Touch	0.151	0.025	0.166	0.176	0.317	0.342
		Right Touch	0.128	0.110	0.454	0.238	0.582	**0.692**
		Left Tilt	0.062	0.030	0.146	0.092	0.208	0.238
		Right Tilt	0.062	0.068	0.351	0.130	0.413	0.481
	LTE Band 4	Left Touch	0.068	0.025	0.166	0.093	0.234	0.259
		Right Touch	0.095	0.110	0.454	0.205	0.549	**0.659**
		Left Tilt	0.067	0.030	0.146	0.097	0.213	0.243
		Right Tilt	0.052	0.068	0.351	0.120	0.403	0.471
	LTE Band 41	Left Touch	0.065	0.025	0.166	0.090	0.231	0.256
		Right Touch	0.044	0.110	0.454	0.154	0.498	**0.608**
		Left Tilt	0.019	0.030	0.146	0.049	0.165	0.195
		Right Tilt	0.026	0.068	0.351	0.094	0.377	0.445

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)	5.6G 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	0.075	0.025	0.079	0.100	0.154	0.179
		Right Touch	0.059	0.110	0.149	0.169	0.208	**0.318**
		Left Tilt	0.034	0.030	0.076	0.064	0.110	0.140
		Right Tilt	0.038	0.068	0.154	0.106	0.192	0.260
	GPRS 850	Left Touch	0.117	0.025	0.079	0.142	0.196	0.221
		Right Touch	0.085	0.110	0.149	0.195	0.234	**0.344**
		Left Tilt	0.049	0.030	0.076	0.079	0.125	0.155
		Right Tilt	0.041	0.068	0.154	0.109	0.195	0.263
	GSM 1900	Left Touch	0.049	0.025	0.079	0.074	0.128	0.153
		Right Touch	0.073	0.110	0.149	0.183	0.222	**0.332**
		Left Tilt	0.037	0.030	0.076	0.067	0.113	0.143
		Right Tilt	0.025	0.068	0.154	0.093	0.179	0.247
	GPRS 1900	Left Touch	0.078	0.025	0.079	0.103	0.157	0.182
		Right Touch	0.107	0.110	0.149	0.217	0.256	**0.366**
		Left Tilt	0.059	0.030	0.076	0.089	0.135	0.165
		Right Tilt	0.038	0.068	0.154	0.106	0.192	0.260
	WCDMA 850	Left Touch	0.167	0.025	0.079	0.192	0.246	0.271
		Right Touch	0.137	0.110	0.149	0.247	0.286	**0.396**
		Left Tilt	0.060	0.030	0.076	0.090	0.136	0.166
		Right Tilt	0.082	0.068	0.154	0.150	0.236	0.304
	LTE Band 12	Left Touch	0.165	0.025	0.079	0.190	0.244	0.269
		Right Touch	0.086	0.110	0.149	0.196	0.235	**0.345**
		Left Tilt	0.054	0.030	0.076	0.084	0.130	0.160
		Right Tilt	0.079	0.068	0.154	0.147	0.233	0.301
	LTE Band 13	Left Touch	0.153	0.025	0.079	0.178	0.232	0.257
		Right Touch	0.138	0.110	0.149	0.248	0.287	**0.397**
		Left Tilt	0.067	0.030	0.076	0.097	0.143	0.173
		Right Tilt	0.069	0.068	0.154	0.137	0.223	0.291
	LTE Band 5	Left Touch	0.151	0.025	0.079	0.176	0.230	0.255
		Right Touch	0.128	0.110	0.149	0.238	0.277	**0.387**
		Left Tilt	0.062	0.030	0.076	0.092	0.138	0.168
		Right Tilt	0.062	0.068	0.154	0.130	0.216	0.284
	LTE Band 4	Left Touch	0.068	0.025	0.079	0.093	0.147	0.172
		Right Touch	0.095	0.110	0.149	0.205	0.244	**0.354**
		Left Tilt	0.067	0.030	0.076	0.097	0.143	0.173
		Right Tilt	0.052	0.068	0.154	0.120	0.206	0.274
	LTE Band 41	Left Touch	0.065	0.025	0.079	0.090	0.144	0.169
		Right Touch	0.044	0.110	0.149	0.154	0.193	**0.303**
		Left Tilt	0.019	0.030	0.076	0.049	0.095	0.125
		Right Tilt	0.026	0.068	0.154	0.094	0.180	0.248

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	0.075	0.025	0.118	0.100	0.193	0.218
		Right Touch	0.059	0.110	0.162	0.169	0.221	**0.331**
		Left Tilt	0.034	0.030	0.090	0.064	0.124	0.154
		Right Tilt	0.038	0.068	0.118	0.106	0.156	0.224
	GPRS 850	Left Touch	0.117	0.025	0.118	0.142	0.235	0.260
		Right Touch	0.085	0.110	0.162	0.195	0.247	**0.357**
		Left Tilt	0.049	0.030	0.090	0.079	0.139	0.169
		Right Tilt	0.041	0.068	0.118	0.109	0.159	0.227
	GSM 1900	Left Touch	0.049	0.025	0.118	0.074	0.167	0.192
		Right Touch	0.073	0.110	0.162	0.183	0.235	**0.345**
		Left Tilt	0.037	0.030	0.090	0.067	0.127	0.157
		Right Tilt	0.025	0.068	0.118	0.093	0.143	0.211
	GPRS 1900	Left Touch	0.078	0.025	0.118	0.103	0.196	0.221
		Right Touch	0.107	0.110	0.162	0.217	0.269	**0.379**
		Left Tilt	0.059	0.030	0.090	0.089	0.149	0.179
		Right Tilt	0.038	0.068	0.118	0.106	0.156	0.224
	WCDMA 850	Left Touch	0.167	0.025	0.118	0.192	0.285	0.310
		Right Touch	0.137	0.110	0.162	0.247	0.299	**0.409**
		Left Tilt	0.060	0.030	0.090	0.090	0.150	0.180
		Right Tilt	0.082	0.068	0.118	0.150	0.200	0.268
	LTE Band 12	Left Touch	0.165	0.025	0.118	0.190	0.283	0.308
		Right Touch	0.086	0.110	0.162	0.196	0.248	**0.358**
		Left Tilt	0.054	0.030	0.090	0.084	0.144	0.174
		Right Tilt	0.079	0.068	0.118	0.147	0.197	0.265
	LTE Band 13	Left Touch	0.153	0.025	0.118	0.178	0.271	0.296
		Right Touch	0.138	0.110	0.162	0.248	0.300	**0.410**
		Left Tilt	0.067	0.030	0.090	0.097	0.157	0.187
		Right Tilt	0.069	0.068	0.118	0.137	0.187	0.255
	LTE Band 5	Left Touch	0.151	0.025	0.118	0.176	0.269	0.294
		Right Touch	0.128	0.110	0.162	0.238	0.290	**0.400**
		Left Tilt	0.062	0.030	0.090	0.092	0.152	0.182
		Right Tilt	0.062	0.068	0.118	0.130	0.180	0.248
	LTE Band 4	Left Touch	0.068	0.025	0.118	0.093	0.186	0.211
		Right Touch	0.095	0.110	0.162	0.205	0.257	**0.367**
		Left Tilt	0.067	0.030	0.090	0.097	0.157	0.187
		Right Tilt	0.052	0.068	0.118	0.120	0.170	0.238
	LTE Band 41	Left Touch	0.065	0.025	0.118	0.090	0.183	0.208
		Right Touch	0.044	0.110	0.162	0.154	0.206	**0.316**
		Left Tilt	0.019	0.030	0.090	0.049	0.109	0.139
		Right Tilt	0.026	0.068	0.118	0.094	0.144	0.212

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	0.075	0.025	0.111	0.100	0.186	0.211
		Right Touch	0.059	0.110	0.321	0.169	0.380	**0.490**
		Left Tilt	0.034	0.030	0.130	0.064	0.164	0.194
		Right Tilt	0.038	0.068	0.188	0.106	0.226	0.294
	GPRS 850	Left Touch	0.117	0.025	0.111	0.142	0.228	0.253
		Right Touch	0.085	0.110	0.321	0.195	0.406	**0.516**
		Left Tilt	0.049	0.030	0.130	0.079	0.179	0.209
		Right Tilt	0.041	0.068	0.188	0.109	0.229	0.297
	GSM 1900	Left Touch	0.049	0.025	0.111	0.074	0.160	0.185
		Right Touch	0.073	0.110	0.321	0.183	0.394	**0.504**
		Left Tilt	0.037	0.030	0.130	0.067	0.167	0.197
		Right Tilt	0.025	0.068	0.188	0.093	0.213	0.281
	GPRS 1900	Left Touch	0.078	0.025	0.111	0.103	0.189	0.214
		Right Touch	0.107	0.110	0.321	0.217	0.428	**0.538**
		Left Tilt	0.059	0.030	0.130	0.089	0.189	0.219
		Right Tilt	0.038	0.068	0.188	0.106	0.226	0.294
	WCDMA 850	Left Touch	0.167	0.025	0.111	0.192	0.278	0.303
		Right Touch	0.137	0.110	0.321	0.247	0.458	**0.568**
		Left Tilt	0.060	0.030	0.130	0.090	0.190	0.220
		Right Tilt	0.082	0.068	0.188	0.150	0.270	0.338
	LTE Band 12	Left Touch	0.165	0.025	0.111	0.190	0.276	0.301
		Right Touch	0.086	0.110	0.321	0.196	0.407	**0.517**
		Left Tilt	0.054	0.030	0.130	0.084	0.184	0.214
		Right Tilt	0.079	0.068	0.188	0.147	0.267	0.335
	LTE Band 13	Left Touch	0.153	0.025	0.111	0.178	0.264	0.289
		Right Touch	0.138	0.110	0.321	0.248	0.459	**0.569**
		Left Tilt	0.067	0.030	0.130	0.097	0.197	0.227
		Right Tilt	0.069	0.068	0.188	0.137	0.257	0.325
	LTE Band 5	Left Touch	0.151	0.025	0.111	0.176	0.262	0.287
		Right Touch	0.128	0.110	0.321	0.238	0.449	**0.559**
		Left Tilt	0.062	0.030	0.130	0.092	0.192	0.222
		Right Tilt	0.062	0.068	0.188	0.130	0.250	0.318
	LTE Band 4	Left Touch	0.068	0.025	0.111	0.093	0.179	0.204
		Right Touch	0.095	0.110	0.321	0.205	0.416	**0.526**
		Left Tilt	0.067	0.030	0.130	0.097	0.197	0.227
		Right Tilt	0.052	0.068	0.188	0.120	0.240	0.308
	LTE Band 41	Left Touch	0.065	0.025	0.111	0.090	0.176	0.201
		Right Touch	0.044	0.110	0.321	0.154	0.365	**0.475**
		Left Tilt	0.019	0.030	0.130	0.049	0.149	0.179
		Right Tilt	0.026	0.068	0.188	0.094	0.214	0.282

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth Ant.1 SAR (W/kg)	2.4G 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	0.075	0.025	0.418	0.100	0.493	0.518
		Right Touch	0.059	0.110	0.603	0.169	0.662	0.772
		Left Tilt	0.034	0.030	0.440	0.064	0.474	0.504
		Right Tilt	0.038	0.068	0.686	0.106	0.724	**0.792**
	GPRS 850	Left Touch	0.117	0.025	0.418	0.142	0.535	0.560
		Right Touch	0.085	0.110	0.603	0.195	0.688	**0.798**
		Left Tilt	0.049	0.030	0.440	0.079	0.489	0.519
		Right Tilt	0.041	0.068	0.686	0.109	0.727	0.795
	GSM 1900	Left Touch	0.049	0.025	0.418	0.074	0.467	0.492
		Right Touch	0.073	0.110	0.603	0.183	0.676	**0.786**
		Left Tilt	0.037	0.030	0.440	0.067	0.477	0.507
		Right Tilt	0.025	0.068	0.686	0.093	0.711	0.779
	GPRS 1900	Left Touch	0.078	0.025	0.418	0.103	0.496	0.521
		Right Touch	0.107	0.110	0.603	0.217	0.710	**0.820**
		Left Tilt	0.059	0.030	0.440	0.089	0.499	0.529
		Right Tilt	0.038	0.068	0.686	0.106	0.724	0.792
	WCDMA 850	Left Touch	0.167	0.025	0.418	0.192	0.585	0.610
		Right Touch	0.137	0.110	0.603	0.247	0.740	**0.850**
		Left Tilt	0.060	0.030	0.440	0.090	0.500	0.530
		Right Tilt	0.082	0.068	0.686	0.150	0.768	0.836
	LTE Band 12	Left Touch	0.165	0.025	0.418	0.190	0.583	0.608
		Right Touch	0.086	0.110	0.603	0.196	0.689	0.799
		Left Tilt	0.054	0.030	0.440	0.084	0.494	0.524
		Right Tilt	0.079	0.068	0.686	0.147	0.765	**0.833**
	LTE Band 13	Left Touch	0.153	0.025	0.418	0.178	0.571	0.596
		Right Touch	0.138	0.110	0.603	0.248	0.741	**0.851**
		Left Tilt	0.067	0.030	0.440	0.097	0.507	0.537
		Right Tilt	0.069	0.068	0.686	0.137	0.755	0.823
	LTE Band 5	Left Touch	0.151	0.025	0.418	0.176	0.569	0.594
		Right Touch	0.128	0.110	0.603	0.238	0.731	**0.841**
		Left Tilt	0.062	0.030	0.440	0.092	0.502	0.532
		Right Tilt	0.062	0.068	0.686	0.130	0.748	0.816
	LTE Band 4	Left Touch	0.068	0.025	0.418	0.093	0.486	0.511
		Right Touch	0.095	0.110	0.603	0.205	0.698	**0.808**
		Left Tilt	0.067	0.030	0.440	0.097	0.507	0.537
		Right Tilt	0.052	0.068	0.686	0.120	0.738	0.806
	LTE Band 41	Left Touch	0.065	0.025	0.418	0.090	0.483	0.508
		Right Touch	0.044	0.110	0.603	0.154	0.647	0.757
		Left Tilt	0.019	0.030	0.440	0.049	0.459	0.489
		Right Tilt	0.026	0.068	0.686	0.094	0.712	**0.780**

Table 12.4.14 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	0.075	0.110	0.185
		Right Touch	0.059	0.306	**0.365**
		Left Tilt	0.034	0.142	0.176
		Right Tilt	0.038	0.318	0.356
	GPRS 850	Left Touch	0.117	0.110	0.227
		Right Touch	0.085	0.306	**0.391**
		Left Tilt	0.049	0.142	0.191
		Right Tilt	0.041	0.318	0.359
	GSM 1900	Left Touch	0.049	0.110	0.159
		Right Touch	0.073	0.306	**0.379**
		Left Tilt	0.037	0.142	0.179
		Right Tilt	0.025	0.318	0.343
	GPRS 1900	Left Touch	0.078	0.110	0.188
		Right Touch	0.107	0.306	**0.413**
		Left Tilt	0.059	0.142	0.201
		Right Tilt	0.038	0.318	0.356
	WCDMA 850	Left Touch	0.167	0.110	0.277
		Right Touch	0.137	0.306	**0.443**
		Left Tilt	0.060	0.142	0.202
		Right Tilt	0.082	0.318	0.400
	LTE Band 12	Left Touch	0.165	0.110	0.275
		Right Touch	0.086	0.306	0.392
		Left Tilt	0.054	0.142	0.196
		Right Tilt	0.079	0.318	**0.397**
	LTE Band 13	Left Touch	0.153	0.110	0.263
		Right Touch	0.138	0.306	**0.444**
		Left Tilt	0.067	0.142	0.209
		Right Tilt	0.069	0.318	0.387
	LTE Band 5	Left Touch	0.151	0.110	0.261
		Right Touch	0.128	0.306	**0.434**
		Left Tilt	0.062	0.142	0.204
		Right Tilt	0.062	0.318	0.380
	LTE Band 4	Left Touch	0.068	0.110	0.178
		Right Touch	0.095	0.306	**0.401**
		Left Tilt	0.067	0.142	0.209
		Right Tilt	0.052	0.318	0.370
	LTE Band 41	Left Touch	0.065	0.110	0.175
		Right Touch	0.044	0.306	**0.350**
		Left Tilt	0.019	0.142	0.161
		Right Tilt	0.026	0.318	0.344

Table 12.4.15 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	0.075	0.418	0.493
		Right Touch	0.059	0.603	0.662
		Left Tilt	0.034	0.440	0.474
		Right Tilt	0.038	0.686	**0.724**
	GPRS 850	Left Touch	0.117	0.418	0.535
		Right Touch	0.085	0.603	0.688
		Left Tilt	0.049	0.440	0.489
		Right Tilt	0.041	0.686	**0.727**
	GSM 1900	Left Touch	0.049	0.418	0.467
		Right Touch	0.073	0.603	0.676
		Left Tilt	0.037	0.440	0.477
		Right Tilt	0.025	0.686	**0.711**
	GPRS 1900	Left Touch	0.078	0.418	0.496
		Right Touch	0.107	0.603	0.710
		Left Tilt	0.059	0.440	0.499
		Right Tilt	0.038	0.686	**0.724**
	WCDMA 850	Left Touch	0.167	0.418	0.585
		Right Touch	0.137	0.603	0.740
		Left Tilt	0.060	0.440	0.500
		Right Tilt	0.082	0.686	**0.768**
	LTE Band 12	Left Touch	0.165	0.418	0.583
		Right Touch	0.086	0.603	0.689
		Left Tilt	0.054	0.440	0.494
		Right Tilt	0.079	0.686	**0.765**
	LTE Band 13	Left Touch	0.153	0.418	0.571
		Right Touch	0.138	0.603	0.741
		Left Tilt	0.067	0.440	0.507
		Right Tilt	0.069	0.686	**0.755**
	LTE Band 5	Left Touch	0.151	0.418	0.569
		Right Touch	0.128	0.603	0.731
		Left Tilt	0.062	0.440	0.502
		Right Tilt	0.062	0.686	**0.748**
	LTE Band 4	Left Touch	0.068	0.418	0.486
		Right Touch	0.095	0.603	0.698
		Left Tilt	0.067	0.440	0.507
		Right Tilt	0.052	0.686	**0.738**
	LTE Band 41	Left Touch	0.065	0.418	0.483
		Right Touch	0.044	0.603	0.647
		Left Tilt	0.019	0.440	0.459
		Right Tilt	0.026	0.686	**0.712**

Table 12.4.16 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	0.075	0.420	0.495
		Right Touch	0.059	0.733	**0.792**
		Left Tilt	0.034	0.440	0.474
		Right Tilt	0.038	0.726	0.764
	GPRS 850	Left Touch	0.117	0.420	0.537
		Right Touch	0.085	0.733	**0.818**
		Left Tilt	0.049	0.440	0.489
		Right Tilt	0.041	0.726	0.767
	GSM 1900	Left Touch	0.049	0.420	0.469
		Right Touch	0.073	0.733	**0.806**
		Left Tilt	0.037	0.440	0.477
		Right Tilt	0.025	0.726	0.751
	GPRS 1900	Left Touch	0.078	0.420	0.498
		Right Touch	0.107	0.733	**0.840**
		Left Tilt	0.059	0.440	0.499
		Right Tilt	0.038	0.726	0.764
	WCDMA 850	Left Touch	0.167	0.420	0.587
		Right Touch	0.137	0.733	**0.870**
		Left Tilt	0.060	0.440	0.500
		Right Tilt	0.082	0.726	0.808
	LTE Band 12	Left Touch	0.165	0.420	0.585
		Right Touch	0.086	0.733	**0.819**
		Left Tilt	0.054	0.440	0.494
		Right Tilt	0.079	0.726	0.805
	LTE Band 13	Left Touch	0.153	0.420	0.573
		Right Touch	**0.138**	**0.733**	0.871
		Left Tilt	0.067	0.440	0.507
		Right Tilt	0.069	0.726	0.795
	LTE Band 5	Left Touch	0.151	0.420	0.571
		Right Touch	0.128	0.733	**0.861**
		Left Tilt	0.062	0.440	0.502
		Right Tilt	0.062	0.726	0.788
	LTE Band 4	Left Touch	0.068	0.420	0.488
		Right Touch	0.095	0.733	**0.828**
		Left Tilt	0.067	0.440	0.507
		Right Tilt	0.052	0.726	0.778
	LTE Band 41	Left Touch	0.065	0.420	0.485
		Right Touch	0.044	0.733	**0.777**
		Left Tilt	0.019	0.440	0.459
		Right Tilt	0.026	0.726	0.752

Table 12.4.17 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	0.075	0.060	0.135
		Right Touch	0.059	0.178	**0.237**
		Left Tilt	0.034	0.080	0.114
		Right Tilt	0.038	0.121	0.159
	GPRS 850	Left Touch	0.117	0.060	0.177
		Right Touch	0.085	0.178	**0.263**
		Left Tilt	0.049	0.080	0.129
		Right Tilt	0.041	0.121	0.162
	GSM 1900	Left Touch	0.049	0.060	0.109
		Right Touch	0.073	0.178	**0.251**
		Left Tilt	0.037	0.080	0.117
		Right Tilt	0.025	0.121	0.146
	GPRS 1900	Left Touch	0.078	0.060	0.138
		Right Touch	0.107	0.178	**0.285**
		Left Tilt	0.059	0.080	0.139
		Right Tilt	0.038	0.121	0.159
	WCDMA 850	Left Touch	0.167	0.060	0.227
		Right Touch	0.137	0.178	**0.315**
		Left Tilt	0.060	0.080	0.140
		Right Tilt	0.082	0.121	0.203
	LTE Band 12	Left Touch	0.165	0.060	0.225
		Right Touch	0.086	0.178	**0.264**
		Left Tilt	0.054	0.080	0.134
		Right Tilt	0.079	0.121	0.200
	LTE Band 13	Left Touch	0.153	0.060	0.213
		Right Touch	0.138	0.178	**0.316**
		Left Tilt	0.067	0.080	0.147
		Right Tilt	0.069	0.121	0.190
	LTE Band 5	Left Touch	0.151	0.060	0.211
		Right Touch	0.128	0.178	**0.306**
		Left Tilt	0.062	0.080	0.142
		Right Tilt	0.062	0.121	0.183
	LTE Band 4	Left Touch	0.068	0.060	0.128
		Right Touch	0.095	0.178	**0.273**
		Left Tilt	0.067	0.080	0.147
		Right Tilt	0.052	0.121	0.173
	LTE Band 41	Left Touch	0.065	0.060	0.125
		Right Touch	0.044	0.178	**0.222**
		Left Tilt	0.019	0.080	0.099
		Right Tilt	0.026	0.121	0.147

Table 12.4.18 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	0.075	0.070	0.145
		Right Touch	0.059	0.184	**0.243**
		Left Tilt	0.034	0.026	0.060
		Right Tilt	0.038	0.112	0.150
	GPRS 850	Left Touch	0.117	0.070	0.187
		Right Touch	0.085	0.184	**0.269**
		Left Tilt	0.049	0.026	0.075
		Right Tilt	0.041	0.112	0.153
	GSM 1900	Left Touch	0.049	0.070	0.119
		Right Touch	0.073	0.184	**0.257**
		Left Tilt	0.037	0.026	0.063
		Right Tilt	0.025	0.112	0.137
	GPRS 1900	Left Touch	0.078	0.070	0.148
		Right Touch	0.107	0.184	**0.291**
		Left Tilt	0.059	0.026	0.085
		Right Tilt	0.038	0.112	0.150
	WCDMA 850	Left Touch	0.167	0.070	0.237
		Right Touch	0.137	0.184	**0.321**
		Left Tilt	0.060	0.026	0.086
		Right Tilt	0.082	0.112	0.194
	LTE Band 12	Left Touch	0.165	0.070	0.235
		Right Touch	0.086	0.184	**0.270**
		Left Tilt	0.054	0.026	0.080
		Right Tilt	0.079	0.112	0.191
	LTE Band 13	Left Touch	0.153	0.070	0.223
		Right Touch	0.138	0.184	**0.322**
		Left Tilt	0.067	0.026	0.093
		Right Tilt	0.069	0.112	0.181
	LTE Band 5	Left Touch	0.151	0.070	0.221
		Right Touch	0.128	0.184	**0.312**
		Left Tilt	0.062	0.026	0.088
		Right Tilt	0.062	0.112	0.174
	LTE Band 4	Left Touch	0.068	0.070	0.138
		Right Touch	0.095	0.184	**0.279**
		Left Tilt	0.067	0.026	0.093
		Right Tilt	0.052	0.112	0.164
	LTE Band 41	Left Touch	0.065	0.070	0.135
		Right Touch	0.044	0.184	**0.228**
		Left Tilt	0.019	0.026	0.045
		Right Tilt	0.026	0.112	0.138

Table 12.4.19 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	0.075	0.043	0.118
		Right Touch	0.059	0.190	**0.249**
		Left Tilt	0.034	0.074	0.108
		Right Tilt	0.038	0.115	0.153
	GPRS 850	Left Touch	0.117	0.043	0.160
		Right Touch	0.085	0.190	**0.275**
		Left Tilt	0.049	0.074	0.123
		Right Tilt	0.041	0.115	0.156
	GSM 1900	Left Touch	0.049	0.043	0.092
		Right Touch	0.073	0.190	**0.263**
		Left Tilt	0.037	0.074	0.111
		Right Tilt	0.025	0.115	0.140
	GPRS 1900	Left Touch	0.078	0.043	0.121
		Right Touch	0.107	0.190	**0.297**
		Left Tilt	0.059	0.074	0.133
		Right Tilt	0.038	0.115	0.153
	WCDMA 850	Left Touch	0.167	0.043	0.210
		Right Touch	0.137	0.190	**0.327**
		Left Tilt	0.060	0.074	0.134
		Right Tilt	0.082	0.115	0.197
	LTE Band 12	Left Touch	0.165	0.043	0.208
		Right Touch	0.086	0.190	**0.276**
		Left Tilt	0.054	0.074	0.128
		Right Tilt	0.079	0.115	0.194
	LTE Band 13	Left Touch	0.153	0.043	0.196
		Right Touch	0.138	0.190	**0.328**
		Left Tilt	0.067	0.074	0.141
		Right Tilt	0.069	0.115	0.184
	LTE Band 5	Left Touch	0.151	0.043	0.194
		Right Touch	0.128	0.190	**0.318**
		Left Tilt	0.062	0.074	0.136
		Right Tilt	0.062	0.115	0.177
	LTE Band 4	Left Touch	0.068	0.043	0.111
		Right Touch	0.095	0.190	**0.285**
		Left Tilt	0.067	0.074	0.141
		Right Tilt	0.052	0.115	0.167
	LTE Band 41	Left Touch	0.065	0.043	0.108
		Right Touch	0.044	0.190	**0.234**
		Left Tilt	0.019	0.074	0.093
		Right Tilt	0.026	0.115	0.141

Table 12.4.20 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	0.075	0.064	0.139
		Right Touch	0.059	0.138	**0.197**
		Left Tilt	0.034	0.057	0.091
		Right Tilt	0.038	0.108	0.146
	GPRS 850	Left Touch	0.117	0.064	0.181
		Right Touch	0.085	0.138	**0.223**
		Left Tilt	0.049	0.057	0.106
		Right Tilt	0.041	0.108	0.149
	GSM 1900	Left Touch	0.049	0.064	0.113
		Right Touch	0.073	0.138	**0.211**
		Left Tilt	0.037	0.057	0.094
		Right Tilt	0.025	0.108	0.133
	GPRS 1900	Left Touch	0.078	0.064	0.142
		Right Touch	0.107	0.138	**0.245**
		Left Tilt	0.059	0.057	0.116
		Right Tilt	0.038	0.108	0.146
	WCDMA 850	Left Touch	0.167	0.064	0.231
		Right Touch	0.137	0.138	**0.275**
		Left Tilt	0.060	0.057	0.117
		Right Tilt	0.082	0.108	0.190
	LTE Band 12	Left Touch	0.165	0.064	**0.229**
		Right Touch	0.086	0.138	0.224
		Left Tilt	0.054	0.057	0.111
		Right Tilt	0.079	0.108	0.187
	LTE Band 13	Left Touch	0.153	0.064	0.217
		Right Touch	0.138	0.138	**0.276**
		Left Tilt	0.067	0.057	0.124
		Right Tilt	0.069	0.108	0.177
	LTE Band 5	Left Touch	0.151	0.064	0.215
		Right Touch	0.128	0.138	**0.266**
		Left Tilt	0.062	0.057	0.119
		Right Tilt	0.062	0.108	0.170
	LTE Band 4	Left Touch	0.068	0.064	0.132
		Right Touch	0.095	0.138	**0.233**
		Left Tilt	0.067	0.057	0.124
		Right Tilt	0.052	0.108	0.160
	LTE Band 41	Left Touch	0.065	0.064	0.129
		Right Touch	0.044	0.138	**0.182**
		Left Tilt	0.019	0.057	0.076
		Right Tilt	0.026	0.108	0.134

Table 12.4.21 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	0.075	0.058	0.133
		Right Touch	0.059	0.336	**0.395**
		Left Tilt	0.034	0.043	0.077
		Right Tilt	0.038	0.200	0.238
	GPRS 850	Left Touch	0.117	0.058	0.175
		Right Touch	0.085	0.336	**0.421**
		Left Tilt	0.049	0.043	0.092
		Right Tilt	0.041	0.200	0.241
	GSM 1900	Left Touch	0.049	0.058	0.107
		Right Touch	0.073	0.336	**0.409**
		Left Tilt	0.037	0.043	0.080
		Right Tilt	0.025	0.200	0.225
	GPRS 1900	Left Touch	0.078	0.058	0.136
		Right Touch	0.107	0.336	**0.443**
		Left Tilt	0.059	0.043	0.102
		Right Tilt	0.038	0.200	0.238
	WCDMA 850	Left Touch	0.167	0.058	0.225
		Right Touch	0.137	0.336	**0.473**
		Left Tilt	0.060	0.043	0.103
		Right Tilt	0.082	0.200	0.282
	LTE Band 12	Left Touch	0.165	0.058	0.223
		Right Touch	0.086	0.336	**0.422**
		Left Tilt	0.054	0.043	0.097
		Right Tilt	0.079	0.200	0.279
	LTE Band 13	Left Touch	0.153	0.058	0.211
		Right Touch	0.138	0.336	**0.474**
		Left Tilt	0.067	0.043	0.110
		Right Tilt	0.069	0.200	0.269
	LTE Band 5	Left Touch	0.151	0.058	0.209
		Right Touch	0.128	0.336	**0.464**
		Left Tilt	0.062	0.043	0.105
		Right Tilt	0.062	0.200	0.262
	LTE Band 4	Left Touch	0.068	0.058	0.126
		Right Touch	0.095	0.336	**0.431**
		Left Tilt	0.067	0.043	0.110
		Right Tilt	0.052	0.200	0.252
	LTE Band 41	Left Touch	0.065	0.058	0.123
		Right Touch	0.044	0.336	**0.380**
		Left Tilt	0.019	0.043	0.062
		Right Tilt	0.026	0.200	0.226

Table 12.4.22 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	0.075	0.166	0.241
		Right Touch	0.059	0.454	**0.513**
		Left Tilt	0.034	0.146	0.180
		Right Tilt	0.038	0.351	0.389
	GPRS 850	Left Touch	0.117	0.166	0.283
		Right Touch	0.085	0.454	**0.539**
		Left Tilt	0.049	0.146	0.195
		Right Tilt	0.041	0.351	0.392
	GSM 1900	Left Touch	0.049	0.166	0.215
		Right Touch	0.073	0.454	**0.527**
		Left Tilt	0.037	0.146	0.183
		Right Tilt	0.025	0.351	0.376
	GPRS 1900	Left Touch	0.078	0.166	0.244
		Right Touch	0.107	0.454	**0.561**
		Left Tilt	0.059	0.146	0.205
		Right Tilt	0.038	0.351	0.389
	WCDMA 850	Left Touch	0.167	0.166	0.333
		Right Touch	0.137	0.454	**0.591**
		Left Tilt	0.060	0.146	0.206
		Right Tilt	0.082	0.351	0.433
	LTE Band 12	Left Touch	0.165	0.166	0.331
		Right Touch	0.086	0.454	**0.540**
		Left Tilt	0.054	0.146	0.200
		Right Tilt	0.079	0.351	0.430
	LTE Band 13	Left Touch	0.153	0.166	0.319
		Right Touch	0.138	0.454	**0.592**
		Left Tilt	0.067	0.146	0.213
		Right Tilt	0.069	0.351	0.420
	LTE Band 5	Left Touch	0.151	0.166	0.317
		Right Touch	0.128	0.454	**0.582**
		Left Tilt	0.062	0.146	0.208
		Right Tilt	0.062	0.351	0.413
	LTE Band 4	Left Touch	0.068	0.166	0.234
		Right Touch	0.095	0.454	**0.549**
		Left Tilt	0.067	0.146	0.213
		Right Tilt	0.052	0.351	0.403
	LTE Band 41	Left Touch	0.065	0.166	0.231
		Right Touch	0.044	0.454	**0.498**
		Left Tilt	0.019	0.146	0.165
		Right Tilt	0.026	0.351	0.377

Table 12.4.23 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	0.075	0.079	0.154
		Right Touch	0.059	0.149	**0.208**
		Left Tilt	0.034	0.076	0.110
		Right Tilt	0.038	0.154	0.192
	GPRS 850	Left Touch	0.117	0.079	0.196
		Right Touch	0.085	0.149	**0.234**
		Left Tilt	0.049	0.076	0.125
		Right Tilt	0.041	0.154	0.195
	GSM 1900	Left Touch	0.049	0.079	0.128
		Right Touch	0.073	0.149	**0.222**
		Left Tilt	0.037	0.076	0.113
		Right Tilt	0.025	0.154	0.179
	GPRS 1900	Left Touch	0.078	0.079	0.157
		Right Touch	0.107	0.149	**0.256**
		Left Tilt	0.059	0.076	0.135
		Right Tilt	0.038	0.154	0.192
	WCDMA 850	Left Touch	0.167	0.079	0.246
		Right Touch	0.137	0.149	**0.286**
		Left Tilt	0.060	0.076	0.136
		Right Tilt	0.082	0.154	0.236
	LTE Band 12	Left Touch	0.165	0.079	**0.244**
		Right Touch	0.086	0.149	0.235
		Left Tilt	0.054	0.076	0.130
		Right Tilt	0.079	0.154	0.233
	LTE Band 13	Left Touch	0.153	0.079	0.232
		Right Touch	0.138	0.149	**0.287**
		Left Tilt	0.067	0.076	0.143
		Right Tilt	0.069	0.154	0.223
	LTE Band 5	Left Touch	0.151	0.079	0.230
		Right Touch	0.128	0.149	**0.277**
		Left Tilt	0.062	0.076	0.138
		Right Tilt	0.062	0.154	0.216
	LTE Band 4	Left Touch	0.068	0.079	0.147
		Right Touch	0.095	0.149	**0.244**
		Left Tilt	0.067	0.076	0.143
		Right Tilt	0.052	0.154	0.206
	LTE Band 41	Left Touch	0.065	0.079	0.144
		Right Touch	0.044	0.149	**0.193**
		Left Tilt	0.019	0.076	0.095
		Right Tilt	0.026	0.154	0.180

Table 12.4.24 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	0.075	0.118	0.193
		Right Touch	0.059	0.162	**0.221**
		Left Tilt	0.034	0.090	0.124
		Right Tilt	0.038	0.118	0.156
	GPRS 850	Left Touch	0.117	0.118	0.235
		Right Touch	0.085	0.162	**0.247**
		Left Tilt	0.049	0.090	0.139
		Right Tilt	0.041	0.118	0.159
	GSM 1900	Left Touch	0.049	0.118	0.167
		Right Touch	0.073	0.162	**0.235**
		Left Tilt	0.037	0.090	0.127
		Right Tilt	0.025	0.118	0.143
	GPRS 1900	Left Touch	0.078	0.118	0.196
		Right Touch	0.107	0.162	**0.269**
		Left Tilt	0.059	0.090	0.149
		Right Tilt	0.038	0.118	0.156
	WCDMA 850	Left Touch	0.167	0.118	0.285
		Right Touch	0.137	0.162	**0.299**
		Left Tilt	0.060	0.090	0.150
		Right Tilt	0.082	0.118	0.200
	LTE Band 12	Left Touch	0.165	0.118	**0.283**
		Right Touch	0.086	0.162	0.248
		Left Tilt	0.054	0.090	0.144
		Right Tilt	0.079	0.118	0.197
	LTE Band 13	Left Touch	0.153	0.118	0.271
		Right Touch	0.138	0.162	**0.300**
		Left Tilt	0.067	0.090	0.157
		Right Tilt	0.069	0.118	0.187
	LTE Band 5	Left Touch	0.151	0.118	0.269
		Right Touch	0.128	0.162	**0.290**
		Left Tilt	0.062	0.090	0.152
		Right Tilt	0.062	0.118	0.180
	LTE Band 4	Left Touch	0.068	0.118	0.186
		Right Touch	0.095	0.162	**0.257**
		Left Tilt	0.067	0.090	0.157
		Right Tilt	0.052	0.118	0.170
	LTE Band 41	Left Touch	0.065	0.118	0.183
		Right Touch	0.044	0.162	**0.206**
		Left Tilt	0.019	0.090	0.109
		Right Tilt	0.026	0.118	0.144

Table 12.4.25 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	0.075	0.111	0.186
		Right Touch	0.059	0.321	**0.380**
		Left Tilt	0.034	0.130	0.164
		Right Tilt	0.038	0.188	0.226
	GPRS 850	Left Touch	0.117	0.111	0.228
		Right Touch	0.085	0.321	**0.406**
		Left Tilt	0.049	0.130	0.179
		Right Tilt	0.041	0.188	0.229
	GSM 1900	Left Touch	0.049	0.111	0.160
		Right Touch	0.073	0.321	**0.394**
		Left Tilt	0.037	0.130	0.167
		Right Tilt	0.025	0.188	0.213
	GPRS 1900	Left Touch	0.078	0.111	0.189
		Right Touch	0.107	0.321	**0.428**
		Left Tilt	0.059	0.130	0.189
		Right Tilt	0.038	0.188	0.226
	WCDMA 850	Left Touch	0.167	0.111	0.278
		Right Touch	0.137	0.321	**0.458**
		Left Tilt	0.060	0.130	0.190
		Right Tilt	0.082	0.188	0.270
	LTE Band 12	Left Touch	0.165	0.111	0.276
		Right Touch	0.086	0.321	**0.407**
		Left Tilt	0.054	0.130	0.184
		Right Tilt	0.079	0.188	0.267
	LTE Band 13	Left Touch	0.153	0.111	0.264
		Right Touch	0.138	0.321	**0.459**
		Left Tilt	0.067	0.130	0.197
		Right Tilt	0.069	0.188	0.257
	LTE Band 5	Left Touch	0.151	0.111	0.262
		Right Touch	0.128	0.321	**0.449**
		Left Tilt	0.062	0.130	0.192
		Right Tilt	0.062	0.188	0.250
	LTE Band 4	Left Touch	0.068	0.111	0.179
		Right Touch	0.095	0.321	**0.416**
		Left Tilt	0.067	0.130	0.197
		Right Tilt	0.052	0.188	0.240
	LTE Band 41	Left Touch	0.065	0.111	0.176
		Right Touch	0.044	0.321	**0.365**
		Left Tilt	0.019	0.130	0.149
		Right Tilt	0.026	0.188	0.214

Table 12.4.26 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	0.075	0.025	0.100
		Right Touch	0.059	0.110	**0.169**
		Left Tilt	0.034	0.030	0.064
		Right Tilt	0.038	0.068	0.106
	GPRS 850	Left Touch	0.117	0.025	0.142
		Right Touch	0.085	0.110	**0.195**
		Left Tilt	0.049	0.030	0.079
		Right Tilt	0.041	0.068	0.109
	GSM 1900	Left Touch	0.049	0.025	0.074
		Right Touch	0.073	0.110	**0.183**
		Left Tilt	0.037	0.030	0.067
		Right Tilt	0.025	0.068	0.093
	GPRS 1900	Left Touch	0.078	0.025	0.103
		Right Touch	0.107	0.110	**0.217**
		Left Tilt	0.059	0.030	0.089
		Right Tilt	0.038	0.068	0.106
	WCDMA 850	Left Touch	0.167	0.025	0.192
		Right Touch	0.137	0.110	**0.247**
		Left Tilt	0.060	0.030	0.090
		Right Tilt	0.082	0.068	0.150
	LTE Band 12	Left Touch	0.165	0.025	0.190
		Right Touch	0.086	0.110	**0.196**
		Left Tilt	0.054	0.030	0.084
		Right Tilt	0.079	0.068	0.147
	LTE Band 13	Left Touch	0.153	0.025	0.178
		Right Touch	0.138	0.110	**0.248**
		Left Tilt	0.067	0.030	0.097
		Right Tilt	0.069	0.068	0.137
	LTE Band 5	Left Touch	0.151	0.025	0.176
		Right Touch	0.128	0.110	**0.238**
		Left Tilt	0.062	0.030	0.092
		Right Tilt	0.062	0.068	0.130
	LTE Band 4	Left Touch	0.068	0.025	0.093
		Right Touch	0.095	0.110	**0.205**
		Left Tilt	0.067	0.030	0.097
		Right Tilt	0.052	0.068	0.120
	LTE Band 41	Left Touch	0.065	0.025	0.090
		Right Touch	0.044	0.110	**0.154**
		Left Tilt	0.019	0.030	0.049
		Right Tilt	0.026	0.068	0.094

Table 12.4.27 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	0.110	0.070	0.180
		Right Touch	0.306	0.184	**0.490**
		Left Tilt	0.142	0.026	0.168
		Right Tilt	0.318	0.112	0.430
	5.6G W-LAN Ant.2	Left Touch	0.110	0.058	0.168
		Right Touch	0.306	0.336	**0.642**
		Left Tilt	0.142	0.043	0.185
		Right Tilt	0.318	0.200	0.518
	5.8G W-LAN Ant.2	Left Touch	0.110	0.118	0.228
		Right Touch	0.306	0.162	**0.468**
		Left Tilt	0.142	0.090	0.232
		Right Tilt	0.318	0.118	0.436

Table 12.4.28 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	0.025	0.060	0.085
		Right Touch	0.110	0.178	**0.288**
		Left Tilt	0.030	0.080	0.110
		Right Tilt	0.068	0.121	0.189
	5.6G W-LAN Ant.1	Left Touch	0.025	0.064	0.089
		Right Touch	0.110	0.138	**0.248**
		Left Tilt	0.030	0.057	0.087
		Right Tilt	0.068	0.108	0.176
	5.8G W-LAN Ant.1	Left Touch	0.025	0.079	0.104
		Right Touch	0.110	0.149	**0.259**
		Left Tilt	0.030	0.076	0.106
		Right Tilt	0.068	0.154	0.222

Table 12.4.29 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	0.025	0.070	0.095
		Right Touch	0.110	0.184	**0.294**
		Left Tilt	0.030	0.026	0.056
		Right Tilt	0.068	0.112	0.180
	5.6G W-LAN Ant.2	Left Touch	0.025	0.058	0.083
		Right Touch	0.110	0.336	**0.446**
		Left Tilt	0.030	0.043	0.073
		Right Tilt	0.068	0.200	0.268
	5.8G W-LAN Ant.2	Left Touch	0.025	0.118	0.143
		Right Touch	0.110	0.162	**0.272**
		Left Tilt	0.030	0.090	0.120
		Right Tilt	0.068	0.118	0.186

Table 12.4.30 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	0.025	0.043	0.068
		Right Touch	0.110	0.190	**0.300**
		Left Tilt	0.030	0.074	0.104
		Right Tilt	0.068	0.115	0.183
	5.6G W-LAN MIMO	Left Touch	0.025	0.166	0.191
		Right Touch	0.110	0.454	**0.564**
		Left Tilt	0.030	0.146	0.176
		Right Tilt	0.068	0.351	0.419
	5.8G W-LAN MIMO	Left Touch	0.025	0.111	0.136
		Right Touch	0.110	0.321	**0.431**
		Left Tilt	0.030	0.130	0.160
		Right Tilt	0.068	0.188	0.256

Table 12.4.31 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 2.4 GHz W-LAN Ant.2 (Held to Ear)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	2.4G W-LAN Ant.2	Left Touch	0.025	0.025	0.050
		Right Touch	0.110	0.110	**0.220**
		Left Tilt	0.030	0.030	0.060
		Right Tilt	0.068	0.068	0.136

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	0.300	0.056	0.039	0.356	0.339	0.395
		Rear	0.348	0.080	0.058	0.428	0.406	**0.486**
	GPRS 850	Front	0.342	0.056	0.039	0.398	0.381	0.437
		Rear	0.422	0.080	0.058	0.502	0.480	**0.560**
	GSM 1900	Front	0.296	0.056	0.039	0.352	0.335	0.391
		Rear	0.311	0.080	0.058	0.391	0.369	**0.449**
	GPRS 1900	Front	0.398	0.056	0.039	0.454	0.437	0.493
		Rear	0.497	0.080	0.058	0.577	0.555	**0.635**
	WCDMA 850	Front	0.265	0.056	0.039	0.321	0.304	0.360
		Rear	0.351	0.080	0.058	0.431	0.409	**0.489**
	LTE Band 12	Front	0.335	0.056	0.039	0.391	0.374	0.430
		Rear	0.425	0.080	0.058	0.505	0.483	**0.563**
	LTE Band 13	Front	0.466	0.056	0.039	0.522	0.505	0.561
		Rear	0.727	0.080	0.058	0.807	0.785	**0.865**
	LTE Band 5	Front	0.558	0.056	0.039	0.614	0.597	0.653
		Rear	0.765	0.080	0.058	0.845	0.823	**0.903**
	LTE Band 4	Front	0.485	0.056	0.039	0.541	0.524	0.580
		Rear	0.542	0.080	0.058	0.622	0.600	**0.680**
	LTE Band 41	Front	0.271	0.056	0.039	0.327	0.310	0.366
		Rear	0.407	0.080	0.058	0.487	0.465	**0.545**

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	0.300	0.056	0.074	0.356	0.374	0.430
		Rear	0.348	0.080	0.150	0.428	0.498	**0.578**
	GPRS 850	Front	0.342	0.056	0.074	0.398	0.416	0.472
		Rear	0.422	0.080	0.150	0.502	0.572	**0.652**
	GSM 1900	Front	0.296	0.056	0.074	0.352	0.370	0.426
		Rear	0.311	0.080	0.150	0.391	0.461	**0.541**
	GPRS 1900	Front	0.398	0.056	0.074	0.454	0.472	0.528
		Rear	0.497	0.080	0.150	0.577	0.647	**0.727**
	WCDMA 850	Front	0.265	0.056	0.074	0.321	0.339	0.395
		Rear	0.351	0.080	0.150	0.431	0.501	**0.581**
	LTE Band 12	Front	0.335	0.056	0.074	0.391	0.409	0.465
		Rear	0.425	0.080	0.150	0.505	0.575	**0.655**
	LTE Band 13	Front	0.466	0.056	0.074	0.522	0.540	0.596
		Rear	0.727	0.080	0.150	0.807	0.877	**0.957**
	LTE Band 5	Front	0.558	0.056	0.074	0.614	0.632	0.688
		Rear	0.765	0.080	0.150	0.845	0.915	**0.995**
	LTE Band 4	Front	0.485	0.056	0.074	0.541	0.559	0.615
		Rear	0.542	0.080	0.150	0.622	0.692	**0.772**
	LTE Band 41	Front	0.271	0.056	0.074	0.327	0.345	0.401
		Rear	0.407	0.080	0.150	0.487	0.557	**0.637**

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	0.300	0.056	0.026	0.356	0.326	0.382
		Rear	0.348	0.080	0.147	0.428	0.495	**0.575**
	GPRS 850	Front	0.342	0.056	0.026	0.398	0.368	0.424
		Rear	0.422	0.080	0.147	0.502	0.569	**0.649**
	GSM 1900	Front	0.296	0.056	0.026	0.352	0.322	0.378
		Rear	0.311	0.080	0.147	0.391	0.458	**0.538**
	GPRS 1900	Front	0.398	0.056	0.026	0.454	0.424	0.480
		Rear	0.497	0.080	0.147	0.577	0.644	**0.724**
	WCDMA 850	Front	0.265	0.056	0.026	0.321	0.291	0.347
		Rear	0.351	0.080	0.147	0.431	0.498	**0.578**
	LTE Band 12	Front	0.335	0.056	0.026	0.391	0.361	0.417
		Rear	0.425	0.080	0.147	0.505	0.572	**0.652**
	LTE Band 13	Front	0.466	0.056	0.026	0.522	0.492	0.548
		Rear	0.727	0.080	0.147	0.807	0.874	**0.954**
	LTE Band 5	Front	0.558	0.056	0.026	0.614	0.584	0.640
		Rear	0.765	0.080	0.147	0.845	0.912	**0.992**
	LTE Band 4	Front	0.485	0.056	0.026	0.541	0.511	0.567
		Rear	0.542	0.080	0.147	0.622	0.689	**0.769**
	LTE Band 41	Front	0.271	0.056	0.026	0.327	0.297	0.353
		Rear	0.407	0.080	0.147	0.487	0.554	**0.634**

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	0.300	0.021	0.041	0.321	0.341	0.362
		Rear	0.348	0.031	0.192	0.379	0.540	**0.571**
	GPRS 850	Front	0.342	0.021	0.041	0.363	0.383	0.404
		Rear	0.422	0.031	0.192	0.453	0.614	**0.645**
	GSM 1900	Front	0.296	0.021	0.041	0.317	0.337	0.358
		Rear	0.311	0.031	0.192	0.342	0.503	**0.534**
	GPRS 1900	Front	0.398	0.021	0.041	0.419	0.439	0.460
		Rear	0.497	0.031	0.192	0.528	0.689	**0.720**
	WCDMA 850	Front	0.265	0.021	0.041	0.286	0.306	0.327
		Rear	0.351	0.031	0.192	0.382	0.543	**0.574**
	LTE Band 12	Front	0.335	0.021	0.041	0.356	0.376	0.397
		Rear	0.425	0.031	0.192	0.456	0.617	**0.648**
	LTE Band 13	Front	0.466	0.021	0.041	0.487	0.507	0.528
		Rear	0.727	0.031	0.192	0.758	0.919	**0.950**
	LTE Band 5	Front	0.558	0.021	0.041	0.579	0.599	0.620
		Rear	0.765	0.031	0.192	0.796	0.957	**0.988**
	LTE Band 4	Front	0.485	0.021	0.041	0.506	0.526	0.547
		Rear	0.542	0.031	0.192	0.573	0.734	**0.765**
	LTE Band 41	Front	0.271	0.021	0.041	0.292	0.312	0.333
		Rear	0.407	0.031	0.192	0.438	0.599	**0.630**

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	0.300	0.021	0.039	0.321	0.339	0.360
		Rear	0.348	0.031	0.058	0.379	0.406	**0.437**
	GPRS 850	Front	0.342	0.021	0.039	0.363	0.381	0.402
		Rear	0.422	0.031	0.058	0.453	0.480	**0.511**
	GSM 1900	Front	0.296	0.021	0.039	0.317	0.335	0.356
		Rear	0.311	0.031	0.058	0.342	0.369	**0.400**
	GPRS 1900	Front	0.398	0.021	0.039	0.419	0.437	0.458
		Rear	0.497	0.031	0.058	0.528	0.555	**0.586**
	WCDMA 850	Front	0.265	0.021	0.039	0.286	0.304	0.325
		Rear	0.351	0.031	0.058	0.382	0.409	**0.440**
	LTE Band 12	Front	0.335	0.021	0.039	0.356	0.374	0.395
		Rear	0.425	0.031	0.058	0.456	0.483	**0.514**
	LTE Band 13	Front	0.466	0.021	0.039	0.487	0.505	0.526
		Rear	0.727	0.031	0.058	0.758	0.785	**0.816**
	LTE Band 5	Front	0.558	0.021	0.039	0.579	0.597	0.618
		Rear	0.765	0.031	0.058	0.796	0.823	**0.854**
	LTE Band 4	Front	0.485	0.021	0.039	0.506	0.524	0.545
		Rear	0.542	0.031	0.058	0.573	0.600	**0.631**
	LTE Band 41	Front	0.271	0.021	0.039	0.292	0.310	0.331
		Rear	0.407	0.031	0.058	0.438	0.465	**0.496**

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	0.300	0.021	0.125	0.321	0.425	0.446
		Rear	0.348	0.031	0.197	0.379	0.545	**0.576**
	GPRS 850	Front	0.342	0.021	0.125	0.363	0.467	0.488
		Rear	0.422	0.031	0.197	0.453	0.619	**0.650**
	GSM 1900	Front	0.296	0.021	0.125	0.317	0.421	0.442
		Rear	0.311	0.031	0.197	0.342	0.508	**0.539**
	GPRS 1900	Front	0.398	0.021	0.125	0.419	0.523	0.544
		Rear	0.497	0.031	0.197	0.528	0.694	**0.725**
	WCDMA 850	Front	0.265	0.021	0.125	0.286	0.390	0.411
		Rear	0.351	0.031	0.197	0.382	0.548	**0.579**
	LTE Band 12	Front	0.335	0.021	0.125	0.356	0.460	0.481
		Rear	0.425	0.031	0.197	0.456	0.622	**0.653**
	LTE Band 13	Front	0.466	0.021	0.125	0.487	0.591	0.612
		Rear	0.727	0.031	0.197	0.758	0.924	**0.955**
	LTE Band 5	Front	0.558	0.021	0.125	0.579	0.683	0.704
		Rear	0.765	0.031	0.197	0.796	0.962	**0.993**
	LTE Band 4	Front	0.485	0.021	0.125	0.506	0.610	0.631
		Rear	0.542	0.031	0.197	0.573	0.739	**0.770**
	LTE Band 41	Front	0.271	0.021	0.125	0.292	0.396	0.417
		Rear	0.407	0.031	0.197	0.438	0.604	**0.635**

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	0.300	0.021	0.040	0.321	0.340	0.361
		Rear	0.348	0.031	0.189	0.379	0.537	**0.568**
	GPRS 850	Front	0.342	0.021	0.040	0.363	0.382	0.403
		Rear	0.422	0.031	0.189	0.453	0.611	**0.642**
	GSM 1900	Front	0.296	0.021	0.040	0.317	0.336	0.357
		Rear	0.311	0.031	0.189	0.342	0.500	**0.531**
	GPRS 1900	Front	0.398	0.021	0.040	0.419	0.438	0.459
		Rear	0.497	0.031	0.189	0.528	0.686	**0.717**
	WCDMA 850	Front	0.265	0.021	0.040	0.286	0.305	0.326
		Rear	0.351	0.031	0.189	0.382	0.540	**0.571**
	LTE Band 12	Front	0.335	0.021	0.040	0.356	0.375	0.396
		Rear	0.425	0.031	0.189	0.456	0.614	**0.645**
	LTE Band 13	Front	0.466	0.021	0.040	0.487	0.506	0.527
		Rear	0.727	0.031	0.189	0.758	0.916	**0.947**
	LTE Band 5	Front	0.558	0.021	0.040	0.579	0.598	0.619
		Rear	0.765	0.031	0.189	0.796	0.954	**0.985**
	LTE Band 4	Front	0.485	0.021	0.040	0.506	0.525	0.546
		Rear	0.542	0.031	0.189	0.573	0.731	**0.762**
	LTE Band 41	Front	0.271	0.021	0.040	0.292	0.311	0.332
		Rear	0.407	0.031	0.189	0.438	0.596	**0.627**

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	0.300	0.021	0.074	0.321	0.374	0.395
		Rear	0.348	0.031	0.150	0.379	0.498	**0.529**
	GPRS 850	Front	0.342	0.021	0.074	0.363	0.416	0.437
		Rear	0.422	0.031	0.150	0.453	0.572	**0.603**
	GSM 1900	Front	0.296	0.021	0.074	0.317	0.370	0.391
		Rear	0.311	0.031	0.150	0.342	0.461	**0.492**
	GPRS 1900	Front	0.398	0.021	0.074	0.419	0.472	0.493
		Rear	0.497	0.031	0.150	0.528	0.647	**0.678**
	WCDMA 850	Front	0.265	0.021	0.074	0.286	0.339	0.360
		Rear	0.351	0.031	0.150	0.382	0.501	**0.532**
	LTE Band 12	Front	0.335	0.021	0.074	0.356	0.409	0.430
		Rear	0.425	0.031	0.150	0.456	0.575	**0.606**
	LTE Band 13	Front	0.466	0.021	0.074	0.487	0.540	0.561
		Rear	0.727	0.031	0.150	0.758	0.877	**0.908**
	LTE Band 5	Front	0.558	0.021	0.074	0.579	0.632	0.653
		Rear	0.765	0.031	0.150	0.796	0.915	**0.946**
	LTE Band 4	Front	0.485	0.021	0.074	0.506	0.559	0.580
		Rear	0.542	0.031	0.150	0.573	0.692	**0.723**
	LTE Band 41	Front	0.271	0.021	0.074	0.292	0.345	0.366
		Rear	0.407	0.031	0.150	0.438	0.557	**0.588**

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	0.300	0.021	0.078	0.321	0.378	0.399
		Rear	0.348	0.031	0.306	0.379	0.654	**0.685**
	GPRS 850	Front	0.342	0.021	0.078	0.363	0.420	0.441
		Rear	0.422	0.031	0.306	0.453	0.728	**0.759**
	GSM 1900	Front	0.296	0.021	0.078	0.317	0.374	0.395
		Rear	0.311	0.031	0.306	0.342	0.617	**0.648**
	GPRS 1900	Front	0.398	0.021	0.078	0.419	0.476	0.497
		Rear	0.497	0.031	0.306	0.528	0.803	**0.834**
	WCDMA 850	Front	0.265	0.021	0.078	0.286	0.343	0.364
		Rear	0.351	0.031	0.306	0.382	0.657	**0.688**
	LTE Band 12	Front	0.335	0.021	0.078	0.356	0.413	0.434
		Rear	0.425	0.031	0.306	0.456	0.731	**0.762**
	LTE Band 13	Front	0.466	0.021	0.078	0.487	0.544	0.565
		Rear	0.727	0.031	0.306	0.758	1.033	**1.064**
	LTE Band 5	Front	0.558	0.021	0.078	0.579	0.636	0.657
		Rear	0.765	0.031	0.306	0.796	1.071	**1.102**
	LTE Band 4	Front	0.485	0.021	0.078	0.506	0.563	0.584
		Rear	0.542	0.031	0.306	0.573	0.848	**0.879**
	LTE Band 41	Front	0.271	0.021	0.078	0.292	0.349	0.370
		Rear	0.407	0.031	0.306	0.438	0.713	**0.744**

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	0.300	0.021	0.039	0.321	0.339	0.360
		Rear	0.348	0.031	0.270	0.379	0.618	**0.649**
	GPRS 850	Front	0.342	0.021	0.039	0.363	0.381	0.402
		Rear	0.422	0.031	0.270	0.453	0.692	**0.723**
	GSM 1900	Front	0.296	0.021	0.039	0.317	0.335	0.356
		Rear	0.311	0.031	0.270	0.342	0.581	**0.612**
	GPRS 1900	Front	0.398	0.021	0.039	0.419	0.437	0.458
		Rear	0.497	0.031	0.270	0.528	0.767	**0.798**
	WCDMA 850	Front	0.265	0.021	0.039	0.286	0.304	0.325
		Rear	0.351	0.031	0.270	0.382	0.621	**0.652**
	LTE Band 12	Front	0.335	0.021	0.039	0.356	0.374	0.395
		Rear	0.425	0.031	0.270	0.456	0.695	**0.726**
	LTE Band 13	Front	0.466	0.021	0.039	0.487	0.505	0.526
		Rear	0.727	0.031	0.270	0.758	0.997	**1.028**
	LTE Band 5	Front	0.558	0.021	0.039	0.579	0.597	0.618
		Rear	0.765	0.031	0.270	0.796	1.035	**1.066**
	LTE Band 4	Front	0.485	0.021	0.039	0.506	0.524	0.545
		Rear	0.542	0.031	0.270	0.573	0.812	**0.843**
	LTE Band 41	Front	0.271	0.021	0.039	0.292	0.310	0.331
		Rear	0.407	0.031	0.270	0.438	0.677	**0.708**

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	0.300	0.021	0.026	0.321	0.326	0.347
		Rear	0.348	0.031	0.147	0.379	0.495	**0.526**
	GPRS 850	Front	0.342	0.021	0.026	0.363	0.368	0.389
		Rear	0.422	0.031	0.147	0.453	0.569	**0.600**
	GSM 1900	Front	0.296	0.021	0.026	0.317	0.322	0.343
		Rear	0.311	0.031	0.147	0.342	0.458	**0.489**
	GPRS 1900	Front	0.398	0.021	0.026	0.419	0.424	0.445
		Rear	0.497	0.031	0.147	0.528	0.644	**0.675**
	WCDMA 850	Front	0.265	0.021	0.026	0.286	0.291	0.312
		Rear	0.351	0.031	0.147	0.382	0.498	**0.529**
	LTE Band 12	Front	0.335	0.021	0.026	0.356	0.361	0.382
		Rear	0.425	0.031	0.147	0.456	0.572	**0.603**
	LTE Band 13	Front	0.466	0.021	0.026	0.487	0.492	0.513
		Rear	0.727	0.031	0.147	0.758	0.874	**0.905**
	LTE Band 5	Front	0.558	0.021	0.026	0.579	0.584	0.605
		Rear	0.765	0.031	0.147	0.796	0.912	**0.943**
	LTE Band 4	Front	0.485	0.021	0.026	0.506	0.511	0.532
		Rear	0.542	0.031	0.147	0.573	0.689	**0.720**
	LTE Band 41	Front	0.271	0.021	0.026	0.292	0.297	0.318
		Rear	0.407	0.031	0.147	0.438	0.554	**0.585**

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	0.300	0.021	0.044	0.321	0.344	0.365
		Rear	0.348	0.031	0.319	0.379	0.667	**0.698**
	GPRS 850	Front	0.342	0.021	0.044	0.363	0.386	0.407
		Rear	0.422	0.031	0.319	0.453	0.741	**0.772**
	GSM 1900	Front	0.296	0.021	0.044	0.317	0.340	0.361
		Rear	0.311	0.031	0.319	0.342	0.630	**0.661**
	GPRS 1900	Front	0.398	0.021	0.044	0.419	0.442	0.463
		Rear	0.497	0.031	0.319	0.528	0.816	**0.847**
	WCDMA 850	Front	0.265	0.021	0.044	0.286	0.309	0.330
		Rear	0.351	0.031	0.319	0.382	0.670	**0.701**
	LTE Band 12	Front	0.335	0.021	0.044	0.356	0.379	0.400
		Rear	0.425	0.031	0.319	0.456	0.744	**0.775**
	LTE Band 13	Front	0.466	0.021	0.044	0.487	0.510	0.531
		Rear	0.727	0.031	0.319	0.758	1.046	**1.077**
	LTE Band 5	Front	0.558	0.021	0.044	0.579	0.602	0.623
		Rear	**0.765**	**0.031**	**0.319**	**0.796**	**1.084**	1.115
	LTE Band 4	Front	0.485	0.021	0.044	0.506	0.529	0.550
		Rear	0.542	0.031	0.319	0.573	0.861	**0.892**
	LTE Band 41	Front	0.271	0.021	0.044	0.292	0.315	0.336
		Rear	0.407	0.031	0.319	0.438	0.726	**0.757**

Table 12.5.13 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 2.4 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)	2.4G 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	0.300	0.021	0.082	0.321	0.382	0.403
		Rear	0.348	0.031	0.134	0.379	0.482	**0.513**
	GPRS 850	Front	0.342	0.021	0.082	0.363	0.424	0.445
		Rear	0.422	0.031	0.134	0.453	0.556	**0.587**
	GSM 1900	Front	0.296	0.021	0.082	0.317	0.378	0.399
		Rear	0.311	0.031	0.134	0.342	0.445	**0.476**
	GPRS 1900	Front	0.398	0.021	0.082	0.419	0.480	0.501
		Rear	0.497	0.031	0.134	0.528	0.631	**0.662**
	WCDMA 850	Front	0.265	0.021	0.082	0.286	0.347	0.368
		Rear	0.351	0.031	0.134	0.382	0.485	**0.516**
	LTE Band 12	Front	0.335	0.021	0.082	0.356	0.417	0.438
		Rear	0.425	0.031	0.134	0.456	0.559	**0.590**
	LTE Band 13	Front	0.466	0.021	0.082	0.487	0.548	0.569
		Rear	0.727	0.031	0.134	0.758	0.861	**0.892**
	LTE Band 5	Front	0.558	0.021	0.082	0.579	0.640	0.661
		Rear	0.765	0.031	0.134	0.796	0.899	**0.930**
	LTE Band 4	Front	0.485	0.021	0.082	0.506	0.567	0.588
		Rear	0.542	0.031	0.134	0.573	0.676	**0.707**
	LTE Band 41	Front	0.271	0.021	0.082	0.292	0.353	0.374
		Rear	0.407	0.031	0.134	0.438	0.541	**0.572**

Table 12.5.14 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	0.300	0.056	0.356
		Rear	0.348	0.080	**0.428**
	GPRS 850	Front	0.342	0.056	0.398
		Rear	0.422	0.080	**0.502**
	GSM 1900	Front	0.296	0.056	0.352
		Rear	0.311	0.080	**0.391**
	GPRS 1900	Front	0.398	0.056	0.454
		Rear	0.497	0.080	**0.577**
	WCDMA 850	Front	0.265	0.056	0.321
		Rear	0.351	0.080	**0.431**
	LTE Band 12	Front	0.335	0.056	0.391
		Rear	0.425	0.080	**0.505**
	LTE Band 13	Front	0.466	0.056	0.522
		Rear	0.727	0.080	**0.807**
	LTE Band 5	Front	0.558	0.056	0.614
		Rear	0.765	0.080	**0.845**
	LTE Band 4	Front	0.485	0.056	0.541
		Rear	0.542	0.080	**0.622**
	LTE Band 41	Front	0.271	0.056	0.327
		Rear	0.407	0.080	**0.487**

Table 12.5.15 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	0.300	0.082	0.382
		Rear	0.348	0.134	**0.482**
	GPRS 850	Front	0.342	0.082	0.424
		Rear	0.422	0.134	**0.556**
	GSM 1900	Front	0.296	0.082	0.378
		Rear	0.311	0.134	**0.445**
	GPRS 1900	Front	0.398	0.082	0.480
		Rear	0.497	0.134	**0.631**
	WCDMA 850	Front	0.265	0.082	0.347
		Rear	0.351	0.134	**0.485**
	LTE Band 12	Front	0.335	0.082	0.417
		Rear	0.425	0.134	**0.559**
	LTE Band 13	Front	0.466	0.082	0.548
		Rear	0.727	0.134	**0.861**
	LTE Band 5	Front	0.558	0.082	0.640
		Rear	0.765	0.134	**0.899**
	LTE Band 4	Front	0.485	0.082	0.567
		Rear	0.542	0.134	**0.676**
	LTE Band 41	Front	0.271	0.082	0.353
		Rear	0.407	0.134	**0.541**

Table 12.5.16 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	0.300	0.125	0.425
		Rear	0.348	0.168	**0.516**
	GPRS 850	Front	0.342	0.125	0.467
		Rear	0.422	0.168	**0.590**
	GSM 1900	Front	0.296	0.125	0.421
		Rear	0.311	0.168	**0.479**
	GPRS 1900	Front	0.398	0.125	0.523
		Rear	0.497	0.168	**0.665**
	WCDMA 850	Front	0.265	0.125	0.390
		Rear	0.351	0.168	**0.519**
	LTE Band 12	Front	0.335	0.125	0.460
		Rear	0.425	0.168	**0.593**
	LTE Band 13	Front	0.466	0.125	0.591
		Rear	0.727	0.168	**0.895**
	LTE Band 5	Front	0.558	0.125	0.683
		Rear	0.765	0.168	**0.933**
	LTE Band 4	Front	0.485	0.125	0.610
		Rear	0.542	0.168	**0.710**
	LTE Band 41	Front	0.271	0.125	0.396
		Rear	0.407	0.168	**0.575**

Table 12.5.17 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	0.300	0.041	0.341
		Rear	0.348	0.192	**0.540**
	GPRS 850	Front	0.342	0.041	0.383
		Rear	0.422	0.192	**0.614**
	GSM 1900	Front	0.296	0.041	0.337
		Rear	0.311	0.192	**0.503**
	GPRS 1900	Front	0.398	0.041	0.439
		Rear	0.497	0.192	**0.689**
	WCDMA 850	Front	0.265	0.041	0.306
		Rear	0.351	0.192	**0.543**
	LTE Band 12	Front	0.335	0.041	0.376
		Rear	0.425	0.192	**0.617**
	LTE Band 13	Front	0.466	0.041	0.507
		Rear	0.727	0.192	**0.919**
	LTE Band 5	Front	0.558	0.041	0.599
		Rear	0.765	0.192	**0.957**
	LTE Band 4	Front	0.485	0.041	0.526
		Rear	0.542	0.192	**0.734**
	LTE Band 41	Front	0.271	0.041	0.312
		Rear	0.407	0.192	**0.599**

Table 12.5.18 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	0.300	0.039	0.339
		Rear	0.348	0.058	**0.406**
	GPRS 850	Front	0.342	0.039	0.381
		Rear	0.422	0.058	**0.480**
	GSM 1900	Front	0.296	0.039	0.335
		Rear	0.311	0.058	**0.369**
	GPRS 1900	Front	0.398	0.039	0.437
		Rear	0.497	0.058	**0.555**
	WCDMA 850	Front	0.265	0.039	0.304
		Rear	0.351	0.058	**0.409**
	LTE Band 12	Front	0.335	0.039	0.374
		Rear	0.425	0.058	**0.483**
	LTE Band 13	Front	0.466	0.039	0.505
		Rear	0.727	0.058	**0.785**
	LTE Band 5	Front	0.558	0.039	0.597
		Rear	0.765	0.058	**0.823**
	LTE Band 4	Front	0.485	0.039	0.524
		Rear	0.542	0.058	**0.600**
	LTE Band 41	Front	0.271	0.039	0.310
		Rear	0.407	0.058	**0.465**

Table 12.5.19 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	0.300	0.125	0.425
		Rear	0.348	0.197	**0.545**
	GPRS 850	Front	0.342	0.125	0.467
		Rear	0.422	0.197	**0.619**
	GSM 1900	Front	0.296	0.125	0.421
		Rear	0.311	0.197	**0.508**
	GPRS 1900	Front	0.398	0.125	0.523
		Rear	0.497	0.197	**0.694**
	WCDMA 850	Front	0.265	0.125	0.390
		Rear	0.351	0.197	**0.548**
	LTE Band 12	Front	0.335	0.125	0.460
		Rear	0.425	0.197	**0.622**
	LTE Band 13	Front	0.466	0.125	0.591
		Rear	0.727	0.197	**0.924**
	LTE Band 5	Front	0.558	0.125	0.683
		Rear	0.765	0.197	**0.962**
	LTE Band 4	Front	0.485	0.125	0.610
		Rear	0.542	0.197	**0.739**
	LTE Band 41	Front	0.271	0.125	0.396
		Rear	0.407	0.197	**0.604**

Table 12.5.20 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	0.300	0.040	0.340
		Rear	0.348	0.189	**0.537**
	GPRS 850	Front	0.342	0.040	0.382
		Rear	0.422	0.189	**0.611**
	GSM 1900	Front	0.296	0.040	0.336
		Rear	0.311	0.189	**0.500**
	GPRS 1900	Front	0.398	0.040	0.438
		Rear	0.497	0.189	**0.686**
	WCDMA 850	Front	0.265	0.040	0.305
		Rear	0.351	0.189	**0.540**
	LTE Band 12	Front	0.335	0.040	0.375
		Rear	0.425	0.189	**0.614**
	LTE Band 13	Front	0.466	0.040	0.506
		Rear	0.727	0.189	**0.916**
	LTE Band 5	Front	0.558	0.040	0.598
		Rear	0.765	0.189	**0.954**
	LTE Band 4	Front	0.485	0.040	0.525
		Rear	0.542	0.189	**0.731**
	LTE Band 41	Front	0.271	0.040	0.311
		Rear	0.407	0.189	**0.596**

Table 12.5.21 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	0.300	0.074	0.374
		Rear	0.348	0.150	**0.498**
	GPRS 850	Front	0.342	0.074	0.416
		Rear	0.422	0.150	**0.572**
	GSM 1900	Front	0.296	0.074	0.370
		Rear	0.311	0.150	**0.461**
	GPRS 1900	Front	0.398	0.074	0.472
		Rear	0.497	0.150	**0.647**
	WCDMA 850	Front	0.265	0.074	0.339
		Rear	0.351	0.150	**0.501**
	LTE Band 12	Front	0.335	0.074	0.409
		Rear	0.425	0.150	**0.575**
	LTE Band 13	Front	0.466	0.074	0.540
		Rear	0.727	0.150	**0.877**
	LTE Band 5	Front	0.558	0.074	0.632
		Rear	0.765	0.150	**0.915**
	LTE Band 4	Front	0.485	0.074	0.559
		Rear	0.542	0.150	**0.692**
	LTE Band 41	Front	0.271	0.074	0.345
		Rear	0.407	0.150	**0.557**

Table 12.5.22 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	0.300	0.078	0.378
		Rear	0.348	0.306	**0.654**
	GPRS 850	Front	0.342	0.078	0.420
		Rear	0.422	0.306	**0.728**
	GSM 1900	Front	0.296	0.078	0.374
		Rear	0.311	0.306	**0.617**
	GPRS 1900	Front	0.398	0.078	0.476
		Rear	0.497	0.306	**0.803**
	WCDMA 850	Front	0.265	0.078	0.343
		Rear	0.351	0.306	**0.657**
	LTE Band 12	Front	0.335	0.078	0.413
		Rear	0.425	0.306	**0.731**
	LTE Band 13	Front	0.466	0.078	0.544
		Rear	0.727	0.306	**1.033**
	LTE Band 5	Front	0.558	0.078	0.636
		Rear	0.765	0.306	**1.071**
	LTE Band 4	Front	0.485	0.078	0.563
		Rear	0.542	0.306	**0.848**
	LTE Band 41	Front	0.271	0.078	0.349
		Rear	0.407	0.306	**0.713**

Table 12.5.23 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	0.300	0.039	0.339
		Rear	0.348	0.270	**0.618**
	GPRS 850	Front	0.342	0.039	0.381
		Rear	0.422	0.270	**0.692**
	GSM 1900	Front	0.296	0.039	0.335
		Rear	0.311	0.270	**0.581**
	GPRS 1900	Front	0.398	0.039	0.437
		Rear	0.497	0.270	**0.767**
	WCDMA 850	Front	0.265	0.039	0.304
		Rear	0.351	0.270	**0.621**
	LTE Band 12	Front	0.335	0.039	0.374
		Rear	0.425	0.270	**0.695**
	LTE Band 13	Front	0.466	0.039	0.505
		Rear	0.727	0.270	**0.997**
	LTE Band 5	Front	0.558	0.039	0.597
		Rear	0.765	0.270	**1.035**
	LTE Band 4	Front	0.485	0.039	0.524
		Rear	0.542	0.270	**0.812**
	LTE Band 41	Front	0.271	0.039	0.310
		Rear	0.407	0.270	**0.677**

Table 12.5.24 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	0.300	0.026	0.326
		Rear	0.348	0.147	**0.495**
	GPRS 850	Front	0.342	0.026	0.368
		Rear	0.422	0.147	**0.569**
	GSM 1900	Front	0.296	0.026	0.322
		Rear	0.311	0.147	**0.458**
	GPRS 1900	Front	0.398	0.026	0.424
		Rear	0.497	0.147	**0.644**
	WCDMA 850	Front	0.265	0.026	0.291
		Rear	0.351	0.147	**0.498**
	LTE Band 12	Front	0.335	0.026	0.361
		Rear	0.425	0.147	**0.572**
	LTE Band 13	Front	0.466	0.026	0.492
		Rear	0.727	0.147	**0.874**
	LTE Band 5	Front	0.558	0.026	0.584
		Rear	0.765	0.147	**0.912**
	LTE Band 4	Front	0.485	0.026	0.511
		Rear	0.542	0.147	**0.689**
	LTE Band 41	Front	0.271	0.026	0.297
		Rear	0.407	0.147	**0.554**

Table 12.5.25 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	0.300	0.044	0.344
		Rear	0.348	0.319	**0.667**
	GPRS 850	Front	0.342	0.044	0.386
		Rear	0.422	0.319	**0.741**
	GSM 1900	Front	0.296	0.044	0.340
		Rear	0.311	0.319	**0.630**
	GPRS 1900	Front	0.398	0.044	0.442
		Rear	0.497	0.319	**0.816**
	WCDMA 850	Front	0.265	0.044	0.309
		Rear	0.351	0.319	**0.670**
	LTE Band 12	Front	0.335	0.044	0.379
		Rear	0.425	0.319	**0.744**
	LTE Band 13	Front	0.466	0.044	0.510
		Rear	0.727	0.319	**1.046**
	LTE Band 5	Front	0.558	0.044	0.602
		Rear	0.765	0.319	**1.084**
	LTE Band 4	Front	0.485	0.044	0.529
		Rear	0.542	0.319	**0.861**
	LTE Band 41	Front	0.271	0.044	0.315
		Rear	0.407	0.319	**0.726**

Table 12.5.26 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	0.300	0.021	0.321
		Rear	0.348	0.031	**0.379**
	GPRS 850	Front	0.342	0.021	0.363
		Rear	0.422	0.031	**0.453**
	GSM 1900	Front	0.296	0.021	0.317
		Rear	0.311	0.031	**0.342**
	GPRS 1900	Front	0.398	0.021	0.419
		Rear	0.497	0.031	**0.528**
	WCDMA 850	Front	0.265	0.021	0.286
		Rear	0.351	0.031	**0.382**
	LTE Band 12	Front	0.335	0.021	0.356
		Rear	0.425	0.031	**0.456**
	LTE Band 13	Front	0.466	0.021	0.487
		Rear	0.727	0.031	**0.758**
	LTE Band 5	Front	0.558	0.021	0.579
		Rear	0.765	0.031	**0.796**
	LTE Band 4	Front	0.485	0.021	0.506
		Rear	0.542	0.031	**0.573**
	LTE Band 41	Front	0.271	0.021	0.292
		Rear	0.407	0.031	**0.438**

Table 12.5.27 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	0.056	0.039	0.095
		Rear	0.080	0.058	**0.138**
	5.6G W-LAN Ant.2	Front	0.056	0.074	0.130
		Rear	0.080	0.150	**0.230**
	5.8G W-LAN Ant.2	Front	0.056	0.026	0.082
		Rear	0.080	0.147	**0.227**

Table 12.5.28 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	0.021	0.041	0.062
		Rear	0.031	0.192	**0.223**
	5.6G W-LAN Ant.1	Front	0.021	0.040	0.061
		Rear	0.031	0.189	**0.220**
	5.8G W-LAN Ant.1	Front	0.021	0.039	0.060
		Rear	0.031	0.270	**0.301**

Table 12.5.29 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	0.021	0.039	0.060
		Rear	0.031	0.058	**0.089**
	5.6G W-LAN Ant.2	Front	0.021	0.074	0.095
		Rear	0.031	0.150	**0.181**
	5.8G W-LAN Ant.2	Front	0.021	0.026	0.047
		Rear	0.031	0.147	**0.178**

Table 12.5.30 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	0.021	0.125	0.146
		Rear	0.031	0.197	**0.228**
	5.6G W-LAN MIMO	Front	0.021	0.078	0.099
		Rear	0.031	0.306	**0.337**
	5.8G W-LAN MIMO	Front	0.021	0.044	0.065
		Rear	0.031	0.319	**0.350**

Table 12.5.31 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 2.4 GHz W-LAN Ant.2 (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	2.4G W-LAN Ant.2	Front	0.021	0.082	0.103
		Rear	0.031	0.134	**0.165**

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	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.056	0.057	0.398	0.399	0.455
		Rear	0.422	0.080	0.050	0.502	0.472	**0.552**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.156	0.033	0.156	0.033	0.189
	GPRS 1900	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.056	0.057	0.454	0.455	0.511
		Rear	0.497	0.080	0.050	0.577	0.547	0.627
		Right	-	-	-	-	-	-
		Left	0.162	0.156	0.033	0.318	0.195	0.351
	WCDMA 850	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.056	0.057	0.321	0.322	0.378
		Rear	0.351	0.080	0.050	0.431	0.401	**0.481**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.156	0.033	0.156	0.033	0.189
	LTE Band 12	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.056	0.057	0.391	0.392	0.448
		Rear	0.425	0.080	0.050	0.505	0.475	**0.555**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.156	0.033	0.156	0.033	0.189
	LTE Band 13	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.056	0.057	0.522	0.523	0.579
		Rear	0.727	0.080	0.050	0.807	0.777	**0.857**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.156	0.033	0.156	0.033	0.189
	LTE Band 5	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.056	0.057	0.614	0.615	0.671
		Rear	0.765	0.080	0.050	0.845	0.815	**0.895**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.156	0.033	0.156	0.033	0.189
	LTE Band 4	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.056	0.057	0.541	0.542	0.598
		Rear	0.542	0.080	0.050	0.622	0.592	0.672
		Right	-	-	-	-	-	-
		Left	0.227	0.156	0.033	0.383	0.260	0.416
	LTE Band 41	Top	-	0.078	0.019	0.078	0.019	0.097
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.056	0.057	0.327	0.328	0.384
		Rear	0.407	0.080	0.050	0.487	0.457	0.537
		Right	-	-	-	-	-	-
		Left	0.075	0.156	0.033	0.231	0.108	0.264

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	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.056	0.026	0.398	0.368	0.424
		Rear	0.422	0.080	0.147	0.502	0.569	**0.649**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.156	0.024	0.156	0.024	0.180
	GPRS 1900	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.691	-	-	0.691	0.691	0.691
		Front	0.398	0.056	0.026	0.454	0.424	0.480
		Rear	0.497	0.080	0.147	0.577	0.644	**0.724**
		Right	-	-	-	-	-	-
		Left	0.162	0.156	0.024	0.318	0.186	0.342
	WCDMA 850	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.056	0.026	0.321	0.291	0.347
		Rear	0.351	0.080	0.147	0.431	0.498	**0.578**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.156	0.024	0.156	0.024	0.180
	LTE Band 12	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.056	0.026	0.391	0.361	0.417
		Rear	0.425	0.080	0.147	0.505	0.572	**0.652**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.156	0.024	0.156	0.024	0.180
	LTE Band 13	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.056	0.026	0.522	0.492	0.548
		Rear	0.727	0.080	0.147	0.807	0.874	**0.954**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.156	0.024	0.156	0.024	0.180
	LTE Band 5	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.056	0.026	0.614	0.584	0.640
		Rear	0.765	0.080	0.147	0.845	0.912	**0.992**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.156	0.024	0.156	0.024	0.180
	LTE Band 4	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.056	0.026	0.541	0.511	0.567
		Rear	0.542	0.080	0.147	0.622	0.689	0.769
		Right	-	-	-	-	-	-
		Left	0.227	0.156	0.024	0.383	0.251	0.407
	LTE Band 41	Top	-	0.078	0.044	0.078	0.044	0.122
		Bottom	0.589	-	-	0.589	0.589	0.589
		Front	0.271	0.056	0.026	0.327	0.297	0.353
		Rear	0.407	0.080	0.147	0.487	0.554	**0.634**
		Right	-	-	-	-	-	-
		Left	0.075	0.156	0.024	0.231	0.099	0.255

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	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.032	0.363	0.374	0.395
		Rear	0.422	0.031	0.132	0.453	0.554	**0.585**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.045	0.063	0.045	0.108
	GPRS 1900	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.021	0.032	0.419	0.430	0.451
		Rear	0.497	0.031	0.132	0.528	0.629	0.660
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.045	0.225	0.207	0.270
	WCDMA 850	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.032	0.286	0.297	0.318
		Rear	0.351	0.031	0.132	0.382	0.483	**0.514**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.045	0.063	0.045	0.108
	LTE Band 12	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.032	0.356	0.367	0.388
		Rear	0.425	0.031	0.132	0.456	0.557	**0.588**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.045	0.063	0.045	0.108
	LTE Band 13	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.032	0.487	0.498	0.519
		Rear	0.727	0.031	0.132	0.758	0.859	**0.890**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.045	0.063	0.045	0.108
	LTE Band 5	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.032	0.579	0.590	0.611
		Rear	0.765	0.031	0.132	0.796	0.897	**0.928**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.045	0.063	0.045	0.108
	LTE Band 4	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.021	0.032	0.506	0.517	0.538
		Rear	0.542	0.031	0.132	0.573	0.674	0.705
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.045	0.290	0.272	0.335
	LTE Band 41	Top	-	0.031	0.043	0.031	0.043	0.074
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.021	0.032	0.292	0.303	0.324
		Rear	0.407	0.031	0.132	0.438	0.539	0.570
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.045	0.138	0.120	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	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.057	0.363	0.399	0.420
		Rear	0.422	0.031	0.050	0.453	0.472	**0.503**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.033	0.063	0.033	0.096
	GPRS 1900	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.021	0.057	0.419	0.455	0.476
		Rear	0.497	0.031	0.050	0.528	0.547	0.578
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.033	0.225	0.195	0.258
	WCDMA 850	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.057	0.286	0.322	0.343
		Rear	0.351	0.031	0.050	0.382	0.401	**0.432**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.033	0.063	0.033	0.096
	LTE Band 12	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.057	0.356	0.392	0.413
		Rear	0.425	0.031	0.050	0.456	0.475	**0.506**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.033	0.063	0.033	0.096
	LTE Band 13	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.057	0.487	0.523	0.544
		Rear	0.727	0.031	0.050	0.758	0.777	**0.808**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.033	0.063	0.033	0.096
	LTE Band 5	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.057	0.579	0.615	0.636
		Rear	0.765	0.031	0.050	0.796	0.815	**0.846**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.033	0.063	0.033	0.096
	LTE Band 4	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.021	0.057	0.506	0.542	0.563
		Rear	0.542	0.031	0.050	0.573	0.592	0.623
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.033	0.290	0.260	0.323
	LTE Band 41	Top	-	0.031	0.019	0.031	0.019	0.050
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.021	0.057	0.292	0.328	0.349
		Rear	0.407	0.031	0.050	0.438	0.457	0.488
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.033	0.138	0.108	0.171

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	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.083	0.363	0.425	0.446
		Rear	0.422	0.031	0.151	0.453	0.573	**0.604**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.102	0.063	0.102	0.165
	GPRS 1900	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.021	0.083	0.419	0.481	0.502
		Rear	0.497	0.031	0.151	0.528	0.648	0.679
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.102	0.225	0.264	0.327
	WCDMA 850	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.083	0.286	0.348	0.369
		Rear	0.351	0.031	0.151	0.382	0.502	**0.533**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.102	0.063	0.102	0.165
	LTE Band 12	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.083	0.356	0.418	0.439
		Rear	0.425	0.031	0.151	0.456	0.576	**0.607**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.102	0.063	0.102	0.165
	LTE Band 13	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.083	0.487	0.549	0.570
		Rear	0.727	0.031	0.151	0.758	0.878	**0.909**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.102	0.063	0.102	0.165
	LTE Band 5	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.083	0.579	0.641	0.662
		Rear	0.765	0.031	0.151	0.796	0.916	**0.947**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.102	0.063	0.102	0.165
	LTE Band 4	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.021	0.083	0.506	0.568	0.589
		Rear	0.542	0.031	0.151	0.573	0.693	0.724
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.102	0.290	0.329	0.392
	LTE Band 41	Top	-	0.031	0.045	0.031	0.045	0.076
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.021	0.083	0.292	0.354	0.375
		Rear	0.407	0.031	0.151	0.438	0.558	**0.589**
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.102	0.138	0.177	0.240

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	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.039	0.363	0.381	0.402
		Rear	0.422	0.031	0.270	0.453	0.692	**0.723**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.142	0.063	0.142	0.205
	GPRS 1900	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.691	-	-	0.691	0.691	0.691
		Front	0.398	0.021	0.039	0.419	0.437	0.458
		Rear	0.497	0.031	0.270	0.528	0.767	**0.798**
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.142	0.225	0.304	0.367
	WCDMA 850	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.039	0.286	0.304	0.325
		Rear	0.351	0.031	0.270	0.382	0.621	**0.652**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.142	0.063	0.142	0.205
	LTE Band 12	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.039	0.356	0.374	0.395
		Rear	0.425	0.031	0.270	0.456	0.695	**0.726**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.142	0.063	0.142	0.205
	LTE Band 13	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.039	0.487	0.505	0.526
		Rear	0.727	0.031	0.270	0.758	0.997	**1.028**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.142	0.063	0.142	0.205
	LTE Band 5	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.039	0.579	0.597	0.618
		Rear	0.765	0.031	0.270	0.796	1.035	**1.066**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.142	0.063	0.142	0.205
	LTE Band 4	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.835	-	-	0.835	0.835	0.835
		Front	0.485	0.021	0.039	0.506	0.524	0.545
		Rear	0.542	0.031	0.270	0.573	0.812	**0.843**
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.142	0.290	0.369	0.432
	LTE Band 41	Top	-	0.031	0.123	0.031	0.123	0.154
		Bottom	0.589	-	-	0.589	0.589	0.589
		Front	0.271	0.021	0.039	0.292	0.310	0.331
		Rear	0.407	0.031	0.270	0.438	0.677	**0.708**
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.142	0.138	0.217	0.280

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	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.026	0.363	0.368	0.389
		Rear	0.422	0.031	0.147	0.453	0.569	**0.600**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.024	0.063	0.024	0.087
	GPRS 1900	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.021	0.026	0.419	0.424	0.445
		Rear	0.497	0.031	0.147	0.528	0.644	0.675
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.024	0.225	0.186	0.249
	WCDMA 850	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.026	0.286	0.291	0.312
		Rear	0.351	0.031	0.147	0.382	0.498	**0.529**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.024	0.063	0.024	0.087
	LTE Band 12	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.026	0.356	0.361	0.382
		Rear	0.425	0.031	0.147	0.456	0.572	**0.603**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.024	0.063	0.024	0.087
	LTE Band 13	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.026	0.487	0.492	0.513
		Rear	0.727	0.031	0.147	0.758	0.874	**0.905**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.024	0.063	0.024	0.087
	LTE Band 5	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.026	0.579	0.584	0.605
		Rear	0.765	0.031	0.147	0.796	0.912	**0.943**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.024	0.063	0.024	0.087
	LTE Band 4	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.021	0.026	0.506	0.511	0.532
		Rear	0.542	0.031	0.147	0.573	0.689	0.720
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.024	0.290	0.251	0.314
	LTE Band 41	Top	-	0.031	0.044	0.031	0.044	0.075
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.021	0.026	0.292	0.297	0.318
		Rear	0.407	0.031	0.147	0.438	0.554	0.585
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.024	0.138	0.099	0.162

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	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.044	0.363	0.386	0.407
		Rear	0.422	0.031	0.319	0.453	0.741	**0.772**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.173	0.063	0.173	0.236
	GPRS 1900	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.691	-	-	0.691	0.691	0.691
		Front	0.398	0.021	0.044	0.419	0.442	0.463
		Rear	0.497	0.031	0.319	0.528	0.816	**0.847**
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.173	0.225	0.335	0.398
	WCDMA 850	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.044	0.286	0.309	0.330
		Rear	0.351	0.031	0.319	0.382	0.670	**0.701**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.173	0.063	0.173	0.236
	LTE Band 12	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.044	0.356	0.379	0.400
		Rear	0.425	0.031	0.319	0.456	0.744	**0.775**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.173	0.063	0.173	0.236
	LTE Band 13	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.044	0.487	0.510	0.531
		Rear	0.727	0.031	0.319	0.758	1.046	**1.077**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.173	0.063	0.173	0.236
	LTE Band 5	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.044	0.579	0.602	0.623
		Rear	0.765	0.031	0.319	**0.796**	**1.084**	1.115
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.173	0.063	0.173	0.236
	LTE Band 4	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.835	-	-	0.835	0.835	0.835
		Front	0.485	0.021	0.044	0.506	0.529	0.550
		Rear	0.542	0.031	0.319	0.573	0.861	**0.892**
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.173	0.290	0.400	0.463
	LTE Band 41	Top	-	0.031	0.137	0.031	0.137	0.168
		Bottom	0.589	-	-	0.589	0.589	0.589
		Front	0.271	0.021	0.044	0.292	0.315	0.336
		Rear	0.407	0.031	0.319	0.438	0.726	**0.757**
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.173	0.138	0.248	0.311

Table 12.6.9 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth Ant.1 + 2.4 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)	2.4G 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	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.227	-	-	0.227	0.227	0.227
		Front	0.342	0.021	0.082	0.363	0.424	0.445
		Rear	0.422	0.031	0.134	0.453	0.556	**0.587**
		Right	0.173	-	-	0.173	0.173	0.173
		Left	-	0.063	0.011	0.063	0.011	0.074
	GPRS 1900	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.691	-	-	0.691	0.691	**0.691**
		Front	0.398	0.021	0.082	0.419	0.480	0.501
		Rear	0.497	0.031	0.134	0.528	0.631	0.662
		Right	-	-	-	-	-	-
		Left	0.162	0.063	0.011	0.225	0.173	0.236
	WCDMA 850	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.416	-	-	0.416	0.416	0.416
		Front	0.265	0.021	0.082	0.286	0.347	0.368
		Rear	0.351	0.031	0.134	0.382	0.485	**0.516**
		Right	0.054	-	-	0.054	0.054	0.054
		Left	-	0.063	0.011	0.063	0.011	0.074
	LTE Band 12	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.182	-	-	0.182	0.182	0.182
		Front	0.335	0.021	0.082	0.356	0.417	0.438
		Rear	0.425	0.031	0.134	0.456	0.559	**0.590**
		Right	0.156	-	-	0.156	0.156	0.156
		Left	-	0.063	0.011	0.063	0.011	0.074
	LTE Band 13	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.231	-	-	0.231	0.231	0.231
		Front	0.466	0.021	0.082	0.487	0.548	0.569
		Rear	0.727	0.031	0.134	0.758	0.861	**0.892**
		Right	0.171	-	-	0.171	0.171	0.171
		Left	-	0.063	0.011	0.063	0.011	0.074
	LTE Band 5	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.393	-	-	0.393	0.393	0.393
		Front	0.558	0.021	0.082	0.579	0.640	0.661
		Rear	0.765	0.031	0.134	0.796	0.899	**0.930**
		Right	0.319	-	-	0.319	0.319	0.319
		Left	-	0.063	0.011	0.063	0.011	0.074
	LTE Band 4	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.835	-	-	0.835	0.835	**0.835**
		Front	0.485	0.021	0.082	0.506	0.567	0.588
		Rear	0.542	0.031	0.134	0.573	0.676	0.707
		Right	-	-	-	-	-	-
		Left	0.227	0.063	0.011	0.290	0.238	0.301
	LTE Band 41	Top	-	0.031	0.140	0.031	0.140	0.171
		Bottom	0.589	-	-	0.589	0.589	**0.589**
		Front	0.271	0.021	0.082	0.292	0.353	0.374
		Rear	0.407	0.031	0.134	0.438	0.541	0.572
		Right	-	-	-	-	-	-
		Left	0.075	0.063	0.011	0.138	0.086	0.149

Table 12.6.10 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	-	0.078	0.078
		Bottom	0.227	-	0.227
		Front	0.342	0.056	0.398
		Rear	0.422	0.080	**0.502**
		Right	0.173	-	0.173
		Left	-	0.156	0.156
	GPRS 1900	Top	-	0.078	0.078
		Bottom	0.691	-	**0.691**
		Front	0.398	0.056	0.454
		Rear	0.497	0.080	0.577
		Right	-	-	-
		Left	0.162	0.156	0.318
	WCDMA 850	Top	-	0.078	0.078
		Bottom	0.416	-	0.416
		Front	0.265	0.056	0.321
		Rear	0.351	0.080	**0.431**
		Right	0.054	-	0.054
		Left	-	0.156	0.156
	LTE Band 12	Top	-	0.078	0.078
		Bottom	0.182	-	0.182
		Front	0.335	0.056	0.391
		Rear	0.425	0.080	**0.505**
		Right	0.156	-	0.156
		Left	-	0.156	0.156
	LTE Band 13	Top	-	0.078	0.078
		Bottom	0.231	-	0.231
		Front	0.466	0.056	0.522
		Rear	0.727	0.080	**0.807**
		Right	0.171	-	0.171
		Left	-	0.156	0.156
	LTE Band 5	Top	-	0.078	0.078
		Bottom	0.393	-	0.393
		Front	0.558	0.056	0.614
		Rear	0.765	0.080	**0.845**
		Right	0.319	-	0.319
		Left	-	0.156	0.156
	LTE Band 4	Top	-	0.078	0.078
		Bottom	0.835	-	**0.835**
		Front	0.485	0.056	0.541
		Rear	0.542	0.080	0.622
		Right	-	-	-
		Left	0.227	0.156	0.383
	LTE Band 41	Top	-	0.078	0.078
		Bottom	0.589	-	**0.589**
		Front	0.271	0.056	0.327
		Rear	0.407	0.080	0.487
		Right	-	-	-
		Left	0.075	0.156	0.231

Table 12.6.11 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	-	0.140	0.140
		Bottom	0.227	-	0.227
		Front	0.342	0.082	0.424
		Rear	0.422	0.134	**0.556**
		Right	0.173	-	0.173
		Left	-	0.011	0.011
	GPRS 1900	Top	-	0.140	0.140
		Bottom	0.691	-	**0.691**
		Front	0.398	0.082	0.480
		Rear	0.497	0.134	0.631
		Right	-	-	-
		Left	0.162	0.011	0.173
	WCDMA 850	Top	-	0.140	0.140
		Bottom	0.416	-	0.416
		Front	0.265	0.082	0.347
		Rear	0.351	0.134	**0.485**
		Right	0.054	-	0.054
		Left	-	0.011	0.011
	LTE Band 12	Top	-	0.140	0.140
		Bottom	0.182	-	0.182
		Front	0.335	0.082	0.417
		Rear	0.425	0.134	**0.559**
		Right	0.156	-	0.156
		Left	-	0.011	0.011
	LTE Band 13	Top	-	0.140	0.140
		Bottom	0.231	-	0.231
		Front	0.466	0.082	0.548
		Rear	0.727	0.134	**0.861**
		Right	0.171	-	0.171
		Left	-	0.011	0.011
	LTE Band 5	Top	-	0.140	0.140
		Bottom	0.393	-	0.393
		Front	0.558	0.082	0.640
		Rear	0.765	0.134	**0.899**
		Right	0.319	-	0.319
		Left	-	0.011	0.011
	LTE Band 4	Top	-	0.140	0.140
		Bottom	0.835	-	**0.835**
		Front	0.485	0.082	0.567
		Rear	0.542	0.134	0.676
		Right	-	-	-
		Left	0.227	0.011	0.238
	LTE Band 41	Top	-	0.140	0.140
		Bottom	0.589	-	**0.589**
		Front	0.271	0.082	0.353
		Rear	0.407	0.134	0.541
		Right	-	-	-
		Left	0.075	0.011	0.086

Table 12.6.12 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	-	0.160	0.160
		Bottom	0.227	-	0.227
		Front	0.342	0.125	0.467
		Rear	0.422	0.168	**0.590**
		Right	0.173	-	0.173
		Left	-	0.218	0.218
	GPRS 1900	Top	-	0.160	0.160
		Bottom	0.691	-	**0.691**
		Front	0.398	0.125	0.523
		Rear	0.497	0.168	0.665
		Right	-	-	-
		Left	0.162	0.218	0.380
	WCDMA 850	Top	-	0.160	0.160
		Bottom	0.416	-	0.416
		Front	0.265	0.125	0.390
		Rear	0.351	0.168	**0.519**
		Right	0.054	-	0.054
		Left	-	0.218	0.218
	LTE Band 12	Top	-	0.160	0.160
		Bottom	0.182	-	0.182
		Front	0.335	0.125	0.460
		Rear	0.425	0.168	**0.593**
		Right	0.156	-	0.156
		Left	-	0.218	0.218
	LTE Band 13	Top	-	0.160	0.160
		Bottom	0.231	-	0.231
		Front	0.466	0.125	0.591
		Rear	0.727	0.168	**0.895**
		Right	0.171	-	0.171
		Left	-	0.218	0.218
	LTE Band 5	Top	-	0.160	0.160
		Bottom	0.393	-	0.393
		Front	0.558	0.125	0.683
		Rear	0.765	0.168	**0.933**
		Right	0.319	-	0.319
		Left	-	0.218	0.218
	LTE Band 4	Top	-	0.160	0.160
		Bottom	0.835	-	**0.835**
		Front	0.485	0.125	0.610
		Rear	0.542	0.168	0.710
		Right	-	-	-
		Left	0.227	0.218	0.445
	LTE Band 41	Top	-	0.160	0.160
		Bottom	0.589	-	**0.589**
		Front	0.271	0.125	0.396
		Rear	0.407	0.168	0.575
		Right	-	-	-
		Left	0.075	0.218	0.293

Table 12.6.13 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	-	0.043	0.043
		Bottom	0.227	-	0.227
		Front	0.342	0.032	0.374
		Rear	0.422	0.132	**0.554**
		Right	0.173	-	0.173
		Left	-	0.045	0.045
	GPRS 1900	Top	-	0.043	0.043
		Bottom	0.691	-	**0.691**
		Front	0.398	0.032	0.430
		Rear	0.497	0.132	0.629
		Right	-	-	-
		Left	0.162	0.045	0.207
	WCDMA 850	Top	-	0.043	0.043
		Bottom	0.416	-	0.416
		Front	0.265	0.032	0.297
		Rear	0.351	0.132	**0.483**
		Right	0.054	-	0.054
		Left	-	0.045	0.045
	LTE Band 12	Top	-	0.043	0.043
		Bottom	0.182	-	0.182
		Front	0.335	0.032	0.367
		Rear	0.425	0.132	**0.557**
		Right	0.156	-	0.156
		Left	-	0.045	0.045
	LTE Band 13	Top	-	0.043	0.043
		Bottom	0.231	-	0.231
		Front	0.466	0.032	0.498
		Rear	0.727	0.132	**0.859**
		Right	0.171	-	0.171
		Left	-	0.045	0.045
	LTE Band 5	Top	-	0.043	0.043
		Bottom	0.393	-	0.393
		Front	0.558	0.032	0.590
		Rear	0.765	0.132	**0.897**
		Right	0.319	-	0.319
		Left	-	0.045	0.045
	LTE Band 4	Top	-	0.043	0.043
		Bottom	0.835	-	**0.835**
		Front	0.485	0.032	0.517
		Rear	0.542	0.132	0.674
		Right	-	-	-
		Left	0.227	0.045	0.272
	LTE Band 41	Top	-	0.043	0.043
		Bottom	0.589	-	**0.589**
		Front	0.271	0.032	0.303
		Rear	0.407	0.132	0.539
		Right	-	-	-
		Left	0.075	0.045	0.120

Table 12.6.14 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	-	0.019	0.019
		Bottom	0.227	-	0.227
		Front	0.342	0.057	0.399
		Rear	0.422	0.050	**0.472**
		Right	0.173	-	0.173
		Left	-	0.033	0.033
	GPRS 1900	Top	-	0.019	0.019
		Bottom	0.691	-	**0.691**
		Front	0.398	0.057	0.455
		Rear	0.497	0.050	0.547
		Right	-	-	-
		Left	0.162	0.033	0.195
	WCDMA 850	Top	-	0.019	0.019
		Bottom	0.416	-	**0.416**
		Front	0.265	0.057	0.322
		Rear	0.351	0.050	0.401
		Right	0.054	-	0.054
		Left	-	0.033	0.033
	LTE Band 12	Top	-	0.019	0.019
		Bottom	0.182	-	0.182
		Front	0.335	0.057	0.392
		Rear	0.425	0.050	**0.475**
		Right	0.156	-	0.156
		Left	-	0.033	0.033
	LTE Band 13	Top	-	0.019	0.019
		Bottom	0.231	-	0.231
		Front	0.466	0.057	0.523
		Rear	0.727	0.050	**0.777**
		Right	0.171	-	0.171
		Left	-	0.033	0.033
	LTE Band 5	Top	-	0.019	0.019
		Bottom	0.393	-	0.393
		Front	0.558	0.057	0.615
		Rear	0.765	0.050	**0.815**
		Right	0.319	-	0.319
		Left	-	0.033	0.033
	LTE Band 4	Top	-	0.019	0.019
		Bottom	0.835	-	**0.835**
		Front	0.485	0.057	0.542
		Rear	0.542	0.050	0.592
		Right	-	-	-
		Left	0.227	0.033	0.260
	LTE Band 41	Top	-	0.019	0.019
		Bottom	0.589	-	**0.589**
		Front	0.271	0.057	0.328
		Rear	0.407	0.050	0.457
		Right	-	-	-
		Left	0.075	0.033	0.108

Table 12.6.15 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	-	0.045	0.045
		Bottom	0.227	-	0.227
		Front	0.342	0.083	0.425
		Rear	0.422	0.151	**0.573**
		Right	0.173	-	0.173
		Left	-	0.102	0.102
	GPRS 1900	Top	-	0.045	0.045
		Bottom	0.691	-	**0.691**
		Front	0.398	0.083	0.481
		Rear	0.497	0.151	0.648
		Right	-	-	-
		Left	0.162	0.102	0.264
	WCDMA 850	Top	-	0.045	0.045
		Bottom	0.416	-	0.416
		Front	0.265	0.083	0.348
		Rear	0.351	0.151	**0.502**
		Right	0.054	-	0.054
		Left	-	0.102	0.102
	LTE Band 12	Top	-	0.045	0.045
		Bottom	0.182	-	0.182
		Front	0.335	0.083	0.418
		Rear	0.425	0.151	**0.576**
		Right	0.156	-	0.156
		Left	-	0.102	0.102
	LTE Band 13	Top	-	0.045	0.045
		Bottom	0.231	-	0.231
		Front	0.466	0.083	0.549
		Rear	0.727	0.151	**0.878**
		Right	0.171	-	0.171
		Left	-	0.102	0.102
	LTE Band 5	Top	-	0.045	0.045
		Bottom	0.393	-	0.393
		Front	0.558	0.083	0.641
		Rear	0.765	0.151	**0.916**
		Right	0.319	-	0.319
		Left	-	0.102	0.102
	LTE Band 4	Top	-	0.045	0.045
		Bottom	0.835	-	**0.835**
		Front	0.485	0.083	0.568
		Rear	0.542	0.151	0.693
		Right	-	-	-
		Left	0.227	0.102	0.329
	LTE Band 41	Top	-	0.045	0.045
		Bottom	0.589	-	**0.589**
		Front	0.271	0.083	0.354
		Rear	0.407	0.151	0.558
		Right	-	-	-
		Left	0.075	0.102	0.177

Table 12.6.16 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	-	0.123	0.123
		Bottom	0.227	-	0.227
		Front	0.342	0.039	0.381
		Rear	0.422	0.270	**0.692**
		Right	0.173	-	0.173
		Left	-	0.142	0.142
	GPRS 1900	Top	-	0.123	0.123
		Bottom	0.691	-	0.691
		Front	0.398	0.039	0.437
		Rear	0.497	0.270	**0.767**
		Right	-	-	-
		Left	0.162	0.142	0.304
	WCDMA 850	Top	-	0.123	0.123
		Bottom	0.416	-	0.416
		Front	0.265	0.039	0.304
		Rear	0.351	0.270	**0.621**
		Right	0.054	-	0.054
		Left	-	0.142	0.142
	LTE Band 12	Top	-	0.123	0.123
		Bottom	0.182	-	0.182
		Front	0.335	0.039	0.374
		Rear	0.425	0.270	**0.695**
		Right	0.156	-	0.156
		Left	-	0.142	0.142
	LTE Band 13	Top	-	0.123	0.123
		Bottom	0.231	-	0.231
		Front	0.466	0.039	0.505
		Rear	0.727	0.270	**0.997**
		Right	0.171	-	0.171
		Left	-	0.142	0.142
	LTE Band 5	Top	-	0.123	0.123
		Bottom	0.393	-	0.393
		Front	0.558	0.039	0.597
		Rear	0.765	0.270	**1.035**
		Right	0.319	-	0.319
		Left	-	0.142	0.142
	LTE Band 4	Top	-	0.123	0.123
		Bottom	0.835	-	**0.835**
		Front	0.485	0.039	0.524
		Rear	0.542	0.270	0.812
		Right	-	-	-
		Left	0.227	0.142	0.369
	LTE Band 41	Top	-	0.123	0.123
		Bottom	0.589	-	0.589
		Front	0.271	0.039	0.310
		Rear	0.407	0.270	**0.677**
		Right	-	-	-
		Left	0.075	0.142	0.217

Table 12.6.17 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	-	0.044	0.044
		Bottom	0.227	-	0.227
		Front	0.342	0.026	0.368
		Rear	0.422	0.147	**0.569**
		Right	0.173	-	0.173
		Left	-	0.024	0.024
	GPRS 1900	Top	-	0.044	0.044
		Bottom	0.691	-	**0.691**
		Front	0.398	0.026	0.424
		Rear	0.497	0.147	0.644
		Right	-	-	-
		Left	0.162	0.024	0.186
	WCDMA 850	Top	-	0.044	0.044
		Bottom	0.416	-	0.416
		Front	0.265	0.026	0.291
		Rear	0.351	0.147	**0.498**
		Right	0.054	-	0.054
		Left	-	0.024	0.024
	LTE Band 12	Top	-	0.044	0.044
		Bottom	0.182	-	0.182
		Front	0.335	0.026	0.361
		Rear	0.425	0.147	**0.572**
		Right	0.156	-	0.156
		Left	-	0.024	0.024
	LTE Band 13	Top	-	0.044	0.044
		Bottom	0.231	-	0.231
		Front	0.466	0.026	0.492
		Rear	0.727	0.147	**0.874**
		Right	0.171	-	0.171
		Left	-	0.024	0.024
	LTE Band 5	Top	-	0.044	0.044
		Bottom	0.393	-	0.393
		Front	0.558	0.026	0.584
		Rear	0.765	0.147	**0.912**
		Right	0.319	-	0.319
		Left	-	0.024	0.024
	LTE Band 4	Top	-	0.044	0.044
		Bottom	0.835	-	**0.835**
		Front	0.485	0.026	0.511
		Rear	0.542	0.147	0.689
		Right	-	-	-
		Left	0.227	0.024	0.251
	LTE Band 41	Top	-	0.044	0.044
		Bottom	0.589	-	**0.589**
		Front	0.271	0.026	0.297
		Rear	0.407	0.147	0.554
		Right	-	-	-
		Left	0.075	0.024	0.099

Table 12.6.18 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	-	0.137	0.137
		Bottom	0.227	-	0.227
		Front	0.342	0.044	0.386
		Rear	0.422	0.319	**0.741**
		Right	0.173	-	0.173
		Left	-	0.173	0.173
	GPRS 1900	Top	-	0.137	0.137
		Bottom	0.691	-	0.691
		Front	0.398	0.044	0.442
		Rear	0.497	0.319	**0.816**
		Right	-	-	-
		Left	0.162	0.173	0.335
	WCDMA 850	Top	-	0.137	0.137
		Bottom	0.416	-	0.416
		Front	0.265	0.044	0.309
		Rear	0.351	0.319	**0.670**
		Right	0.054	-	0.054
		Left	-	0.173	0.173
	LTE Band 12	Top	-	0.137	0.137
		Bottom	0.182	-	0.182
		Front	0.335	0.044	0.379
		Rear	0.425	0.319	**0.744**
		Right	0.156	-	0.156
		Left	-	0.173	0.173
	LTE Band 13	Top	-	0.137	0.137
		Bottom	0.231	-	0.231
		Front	0.466	0.044	0.510
		Rear	0.727	0.319	**1.046**
		Right	0.171	-	0.171
		Left	-	0.173	0.173
	LTE Band 5	Top	-	0.137	0.137
		Bottom	0.393	-	0.393
		Front	0.558	0.044	0.602
		Rear	0.765	0.319	**1.084**
		Right	0.319	-	0.319
		Left	-	0.173	0.173
	LTE Band 4	Top	-	0.137	0.137
		Bottom	0.835	-	0.835
		Front	0.485	0.044	0.529
		Rear	0.542	0.319	**0.861**
		Right	-	-	-
		Left	0.227	0.173	0.400
	LTE Band 41	Top	-	0.137	0.137
		Bottom	0.589	-	0.589
		Front	0.271	0.044	0.315
		Rear	0.407	0.319	**0.726**
		Right	-	-	-
		Left	0.075	0.173	0.248

Table 12.6.19 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	-	0.031	0.031
		Bottom	0.227	-	0.227
		Front	0.342	0.021	0.363
		Rear	0.422	0.031	**0.453**
		Right	0.173	-	0.173
		Left	-	0.063	0.063
	GPRS 1900	Top	-	0.031	0.031
		Bottom	0.691	-	**0.691**
		Front	0.398	0.021	0.419
		Rear	0.497	0.031	0.528
		Right	-	-	-
		Left	0.162	0.063	0.225
	WCDMA 850	Top	-	0.031	0.031
		Bottom	0.416	-	**0.416**
		Front	0.265	0.021	0.286
		Rear	0.351	0.031	0.382
		Right	0.054	-	0.054
		Left	-	0.063	0.063
	LTE Band 12	Top	-	0.031	0.031
		Bottom	0.182	-	0.182
		Front	0.335	0.021	0.356
		Rear	0.425	0.031	**0.456**
		Right	0.156	-	0.156
		Left	-	0.063	0.063
	LTE Band 13	Top	-	0.031	0.031
		Bottom	0.231	-	0.231
		Front	0.466	0.021	0.487
		Rear	0.727	0.031	**0.758**
		Right	0.171	-	0.171
		Left	-	0.063	0.063
	LTE Band 5	Top	-	0.031	0.031
		Bottom	0.393	-	0.393
		Front	0.558	0.021	0.579
		Rear	0.765	0.031	**0.796**
		Right	0.319	-	0.319
		Left	-	0.063	0.063
	LTE Band 4	Top	-	0.031	0.031
		Bottom	0.835	-	**0.835**
		Front	0.485	0.021	0.506
		Rear	0.542	0.031	0.573
		Right	-	-	-
		Left	0.227	0.063	0.290
	LTE Band 41	Top	-	0.031	0.031
		Bottom	0.589	-	**0.589**
		Front	0.271	0.021	0.292
		Rear	0.407	0.031	0.438
		Right	-	-	-
		Left	0.075	0.063	0.138

Table 12.6.20 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	0.078	0.019	0.097
		Bottom	-	-	-
		Front	0.056	0.057	0.113
		Rear	0.080	0.050	0.130
		Right	-	-	-
		Left	0.156	0.033	**0.189**
	5.8G W-LAN Ant.2	Top	0.078	0.044	0.122
		Bottom	-	-	-
		Front	0.056	0.026	0.082
		Rear	0.080	0.147	**0.227**
		Right	-	-	-
		Left	0.156	0.024	0.180

Table 12.6.21 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	0.031	0.043	0.074
		Bottom	-	-	-
		Front	0.021	0.032	0.053
		Rear	0.031	0.132	**0.163**
		Right	-	-	-
		Left	0.063	0.045	0.108
	5.8G W-LAN Ant.1	Top	0.031	0.123	0.154
		Bottom	-	-	-
		Front	0.021	0.039	0.060
		Rear	0.031	0.270	**0.301**
		Right	-	-	-
		Left	0.063	0.142	0.205

Table 12.6.22 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	0.031	0.019	0.050
		Bottom	-	-	-
		Front	0.021	0.057	0.078
		Rear	0.031	0.050	0.081
		Right	-	-	-
		Left	0.063	0.033	**0.096**
	5.8G W-LAN Ant.2	Top	0.031	0.044	0.075
		Bottom	-	-	-
		Front	0.021	0.026	0.047
		Rear	0.031	0.147	**0.178**
		Right	-	-	-
		Left	0.063	0.024	0.087

Table 12.6.23 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	0.031	0.045	0.076
		Bottom	-	-	-
		Front	0.021	0.083	0.104
		Rear	0.031	0.151	**0.182**
		Right	-	-	-
		Left	0.063	0.102	0.165
	5.8G W-LAN MIMO	Top	0.031	0.137	0.168
		Bottom	-	-	-
		Front	0.021	0.044	0.065
		Rear	0.031	0.319	**0.350**
		Right	-	-	-
		Left	0.063	0.173	0.236

Table 12.6.24 Simultaneous Transmission Scenario : Bluetooth Ant.1 + 2.4 GHz W-LAN Ant.2 (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth Ant.1 SAR (W/kg)	2.4G W-LAN Ant.2 SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	2.4G W-LAN Ant.2	Top	0.031	0.140	**0.171**
		Bottom	-	-	-
		Front	0.021	0.082	0.103
		Rear	0.031	0.134	0.165
		Right	-	-	-
		Left	0.063	0.011	0.074

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 Hotspot 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)	
1 732.5	20175	LTE B4	-	-	10 mm [Bottom]	0.829	0.799	1.04	-	-	-	-
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 14.1.1 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
☒	Robot	SPEAG	TX60L	N/A	N/A	F12/5LP5A1/A/01
☒	Robot	SPEAG	TX60L	N/A	N/A	F14/5VR2A1/A/01
☒	Robot Controller	SPEAG	CS8C	N/A	N/A	F12/5LP5A1/C/01
☒	Robot Controller	SPEAG	CS8C	N/A	N/A	F14/5VR2A1/C/01
☒	Joystick	SPEAG	N/A	N/A	N/A	S-12030401
☒	Joystick	SPEAG	N/A	N/A	N/A	D21142605A
☒	Intel Core i7-2 600 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
☒	Intel Core i7-4 770 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
☒	Device Holder	SPEAG	SD000H01KA	N/A	N/A	N/A
☒	Device Holder	SPEAG	SD000H01HA	N/A	N/A	N/A
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1679
☒	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1220
☒	Data Acquisition Electronics	SPEAG	DAE4V1	2020-04-22	2021-04-22	1485
☒	Data Acquisition Electronics	SPEAG	DAE4V1	2019-09-20	2020-09-20	1453
☒	Data Acquisition Electronics	SPEAG	DAE4V1	2020-04-22	2021-04-22	1391
☒	Dosimetric E-Field Probe	SPEAG	EX3DV4	2020-04-27	2021-04-27	3916
☒	Dosimetric E-Field Probe	SPEAG	EX3DV4	2020-05-27	2021-05-27	3866
☒	Dosimetric E-Field Probe	SPEAG	EX3DV4	2019-11-27	2020-11-27	7337
☒	Dosimetric E-Field Probe	SPEAG	ES3DV3	2020-03-25	2021-03-25	3328
☒	750MHz SAR Dipole	SPEAG	D750V3	2020-01-22	2022-01-22	1049
☒	835MHz SAR Dipole	SPEAG	D835V2	2020-05-19	2022-05-19	4d159
☒	1 800MHz SAR Dipole	SPEAG	D1800V2	2020-03-20	2022-03-20	2d202
☒	1 900MHz SAR Dipole	SPEAG	D1900V2	2020-05-19	2022-05-19	5d176
☒	2 450MHz SAR Dipole	SPEAG	D2450V2	2019-09-19	2021-09-19	726
☒	2 600MHz SAR Dipole	SPEAG	D2600V2	2020-02-20	2022-02-20	1103
☒	5GHz SAR Dipole	SPEAG	D5GHzV2	2020-02-27	2022-02-27	1212
☒	Network Analyzer	Agilent	E5071C	2020-06-24	2021-06-24	MY46106970
☒	Signal Generator	Agilent	E4438C	2020-06-24	2021-06-24	US41461520
☒	Amplifier	RFBAY.Inc	MPA-40-40	2019-12-16	2020-12-16	21151801
☒	Amplifier	EMPOWER	BBS3Q7ELU	2020-06-24	2021-06-24	1020
☒	High Power RF Amplifier	EMPOWER	BBS3Q8CCJ	2020-06-24	2021-06-24	1005
☒	Power Meter	HP	EPM-442A	2019-12-16	2020-12-16	GB37170267
☒	Power Meter	HP	EPM-442A	2019-12-16	2020-12-16	GB37170413
☒	Power Sensor	HP	8481A	2019-12-16	2020-12-16	US37294267
☒	Power Sensor	HP	8481A	2019-12-16	2020-12-16	3318A96566
☒	Power Sensor	HP	8481A	2019-12-16	2020-12-16	2702A65976
☒	Dual Directional Coupler	Agilent	778D-012	2019-12-16	2020-12-16	50228
☒	Directional Coupler	HP	772D	2020-06-24	2021-06-24	2889A01064
☒	Low Pass Filter 1GHz	Wainwright Instruments	WLK6-1000-1400-9000-60SS	2020-06-24	2021-06-24	165
☒	Low Pass Filter 1.5GHz	Micro LAB	LA-15N	2020-06-24	2021-06-24	2
☒	Low Pass Filter 3.0GHz	Micro LAB	LA-30N	2020-06-24	2021-06-24	2
☒	Low Pass Filter 6.0GHz	Micro LAB	LA-60N	2019-12-16	2020-12-16	03942
☒	Attenuators(10 dB)	WEINSCHEL	23-10-34	2019-12-16	2020-12-16	BP4387
☒	Attenuators	Cernexwave	CFADC2603U5	2020-06-24	2021-06-24	C11711
☒	Dielectric Probe kit	SPEAG	DAK-3.5	2019-11-19	2020-11-19	1092
☒	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	2020-06-24	2021-06-24	GB41321164
☒	Wideband Radio Communication Tester	Rohde Schwarz	CMW500	2019-12-16	2020-12-16	101414
☒	Wideband Radio Communication Tester	Rohde Schwarz	CMW500	2020-04-29	2021-04-29	147898
☒	Radio Communication Analyzer	Agilent	E5515E	2020-06-24	2021-06-24	MY52113012
☒	Power Splitter	Anritsu	K241B	2019-12-16	2020-12-16	1301183
☒	Bluetooth Tester	TESCOM	TC-3000C	2020-06-24	2021-06-24	3000C000563

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: 3866)

Error Description	Uncertainty value ±%		Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.0		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	2.0		Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty							**12**	**11**	330
Expanded Uncertainty (k=2)							**24**	**22**	

U(1 g) = $k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
U(10 g) = $k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

750 MHz Body (SN: 3866)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	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	1.9	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Head (SN: 7337)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	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	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Body (SN: 3866)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.0	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						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

1 800 MHz Head (SN: 7337)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

1 800 MHz Body (SN: 3328)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.0	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	1.8	Rectangular	√3	0.23	0.26	0.2	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

1 900 MHz Head (SN: 3328)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.0	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						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

1 900 MHz Body (SN: 3328)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.1	Normal	1	0.23	0.26	0.9	1.1	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						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

2 450 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	1.9	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

2 450 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.1	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.)	4.2	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	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

2 600 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.2	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	2.0	Rectangular	√3	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

2 600 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	1.9	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						**12**	**11**	330
Expanded Uncertainty (k=2)						**24**	**22**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 11 %
= 22 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 200 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	1.8	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						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 300 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.2	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.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 300 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	4.1	Normal	1	0.23	0.26	0.9	1.1	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						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 500 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 500 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	1.9	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						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 800 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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.)	3.7	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.)	4.1	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	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

The above measurement uncertainties are according to IEEE Std 1528

5 800 MHz Body (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g (± %)	Standard 10 g (± %)	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	2.0	Rectangular	√3	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	√3	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						**12.**	**12**	330
Expanded Uncertainty (k=2)						**24**	**24**	

$U(1\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)
$U(10\ g) = k \cdot u_c$
= 2 · 12 %
= 24 % (The confidence level is about 95 % k = 2)

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.

17. REFERENCES

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.

[2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radiofrequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.

[3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radiofrequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.

[4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.

[5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2003,Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices.

[6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.

[7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.

[8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. -124.

[9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.

[10] Schmid& Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.

[11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct.1996, pp. 1865-1873.

[12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[13] G. Hartsgrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bio electromagnetics, Canada: 1987, pp. 29-36.

[14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.

[15] W. Gander, Computer mathematick, Birkhaeuser, Basel, 1992.

[16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hoschschule Zürich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300MHz to 3 GHz), Feb. 2005.

[21] Industry Canada RSS-102 Radio Frequency Exposure Compliance of Radio communication Apparatus (All Frequency Bands) Issue 5, March 2015.

[22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2009

[23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225,D01-D07

[24] SAR Measurement procedures for IEEE 802.11a/b/g KDB Publication 248227 D01v02

[25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474D02-D04

[26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04

[27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02

[28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02

[29] 615223 D01 802 16e WI-Max SAR Guidance v01, Nov. 13, 2009

[30] Anexo à Resolução No. 533, de 10 de September de 2009.

[31] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 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), Mar. 2010.

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
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

Client DT&C (Dymstec)

Certificate No: EX3-3916_Apr20

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3916

Calibration procedure(s): QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes

Calibration date: April 27, 2020

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	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
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-19)	In house check: Oct-20

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 27, 2020

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) Accreditation No.: **SCS 0108**
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

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).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3916

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.55	0.48	0.52	± 10.1 %
DCP (mV)[B]	105.1	102.4	105.2	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	173.8	± 2.7 %	± 4.7 %
		Y	0.0	0.0	1.0		167.8		
		Z	0.0	0.0	1.0		169.5		

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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3916

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	89.4
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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3916

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	7.75	7.75	7.75	0.36	0.90	± 12.0 %
2600	39.0	1.96	7.41	7.41	7.41	0.38	0.90	± 12.0 %
5200	36.0	4.66	5.09	5.09	5.09	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.95	4.95	4.95	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.80	4.80	4.80	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.70	4.70	4.70	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.74	4.74	4.74	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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. 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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3916

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	7.96	7.96	7.96	0.35	0.85	± 12.0 %
2600	52.5	2.16	7.57	7.57	7.57	0.35	0.95	± 12.0 %
5200	49.0	5.30	4.51	4.51	4.51	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.37	4.37	4.37	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.14	4.14	4.14	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.00	4.00	4.00	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.18	4.18	4.18	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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

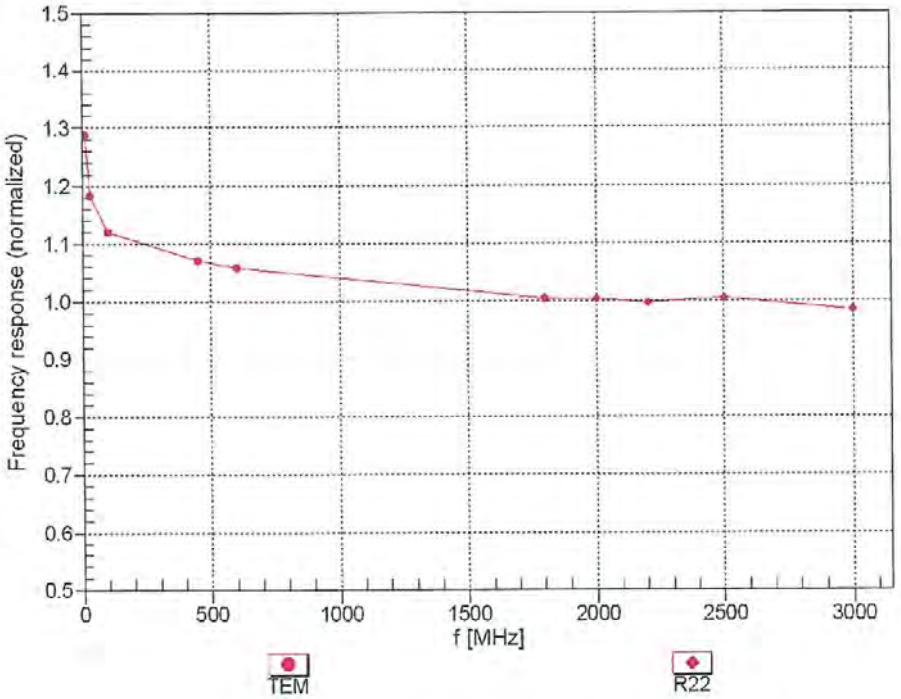
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF 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:3916 April 27, 2020

Frequency Response of E-Field

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

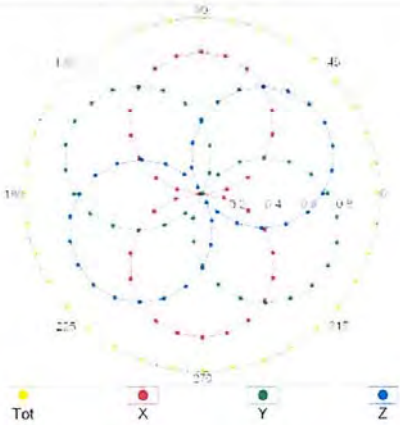


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

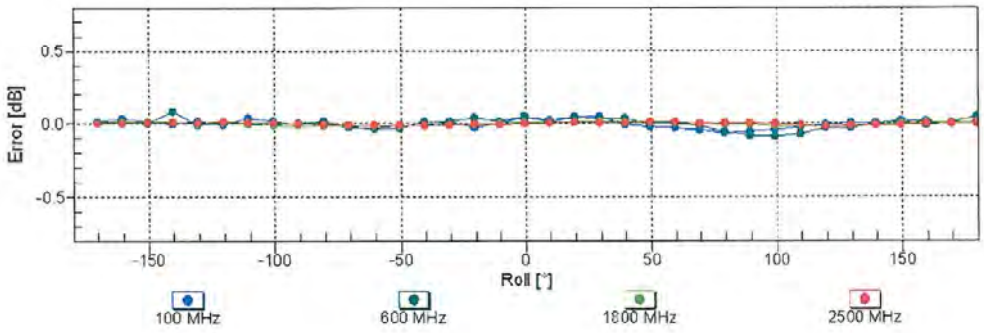
EX3DV4– SN:3916 April 27, 2020

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



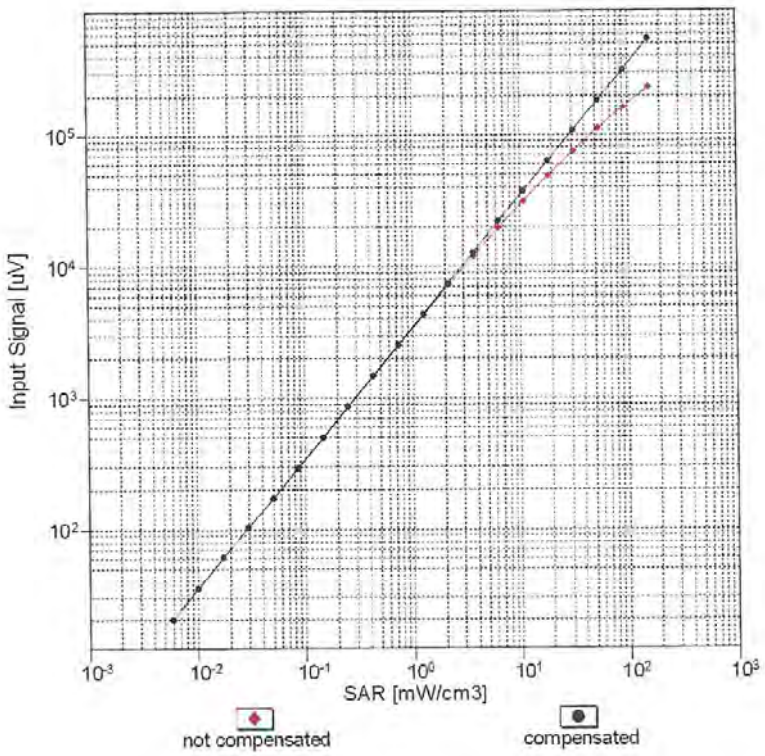
f=1800 MHz,R22

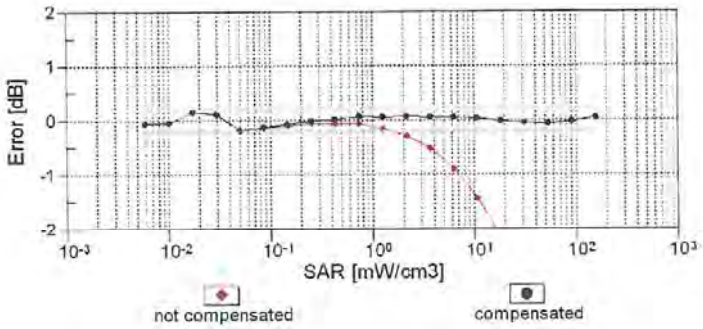


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

EX3DV4– SN:3916 April 27, 2020

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



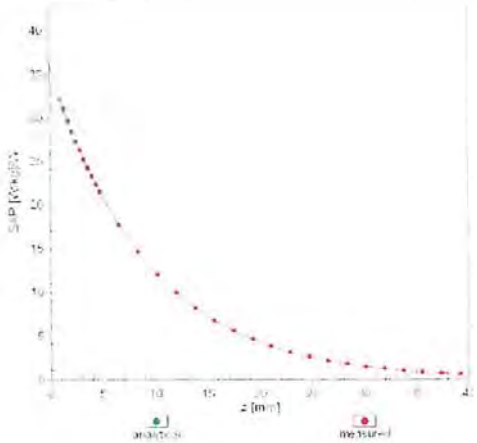


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

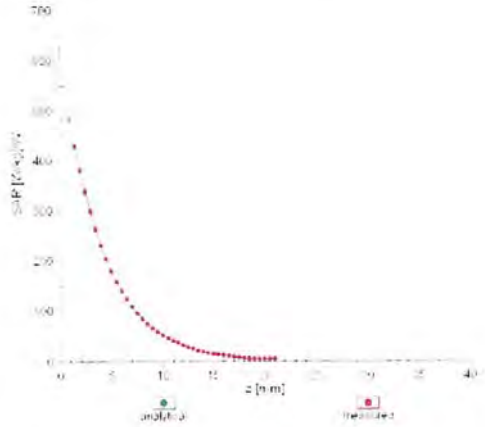
EX3DV4– SN:3916 April 27, 2020

Conversion Factor Assessment

f = 2450 MHz,WGLS R22 (H_convF)

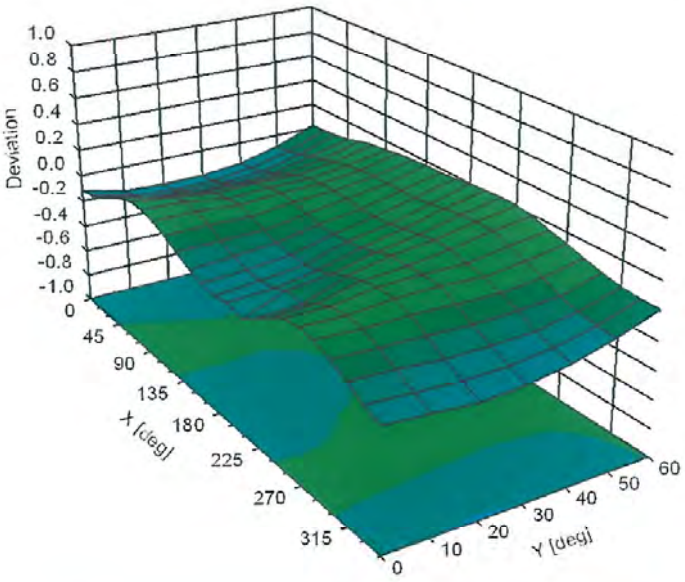


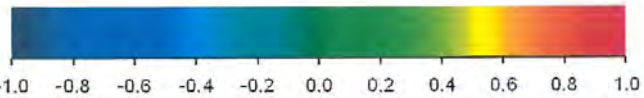
f = 5200 MHz,WGLS R58 (H_convF)-SCS



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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

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
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: **ES3-3328_Mar20**

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3328

Calibration procedure(s) QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes

Calibration date: March 25, 2020

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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
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-19)	In house check: Oct-20

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

Issued: March 27, 2020

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
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**

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).

ES3DV3 – SN:3328 March 25, 2020

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3328

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.03	1.05	1.08	± 10.1 %
DCP (mV)[B]	106.5	103.5	104.9	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	195.5	± 3.5 %	± 4.7 %
		Y	0.0	0.0	1.0		194.7		
		Z	0.0	0.0	1.0		193.7		

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.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3328

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-23.3
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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3328

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	6.34	6.34	6.34	0.80	1.30	± 12.0 %
835	41.5	0.90	6.19	6.19	6.19	0.80	1.23	± 12.0 %
900	41.5	0.97	6.01	6.01	6.01	0.80	1.24	± 12.0 %
1750	40.1	1.37	5.34	5.34	5.34	0.80	1.24	± 12.0 %
1900	40.0	1.40	5.09	5.09	5.09	0.80	1.30	± 12.0 %
2450	39.2	1.80	4.70	4.70	4.70	0.78	1.33	± 12.0 %
2600	39.0	1.96	4.57	4.57	4.57	0.80	1.28	± 12.0 %
3500	37.9	2.91	4.30	4.30	4.30	0.65	1.60	± 13.1 %
3700	37.7	3.12	4.23	4.23	4.23	0.70	1.60	± 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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. 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.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3328

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	6.18	6.18	6.18	0.51	1.47	± 12.0 %
835	55.2	0.97	6.11	6.11	6.11	0.80	1.19	± 12.0 %
900	55.0	1.05	6.06	6.06	6.06	0.48	1.48	± 12.0 %
1750	53.4	1.49	4.98	4.98	4.98	0.71	1.31	± 12.0 %
1900	53.3	1.52	4.74	4.74	4.74	0.62	1.55	± 12.0 %
2450	52.7	1.95	4.44	4.44	4.44	0.75	1.30	± 12.0 %
2600	52.5	2.16	4.25	4.25	4.25	0.80	1.30	± 12.0 %
3500	51.3	3.31	3.70	3.70	3.70	0.85	1.60	± 13.1 %
3700	51.0	3.55	3.57	3.57	3.57	0.70	1.70	± 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. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

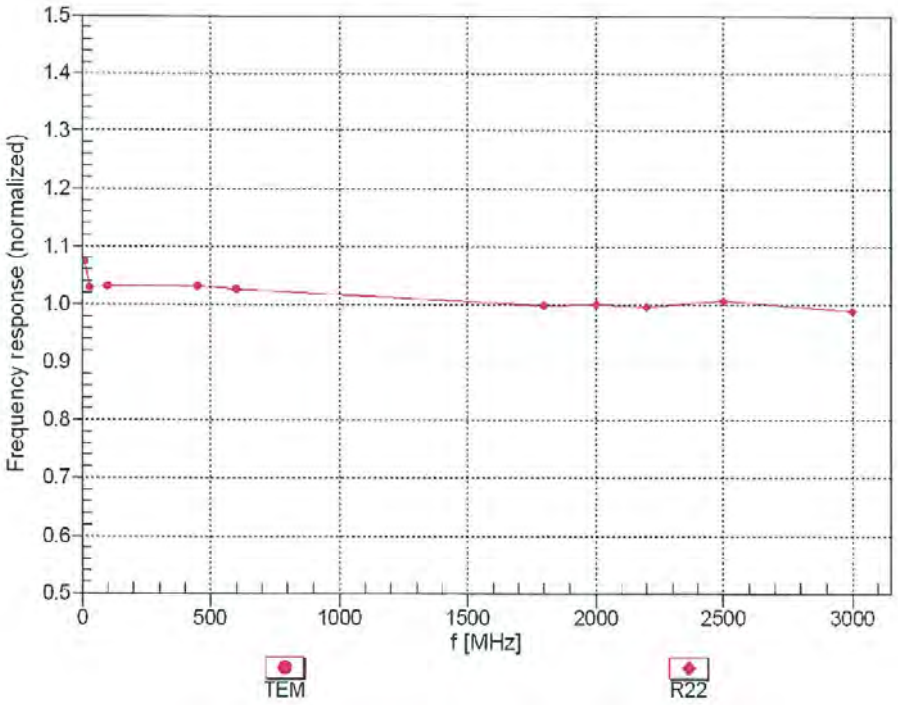
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF 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:3328 March 25, 2020

Frequency Response of E-Field

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

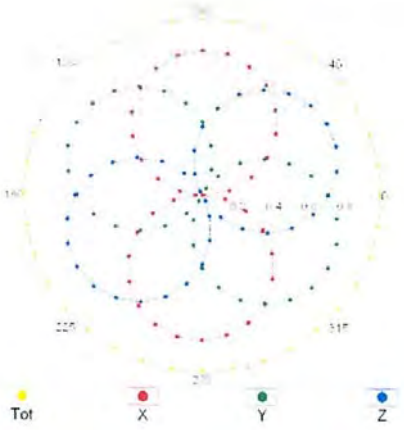


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

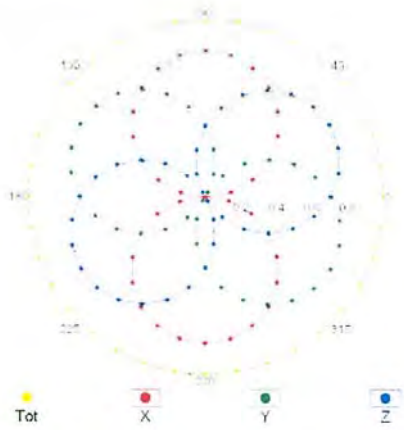
ES3DV3– SN:3328 March 25, 2020

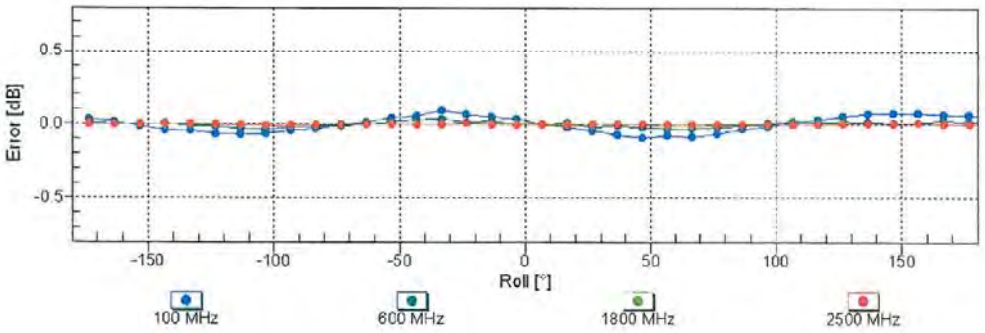
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

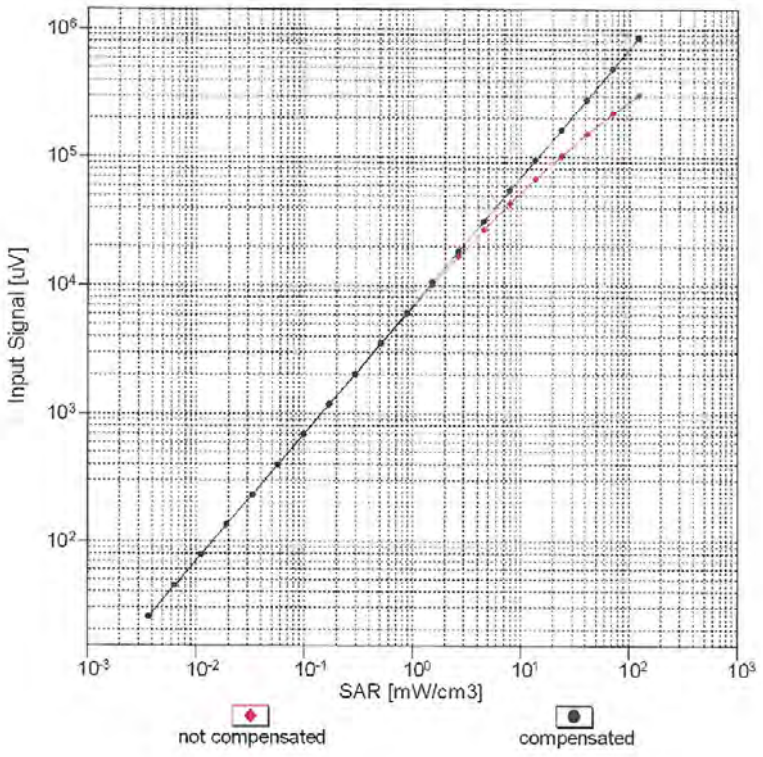


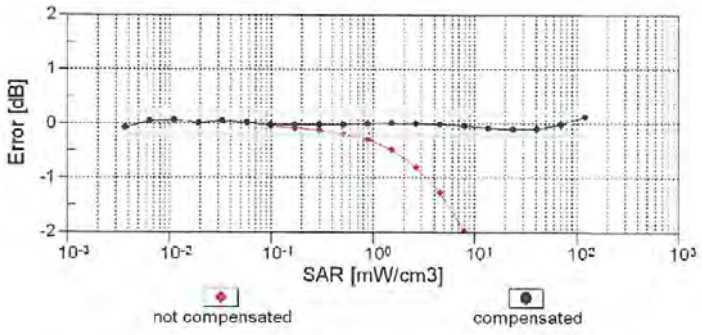


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

ES3DV3– SN:3328 March 25, 2020

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



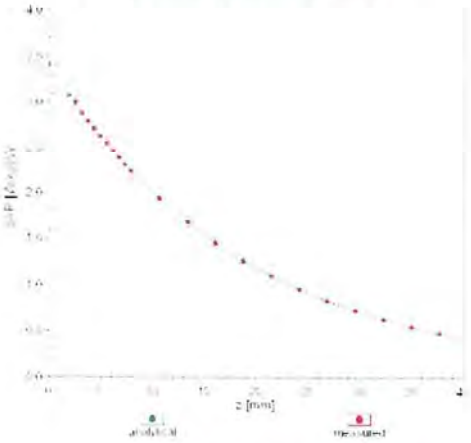


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

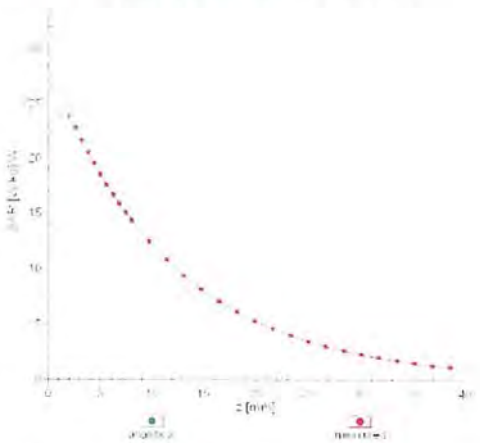
ES3DV3– SN:3328 March 25, 2020

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

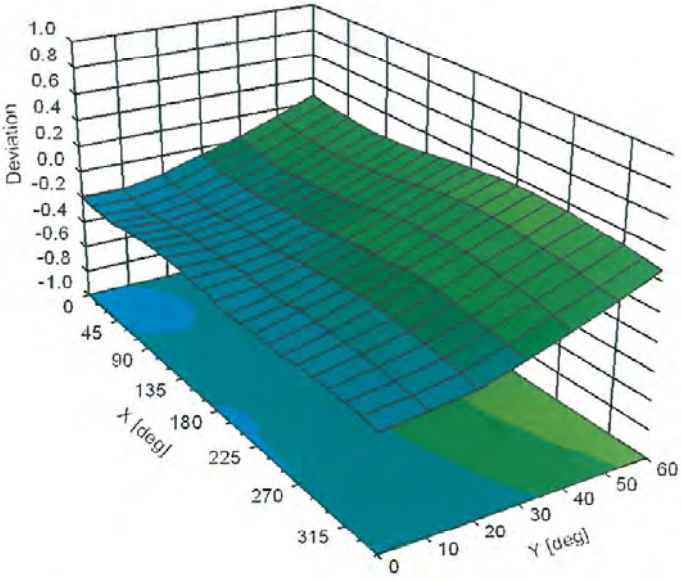


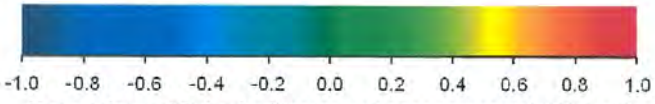
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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