

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 : DRRFCC2009-0086(1)

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 / LM-F100EMW

FCC ID : ZNFF100EMW

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 : 2020.08.11 ~ 2020.08.31

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	Reviewed by
	Name : BumJun Park 	Name : HakMin Kim  (signature)

2020 . 09 . 23 .

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
DRRFCC2009-0086	Sep. 10, 2020	Initial issue	BumJun Park	HakMin Kim
DRRFCC2009-0086(1)	Sep. 23, 2020	Revise of section 11	BumJun Park	HakMin Kim

Table of Contents

1. DESCRIPTION OF DEVICE	5
1.1 General Information	5
1.2 Power Reduction for SAR	7
1.3 Nominal and Maximum Output Power Specifications	7
1.4 DUT Antenna Locations	7
1.5 Simultaneous Transmission Capabilities	7
1.6 Miscellaneous SAR Test Considerations	8
1.7 Guidance Applied	9
1.8 Device Serial Numbers	9
1.9 FCC & ISED MRA test lab designation no. : KR0034	9
2. LTE INFORMATION	10
3. INTROCUCTION	11
4. DOSIMETRIC ASSESSMENT	12
4.1 Measurement Procedure	12
5. DEFINITION OF REFERENCE POINTS	14
5.1 Ear Reference Point	14
5.2 Handset Reference Points	14
6. TEST CONFIGURATION POSITIONS FOR HANDSETS	15
6.1 Device Holder	15
6.2 Positioning for Cheek/Touch	15
6.3 Positioning for Ear / 15 ° Tilt	15
6.4 Body-Worn Accessory Configurations	16
6.5 Extremity Exposure Configurations	16
6.6 Wireless Router Configurations	17
6.7 Phablet Configurations	17
7. RF EXPOSURE LIMITS	18
8. FCC MEASUREMENT PROCEDURES	19
8.1 Measured and Reported SAR	19
8.2 Procedures Used to Establish RF Signal for SAR	19
8.3 SAR Measurement Conditions for WCDMA (UMTS)	19
8.3.1 Output Power Verification	19
8.3.2 Head SAR Measurements for Handsets	19
8.3.3 Body SAR Measurements	20
8.3.4 Release 5 HSDPA Data Devices	20
8.3.5 Release 6 HSUPA Data Devices	20
8.3.6 SAR Measurement Conditions for DC-HSDPA	21
8.4 SAR Measurement Conditions for LTE	22
8.4.1 Spectrum Plots for RB Configurations	22
8.4.2 MPR	22
8.4.3 A-MPR	22
8.4.4 Required RB Size and RB Offsets for SAR Testing	22
8.4.5 64QAM uplink	22
8.4.6 LTE TDD Consideration setup for SAR measurement	23
8.5 SAR Testing with 802.11 Transmitters	24
8.5.1 General Device Setup	24
8.5.2 U-NII and U-NII-2A	24
8.5.3 U-NII-2C and U-NII-3	24
8.5.4 Initial Test Position Procedure	25
8.5.5 2.4 GHz SAR Test Requirements	25
8.5.6 OFDM Transmission Mode and SAR Test Channel Selection	25
8.5.7 Initial Test Configuration Procedure	25
8.5.8 Subsequent Test Configuration Procedures	26
8.5.9 MIMO SAR Considerations	26

9. RF CONDUCTED POWERS	27
9.1 GSM Nominal and Maximum Output Power Spec and Conducted Powers	27
9.2 WCDMA Nominal and Maximum Output Power Spec and Conducted Powers	28
9.3 LTE Nominal and Maximum Output Power Spec and Conducted Powers	29
9.4 WLAN Nominal and Maximum Output Power Spec and Conducted Powers	40
9.5 Bluetooth Conducted Powers	42
10. SYSTEM VERIFICATION	44
10.1 Tissue Verification	44
10.2 Test System Verification	47
11. SAR TEST RESULTS	48
11.1 Standalone Head SAR Results	48
11.2 Standalone Body-Worn SAR Worn SAR Results	52
11.3 Standalone Hotspot SAR Results	54
11.4 Standalone Phablet SAR Results	57
11.5 SAR Test Notes	58
12. FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS	61
12.1 Introduction	61
12.2 Simultaneous Transmission Procedures	61
12.3 Simultaneous Transmission Capabilities	61
12.4 Head SAR Simultaneous Transmission Analysis	63
12.5 Body-Worn Simultaneous Transmission Analysis	77
12.6 Hotspot SAR Simultaneous Transmission Analysis	84
12.7 Phablet SAR Simultaneous Transmission Analysis	94
12.8 Simultaneous Transmission Conclusion	94
13. SAR MEASUREMENT VARIABILITY	95
13.1 Measurement Variability	95
13.2 Measurement Uncertainty	95
14. EQUIPMENT LIST	96
15. MEASUREMENT UNCERTAINTIES	97
16. CONCLUSION	118
17. REFERENCES	119
APPENDIX A. – Probe Calibration Data	121
APPENDIX B. – Dipole Calibration Data	177
APPENDIX C. – SAR Tissue Specifications	242
APPENDIX D. – SAR SYSTEM VALIDATION	245
APPENDIX E. – Description of Test Equipment	247

1. DESCRIPTION OF DEVICE

1.1 General Information

EUT type	Mobile Phone				
FCC ID	ZNFF100EMW				
Equipment model name	LM-F100EMW				
Equipment add model name	LMF100EMW, F100EMW, LM-F100EM, LMF100EM, F100EM • 6 models are same mechanical, electrical and functional except follows. - LM-F100EM, LMF100EM, F100EM: No differences - LM-F100EMW, LMF100EMW, F100EMW: Dual SIM support(1 RF Path)				
Equipment serial no.	Identical prototype				
Mode(s) of Operation	GSM 850, GSM 1900, WCDMA 850, WCDMA 1900, LTE Band 12, 17, 13, 5, 66, 4, 2, 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/EDGE	Voice/Data	-	824.2 MHz ~ 848.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1 850.2 MHz ~ 1 909.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	826.4 MHz ~ 846.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1 852.4 MHz ~ 1 907.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	699.7 MHz ~ 715.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	706.5 MHz ~ 713.5 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 66	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1 710.7 MHz ~ 1 779.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1 710.7 MHz ~ 1 754.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1 850.7 MHz ~ 1 909.3 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
		802.11ac	Voice/Data	HT40/VHT40 VHT80	5 190 MHz ~ 5 230 MHz 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
	5.6 GHz W-LAN	802.11ac	Voice/Data	VHT80	5 290 MHz
		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
	5.8 GHz W-LAN	802.11ac	Voice/Data	VHT80	5 530 MHz ~ 5 690 MHz
		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/EDGE	Voice/Data	-	869.2 MHz ~ 893.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1 930.2 MHz ~ 1 989.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	871.4 MHz ~ 891.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1 932.4 MHz ~ 1 987.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	729.7 MHz ~ 745.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	736.5 MHz ~ 743.5 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 66	LTE	Voice/Data	1.4/3/5/10/15/20MHz	2 110.7 MHz ~ 2 179.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	2 110.7 MHz ~ 2 154.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1 930.7 MHz ~ 1 989.3 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
	5.3 GHz W-LAN	802.11ac	Voice/Data	VHT80	5 210 MHz
		802.11a/n/ac	Voice/Data	HT20/VHT200	5 260 MHz ~ 5 320 MHz
	5.6 GHz W-LAN	802.11ac	Voice/Data	HT40/VHT40	5 270 MHz ~ 5 310 MHz
		802.11ac	Voice/Data	VHT80	5 290 MHz
		802.11a/n/ac	Voice/Data	HT20/VHT20	5 500 MHz ~ 5 720 MHz
	5.8 GHz W-LAN	802.11n/ac	Voice/Data	HT40/VHT40	5 510 MHz ~ 5 710 MHz
		802.11ac	Voice/Data	VHT80	5 530 MHz ~ 5 690 MHz
		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
	Bluetooth	-	Data	-	5 775 MHz 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	0.14	-	-
PCE	GPRS 850	< 0.1	0.13	0.13	-
PCE	GSM 1900	< 0.1	0.38	-	-
PCE	GPRS 1900	< 0.1	0.52	0.62	-
PCE	WCDMA 850	0.16	0.58	0.58	-
PCE	WCDMA 1900	0.13	0.72	1.10	-
PCE	LTE Band 12	0.11	0.27	0.27	-
PCE	LTE Band 17	-	-	-	-
PCE	LTE Band 13	0.15	0.45	0.45	-
PCE	LTE Band 5	0.15	0.53	0.53	-
PCE	LTE Band 66	< 0.1	0.88	1.17	-
PCE	LTE Band 4	-	-	-	-
PCE	LTE Band 2	< 0.1	0.69	0.84	-
PCE	LTE Band 41	< 0.1	0.39	0.48	-
DTS(SISO)	2.4 GHz W-LAN	0.55	0.17	0.29	-
DTS(MIMO)	2.4 GHz W-LAN	0.57	0.14	0.23	-
U-NII-1(SISO)	5.2 GHz W-LAN	-	-	0.38	-
U-NII-1(MIMO)	5.2 GHz W-LAN	-	-	0.42	-
U-NII-2A(SISO)	5.3 GHz W-LAN	0.45	0.31	-	0.63
U-NII-2A(MIMO)	5.3 GHz W-LAN	0.50	0.35	-	1.04
U-NII-2C(SISO)	5.6 GHz W-LAN	0.40	0.22	-	0.67
U-NII-2C(MIMO)	5.6 GHz W-LAN	0.47	0.37	-	1.00
U-NII-3(SISO)	5.8 GHz W-LAN	0.29	0.21	0.21	0.67
U-NII-3(MIMO)	5.8 GHz W-LAN	0.35	0.34	0.34	1.05
DSS	Bluetooth	0.11	< 0.1	< 0.1	-
Simultaneous SAR per KDB 690783 D01v01r03		0.75	1.28	1.33	-
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	2020.08.11 ~ 2020.08.31				
Antenna Type	Internal Antenna				
Functions	- GSM/GPRS/EDGE (GPRS/EDGE Class: 12) supported. * DTM not supported. - 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 ZNFF100EMW_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/EDGE 850	X	O	O	O	O	X
GSM/GPRS/EDGE 1900	X	O	O	O	X	O
WCDMA 850	X	O	O	O	O	X
WCDMA 1900	X	O	O	O	X	O
LTE Band 12	X	O	O	O	O	X
LTE Band 17	X	O	O	O	O	X
LTE Band 13	X	O	O	O	O	X
LTE Band 5	X	O	O	O	O	X
LTE Band 66	X	O	O	O	X	O
LTE Band 4	X	O	O	O	X	O
LTE Band 2	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 ZNFF100EMW_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:

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

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; [(14/10)*√2.480] = 2.2 (< 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:

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

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; [(14/5)*√2.480] = 4.4 (< 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/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

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

Per FCC KDB Publication 648474 D04 v01r03, this device is considered a “phablet” since the diagonal dimension is greater than 160 mm and less than 200 mm. 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 larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

1.7 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. 518109)

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	ZNFF100EMW				
Form Factor	Mobile Phone				
Frequency Range of each LTE transmission Band	LTE Band 12 (699.7 ~ 715.3 MHz) LTE Band 17 (706.5 ~ 713.5 MHz) LTE Band 13 (779.5 ~ 784.5 MHz) LTE Band 5 (Cell) (824.7 ~ 848.3 MHz) LTE Band 66 (AWS) (1710.7 ~ 1779.3 MHz) LTE Band 4 (AWS) (1710.7 ~ 1754.3 MHz) LTE Band 2 (PCS) (1850.7 ~ 1909.3 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 17 : 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 66 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 4 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 2 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz 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 17: 5 MHz	706.5(23755)	N/A	710.0(23790)	N/A	713.5(23825)
LTE Band 17: 10 MHz	709.0(23780)	N/A	710.0(23790)	N/A	711.0(23800)
LTE Band 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 66 (AWS): 1.4 MHz	1710.7 (131979)	N/A	1745.0 (132322)	N/A	1779.3 (132665)
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)	N/A	1745.0 (132322)	N/A	1778.5 (132657)
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)	N/A	1745.0 (132322)	N/A	1777.5 (132647)
LTE Band 66 (AWS): 10 MHz	1715.0 (132022)	N/A	1745.0 (132322)	N/A	1775.0 (132622)
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)	N/A	1745.0 (132322)	N/A	1772.5 (132597)
LTE Band 66 (AWS): 20 MHz	1720.0 (132072)	N/A	1745.0 (132322)	N/A	1770.0 (132572)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	N/A	1732.5 (20175)	N/A	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	N/A	1732.5 (20175)	N/A	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	N/A	1732.5 (20175)	N/A	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715.0 (20000)	N/A	1732.5 (20175)	N/A	1750.0 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	N/A	1732.5 (20175)	N/A	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720.0 (20050)	N/A	1732.5 (20175) ^{Note4}	N/A	1745.0 (20300)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)	N/A	1880.0 (18900)	N/A	1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)	N/A	1880.0 (18900)	N/A	1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)	N/A	1880.0 (18900)	N/A	1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855.0 (18650)	N/A	1880.0 (18900)	N/A	1905.0 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)	N/A	1880.0 (18900)	N/A	1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	1860.0 (18700)	N/A	1880.0 (18900)	N/A	1900.0 (19100)
LTE Band 41: 5 MHz	2498.5 (39675)	2545.8 (40148)	2593.0 (40620)	2640.3 (41093)	2687.5 (41565)
LTE Band 41: 10 MHz	2501.0 (39700)	2547.0 (40160)	2593.0 (40620)	2639.0 (41080)	2685.0 (41540)
LTE Band 41: 15 MHz	2503.5 (39725)	2548.3 (40173)	2593.0 (40620)	2637.8 (41068)	2682.5 (41515)
LTE Band 41: 20 MHz	2506.0 (39750)	2549.5 (40185)	2593.0 (40620)	2636.5 (41055)	2680.0 (41490)
UE Category	LTE Rel.15 DL UE Cat 18, 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/m³)
- 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.
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.

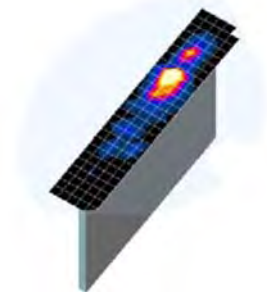


Figure 4.1
Sample SAR Area Scan

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm $\pm$ 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm $\pm$ 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° $\pm$ 1°	20° $\pm$ 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 $\leq$ 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 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ 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 <u>reported</u> SAR from the <u>area scan based 1-g SAR estimation</u> 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.

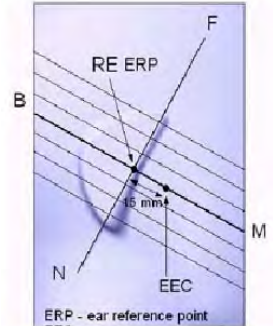


Figure 5.1
Close-up side view
of ERP

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 then 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

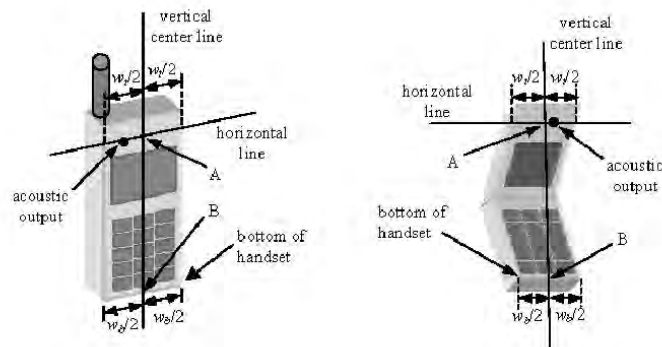


Figure 5.3 Handset Vertical Center & Horizontal Line Reference Points

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 $\epsilon = 3$ and loss tangent $\delta = 0.02$.

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 then rotated around the vertical centerline until the phone (horizontal line) was symmetrical with respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, the handset was rotated about the line NF until any point on the handset made contact with a phantom point below the ear (cheek). (See Figure 6.2)

6.3 Positioning for Ear / 15 ° Tilt

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

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

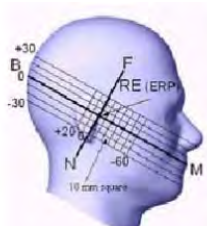


Figure 6.2 Side view w/relevant markings



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

6.4 Body-Worn Accessory Configurations

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

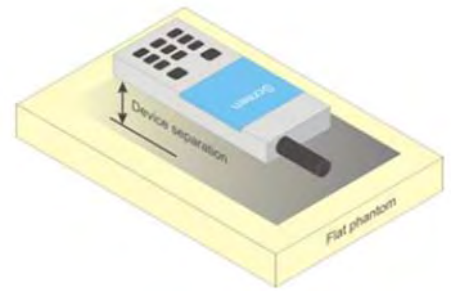


Figure 6.4 Sample Body-Worn Diagram

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 ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from 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 $> 150 \text{ mm}$ or an overall diagonal dimension $> 160 \text{ mm}$ 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 $\leq 25 \text{ mm}$ 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 $> 1.2 \text{ W/kg}$.

7. RF EXPOSURE LIMITS

Uncontrolled Environment:

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

Controlled Environment:

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

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

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

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

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

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e.as a result of employment or occupation).

8. FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 Procedures Used to Establish RF Signal for SAR

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

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

8.3 SAR Measurement Conditions for WCDMA (UMTS)

8.3.1 Output Power Verification

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

Maximum output power is verified on the High, Middle and Low channels according to the general, descriptions in section 5.2 of 3GPP TS 34.121 (release 5), using the appropriate RMC with TPC, (transmit power control) set to all “1s” or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.3.2 Head SAR Measurements for Handsets

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

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	$\beta_{hs}^{(1)}$	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: $\Delta_{ACK}, \Delta_{NACK}$ 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 $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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 $\beta_c = 11/15$ and $\beta_d = 15/15$.						

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	$\beta_{hs}^{(1)}$	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	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCCH, 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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 $\beta_c = 14/15$ and $\beta_d = 15/15$.

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 $\leq 1/4$ 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 disabled for all SAR tests by setting NS=01 on the base station simulator.

8.4.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r05:

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channel is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
- c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to 0.5 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

8.4.5 64QAM uplink

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

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

8.4.6 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	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
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 * (T_s) * # of S + # of U

$T_s = 1/(15000 * 2048)$ seconds

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

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

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 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 802.11g then 802.11n is used for SAR measurement. When the maximum output power were the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.5.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required.

Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured.

8.5.8 Subsequent Test Configuration Procedures

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

8.5.9 MIMO SAR Considerations

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

9. RF CONDUCTED POWERS

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

9.1 GSM Nominal and Maximum Output Power Spec and Conducted Powers

Band & Mode		Voice[dBm]	Burst Average GMSK [dBm]				Burst Average GMSK [dBm]			
		1 TX Slot	1 TX Slot	2 TX Slot	3 TX Slot	4 TX Slot	1 TX Slot	2 TX Slot	3 TX Slot	4 TX Slot
GSM/GPRS/EDGE 850	Maximum	34.00	34.00	32.00	30.50	29.00	27.00	27.00	26.00	26.00
	Nominal	33.50	33.50	31.50	30.00	28.50	26.50	26.50	25.50	25.50
GSM/GPRS/EDGE 1900	Maximum	31.00	31.00	29.00	28.00	26.00	26.00	26.00	25.00	25.00
	Nominal	30.50	30.50	28.50	27.50	25.50	25.50	25.50	24.50	24.50

Table 9.1.1 GSM Nominal and Maximum Output Power Spec

Band	Channel	Maximum Burst-Averaged Output Power(dBm)								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
GSM850	128	32.60	32.60	31.60	29.90	28.60	26.60	26.30	25.50	25.20
	190	32.60	32.60	31.30	29.70	28.40	26.40	26.10	25.20	24.90
	251	32.50	32.50	31.10	29.40	28.10	26.10	26.00	25.00	25.00
PCS 1900	512	30.70	30.70	28.70	27.10	25.10	25.00	24.90	24.20	24.00
	661	30.80	30.80	28.80	27.20	25.20	25.30	25.20	24.20	24.10
	810	30.60	30.60	28.50	27.00	25.00	25.20	25.10	23.90	23.70
Band	Channel	Calculated Maximum Frame-Averaged Output Power(dBm)								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM CS 1 Slot	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
GSM850	128	23.57	23.57	25.58	25.64	25.59	17.57	20.28	21.24	22.19
	190	23.57	23.57	25.28	25.44	25.39	17.37	20.08	20.94	21.89
	251	23.47	23.47	25.08	25.14	25.09	17.07	19.98	20.74	21.99
PCS 1900	512	21.67	21.67	22.68	22.84	22.09	15.97	18.88	19.94	20.99
	661	21.77	21.77	22.78	22.94	22.19	16.27	19.18	19.94	21.09
	810	21.57	21.57	22.48	22.74	21.99	16.17	19.08	19.64	20.69
GSM850	Frame Avg. Targets:	24.47	24.47	25.48	25.74	25.49	17.47	20.48	21.24	22.49
PCS 1900		21.47	21.47	22.48	23.24	22.49	16.47	19.48	20.24	21.49

Table 9.1.2 GSM Conducted Power

Note:

- 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.
- 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.
- EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK modulation do not have an impact on output power.

GPRS Multislot class: 12 (max 4 TX Uplink slots)
EDGE 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)	PCS Band (dBm)	3GPP MPR (dB)
99	WCDMA	Voice	Maximum	25.5	25.0	-
			Nominal	25.0	24.5	-
5	HSDPA	Subtest 1	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
5		Subtest 2	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
5		Subtest 3	Maximum	25.0	24.5	0.5
			Nominal	24.5	24.0	0.5
5		Subtest 4	Maximum	25.0	24.5	0.5
			Nominal	24.5	24.0	0.5
6	HSUPA	Subtest 1	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
6		Subtest 2	Maximum	23.5	23.0	2
			Nominal	23.0	22.5	2
6		Subtest 3	Maximum	24.5	24.0	1
			Nominal	24.0	23.5	1
6		Subtest 4	Maximum	23.5	23.0	2
			Nominal	23.0	22.5	2
6		Subtest 5	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
8	DC-HSDPA	Subtest 1	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
8		Subtest 2	Maximum	25.5	25.0	0
			Nominal	25.0	24.5	0
8		Subtest 3	Maximum	25.0	24.5	0.5
			Nominal	24.5	24.0	0.5
8		Subtest 4	Maximum	25.0	24.5	0.5
			Nominal	24.5	24.0	0.5

Table 9.2.1 WCDMA Nominal and Maximum Output Power Spec

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band (dBm)			PCS Band (dBm)			3GPP MPR (dB)
			4132	4183	4233	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	25.19	25.22	25.15	24.90	24.89	24.72	-
99		12.2 kbps AMR	25.15	25.20	25.14	24.88	24.84	24.71	-
5	HSDPA	Subtest 1	25.17	25.22	25.15	24.89	24.88	24.72	0
5		Subtest 2	25.16	25.18	25.14	24.88	24.85	24.69	0
5		Subtest 3	24.66	24.69	24.62	24.37	24.34	24.22	0.5
5		Subtest 4	24.63	24.67	24.62	24.34	24.33	24.21	0.5
6	HSUPA	Subtest 1	24.67	24.68	24.64	24.40	24.37	24.23	0
6		Subtest 2	23.15	23.19	23.16	22.87	22.86	22.71	2
6		Subtest 3	24.14	24.19	24.12	23.84	23.83	23.68	1
6		Subtest 4	23.18	23.22	23.15	22.88	22.85	22.73	2
6		Subtest 5	25.14	25.18	25.14	24.87	24.84	24.71	0
8	DC-HSDPA	Subtest 1	24.62	24.73	24.65	24.37	24.39	24.34	0
8		Subtest 2	24.61	24.70	24.66	24.35	24.32	24.33	0
8		Subtest 3	24.11	24.19	24.13	23.82	23.80	23.81	0.5
8		Subtest 4	24.09	24.18	24.11	23.79	23.81	23.78	0.5

Table 9.2.2 WCDMA Conducted Power

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

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

DC-HSDPA considerations

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



Figure 9.2 Power Measurement Setup

9.3 LTE Nominal and Maximum Output Power Spec and Conducted Powers

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

Table 9.3.1.1 Nominal and Maximum Output Power Spec

1) LTE Band 12

LTE Band 12 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23095 (707.5 MHz)		
			Conducted Power (dBm)		
QPSK	1	0	25.23	≤ 1	0
	1	25	25.32		
	1	49	25.25		
	25	0	23.96		1
	25	12	24.14		
	25	25	24.08		
	50	0	24.11		
16QAM	1	0	24.14	≤ 1	1
	1	25	24.25		
	1	49	24.17		
	25	0	22.88		
	25	12	23.06	≤ 2	2
	25	25	22.97		
	50	0	23.03		
64QAM	1	0	23.11	≤ 2	2
	1	25	23.18		
	1	49	23.12		
	25	0	21.86	≤ 3	3
	25	12	22.07		
	25	25	21.99		
	50	0	22.02		

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	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.15	25.14	25.19	≤ 1	0
	1	12	25.22	25.27	25.30		
	1	24	25.18	25.24	25.28		
	12	0	24.09	24.07	24.07		1
	12	6	24.11	24.13	24.14		
	12	13	24.10	24.12	24.13		
	25	0	24.06	24.11	24.12		
16QAM	1	0	24.08	24.05	24.10	≤ 1	1
	1	12	24.20	24.20	24.22		
	1	24	24.12	24.18	24.20		
	12	0	23.06	23.02	23.05	≤ 2	2
	12	6	23.10	23.08	23.08		
	12	13	23.08	23.04	23.05		
	25	0	23.04	23.06	23.09		
64QAM	1	0	23.00	22.99	23.07	≤ 2	2
	1	12	23.12	23.14	23.16		
	1	24	23.05	23.06	23.11		
	12	0	22.02	21.98	22.03	≤ 3	3
	12	6	22.07	22.07	22.08		
	12	13	22.04	22.02	22.06		
	15	0	21.99	22.04	22.05		

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	25.16	25.12	25.15	≤ 1	0
	1	7	25.23	25.25	25.28		
	1	14	25.20	25.20	25.22		
	8	0	24.04	24.06	24.10		1
	8	4	24.12	24.13	24.15		
	8	7	24.08	24.12	24.11		
	15	0	24.10	24.12	24.13		
16QAM	1	0	24.13	24.16	24.22	≤ 1	1
	1	7	24.20	24.21	24.29		
	1	14	24.19	24.19	24.17		
	8	0	23.05	23.03	23.08	≤ 2	2
	8	4	23.13	23.15	23.17		
	8	7	23.10	23.12	23.12		
	15	0	23.05	23.06	23.08		
64QAM	1	0	23.09	23.06	23.06	≤ 2	2
	1	7	23.14	23.15	23.16		
	1	14	23.08	23.11	23.10		
	8	0	22.02	21.97	21.99	≤ 3	3
	8	4	22.06	22.05	22.08		
	8	7	22.03	22.03	22.01		
	15	0	22.02	22.05	22.06		

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	25.11	25.05	25.14	≤ 1	0
	1	2	25.16	25.20	25.21		
	1	5	25.10	25.12	25.15		
	3	0	25.09	25.02	25.08		0
	3	2	25.10	25.12	25.13		
	3	3	25.08	25.06	25.09		
	6	0	24.00	24.01	24.03	1	
16QAM	1	0	24.20	24.15	24.12	≤ 1	1
	1	2	24.23	24.23	24.26		
	1	5	24.20	24.11	24.20		
	3	0	24.04	23.95	24.02		1
	3	2	24.07	24.09	24.11		
	3	3	24.02	23.99	23.99		
	6	0	23.06	23.02	23.03	≤ 2	2
64QAM	1	0	23.04	22.95	23.00	≤ 2	2
	1	2	23.15	23.18	23.19		
	1	5	22.93	23.03	23.05		
	3	0	23.08	23.02	23.10		2
	3	2	23.12	23.13	23.14		
	3	3	23.07	23.09	23.09		
	6	0	21.97	21.96	22.03	≤ 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	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23230 (782.0 MHz)		
			Conducted Power (dBm)		
QPSK	1	0	25.28	≤ 1	0
	1	25	25.45		
	1	49	25.29		
	25	0	23.81		1
	25	12	23.83		
	25	25	23.86		
16QAM	50	0	23.98	≤ 1	1
	1	0	24.09		1
	1	25	24.29		
	1	49	24.11		
	25	0	22.82		2
	25	12	22.85		
64QAM	25	25	22.87		
	50	0	22.93	≤ 2	2
	1	0	23.11		2
	1	25	23.31		
	1	49	23.21		
	25	0	21.81		3
64QAM	25	12	21.82		
	25	25	21.87		
	50	0	21.92	≤ 3	3

Table 9.3.2.2 LTE Conducted Power

LTE Band 13 Conducted Power– 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			23230 (782.0 MHz)		
			Conducted Power (dBm)		
QPSK	1	0	25.37	≤ 1	0
	1	12	25.43		
	1	24	25.40		
	12	0	23.88		1
	12	6	23.92		
	12	13	23.95		
16QAM	25	0	23.93	≤ 1	1
	1	0	24.27		1
	1	12	24.31		
	1	24	24.29		
	12	0	22.86		2
	12	6	22.89		
64QAM	12	13	22.94		
	25	0	22.86	≤ 2	2
	1	0	23.20		2
	1	12	23.27		
	1	24	23.22		
	12	0	21.82		3
64QAM	12	6	21.86		
	12	13	21.90		
	15	0	21.84	≤ 3	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	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20525 (836.5 MHz)		
			Conducted Power (dBm)		
QPSK	1	0	25.27	≤ 1	0
	1	25	25.36		
	1	49	25.26		
	25	0	23.82		1
	25	12	23.88		
	25	25	23.84		
16QAM	50	0	23.97	≤ 1	1
	1	0	24.14		1
	1	25	24.23		
	1	49	24.16		
	25	0	22.86		2
	25	12	22.93		
64QAM	25	25	22.87		
	50	0	23.02	≤ 2	2
	1	0	23.15		2
	1	25	23.23		
	1	49	23.19		
	25	0	21.89		3
64QAM	25	12	21.97		
	25	25	21.90		
	50	0	22.05	≤ 3	3
	1	0	23.15		2
	1	25	23.23		
	1	49	23.19		
	25	0	21.89		3
	25	12	21.97		
	25	25	21.90		
	50	0	22.05		3

Table 9.3.2.2 LTE Conducted Power

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

Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

LTE Band 5 (Cell) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20425 (826.5 MHz)	20525 (836.5 MHz)	20625 (846.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.21	25.17	25.12	≤ 1	0
	1	12	25.30	25.33	25.26		
	1	24	25.25	25.23	25.15		
	12	0	23.84	23.83	23.83		1
	12	6	23.87	23.92	23.85		
	12	13	23.85	23.90	23.86		
16QAM	25	0	23.86	23.88	23.84	1	
	1	0	24.04	24.03	24.03	≤ 1	1
	1	12	24.12	24.19	24.14		
	1	24	24.07	24.11	24.05		
	12	0	22.83	22.89	22.84	≤ 2	2
	12	6	22.91	22.98	22.87		
12	13	22.85	22.93	22.85			
64QAM	25	0	22.87	22.92	22.85	2	
	1	0	23.03	22.98	22.95	≤ 2	2
	1	12	23.11	23.15	23.11		
	1	24	23.09	23.05	22.97		
	12	0	21.89	21.91	21.89	≤ 3	3
	12	6	21.96	22.03	21.92		
12	13	21.92	21.95	21.91			
64QAM	25	0	21.89	21.90	21.86	3	

Table 9.3.2.3 LTE Conducted Power

LTE Band 5 (Cell) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.23	25.23	25.19	≤ 1	0
	1	7	25.30	25.37	25.26		
	1	14	25.20	25.30	25.21		
	8	0	23.83	23.82	23.84		1
	8	4	23.87	23.91	23.85		
	8	7	23.84	23.87	23.85		
	15	0	23.85	23.87	23.82		
16QAM	1	0	24.08	24.08	24.12	≤ 1	1
	1	7	24.15	24.21	24.14		
	1	14	24.11	24.16	24.12		
	8	0	22.93	22.91	22.93	≤ 2	2
	8	4	22.97	22.98	22.95		
	8	7	22.95	22.93	22.91		
	15	0	22.87	22.90	22.84		
64QAM	1	0	23.05	23.06	23.05	≤ 2	2
	1	7	23.14	23.27	23.17		
	1	14	23.05	23.18	23.09		
	8	0	21.93	21.93	21.90	≤ 3	3
	8	4	21.96	21.99	21.94		
	8	7	21.92	21.94	21.92		
	15	0	21.93	21.95	21.86		

Table 9.3.2.4 LTE Conducted Power

LTE Band 5 (Cell) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.17	25.12	25.16	≤ 1	0
	1	2	25.25	25.26	25.22		
	1	5	25.19	25.17	25.18		
	3	0	25.14	25.11	25.08		0
	3	2	25.20	25.21	25.15		
	3	3	25.16	25.15	25.09		
	6	0	23.82	23.84	23.81		1
16QAM	1	0	24.06	24.06	24.07	≤ 1	1
	1	2	24.18	24.23	24.16		
	1	5	24.04	24.05	24.09		
	3	0	24.13	24.10	24.08		1
	3	2	24.15	24.19	24.15		
	3	3	24.07	24.12	24.07		
	6	0	22.81	22.82	22.80		≤ 2
64QAM	1	0	23.08	22.96	23.01	≤ 2	2
	1	2	23.16	23.19	23.15		
	1	5	23.09	22.99	23.06		
	3	0	22.98	22.94	22.90		2
	3	2	23.03	23.05	22.96		
	3	3	22.99	22.98	22.91		
	6	0	21.83	21.81	21.80		≤ 3

Table 9.3.2.5 LTE Conducted Power

Band & Mode		Modulated Average(dBm)
LTE Band 66 (AWS)	Maximum	25.5
	Nominal	25.0

Table 9.3.4.1 Nominal and Maximum Output Power Spec

4) LTE Band 66 (AWS)

LTE Band 66 (AWS) Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			132072 (1 720.0 MHz)	132322 (1 745.0 MHz)	132572 (1 770.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.16	25.09	25.32	≤ 1	0
	1	50	25.19	25.18	25.34		
	1	99	25.06	25.05	25.20		
	50	0	23.92	23.95	24.13		1
	50	25	24.00	24.01	24.14		
	50	50	23.90	23.89	24.03		
	100	0	23.94	23.95	24.11		
16QAM	1	0	24.20	24.19	24.34	≤ 1	1
	1	50	24.26	24.28	24.38		
	1	99	24.10	24.16	24.29		
	50	0	23.03	22.96	23.15	≤ 2	2
	50	25	23.04	23.01	23.20		
	50	50	22.91	22.96	23.07		
	100	0	22.97	22.97	23.12		
64QAM	1	0	23.16	23.12	23.31	≤ 2	2
	1	50	23.20	23.25	23.32		
	1	99	23.09	23.05	23.19		
	50	0	22.06	22.00	22.18	≤ 3	3
	50	25	22.08	22.05	22.22		
	50	50	21.95	21.99	22.11		
	100	0	21.96	21.99	22.16		

Table 9.3.4.2 LTE Conducted Power

LTE Band 66 (AWS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			132047 (1 717.5 MHz)	132322 (1 745.0 MHz)	132597 (1 772.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.98	25.01	25.16	≤ 1	0
	1	36	25.04	25.07	25.23		
	1	74	24.86	24.90	25.13		
	36	0	23.88	23.89	24.02		1
	36	18	23.96	23.96	24.03		
	36	37	23.83	23.86	23.99		
	75	0	23.86	23.88	23.97		
16QAM	1	0	23.93	24.13	24.23	≤ 1	1
	1	36	24.18	24.24	24.30		
	1	74	24.02	24.09	24.19		
	36	0	23.02	22.92	23.07	≤ 2	2
	36	18	23.04	23.04	23.16		
	36	37	22.95	22.91	23.01		
	75	0	22.99	23.01	23.00		
64QAM	1	0	22.97	22.99	23.24	≤ 2	2
	1	36	23.04	23.03	23.26		
	1	74	22.82	22.90	23.18		
	36	0	21.93	21.93	22.05	≤ 3	3
	36	18	21.99	22.01	22.08		
	36	37	21.90	21.91	22.02		
	75	0	21.94	21.94	22.00		

Table 9.3.4.3 LTE Conducted Power

LTE Band 66 (AWS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			132022 (1 715.0 MHz)	132322 (1 745.0 MHz)	132622 (1 775.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.92	24.90	25.04	≤ 1	0
	1	25	25.12	25.13	25.29		
	1	49	24.90	24.92	25.06		
	25	0	23.91	23.84	23.99		1
	25	12	23.94	23.96	24.03		
	25	25	23.84	23.87	23.92		
	50	0	23.89	23.90	23.97		
16QAM	1	0	24.00	23.98	24.11	≤ 1	1
	1	25	24.21	24.27	24.44		
	1	49	24.01	24.03	24.20		
	25	0	22.95	22.89	23.00	≤ 2	2
	25	12	23.01	22.98	23.07		
	25	25	22.87	22.90	23.06		
	50	0	22.89	22.91	23.00		
64QAM	1	0	22.92	22.87	22.96	≤ 2	2
	1	25	23.12	23.15	23.31		
	1	49	22.83	22.94	23.01		
	25	0	21.93	21.86	22.03	≤ 3	3
	25	12	22.00	22.05	22.11		
	25	25	21.89	21.92	22.08		
	50	0	21.91	21.92	21.99		

Table 9.3.4.4 LTE Conducted Power

LTE Band 66 (AWS) Conducted Power~ 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			131997 (1 712.5 MHz)	132322 (1 745.0 MHz)	132647 (1 777.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.86	24.86	25.18	≤ 1	0
	1	12	25.04	25.07	25.29		
	1	24	24.82	24.81	25.13		
	12	0	23.83	23.85	23.96		1
	12	6	23.94	23.95	24.06		
	12	13	23.81	23.82	23.93		
	25	0	23.85	23.88	23.94		
16QAM	1	0	23.91	23.96	24.26	≤ 1	1
	1	12	24.11	24.15	24.32		
	1	24	23.85	23.87	24.21		
	12	0	22.86	22.88	23.01		
	12	6	22.97	22.99	23.10	≤ 2	2
	12	13	22.85	22.87	22.99		
	25	0	22.87	22.89	22.92		
64QAM	1	0	22.83	22.85	23.15	≤ 2	2
	1	12	23.05	23.08	23.23		
	1	24	22.81	22.86	23.13		
	12	0	21.90	21.88	22.00		
	12	6	21.95	21.98	22.10	≤ 3	3
	12	13	21.86	21.88	21.99		
	25	0	21.88	21.91	21.96		

Table 9.3.4.5 LTE Conducted Power

LTE Band 66 (AWS) Conducted Power-- 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			131987 (1 711.5 MHz)	132322 (1 745.0 MHz)	132657 (1 778.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.16	25.13	25.32	≤ 1	0
	1	7	25.18	25.20	25.33		
	1	14	25.11	25.07	25.21		
	8	0	24.00	23.95	24.10		1
	8	4	24.01	24.03	24.13		
	8	7	23.93	23.93	24.05		
	15	0	23.98	24.01	24.10		
16QAM	1	0	24.26	24.15	24.40	≤ 1	1
	1	7	24.27	24.28	24.41		
	1	14	24.13	24.18	24.34		
	8	0	23.07	22.99	23.17		
	8	4	23.11	23.13	23.20	≤ 2	2
	8	7	22.99	22.95	23.08		
	15	0	22.97	23.01	23.10		
64QAM	1	0	23.22	23.16	23.30	≤ 2	2
	1	7	23.23	23.21	23.35		
	1	14	23.07	23.05	23.25		
	8	0	22.07	22.00	22.16		
	8	4	22.09	22.10	22.18	≤ 3	3
	8	7	21.97	21.98	22.10		
	15	0	22.01	21.99	22.13		

Table 9.3.4.6 LTE Conducted Power

LTE Band 66 (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)
			131979 (1 710.7 MHz)	132322 (1 745.0 MHz)	132665 (1 779.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	25.14	25.12	25.28	≤ 1	0
	1	2	25.15	25.16	25.29		
	1	5	25.04	25.07	25.16		
	3	0	25.07	25.10	25.24		0
	3	2	25.11	25.13	25.25		
	3	3	25.01	25.07	25.17		
	6	0	23.86	23.88	24.03		
16QAM	1	0	24.21	24.18	24.31	≤ 1	1
	1	2	24.22	24.19	24.34		
	1	5	24.14	24.07	24.20		
	3	0	23.94	23.93	24.06		1
	3	2	23.96	23.95	24.09		
	3	3	23.86	23.88	24.01		
	6	0	22.95	22.95	23.10		
64QAM	1	0	23.13	23.11	23.23	≤ 2	2
	1	2	23.14	23.13	23.24		
	1	5	23.05	22.99	23.19		
	3	0	23.05	23.02	23.19		2
	3	2	23.10	23.07	23.22		
	3	3	23.03	23.03	23.14		
	6	0	21.93	21.91	22.05		

Table 9.3.4.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 2 (PCS)	Maximum	25.0
	Nominal	24.5

Table 9.3.5.1 Nominal and Maximum Output Power Spec

5) LTE Band 2 (PCS)

LTE Band 2 (PCS) Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18700 (1 860.0 MHz)	18900 (1 880.0 MHz)	19100 (1 900.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.70	24.69	24.50	≤ 1	0
	1	50	24.93	24.89	24.63		
	1	99	24.72	24.70	24.61		
	50	0	23.48	23.36	23.33		1
	50	25	23.69	23.49	23.42		
	50	50	23.49	23.45	23.36		
	100	0	23.60	23.38	23.32		1
16QAM	1	0	23.78	23.52	23.36	≤ 1	1
	1	50	23.96	23.74	23.44		
	1	99	23.80	23.59	23.42		
	50	0	22.50	22.38	22.32	≤ 2	2
	50	25	22.59	22.51	22.48		
	50	50	22.52	22.47	22.41		
	100	0	22.56	22.40	22.35		2
64QAM	1	0	22.54	22.61	22.36	≤ 2	2
	1	50	22.89	22.79	22.57		
	1	99	22.57	22.68	22.44		
	50	0	21.65	21.48	21.37	≤ 3	3
	50	25	21.71	21.65	21.54		
	50	50	21.63	21.62	21.53		
	100	0	21.61	21.40	21.45		3

Table 9.3.5.2 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18675 (1 857.5 MHz)	18900 (1 880.0 MHz)	19125 (1 902.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.66	24.69	24.62	≤ 1	0
	1	36	24.85	24.81	24.67		
	1	74	24.69	24.75	24.64		
	36	0	23.49	23.46	23.31		1
	36	18	23.61	23.52	23.45		
	36	37	23.54	23.44	23.44		
	75	0	23.49	23.40	23.34		1
16QAM	1	0	23.49	23.52	23.43	≤ 1	1
	1	36	23.66	23.64	23.48		
	1	74	23.60	23.61	23.45		
	36	0	22.52	22.38	22.31	≤ 2	2
	36	18	22.57	22.52	22.44		
	36	37	22.54	22.47	22.43		
	75	0	22.53	22.44	22.33		2
64QAM	1	0	22.60	22.61	22.51	≤ 2	2
	1	36	22.78	22.69	22.60		
	1	74	22.52	22.66	22.56		
	36	0	21.83	21.54	21.37	≤ 3	3
	36	18	21.67	21.64	21.59		
	36	37	21.65	21.62	21.51		
	75	0	21.73	21.49	21.42		3

Table 9.3.5.3 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18650 (1 855.0 MHz)	18900 (1 880.0 MHz)	19150 (1 905.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.55	24.45	24.66	≤ 1	0
	1	25	24.81	24.78	24.74		
	1	49	24.57	24.55	24.71		
	25	0	23.58	23.45	23.44		1
	25	12	23.68	23.56	23.54		
	25	25	23.54	23.50	23.41		
	50	0	23.56	23.43	23.40		1
16QAM	1	0	23.43	23.34	23.57	≤ 1	1
	1	25	23.66	23.66	23.58		
	1	49	23.44	23.36	23.53		
	25	0	22.60	22.50	22.46	≤ 2	2
	25	12	22.70	22.58	22.55		
	25	25	22.55	22.55	22.44		
	50	0	22.57	22.47	22.43		2
64QAM	1	0	22.60	22.34	22.61	≤ 2	2
	1	25	22.77	22.78	22.73		
	1	49	22.59	22.57	22.68		
	25	0	21.69	21.55	21.54	≤ 3.	3
	25	12	21.81	21.66	21.69		
	25	25	21.63	21.64	21.53		
	50	0	21.69	21.53	21.56		3

Table 9.3.5.4 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18625 (1 852.5 MHz)	18900 (1 880.0 MHz)	19175 (1 907.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.85	24.74	24.68	≤ 1	0
	1	12	24.92	24.91	24.79		1
	1	24	24.74	24.71	24.60		
	12	0	23.55	23.47	23.41		
	12	6	23.56	23.55	23.43		
	12	13	23.45	23.43	23.36		
	25	0	23.56	23.46	23.41		1
16QAM	1	0	23.68	23.58	23.54	≤ 1	1
	1	12	23.87	23.81	23.61		
	1	24	23.64	23.56	23.49		
	12	0	22.61	22.53	22.49	≤ 2	2
	12	6	22.62	22.64	22.51		
	12	13	22.56	22.51	22.40		
	25	0	22.56	22.45	22.42		
64QAM	1	0	22.79	22.72	22.57	≤ 2	2
	1	12	22.88	22.89	22.78		
	1	24	22.76	22.73	22.77		
	12	0	21.63	21.66	21.56	≤ 3	3
	12	6	21.73	21.70	21.62		
	12	13	21.64	21.62	21.54		
	25	0	21.68	21.55	21.51		

Table 9.3.5.5 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18615 (1 851.5 MHz)	18900 (1 880.0 MHz)	19185 (1 908.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.80	24.61	24.56	≤ 1	0
	1	7	24.89	24.88	24.86		
	1	14	24.86	24.73	24.75		
	8	0	23.56	23.54	23.39		1
	8	4	23.58	23.56	23.44		
	8	7	23.46	23.43	23.32		
	15	0	23.54	23.52	23.39		1
16QAM	1	0	23.66	23.56	23.47	≤ 1	1
	1	7	23.71	23.69	23.67		
	1	14	23.69	23.62	23.60		
	8	0	22.65	22.62	22.50	≤ 2	2
	8	4	22.67	22.64	22.52		
	8	7	22.62	22.54	22.44		
	15	0	22.58	22.55	22.46		2
64QAM	1	0	22.66	22.51	22.47	≤ 2	2
	1	7	22.72	22.70	22.67		
	1	14	22.68	22.59	22.56		
	8	0	21.65	21.60	21.52	≤ 3	3
	8	4	21.69	21.62	21.53		
	8	7	21.62	21.56	21.44		
	15	0	21.64	21.60	21.47		3

Table 9.3.5.6 LTE Conducted Power

LTE Band 2 (PCS) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			18607 (1 850.7 MHz)	18900 (1 880.0 MHz)	19193 (1 909.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	24.66	24.72	24.52	≤ 1	0
	1	2	24.80	24.76	24.66		
	1	5	24.71	24.66	24.56		
	3	0	24.77	24.72	24.59		0
	3	2	24.79	24.75	24.62		
	3	3	24.73	24.68	24.56		
	6	0	23.38	23.34	23.31		1
16QAM	1	0	23.52	23.54	23.38	≤ 1	1
	1	2	23.63	23.61	23.50		
	1	5	23.61	23.58	23.40		
	3	0	23.60	23.56	23.42		1
	3	2	23.61	23.58	23.48		
	3	3	23.56	23.52	23.40		
	6	0	22.34	22.33	22.32		≤ 2
64QAM	1	0	22.58	22.64	22.47	≤ 2	2
	1	2	22.83	22.67	22.60		
	1	5	22.63	22.66	22.48		
	3	0	22.61	22.55	22.42		2
	3	2	22.68	22.62	22.43		
	3	3	22.57	22.56	22.41		
	6	0	21.49	21.46	21.42		≤ 3

Table 9.3.5.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 41	Maximum	24.0
	Nominal	23.5

Table 9.3.6.1 Nominal and Maximum Output Power Spec

6) LTE Band 41

LTE Band 41 Conducted Power– 20 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)
			39750 (2 506.0 MHz)	40185 (2 549.5 MHz)	40620 (2 593.0 MHz)	41055 (2 636.5 MHz)	41490 (2 680.0 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	23.58	23.52	23.46	23.50	23.46	≤ 1	0
	1	50	23.75	23.74	23.71	23.69	23.65		
	1	99	23.68	23.68	23.47	23.55	23.54		
	50	0	22.33	22.38	22.42	22.42	22.44		1
	50	25	22.65	22.62	22.59	22.56	22.53		
	50	50	22.49	22.53	22.51	22.50	22.52		
	100	0	22.62	22.56	22.52	22.49	22.47	1	
16QAM	1	0	22.50	22.49	22.48	22.51	22.34	≤ 1	1
	1	50	22.73	22.72	22.64	22.64	22.58		
	1	99	22.66	22.64	22.37	22.44	22.41		
	50	0	21.34	21.31	21.44	21.42	21.43	≤ 2	2
	50	25	21.74	21.60	21.59	21.57	21.54		
	50	50	21.53	21.51	21.51	21.51	21.51		
	100	0	21.68	21.56	21.49	21.49	21.44		
64QAM	1	0	21.59	21.45	21.37	21.39	21.31	≤ 2	2
	1	50	21.70	21.62	21.57	21.53	21.55		
	1	99	21.67	21.59	21.40	21.43	21.43		
	50	0	20.32	20.30	20.44	20.44	20.39	≤ 3	3
	50	25	20.62	20.61	20.57	20.57	20.53		
	50	50	20.49	20.49	20.48	20.49	20.47		
	100	0	20.55	20.55	20.52	20.48	20.41		

Table 9.3.6.2 LTE Conducted Power

LTE Band 41 Conducted Power– 15 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)
			39725 (2 503.5 MHz)	40173 (2 548.3 MHz)	40620 (2 593.0 MHz)	41068 (2 637.8 MHz)	41515 (2 682.5 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	23.63	23.60	23.56	23.52	23.55	≤ 1	0
	1	36	23.74	23.70	23.68	23.62	23.60		
	1	74	23.63	23.59	23.60	23.55	23.57		
	36	0	22.38	22.33	22.42	22.45	22.45		1
	36	18	22.64	22.61	22.59	22.55	22.51		
	36	37	22.32	22.50	22.53	22.50	22.49		
	75	0	22.58	22.52	22.51	22.50	22.42		
16QAM	1	0	22.57	22.57	22.51	22.48	22.49	≤ 1	1
	1	36	22.75	22.70	22.70	22.59	22.53		
	1	74	22.54	22.54	22.49	22.51	22.48		
	36	0	21.41	21.42	21.47	21.42	21.45	≤ 2	2
	36	18	21.64	21.63	21.57	21.56	21.54		
	36	37	21.35	21.50	21.49	21.52	21.50		
	75	0	21.64	21.61	21.58	21.51	21.48		
64QAM	1	0	21.50	21.47	21.42	21.39	21.41	≤ 2	2
	1	36	21.67	21.61	21.61	21.56	21.48		
	1	74	21.54	21.58	21.53	21.49	21.41		
	36	0	20.34	20.36	20.42	20.44	20.40	≤ 3	3
	36	18	20.65	20.62	20.53	20.53	20.53		
	36	37	20.34	20.47	20.49	20.46	20.44		
	75	0	20.62	20.57	20.55	20.47	20.41		

Table 9.3.6.3 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	23.66	23.63	23.62	23.62	23.59	≤ 1	0	
	1	25	23.71	23.70	23.68	23.67	23.65			
	1	49	23.63	23.62	23.61	23.55	23.55			
	25	0	22.42	22.33	22.40	22.36	22.36		1	
	25	12	22.64	22.52	22.42	22.44	22.41			
	25	25	22.39	22.32	22.41	22.39	22.38			
16QAM	50	0	22.62	22.51	22.49	22.42	22.36	≤ 1	1	
	1	0	22.60	22.60	22.56	22.56	22.55			
	1	25	22.73	22.68	22.70	22.67	22.61			
	1	49	22.58	22.54	22.52	22.44	22.38		≤ 2	2
	25	0	21.40	21.49	21.48	21.50	21.46			
	25	12	21.62	21.58	21.56	21.54	21.51			
64QAM	25	25	21.43	21.46	21.51	21.49	21.49	≤ 2	2	
	50	0	21.56	21.56	21.55	21.44	21.43			
	1	0	21.59	21.57	21.50	21.49	21.45			≤ 2
	1	25	21.68	21.68	21.65	21.62	21.60			
	1	49	21.56	21.51	21.47	21.45	21.38			
	64QAM	25	0	20.33	20.43	20.46	20.43		20.45	≤ 3
25		12	20.65	20.57	20.53	20.50	20.47			
25		25	20.38	20.45	20.52	20.50	20.44			
50		0	20.48	20.45	20.47	20.45	20.31	3		

Table 9.3.6.4 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	23.59	23.59	23.58	23.56	23.44	≤ 1	0	
	1	12	23.71	23.68	23.66	23.61	23.56			
	1	24	23.61	23.64	23.62	23.60	23.50			
	12	0	22.42	22.38	22.37	22.39	22.38		1	
	12	6	22.54	22.50	22.48	22.46	22.41			
	12	13	22.46	22.46	22.46	22.42	22.38			
16QAM	25	0	22.50	22.48	22.46	22.42	22.37	≤ 1	1	
	1	0	22.58	22.57	22.53	22.53	22.42		≤ 1	1
	1	12	22.63	22.62	22.63	22.61	22.54			
	1	24	22.61	22.59	22.59	22.56	22.44			
	12	0	21.51	21.56	21.54	21.42	21.44			
	12	6	21.65	21.59	21.57	21.53	21.50			
64QAM	12	13	21.64	21.58	21.51	21.47	21.48	≤ 2	2	
	25	0	21.59	21.54	21.49	21.43	21.44		≤ 3	3
	1	0	21.48	21.47	21.43	21.42	21.44			
	1	12	21.56	21.54	21.47	21.45	21.46			
	1	24	21.54	21.51	21.44	21.43	21.44			
	12	0	20.41	20.42	20.35	20.45	20.46			
64QAM	12	6	20.64	20.55	20.53	20.52	20.48	≤ 3		
	12	13	20.46	20.45	20.45	20.41	20.40			
	25	0	20.48	20.46	20.42	20.44	20.37			

Table 9.3.6.5 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	17.0	16.0	17.0	16.0	-	-
		12	3.0	2.0	3.0	2.0	-	-
		13	2.0	1.0	2.0	1.0	-	-
	802.11g (6M)	1-11	16.0	15.0	16.0	15.0	19.0	18.0
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0
	802.11n (MCS0)	1-11	15.0	14.0	15.0	14.0	18.0	17.0
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0
	802.11ac (MCS0)	1-11	15.0	14.0	15.0	14.0	18.0	17.0
		12	3.0	2.0	3.0	2.0	6.0	5.0
		13	2.0	1.0	2.0	1.0	5.0	4.0

Table 9.4.1 Nominal and Maximum Output Power Spec

Mode	Freq. (MHz)	Channel	IEEE 802.11 (2.4 GHz) Conducted Power[dBm]			
			Ant.1	Ant.2	MIMO(CDD)	MIMO(SDM)
802.11b	2 412	1	15.56	15.44	-	-
	2 437	6	15.24	15.24	-	-
	2 462	11	15.16	15.26	-	-
	2 467	12	1.71	1.37	-	-
	2 472	13	0.65	0.01	-	-
802.11g (6M)	2 412	1	15.10	14.79	17.96	-
	2 437	6	14.30	14.83	17.58	-
	2 462	11	14.30	14.51	17.42	-
	2 467	12	1.93	1.40	4.68	-
	2 472	13	0.61	0.27	3.45	-
802.11n (HT-20) (MCS0)	2 412	1	13.63	13.58	16.61	16.65
	2 437	6	13.18	13.11	16.16	16.14
	2 462	11	13.25	13.37	16.32	16.34
	2 467	12	1.70	1.06	4.40	4.46
	2 472	13	0.37	0.54	3.47	3.53
802.11ac (VHT-20) (MCS0)	2 412	1	13.61	13.67	16.65	16.62
	2 437	6	13.65	13.12	16.41	16.12
	2 462	11	13.27	13.22	16.25	16.32
	2 467	12	1.75	1.11	4.45	4.46
	2 472	13	0.33	0.48	3.41	3.43

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 (6M)	36-165	17.0	16.0	17.0	16.0	20.0	19.0
	802.11n/ac (20MHz) (MCS0)	36-165	15.5	14.5	15.5	14.5	18.5	17.5
	802.11n/ac (40MHz) (MCS0)	38-159	14.0	13.0	14.0	13.0	17.0	16.0
	802.11ac (80MHz) (MCS0)	42-155	13.0	12.0	13.0	12.0	16.0	15.0

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 (6M)	5 180	36	15.91	15.85	18.89	-
	5 200	40	15.80	15.87	18.85	-
	5 220	44	16.07	15.76	18.93	-
	5 240	48	16.01	15.58	18.81	-
	5 260	52	15.99	15.69	18.55	-
	5 280	56	15.85	15.58	18.73	-
	5 300	60	15.85	15.69	18.78	-
	5 320	64	15.56	15.32	18.45	-
	5 500	100	16.02	15.37	18.72	-
	5 600	120	16.09	15.20	18.68	-
	5 660	132	16.10	15.30	18.73	-
	5 720	144	15.86	15.17	18.54	-
	5 745	149	15.99	15.48	18.75	-
	5 785	157	15.86	15.28	18.59	-
	5 825	165	15.74	15.18	18.48	-

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) (MCS0)	5 180	36	14.52	14.32	17.43	17.86
	5 200	40	14.24	14.33	17.30	17.87
	5 220	44	14.72	14.11	17.44	17.93
	5 240	48	14.33	14.09	17.22	17.86
	5 260	52	14.43	13.99	17.23	17.82
	5 280	56	14.14	13.91	17.04	17.67
	5 300	60	14.41	13.94	17.19	17.80
	5 320	64	14.21	13.77	17.01	17.51
	5 500	100	14.62	13.74	17.21	17.72
	5 600	120	14.61	13.72	17.20	17.59
	5 660	132	14.62	13.65	17.17	17.79
	5 720	144	14.61	13.68	17.18	17.55
	5 745	149	14.54	13.86	17.22	17.59
	5 785	157	14.29	13.86	17.09	17.54
	5 825	165	14.07	13.57	16.84	17.41

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) (MCS0)	5 180	36	14.38	14.39	17.40	17.93
	5 200	40	14.24	14.41	17.34	17.93
	5 220	44	14.49	14.13	17.32	17.95
	5 240	48	14.33	14.18	17.27	17.90
	5 260	52	14.38	14.04	17.22	17.91
	5 280	56	14.31	14.00	17.17	17.72
	5 300	60	14.38	14.00	17.20	17.85
	5 320	64	14.15	13.76	16.97	17.53
	5 500	100	14.54	13.90	17.24	17.80
	5 600	120	14.66	13.73	17.23	17.68
	5 660	132	14.73	13.66	17.24	17.84
	5 720	144	14.54	13.61	17.11	17.56
	5 745	149	14.47	13.72	17.12	17.61
	5 785	157	14.38	13.80	17.11	17.61
	5 825	165	14.34	13.61	17.00	17.42

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) (MCS0)	5 190	38	13.10	13.03	16.08	16.16
	5 230	46	13.22	12.60	15.93	15.97
	5 270	54	13.05	12.68	15.88	15.86
	5 310	62	13.05	12.61	15.85	15.79
	5 510	102	13.06	12.53	15.81	15.85
	5 590	118	13.16	12.29	15.76	15.75
	5 670	134	13.11	12.21	15.69	15.72
	5 710	142	13.05	12.26	15.68	15.75
	5 755	151	12.81	12.10	15.48	15.51
	5 795	159	12.82	12.13	15.50	15.68

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) (MCS0)	5 190	38	13.15	12.95	16.06	16.10
	5 230	46	13.21	12.69	15.97	16.07
	5 270	54	13.13	12.84	16.00	15.98
	5 310	62	13.22	12.68	15.97	15.92
	5 510	102	13.09	12.64	15.88	15.90
	5 590	118	13.23	12.28	15.79	15.84
	5 670	134	13.21	12.37	15.82	15.85
	5 710	142	12.97	12.42	15.71	15.82
	5 755	151	12.85	12.36	15.62	15.65
	5 795	159	12.86	12.22	15.56	15.70

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) (MCS0)	5 210	42	11.82	11.92	14.88	14.90
	5 290	58	11.75	11.27	14.53	14.59
	5 530	106	11.69	11.37	14.54	14.57
	5 610	122	11.84	11.24	14.56	14.69
	5 690	138	11.84	11.07	14.48	14.58
	5 775	155	11.72	11.11	14.44	14.53

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, due 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.

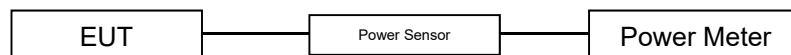


Figure 9.4 Power Measurement Setup

9.5 Bluetooth Conducted Powers

Burst Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	11.5
	Nominal	10.5
Bluetooth 2 Mbps	Maximum	11.5
	Nominal	10.5
Bluetooth 3 Mbps	Maximum	11.5
	Nominal	10.5
Bluetooth LE	Maximum	9.0
	Nominal	8.0

Table 9.5.1 Nominal and Maximum Output Power Spec (Burst)

Frame Modulated Average[dBm]		
Bluetooth 1 Mbps	Maximum	10.35
	Nominal	9.35
Bluetooth 2 Mbps	Maximum	10.35
	Nominal	9.35
Bluetooth 3 Mbps	Maximum	10.35
	Nominal	9.35
Bluetooth (LE / 1Mbps)	Maximum	8.30
	Nominal	7.30
Bluetooth (LE / 2Mbps)	Maximum	6.62
	Nominal	5.62

Table 9.5.2 Nominal and Maximum Output Power Spec (Frame)

Channel	Frequency (MHz)	Burst AVG Output Power (1Mbps) (dBm)	Frame AVG Output Power (1Mbps) (dBm)	Burst AVG Output Power (2Mbps) (dBm)	Frame AVG Output Power (2Mbps) (dBm)	Burst AVG Output Power (3Mbps) (dBm)	Frame AVG Output Power (3Mbps) (dBm)
Low	2 402	10.22	9.07	10.20	9.05	10.19	9.04
Mid	2 441	11.28	10.13	11.26	10.11	11.26	10.11
High	2 480	9.23	8.08	9.13	7.98	9.11	7.96

Table 9.5.3 Bluetooth Burst and Frame Average RF Power

Channel	Frequency (MHz)	Burst AVG Output Power(LE / 1Mbps) (dBm)	Frame AVG Output Power(LE / 1Mbps) (dBm)	Burst AVG Output Power(LE / 2Mbps) (dBm)	Frame AVG Output Power(LE / 2Mbps) (dBm)
Low	2 402	7.38	6.68	7.37	4.99
Mid	2 440	8.47	7.77	8.45	6.07
High	2 480	7.27	6.57	7.31	4.93

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.

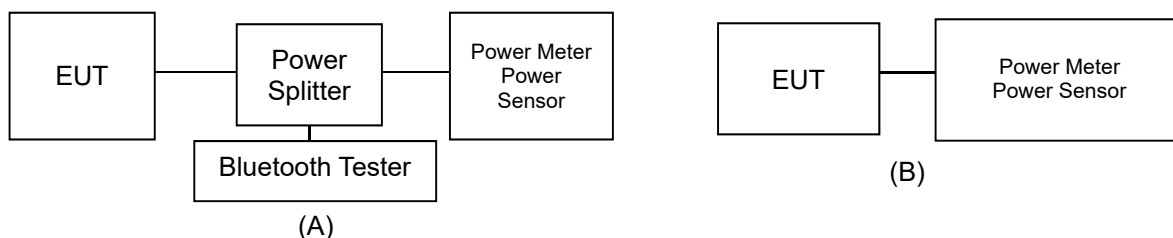


Figure 9.5.1 Average Power Measurement Setup

- Bluetooth Transmission Plot

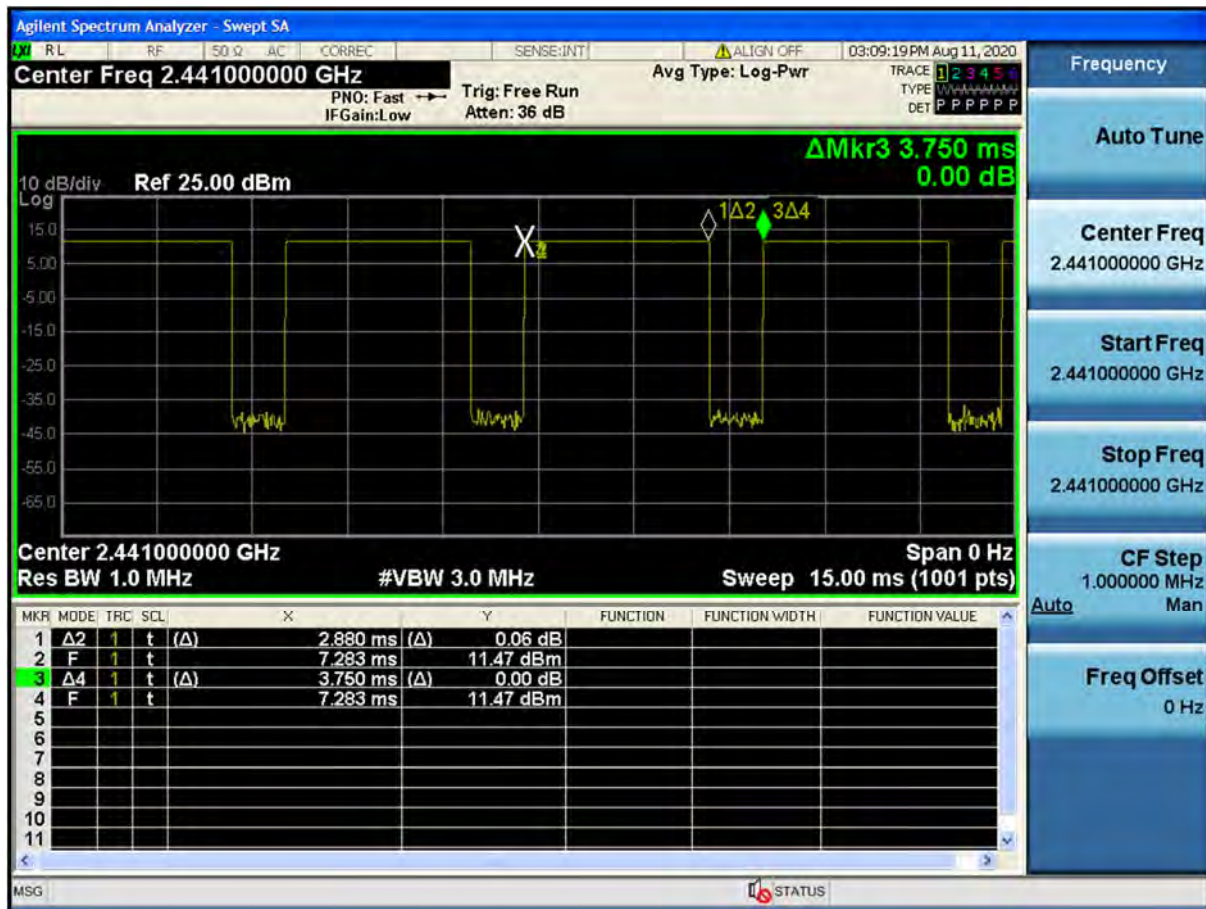


Figure 9.5.2 Bluetooth Transmission Plot

- Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \text{Pulse/Period} * 100\% = (2.880/3.750) * 100 = 76.8\%$$

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, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Aug. 18. 2020	750 Head	21.5	21.7	707.5	42.129	0.887	42.401	0.869	0.65	-2.03
				750.0	41.900	0.890	41.680	0.903	-0.53	1.46
				782.0	41.749	0.894	41.212	0.912	-1.29	2.01
Aug. 19. 2020	750 Body	21.7	21.7	707.5	55.672	0.957	56.579	0.932	1.63	-2.61
				750.0	55.500	0.960	56.154	0.972	1.18	1.25
				782.0	55.387	0.964	55.792	0.991	0.73	2.80
Aug. 13. 2020	835 Head	20.9	21.1	821.5	41.566	0.898	40.673	0.874	-2.15	-2.67
				824.2	41.552	0.899	40.656	0.875	-2.16	-2.67
				826.4	41.542	0.899	40.642	0.877	-2.17	-2.45
				829.0	41.528	0.899	40.620	0.879	-2.19	-2.22
				831.5	41.519	0.900	40.596	0.881	-2.22	-2.11
				835.0	41.500	0.900	40.572	0.884	-2.24	-1.78
				836.5	41.500	0.901	40.558	0.885	-2.27	-1.78
				836.6	41.500	0.901	40.558	0.885	-2.27	-1.78
				841.5	41.500	0.906	40.522	0.888	-2.36	-1.99
				844.0	41.500	0.910	40.504	0.890	-2.40	-2.20
				846.6	41.500	0.912	40.489	0.891	-2.44	-2.30
				848.8	41.500	0.914	40.463	0.893	-2.50	-2.30
Aug. 14. 2020	835 Body	21.6	21.4	821.5	55.255	0.969	53.493	0.992	-3.19	2.37
				824.2	55.243	0.969	53.466	0.994	-3.22	2.58
				826.4	55.235	0.969	53.440	0.997	-3.25	2.89
				829.0	55.223	0.970	53.414	0.999	-3.28	2.99
				831.5	55.216	0.970	53.387	1.002	-3.31	3.30
				835.0	55.200	0.970	53.348	1.005	-3.36	3.61
				836.5	55.197	0.971	53.332	1.007	-3.38	3.71
				836.6	55.197	0.971	53.332	1.007	-3.38	3.71
				841.5	55.182	0.977	53.288	1.011	-3.43	3.48
				844.0	55.172	0.981	53.254	1.014	-3.48	3.36
				846.6	55.166	0.984	53.227	1.017	-3.51	3.35
				848.8	55.160	0.986	53.209	1.018	-3.54	3.25
Aug. 19. 2020	1 800 Head	21.2	21.0	1712.4	40.126	1.350	39.133	1.330	-2.47	-1.48
				1720.0	40.114	1.354	39.099	1.336	-2.53	-1.33
				1732.4	40.097	1.361	39.037	1.345	-2.64	-1.18
				1732.5	40.097	1.361	39.037	1.344	-2.64	-1.25
				1745.0	40.079	1.369	38.955	1.353	-2.80	-1.17
				1752.6	40.069	1.373	38.888	1.358	-2.95	-1.09
				1770.0	40.043	1.383	38.703	1.370	-3.35	-0.94
				1800.0	40.000	1.400	38.604	1.403	-3.49	0.21
				1712.4	53.596	1.464	52.332	1.415	-2.36	-3.35
Aug. 21. 2020	1 800 Body	21.7	21.5	1720.0	53.580	1.469	52.305	1.422	-2.38	-3.20
				1732.4	53.556	1.477	52.264	1.432	-2.41	-3.05
				1732.5	53.556	1.477	52.264	1.432	-2.41	-3.05
				1745.0	53.530	1.485	52.227	1.443	-2.43	-2.83
				1752.6	53.516	1.489	52.205	1.450	-2.45	-2.62
				1770.0	53.480	1.501	52.172	1.468	-2.45	-2.20
				1800.0	53.300	1.520	52.126	1.501	-2.20	-1.25
Aug. 18. 2020	1 900 Head	21.5	20.9	1850.2	40.000	1.400	39.083	1.400	-2.29	0.00
				1852.4	40.000	1.400	39.080	1.402	-2.30	0.14
				1860.0	40.000	1.400	39.064	1.409	-2.34	0.64
				1880.0	40.000	1.400	39.008	1.428	-2.48	2.00
				1900.0	40.000	1.400	38.944	1.447	-2.64	3.36
				1907.6	40.000	1.400	38.918	1.454	-2.71	3.86
				1909.8	40.000	1.400	38.912	1.455	-2.72	3.93
Aug. 20. 2020	1 900 Body	21.4	21.2	1850.2	53.300	1.520	54.424	1.507	2.11	-0.86
				1852.4	53.300	1.520	54.420	1.509	2.10	-0.72
				1860.0	53.300	1.520	54.398	1.515	2.06	-0.33
				1880.0	53.300	1.520	54.361	1.534	1.99	0.92
				1900.0	53.300	1.520	54.329	1.554	1.93	2.24
				1907.6	53.300	1.520	54.317	1.561	1.91	2.70
				1909.8	53.300	1.520	54.316	1.563	1.91	2.83
Aug. 24. 2020	2 450 Head	21.4	21.1	2402.0	39.282	1.757	38.347	1.723	-2.38	-1.94
				2412.0	39.265	1.766	38.325	1.735	-2.39	-1.76
				2437.0	39.222	1.788	38.260	1.765	-2.45	-1.29
				2441.0	39.215	1.792	38.246	1.770	-2.47	-1.23
				2450.0	39.200	1.800	38.224	1.780	-2.49	-1.11
				2462.0	39.184	1.813	38.193	1.792	-2.53	-1.16
				2467.0	39.177	1.818	38.180	1.798	-2.54	-1.10
				2472.0	39.171	1.823	38.170	1.802	-2.56	-1.15
Aug. 28. 2020	2 450 Body	21.5	21.3	2480.0	39.160	1.832	38.137	1.811	-2.61	-1.15
				2402.0	52.764	1.904	51.309	1.868	-2.76	-1.89
				2412.0	52.751	1.914	51.277	1.882	-2.79	-1.67
				2437.0	52.717	1.938	51.221	1.914	-2.84	-1.24
				2441.0	52.712	1.941	51.213	1.919	-2.84	-1.13
				2450.0	52.700	1.950	51.191	1.928	-2.86	-1.13
				2462.0	52.685	1.967	51.158	1.937	-2.90	-1.53
				2467.0	52.678	1.974	51.151	1.942	-2.90	-1.62
				2472.0	52.672	1.981	51.138	1.948	-2.91	-1.67
				2480.0	52.662	1.993	51.114	1.956	-2.94	-1.86

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Aug. 31. 2020	2 600 Head	21.7	21.5	2 506.0	39.125	1.860	39.146	1.840	0.05	-1.08
				2 549.5	39.068	1.906	38.975	1.896	-0.24	-0.52
				2 593.0	39.009	1.953	38.888	1.944	-0.31	-0.46
				2 600.0	39.000	1.960	38.865	1.949	-0.35	-0.56
				2 636.5	38.955	2.000	38.699	1.984	-0.66	-0.80
				2 680.0	38.900	2.048	38.585	2.044	-0.81	-0.20
Aug. 31. 2020	2 600 Body	21.7	21.4	2 506.0	52.629	2.029	51.075	1.987	-2.95	-2.07
				2 549.5	52.574	2.090	50.961	2.043	-3.07	-2.25
				2 593.0	52.518	2.153	50.878	2.093	-3.12	-2.79
				2 600.0	52.509	2.163	50.858	2.100	-3.14	-2.91
				2 636.5	52.463	2.214	50.734	2.142	-3.30	-3.25
				2 680.0	52.407	2.276	50.638	2.199	-3.38	-3.38
Aug. 20. 2020	5 200 Body	21.8	21.5	5 180.0	49.041	5.276	47.307	5.377	-3.54	1.91
				5 190.0	49.028	5.288	47.287	5.394	-3.55	2.00
				5 200.0	49.014	5.299	47.270	5.411	-3.56	2.11
				5 210.0	49.001	5.311	47.262	5.427	-3.55	2.18
				5 220.0	48.987	5.323	47.255	5.439	-3.54	2.18
				5 230.0	48.974	5.334	47.238	5.449	-3.54	2.16
				5 240.0	48.960	5.346	47.211	5.461	-3.57	2.15
Aug. 25. 2020	5 300 Head	21.3	21.0	5 260.0	35.940	4.720	35.101	4.819	-2.33	2.10
				5 270.0	35.930	4.730	35.084	4.831	-2.35	2.14
				5 280.0	35.920	4.740	35.076	4.841	-2.35	2.13
				5 290.0	35.910	4.750	35.058	4.851	-2.37	2.13
				5 300.0	35.900	4.760	35.035	4.863	-2.41	2.16
				5 310.0	35.890	4.770	35.018	4.878	-2.43	2.26
				5 320.0	35.880	4.780	35.011	4.890	-2.42	2.30
Aug. 21. 2020	5 300 Body	21.6	21.7	5 260.0	48.933	5.369	48.424	5.486	-1.04	2.18
				5 270.0	48.919	5.381	48.402	5.502	-1.06	2.25
				5 280.0	48.906	5.393	48.389	5.517	-1.06	2.30
				5 290.0	48.892	5.404	48.380	5.529	-1.05	2.31
				5 300.0	48.879	5.416	48.358	5.540	-1.07	2.29
				5 310.0	48.865	5.428	48.331	5.554	-1.09	2.32
				5 320.0	48.851	5.439	48.309	5.570	-1.11	2.41
Aug. 26. 2020	5 600 Head	21.6	21.3	5 500.0	35.650	4.965	35.016	5.121	-1.78	3.14
				5 510.0	35.635	4.976	34.997	5.130	-1.79	3.09
				5 530.0	35.605	4.997	34.954	5.156	-1.83	3.18
				5 550.0	35.575	5.018	34.927	5.178	-1.82	3.19
				5 580.0	35.530	5.049	34.869	5.217	-1.86	3.33
				5 600.0	35.500	5.070	34.849	5.242	-1.83	3.39
				5 660.0	35.440	5.130	34.753	5.309	-1.94	3.49
				5 670.0	35.430	5.140	34.731	5.319	-1.97	3.48
				5 690.0	35.410	5.160	34.694	5.348	-2.02	3.64
				5 710.0	35.390	5.180	34.675	5.372	-2.02	3.71
				5 720.0	35.380	5.190	34.660	5.380	-2.04	3.66
Aug. 24. 2020	5 600 Body	20.9	21.0	5 500.0	48.607	5.650	46.753	5.794	-3.81	2.55
				5 510.0	48.594	5.661	46.729	5.808	-3.84	2.60
				5 530.0	48.566	5.685	46.690	5.839	-3.86	2.71
				5 550.0	48.539	5.708	46.665	5.861	-3.86	2.68
				5 580.0	48.499	5.743	46.590	5.903	-3.94	2.79
				5 600.0	48.471	5.766	46.556	5.928	-3.95	2.81
				5 660.0	48.390	5.836	46.534	6.009	-3.84	2.96
				5 670.0	48.376	5.848	46.515	6.020	-3.85	2.94
				5 690.0	48.349	5.872	46.457	6.049	-3.91	3.01
				5 710.0	48.322	5.895	46.418	6.075	-3.94	3.05
				5 720.0	48.309	5.907	46.385	6.090	-3.98	3.10

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Aug. 27. 2020	5 800 Head	21.4	21.2	5 745.0	35.355	5.215	34.133	5.393	-3.46	3.41
				5 755.0	35.345	5.225	34.124	5.405	-3.45	3.44
				5 775.0	35.325	5.245	34.091	5.424	-3.49	3.41
				5 785.0	35.315	5.255	34.068	5.437	-3.53	3.46
				5 795.0	35.305	5.265	34.049	5.452	-3.56	3.55
				5 800.0	35.300	5.270	34.042	5.460	-3.56	3.61
				5 825.0	35.275	5.296	34.027	5.487	-3.54	3.61
Aug. 25. 2020	5 800 Body	20.6	20.5	5 745.0	48.275	5.936	47.144	5.952	-2.34	0.27
				5 755.0	48.261	5.947	47.125	5.968	-2.35	0.35
				5 775.0	48.234	5.971	47.096	5.994	-2.36	0.39
				5 785.0	48.220	5.982	47.076	6.006	-2.37	0.40
				5 795.0	48.207	5.994	47.054	6.021	-2.39	0.45
				5 800.0	48.200	6.000	47.045	6.028	-2.40	0.47
				5 825.0	48.166	6.029	47.008	6.066	-2.40	0.61

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):

$$Y = \frac{j2\omega\epsilon_r\epsilon_0}{[\ln(b/a)]^2} \int_a^b \int_a^b \int_0^\pi \cos\phi' \frac{\exp[-j\omega r(\mu_0\epsilon_r\epsilon_0)^{1/2}]}{r} d\phi' d\rho' d\rho$$

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 $\pm 10\%$ of the specifications at using the SAR Dipole kit(s). (Graphic Plots Attached)

Table 10.2.1 System Verification Results (1g)

SYSTEM DIPOLE VERIFICATION TARGET & MEASURED												
SAR System #	Freq. [MHz]	SAR Dipole kits	Date(s)	Tissue Type	Ambient Temp. [°C]	Liquid Temp. [°C]	Probe S/N	Input Power (mW)	1 W Target SAR _{1g} (W/kg)	Measured SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation [%]
C	750	D750V3, SN:1049	Aug. 18. 2020	Head	21.5	21.7	3328	250	8.47	2.11	8.44	-0.35
C	750	D750V3, SN:1049	Aug. 19. 2020	Body	21.7	21.7	3328	250	8.43	2.11	8.44	0.12
C	835	D835V2, SN:4d159	Aug. 13. 2020	Head	20.9	21.1	3328	250	9.47	2.35	9.40	-0.74
C	835	D835V2, SN:4d159	Aug. 14. 2020	Body	21.6	21.4	3328	250	9.50	2.41	9.64	1.47
D	1 800	D1800V2, SN:2d202	Aug. 19. 2020	Head	21.2	21.0	3933	100	39.6	3.87	38.70	-2.27
D	1 800	D1800V2, SN:2d202	Aug. 21. 2020	Body	21.7	21.5	3933	100	39.0	3.91	39.10	0.26
D	1 900	D1900V2, SN:5d176	Aug. 18. 2020	Head	21.5	20.9	3933	100	39.3	3.84	38.40	-2.29
D	1 900	D1900V2, SN:5d176	Aug. 20. 2020	Body	21.4	21.2	3933	100	38.9	4.02	40.20	3.34
D	2 450	D2450V2, SN: 726	Aug. 24. 2020	Head	21.4	21.1	3933	100	51.2	5.19	51.90	1.37
D	2 450	D2450V2, SN: 726	Aug. 28. 2020	Body	21.5	21.3	3933	100	52.0	5.06	50.60	-2.69
D	2 600	D2600V2, SN: 1103	Aug. 31. 2020	Head	21.7	21.5	3933	100	57.8	5.71	57.10	-1.21
D	2 600	D2600V2, SN: 1103	Aug. 31. 2020	Body	21.7	21.4	3933	100	55.8	5.49	54.90	-1.61
C	5 200	D5GHZV2, SN:1212	Aug. 20. 2020	Body	21.8	21.5	3866	100	72.8	7.60	76.00	4.40
D	5 300	D5GHZV2, SN:1212	Aug. 25. 2020	Head	21.3	21.0	3933	100	81.3	8.29	82.90	1.97
C	5 300	D5GHZV2, SN:1212	Aug. 21. 2020	Body	21.6	21.7	3866	100	72.8	7.51	75.10	3.16
D	5 500	D5GHZV2, SN:1212	Aug. 26. 2020	Head	21.6	21.3	3933	100	86.3	8.84	88.40	2.43
C	5 500	D5GHZV2, SN:1212	Aug. 24. 2020	Body	20.9	21.0	3866	100	78.6	7.88	78.80	0.25
D	5 600	D5GHZV2, SN:1212	Aug. 26. 2020	Head	21.6	21.3	3933	100	83.3	8.54	85.40	2.52
C	5 600	D5GHZV2, SN:1212	Aug. 24. 2020	Body	20.9	21.0	3866	100	77.6	8.06	80.60	3.87
D	5 800	D5GHZV2, SN:1212	Aug. 27. 2020	Head	21.4	21.2	3933	100	81.5	8.44	84.40	3.56
C	5 800	D5GHZV2, SN:1212	Aug. 25. 2020	Body	20.6	20.5	3866	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 [%]
C	5 300	D5GHZV2, SN:1212	Aug. 21. 2020	Body	21.6	21.7	3866	100	20.2	2.09	20.90	3.47
C	5 500	D5GHZV2, SN:1212	Aug. 24. 2020	Body	20.9	21.0	3866	100	21.6	2.17	21.70	0.46
C	5 600	D5GHZV2, SN:1212	Aug. 24. 2020	Body	20.9	21.0	3866	100	21.4	2.24	22.40	4.67
C	5 800	D5GHZV2, SN:1212	Aug. 25. 2020	Body	20.6	20.5	3866	100	20.2	2.08	20.80	2.97

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.

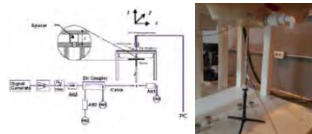


Figure 10.1 Dipole Verification Test Setup Diagram & Photo

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	34.00	32.60	0.090	Left Touch	FCC #1	1	1:8.3	0.007	1.380	0.010	A1
836.6	190	GSM850	GSM	34.00	32.60	0.140	Right Touch	FCC #1	1	1:8.3	0.005	1.380	0.007	
836.6	190	GSM850	GSM	34.00	32.60	0.120	Left Tilt	FCC #1	1	1:8.3	0.006	1.380	0.008	
836.6	190	GSM850	GSM	34.00	32.60	0.190	Right Tilt	FCC #1	1	1:8.3	0.005	1.380	0.007	
836.6	190	GSM850	GPRS	29.00	28.40	0.130	Left Touch	FCC #1	4	1:2.075	0.008	1.148	0.009	A72
836.6	190	GSM850	GPRS	29.00	28.40	0.060	Right Touch	FCC #1	4	1:2.075	0.006	1.148	0.007	
836.6	190	GSM850	GPRS	29.00	28.40	0.110	Left Tilt	FCC #1	4	1:2.075	0.006	1.148	0.007	
836.6	190	GSM850	GPRS	29.00	28.40	0.120	Right Tilt	FCC #1	4	1:2.075	0.007	1.148	0.008	
836.6	190	GSM850	GPRS	29.00	28.40	0.080	Left Touch	FCC #1	4	1:2.075	0.035	1.148	0.040	A2
836.6	190	GSM850	GPRS	29.00	28.40	0.140	Left Touch	FCC #1	4	1:2.075	0.032	1.148	0.037	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

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													
1880.0	661	PCS1900	PCS	31.00	30.80	0.110	Left Touch	FCC #1	1	1:8.3	0.039	1.047	0.041	A3
1880.0	661	PCS1900	PCS	31.00	30.80	-0.090	Right Touch	FCC #1	1	1:8.3	0.049	1.047	0.051	
1880.0	661	PCS1900	PCS	31.00	30.80	0.170	Left Tilt	FCC #1	1	1:8.3	0.044	1.047	0.046	
1880.0	661	PCS1900	PCS	31.00	30.80	0.030	Right Tilt	FCC #1	1	1:8.3	0.033	1.047	0.035	
1880.0	661	PCS1900	GPRS	28.00	27.20	0.090	Left Touch	FCC #1	3	1:2.77	0.054	1.202	0.065	A73
1880.0	661	PCS1900	GPRS	28.00	27.20	0.030	Right Touch	FCC #1	3	1:2.77	0.055	1.202	0.066	
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.140	Left Tilt	FCC #1	3	1:2.77	0.048	1.202	0.058	
1880.0	661	PCS1900	GPRS	28.00	27.20	0.160	Right Tilt	FCC #1	3	1:2.77	0.035	1.202	0.042	
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.050	Right Touch	FCC #1	3	1:2.77	0.062	1.202	0.075	A4
1880.0	661	PCS1900	GPRS	28.00	27.20	0.180	Right Touch	FCC #1	3	1:2.77	0.059	1.202	0.071	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.3 WCDMA 850 Head SAR

MEASUREMENT RESULTS													
FREQUENCY		Mode/ Band	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	25.22	0.080	Left Touch	FCC #1	1:1	0.041	1.067	0.044	A74
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.120	Right Touch	FCC #1	1:1	0.032	1.067	0.034	
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.130	Left Tilt	FCC #1	1:1	0.040	1.067	0.043	
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.130	Right Tilt	FCC #1	1:1	0.034	1.067	0.036	
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.010	Left Touch	FCC #1	1:1	0.147	1.067	0.157	A5
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.000	Left Touch	FCC #1	1:1	0.132	1.067	0.141	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.4 WCDMA 1900 Head SAR

MEASUREMENT RESULTS													
FREQUENCY		Mode/ Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch												
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.130	Left Touch	FCC #1	1:1	0.105	1.026	0.108	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.090	Right Touch	FCC #1	1:1	0.122	1.026	0.125	A6
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.030	Left Tilt	FCC #1	1:1	0.091	1.026	0.093	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.110	Right Tilt	FCC #1	1:1	0.075	1.026	0.077	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.180	Right Touch	FCC #1	1:1	0.113	1.026	0.116	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.030	Right Touch	FCC #1	1:1	0.118	1.026	0.121	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.5 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	25.32	0.140	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.039	1.042	0.041	A75
707.5	23095	LTE B12	10	24.50	24.14	0.080	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.026	1.086	0.028	
707.5	23095	LTE B12	10	25.50	25.32	0.180	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.037	1.042	0.039	
707.5	23095	LTE B12	10	24.50	24.14	0.110	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.019	1.086	0.021	
707.5	23095	LTE B12	10	25.50	25.32	0.120	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.026	1.042	0.027	
707.5	23095	LTE B12	10	24.50	24.14	-0.030	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.021	1.086	0.023	
707.5	23095	LTE B12	10	25.50	25.32	0.120	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.029	1.042	0.030	
707.5	23095	LTE B12	10	24.50	24.14	0.100	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.016	1.086	0.017	
707.5	23095	LTE B12	10	25.50	25.32	0.160	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.102	1.042	0.106	A7
707.5	23095	LTE B12	10	25.50	25.32	0.190	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.092	1.042	0.096	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.6 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	25.45	0.130	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.056	1.012	0.057	A76
782.0	23230	LTE B13	10	24.50	23.86	0.090	1	Left Touch	FCC #1	QPSK	25	25	1:1	0.035	1.159	0.041	
782.0	23230	LTE B13	10	25.50	25.45	0.090	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.037	1.012	0.037	
782.0	23230	LTE B13	10	24.50	23.86	0.000	1	Right Touch	FCC #1	QPSK	25	25	1:1	0.022	1.159	0.025	
782.0	23230	LTE B13	10	25.50	25.45	0.080	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.026	1.012	0.026	
782.0	23230	LTE B13	10	24.50	23.86	0.190	1	Left Tilt	FCC #1	QPSK	25	25	1:1	0.019	1.159	0.022	
782.0	23230	LTE B13	10	25.50	25.45	0.170	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.031	1.012	0.031	
782.0	23230	LTE B13	10	24.50	23.86	0.130	1	Right Tilt	FCC #1	QPSK	25	25	1:1	0.017	1.159	0.020	
782.0	23230	LTE B13	10	25.50	25.45	0.080	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.149	1.012	0.151	A8
782.0	23230	LTE B13	10	25.50	25.45	0.110	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.134	1.012	0.136	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.7 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	25.36	-0.060	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.040	1.033	0.041	A77
836.5	20525	LTE B5	10	24.50	23.88	0.180	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.025	1.153	0.029	
836.5	20525	LTE B5	10	25.50	25.36	0.190	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.038	1.033	0.039	
836.5	20525	LTE B5	10	24.50	23.88	0.110	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.021	1.153	0.024	
836.5	20525	LTE B5	10	25.50	25.36	0.110	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.045	1.033	0.046	
836.5	20525	LTE B5	10	24.50	23.88	0.130	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.027	1.153	0.031	
836.5	20525	LTE B5	10	25.50	25.36	0.150	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.036	1.033	0.037	
836.5	20525	LTE B5	10	24.50	23.88	0.160	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.022	1.153	0.025	
836.5	20525	LTE B5	10	25.50	25.36	-0.090	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.146	1.033	0.151	A9
836.5	20525	LTE B5	10	25.50	25.36	-0.180	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.131	1.033	0.135	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.8 LTE Band 66 (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																
1 770.0	132572	LTE B66	20	25.50	25.34	0.130	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.086	1.038	0.089	A78
1 770.0	132572	LTE B66	20	24.50	24.14	0.080	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.081	1.086	0.088	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.150	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.075	1.038	0.078	
1 770.0	132572	LTE B66	20	24.50	24.14	0.110	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.066	1.086	0.072	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.040	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.063	1.038	0.065	
1 770.0	132572	LTE B66	20	24.50	24.14	0.070	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.056	1.086	0.061	
1 770.0	132572	LTE B66	20	25.50	25.34	0.110	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.065	1.038	0.067	
1 770.0	132572	LTE B66	20	24.50	24.14	-0.080	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.061	1.086	0.066	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.070	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.093	1.038	0.097	A10
1 770.0	132572	LTE B66	20	25.50	25.34	0.190	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.090	1.038	0.093	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.9 LTE Band 2 (PCS) 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																
1 860.0	18700	LTE B2	20	25.00	24.93	0.120	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.070	1.016	0.071	A11
1 860.0	18700	LTE B2	20	24.00	23.69	0.080	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.044	1.074	0.047	
1 860.0	18700	LTE B2	20	25.00	24.93	0.130	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.058	1.016	0.059	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.090	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.047	1.074	0.050	
1 860.0	18700	LTE B2	20	25.00	24.93	0.140	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.089	1.016	0.090	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.060	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.054	1.074	0.058	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.140	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.063	1.016	0.064	
1 860.0	18700	LTE B2	20	24.00	23.69	0.010	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.029	1.074	0.031	
1 860.0	18700	LTE B2	20	25.00	24.93	0.180	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.065	1.016	0.066	A12
1 860.0	18700	LTE B2	20	25.00	24.93	0.150	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.088	1.016	0.089	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
2. Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.1.10 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	24.00	23.75	0.010	0	Left Touch	FCC #1	QPSK	1	50	1:1.58	0.044	1.059	0.047	A79
2 506.0	39750	LTE B41	20	23.00	22.65	-0.110	1	Left Touch	FCC #1	QPSK	50	25	1:1.58	0.031	1.084	0.034	
2 506.0	39750	LTE B41	20	24.00	23.75	0.190	0	Right Touch	FCC #1	QPSK	1	50	1:1.58	0.021	1.059	0.022	
2 506.0	39750	LTE B41	20	23.00	22.65	0.000	1	Right Touch	FCC #1	QPSK	50	25	1:1.58	0.019	1.084	0.021	
2 506.0	39750	LTE B41	20	24.00	23.75	0.030	0	Left Tilt	FCC #1	QPSK	1	50	1:1.58	0.016	1.059	0.017	
2 506.0	39750	LTE B41	20	23.00	22.65	-0.090	1	Left Tilt	FCC #1	QPSK	50	25	1:1.58	0.012	1.084	0.013	
2 506.0	39750	LTE B41	20	24.00	23.75	0.130	0	Right Tilt	FCC #1	QPSK	1	50	1:1.58	0.012	1.059	0.013	A12
2 506.0	39750	LTE B41	20	23.00	22.65	0.040	1	Right Tilt	FCC #1	QPSK	50	25	1:1.58	0.009	1.084	0.010	
2 506.0	39750	LTE B41	20	24.00	23.75	0.000	0	Left Touch	FCC #1	QPSK	1	50	1:1.58	0.076	1.059	0.080	
2 506.0	39750	LTE B41	20	24.00	23.75	0.000	0	Left Touch	FCC #1	QPSK	1	50	1:1.58	0.071	1.059	0.075	
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 11.1.11 DTS 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														
2 412.0	1	802.11b (Ant.1)	17.00	15.66	0.120	Left Touch	FCC #2	0.080	1	98.4	0.077	1.361	1.016	0.107	A80
2 412.0	1	802.11b (Ant.1)	17.00	15.66	0.190	Right Touch	FCC #2	0.187	1	98.4	0.192	1.361	1.016	0.266	
2 412.0	1	802.11b (Ant.1)	17.00	15.66	0.120	Left Tilt	FCC #2	0.061	1	98.4	0.065	1.361	1.016	0.090	
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.080	Right Tilt	FCC #2	0.159	1	98.4	0.154	1.361	1.016	0.213	A13
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.080	Right Touch	FCC #2	0.345	1	98.4	0.378	1.361	1.016	0.523	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.020	Left Touch	FCC #2	0.053	1	99.3	0.051	1.432	1.007	0.074	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	0.190	Right Touch	FCC #2	0.081	1	99.3	0.088	1.432	1.007	0.127	A81
2 412.0	1	802.11b (Ant.2)	17.00	15.44	0.050	Left Tilt	FCC #2	0.074	1	99.3	0.069	1.432	1.007	0.100	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.170	Right Tilt	FCC #2	0.105	1	99.3	0.111	1.432	1.007	0.160	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	0.150	Right Tilt	FCC #2	0.356	1	99.3	0.378	1.432	1.007	0.545	A14
2 412.0	1	802.11g (MIMO)	19.00	17.96	0.090	Left Touch	FCC #2	0.092	1	97.7	0.087	1.432	1.024	0.128	A82
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.190	Right Touch	FCC #2	0.186	1	97.7	0.191	1.432	1.024	0.280	
2 412.0	1	802.11g (MIMO)	19.00	17.96	0.060	Left Tilt	FCC #2	0.116	1	97.7	0.109	1.432	1.024	0.160	
2 412.0	1	802.11g (MIMO)	19.00	17.96	0.080	Right Tilt	FCC #2	0.212	1	97.7	0.232	1.432	1.024	0.340	A15
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.110	Right Tilt	FCC #2	0.334	1	97.7	0.387	1.432	1.024	0.567	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.

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												
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.523	2 412.0	802.11g	OFDM	16.0	0.794	0.415	X	
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.523	2 412.0	802.11n	OFDM	15.0	0.631	0.330	X	
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.523	2 412.0	802.11ac	OFDM	15.0	0.631	0.330	X	
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.545	2 412.0	802.11g	OFDM	16.0	0.794	0.433	X	
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.545	2 412.0	802.11n	OFDM	15.0	0.631	0.344	X	
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.545	2 412.0	802.11ac	OFDM	15.0	0.631	0.344	X	
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.567	2 412.0	802.11n	OFDM	18.0	0.794	0.450	X	
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.567	2 412.0	802.11ac	OFDM	18.0	0.794	0.450	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 11.1.12 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														
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.090	Left Touch	FCC #2	0.185	6	97.6	0.223	1.262	1.025	0.288	A16
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.100	Right Touch	FCC #2	0.281	6	97.6	0.349	1.262	1.025	0.451	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.170	Left Tilt	FCC #2	0.213	6	97.6	0.251	1.262	1.025	0.325	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.140	Right Tilt	FCC #2	0.280	6	97.6	0.298	1.262	1.025	0.385	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.090	Right Touch	FCC #2	0.175	6	97.6	0.192	1.262	1.025	0.248	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.000	Left Touch	FCC #2	0.025	6	98.1	0.025	1.352	1.019	0.034	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.000	Right Touch	FCC #2	0.077	6	98.1	0.072	1.352	1.019	0.099	A83
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.000	Left Tilt	FCC #2	0.049	6	98.1	0.039	1.352	1.019	0.054	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.000	Right Tilt	FCC #2	0.090	6	98.1	0.088	1.352	1.019	0.121	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	-0.120	Right Tilt	FCC #2	0.154	6	98.1	0.203	1.352	1.019	0.280	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.070	Left Touch	FCC #2	0.263	6	97.6	0.308	1.352	1.025	0.427	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.190	Right Touch	FCC #2	0.332	6	97.6	0.359	1.352	1.025	0.497	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.080	Left Tilt	FCC #2	0.295	6	97.6	0.294	1.352	1.025	0.407	A18
5 260.0	52	802.11a (MIMO)	20.00	18.85	-0.010	Right Tilt	FCC #2	0.297	6	97.6	0.340	1.352	1.025	0.471	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.080	Right Touch	FCC #2	0.162	6	97.6	0.205	1.352	1.025	0.284	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.

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											
5 260.0	52	802.11a (Ant.1)	OFDM	17.00	0.451	5 220	802.11a	OFDM	17.00	1.000	0.451	X
5 300.0	60	802.11a (Ant.2)	OFDM	17.00	0.280	5 200	802.11a	OFDM	17.00	1.000	0.280	X
5 260.0	52	802.11a (MIMO)	OFDM	20.00	0.497	5 220	802.11a	OFDM	20.00	1.000	0.497	X
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak						Head 1.6 W/kg (mW/g) averaged over 1 gram						
Uncontrolled Exposure/General Population Exposure												

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 11.1.13 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														
5 660.0	132	802.11a (Ant.1)	17.00	16.10	-0.180	Left Touch	FCC #2	0.194	6	97.6	0.244	1.230	1.025	0.308	A19
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.010	Right Touch	FCC #2	0.296	6	97.6	0.315	1.230	1.025	0.397	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	-0.050	Left Tilt	FCC #2	0.262	6	97.6	0.314	1.230	1.025	0.396	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.110	Right Tilt	FCC #2	0.216	6	97.6	0.221	1.230	1.025	0.279	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	-0.050	Right Touch	FCC #2	0.067	6	97.6	0.096	1.230	1.025	0.121	A20
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.060	Left Touch	FCC #2	0.072	6	98.1	0.070	1.455	1.019	0.104	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.000	Right Touch	FCC #2	0.061	6	98.1	0.061	1.455	1.019	0.090	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	-0.070	Left Tilt	FCC #2	0.076	6	98.1	0.080	1.455	1.019	0.119	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.000	Right Tilt	FCC #2	0.071	6	98.1	0.075	1.455	1.019	0.111	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.000	Left Tilt	FCC #2	0.047	6	98.1	0.051	1.455	1.019	0.076	A21
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.020	Left Touch	FCC #2	0.113	6	97.6	0.129	1.455	1.025	0.192	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.070	Right Touch	FCC #2	0.305	6	97.6	0.317	1.455	1.025	0.473	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.010	Left Tilt	FCC #2	0.124	6	97.6	0.144	1.455	1.025	0.215	
5 660.0	132	802.11a (MIMO)	20.00	18.73	-0.110	Right Tilt	FCC #2	0.220	6	97.6	0.226	1.455	1.025	0.337	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.160	Right Touch	FCC #2	0.084	6	97.6	0.104	1.455	1.025	0.155	A22
5 745.0	149	802.11a (Ant.1)	17.00	15.99	-0.150	Left Touch	FCC #2	0.148	6	97.6	0.163	1.262	1.025	0.211	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.120	Right Touch	FCC #2	0.224	6	97.6	0.225	1.262	1.025	0.291	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.090	Left Tilt	FCC #2	0.134	6	97.6	0.141	1.262	1.025	0.182	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.090	Right Tilt	FCC #2	0.172	6	97.6	0.159	1.262	1.025	0.206	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	-0.110	Right Touch	FCC #2	0.117	6	97.6	0.094	1.262	1.025	0.122	A23
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.060	Left Touch	FCC #2	0.059	6	98.1	0.034	1.419	1.019	0.049	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.000	Right Touch	FCC #2	0.042	6	98.1	0.026	1.419	1.019	0.038	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	-0.050	Left Tilt	FCC #2	0.055	6	98.1	0.036	1.419	1.019	0.052	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.000	Right Tilt	FCC #2	0.032	6	98.1	0.024	1.419	1.019	0.035	A24
5 745.0	149	802.11a (MIMO)	20.00	18.75	0.030	Left Touch	FCC #2	0.138	6	97.6	0.162	1.419	1.025	0.236	
5 745.0	149	802.11a (MIMO)	20.00	18.75	0.090	Right Touch	FCC #2	0.246	6	97.6	0.240	1.419	1.025	0.349	
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.090	Left Tilt	FCC #2	0.136	6	97.6	0.157	1.419	1.025	0.228	
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.010	Right Tilt	FCC #2	0.194	6	97.6	0.182	1.419	1.025	0.265	
5 745.0	149	802.11a (MIMO)	20.00	18.75	0.070	Right Touch	FCC #2	0.129	6	97.6	0.124	1.419	1.025	0.180	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.

Table 11.1.14 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	10.35	10.13	-0.170	Left Touch	FCC #2	1	76.8	0.025	1.052	1.302	0.034	A25
2 441.0	39	Bluetooth	10.35	10.13	0.090	Right Touch	FCC #2	1	76.8	0.083	1.052	1.302	0.114	
2 441.0	39	Bluetooth	10.35	10.13	-0.130	Left Tilt	FCC #2	1	76.8	0.019	1.052	1.302	0.026	
2 441.0	39	Bluetooth	10.35	10.13	-0.060	Right Tilt	FCC #2	1	76.8	0.044	1.052	1.302	0.060	
2 441.0	39	Bluetooth	10.35	10.13	0.120	Right Touch	FCC #2	1	76.8	0.053	1.052	1.302	0.073	
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. Purple entries represent additional Head SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.

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	34.00	32.60	0.120	10 mm [Front]	FCC #1	1	1:8.3	0.038	1.380	0.052	A26
836.6	190	GSM850	GSM	34.00	32.60	0.000	10 mm [Rear]	FCC #1	1	1:8.3	0.102	1.380	0.141	
836.6	190	GSM850	GPRS	29.00	28.40	-0.010	10 mm [Front]	FCC #1	4	1:2.075	0.041	1.148	0.047	
836.6	190	GSM850	GPRS	29.00	28.40	-0.040	10 mm [Rear]	FCC #1	4	1:2.075	0.111	1.148	0.127	A27
836.6	190	GSM850	GPRS	29.00	28.40	0.110	10 mm [Rear]	FCC #1	4	1:2.075	0.106	1.148	0.122	
1880.0	661	PCS1900	PCS	31.00	30.80	-0.090	10 mm [Front]	FCC #1	1	1:8.3	0.198	1.047	0.207	A28
1880.0	661	PCS1900	PCS	31.00	30.80	-0.140	10 mm [Rear]	FCC #1	1	1:8.3	0.366	1.047	0.383	
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.170	10 mm [Front]	FCC #1	3	1:2.77	0.224	1.202	0.269	
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.090	10 mm [Rear]	FCC #1	3	1:2.77	0.431	1.202	0.518	
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.130	10 mm [Front]	FCC #1	N/A	1:1	0.215	1.067	0.229	A30
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.060	10 mm [Rear]	FCC #1	N/A	1:1	0.545	1.067	0.582	
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.110	10 mm [Rear]	FCC #1	N/A	1:1	0.520	1.067	0.555	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.070	10 mm [Front]	FCC #1	N/A	1:1	0.373	1.026	0.383	A31
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.150	10 mm [Rear]	FCC #1	N/A	1:1	0.701	1.026	0.719	
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 SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.2.2 LTE B12, B13, B5, B66 Body-Worn 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	25.32	0.010	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.079	1.042	0.082	A32
707.5	23095	LTE B12	10	24.50	24.14	-0.030	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.055	1.086	0.060	
707.5	23095	LTE B12	10	25.50	25.32	0.030	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.258	1.042	0.269	
707.5	23095	LTE B12	10	24.50	24.14	0.050	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.166	1.086	0.180	
707.5	23095	LTE B12	10	25.50	25.32	0.070	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.245	1.042	0.255	
782.0	23230	LTE B13	10	25.50	25.45	-0.020	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.182	1.012	0.184	A33
782.0	23230	LTE B13	10	24.50	23.86	-0.070	1	10 mm [Front]	FCC #1	QPSK	25	25	1:1	0.114	1.159	0.132	
782.0	23230	LTE B13	10	25.50	25.45	-0.070	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.449	1.012	0.454	
782.0	23230	LTE B13	10	24.50	23.86	-0.020	1	10 mm [Rear]	FCC #1	QPSK	25	25	1:1	0.288	1.159	0.334	
782.0	23230	LTE B13	10	25.50	25.45	0.120	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.405	1.012	0.410	
836.5	20525	LTE B5	10	25.50	25.36	-0.000	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.219	1.033	0.226	A34
836.5	20525	LTE B5	10	24.50	23.88	-0.010	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.131	1.153	0.151	
836.5	20525	LTE B5	10	25.50	25.36	-0.030	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.516	1.033	0.533	
836.5	20525	LTE B5	10	24.50	23.88	-0.040	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.322	1.153	0.371	
836.5	20525	LTE B5	10	25.50	25.36	0.110	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.492	1.033	0.508	
1770.0	132572	LTE B66	20	25.50	25.34	-0.100	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.411	1.038	0.427	A35
1770.0	132572	LTE B66	20	24.50	24.14	-0.030	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.320	1.086	0.348	
1720.0	132072	LTE B66	20	25.50	25.19	-0.090	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.817	1.074	0.877	
1745.0	132322	LTE B66	20	25.50	25.18	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.800	1.076	0.861	
1770.0	132572	LTE B66	20	25.50	25.34	-0.110	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.823	1.038	0.854	
1770.0	132572	LTE B66	20	24.50	24.14	-0.080	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.633	1.086	0.687	
1770.0	132572	LTE B66	20	24.50	24.11	-0.020	1	10 mm [Rear]	FCC #1	QPSK	100	0	1:1	0.614	1.094	0.672	
1770.0	132572	LTE B66	20	25.50	25.34	-0.050	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.820	1.038	0.851	
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 SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.
2. Yellow entries represent variability measurements.

Table 11.2.3 LTE B2, B41 Body-Worn 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																
1 860.0	18700	LTE B2	20	25.00	24.93	-0.090	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.310	1.016	0.315	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.070	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.238	1.074	0.256	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.674	1.016	0.685	A36
1 860.0	18700	LTE B2	20	24.00	23.69	-0.050	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.527	1.074	0.566	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.170	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1.58	0.142	1.059	0.150	
2 506.0	39750	LTE B41	20	23.00	22.65	-0.160	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1.58	0.114	1.084	0.124	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.090	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1.58	0.369	1.059	0.391	A37
2 506.0	39750	LTE B41	20	23.00	22.65	-0.080	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1.58	0.296	1.084	0.321	
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 11.2.4 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														
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.170	10 mm [Front]	FCC #2	0.056	1	98.4	0.053	1.361	1.016	0.073	A38
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.100	10 mm [Rear]	FCC #2	0.121	1	98.4	0.123	1.361	1.016	0.170	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.040	10 mm [Front]	FCC #2	0.017	1	99.3	0.018	1.432	1.007	0.026	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.130	10 mm [Rear]	FCC #2	0.061	1	99.3	0.063	1.432	1.007	0.091	A39
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.150	10 mm [Front]	FCC #2	0.050	1	97.7	0.050	1.432	1.024	0.073	A40
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.070	10 mm [Rear]	FCC #2	0.091	1	97.7	0.093	1.432	1.024	0.136	
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											
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.170	2 412.0	802.11g	OFDM	16.0	0.794	0.135	X
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.170	2 412.0	802.11n	OFDM	15.0	0.631	0.107	X
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.170	2 412.0	802.11ac	OFDM	15.0	0.631	0.107	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.091	2 412.0	802.11g	OFDM	16.0	0.794	0.072	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.091	2 412.0	802.11n	OFDM	15.0	0.631	0.057	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.091	2 412.0	802.11ac	OFDM	15.0	0.631	0.057	X
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.136	2 412.0	802.11n	OFDM	18.0	0.794	0.108	X
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.136	2 412.0	802.11ac	OFDM	18.0	0.794	0.108	X
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Body 1.6 W/kg (mW/g) averaged over 1 gram						

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

Table 11.2.5 UNII Body-Worn SAR

MEASUREMENT RESULTS															
FREQUENCY		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														
5 260.0	52	802.11a (Ant.1)	17.00	15.99	-0.010	10 mm [Front]	FCC #2	0.038	6	97.6	0.035	1.262	1.025	0.045	A41
5 260.0	52	802.11a (Ant.1)	17.00	15.99	-0.070	10 mm [Rear]	FCC #2	0.241	6	97.6	0.242	1.262	1.025	0.313	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	-0.110	10 mm [Front]	FCC #2	0.005	6	98.1	0.011	1.352	1.019	0.015	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.110	10 mm [Rear]	FCC #2	0.136	6	98.1	0.134	1.352	1.019	0.185	A42
5 260.0	52	802.11a (MIMO)	20.00	18.85	-0.050	10 mm [Front]	FCC #2	0.032	6	97.6	0.032	1.352	1.025	0.044	A43
5 260.0	52	802.11a (MIMO)	20.00	18.85	-0.040	10 mm [Rear]	FCC #2	0.265	6	97.6	0.252	1.352	1.025	0.349	
ANSI / IEEE C95.1-2005- SAFETY LIMIT												Body			
Spatial Peak												1.6 W/kg (mW/g)			
Uncontrolled Exposure/General Population Exposure												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											
5 260.0	52	802.11a (Ant.1)	OFDM	17.00	0.313	5 180	802.11a	OFDM	17.00	1.000	0.313	X
5 300.0	60	802.11a (Ant.2)	OFDM	17.00	0.185	5 180	802.11a	OFDM	17.00	1.000	0.185	X
5 260.0	52	802.11a (MIMO)	OFDM	20.00	0.349	5 180	802.11a	OFDM	20.00	1.000	0.349	X
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure						Body 1.6 W/kg (mW/g) averaged over 1 gram						

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

Table 11.2.6 UNII Body-Worn SAR

MEASUREMENT RESULTS															
FREQUENCY		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														
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.000	10 mm [Front]	FCC #2	0.032	6	97.6	0.024	1.230	1.025	0.030	A44
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.000	10 mm [Rear]	FCC #2	0.172	6	97.6	0.178	1.230	1.025	0.224	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	-0.090	10 mm [Front]	FCC #2	0.006	6	98.1	0.009	1.455	1.019	0.013	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	-0.030	10 mm [Rear]	FCC #2	0.112	6	98.1	0.105	1.455	1.019	0.156	A45
5 660.0	132	802.11a (MIMO)	20.00	18.73	-0.080	10 mm [Front]	FCC #2	0.061	6	97.6	0.048	1.455	1.025	0.072	A46
5 660.0	132	802.11a (MIMO)	20.00	18.73	-0.140	10 mm [Rear]	FCC #2	0.273	6	97.6	0.247	1.455	1.025	0.368	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	-0.180	10 mm [Front]	FCC #2	0.044	6	97.6	0.019	1.262	1.025	0.025	A47
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.090	10 mm [Rear]	FCC #2	0.116	6	97.6	0.097	1.262	1.025	0.125	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.110	10 mm [Front]	FCC #2	0.021	6	98.1	0.008	1.419	1.019	0.012	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.070	10 mm [Rear]	FCC #2	0.151	6	98.1	0.146	1.419	1.019	0.211	A48
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.130	10 mm [Front]	FCC #2	0.043	6	97.6	0.026	1.419	1.025	0.038	A49
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.170	10 mm [Rear]	FCC #2	0.244	6	97.6	0.233	1.419	1.025	0.339	
ANSI / IEEE C95.1-1992- SAFETY LIMIT												Body			
Spatial Peak												1.6 W/kg (mW/g)			
Uncontrolled Exposure/General Population Exposure												averaged over 1 gram			

Table 11.2.7 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	10.35	10.13	0.160	10 mm [Front]	FCC #2	1	76.8	0.013	1.052	1.302	0.018	A50
2 441.0	39	Bluetooth	10.35	10.13	-0.090	10 mm [Rear]	FCC #2	1	76.8	0.022	1.052	1.302	0.030	
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	29.00	28.40	-0.040	10 mm [Bottom]	FCC #1	4	1:2.075	0.052	1.148	0.060	A28	
836.6	190	GSM850	GPRS	29.00	28.40	-0.010	10 mm [Front]	FCC #1	4	1:2.075	0.041	1.148	0.047		
836.6	190	GSM850	GPRS	29.00	28.40	-0.040	10 mm [Rear]	FCC #1	4	1:2.075	0.111	1.148	0.127		
836.6	190	GSM850	GPRS	29.00	28.40	-0.140	10 mm [Right]	FCC #1	4	1:2.075	0.071	1.148	0.082		
836.6	190	GSM850	GPRS	29.00	28.40	0.110	10 mm [Rear]	FCC #1	4	1:2.075	0.106	1.148	0.122		
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.190	10 mm [Bottom]	FCC #1	3	1:2.77	0.515	1.202	0.619	A51	
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.170	10 mm [Front]	FCC #1	3	1:2.77	0.224	1.202	0.269		
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.090	10 mm [Rear]	FCC #1	3	1:2.77	0.431	1.202	0.518		
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.150	10 mm [Left]	FCC #1	3	1:2.77	0.142	1.202	0.171		
1880.0	661	PCS1900	GPRS	28.00	27.20	-0.120	10 mm [Bottom]	FCC #1	3	1:2.77	0.510	1.202	0.613		
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.170	10 mm [Bottom]	FCC #1	N/A	1:1	0.244	1.067	0.260	A31	
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.130	10 mm [Front]	FCC #1	N/A	1:1	0.215	1.067	0.229		
836.6	4183	WCDMA 850	RMC	25.50	25.22	0.060	10 mm [Rear]	FCC #1	N/A	1:1	0.545	1.067	0.582		
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.190	10 mm [Right]	FCC #1	N/A	1:1	0.300	1.067	0.320		
836.6	4183	WCDMA 850	RMC	25.50	25.22	-0.110	10 mm [Rear]	FCC #1	N/A	1:1	0.520	1.067	0.555		
1852.4	9262	WCDMA 1900	RMC	25.00	24.90	-0.030	10 mm [Bottom]	FCC #1	N/A	1:1	1.070	1.023	1.095	A52	
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	0.040	10 mm [Bottom]	FCC #1	N/A	1:1	0.981	1.026	1.007		
1907.6	9538	WCDMA 1900	RMC	25.00	24.72	0.030	10 mm [Bottom]	FCC #1	N/A	1:1	1.000	1.067	1.067		
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.070	10 mm [Front]	FCC #1	N/A	1:1	0.373	1.026	0.383		
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.150	10 mm [Rear]	FCC #1	N/A	1:1	0.701	1.026	0.719		
1880.0	9400	WCDMA 1900	RMC	25.00	24.89	-0.040	10 mm [Left]	FCC #1	N/A	1:1	0.274	1.026	0.281		
1852.4	9262	WCDMA 1900	RMC	25.00	24.90	0.190	10 mm [Bottom]	FCC #1	N/A	1:1	1.010	1.023	1.033		
1852.4	9262	WCDMA 1900	RMC	25.00	24.90	0.070	10 mm [Bottom]	FCC #1	N/A	1:1	1.050	1.023	1.074		
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 SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.
2. Yellow entries represent variability measurements.

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	25.32	0.110	0	10 mm (Bottom)	FCC #1	QPSK	1	25	1:1	0.108	1.042	0.113	A34
707.5	23095	LTE B12	10	24.50	24.14	0.010	1	10 mm (Bottom)	FCC #1	QPSK	25	12	1:1	0.064	1.086	0.070	
707.5	23095	LTE B12	10	25.50	25.32	0.010	0	10 mm (Front)	FCC #1	QPSK	1	25	1:1	0.079	1.042	0.082	
707.5	23095	LTE B12	10	24.50	24.14	-0.030	1	10 mm (Front)	FCC #1	QPSK	25	12	1:1	0.055	1.086	0.060	
707.5	23095	LTE B12	10	25.50	25.32	0.030	0	10 mm (Rear)	FCC #1	QPSK	1	25	1:1	0.258	1.042	0.269	
707.5	23095	LTE B12	10	24.50	24.14	0.050	1	10 mm (Rear)	FCC #1	QPSK	25	12	1:1	0.166	1.086	0.180	
707.5	23095	LTE B12	10	25.50	25.32	-0.180	0	10 mm (Right)	FCC #1	QPSK	1	25	1:1	0.103	1.042	0.107	
707.5	23095	LTE B12	10	24.50	24.14	-0.160	1	10 mm (Right)	FCC #1	QPSK	25	12	1:1	0.068	1.086	0.074	
707.5	23095	LTE B12	10	25.50	25.32	0.070	0	10 mm (Right)	FCC #1	QPSK	1	25	1:1	0.245	1.042	0.255	
782.0	23230	LTE B13	10	25.50	25.45	0.040	0	10 mm (Bottom)	FCC #1	QPSK	1	25	1:1	0.175	1.012	0.177	A35
782.0	23230	LTE B13	10	24.50	23.86	0.090	1	10 mm (Bottom)	FCC #1	QPSK	25	25	1:1	0.111	1.159	0.129	
782.0	23230	LTE B13	10	25.50	25.45	-0.020	0	10 mm (Front)	FCC #1	QPSK	1	25	1:1	0.182	1.012	0.184	
782.0	23230	LTE B13	10	24.50	23.86	-0.070	1	10 mm (Front)	FCC #1	QPSK	25	25	1:1	0.114	1.159	0.132	
782.0	23230	LTE B13	10	25.50	25.45	-0.070	0	10 mm (Rear)	FCC #1	QPSK	1	25	1:1	0.449	1.012	0.454	
782.0	23230	LTE B13	10	24.50	23.86	-0.020	1	10 mm (Rear)	FCC #1	QPSK	25	25	1:1	0.288	1.159	0.334	
782.0	23230	LTE B13	10	25.50	25.45	-0.180	0	10 mm (Right)	FCC #1	QPSK	1	25	1:1	0.161	1.012	0.163	
782.0	23230	LTE B13	10	24.50	23.86	-0.140	1	10 mm (Right)	FCC #1	QPSK	25	25	1:1	0.104	1.159	0.121	
782.0	23230	LTE B13	10	24.50	25.45	0.120	0	10 mm (Rear)	FCC #1	QPSK	1	25	1:1	0.405	1.012	0.410	
836.5	20525	LTE B5	10	25.50	25.36	-0.010	0	10 mm (Bottom)	FCC #1	QPSK	1	25	1:1	0.236	1.033	0.244	A36
836.5	20525	LTE B5	10	24.50	23.88	0.030	1	10 mm (Bottom)	FCC #1	QPSK	25	12	1:1	0.147	1.153	0.169	
836.5	20525	LTE B5	10	25.50	25.36	-0.000	0	10 mm (Front)	FCC #1	QPSK	1	25	1:1	0.219	1.033	0.226	
836.5	20525	LTE B5	10	24.50	23.88	-0.010	1	10 mm (Front)	FCC #1	QPSK	25	12	1:1	0.131	1.153	0.151	
836.5	20525	LTE B5	10	25.50	25.36	-0.030	0	10 mm (Rear)	FCC #1	QPSK	1	25	1:1	0.516	1.033	0.533	
836.5	20525	LTE B5	10	24.50	23.88	-0.040	1	10 mm (Rear)	FCC #1	QPSK	25	12	1:1	0.322	1.153	0.371	
836.5	20525	LTE B5	10	25.50	25.36	-0.160	0	10 mm (Right)	FCC #1	QPSK	1	25	1:1	0.254	1.033	0.262	
836.5	20525	LTE B5	10	24.50	23.88	-0.130	1	10 mm (Right)	FCC #1	QPSK	25	12	1:1	0.152	1.153	0.175	
836.5	20525	LTE B5	10	25.50	25.36	0.110	0	10 mm (Rear)	FCC #1	QPSK	1	25	1:1	0.492	1.033	0.508	
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 SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.3.3 LTE B66 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																
1 720.0	132072	LTE B66	20	25.50	25.19	-0.050	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	1.000	1.074	1.074	A53
1 745.0	132322	LTE B66	20	25.50	25.18	-0.020	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	1.020	1.076	1.098	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.010	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	1.130	1.038	1.173	
1 770.0	132572	LTE B66	20	24.50	24.14	-0.010	1	10 mm (Bottom)	FCC #1	QPSK	50	25	1:1	0.750	1.086	0.815	
1 770.0	132572	LTE B66	20	24.50	24.11	0.080	1	10 mm (Bottom)	FCC #1	QPSK	100	0	1:1	0.698	1.094	0.764	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.100	0	10 mm (Front)	FCC #1	QPSK	1	50	1:1	0.411	1.038	0.427	
1 770.0	132572	LTE B66	20	24.50	24.14	-0.030	1	10 mm (Front)	FCC #1	QPSK	50	25	1:1	0.320	1.086	0.348	
1 720.0	132072	LTE B66	20	25.50	25.19	-0.090	0	10 mm (Rear)	FCC #1	QPSK	1	50	1:1	0.817	1.074	0.877	
1 745.0	132322	LTE B66	20	25.50	25.18	-0.000	0	10 mm (Rear)	FCC #1	QPSK	1	50	1:1	0.800	1.076	0.861	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.110	0	10 mm (Rear)	FCC #1	QPSK	1	50	1:1	0.823	1.038	0.854	
1 770.0	132572	LTE B66	20	24.50	24.14	-0.080	1	10 mm (Rear)	FCC #1	QPSK	50	25	1:1	0.633	1.086	0.687	
1 770.0	132572	LTE B66	20	24.50	24.11	-0.020	1	10 mm (Rear)	FCC #1	QPSK	100	0	1:1	0.614	1.094	0.672	
1 770.0	132572	LTE B66	20	25.50	25.34	-0.190	0	10 mm (Left)	FCC #1	QPSK	1	50	1:1	0.357	1.038	0.371	
1 770.0	132572	LTE B66	20	24.50	24.14	-0.190	1	10 mm (Left)	FCC #1	QPSK	50	25	1:1	0.280	1.086	0.304	
1 770.0	132572	LTE B66	20	25.50	25.34	0.040	0	10 mm (Left)	FCC #1	QPSK	1	50	1:1	1.010	1.038	1.048	
1 770.0	132572	LTE B66	20	25.50	25.34	0.000	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	1.120	1.038	1.163	
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak									Body 1.6 W/kg (mW/g)								
Uncontrolled Exposure/General Population Exposure									averaged over 1 gram								

Note(s):

- Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.
- Yellow entries represent variability measurements.

Table 11.3.4 LTE B2 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																
1 860.0	18700	LTE B2	20	25.00	24.93	-0.020	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	0.829	1.016	0.842	A54
1 860.0	18700	LTE B2	20	24.00	23.69	-0.030	1	10 mm (Bottom)	FCC #1	QPSK	50	25	1:1	0.506	1.074	0.543	
1 860.0	18700	LTE B2	20	24.00	23.60	-0.040	1	10 mm (Bottom)	FCC #1	QPSK	100	0	1:1	0.510	1.096	0.559	
1 880.0	18900	LTE B2	20	25.00	24.89	-0.030	0	10 mm (Bottom)	FCC #1	QPSK	1	0	1:1	0.773	1.026	0.793	
1 900.0	19100	LTE B2	20	25.00	24.63	-0.050	0	10 mm (Bottom)	FCC #1	QPSK	1	0	1:1	0.703	1.089	0.766	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.090	0	10 mm (Front)	FCC #1	QPSK	1	50	1:1	0.310	1.016	0.315	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.070	1	10 mm (Front)	FCC #1	QPSK	50	25	1:1	0.238	1.074	0.256	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.010	0	10 mm (Rear)	FCC #1	QPSK	1	50	1:1	0.674	1.016	0.685	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.050	1	10 mm (Rear)	FCC #1	QPSK	50	25	1:1	0.527	1.074	0.566	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.130	0	10 mm (Left)	FCC #1	QPSK	1	50	1:1	0.246	1.016	0.250	
1 860.0	18700	LTE B2	20	24.00	23.69	-0.160	1	10 mm (Left)	FCC #1	QPSK	50	25	1:1	0.195	1.074	0.209	
1 860.0	18700	LTE B2	20	25.00	24.93	0.030	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	0.821	1.016	0.834	
1 860.0	18700	LTE B2	20	25.00	24.93	-0.050	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1	0.823	1.016	0.836	
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak									Body 1.6 W/kg (mW/g) averaged over 1 gram								
Uncontrolled Exposure/General Population Exposure																	

Note(s):

- Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.
- Yellow entries represent variability measurements.

Table 11.3.5 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	24.00	23.75	-0.170	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1.58	0.453	1.059	0.480	A55
2 506.0	39750	LTE B41	20	23.00	22.65	-0.140	1	10 mm (Bottom)	FCC #1	QPSK	50	25	1:1.58	0.402	1.084	0.436	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.170	0	10 mm (Front)	FCC #1	QPSK	1	50	1:1.58	0.142	1.059	0.150	
2 506.0	39750	LTE B41	20	23.00	22.65	-0.160	1	10 mm (Front)	FCC #1	QPSK	50	25	1:1.58	0.114	1.084	0.124	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.090	0	10 mm (Rear)	FCC #1	QPSK	1	50	1:1.58	0.369	1.059	0.391	
2 506.0	39750	LTE B41	20	23.00	22.65	-0.080	1	10 mm (Rear)	FCC #1	QPSK	50	25	1:1.58	0.296	1.084	0.321	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.170	0	10 mm (Left)	FCC #1	QPSK	1	50	1:1.58	0.097	1.059	0.103	
2 506.0	39750	LTE B41	20	23.00	22.65	-0.030	1	10 mm (Left)	FCC #1	QPSK	50	25	1:1.58	0.077	1.084	0.083	
2 506.0	39750	LTE B41	20	24.00	23.75	-0.160	0	10 mm (Bottom)	FCC #1	QPSK	1	50	1:1.58	0.439	1.059	0.465	
ANSI / IEEE C95.1-1992- SAFETY LIMIT Spatial Peak										Body 1.6 W/kg (mW/g) averaged over 1 gram							
Uncontrolled Exposure/General Population Exposure																	

Note(s):

- Blue entries represent SIM2 (This device supports Dual SIM and is 1 RF Path.) measurements.

Table 11.3.6 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														
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.140	10 mm [Top]	FCC #2	0.067	1	98.4	0.064	1.361	1.016	0.089	A56
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.170	10 mm [Front]	FCC #2	0.056	1	98.4	0.053	1.361	1.016	0.073	
2 412.0	1	802.11b (Ant.1)	17.00	15.66	-0.100	10 mm [Rear]	FCC #2	0.121	1	98.4	0.123	1.361	1.016	0.170	
2 412.0	1	802.11b (Ant.1)	17.00	15.66	0.160	10 mm [Left]	FCC #2	0.203	1	98.4	0.212	1.361	1.016	0.293	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.050	10 mm [Top]	FCC #2	0.071	1	99.3	0.074	1.432	1.007	0.107	A57
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.040	10 mm [Front]	FCC #2	0.017	1	99.3	0.018	1.432	1.007	0.026	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.130	10 mm [Rear]	FCC #2	0.061	1	99.3	0.063	1.432	1.007	0.091	
2 412.0	1	802.11b (Ant.2)	17.00	15.44	-0.170	10 mm [Left]	FCC #2	0.008	1	99.3	0.010	1.432	1.007	0.014	
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.080	10 mm [Top]	FCC #2	0.108	1	97.7	0.110	1.432	1.024	0.161	A58
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.150	10 mm [Front]	FCC #2	0.050	1	97.7	0.050	1.432	1.024	0.073	
2 412.0	1	802.11g (MIMO)	19.00	17.96	-0.070	10 mm [Rear]	FCC #2	0.091	1	97.7	0.093	1.432	1.024	0.136	
2 412.0	1	802.11g (MIMO)	19.00	17.96	0.160	10 mm [Left]	FCC #2	0.149	1	97.7	0.157	1.432	1.024	0.230	
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											
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.293	2 412.0	802.11g	OFDM	16.0	0.794	0.233	X
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.293	2 412.0	802.11n	OFDM	15.0	0.631	0.185	X
2 412.0	1	802.11b (Ant.1)	DSSS	17.0	0.293	2 412.0	802.11ac	OFDM	15.0	0.631	0.185	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.107	2 412.0	802.11g	OFDM	16.0	0.794	0.085	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.107	2 412.0	802.11n	OFDM	15.0	0.631	0.068	X
2 412.0	1	802.11b (Ant.2)	DSSS	17.0	0.107	2 412.0	802.11ac	OFDM	15.0	0.631	0.068	X
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.230	2 412.0	802.11n	OFDM	18.0	0.794	0.183	X
2 412.0	1	802.11g (MIMO)	OFDM	19.0	0.230	2 412.0	802.11ac	OFDM	18.0	0.794	0.183	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 11.3.7 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														
5 220.0	44	802.11a (Ant.1)	17.00	16.07	0.140	10 mm [Top]	FCC #2	0.089	6	97.6	0.089	1.239	1.025	0.113	A59
5 220.0	44	802.11a (Ant.1)	17.00	16.07	0.000	10 mm [Front]	FCC #2	0.044	6	97.6	0.032	1.239	1.025	0.041	
5 220.0	44	802.11a (Ant.1)	17.00	16.07	-0.080	10 mm [Rear]	FCC #2	0.271	6	97.6	0.299	1.239	1.025	0.380	
5 220.0	44	802.11a (Ant.1)	17.00	16.07	0.160	10 mm [Left]	FCC #2	0.102	6	97.6	0.092	1.239	1.025	0.117	
5 200.0	40	802.11a (Ant.2)	17.00	15.87	-0.190	10 mm [Top]	FCC #2	0.030	6	98.1	0.023	1.297	1.019	0.030	A60
5 200.0	40	802.11a (Ant.2)	17.00	15.87	0.000	10 mm [Front]	FCC #2	0.001	6	98.1	0.006	1.297	1.019	0.008	
5 200.0	40	802.11a (Ant.2)	17.00	15.87	-0.020	10 mm [Rear]	FCC #2	0.093	6	98.1	0.092	1.297	1.019	0.122	
5 200.0	40	802.11a (Ant.2)	17.00	15.87	-0.000	10 mm [Left]	FCC #2	0.059	6	98.1	0.045	1.297	1.019	0.059	
5 220.0	44	802.11a (MIMO)	20.00	18.93	-0.000	10 mm [Top]	FCC #2	0.113	6	97.6	0.117	1.297	1.025	0.155	A61
5 220.0	44	802.11a (MIMO)	20.00	18.93	0.000	10 mm [Front]	FCC #2	0.055	6	97.6	0.040	1.297	1.025	0.053	
5 220.0	44	802.11a (MIMO)	20.00	18.93	-0.130	10 mm [Rear]	FCC #2	0.297	6	97.6	0.316	1.297	1.025	0.420	
5 220.0	44	802.11a (MIMO)	20.00	18.93	-0.020	10 mm [Left]	FCC #2	0.133	6	97.6	0.125	1.297	1.025	0.166	
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 11.3.8 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)	17.00	15.99	0.060	10 mm [Top]	FCC #2	0.051	6	97.6	0.039	1.262	1.025	0.050	A49
5 745.0	149	802.11a (Ant.1)	17.00	15.99	-0.180	10 mm [Front]	FCC #2	0.044	6	97.6	0.019	1.262	1.025	0.025	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.090	10 mm [Rear]	FCC #2	0.116	6	97.6	0.097	1.262	1.025	0.125	
5 745.0	149	802.11a (Ant.1)	17.00	15.99	0.180	10 mm [Left]	FCC #2	0.079	6	97.6	0.071	1.262	1.025	0.092	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	-0.150	10 mm [Top]	FCC #2	0.011	6	98.1	0.009	1.419	1.019	0.013	A50
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.110	10 mm [Front]	FCC #2	0.021	6	98.1	0.008	1.419	1.019	0.012	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	0.070	10 mm [Rear]	FCC #2	0.151	6	98.1	0.146	1.419	1.019	0.211	
5 745.0	149	802.11a (Ant.2)	17.00	15.48	-0.160	10 mm [Left]	FCC #2	0.076	6	98.1	0.067	1.419	1.019	0.097	
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.000	10 mm [Top]	FCC #2	0.057	6	97.6	0.046	1.419	1.025	0.067	A51
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.130	10 mm [Front]	FCC #2	0.043	6	97.6	0.026	1.419	1.025	0.038	
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.170	10 mm [Rear]	FCC #2	0.244	6	97.6	0.233	1.419	1.025	0.339	
5 745.0	149	802.11a (MIMO)	20.00	18.75	-0.010	10 mm [Left]	FCC #2	0.143	6	97.6	0.139	1.419	1.025	0.202	
ANSI / IEEE C95.1-1992- SAFETY LIMIT											Body				
Spatial Peak											1.6 W/kg (mW/g)				
Uncontrolled Exposure/General Population Exposure											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 11.3.9 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	10.35	10.13	-0.110	10 mm [Top]	FCC #2	1	76.8	0.007	1.052	1.302	0.010	
2 441.0	39	Bluetooth	10.35	10.13	0.160	10 mm [Front]	FCC #2	1	76.8	0.013	1.052	1.302	0.018	
2 441.0	39	Bluetooth	10.35	10.13	-0.090	10 mm [Rear]	FCC #2	1	76.8	0.022	1.052	1.302	0.030	
2 441.0	39	Bluetooth	10.35	10.13	-0.030	10 mm [Left]	FCC #2	1	76.8	0.038	1.052	1.302	0.052	A62
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	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 Scaled SAR [W/kg]	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR [W/kg]	Plots #
MHz	Ch														
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.110	0 mm [Top]	FCC #2	0.158	6	97.6	0.215	1.262	1.025	0.278	A63
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.110	0 mm [Front]	FCC #2	0.139	6	97.6	0.144	1.262	1.025	0.186	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	0.010	0 mm [Rear]	FCC #2	0.373	6	97.6	0.390	1.262	1.025	0.504	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	-0.180	0 mm [Left]	FCC #2	0.310	6	97.6	0.346	1.262	1.025	0.447	
5 260.0	52	802.11a (Ant.1)	17.00	15.99	-0.160	0 mm [Rear]	FCC #2	0.347	6	97.6	0.376	1.262	1.025	0.486	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	-0.070	0 mm [Top]	FCC #2	0.097	6	98.1	0.116	1.352	1.019	0.160	A84
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.070	0 mm [Front]	FCC #2	0.028	6	98.1	0.022	1.352	1.019	0.030	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	-0.180	0 mm [Rear]	FCC #2	0.481	6	98.1	0.453	1.352	1.019	0.624	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.100	0 mm [Left]	FCC #2	0.223	6	98.1	0.261	1.352	1.019	0.360	
5 300.0	60	802.11a (Ant.2)	17.00	15.69	0.080	0 mm [Rear]	FCC #2	0.471	6	98.1	0.455	1.352	1.019	0.627	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.070	0 mm [Top]	FCC #2	0.215	6	97.6	0.291	1.352	1.025	0.403	A85
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.150	0 mm [Front]	FCC #2	0.154	6	97.6	0.144	1.352	1.025	0.199	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.050	0 mm [Rear]	FCC #2	0.642	6	97.6	0.658	1.352	1.025	0.911	
5 260.0	52	802.11a (MIMO)	20.00	18.85	-0.140	0 mm [Left]	FCC #2	0.460	6	97.6	0.580	1.352	1.025	0.803	
5 260.0	52	802.11a (MIMO)	20.00	18.85	0.050	0 mm [Rear]	FCC #2	0.689	6	97.6	0.749	1.352	1.025	1.038	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.190	0 mm [Top]	FCC #2	0.098	6	97.6	0.119	1.230	1.019	0.149	A86
5 660.0	132	802.11a (Ant.1)	17.00	16.10	-0.160	0 mm [Front]	FCC #2	0.127	6	97.6	0.125	1.230	1.019	0.157	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.020	0 mm [Rear]	FCC #2	0.390	6	97.6	0.384	1.230	1.019	0.481	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	-0.160	0 mm [Left]	FCC #2	0.257	6	97.6	0.333	1.230	1.019	0.417	
5 660.0	132	802.11a (Ant.1)	17.00	16.10	0.010	0 mm [Rear]	FCC #2	0.498	6	97.6	0.533	1.230	1.019	0.668	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.020	0 mm [Top]	FCC #2	0.072	6	98.1	0.088	1.455	1.019	0.130	A87
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.180	0 mm [Front]	FCC #2	0.035	6	98.1	0.023	1.455	1.019	0.034	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	-0.070	0 mm [Rear]	FCC #2	0.347	6	98.1	0.346	1.455	1.019	0.513	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	-0.060	0 mm [Left]	FCC #2	0.174	6	98.1	0.206	1.455	1.019	0.305	
5 500.0	100	802.11a (Ant.2)	17.00	15.37	0.000	0 mm [Rear]	FCC #2	0.349	6	98.1	0.348	1.455	1.019	0.516	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.060	0 mm [Top]	FCC #2	0.130	6	97.6	0.159	1.455	1.019	0.236	A68
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.130	0 mm [Front]	FCC #2	0.147	6	97.6	0.150	1.455	1.019	0.222	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.170	0 mm [Rear]	FCC #2	0.706	6	97.6	0.672	1.455	1.019	0.996	
5 660.0	132	802.11a (MIMO)	20.00	18.73	-0.100	0 mm [Left]	FCC #2	0.344	6	97.6	0.441	1.455	1.019	0.654	
5 660.0	132	802.11a (MIMO)	20.00	18.73	0.050	0 mm [Rear]	FCC #2	0.539	6	97.6	0.657	1.455	1.019	0.974	
5 825.0	165	802.11a (Ant.1)	17.00	15.74	-0.110	0 mm [Top]	FCC #2	0.110	6	97.6	0.125	1.337	1.025	0.171	A88
5 825.0	165	802.11a (Ant.1)	17.00	15.74	0.150	0 mm [Front]	FCC #2	0.113	6	97.6	0.122	1.337	1.025	0.167	
5 825.0	165	802.11a (Ant.1)	17.00	15.74	-0.180	0 mm [Rear]	FCC #2	0.315	6	97.6	0.310	1.337	1.025	0.425	
5 825.0	165	802.11a (Ant.1)	17.00	15.74	0.100	0 mm [Left]	FCC #2	0.275	6	97.6	0.305	1.337	1.025	0.418	
5 825.0	165	802.11a (Ant.1)	17.00	15.74	-0.080	0 mm [Rear]	FCC #2	0.318	6	97.6	0.311	1.337	1.025	0.426	
5 825.0	165	802.11a (Ant.2)	17.00	15.18	-0.110	0 mm [Top]	FCC #2	0.033	6	98.1	0.022	1.521	1.019	0.034	A70
5 825.0	165	802.11a (Ant.2)	17.00	15.18	-0.150	0 mm [Front]	FCC #2	0.035	6	98.1	0.028	1.521	1.019	0.043	
5 825.0	165	802.11a (Ant.2)	17.00	15.18	-0.020	0 mm [Rear]	FCC #2	0.397	6	98.1	0.432	1.521	1.019	0.670	
5 825.0	165	802.11a (Ant.2)	17.00	15.18	0.150	0 mm [Left]	FCC #2	0.169	6	98.1	0.172	1.521	1.019	0.267	
5 825.0	165	802.11a (Ant.2)	17.00	15.18	0.030	0 mm [Rear]	FCC #2	0.338	6	98.1	0.387	1.521	1.019	0.600	
5 825.0	165	802.11a (MIMO)	20.00	18.48	-0.100	0 mm [Top]	FCC #2	0.118	6	97.6	0.139	1.521	1.025	0.217	A71
5 825.0	165	802.11a (MIMO)	20.00	18.48	-0.120	0 mm [Front]	FCC #2	0.150	6	97.6	0.166	1.521	1.025	0.259	
5 825.0	165	802.11a (MIMO)	20.00	18.48	0.140	0 mm [Rear]	FCC #2	0.742	6	97.6	0.675	1.521	1.025	1.052	
5 825.0	165	802.11a (MIMO)	20.00	18.48	0.110	0 mm [Left]	FCC #2	0.419	6	97.6	0.423	1.521	1.025	0.659	
5 825.0	165	802.11a (MIMO)	20.00	18.48	0.060	0 mm [Rear]	FCC #2	0.527	6	97.6	0.634	1.521	1.025	0.988	
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. Purple entries represent additional Phablet SAR Test Position (Screen swivel mode) at the worst case position of normal mode. It basically does not contain (transmit) antennas in the swivel display section.
 2. 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 > $\frac{1}{2}$ 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 $> \frac{1}{2}$ 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 due 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 physical test configuration is ≤ 1.6 W/kg. The different test position 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 ^A	Yes	N/A	Yes	^A 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 ^A	Yes	N/A	Yes	^A Bluetooth Tethering is considered.
8	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes ^A	Yes	N/A	Yes	^A Bluetooth Tethering is considered.
9	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes ^A	Yes	N/A	Yes	^A 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 ^A	Yes	Yes	Yes	^A 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	WCDMA + 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	WCDMA + BT 2.4 GHz Ant.1 + Wi-Fi 2.4 GHz Ant.2	Yes ^A	Yes	Yes	Yes	^A Bluetooth Tethering is considered.
17	WCDMA + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes ^A	Yes	Yes	Yes	^A Bluetooth Tethering is considered. [^] Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission.
18	WCDMA + Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes ^A	Yes	Yes	Yes	^A 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 ^A	Yes	Yes	Yes	^A 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 ^A	Yes	Yes	Yes	^A Bluetooth Tethering is considered.
26	LTE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes ^A	Yes	Yes	Yes	^A 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 ^A	Yes	Yes	Yes	^A 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 ^{A*}	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered. ^A 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 ^{A*}	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered. ^A Bluetooth Tethering is considered.
35	GPRS/EDGE + Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes ^{A*}	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered. ^A 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 ^{A*}	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered. ^A 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 ^A	Yes	N/A	Yes	^A Bluetooth Tethering is considered.
39	Bluetooth 2.4 GHz + Wi-Fi 5 GHz	Yes ^A	Yes	N/A	Yes	^A Bluetooth Tethering is considered.
40	Bluetooth 2.4 GHz + Wi-Fi 5 GHz MIMO	Yes ^A	Yes	N/A	Yes	^A Bluetooth Tethering is considered.
Notes: 1. Wi-Fi 2.4GHz is supported Hotspot and Wi-Fi-Direct(GO/GC). 2. Wi-Fi 5GHz is supported Hotspot in UNII B1,B3 and Wi-Fi-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. Wi-Fi 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, Wi-Fi Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Simultaneous transmission scenarios involving Wi-Fi 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)		
Head SAR	GSM 850	Left Touch	0.010	0.107	0.034	0.117	0.044	0.151
		Right Touch	0.007	0.523	0.099	0.530	0.106	0.629
		Left Tilt	0.008	0.090	0.054	0.098	0.062	0.152
		Right Tilt	0.007	0.213	0.280	0.220	0.287	0.500
	GPRS 850	Left Touch	0.040	0.107	0.034	0.147	0.074	0.181
		Right Touch	0.007	0.523	0.099	0.530	0.106	0.629
		Left Tilt	0.007	0.090	0.054	0.097	0.061	0.151
		Right Tilt	0.008	0.213	0.280	0.221	0.288	0.501
	GSM 1900	Left Touch	0.041	0.107	0.034	0.148	0.075	0.182
		Right Touch	0.051	0.523	0.099	0.574	0.150	0.673
		Left Tilt	0.046	0.090	0.054	0.136	0.100	0.190
		Right Tilt	0.035	0.213	0.280	0.248	0.315	0.529
	GPRS 1900	Left Touch	0.065	0.107	0.034	0.172	0.099	0.208
		Right Touch	0.075	0.523	0.099	0.598	0.174	0.697
		Left Tilt	0.058	0.090	0.054	0.148	0.112	0.202
		Right Tilt	0.042	0.213	0.280	0.255	0.322	0.535
	WCDMA 850	Left Touch	0.157	0.107	0.034	0.264	0.191	0.298
		Right Touch	0.034	0.523	0.099	0.557	0.133	0.656
		Left Tilt	0.043	0.090	0.054	0.133	0.097	0.187
		Right Tilt	0.036	0.213	0.280	0.249	0.316	0.529
	WCDMA 1900	Left Touch	0.108	0.107	0.034	0.215	0.142	0.249
		Right Touch	0.125	0.523	0.099	0.648	0.224	0.747
		Left Tilt	0.093	0.090	0.054	0.183	0.147	0.237
		Right Tilt	0.077	0.213	0.280	0.290	0.357	0.570
	LTE Band 12	Left Touch	0.106	0.107	0.034	0.213	0.140	0.247
		Right Touch	0.039	0.523	0.099	0.562	0.138	0.661
		Left Tilt	0.027	0.090	0.054	0.117	0.081	0.171
		Right Tilt	0.030	0.213	0.280	0.243	0.310	0.523
	LTE Band 13	Left Touch	0.151	0.107	0.034	0.258	0.185	0.292
		Right Touch	0.037	0.523	0.099	0.580	0.136	0.659
		Left Tilt	0.026	0.090	0.054	0.116	0.080	0.170
		Right Tilt	0.031	0.213	0.280	0.244	0.311	0.524
	LTE Band 5	Left Touch	0.041	0.107	0.034	0.148	0.075	0.182
		Right Touch	0.039	0.523	0.099	0.562	0.138	0.661
		Left Tilt	0.151	0.090	0.054	0.241	0.205	0.295
		Right Tilt	0.037	0.213	0.280	0.250	0.317	0.530
	LTE Band 66	Left Touch	0.097	0.107	0.034	0.204	0.131	0.238
		Right Touch	0.078	0.523	0.099	0.601	0.177	0.700
		Left Tilt	0.065	0.090	0.054	0.155	0.119	0.209
		Right Tilt	0.067	0.213	0.280	0.280	0.347	0.560
	LTE Band 2	Left Touch	0.071	0.107	0.034	0.178	0.105	0.212
		Right Touch	0.059	0.523	0.099	0.582	0.158	0.681
		Left Tilt	0.090	0.090	0.054	0.180	0.144	0.234
		Right Tilt	0.064	0.213	0.280	0.277	0.344	0.557
	LTE Band 41	Left Touch	0.080	0.107	0.034	0.187	0.114	0.221
		Right Touch	0.022	0.523	0.099	0.545	0.121	0.644
		Left Tilt	0.017	0.090	0.054	0.107	0.071	0.161
		Right Tilt	0.013	0.213	0.280	0.226	0.293	0.506

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)		
Head SAR	GSM 850	Left Touch	0.010	0.107	0.104	0.117	0.114	0.221
		Right Touch	0.007	0.523	0.090	0.530	0.097	0.620
		Left Tilt	0.008	0.090	0.119	0.098	0.127	0.217
		Right Tilt	0.007	0.213	0.111	0.220	0.118	0.331
	GPRS 850	Left Touch	0.040	0.107	0.104	0.147	0.144	0.251
		Right Touch	0.007	0.523	0.090	0.530	0.097	0.620
		Left Tilt	0.007	0.090	0.119	0.097	0.126	0.216
		Right Tilt	0.008	0.213	0.111	0.221	0.119	0.332
	GSM 1900	Left Touch	0.041	0.107	0.104	0.148	0.145	0.252
		Right Touch	0.051	0.523	0.090	0.574	0.141	0.664
		Left Tilt	0.046	0.090	0.119	0.136	0.165	0.255
		Right Tilt	0.035	0.213	0.111	0.248	0.146	0.359
	GPRS 1900	Left Touch	0.065	0.107	0.104	0.172	0.169	0.276
		Right Touch	0.075	0.523	0.090	0.598	0.165	0.688
		Left Tilt	0.058	0.090	0.119	0.148	0.177	0.267
		Right Tilt	0.042	0.213	0.111	0.255	0.153	0.366
	WCDMA 850	Left Touch	0.157	0.107	0.104	0.264	0.261	0.368
		Right Touch	0.034	0.523	0.090	0.557	0.124	0.647
		Left Tilt	0.043	0.090	0.119	0.133	0.162	0.252
		Right Tilt	0.036	0.213	0.111	0.249	0.147	0.360
	WCDMA 1900	Left Touch	0.108	0.107	0.104	0.215	0.212	0.319
		Right Touch	0.125	0.523	0.090	0.648	0.215	0.738
		Left Tilt	0.093	0.090	0.119	0.183	0.212	0.302
		Right Tilt	0.077	0.213	0.111	0.290	0.188	0.401
	LTE Band 12	Left Touch	0.106	0.107	0.104	0.213	0.210	0.317
		Right Touch	0.039	0.523	0.090	0.582	0.129	0.652
		Left Tilt	0.027	0.090	0.119	0.117	0.146	0.236
		Right Tilt	0.030	0.213	0.111	0.243	0.141	0.354
	LTE Band 13	Left Touch	0.151	0.107	0.104	0.258	0.255	0.362
		Right Touch	0.037	0.523	0.090	0.580	0.127	0.650
		Left Tilt	0.026	0.090	0.119	0.116	0.145	0.235
		Right Tilt	0.031	0.213	0.111	0.244	0.142	0.355
	LTE Band 5	Left Touch	0.041	0.107	0.104	0.148	0.145	0.252
		Right Touch	0.039	0.523	0.090	0.562	0.129	0.652
		Left Tilt	0.151	0.090	0.119	0.241	0.270	0.360
		Right Tilt	0.037	0.213	0.111	0.250	0.148	0.361
	LTE Band 66	Left Touch	0.097	0.107	0.104	0.204	0.201	0.308
		Right Touch	0.078	0.523	0.090	0.601	0.168	0.691
		Left Tilt	0.065	0.090	0.119	0.155	0.184	0.274
		Right Tilt	0.067	0.213	0.111	0.280	0.178	0.391
	LTE Band 2	Left Touch	0.071	0.107	0.104	0.178	0.175	0.282
		Right Touch	0.059	0.523	0.090	0.582	0.149	0.672
		Left Tilt	0.090	0.090	0.119	0.180	0.209	0.299
		Right Tilt	0.064	0.213	0.111	0.277	0.175	0.388
	LTE Band 41	Left Touch	0.080	0.107	0.104	0.187	0.184	0.291
		Right Touch	0.022	0.523	0.090	0.545	0.112	0.635
		Left Tilt	0.017	0.090	0.119	0.107	0.136	0.226
		Right Tilt	0.013	0.213	0.111	0.226	0.124	0.337

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)	1+2	ΣSAR (W/kg)	1+2+3
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.010	0.107	0.049	0.117	0.059	0.166
		Right Touch	0.007	0.523	0.038	0.530	0.045	0.568
		Left Tilt	0.008	0.090	0.052	0.098	0.060	0.150
		Right Tilt	0.007	0.213	0.035	0.220	0.042	0.255
	GPRS 850	Left Touch	0.040	0.107	0.049	0.147	0.089	0.196
		Right Touch	0.007	0.523	0.038	0.530	0.045	0.568
		Left Tilt	0.007	0.090	0.052	0.097	0.059	0.149
		Right Tilt	0.008	0.213	0.035	0.221	0.043	0.256
	GSM 1900	Left Touch	0.041	0.107	0.049	0.148	0.090	0.197
		Right Touch	0.051	0.523	0.038	0.574	0.089	0.612
		Left Tilt	0.046	0.090	0.052	0.136	0.098	0.188
		Right Tilt	0.035	0.213	0.035	0.248	0.070	0.283
	GPRS 1900	Left Touch	0.065	0.107	0.049	0.172	0.114	0.221
		Right Touch	0.075	0.523	0.038	0.598	0.113	0.636
		Left Tilt	0.058	0.090	0.052	0.148	0.110	0.200
		Right Tilt	0.042	0.213	0.035	0.255	0.077	0.290
	WCDMA 850	Left Touch	0.157	0.107	0.049	0.264	0.206	0.313
		Right Touch	0.034	0.523	0.038	0.557	0.072	0.595
		Left Tilt	0.043	0.090	0.052	0.133	0.095	0.185
		Right Tilt	0.036	0.213	0.035	0.249	0.071	0.284
	WCDMA 1900	Left Touch	0.108	0.107	0.049	0.215	0.157	0.264
		Right Touch	0.125	0.523	0.038	0.648	0.163	0.686
		Left Tilt	0.093	0.090	0.052	0.183	0.145	0.235
		Right Tilt	0.077	0.213	0.035	0.290	0.112	0.325
	LTE Band 12	Left Touch	0.106	0.107	0.049	0.213	0.155	0.262
		Right Touch	0.039	0.523	0.038	0.562	0.077	0.600
		Left Tilt	0.027	0.090	0.052	0.117	0.079	0.169
		Right Tilt	0.030	0.213	0.035	0.243	0.065	0.278
	LTE Band 13	Left Touch	0.151	0.107	0.049	0.258	0.200	0.307
		Right Touch	0.037	0.523	0.038	0.560	0.075	0.598
		Left Tilt	0.026	0.090	0.052	0.116	0.078	0.168
		Right Tilt	0.031	0.213	0.035	0.244	0.066	0.279
	LTE Band 5	Left Touch	0.041	0.107	0.049	0.148	0.090	0.197
		Right Touch	0.039	0.523	0.038	0.562	0.077	0.600
		Left Tilt	0.151	0.090	0.052	0.241	0.203	0.293
		Right Tilt	0.037	0.213	0.035	0.250	0.072	0.285
	LTE Band 66	Left Touch	0.097	0.107	0.049	0.204	0.146	0.253
		Right Touch	0.078	0.523	0.038	0.601	0.116	0.639
		Left Tilt	0.065	0.090	0.052	0.155	0.117	0.207
		Right Tilt	0.067	0.213	0.035	0.280	0.102	0.315
	LTE Band 2	Left Touch	0.071	0.107	0.049	0.178	0.120	0.227
		Right Touch	0.059	0.523	0.038	0.582	0.097	0.620
		Left Tilt	0.090	0.090	0.052	0.180	0.142	0.232
		Right Tilt	0.064	0.213	0.035	0.277	0.099	0.312
	LTE Band 41	Left Touch	0.080	0.107	0.049	0.187	0.129	0.236
		Right Touch	0.022	0.523	0.038	0.105	0.069	0.583
		Left Tilt	0.017	0.090	0.052	0.107	0.069	0.159
		Right Tilt	0.013	0.213	0.035	0.226	0.048	0.261

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)	1+2	ΣSAR (W/kg)	1+2+3
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.010	0.034	0.288	0.044	0.298	0.332
		Right Touch	0.007	0.114	0.451	0.121	0.458	0.572
		Left Tilt	0.008	0.026	0.325	0.034	0.333	0.359
		Right Tilt	0.007	0.060	0.385	0.067	0.392	0.452
	GPRS 850	Left Touch	0.040	0.034	0.288	0.074	0.328	0.362
		Right Touch	0.007	0.114	0.451	0.121	0.458	0.572
		Left Tilt	0.007	0.026	0.325	0.033	0.332	0.358
		Right Tilt	0.008	0.060	0.385	0.068	0.393	0.453
	GSM 1900	Left Touch	0.041	0.034	0.288	0.075	0.329	0.363
		Right Touch	0.051	0.114	0.451	0.165	0.502	0.616
		Left Tilt	0.046	0.026	0.325	0.072	0.371	0.397
		Right Tilt	0.035	0.060	0.385	0.095	0.420	0.480
	GPRS 1900	Left Touch	0.065	0.034	0.288	0.099	0.353	0.387
		Right Touch	0.075	0.114	0.451	0.189	0.526	0.640
		Left Tilt	0.058	0.026	0.325	0.084	0.383	0.409
		Right Tilt	0.042	0.060	0.385	0.102	0.427	0.487
	WCDMA 850	Left Touch	0.157	0.034	0.288	0.191	0.445	0.479
		Right Touch	0.034	0.114	0.451	0.148	0.485	0.599
		Left Tilt	0.043	0.026	0.325	0.069	0.368	0.394
		Right Tilt	0.036	0.060	0.385	0.096	0.421	0.481
	WCDMA 1900	Left Touch	0.108	0.034	0.288	0.142	0.396	0.430
		Right Touch	0.125	0.114	0.451	0.239	0.576	0.890
		Left Tilt	0.093	0.026	0.325	0.119	0.418	0.444
		Right Tilt	0.077	0.060	0.385	0.137	0.462	0.522
	LTE Band 12	Left Touch	0.106	0.034	0.288	0.140	0.394	0.428
		Right Touch	0.039	0.114	0.451	0.153	0.490	0.604
		Left Tilt	0.027	0.026	0.325	0.053	0.352	0.378
		Right Tilt	0.030	0.060	0.385	0.090	0.415	0.475
	LTE Band 13	Left Touch	0.151	0.034	0.288	0.185	0.439	0.473
		Right Touch	0.037	0.114	0.451	0.151	0.488	0.602
		Left Tilt	0.026	0.026	0.325	0.052	0.351	0.377
		Right Tilt	0.031	0.060	0.385	0.091	0.416	0.476
	LTE Band 5	Left Touch	0.041	0.034	0.288	0.075	0.329	0.363
		Right Touch	0.039	0.114	0.451	0.153	0.490	0.604
		Left Tilt	0.151	0.026	0.325	0.177	0.476	0.502
		Right Tilt	0.037	0.060	0.385	0.097	0.422	0.482
	LTE Band 66	Left Touch	0.097	0.034	0.288	0.131	0.385	0.419
		Right Touch	0.078	0.114	0.451	0.192	0.529	0.643
		Left Tilt	0.065	0.026	0.325	0.091	0.390	0.416
		Right Tilt	0.067	0.060	0.385	0.127	0.452	0.512
	LTE Band 2	Left Touch	0.071	0.034	0.288	0.105	0.359	0.393
		Right Touch	0.059	0.114	0.451	0.173	0.510	0.624
		Left Tilt	0.090	0.026	0.325	0.116	0.415	0.441
		Right Tilt	0.064	0.060	0.385	0.124	0.449	0.509
	LTE Band 41	Left Touch	0.080	0.034	0.288	0.114	0.368	0.402
		Right Touch	0.022	0.114	0.451	0.136	0.473	0.587
		Left Tilt	0.017	0.026	0.325	0.043	0.342	0.368
		Right Tilt	0.013	0.060	0.385	0.073	0.398	0.458

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)	1+2	ΣSAR (W/kg)	1+2+3
Head SAR	GSM 850	Left Touch	0.010	0.034	0.034	0.044	0.044	0.078
		Right Touch	0.007	0.114	0.020	0.121	0.106	0.220
		Left Tilt	0.008	0.026	0.054	0.034	0.062	0.088
		Right Tilt	0.007	0.060	0.280	0.067	0.287	0.347
	GPRS 850	Left Touch	0.040	0.034	0.034	0.074	0.074	0.108
		Right Touch	0.007	0.114	0.099	0.121	0.106	0.220
		Left Tilt	0.007	0.026	0.054	0.033	0.061	0.087
		Right Tilt	0.008	0.060	0.280	0.068	0.288	0.348
	GSM 1900	Left Touch	0.041	0.034	0.034	0.075	0.075	0.109
		Right Touch	0.051	0.114	0.099	0.155	0.150	0.264
		Left Tilt	0.046	0.026	0.054	0.072	0.100	0.128
		Right Tilt	0.035	0.060	0.280	0.095	0.315	0.375
	GPRS 1900	Left Touch	0.065	0.034	0.034	0.099	0.099	0.133
		Right Touch	0.075	0.114	0.099	0.189	0.174	0.288
		Left Tilt	0.058	0.026	0.054	0.084	0.112	0.138
		Right Tilt	0.042	0.060	0.280	0.102	0.322	0.382
	WCDMA 850	Left Touch	0.157	0.034	0.034	0.191	0.191	0.225
		Right Touch	0.034	0.114	0.099	0.148	0.133	0.247
		Left Tilt	0.043	0.026	0.054	0.069	0.097	0.123
		Right Tilt	0.036	0.060	0.280	0.068	0.280	0.378
	WCDMA 1900	Left Touch	0.108	0.034	0.034	0.142	0.142	0.176
		Right Touch	0.125	0.114	0.099	0.239	0.224	0.338
		Left Tilt	0.093	0.026	0.054	0.119	0.147	0.173
		Right Tilt	0.077	0.060	0.280	0.137	0.357	0.417
	LTE Band 12	Left Touch	0.106	0.034	0.034	0.140	0.140	0.174
		Right Touch	0.039	0.114	0.099	0.153	0.138	0.252
		Left Tilt	0.027	0.026	0.054	0.053	0.081	0.107
		Right Tilt	0.030	0.060	0.280	0.080	0.310	0.370
	LTE Band 13	Left Touch	0.151	0.034	0.034	0.185	0.185	0.219
		Right Touch	0.037	0.114	0.099	0.151	0.136	0.250
		Left Tilt	0.026	0.026	0.054	0.052	0.080	0.106
		Right Tilt	0.031	0.060	0.280	0.091	0.311	0.371
	LTE Band 5	Left Touch	0.041	0.034	0.034	0.075	0.075	0.109
		Right Touch	0.039	0.114	0.099	0.153	0.138	0.252
		Left Tilt	0.026	0.026	0.054	0.053	0.081	0.107
		Right Tilt	0.037	0.060	0.280	0.091	0.311	0.371
	LTE Band 66	Left Touch	0.097	0.034	0.034	0.131	0.131	0.165
		Right Touch	0.078	0.114	0.099	0.192	0.177	0.291
		Left Tilt	0.065	0.026	0.054	0.091	0.119	0.145
		Right Tilt	0.067	0.060	0.280	0.127	0.347	0.407
	LTE Band 2	Left Touch	0.071	0.034	0.034	0.105	0.105	0.139
		Right Touch	0.059	0.114	0.099	0.173	0.158	0.272
		Left Tilt	0.050	0.026	0.054	0.116	0.144	0.170
		Right Tilt	0.064	0.060	0.280	0.124	0.344	0.404
	LTE Band 41	Left Touch	0.080	0.034	0.034	0.114	0.114	0.148
		Right Touch	0.022	0.114	0.099	0.136	0.121	0.235
		Left Tilt	0.017	0.026	0.054	0.043	0.071	0.097
		Right Tilt	0.013	0.060	0.280	0.073	0.293	0.353

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)	1+2	ΣSAR (W/kg)	1+2+3
Head SAR	GSM 850	Left Touch	0.010	0.034	0.427	0.044	0.437	0.471
		Right Touch	0.007	0.114	0.497	0.121	0.504	0.618
		Left Tilt	0.008	0.026	0.407	0.034	0.415	0.441
		Right Tilt	0.007	0.060	0.471	0.067	0.478	0.538
	GPRS 850	Left Touch	0.040	0.034	0.427	0.074	0.467	0.501
		Right Touch	0.007	0.114	0.497	0.121	0.504	0.618
		Left Tilt	0.007	0.026	0.407	0.033	0.414	0.440
		Right Tilt	0.008	0.060	0.471	0.068	0.479	0.539
	GSM 1900	Left Touch	0.041	0.034	0.427	0.075	0.468	0.502
		Right Touch	0.051	0.114	0.497	0.165	0.548	0.662
		Left Tilt	0.046	0.026	0.407	0.072	0.453	0.479
		Right Tilt	0.035	0.060	0.471	0.095	0.506	0.566
	GPRS 1900	Left Touch	0.065	0.034	0.427	0.099	0.492	0.526
		Right Touch	0.075	0.114	0.497	0.189	0.572	0.686
		Left Tilt	0.058	0.026	0.407	0.084	0.465	0.491
		Right Tilt	0.042	0.060	0.471	0.102	0.513	0.573
	WCDMA 850	Left Touch	0.157	0.034	0.427	0.191	0.584	0.618
		Right Touch	0.034	0.114	0.497	0.148	0.531	0.645
		Left Tilt	0.043	0.026	0.407	0.069	0.450	0.476
		Right Tilt	0.036	0.060	0.471	0.096	0.507	0.567
	WCDMA 1900	Left Touch	0.108	0.034	0.427	0.142	0.535	0.569
		Right Touch	0.125	0.114	0.497	0.239	0.622	0.736
		Left Tilt	0.093	0.026	0.407	0.119	0.500	0.526
		Right Tilt	0.077	0.060	0.471	0.137	0.548	0.608
	LTE Band 12	Left Touch	0.106	0.034	0.427	0.140	0.533	0.567
		Right Touch	0.039	0.114	0.497	0.153	0.536	0.650
		Left Tilt	0.027	0.026	0.407	0.053	0.434	0.460
		Right Tilt	0.030	0.060	0.471	0.090	0.501	0.561
	LTE Band 13	Left Touch	0.151	0.034	0.427	0.185	0.578	0.612
		Right Touch	0.037	0.114	0.497	0.151	0.534	0.648
		Left Tilt	0.026	0.026	0.407	0.052	0.433	0.459
		Right Tilt	0.031	0.060	0.471	0.091	0.502	0.562
	LTE Band 5	Left Touch	0.041	0.034	0.427	0.075	0.468	0.502
		Right Touch	0.039	0.114	0.497	0.153	0.536	0.650
		Left Tilt	0.026	0.026	0.407	0.053	0.434	0.460
		Right Tilt	0.037	0.060	0.471	0.097	0.508	0.568
	LTE Band 66	Left Touch	0.097	0.034	0.427	0.131	0.524	0.558
		Right Touch	0.078	0.114	0.497	0.192	0.575	0.689
		Left Tilt	0.065	0.026	0.407	0.091	0.472	0.498
		Right Tilt	0.067	0.060	0.471	0.127	0.538	0.598
	LTE Band 2	Left Touch	0.071	0.034	0.427	0.105	0.498	0.532
		Right Touch	0.059	0.114	0.497	0.173	0.556	0.670
		Left Tilt	0.050	0.026	0.407	0.116	0.497	0.523
		Right Tilt	0.064	0.060	0.471	0.124	0.535	0.595
	LTE Band 41	Left Touch	0.080	0.034	0.427	0.114	0.507	0.541
		Right Touch	0.022	0.114	0.497	0.136	0.519	0.633
		Left Tilt	0.017	0.026	0.407	0.043	0.424	0.450
		Right Tilt	0.013	0.060	0.471	0.073	0.484	0.544

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	0.010	0.034	0.308	0.044	0.318	0.352
		Right Touch	0.007	0.114	0.397	0.121	0.404	0.518
		Left Tilt	0.008	0.026	0.396	0.034	0.404	0.430
		Right Tilt	0.007	0.060	0.279	0.067	0.286	0.346
	GPRS 850	Left Touch	0.040	0.034	0.308	0.074	0.348	0.382
		Right Touch	0.007	0.114	0.397	0.121	0.404	0.518
		Left Tilt	0.007	0.026	0.396	0.033	0.403	0.429
		Right Tilt	0.008	0.060	0.279	0.068	0.287	0.347
	GSM 1900	Left Touch	0.041	0.034	0.308	0.075	0.349	0.383
		Right Touch	0.051	0.114	0.397	0.165	0.448	0.562
		Left Tilt	0.046	0.026	0.396	0.072	0.442	0.468
		Right Tilt	0.035	0.060	0.279	0.095	0.314	0.374
	GPRS 1900	Left Touch	0.065	0.034	0.308	0.099	0.373	0.407
		Right Touch	0.075	0.114	0.397	0.189	0.472	0.586
		Left Tilt	0.058	0.026	0.396	0.084	0.454	0.480
		Right Tilt	0.042	0.060	0.279	0.102	0.321	0.381
	WCDMA 850	Left Touch	0.157	0.034	0.308	0.191	0.465	0.499
		Right Touch	0.034	0.114	0.397	0.148	0.431	0.545
		Left Tilt	0.043	0.026	0.396	0.089	0.439	0.465
		Right Tilt	0.036	0.060	0.279	0.096	0.315	0.375
	WCDMA 1900	Left Touch	0.108	0.034	0.308	0.142	0.416	0.450
		Right Touch	0.125	0.114	0.397	0.239	0.522	0.636
		Left Tilt	0.093	0.026	0.396	0.119	0.489	0.515
		Right Tilt	0.077	0.060	0.279	0.137	0.356	0.416
	LTE Band 12	Left Touch	0.106	0.034	0.308	0.140	0.414	0.448
		Right Touch	0.039	0.114	0.397	0.153	0.436	0.590
		Left Tilt	0.027	0.026	0.396	0.053	0.423	0.449
		Right Tilt	0.030	0.060	0.279	0.090	0.309	0.369
	LTE Band 13	Left Touch	0.151	0.034	0.308	0.185	0.459	0.493
		Right Touch	0.037	0.114	0.397	0.151	0.434	0.548
		Left Tilt	0.026	0.026	0.396	0.052	0.422	0.448
		Right Tilt	0.031	0.060	0.279	0.091	0.310	0.370
	LTE Band 5	Left Touch	0.041	0.034	0.308	0.075	0.349	0.383
		Right Touch	0.039	0.114	0.397	0.153	0.436	0.550
		Left Tilt	0.151	0.026	0.396	0.177	0.547	0.573
		Right Tilt	0.037	0.060	0.279	0.097	0.316	0.376
	LTE Band 66	Left Touch	0.097	0.034	0.308	0.131	0.405	0.439
		Right Touch	0.078	0.114	0.397	0.192	0.475	0.589
		Left Tilt	0.065	0.026	0.396	0.091	0.461	0.487
		Right Tilt	0.067	0.060	0.279	0.127	0.346	0.406
	LTE Band 2	Left Touch	0.071	0.034	0.308	0.105	0.379	0.413
		Right Touch	0.059	0.114	0.397	0.173	0.456	0.570
		Left Tilt	0.090	0.026	0.396	0.116	0.486	0.512
		Right Tilt	0.064	0.060	0.279	0.124	0.343	0.403
	LTE Band 41	Left Touch	0.080	0.034	0.308	0.114	0.388	0.422
		Right Touch	0.022	0.114	0.397	0.136	0.419	0.533
		Left Tilt	0.017	0.026	0.396	0.043	0.413	0.439
		Right Tilt	0.013	0.060	0.279	0.073	0.292	0.352

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	0.010	0.034	0.104	0.044	0.114	0.148
		Right Touch	0.007	0.114	0.090	0.121	0.097	0.211
		Left Tilt	0.008	0.026	0.119	0.034	0.127	0.153
		Right Tilt	0.007	0.060	0.111	0.067	0.118	0.179
	GPRS 850	Left Touch	0.040	0.034	0.104	0.074	0.118	0.178
		Right Touch	0.007	0.114	0.090	0.121	0.097	0.211
		Left Tilt	0.007	0.026	0.119	0.033	0.126	0.152
		Right Tilt	0.008	0.060	0.111	0.068	0.119	0.179
	GSM 1900	Left Touch	0.041	0.034	0.104	0.075	0.145	0.179
		Right Touch	0.051	0.114	0.090	0.165	0.141	0.255
		Left Tilt	0.046	0.026	0.119	0.072	0.165	0.191
		Right Tilt	0.035	0.060	0.111	0.095	0.146	0.206
	GPRS 1900	Left Touch	0.065	0.034	0.104	0.099	0.169	0.203
		Right Touch	0.075	0.114	0.090	0.189	0.165	0.279
		Left Tilt	0.058	0.026	0.119	0.084	0.177	0.203
		Right Tilt	0.042	0.060	0.111	0.102	0.153	0.213
	WCDMA 850	Left Touch	0.157	0.034	0.104	0.191	0.261	0.295
		Right Touch	0.034	0.114	0.090	0.148	0.124	0.238
		Left Tilt	0.043	0.026	0.119	0.069	0.162	0.188
		Right Tilt	0.036	0.060	0.111	0.096	0.147	0.207
	WCDMA 1900	Left Touch	0.108	0.034	0.104	0.142	0.212	0.246
		Right Touch	0.125	0.114	0.090	0.239	0.215	0.329
		Left Tilt	0.093	0.026	0.119	0.119	0.212	0.238
		Right Tilt	0.077	0.060	0.111	0.137	0.188	0.248
	LTE Band 12	Left Touch	0.106	0.034	0.104	0.140	0.210	0.244
		Right Touch	0.039	0.114	0.090	0.153	0.129	0.243
		Left Tilt	0.027	0.026	0.119	0.053	0.146	0.172
		Right Tilt	0.030	0.060	0.111	0.090	0.141	0.201
	LTE Band 13	Left Touch	0.151	0.034	0.104	0.185	0.255	0.289
		Right Touch	0.037	0.114	0.090	0.151	0.127	0.241
		Left Tilt	0.026	0.026	0.119	0.052	0.145	0.171
		Right Tilt	0.031	0.060	0.111	0.091	0.142	0.202
	LTE Band 5	Left Touch	0.041	0.034	0.104	0.075	0.145	0.179
		Right Touch	0.039	0.114	0.090	0.153	0.129	0.243
		Left Tilt	0.151	0.026	0.119	0.177	0.270	0.296
		Right Tilt	0.037	0.060	0.111	0.097	0.148	0.208
	LTE Band 66	Left Touch	0.097	0.034	0.104	0.131	0.201	0.235
		Right Touch	0.078	0.114	0.090	0.192	0.168	0.282
		Left Tilt	0.065	0.026	0.119	0.091	0.184	0.210
		Right Tilt	0.067	0.060	0.111	0.127	0.178	0.238
	LTE Band 2	Left Touch	0.071	0.034	0.104	0.105	0.175	0.209
		Right Touch	0.059	0.114	0.090	0.173	0.149	0.263
		Left Tilt	0.090	0.026	0.119	0.116	0.209	0.235
		Right Tilt	0.064	0.060	0.111	0.124	0.175	0.235
	LTE Band 41	Left Touch	0.080	0.034	0.104	0.114	0.184	0.218
		Right Touch	0.022	0.114	0.090	0.136	0.112	0.226
		Left Tilt	0.017	0.026	0.119	0.043	0.136	0.162
		Right Tilt	0.013	0.060	0.111	0.073	0.124	0.184

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	0.010	0.034	0.192	0.044	0.202	0.236
		Right Touch	0.007	0.114	0.121	0.121	0.480	0.594
		Left Tilt	0.008	0.026	0.215	0.034	0.223	0.249
		Right Tilt	0.007	0.060	0.337	0.067	0.344	0.404
	GPRS 850	Left Touch	0.040	0.034	0.192	0.074	0.232	0.266
		Right Touch	0.007	0.114	0.473	0.121	0.480	0.594
		Left Tilt	0.007	0.026	0.215	0.033	0.222	0.248
		Right Tilt	0.008	0.060	0.337	0.068	0.345	0.405
	GSM 1900	Left Touch	0.041	0.034	0.192	0.075	0.233	0.267
		Right Touch	0.051	0.114	0.473	0.165	0.524	0.638
		Left Tilt	0.046	0.026	0.215	0.072	0.261	0.287
		Right Tilt	0.035	0.060	0.337	0.095	0.372	0.432
	GPRS 1900	Left Touch	0.065	0.034	0.192	0.099	0.257	0.291
		Right Touch	0.075	0.114	0.473	0.189	0.548	0.662
		Left Tilt	0.058	0.026	0.215	0.084	0.273	0.299
		Right Tilt	0.042	0.060	0.337	0.102	0.379	0.439
	WCDMA 850	Left Touch	0.157	0.034	0.192	0.191	0.349	0.383
		Right Touch	0.034	0.114	0.473	0.148	0.507	0.621
		Left Tilt	0.043	0.026	0.215	0.069	0.258	0.284
		Right Tilt	0.036	0.060	0.337	0.096	0.373	0.433
	WCDMA 1900	Left Touch	0.108	0.034	0.192	0.142	0.300	0.334
		Right Touch	0.125	0.114	0.473	0.239	0.598	0.712
		Left Tilt	0.093	0.026	0.215	0.119	0.308	0.334
		Right Tilt	0.077	0.060	0.337	0.137	0.414	0.474
	LTE Band 12	Left Touch	0.106	0.034	0.192	0.140	0.298	0.332
		Right Touch	0.039	0.114	0.473	0.153	0.512	0.626
		Left Tilt	0.027	0.026	0.215	0.053	0.242	0.268
		Right Tilt	0.030	0.060	0.337	0.090	0.367	0.427
	LTE Band 13	Left Touch	0.151	0.034	0.192	0.185	0.343	0.377
		Right Touch	0.037	0.114	0.473	0.151	0.510	0.624
		Left Tilt	0.026	0.026	0.215	0.052	0.241	0.267
		Right Tilt	0.031	0.060	0.337	0.091	0.368	0.428
	LTE Band 5	Left Touch	0.041	0.034	0.192	0.075	0.233	0.267
		Right Touch	0.039	0.114	0.473	0.153	0.512	0.626
		Left Tilt	0.151	0.026	0.215	0.177	0.366	0.392
		Right Tilt	0.037	0.060	0.337	0.097	0.374	0.434
	LTE Band 66	Left Touch	0.097	0.034	0.192	0.131	0.289	0.323
		Right Touch	0.078	0.114	0.473	0.192	0.551	0.665
		Left Tilt	0.065	0.026	0.215	0.091	0.280	0.306
		Right Tilt	0.067	0.060	0.337	0.127	0.404	0.464
	LTE Band 2	Left Touch	0.071	0.034	0.192	0.105	0.283	0.297
		Right Touch	0.059	0.114	0.473	0.173	0.532	0.646
		Left Tilt	0.090	0.026	0.215	0.116	0.305	0.331
		Right Tilt	0.064	0.060	0.337	0.124	0.401	0.461
	LTE Band 41	Left Touch	0.080	0.034	0.192	0.114	0.272	0.306
		Right Touch	0.022	0.114	0.473	0.136	0.495	0.609
		Left Tilt	0.017	0.026	0.215	0.043	0.232	0.258
		Right Tilt	0.013	0.060	0.337	0.073	0.350	0.410

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	0.010	0.034	0.211	0.044	0.221	0.255
		Right Touch	0.007	0.114	0.291	0.121	0.298	0.412
		Left Tilt	0.008	0.026	0.182	0.034	0.190	0.216
		Right Tilt	0.007	0.060	0.206	0.067	0.213	0.273
	GPRS 850	Left Touch	0.040	0.034	0.211	0.074	0.254	0.286
		Right Touch	0.007	0.114	0.291	0.121	0.298	0.412
		Left Tilt	0.007	0.026	0.182	0.033	0.189	0.215
		Right Tilt	0.008	0.060	0.206	0.068	0.214	0.274
	GSM 1900	Left Touch	0.041	0.034	0.211	0.075	0.252	0.286
		Right Touch	0.051	0.114	0.291	0.165	0.342	0.456
		Left Tilt	0.046	0.026	0.182	0.072	0.228	0.254
		Right Tilt	0.035	0.060	0.206	0.095	0.241	0.301
	GPRS 1900	Left Touch	0.065	0.034	0.211	0.099	0.276	0.310
		Right Touch	0.075	0.114	0.291	0.189	0.366	0.480
		Left Tilt	0.058	0.026	0.182	0.084	0.240	0.266
		Right Tilt	0.042	0.060	0.206	0.102	0.248	0.308
	WCDMA 850	Left Touch	0.157	0.034	0.211	0.191	0.368	0.402
		Right Touch	0.034	0.114	0.291	0.148	0.325	0.439
		Left Tilt	0.043	0.026	0.182	0.069	0.225	0.251
		Right Tilt	0.036	0.060	0.206	0.096	0.242	0.302
	WCDMA 1900	Left Touch	0.108	0.034	0.211	0.142	0.319	0.353
		Right Touch	0.125	0.114	0.291	0.239	0.416	0.530
		Left Tilt	0.093	0.026	0.182	0.119	0.275	0.301
		Right Tilt	0.077	0.060	0.206	0.137	0.283	0.343
	LTE Band 12	Left Touch	0.106	0.034	0.211	0.140	0.317	0.351
		Right Touch	0.039	0.114	0.291	0.153	0.330	0.444
		Left Tilt	0.027	0.026	0.182	0.053	0.209	0.235
		Right Tilt	0.030	0.060	0.206	0.090	0.236	0.296
	LTE Band 13	Left Touch	0.151	0.034	0.211	0.185	0.362	0.396
		Right Touch	0.037	0.114	0.291	0.151	0.328	0.442
		Left Tilt	0.026	0.026	0.182	0.052	0.208	0.234
		Right Tilt	0.031	0.060	0.206	0.091	0.237	0.297
	LTE Band 5	Left Touch	0.041	0.034	0.211	0.075	0.252	0.286
		Right Touch	0.039	0.114	0.291	0.153	0.330	0.444
		Left Tilt	0.151	0.026	0.182	0.177	0.333	0.359
		Right Tilt	0.037	0.060	0.206	0.097	0.243	0.303
	LTE Band 66	Left Touch	0.097	0.034	0.211	0.131	0.308	0.342
		Right Touch	0.078	0.114	0.291	0.192	0.369	0.483
		Left Tilt	0.065	0.026	0.182	0.091	0.247	0.273
		Right Tilt	0.067	0.060	0.206	0.127	0.273	0.333
	LTE Band 2	Left Touch	0.071	0.034	0.211	0.105	0.282	0.316
		Right Touch	0.059	0.114	0.291	0.173	0.350	0.464
		Left Tilt	0.090	0.026	0.182	0.116	0.272	0.298
		Right Tilt	0.064	0.060	0.206	0.124	0.270	0.330
	LTE Band 41	Left Touch	0.080	0.034	0.211	0.114	0.291	0.325
		Right Touch	0.022	0.114	0.291	0.136	0.313	0.427
		Left Tilt	0.017	0.026	0.182	0.043	0.199	0.225
		Right Tilt	0.013	0.060	0.206	0.073	0.219	0.279

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	0.010	0.034	0.049	0.044	0.059	0.093
		Right Touch	0.007	0.114	0.038	0.121	0.145	0.159
		Left Tilt	0.008	0.026	0.052	0.034	0.060	0.086
		Right Tilt	0.007	0.060	0.035	0.067	0.042	0.102
	GPRS 850	Left Touch	0.040	0.034	0.049	0.074	0.089	0.123
		Right Touch	0.007	0.114	0.038	0.121	0.045	0.159
		Left Tilt	0.007	0.026	0.052	0.033	0.059	0.085
		Right Tilt	0.008	0.060	0.035	0.068	0.043	0.103
	GSM 1900	Left Touch	0.041	0.034	0.049	0.075	0.090	0.124
		Right Touch	0.051	0.114	0.038	0.165	0.089	0.263
		Left Tilt	0.046	0.026	0.052	0.072	0.098	0.124
		Right Tilt	0.035	0.060	0.035	0.095	0.070	0.130
	GPRS 1900	Left Touch	0.065	0.034	0.049	0.099	0.114	0.148
		Right Touch	0.075	0.114	0.038	0.189	0.113	0.227
		Left Tilt	0.058	0.026	0.052	0.084	0.110	0.136
		Right Tilt	0.042	0.060	0.035	0.102	0.077	0.137
	WCDMA 850	Left Touch	0.157	0.034	0.049	0.191	0.206	0.240
		Right Touch	0.034	0.114	0.038	0.148	0.072	0.186
		Left Tilt	0.043	0.026	0.052	0.069	0.095	0.121
		Right Tilt	0.036	0.060	0.035	0.096	0.071	0.131
	WCDMA 1900	Left Touch	0.108	0.034	0.049	0.142	0.157	0.191
		Right Touch	0.125	0.114	0.038	0.239	0.163	0.277
		Left Tilt	0.093	0.026	0.052	0.119	0.145	0.171
		Right Tilt	0.077	0.060	0.035	0.137	0.112	0.172
	LTE Band 12	Left Touch	0.106	0.034	0.049	0.140	0.155	0.189
		Right Touch	0.039	0.114	0.038	0.153	0.077	0.191
		Left Tilt	0.027	0.026	0.052	0.053	0.079	0.105
		Right Tilt	0.030	0.060	0.035	0.090	0.065	0.126
	LTE Band 13	Left Touch	0.151	0.034	0.049	0.185	0.200	0.234
		Right Touch	0.037	0.114	0.038	0.151	0.075	0.189
		Left Tilt	0.026	0.026	0.052	0.052	0.078	0.104
		Right Tilt	0.031	0.060	0.035	0.091	0.066	0.126
	LTE Band 5	Left Touch	0.041	0.034	0.049	0.075	0.090	0.124
		Right Touch	0.039	0.114	0.038	0.153	0.077	0.191
		Left Tilt	0.151	0.026	0.052	0.177	0.203	0.229
		Right Tilt	0.037	0.060	0.035	0.097	0.072	0.132
	LTE Band 66	Left Touch	0.097	0.034	0.049	0.131	0.146	0.180
		Right Touch	0.078	0.114	0.038	0.192	0.116	0.230
		Left Tilt	0.065	0.026	0.052	0.091	0.117	0.143
		Right Tilt	0.067	0.060	0.035	0.127	0.102	0.162
	LTE Band 2	Left Touch	0.071	0.034	0.049	0.105	0.120	0.154
		Right Touch	0.059	0.114	0.038	0.173	0.097	0.211
		Left Tilt	0.090	0.026	0.052	0.116	0.142	0.168
		Right Tilt	0.064	0.060	0.035	0.124	0.099	0.159
	LTE Band 41	Left Touch	0.080	0.034	0.049	0.114	0.129	0.163
		Right Touch	0.022	0.114	0.038	0.136	0.060	0.174
		Left Tilt	0.017	0.026	0.052	0.043	0.069	0.095
		Right Tilt	0.013	0.060	0.035	0.073	0.048	0.108

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	0.010	0.034	0.236	0.044	0.246	0.280
		Right Touch	0.007	0.114	0.349	0.121	0.356	0.470
		Left Tilt	0.008	0.026	0.228	0.034	0.236	0.262
		Right Tilt	0.007	0.060	0.265	0.067	0.232	0.302
	GPRS 850	Left Touch	0.040	0.034	0.236	0.074	0.276	0.316
		Right Touch	0.007	0.114	0.349	0.121	0.356	0.470
		Left Tilt	0.007	0.026	0.228	0.033	0.235	0.261
		Right Tilt	0.008	0.060	0.265	0.068	0.273	0.333
	GSM 1900	Left Touch	0.041	0.034	0.236	0.075	0.277	0.311
		Right Touch	0.051	0.114	0.349	0.165	0.400	0.514
		Left Tilt	0.046	0.026	0.228	0.072	0.274	0.300
		Right Tilt	0.035	0.060	0.265	0.095	0.300	0.360
	GPRS 1900	Left Touch	0.065	0.034	0.236	0.099	0.301	0.335
		Right Touch	0.075	0.114	0.349	0.189	0.424	0.538
		Left Tilt	0.058	0.026	0.228	0.084	0.286	0.312
		Right Tilt	0.042	0.060	0.265	0.102	0.307	0.367
	WCDMA 850	Left Touch	0.157	0.034	0.236	0.191	0.393	0.427
		Right Touch	0.034	0.114	0.349	0.148	0.383	0.497
		Left Tilt	0.043	0.026	0.228	0.069	0.271	0.297
		Right Tilt	0.036	0.060	0.265	0.096	0.301	0.361
	WCDMA 1900	Left Touch	0.108	0.034	0.236	0.142	0.344	0.378
		Right Touch	0.125	0.114	0.349	0.239	0.474	0.588
		Left Tilt	0.093	0.026	0.228	0.119	0.321	0.347
		Right Tilt	0.077	0.060	0.265	0.137	0.342	0.402
	LTE Band 12	Left Touch	0.106	0.034	0.236	0.140	0.342	0.376
		Right Touch	0.039	0.114	0.349	0.153	0.388	0.502
		Left Tilt	0.027	0.026	0.228	0.053	0.255	0.281
		Right Tilt	0.030	0.060	0.265	0.090	0.295	0.355
	LTE Band 13	Left Touch	0.151	0.034	0.236	0.185	0.387	0.421
		Right Touch	0.037	0.114	0.349	0.151	0.386	0.500
		Left Tilt	0.026	0.026	0.228	0.052	0.254	0.280
		Right Tilt	0.031	0.060	0.265	0.091	0.296	0.356
	LTE Band 5	Left Touch	0.041	0.034	0.236	0.075	0.277	0.311
		Right Touch	0.039	0.114	0.349	0.153	0.388	0.502
		Left Tilt	0.151	0.026	0.228	0.177	0.379	0.405
		Right Tilt	0.037	0.060	0.265	0.097	0.302	0.362
	LTE Band 66	Left Touch	0.097	0.034	0.236	0.131	0.333	0.367
		Right Touch	0.078	0.114	0.349	0.192	0.427	0.541
		Left Tilt	0.065	0.026	0.228	0.091	0.293	0.319
		Right Tilt	0.067	0.060	0.265	0.127	0.332	0.392
	LTE Band 2	Left Touch	0.071	0.034	0.236	0.105	0.307	0.341
		Right Touch	0.059	0.114	0.349	0.173	0.408	0.522
		Left Tilt	0.090	0.026	0.228	0.116	0.318	0.344
		Right Tilt	0.064	0.060	0.265	0.124	0.329	0.389
	LTE Band 41	Left Touch	0.080	0.034	0.236	0.114	0.316	0.350
		Right Touch	0.022	0.114	0.349	0.136	0.371	0.485
		Left Tilt	0.017	0.026	0.228	0.043	0.245	0.271
		Right Tilt	0.013	0.060	0.265	0.073	0.278	0.338

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)	1+2	ΣSAR (W/kg)	1+2+3
Head SAR	GSM 850	Left Touch	0.010	0.034	0.074	0.044	0.084	0.118
		Right Touch	0.007	0.114	0.127	0.121	0.134	0.248
		Left Tilt	0.008	0.026	0.100	0.034	0.108	0.134
		Right Tilt	0.007	0.060	0.545	0.067	0.552	0.612
	GPRS 850	Left Touch	0.040	0.034	0.074	0.074	0.114	0.148
		Right Touch	0.007	0.114	0.127	0.121	0.134	0.248
		Left Tilt	0.007	0.026	0.100	0.033	0.107	0.133
		Right Tilt	0.008	0.060	0.545	0.068	0.553	0.613
	GSM 1900	Left Touch	0.041	0.034	0.074	0.075	0.115	0.149
		Right Touch	0.051	0.114	0.127	0.165	0.178	0.292
		Left Tilt	0.046	0.026	0.100	0.072	0.146	0.172
		Right Tilt	0.035	0.060	0.545	0.095	0.580	0.640
	GPRS 1900	Left Touch	0.065	0.034	0.074	0.099	0.139	0.173
		Right Touch	0.075	0.114	0.127	0.189	0.202	0.316
		Left Tilt	0.058	0.026	0.100	0.084	0.158	0.184
		Right Tilt	0.042	0.060	0.545	0.102	0.587	0.647
	WCDMA 850	Left Touch	0.157	0.034	0.074	0.191	0.231	0.265
		Right Touch	0.034	0.114	0.127	0.148	0.161	0.275
		Left Tilt	0.043	0.026	0.100	0.089	0.143	0.169
		Right Tilt	0.036	0.060	0.545	0.096	0.581	0.641
	WCDMA 1900	Left Touch	0.108	0.034	0.074	0.142	0.182	0.216
		Right Touch	0.125	0.114	0.127	0.239	0.252	0.366
		Left Tilt	0.093	0.026	0.100	0.119	0.193	0.219
		Right Tilt	0.077	0.060	0.545	0.137	0.622	0.682
	LTE Band 12	Left Touch	0.106	0.034	0.074	0.140	0.180	0.214
		Right Touch	0.039	0.114	0.127	0.153	0.166	0.280
		Left Tilt	0.027	0.026	0.100	0.053	0.127	0.153
		Right Tilt	0.030	0.060	0.545	0.090	0.575	0.635
	LTE Band 13	Left Touch	0.151	0.034	0.074	0.185	0.225	0.259
		Right Touch	0.037	0.114	0.127	0.151	0.164	0.278
		Left Tilt	0.026	0.026	0.100	0.052	0.126	0.152
		Right Tilt	0.031	0.060	0.545	0.091	0.576	0.636
	LTE Band 5	Left Touch	0.041	0.034	0.074	0.075	0.115	0.149
		Right Touch	0.039	0.114	0.127	0.153	0.166	0.280
		Left Tilt	0.151	0.026	0.100	0.177	0.251	0.277
		Right Tilt	0.037	0.060	0.545	0.097	0.582	0.642
	LTE Band 66	Left Touch	0.097	0.034	0.074	0.131	0.171	0.205
		Right Touch	0.078	0.114	0.127	0.192	0.205	0.319
		Left Tilt	0.065	0.026	0.100	0.091	0.185	0.191
		Right Tilt	0.067	0.060	0.545	0.127	0.612	0.672
	LTE Band 2	Left Touch	0.071	0.034	0.074	0.105	0.145	0.179
		Right Touch	0.059	0.114	0.127	0.173	0.186	0.300
		Left Tilt	0.090	0.026	0.100	0.116	0.190	0.216
		Right Tilt	0.064	0.060	0.545	0.124	0.609	0.669
	LTE Band 41	Left Touch	0.080	0.034	0.074	0.114	0.154	0.188
		Right Touch	0.022	0.114	0.127	0.136	0.149	0.263
		Left Tilt	0.017	0.026	0.100	0.043	0.117	0.143
		Right Tilt	0.013	0.060	0.545	0.073	0.558	0.618

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)
Head SAR	GSM 850	Left Touch	0.010	0.107	0.117
		Right Touch	0.007	0.523	0.530
		Left Tilt	0.008	0.090	0.098
		Right Tilt	0.007	0.213	0.220
	GPRS 850	Left Touch	0.040	0.107	0.147
		Right Touch	0.007	0.523	0.530
		Left Tilt	0.007	0.090	0.097
		Right Tilt	0.008	0.213	0.221
	GSM 1900	Left Touch	0.041	0.107	0.148
		Right Touch	0.051	0.523	0.574
		Left Tilt	0.046	0.090	0.136
		Right Tilt	0.035	0.213	0.248
	GPRS 1900	Left Touch	0.065	0.107	0.172
		Right Touch	0.075	0.523	0.598
		Left Tilt	0.058	0.090	0.148
		Right Tilt	0.042	0.213	0.255
	WCDMA 850	Left Touch	0.157	0.107	0.264
		Right Touch	0.034	0.523	0.557
		Left Tilt	0.043	0.090	0.133
		Right Tilt	0.036	0.213	0.249
	WCDMA 1900	Left Touch	0.108	0.107	0.215
		Right Touch	0.125	0.523	0.648
		Left Tilt	0.093	0.090	0.183
		Right Tilt	0.077	0.213	0.290
	LTE Band 12	Left Touch	0.106	0.107	0.213
		Right Touch	0.039	0.523	0.562
		Left Tilt	0.027	0.090	0.117
		Right Tilt	0.030	0.213	0.243
	LTE Band 13	Left Touch	0.151	0.107	0.258
		Right Touch	0.037	0.523	0.560
		Left Tilt	0.026	0.090	0.116
		Right Tilt	0.031	0.213	0.244
	LTE Band 5	Left Touch	0.041	0.107	0.148
		Right Touch	0.039	0.523	0.562
		Left Tilt	0.151	0.090	0.241
		Right Tilt	0.037	0.213	0.250
	LTE Band 66	Left Touch	0.097	0.107	0.204
		Right Touch	0.078	0.523	0.601
		Left Tilt	0.065	0.090	0.155
		Right Tilt	0.067	0.213	0.280
	LTE Band 2	Left Touch	0.071	0.107	0.178
		Right Touch	0.059	0.523	0.582
		Left Tilt	0.090	0.090	0.180
		Right Tilt	0.064	0.213	0.277
	LTE Band 41	Left Touch	0.080	0.107	0.187
		Right Touch	0.022	0.523	0.545
		Left Tilt	0.017	0.090	0.107
		Right Tilt	0.013	0.213	0.226

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	0.010	0.074	0.084
		Right Touch	0.007	0.127	0.134
		Left Tilt	0.008	0.100	0.108
		Right Tilt	0.007	0.545	0.552
	GPRS 850	Left Touch	0.040	0.074	0.114
		Right Touch	0.007	0.127	0.134
		Left Tilt	0.007	0.100	0.107
		Right Tilt	0.008	0.545	0.553
	GSM 1900	Left Touch	0.041	0.074	0.115
		Right Touch	0.051	0.127	0.178
		Left Tilt	0.046	0.100	0.146
		Right Tilt	0.035	0.545	0.580
	GPRS 1900	Left Touch	0.065	0.074	0.139
		Right Touch	0.075	0.127	0.202
		Left Tilt	0.058	0.100	0.158
		Right Tilt	0.042	0.545	0.587
	WCDMA 850	Left Touch	0.157	0.074	0.231
		Right Touch	0.034	0.127	0.161
		Left Tilt	0.043	0.100	0.143
		Right Tilt	0.036	0.545	0.581
	WCDMA 1900	Left Touch	0.108	0.074	0.182
		Right Touch	0.125	0.127	0.252
		Left Tilt	0.093	0.100	0.193
		Right Tilt	0.077	0.545	0.622
	LTE Band 12	Left Touch	0.106	0.074	0.180
		Right Touch	0.039	0.127	0.166
		Left Tilt	0.027	0.100	0.127
	LTE Band 13	Right Touch	0.030	0.545	0.575
		Left Touch	0.151	0.074	0.225
		Right Touch	0.037	0.127	0.164
	LTE Band 5	Left Tilt	0.026	0.100	0.126
		Right Tilt	0.031	0.545	0.576
		Left Touch	0.041	0.074	0.115
	LTE Band 66	Right Touch	0.039	0.127	0.166
		Left Tilt	0.151	0.100	0.251
		Right Tilt	0.037	0.545	0.582
	LTE Band 2	Left Touch	0.097	0.074	0.171
		Right Touch	0.078	0.127	0.205
		Left Tilt	0.065	0.100	0.165
	LTE Band 41	Right Tilt	0.067	0.545	0.612
		Left Touch	0.071	0.074	0.145
		Right Touch	0.059	0.127	0.186
	LTE Band 12	Left Tilt	0.090	0.100	0.190
		Right Tilt	0.064	0.545	0.609
	LTE Band 41	Left Touch	0.080	0.074	0.154
		Right Touch	0.022	0.127	0.149
		Left Tilt	0.017	0.100	0.117
		Right Tilt	0.013	0.545	0.558

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	0.010	0.128	0.138
		Right Touch	0.007	0.280	0.287
		Left Tilt	0.008	0.160	0.168
		Right Tilt	0.007	0.567	0.574
	GPRS 850	Left Touch	0.040	0.128	0.168
		Right Touch	0.007	0.280	0.287
		Left Tilt	0.007	0.160	0.167
		Right Tilt	0.008	0.567	0.575
	GSM 1900	Left Touch	0.041	0.128	0.169
		Right Touch	0.051	0.280	0.331
		Left Tilt	0.046	0.160	0.206
		Right Tilt	0.035	0.567	0.602
	GPRS 1900	Left Touch	0.065	0.128	0.193
		Right Touch	0.075	0.280	0.355
		Left Tilt	0.058	0.160	0.218
		Right Tilt	0.042	0.567	0.609
	WCDMA 850	Left Touch	0.157	0.128	0.285
		Right Touch	0.034	0.280	0.314
		Left Tilt	0.043	0.160	0.203
		Right Tilt	0.036	0.567	0.603
	WCDMA 1900	Left Touch	0.108	0.128	0.236
		Right Touch	0.125	0.280	0.405
		Left Tilt	0.093	0.160	0.253
		Right Tilt	0.077	0.567	0.644
	LTE Band 12	Left Touch	0.106	0.128	0.234
		Right Touch	0.039	0.280	0.319
		Left Tilt	0.027	0.160	0.187
		Right Tilt	0.030	0.567	0.597
	LTE Band 13	Left Touch	0.151	0.128	0.279
		Right Touch	0.037	0.280	0.317
		Left Tilt	0.026	0.160	0.186
		Right Tilt	0.031	0.567	0.598
	LTE Band 5	Left Touch	0.041	0.128	0.169
		Right Touch	0.039	0.280	0.319
		Left Tilt	0.151	0.160	0.311
		Right Tilt	0.037	0.567	0.604
	LTE Band 66	Left Touch	0.097	0.128	0.225
		Right Touch	0.078	0.280	0.358
		Left Tilt	0.065	0.160	0.225
		Right Tilt	0.067	0.567	0.634
	LTE Band 2	Left Touch	0.071	0.128	0.199
		Right Touch	0.059	0.280	0.339
		Left Tilt	0.090	0.160	0.250
		Right Tilt	0.064	0.567	0.631
	LTE Band 41	Left Touch	0.080	0.128	0.208
		Right Touch	0.022	0.280	0.302
		Left Tilt	0.017	0.160	0.177
		Right Tilt	0.013	0.567	0.580

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	0.010	0.288	0.298
		Right Touch	0.007	0.451	0.458
		Left Tilt	0.008	0.325	0.333
		Right Tilt	0.007	0.385	0.392
	GPRS 850	Left Touch	0.040	0.288	0.328
		Right Touch	0.007	0.451	0.458
		Left Tilt	0.007	0.325	0.332
		Right Tilt	0.008	0.385	0.393
	GSM 1900	Left Touch	0.041	0.288	0.329
		Right Touch	0.051	0.451	0.502
		Left Tilt	0.046	0.325	0.371
		Right Tilt	0.035	0.385	0.420
	GPRS 1900	Left Touch	0.065	0.288	0.353
		Right Touch	0.075	0.451	0.526
		Left Tilt	0.058	0.325	0.383
		Right Tilt	0.042	0.385	0.427
	WCDMA 850	Left Touch	0.157	0.288	0.445
		Right Touch	0.034	0.451	0.485
		Left Tilt	0.043	0.325	0.368
		Right Tilt	0.036	0.385	0.421
	WCDMA 1900	Left Touch	0.108	0.288	0.396
		Right Touch	0.125	0.451	0.576
		Left Tilt	0.093	0.325	0.418
		Right Tilt	0.077	0.385	0.462
	LTE Band 12	Left Touch	0.106	0.288	0.394
		Right Touch	0.039	0.451	0.490
		Left Tilt	0.027	0.325	0.352
		Right Tilt	0.030	0.385	0.415
	LTE Band 13	Left Touch	0.151	0.288	0.439
		Right Touch	0.037	0.451	0.488
		Left Tilt	0.026	0.325	0.351
		Right Tilt	0.031	0.385	0.416
	LTE Band 5	Left Touch	0.041	0.288	0.329
		Right Touch	0.039	0.451	0.490
		Left Tilt	0.151	0.325	0.476
		Right Tilt	0.037	0.385	0.422
	LTE Band 66	Left Touch	0.097	0.288	0.385
		Right Touch	0.078	0.451	0.529
		Left Tilt	0.065	0.325	0.390
		Right Tilt	0.067	0.385	0.452
	LTE Band 2	Left Touch	0.071	0.288	0.359
		Right Touch	0.059	0.451	0.510
		Left Tilt	0.090	0.325	0.415
		Right Tilt	0.064	0.385	0.449
	LTE Band 41	Left Touch	0.080	0.288	0.368
		Right Touch	0.022	0.451	0.473
		Left Tilt	0.017	0.325	0.342
		Right Tilt	0.013	0.385	0.398

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	0.010	0.034	0.044
		Right Touch	0.007	0.099	0.106
		Left Tilt	0.008	0.054	0.062
		Right Tilt	0.007	0.280	0.287
	GPRS 850	Left Touch	0.040	0.034	0.074
		Right Touch	0.007	0.099	0.106
		Left Tilt	0.007	0.054	0.061
		Right Tilt	0.008	0.280	0.288
	GSM 1900	Left Touch	0.041	0.034	0.075
		Right Touch	0.051	0.099	0.150
		Left Tilt	0.046	0.054	0.100
		Right Tilt	0.035	0.280	0.315
	GPRS 1900	Left Touch	0.065	0.034	0.099
		Right Touch	0.075	0.099	0.174
		Left Tilt	0.058	0.054	0.112
		Right Tilt	0.042	0.280	0.322
	WCDMA 850	Left Touch	0.157	0.034	0.191
		Right Touch	0.034	0.099	0.133
		Left Tilt	0.043	0.054	0.097
		Right Tilt	0.036	0.280	0.316
	WCDMA 1900	Left Touch	0.108	0.034	0.142
		Right Touch	0.125	0.099	0.224
		Left Tilt	0.093	0.054	0.147
		Right Tilt	0.077	0.280	0.357
	LTE Band 12	Left Touch	0.106	0.034	0.140
		Right Touch	0.039	0.099	0.138
		Left Tilt	0.027	0.054	0.081
		Right Tilt	0.030	0.280	0.310
	LTE Band 13	Left Touch	0.151	0.034	0.185
		Right Touch	0.037	0.099	0.136
		Left Tilt	0.026	0.054	0.080
		Right Tilt	0.031	0.280	0.311
	LTE Band 5	Left Touch	0.041	0.034	0.075
		Right Touch	0.039	0.099	0.138
		Left Tilt	0.151	0.054	0.205
		Right Tilt	0.037	0.280	0.317
	LTE Band 66	Left Touch	0.097	0.034	0.131
		Right Touch	0.078	0.099	0.177
		Left Tilt	0.065	0.054	0.119
		Right Tilt	0.067	0.280	0.347
	LTE Band 2	Left Touch	0.071	0.034	0.105
		Right Touch	0.059	0.099	0.158
		Left Tilt	0.090	0.054	0.144
		Right Tilt	0.064	0.280	0.344
	LTE Band 41	Left Touch	0.080	0.034	0.114
		Right Touch	0.022	0.099	0.121
		Left Tilt	0.017	0.054	0.071
		Right Tilt	0.013	0.280	0.293

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	0.010	0.427	0.437
		Right Touch	0.007	0.497	0.504
		Left Tilt	0.008	0.407	0.415
		Right Tilt	0.007	0.471	0.478
	GPRS 850	Left Touch	0.040	0.427	0.467
		Right Touch	0.007	0.497	0.504
		Left Tilt	0.007	0.407	0.414
		Right Tilt	0.008	0.471	0.479
	GSM 1900	Left Touch	0.041	0.427	0.468
		Right Touch	0.051	0.497	0.548
		Left Tilt	0.046	0.407	0.453
		Right Tilt	0.035	0.471	0.506
	GPRS 1900	Left Touch	0.065	0.427	0.492
		Right Touch	0.075	0.497	0.572
		Left Tilt	0.058	0.407	0.465
		Right Tilt	0.042	0.471	0.513
	WCDMA 850	Left Touch	0.157	0.427	0.584
		Right Touch	0.034	0.497	0.531
		Left Tilt	0.043	0.407	0.450
		Right Tilt	0.036	0.471	0.507
	WCDMA 1900	Left Touch	0.108	0.427	0.535
		Right Touch	0.125	0.497	0.622
		Left Tilt	0.093	0.407	0.500
		Right Tilt	0.077	0.471	0.548
	LTE Band 12	Left Touch	0.106	0.427	0.533
		Right Touch	0.039	0.497	0.536
		Left Tilt	0.027	0.407	0.434
		Right Tilt	0.030	0.471	0.501
	LTE Band 13	Left Touch	0.151	0.427	0.578
		Right Touch	0.037	0.497	0.534
		Left Tilt	0.026	0.407	0.433
		Right Tilt	0.031	0.471	0.502
	LTE Band 5	Left Touch	0.041	0.427	0.468
		Right Touch	0.039	0.497	0.536
		Left Tilt	0.151	0.407	0.558
		Right Tilt	0.037	0.471	0.508
	LTE Band 66	Left Touch	0.097	0.427	0.524
		Right Touch	0.078	0.497	0.575
		Left Tilt	0.065	0.407	0.472
		Right Tilt	0.067	0.471	0.538
	LTE Band 2	Left Touch	0.071	0.427	0.498
		Right Touch	0.059	0.497	0.556
		Left Tilt	0.090	0.407	0.497
		Right Tilt	0.064	0.471	0.535
	LTE Band 41	Left Touch	0.080	0.427	0.507
		Right Touch	0.022	0.497	0.519
		Left Tilt	0.017	0.407	0.424
		Right Tilt	0.013	0.471	0.484

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	0.010	0.308	0.318
		Right Touch	0.007	0.397	0.404
		Left Tilt	0.008	0.396	0.404
		Right Tilt	0.007	0.279	0.286
	GPRS 850	Left Touch	0.040	0.308	0.348
		Right Touch	0.007	0.397	0.404
		Left Tilt	0.007	0.396	0.403
		Right Tilt	0.008	0.279	0.287
	GSM 1900	Left Touch	0.041	0.308	0.349
		Right Touch	0.051	0.397	0.448
		Left Tilt	0.046	0.396	0.442
		Right Tilt	0.035	0.279	0.314
	GPRS 1900	Left Touch	0.065	0.308	0.373
		Right Touch	0.075	0.397	0.472
		Left Tilt	0.058	0.396	0.454
		Right Tilt	0.042	0.279	0.321
	WCDMA 850	Left Touch	0.157	0.308	0.465
		Right Touch	0.034	0.397	0.431
		Left Tilt	0.043	0.396	0.439
		Right Tilt	0.036	0.279	0.315
	WCDMA 1900	Left Touch	0.108	0.308	0.416
		Right Touch	0.125	0.397	0.522
		Left Tilt	0.093	0.396	0.489
		Right Tilt	0.077	0.279	0.356
	LTE Band 12	Left Touch	0.106	0.308	0.414
		Right Touch	0.039	0.397	0.436
		Left Tilt	0.027	0.396	0.423
		Right Tilt	0.030	0.279	0.309
	LTE Band 13	Left Touch	0.151	0.308	0.459
		Right Touch	0.037	0.397	0.434
		Left Tilt	0.026	0.396	0.422
		Right Tilt	0.031	0.279	0.310
	LTE Band 5	Left Touch	0.041	0.308	0.349
		Right Touch	0.039	0.397	0.436
		Left Tilt	0.151	0.396	0.547
		Right Tilt	0.037	0.279	0.316
	LTE Band 66	Left Touch	0.097	0.308	0.405
		Right Touch	0.078	0.397	0.475
		Left Tilt	0.065	0.396	0.461
		Right Tilt	0.067	0.279	0.346
	LTE Band 2	Left Touch	0.071	0.308	0.379
		Right Touch	0.059	0.397	0.456
		Left Tilt	0.090	0.396	0.486
		Right Tilt	0.064	0.279	0.343
	LTE Band 41	Left Touch	0.080	0.308	0.388
		Right Touch	0.022	0.397	0.419
		Left Tilt	0.017	0.396	0.413
		Right Tilt	0.013	0.279	0.292

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	0.010	0.104	0.114
		Right Touch	0.007	0.090	0.097
		Left Tilt	0.008	0.119	0.127
		Right Tilt	0.007	0.111	0.118
	GPRS 850	Left Touch	0.040	0.104	0.144
		Right Touch	0.007	0.090	0.097
		Left Tilt	0.007	0.119	0.126
		Right Tilt	0.008	0.111	0.119
	GSM 1900	Left Touch	0.041	0.104	0.145
		Right Touch	0.051	0.090	0.141
		Left Tilt	0.046	0.119	0.165
		Right Tilt	0.035	0.111	0.146
	GPRS 1900	Left Touch	0.065	0.104	0.169
		Right Touch	0.075	0.090	0.165
		Left Tilt	0.058	0.119	0.177
		Right Tilt	0.042	0.111	0.153
	WCDMA 850	Left Touch	0.157	0.104	0.261
		Right Touch	0.034	0.090	0.124
		Left Tilt	0.043	0.119	0.162
		Right Tilt	0.036	0.111	0.147
	WCDMA 1900	Left Touch	0.108	0.104	0.212
		Right Touch	0.125	0.090	0.215
		Left Tilt	0.093	0.119	0.212
		Right Tilt	0.077	0.111	0.188
	LTE Band 12	Left Touch	0.106	0.104	0.210
		Right Touch	0.039	0.090	0.129
		Left Tilt	0.027	0.119	0.146
		Right Tilt	0.030	0.111	0.141
	LTE Band 13	Left Touch	0.151	0.104	0.255
		Right Touch	0.037	0.090	0.127
		Left Tilt	0.026	0.119	0.145
		Right Tilt	0.031	0.111	0.142
	LTE Band 5	Left Touch	0.041	0.104	0.145
		Right Touch	0.039	0.090	0.129
		Left Tilt	0.151	0.119	0.270
		Right Tilt	0.037	0.111	0.148
	LTE Band 66	Left Touch	0.097	0.104	0.201
		Right Touch	0.078	0.090	0.168
		Left Tilt	0.065	0.119	0.184
		Right Tilt	0.067	0.111	0.178
	LTE Band 2	Left Touch	0.071	0.104	0.175
		Right Touch	0.059	0.090	0.149
		Left Tilt	0.090	0.119	0.209
		Right Tilt	0.064	0.111	0.175
	LTE Band 41	Left Touch	0.080	0.104	0.184
		Right Touch	0.022	0.090	0.112
		Left Tilt	0.017	0.119	0.136
		Right Tilt	0.013	0.111	0.124

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	0.010	0.192	0.202
		Right Touch	0.007	0.473	0.480
		Left Tilt	0.008	0.215	0.223
		Right Tilt	0.007	0.337	0.344
	GPRS 850	Left Touch	0.040	0.192	0.232
		Right Touch	0.007	0.473	0.480
		Left Tilt	0.007	0.215	0.222
		Right Tilt	0.008	0.337	0.345
	GSM 1900	Left Touch	0.041	0.192	0.233
		Right Touch	0.051	0.473	0.524
		Left Tilt	0.046	0.215	0.261
		Right Tilt	0.035	0.337	0.372
	GPRS 1900	Left Touch	0.065	0.192	0.257
		Right Touch	0.075	0.473	0.548
		Left Tilt	0.058	0.215	0.273
		Right Tilt	0.042	0.337	0.379
	WCDMA 850	Left Touch	0.157	0.192	0.349
		Right Touch	0.034	0.473	0.507
		Left Tilt	0.043	0.215	0.258
		Right Tilt	0.036	0.337	0.373
	WCDMA 1900	Left Touch	0.108	0.192	0.300
		Right Touch	0.125	0.473	0.598
		Left Tilt	0.093	0.215	0.308
		Right Tilt	0.077	0.337	0.414
	LTE Band 12	Left Touch	0.106	0.192	0.298
		Right Touch	0.039	0.473	0.512
		Left Tilt	0.027	0.215	0.242
		Right Tilt	0.030	0.337	0.367
	LTE Band 13	Left Touch	0.151	0.192	0.343
		Right Touch	0.037	0.473	0.510
		Left Tilt	0.026	0.215	0.241
		Right Tilt	0.031	0.337	0.368
	LTE Band 5	Left Touch	0.041	0.192	0.233
		Right Touch	0.039	0.473	0.512
		Left Tilt	0.151	0.215	0.366
		Right Tilt	0.037	0.337	0.374
	LTE Band 66	Left Touch	0.097	0.192	0.289
		Right Touch	0.078	0.473	0.551
		Left Tilt	0.065	0.215	0.280
		Right Tilt	0.067	0.337	0.404
	LTE Band 2	Left Touch	0.071	0.192	0.263
		Right Touch	0.059	0.473	0.532
		Left Tilt	0.090	0.215	0.305
		Right Tilt	0.064	0.337	0.401
	LTE Band 41	Left Touch	0.080	0.192	0.272
		Right Touch	0.022	0.473	0.495
		Left Tilt	0.017	0.215	0.232
		Right Tilt	0.013	0.337	0.350

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	0.010	0.211	0.221
		Right Touch	0.007	0.291	0.298
		Left Tilt	0.008	0.182	0.190
		Right Tilt	0.007	0.206	0.213
	GPRS 850	Left Touch	0.040	0.211	0.251
		Right Touch	0.007	0.291	0.298
		Left Tilt	0.007	0.182	0.189
		Right Tilt	0.008	0.206	0.214
	GSM 1900	Left Touch	0.041	0.211	0.252
		Right Touch	0.051	0.291	0.342
		Left Tilt	0.046	0.182	0.228
		Right Tilt	0.035	0.206	0.241
	GPRS 1900	Left Touch	0.065	0.211	0.276
		Right Touch	0.075	0.291	0.366
		Left Tilt	0.058	0.182	0.240
		Right Tilt	0.042	0.206	0.248
	WCDMA 850	Left Touch	0.157	0.211	0.368
		Right Touch	0.034	0.291	0.325
		Left Tilt	0.043	0.182	0.225
		Right Tilt	0.036	0.206	0.242
	WCDMA 1900	Left Touch	0.108	0.211	0.319
		Right Touch	0.125	0.291	0.416
		Left Tilt	0.093	0.182	0.275
		Right Tilt	0.077	0.206	0.283
	LTE Band 12	Left Touch	0.106	0.211	0.317
		Right Touch	0.039	0.291	0.330
		Left Tilt	0.027	0.182	0.209
		Right Tilt	0.030	0.206	0.236
	LTE Band 13	Left Touch	0.151	0.211	0.362
		Right Touch	0.037	0.291	0.328
		Left Tilt	0.026	0.182	0.208
		Right Tilt	0.031	0.206	0.237
	LTE Band 5	Left Touch	0.041	0.211	0.252
		Right Touch	0.039	0.291	0.330
		Left Tilt	0.151	0.182	0.333
		Right Tilt	0.037	0.206	0.243
	LTE Band 66	Left Touch	0.097	0.211	0.308
		Right Touch	0.078	0.291	0.369
		Left Tilt	0.065	0.182	0.247
		Right Tilt	0.067	0.206	0.273
	LTE Band 2	Left Touch	0.071	0.211	0.282
		Right Touch	0.059	0.291	0.350
		Left Tilt	0.090	0.182	0.272
		Right Tilt	0.064	0.206	0.270
	LTE Band 41	Left Touch	0.080	0.211	0.291
		Right Touch	0.022	0.291	0.313
		Left Tilt	0.017	0.182	0.199
		Right Tilt	0.013	0.206	0.219

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	0.010	0.049	0.059
		Right Touch	0.007	0.038	0.045
		Left Tilt	0.008	0.052	0.060
		Right Tilt	0.007	0.035	0.042
	GPRS 850	Left Touch	0.040	0.049	0.089
		Right Touch	0.007	0.038	0.045
		Left Tilt	0.007	0.052	0.059
		Right Tilt	0.008	0.035	0.043
	GSM 1900	Left Touch	0.041	0.049	0.090
		Right Touch	0.051	0.038	0.089
		Left Tilt	0.046	0.052	0.098
		Right Tilt	0.035	0.035	0.070
	GPRS 1900	Left Touch	0.065	0.049	0.114
		Right Touch	0.075	0.038	0.113
		Left Tilt	0.058	0.052	0.110
		Right Tilt	0.042	0.035	0.077
	WCDMA 850	Left Touch	0.157	0.049	0.206
		Right Touch	0.034	0.038	0.072
		Left Tilt	0.043	0.052	0.095
		Right Tilt	0.036	0.035	0.071
	WCDMA 1900	Left Touch	0.108	0.049	0.157
		Right Touch	0.125	0.038	0.163
		Left Tilt	0.093	0.052	0.145
		Right Tilt	0.077	0.035	0.112
	LTE Band 12	Left Touch	0.106	0.049	0.155
		Right Touch	0.039	0.038	0.077
		Left Tilt	0.027	0.052	0.079
		Right Tilt	0.030	0.035	0.065
	LTE Band 13	Left Touch	0.151	0.049	0.200
		Right Touch	0.037	0.038	0.075
		Left Tilt	0.026	0.052	0.078
		Right Tilt	0.031	0.035	0.066
	LTE Band 5	Left Touch	0.041	0.049	0.090
		Right Touch	0.039	0.038	0.077
		Left Tilt	0.151	0.052	0.203
		Right Tilt	0.037	0.035	0.072
	LTE Band 66	Left Touch	0.097	0.049	0.146
		Right Touch	0.078	0.038	0.116
		Left Tilt	0.065	0.052	0.117
		Right Tilt	0.067	0.035	0.102
	LTE Band 2	Left Touch	0.071	0.049	0.120
		Right Touch	0.059	0.038	0.097
		Left Tilt	0.090	0.052	0.142
		Right Tilt	0.064	0.035	0.099
	LTE Band 41	Left Touch	0.080	0.049	0.129
		Right Touch	0.022	0.038	0.060
		Left Tilt	0.017	0.052	0.069
		Right Tilt	0.013	0.035	0.048

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	0.010	0.236	0.246
		Right Touch	0.007	0.349	0.356
		Left Tilt	0.008	0.228	0.236
		Right Tilt	0.007	0.265	0.272
	GPRS 850	Left Touch	0.040	0.236	0.276
		Right Touch	0.007	0.349	0.356
		Left Tilt	0.007	0.228	0.235
		Right Tilt	0.008	0.265	0.273
	GSM 1900	Left Touch	0.041	0.236	0.277
		Right Touch	0.051	0.349	0.400
		Left Tilt	0.046	0.228	0.274
		Right Tilt	0.035	0.265	0.300
	GPRS 1900	Left Touch	0.065	0.236	0.301
		Right Touch	0.075	0.349	0.424
		Left Tilt	0.058	0.228	0.286
		Right Tilt	0.042	0.265	0.307
	WCDMA 850	Left Touch	0.157	0.236	0.393
		Right Touch	0.034	0.349	0.383
		Left Tilt	0.043	0.228	0.271
		Right Tilt	0.036	0.265	0.301
	WCDMA 1900	Left Touch	0.108	0.236	0.344
		Right Touch	0.125	0.349	0.474
		Left Tilt	0.093	0.228	0.321
		Right Tilt	0.077	0.265	0.342
	LTE Band 12	Left Touch	0.106	0.236	0.342
		Right Touch	0.039	0.349	0.388
		Left Tilt	0.027	0.228	0.255
		Right Tilt	0.030	0.265	0.295
	LTE Band 13	Left Touch	0.151	0.236	0.387
		Right Touch	0.037	0.349	0.386
		Left Tilt	0.026	0.228	0.254
		Right Tilt	0.031	0.265	0.296
	LTE Band 5	Left Touch	0.041	0.236	0.277
		Right Touch	0.039	0.349	0.388
		Left Tilt	0.151	0.228	0.379
		Right Tilt	0.037	0.265	0.302
	LTE Band 66	Left Touch	0.097	0.236	0.333
		Right Touch	0.078	0.349	0.427
		Left Tilt	0.065	0.228	0.293
		Right Tilt	0.067	0.265	0.332
	LTE Band 2	Left Touch	0.071	0.236	0.307
		Right Touch	0.059	0.349	0.408
		Left Tilt	0.090	0.228	0.318
		Right Tilt	0.064	0.265	0.329
	LTE Band 41	Left Touch	0.080	0.236	0.316
		Right Touch	0.022	0.349	0.371
		Left Tilt	0.017	0.228	0.245
		Right Tilt	0.013	0.265	0.278

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	0.010	0.034	0.044
		Right Touch	0.007	0.114	0.121
		Left Tilt	0.008	0.026	0.034
		Right Tilt	0.007	0.060	0.067
	GPRS 850	Left Touch	0.040	0.034	0.074
		Right Touch	0.007	0.114	0.121
		Left Tilt	0.007	0.026	0.033
		Right Tilt	0.008	0.060	0.068
	GSM 1900	Left Touch	0.041	0.034	0.075
		Right Touch	0.051	0.114	0.165
		Left Tilt	0.046	0.026	0.072
		Right Tilt	0.035	0.060	0.095
	GPRS 1900	Left Touch	0.065	0.034	0.099
		Right Touch	0.075	0.114	0.189
		Left Tilt	0.058	0.026	0.084
		Right Tilt	0.042	0.060	0.102
	WCDMA 850	Left Touch	0.157	0.034	0.191
		Right Touch	0.034	0.114	0.148
		Left Tilt	0.043	0.026	0.069
		Right Tilt	0.036	0.060	0.096
	WCDMA 1900	Left Touch	0.108	0.034	0.142
		Right Touch	0.125	0.114	0.239
		Left Tilt	0.093	0.026	0.119
		Right Tilt	0.077	0.060	0.137
	LTE Band 12	Left Touch	0.106	0.034	0.140
		Right Touch	0.039	0.114	0.153
		Left Tilt	0.027	0.026	0.053
		Right Tilt	0.030	0.060	0.090
	LTE Band 13	Left Touch	0.151	0.034	0.185
		Right Touch	0.037	0.114	0.151
		Left Tilt	0.026	0.026	0.052
		Right Tilt	0.031	0.060	0.091
	LTE Band 5	Left Touch	0.041	0.034	0.075
		Right Touch	0.039	0.114	0.153
		Left Tilt	0.151	0.026	0.177
		Right Tilt	0.037	0.060	0.097
	LTE Band 66	Left Touch	0.097	0.034	0.131
		Right Touch	0.078	0.114	0.192
		Left Tilt	0.065	0.026	0.091
		Right Tilt	0.067	0.060	0.127
	LTE Band 2	Left Touch	0.071	0.034	0.105
		Right Touch	0.059	0.114	0.173
		Left Tilt	0.090	0.026	0.116
		Right Tilt	0.064	0.060	0.124
	LTE Band 41	Left Touch	0.080	0.034	0.114
		Right Touch	0.022	0.114	0.136
		Left Tilt	0.017	0.026	0.043
		Right Tilt	0.013	0.060	0.073

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	0.107	0.034	0.141
		Right Touch	0.523	0.099	0.622
		Left Tilt	0.090	0.054	0.144
		Right Tilt	0.213	0.280	0.493
	5.6G W-LAN Ant.2	Left Touch	0.107	0.104	0.211
		Right Touch	0.523	0.090	0.613
		Left Tilt	0.090	0.119	0.209
		Right Tilt	0.213	0.111	0.324
	5.8G W-LAN Ant.2	Left Touch	0.107	0.049	0.156
		Right Touch	0.523	0.038	0.561
		Left Tilt	0.090	0.052	0.142
		Right Tilt	0.213	0.035	0.248

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	0.034	0.288	0.322
		Right Touch	0.114	0.451	0.565
		Left Tilt	0.026	0.325	0.351
		Right Tilt	0.060	0.385	0.445
	5.6G W-LAN Ant.1	Left Touch	0.034	0.308	0.342
		Right Touch	0.114	0.397	0.511
		Left Tilt	0.026	0.396	0.422
		Right Tilt	0.060	0.279	0.339
	5.8G W-LAN Ant.1	Left Touch	0.034	0.211	0.245
		Right Touch	0.114	0.251	0.465
		Left Tilt	0.026	0.182	0.208
		Right Tilt	0.060	0.206	0.266

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	0.034	0.034	0.068
		Right Touch	0.114	0.099	0.213
		Left Tilt	0.026	0.054	0.080
		Right Tilt	0.060	0.280	0.340
	5.6G W-LAN Ant.2	Left Touch	0.034	0.104	0.138
		Right Touch	0.114	0.090	0.204
		Left Tilt	0.026	0.119	0.145
		Right Tilt	0.060	0.111	0.171
	5.8G W-LAN Ant.2	Left Touch	0.034	0.049	0.083
		Right Touch	0.114	0.038	0.152
		Left Tilt	0.026	0.052	0.078
		Right Tilt	0.060	0.035	0.095

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	0.034	0.427	0.461
		Right Touch	0.114	0.497	0.611
		Left Tilt	0.026	0.407	0.433
		Right Tilt	0.060	0.471	0.531
	5.6G W-LAN MIMO	Left Touch	0.034	0.192	0.226
		Right Touch	0.114	0.473	0.587
		Left Tilt	0.026	0.215	0.241
		Right Tilt	0.060	0.337	0.397
	5.8G W-LAN MIMO	Left Touch	0.034	0.236	0.270
		Right Touch	0.114	0.349	0.463
		Left Tilt	0.026	0.228	0.254
		Right Tilt	0.060	0.265	0.325

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	0.034	0.074	0.108
		Right Touch	0.114	0.127	0.241
		Left Tilt	0.026	0.100	0.126
		Right Tilt	0.060	0.545	0.605

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	0.052	0.073	0.015	0.125	0.067	0.140
		Rear	0.141	0.170	0.185	0.311	0.326	0.496
	GPRS 850	Front	0.047	0.073	0.015	0.120	0.062	0.135
		Rear	0.127	0.170	0.185	0.297	0.312	0.462
	GSM 1900	Front	0.207	0.073	0.015	0.280	0.222	0.295
		Rear	0.383	0.170	0.185	0.553	0.568	0.738
	GPRS 1900	Front	0.269	0.073	0.015	0.342	0.284	0.357
		Rear	0.518	0.170	0.185	0.688	0.703	0.873
	WCDMA 850	Front	0.229	0.073	0.015	0.302	0.244	0.317
		Rear	0.582	0.170	0.185	0.752	0.767	0.937
	WCDMA 1900	Front	0.383	0.073	0.015	0.456	0.398	0.471
		Rear	0.719	0.170	0.185	0.889	0.904	1.074
	LTE Band 12	Front	0.082	0.073	0.015	0.155	0.097	0.170
		Rear	0.269	0.170	0.185	0.439	0.454	0.624
	LTE Band 13	Front	0.184	0.073	0.015	0.257	0.199	0.272
		Rear	0.454	0.170	0.185	0.624	0.639	0.809
	LTE Band 5	Front	0.226	0.073	0.015	0.299	0.241	0.314
		Rear	0.533	0.170	0.185	0.703	0.718	0.888
	LTE Band 66	Front	0.427	0.073	0.015	0.500	0.442	0.515
		Rear	0.877	0.170	0.185	1.047	1.062	1.232
	LTE Band 2	Front	0.315	0.073	0.015	0.388	0.330	0.403
		Rear	0.685	0.170	0.185	0.855	0.870	1.040
	LTE Band 41	Front	0.150	0.073	0.015	0.223	0.165	0.238
		Rear	0.391	0.170	0.185	0.561	0.576	0.746

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	0.052	0.073	0.013	0.125	0.065	0.138
		Rear	0.141	0.170	0.156	0.311	0.297	0.467
	GPRS 850	Front	0.047	0.073	0.013	0.120	0.060	0.133
		Rear	0.127	0.170	0.156	0.297	0.283	0.453
	GSM 1900	Front	0.207	0.073	0.013	0.280	0.220	0.293
		Rear	0.383	0.170	0.156	0.553	0.539	0.709
	GPRS 1900	Front	0.269	0.073	0.013	0.342	0.282	0.355
		Rear	0.518	0.170	0.156	0.688	0.674	0.844
	WCDMA 850	Front	0.229	0.073	0.013	0.302	0.242	0.315
		Rear	0.582	0.170	0.156	0.752	0.738	0.908
	WCDMA 1900	Front	0.383	0.073	0.013	0.456	0.396	0.469
		Rear	0.719	0.170	0.156	0.889	0.875	1.045
	LTE Band 12	Front	0.082	0.073	0.013	0.155	0.095	0.168
		Rear	0.269	0.170	0.156	0.439	0.425	0.595
	LTE Band 13	Front	0.184	0.073	0.013	0.257	0.197	0.270
		Rear	0.454	0.170	0.156	0.624	0.610	0.780
	LTE Band 5	Front	0.226	0.073	0.013	0.299	0.239	0.312
		Rear	0.533	0.170	0.156	0.703	0.689	0.859
	LTE Band 66	Front	0.427	0.073	0.013	0.500	0.440	0.513
		Rear	0.877	0.170	0.156	1.047	1.033	1.203
	LTE Band 2	Front	0.315	0.073	0.013	0.388	0.328	0.401
		Rear	0.685	0.170	0.156	0.855	0.841	1.011
	LTE Band 41	Front	0.150	0.073	0.013	0.223	0.163	0.236
		Rear	0.391	0.170	0.156	0.561	0.547	0.717

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	0.052	0.073	0.012	0.125	0.064	0.137
		Rear	0.141	0.170	0.211	0.311	0.352	0.522
	GPRS 850	Front	0.047	0.073	0.012	0.120	0.059	0.132
		Rear	0.127	0.170	0.211	0.297	0.338	0.508
	GSM 1900	Front	0.207	0.073	0.012	0.280	0.219	0.292
		Rear	0.383	0.170	0.211	0.553	0.594	0.764
	GPRS 1900	Front	0.269	0.073	0.012	0.342	0.281	0.354
		Rear	0.518	0.170	0.211	0.688	0.729	0.899
	WCDMA 850	Front	0.229	0.073	0.012	0.302	0.241	0.314
		Rear	0.582	0.170	0.211	0.752	0.793	0.963
	WCDMA 1900	Front	0.383	0.073	0.012	0.456	0.395	0.468
		Rear	0.719	0.170	0.211	0.889	0.930	1.100
	LTE Band 12	Front	0.082	0.073	0.012	0.155	0.094	0.167
		Rear	0.269	0.170	0.211	0.439	0.480	0.650
	LTE Band 13	Front	0.184	0.073	0.012	0.257	0.196	0.269
		Rear	0.454	0.170	0.211	0.624	0.665	0.835
	LTE Band 5	Front	0.226	0.073	0.012	0.299	0.238	0.311
		Rear	0.533	0.170	0.211	0.703	0.744	0.914
	LTE Band 66	Front	0.427	0.073	0.012	0.500	0.439	0.512
		Rear	0.877	0.170	0.211	1.047	1.088	1.258
	LTE Band 2	Front	0.315	0.073	0.012	0.388	0.327	0.400
		Rear	0.685	0.170	0.211	0.855	0.896	1.066
	LTE Band 41	Front	0.150	0.073	0.012	0.223	0.162	0.235
		Rear	0.391	0.170	0.211	0.561	0.602	0.772

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	0.052	0.018	0.045	0.070	0.097	0.115
		Rear	0.141	0.030	0.313	0.171	0.454	0.484
	GPRS 850	Front	0.047	0.018	0.045	0.065	0.092	0.110
		Rear	0.127	0.030	0.313	0.157	0.440	0.470
	GSM 1900	Front	0.207	0.018	0.045	0.225	0.252	0.270
		Rear	0.383	0.030	0.313	0.413	0.686	0.726
	GPRS 1900	Front	0.269	0.018	0.045	0.287	0.314	0.332
		Rear	0.518	0.030	0.313	0.548	0.831	0.861
	WCDMA 850	Front	0.229	0.018	0.045	0.247	0.274	0.292
		Rear	0.582	0.030	0.313	0.612	0.895	0.925
	WCDMA 1900	Front	0.383	0.018	0.045	0.401	0.428	0.446
		Rear	0.719	0.030	0.313	0.749	1.032	1.062
	LTE Band 12	Front	0.082	0.018	0.045	0.100	0.127	0.145
		Rear	0.269	0.030	0.313	0.299	0.582	0.612
	LTE Band 13	Front	0.184	0.018	0.045	0.202	0.229	0.247
		Rear	0.454	0.030	0.313	0.484	0.767	0.797
	LTE Band 5	Front	0.226	0.018	0.045	0.244	0.271	0.289
		Rear	0.533	0.030	0.313	0.563	0.846	0.876
	LTE Band 66	Front	0.427	0.018	0.045	0.445	0.472	0.490
		Rear	0.877	0.030	0.313	0.907	1.290	1.220
	LTE Band 2	Front	0.315	0.018	0.045	0.333	0.360	0.378
		Rear	0.685	0.030	0.313	0.715	0.998	1.028
	LTE Band 41	Front	0.150	0.018	0.045	0.168	0.195	0.213
		Rear	0.391	0.030	0.313	0.421	0.704	0.734

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	0.052	0.018	0.015	0.070	0.067	0.095
		Rear	0.141	0.030	0.185	0.171	0.338	0.356
	GPRS 850	Front	0.047	0.018	0.015	0.065	0.062	0.080
		Rear	0.127	0.030	0.185	0.157	0.312	0.342
	GSM 1900	Front	0.207	0.018	0.015	0.225	0.222	0.240
		Rear	0.383	0.030	0.185	0.413	0.568	0.598
	GPRS 1900	Front	0.269	0.018	0.015	0.287	0.284	0.302
		Rear	0.518	0.030	0.185	0.548	0.703	0.733
	WCDMA 850	Front	0.229	0.018	0.015	0.247	0.244	0.262
		Rear	0.582	0.030	0.185	0.612	0.767	0.797
	WCDMA 1900	Front	0.383	0.018	0.015	0.401	0.398	0.416
		Rear	0.719	0.030	0.185	0.749	0.904	0.934
	LTE Band 12	Front	0.082	0.018	0.015	0.100	0.097	0.115
		Rear	0.269	0.030	0.185	0.299	0.454	0.484
	LTE Band 13	Front	0.184	0.018	0.015	0.202	0.199	0.217
		Rear	0.454	0.030	0.185	0.484	0.639	0.669
	LTE Band 5	Front	0.226	0.018	0.015	0.244	0.241	0.259
		Rear	0.533	0.030	0.185	0.563	0.718	0.748
	LTE Band 66	Front	0.427	0.018	0.015	0.445	0.442	0.460
		Rear	0.877	0.030	0.185	0.907	1.062	1.092
	LTE Band 2	Front	0.315	0.018	0.015	0.333	0.330	0.348
		Rear	0.685	0.030	0.185	0.715	0.870	0.900
	LTE Band 41	Front	0.150	0.018	0.015	0.168	0.165	0.183
		Rear	0.391	0.030	0.185	0.421	0.576	0.606

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	0.052	0.018	0.044	0.070	0.096	0.114
		Rear	0.141	0.030	0.349	0.171	0.490	0.520
	GPRS 850	Front	0.047	0.018	0.044	0.065	0.091	0.109
		Rear	0.127	0.030	0.349	0.157	0.476	0.506
	GSM 1900	Front	0.207	0.018	0.044	0.225	0.251	0.269
		Rear	0.383	0.030	0.349	0.413	0.732	0.762
	GPRS 1900	Front	0.269	0.018	0.044	0.287	0.313	0.331
		Rear	0.518	0.030	0.349	0.548	0.867	0.897
	WCDMA 850	Front	0.229	0.018	0.044	0.247	0.273	0.291
		Rear	0.582	0.030	0.349	0.612	0.931	0.961
	WCDMA 1900	Front	0.383	0.018	0.044	0.401	0.427	0.445
		Rear	0.719	0.030	0.349	0.749	1.068	1.098
	LTE Band 12	Front	0.082	0.018	0.044	0.100	0.126	0.144
		Rear	0.269	0.030	0.349	0.299	0.618	0.648
	LTE Band 13	Front	0.184	0.018	0.044	0.202	0.228	0.246
		Rear	0.454	0.030	0.349	0.484	0.803	0.833
	LTE Band 5	Front	0.226	0.018	0.044	0.244	0.270	0.288
		Rear	0.533	0.030	0.349	0.563	0.882	0.912
	LTE Band 66	Front	0.427	0.018	0.044	0.445	0.471	0.489
		Rear	0.877	0.030	0.349	0.907	1.226	1.256
	LTE Band 2	Front	0.315	0.018	0.044	0.333	0.359	0.377
		Rear	0.685	0.030	0.349	0.715	1.034	1.064
	LTE Band 41	Front	0.150	0.018	0.044	0.168	0.194	0.212
		Rear	0.391	0.030	0.349	0.421	0.740	0.770

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	0.052	0.018	0.030	0.070	0.082	0.100
		Rear	0.141	0.030	0.224	0.171	0.365	0.395
	GPRS 850	Front	0.047	0.018	0.030	0.065	0.077	0.095
		Rear	0.127	0.030	0.224	0.157	0.351	0.381
	GSM 1900	Front	0.207	0.018	0.030	0.225	0.237	0.255
		Rear	0.383	0.030	0.224	0.413	0.607	0.637
	GPRS 1900	Front	0.269	0.018	0.030	0.287	0.299	0.317
		Rear	0.518	0.030	0.224	0.548	0.742	0.772
	WCDMA 850	Front	0.229	0.018	0.030	0.247	0.259	0.277
		Rear	0.582	0.030	0.224	0.612	0.806	0.836
	WCDMA 1900	Front	0.383	0.018	0.030	0.401	0.413	0.431
		Rear	0.719	0.030	0.224	0.749	0.943	0.973
	LTE Band 12	Front	0.082	0.018	0.030	0.100	0.112	0.130
		Rear	0.269	0.030	0.224	0.299	0.493	0.523
	LTE Band 13	Front	0.184	0.018	0.030	0.202	0.214	0.232
		Rear	0.454	0.030	0.224	0.484	0.678	0.708
	LTE Band 5	Front	0.226	0.018	0.030	0.244	0.256	0.274
		Rear	0.533	0.030	0.224	0.563	0.757	0.787
	LTE Band 66	Front	0.427	0.018	0.030	0.445	0.457	0.475
		Rear	0.877	0.030	0.224	0.907	1.101	1.131
	LTE Band 2	Front	0.315	0.018	0.030	0.333	0.345	0.363
		Rear	0.685	0.030	0.224	0.715	0.909	0.939
	LTE Band 41	Front	0.150	0.018	0.030	0.168	0.180	0.198
		Rear	0.391	0.030	0.224	0.421	0.615	0.645

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	0.052	0.018	0.013	0.070	0.065	0.083
		Rear	0.141	0.030	0.156	0.171	0.297	0.327
	GPRS 850	Front	0.047	0.018	0.013	0.065	0.060	0.078
		Rear	0.127	0.030	0.156	0.157	0.283	0.313
	GSM 1900	Front	0.207	0.018	0.013	0.225	0.220	0.238
		Rear	0.383	0.030	0.156	0.413	0.539	0.569
	GPRS 1900	Front	0.269	0.018	0.013	0.287	0.282	0.300
		Rear	0.518	0.030	0.156	0.548	0.674	0.704
	WCDMA 850	Front	0.229	0.018	0.013	0.247	0.242	0.260
		Rear	0.582	0.030	0.156	0.612	0.738	0.768
	WCDMA 1900	Front	0.383	0.018	0.013	0.401	0.396	0.414
		Rear	0.719	0.030	0.156	0.749	0.875	0.905
	LTE Band 12	Front	0.082	0.018	0.013	0.100	0.095	0.113
		Rear	0.269	0.030	0.156	0.299	0.425	0.455
	LTE Band 13	Front	0.184	0.018	0.013	0.202	0.197	0.215
		Rear	0.454	0.030	0.156	0.484	0.610	0.640
	LTE Band 5	Front	0.226	0.018	0.013	0.244	0.239	0.257
		Rear	0.533	0.030	0.156	0.563	0.689	0.719
	LTE Band 66	Front	0.427	0.018	0.013	0.445	0.440	0.458
		Rear	0.877	0.030	0.156	0.907	1.033	1.063
	LTE Band 2	Front	0.315	0.018	0.013	0.333	0.328	0.346
		Rear	0.685	0.030	0.156	0.715	0.841	0.871
	LTE Band 41	Front	0.150	0.018	0.013	0.168	0.163	0.181
		Rear	0.391	0.030	0.156	0.421	0.547	0.577

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)	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.052	0.018	0.072	0.070	0.124	0.142
		Rear	0.141	0.030	0.368	0.111	0.509	0.538
	GPRS 850	Front	0.047	0.018	0.072	0.065	0.119	0.137
		Rear	0.127	0.030	0.368	0.157	0.495	0.525
	GSM 1900	Front	0.207	0.018	0.072	0.225	0.279	0.297
		Rear	0.383	0.030	0.368	0.413	0.751	0.781
	GPRS 1900	Front	0.269	0.018	0.072	0.287	0.341	0.359
		Rear	0.518	0.030	0.368	0.548	0.886	0.916
	WCDMA 850	Front	0.229	0.018	0.072	0.247	0.301	0.319
		Rear	0.582	0.030	0.368	0.612	0.950	0.980
	WCDMA 1900	Front	0.383	0.018	0.072	0.401	0.455	0.473
		Rear	0.719	0.030	0.368	0.749	1.087	1.117
	LTE Band 12	Front	0.082	0.018	0.072	0.100	0.154	0.172
		Rear	0.269	0.030	0.368	0.299	0.637	0.667
	LTE Band 13	Front	0.184	0.018	0.072	0.202	0.256	0.274
		Rear	0.454	0.030	0.368	0.484	0.822	0.852
	LTE Band 5	Front	0.226	0.018	0.072	0.244	0.298	0.316
		Rear	0.533	0.030	0.368	0.583	0.901	0.931
	LTE Band 66	Front	0.427	0.018	0.072	0.445	0.499	0.517
		Rear	0.877	0.030	0.368	0.907	1.245	1.275
	LTE Band 2	Front	0.315	0.018	0.072	0.333	0.387	0.405
		Rear	0.685	0.030	0.368	0.715	1.053	1.083
	LTE Band 41	Front	0.150	0.018	0.072	0.168	0.222	0.240
		Rear	0.391	0.030	0.368	0.421	0.759	0.789

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)	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.052	0.018	0.025	0.070	0.077	0.095
		Rear	0.141	0.030	0.125	0.111	0.356	0.386
	GPRS 850	Front	0.047	0.018	0.025	0.065	0.072	0.090
		Rear	0.127	0.030	0.125	0.157	0.252	0.282
	GSM 1900	Front	0.207	0.018	0.025	0.225	0.232	0.250
		Rear	0.383	0.030	0.125	0.413	0.508	0.538
	GPRS 1900	Front	0.269	0.018	0.025	0.287	0.294	0.312
		Rear	0.518	0.030	0.125	0.548	0.643	0.673
	WCDMA 850	Front	0.229	0.018	0.025	0.247	0.254	0.272
		Rear	0.582	0.030	0.125	0.612	0.707	0.737
	WCDMA 1900	Front	0.383	0.018	0.025	0.401	0.408	0.426
		Rear	0.719	0.030	0.125	0.749	0.844	0.874
	LTE Band 12	Front	0.082	0.018	0.025	0.100	0.107	0.125
		Rear	0.269	0.030	0.125	0.299	0.394	0.424
	LTE Band 13	Front	0.184	0.018	0.025	0.202	0.209	0.227
		Rear	0.454	0.030	0.125	0.484	0.579	0.599
	LTE Band 5	Front	0.226	0.018	0.025	0.244	0.251	0.269
		Rear	0.533	0.030	0.125	0.583	0.688	0.688
	LTE Band 66	Front	0.427	0.018	0.025	0.445	0.452	0.470
		Rear	0.877	0.030	0.125	0.907	1.002	1.032
	LTE Band 2	Front	0.315	0.018	0.025	0.333	0.340	0.358
		Rear	0.685	0.030	0.125	0.715	0.810	0.840
	LTE Band 41	Front	0.150	0.018	0.025	0.168	0.175	0.193
		Rear	0.391	0.030	0.125	0.421	0.516	0.546

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)	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.052	0.018	0.012	0.070	0.064	0.082
		Rear	0.141	0.030	0.211	0.111	0.352	0.382
	GPRS 850	Front	0.047	0.018	0.012	0.065	0.059	0.077
		Rear	0.127	0.030	0.211	0.157	0.338	0.368
	GSM 1900	Front	0.207	0.018	0.012	0.225	0.219	0.237
		Rear	0.383	0.030	0.211	0.413	0.594	0.624
	GPRS 1900	Front	0.269	0.018	0.012	0.287	0.281	0.299
		Rear	0.518	0.030	0.211	0.548	0.729	0.759
	WCDMA 850	Front	0.229	0.018	0.012	0.247	0.241	0.259
		Rear	0.582	0.030	0.211	0.612	0.793	0.823
	WCDMA 1900	Front	0.383	0.018	0.012	0.401	0.395	0.413
		Rear	0.719	0.030	0.211	0.749	0.930	0.960
	LTE Band 12	Front	0.082	0.018	0.012	0.100	0.094	0.112
		Rear	0.269	0.030	0.211	0.299	0.480	0.510
	LTE Band 13	Front	0.184	0.018	0.012	0.202	0.196	0.214
		Rear	0.454	0.030	0.211	0.484	0.665	0.695
	LTE Band 5	Front	0.226	0.018	0.012	0.244	0.238	0.256
		Rear	0.533	0.030	0.211	0.583	0.774	0.774
	LTE Band 66	Front	0.427	0.018	0.012	0.445	0.439	0.457
		Rear	0.877	0.030	0.211	0.907	1.088	1.118
	LTE Band 2	Front	0.315	0.018	0.012	0.333	0.327	0.345
		Rear	0.685	0.030	0.211	0.715	0.896	0.926
	LTE Band 41	Front	0.150	0.018	0.012	0.168	0.162	0.180
		Rear	0.391	0.030	0.211	0.421	0.602	0.632

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)	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.052	0.018	0.038	0.070	0.090	0.108
		Rear	0.141	0.030	0.339	0.171	0.480	0.510
	GPRS 850	Front	0.047	0.018	0.038	0.065	0.085	0.103
		Rear	0.127	0.030	0.339	0.157	0.468	0.498
	GSM 1900	Front	0.207	0.018	0.038	0.225	0.245	0.263
		Rear	0.383	0.030	0.339	0.413	0.722	0.752
	GPRS 1900	Front	0.269	0.018	0.038	0.287	0.307	0.325
		Rear	0.518	0.030	0.339	0.548	0.857	0.887
	WCDMA 850	Front	0.229	0.018	0.038	0.247	0.267	0.285
		Rear	0.582	0.030	0.339	0.612	0.921	0.951
	WCDMA 1900	Front	0.383	0.018	0.038	0.401	0.421	0.439
		Rear	0.719	0.030	0.339	0.749	1.058	1.088
	LTE Band 12	Front	0.082	0.018	0.038	0.100	0.120	0.138
		Rear	0.269	0.030	0.339	0.299	0.608	0.638
	LTE Band 13	Front	0.184	0.018	0.038	0.202	0.222	0.240
		Rear	0.454	0.030	0.339	0.484	0.793	0.823
	LTE Band 5	Front	0.226	0.018	0.038	0.244	0.254	0.262
		Rear	0.533	0.030	0.339	0.583	0.872	0.902
	LTE Band 66	Front	0.427	0.018	0.038	0.445	0.465	0.483
		Rear	0.877	0.030	0.339	0.907	1.216	1.246
	LTE Band 2	Front	0.315	0.018	0.038	0.333	0.353	0.371
		Rear	0.685	0.030	0.339	0.715	1.024	1.054
	LTE Band 41	Front	0.150	0.018	0.038	0.168	0.188	0.206
		Rear	0.391	0.030	0.339	0.421	0.730	0.760

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	0.052	0.018	0.026	0.070	0.078	0.096
		Rear	0.141	0.030	0.091	0.111	0.232	0.362
	GPRS 850	Front	0.047	0.018	0.026	0.065	0.073	0.091
		Rear	0.127	0.030	0.091	0.157	0.218	0.248
	GSM 1900	Front	0.207	0.018	0.026	0.225	0.233	0.251
		Rear	0.383	0.030	0.091	0.413	0.474	0.504
	GPRS 1900	Front	0.269	0.018	0.026	0.287	0.295	0.313
		Rear	0.518	0.030	0.091	0.548	0.609	0.639
	WCDMA 850	Front	0.229	0.018	0.026	0.247	0.255	0.273
		Rear	0.582	0.030	0.091	0.612	0.673	0.703
	WCDMA 1900	Front	0.383	0.018	0.026	0.401	0.409	0.427
		Rear	0.719	0.030	0.091	0.749	0.810	0.840
	LTE Band 12	Front	0.082	0.018	0.026	0.100	0.108	0.126
		Rear	0.269	0.030	0.091	0.299	0.360	0.390
	LTE Band 13	Front	0.184	0.018	0.026	0.202	0.210	0.228
		Rear	0.454	0.030	0.091	0.484	0.545	0.575
	LTE Band 5	Front	0.226	0.018	0.026	0.244	0.252	0.270
		Rear	0.533	0.030	0.091	0.563	0.624	0.654
	LTE Band 66	Front	0.427	0.018	0.026	0.445	0.453	0.471
		Rear	0.877	0.030	0.091	0.907	0.968	0.998
	LTE Band 2	Front	0.315	0.018	0.026	0.333	0.341	0.359
		Rear	0.685	0.030	0.091	0.715	0.776	0.806
	LTE Band 41	Front	0.150	0.018	0.026	0.168	0.176	0.194
		Rear	0.391	0.030	0.091	0.421	0.482	0.512

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	0.052	0.073	0.125
		Rear	0.141	0.170	0.311
	GPRS 850	Front	0.047	0.073	0.120
		Rear	0.127	0.170	0.297
	GSM 1900	Front	0.207	0.073	0.280
		Rear	0.383	0.170	0.553
	GPRS 1900	Front	0.269	0.073	0.342
		Rear	0.518	0.170	0.688
	WCDMA 850	Front	0.229	0.073	0.302
		Rear	0.582	0.170	0.752
	WCDMA 1900	Front	0.383	0.073	0.456
		Rear	0.719	0.170	0.889
	LTE Band 12	Front	0.082	0.073	0.155
		Rear	0.269	0.170	0.439
	LTE Band 13	Front	0.184	0.073	0.257
		Rear	0.454	0.170	0.624
	LTE Band 5	Front	0.226	0.073	0.299
		Rear	0.533	0.170	0.703
	LTE Band 66	Front	0.427	0.073	0.500
		Rear	0.877	0.170	1.047
	LTE Band 2	Front	0.315	0.073	0.388
		Rear	0.685	0.170	0.855
	LTE Band 41	Front	0.150	0.073	0.223
		Rear	0.391	0.170	0.561

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	0.052	0.026	0.078
		Rear	0.141	0.091	0.232
	GPRS 850	Front	0.047	0.026	0.073
		Rear	0.127	0.091	0.218
	GSM 1900	Front	0.207	0.026	0.233
		Rear	0.383	0.091	0.474
	GPRS 1900	Front	0.269	0.026	0.295
		Rear	0.518	0.091	0.609
	WCDMA 850	Front	0.229	0.026	0.255
		Rear	0.582	0.091	0.673
	WCDMA 1900	Front	0.383	0.026	0.409
		Rear	0.719	0.091	0.810
	LTE Band 12	Front	0.082	0.026	0.108
		Rear	0.269	0.091	0.360
	LTE Band 13	Front	0.184	0.026	0.210
		Rear	0.454	0.091	0.545
	LTE Band 5	Front	0.226	0.026	0.252
		Rear	0.533	0.091	0.624
	LTE Band 66	Front	0.427	0.026	0.453
		Rear	0.877	0.091	0.968
	LTE Band 2	Front	0.315	0.026	0.341
		Rear	0.685	0.091	0.776
	LTE Band 41	Front	0.150	0.026	0.176
		Rear	0.391	0.091	0.482

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	0.052	0.073	0.125
		Rear	0.141	0.136	0.277
	GPRS 850	Front	0.047	0.073	0.120
		Rear	0.127	0.136	0.263
	GSM 1900	Front	0.207	0.073	0.280
		Rear	0.383	0.136	0.519
	GPRS 1900	Front	0.269	0.073	0.342
		Rear	0.518	0.136	0.654
	WCDMA 850	Front	0.229	0.073	0.302
		Rear	0.582	0.136	0.718
	WCDMA 1900	Front	0.383	0.073	0.456
		Rear	0.719	0.136	0.855
	LTE Band 12	Front	0.082	0.073	0.155
		Rear	0.269	0.136	0.405
	LTE Band 13	Front	0.184	0.073	0.257
		Rear	0.454	0.136	0.590
	LTE Band 5	Front	0.226	0.073	0.299
		Rear	0.533	0.136	0.669
	LTE Band 66	Front	0.427	0.073	0.500
		Rear	0.877	0.136	1.013
	LTE Band 2	Front	0.315	0.073	0.388
		Rear	0.685	0.136	0.821
	LTE Band 41	Front	0.150	0.073	0.223
		Rear	0.391	0.136	0.527

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)
Body-Worn SAR	GSM 850	Front	0.052	0.045	0.097
		Rear	0.141	0.313	0.454
	GPRS 850	Front	0.047	0.045	0.092
		Rear	0.127	0.313	0.440
	GSM 1900	Front	0.207	0.045	0.252
		Rear	0.383	0.313	0.696
	GPRS 1900	Front	0.269	0.045	0.314
		Rear	0.518	0.313	0.831
	WCDMA 850	Front	0.229	0.045	0.274
		Rear	0.582	0.313	0.895
	WCDMA 1900	Front	0.383	0.045	0.428
		Rear	0.719	0.313	1.032
	LTE Band 12	Front	0.082	0.045	0.127
		Rear	0.269	0.313	0.582
	LTE Band 13	Front	0.184	0.045	0.229
		Rear	0.454	0.313	0.767
	LTE Band 5	Front	0.226	0.045	0.271
		Rear	0.533	0.313	0.846
	LTE Band 66	Front	0.427	0.045	0.472
		Rear	0.877	0.313	1.190
	LTE Band 2	Front	0.315	0.045	0.360
		Rear	0.685	0.313	0.998
	LTE Band 41	Front	0.150	0.045	0.195
		Rear	0.391	0.313	0.704

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)
Body-Worn SAR	GSM 850	Front	0.052	0.015	0.067
		Rear	0.141	0.185	0.326
	GPRS 850	Front	0.047	0.015	0.062
		Rear	0.127	0.185	0.312
	GSM 1900	Front	0.207	0.015	0.222
		Rear	0.383	0.185	0.568
	GPRS 1900	Front	0.269	0.015	0.284
		Rear	0.518	0.185	0.703
	WCDMA 850	Front	0.229	0.015	0.244
		Rear	0.582	0.185	0.767
	WCDMA 1900	Front	0.383	0.015	0.398
		Rear	0.719	0.185	0.904
	LTE Band 12	Front	0.082	0.015	0.097
		Rear	0.269	0.185	0.454
	LTE Band 13	Front	0.184	0.015	0.199
		Rear	0.454	0.185	0.639
	LTE Band 5	Front	0.226	0.015	0.241
		Rear	0.533	0.185	0.718
	LTE Band 66	Front	0.427	0.015	0.442
		Rear	0.877	0.185	1.062
	LTE Band 2	Front	0.315	0.015	0.330
		Rear	0.685	0.185	0.870
	LTE Band 41	Front	0.150	0.015	0.165
		Rear	0.391	0.185	0.576

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)
Body-Worn SAR	GSM 850	Front	0.052	0.044	0.096
		Rear	0.141	0.349	0.490
	GPRS 850	Front	0.047	0.044	0.091
		Rear	0.127	0.349	0.476
	GSM 1900	Front	0.207	0.044	0.251
		Rear	0.383	0.349	0.732
	GPRS 1900	Front	0.269	0.044	0.313
		Rear	0.518	0.349	0.867
	WCDMA 850	Front	0.229	0.044	0.273
		Rear	0.582	0.349	0.931
	WCDMA 1900	Front	0.383	0.044	0.427
		Rear	0.719	0.349	1.068
	LTE Band 12	Front	0.082	0.044	0.126
		Rear	0.269	0.349	0.618
	LTE Band 13	Front	0.184	0.044	0.228
		Rear	0.454	0.349	0.803
	LTE Band 5	Front	0.226	0.044	0.270
		Rear	0.533	0.349	0.882
	LTE Band 66	Front	0.427	0.044	0.471
		Rear	0.877	0.349	1.226
	LTE Band 2	Front	0.315	0.044	0.359
		Rear	0.685	0.349	1.034
	LTE Band 41	Front	0.150	0.044	0.194
		Rear	0.391	0.349	0.740

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)
Body-Worn SAR	GSM 850	Front	0.052	0.030	0.082
		Rear	0.141	0.224	0.365
	GPRS 850	Front	0.047	0.030	0.077
		Rear	0.127	0.224	0.351
	GSM 1900	Front	0.207	0.030	0.237
		Rear	0.383	0.224	0.607
	GPRS 1900	Front	0.269	0.030	0.299
		Rear	0.518	0.224	0.742
	WCDMA 850	Front	0.229	0.030	0.259
		Rear	0.582	0.224	0.806
	WCDMA 1900	Front	0.383	0.030	0.413
		Rear	0.719	0.224	0.943
	LTE Band 12	Front	0.082	0.030	0.112
		Rear	0.269	0.224	0.493
	LTE Band 13	Front	0.184	0.030	0.214
		Rear	0.454	0.224	0.678
	LTE Band 5	Front	0.226	0.030	0.256
		Rear	0.533	0.224	0.757
	LTE Band 66	Front	0.427	0.030	0.457
		Rear	0.877	0.224	1.101
	LTE Band 2	Front	0.315	0.030	0.345
		Rear	0.685	0.224	0.909
	LTE Band 41	Front	0.150	0.030	0.180
		Rear	0.391	0.224	0.615

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)
Body-Worn SAR	GSM 850	Front	0.052	0.013	0.065
		Rear	0.141	0.156	0.297
	GPRS 850	Front	0.047	0.013	0.060
		Rear	0.127	0.156	0.283
	GSM 1900	Front	0.207	0.013	0.220
		Rear	0.383	0.156	0.539
	GPRS 1900	Front	0.269	0.013	0.282
		Rear	0.518	0.156	0.674
	WCDMA 850	Front	0.229	0.013	0.242
		Rear	0.582	0.156	0.738
	WCDMA 1900	Front	0.383	0.013	0.396
		Rear	0.719	0.156	0.875
	LTE Band 12	Front	0.082	0.013	0.095
		Rear	0.269	0.156	0.425
	LTE Band 13	Front	0.184	0.013	0.197
		Rear	0.454	0.156	0.610
	LTE Band 5	Front	0.226	0.013	0.239
		Rear	0.533	0.156	0.689
	LTE Band 66	Front	0.427	0.013	0.440
		Rear	0.877	0.156	1.033
	LTE Band 2	Front	0.315	0.013	0.328
		Rear	0.685	0.156	0.841
	LTE Band 41	Front	0.150	0.013	0.163
		Rear	0.391	0.156	0.547

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)
Body-Worn SAR	GSM 850	Front	0.052	0.072	0.124
		Rear	0.141	0.368	0.509
	GPRS 850	Front	0.047	0.072	0.119
		Rear	0.127	0.368	0.495
	GSM 1900	Front	0.207	0.072	0.279
		Rear	0.383	0.368	0.751
	GPRS 1900	Front	0.269	0.072	0.341
		Rear	0.518	0.368	0.886
	WCDMA 850	Front	0.229	0.072	0.301
		Rear	0.582	0.368	0.950
	WCDMA 1900	Front	0.383	0.072	0.455
		Rear	0.719	0.368	1.087
	LTE Band 12	Front	0.082	0.072	0.154
		Rear	0.269	0.368	0.637
	LTE Band 13	Front	0.184	0.072	0.256
		Rear	0.454	0.368	0.822
	LTE Band 5	Front	0.226	0.072	0.298
		Rear	0.533	0.368	0.901
	LTE Band 66	Front	0.427	0.072	0.499
		Rear	0.877	0.368	1.245
	LTE Band 2	Front	0.315	0.072	0.387
		Rear	0.685	0.368	1.053
	LTE Band 41	Front	0.150	0.072	0.222
		Rear	0.391	0.368	0.759

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)
Body-Worn SAR	GSM 850	Front	0.052	0.025	0.077
		Rear	0.141	0.125	0.266
	GPRS 850	Front	0.047	0.025	0.072
		Rear	0.127	0.125	0.252
	GSM 1900	Front	0.207	0.025	0.232
		Rear	0.383	0.125	0.508
	GPRS 1900	Front	0.269	0.025	0.294
		Rear	0.518	0.125	0.643
	WCDMA 850	Front	0.229	0.025	0.254
		Rear	0.582	0.125	0.707
	WCDMA 1900	Front	0.383	0.025	0.408
		Rear	0.719	0.125	0.844
	LTE Band 12	Front	0.082	0.025	0.107
		Rear	0.269	0.125	0.394
	LTE Band 13	Front	0.184	0.025	0.209
		Rear	0.454	0.125	0.579
	LTE Band 5	Front	0.226	0.025	0.251
		Rear	0.533	0.125	0.658
	LTE Band 66	Front	0.427	0.025	0.452
		Rear	0.877	0.125	1.002
	LTE Band 2	Front	0.315	0.025	0.340
		Rear	0.685	0.125	0.810
	LTE Band 41	Front	0.150	0.025	0.175
		Rear	0.391	0.125	0.516

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)
Body-Worn SAR	GSM 850	Front	0.052	0.012	0.064
		Rear	0.141	0.211	0.352
	GPRS 850	Front	0.047	0.012	0.059
		Rear	0.127	0.211	0.338
	GSM 1900	Front	0.207	0.012	0.219
		Rear	0.383	0.211	0.594
	GPRS 1900	Front	0.269	0.012	0.281
		Rear	0.518	0.211	0.729
	WCDMA 850	Front	0.229	0.012	0.241
		Rear	0.582	0.211	0.793
	WCDMA 1900	Front	0.383	0.012	0.395
		Rear	0.719	0.211	0.930
	LTE Band 12	Front	0.082	0.012	0.094
		Rear	0.269	0.211	0.480
	LTE Band 13	Front	0.184	0.012	0.196
		Rear	0.454	0.211	0.665
	LTE Band 5	Front	0.226	0.012	0.238
		Rear	0.533	0.211	0.744
	LTE Band 66	Front	0.427	0.012	0.439
		Rear	0.877	0.211	1.088
	LTE Band 2	Front	0.315	0.012	0.327
		Rear	0.685	0.211	0.896
	LTE Band 41	Front	0.150	0.012	0.162
		Rear	0.391	0.211	0.602

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)
Body-Worn SAR	GSM 850	Front	1	2	1+2
		Rear	0.052	0.038	0.090
	GPRS 850	Front	0.141	0.339	0.480
		Rear	0.047	0.038	0.085
	GSM 1900	Front	0.127	0.339	0.466
		Rear	0.207	0.038	0.245
	GPRS 1900	Front	0.383	0.339	0.722
		Rear	0.269	0.038	0.307
	WCDMA 850	Front	0.518	0.339	0.857
		Rear	0.229	0.038	0.267
	WCDMA 1900	Front	0.582	0.339	0.921
		Rear	0.383	0.038	0.421
	LTE Band 12	Front	0.719	0.339	1.058
		Rear	0.082	0.038	0.120
	LTE Band 13	Front	0.269	0.339	0.608
		Rear	0.184	0.038	0.222
	LTE Band 5	Front	0.454	0.339	0.793
		Rear	0.226	0.038	0.264
	LTE Band 66	Front	0.533	0.339	0.872
		Rear	0.427	0.038	0.465
	LTE Band 2	Front	0.877	0.339	1.216
		Rear	0.315	0.038	0.353
	LTE Band 41	Front	0.685	0.339	1.024
		Rear	0.150	0.038	0.188
		Front	0.391	0.339	0.730
		Rear			

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)
Body-Worn SAR	GSM 850	Front	1	2	1+2
		Rear	0.052	0.018	0.070
	GPRS 850	Front	0.141	0.030	0.171
		Rear	0.047	0.018	0.065
	GSM 1900	Front	0.127	0.030	0.157
		Rear	0.207	0.018	0.225
	GPRS 1900	Front	0.383	0.030	0.413
		Rear	0.269	0.018	0.287
	WCDMA 850	Front	0.518	0.030	0.548
		Rear	0.229	0.018	0.247
	WCDMA 1900	Front	0.582	0.030	0.612
		Rear	0.383	0.018	0.401
	LTE Band 12	Front	0.719	0.030	0.749
		Rear	0.082	0.018	0.100
	LTE Band 13	Front	0.269	0.030	0.299
		Rear	0.184	0.018	0.202
	LTE Band 5	Front	0.454	0.030	0.484
		Rear	0.226	0.018	0.244
	LTE Band 66	Front	0.533	0.030	0.563
		Rear	0.427	0.018	0.445
	LTE Band 2	Front	0.877	0.030	0.907
		Rear	0.315	0.018	0.333
	LTE Band 41	Front	0.685	0.030	0.715
		Rear	0.150	0.018	0.168
		Front	0.391	0.030	0.421
		Rear			

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)
Body-Worn SAR	5.2G W-LAN Ant.2	Front	2	2	1+2
		Rear	0.073	0.015	0.088
	5.6G W-LAN Ant.2	Front	0.170	0.185	0.355
		Rear	0.073	0.072	0.145
	5.8G W-LAN Ant.2	Front	0.170	0.368	0.538
		Rear	0.073	0.012	0.085
			0.170	0.211	0.381

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)
Body-Worn SAR	5.3G W-LAN Ant.1	Front	1	2	1+2
		Rear	0.018	0.045	0.063
	5.6G W-LAN Ant.1	Front	0.030	0.313	0.343
		Rear	0.018	0.030	0.048
	5.8G W-LAN Ant.1	Front	0.030	0.224	0.254
		Rear	0.018	0.025	0.043
		Front	0.030	0.125	0.155
		Rear			

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)
Body-Worn SAR	5.3G W-LAN Ant.2	Front	1	2	1+2
		Rear	0.018	0.015	0.033
	5.6G W-LAN Ant.2	Front	0.030	0.185	0.215
		Rear	0.018	0.013	0.031
	5.8G W-LAN Ant.2	Front	0.030	0.156	0.186
		Rear	0.018	0.012	0.030
		Front	0.030	0.211	0.241
		Rear			

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)
Body-Worn SAR	5.3G W-LAN MIMO	Front	1	2	1+2
		Rear	0.018	0.044	0.062
	5.6G W-LAN MIMO	Front	0.030	0.349	0.379
		Rear	0.018	0.072	0.090
	5.8G W-LAN MIMO	Front	0.030	0.368	0.398
		Rear	0.018	0.038	0.056
		Front	0.030	0.339	0.369
		Rear			

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)
Body-Worn SAR	2.4G W-LAN Ant.2	Front	1	2	1+2
		Rear	0.018	0.026	0.044
			0.030	0.091	0.121

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)	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.060	-	0.060	0.060	0.060	0.060
		Front	0.047	0.073	0.008	0.120	0.065	0.128
		Rear	0.127	0.170	0.122	0.297	0.249	0.419
	GPRS 1900	Right	0.082	-	-	0.082	0.082	0.082
		Left	-	0.293	0.059	0.293	0.059	0.352
		Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.619	-	0.619	0.619	0.619	0.619
	WCDMA 850	Front	0.269	0.073	0.008	0.342	0.277	0.350
		Rear	0.518	0.170	0.122	0.688	0.640	0.810
		Right	-	-	-	-	-	-
		Left	0.171	0.293	0.059	0.464	0.230	0.523
	WCDMA 1900	Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.073	0.008	0.302	0.237	0.310
		Rear	0.582	0.170	0.122	0.752	0.704	0.874
	LTE Band 12	Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.293	0.059	0.293	0.059	0.352
		Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	1.095	-	-	1.095	1.095	1.095
	LTE Band 13	Front	0.383	0.073	0.008	0.456	0.391	0.464
		Rear	0.719	0.170	0.122	0.889	0.841	1.011
		Right	-	-	-	-	-	-
		Left	0.281	0.293	0.059	0.574	0.340	0.633
	LTE Band 5	Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.113	-	-	0.113	0.113	0.113
		Front	0.082	0.073	0.008	0.155	0.090	0.163
		Rear	0.269	0.170	0.122	0.439	0.391	0.561
	LTE Band 66	Right	0.107	-	-	0.107	0.107	0.107
		Left	-	0.293	0.059	0.293	0.059	0.352
		Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.177	-	-	0.177	0.177	0.177
	LTE Band 2	Front	0.184	0.073	0.008	0.257	0.192	0.265
		Rear	0.454	0.170	0.122	0.624	0.576	0.746
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.293	0.059	0.293	0.059	0.352
	LTE Band 41	Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.073	0.008	0.299	0.234	0.307
		Rear	0.533	0.170	0.122	0.703	0.655	0.825
	LTE Band 68	Right	0.262	-	-	0.262	0.262	0.262
		Left	-	0.293	0.059	0.293	0.059	0.352
		Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	1.173	-	-	1.173	1.173	1.173
	LTE Band 12	Front	0.427	0.073	0.008	0.500	0.435	0.508
		Rear	0.877	0.170	0.122	1.047	0.999	1.169
		Right	-	-	-	-	-	-
		Left	0.371	0.293	0.059	0.664	0.430	0.723
	LTE Band 2	Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.842	-	-	0.842	0.842	0.842
		Front	0.315	0.073	0.008	0.388	0.323	0.396
		Rear	0.685	0.170	0.122	0.855	0.807	0.977
	LTE Band 41	Right	-	-	-	-	-	-
		Left	0.250	0.293	0.059	0.543	0.309	0.602
		Top	-	0.089	0.030	0.089	0.030	0.119
		Bottom	0.480	-	-	0.480	0.480	0.480
	LTE Band 41	Front	0.150	0.073	0.008	0.223	0.168	0.251
		Rear	0.391	0.170	0.122	0.551	0.513	0.683
		Right	-	-	-	-	-	-
		Left	0.103	0.293	0.059	0.396	0.162	0.455

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)	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.060	-	0.060	0.060	0.060	0.060
		Front	0.047	0.073	0.012	0.120	0.059	0.132
		Rear	0.127	0.170	0.211	0.297	0.338	0.508
	GPRS 1900	Right	0.082	-	-	0.082	0.082	0.082
		Left	-	0.293	0.097	0.293	0.097	0.390
		Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.619	-	-	0.619	0.619	0.619
	WCDMA 850	Front	0.269	0.073	0.012	0.342	0.281	0.354
		Rear	0.518	0.170	0.211	0.688	0.729	0.899
		Right	-	-	-	-	-	-
		Left	0.171	0.293	0.097	0.464	0.268	0.561
	WCDMA 1900	Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.073	0.012	0.302	0.241	0.314
		Rear	0.582	0.170	0.211	0.752	0.793	0.963
	LTE Band 12	Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.293	0.097	0.293	0.097	0.390
		Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	1.095	-	-	1.095	1.095	1.095
	LTE Band 13	Front	0.383	0.073	0.012	0.456	0.395	0.468
		Rear	0.719	0.170	0.211	0.889	0.930	1.100
		Right	-	-	-	-	-	-
		Left	0.281	0.293	0.097	0.574	0.378	0.571
	LTE Band 5	Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.113	-	-	0.113	0.113	0.113
		Front	0.082	0.073	0.012	0.155	0.094	0.167
		Rear	0.269	0.170	0.211	0.439	0.480	0.650
	LTE Band 66	Right	0.107	-	-	0.107	0.107	0.107
		Left	-	0.293	0.097	0.293	0.097	0.390
		Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.177	-	-	0.177	0.177	0.177
	LTE Band 2	Front	0.184	0.073	0.012	0.257	0.196	0.269
		Rear	0.454	0.170	0.211	0.624	0.665	0.835
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.293	0.097	0.293	0.097	0.390
	LTE Band 41	Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.073	0.012	0.299	0.238	0.311
		Rear	0.533	0.170	0.211	0.703	0.744	0.914
	LTE Band 68	Right	0.262	-	-	0.262	0.262	0.262
		Left	-	0.293	0.097	0.293	0.097	0.390
		Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	1.173	-	-	1.173	1.173	1.173
	LTE Band 12	Front	0.427	0.073	0.012	0.500	0.439	0.512
		Rear	0.877	0.170	0.211	1.047	1.088	1.258
		Right	-	-	-	-	-	-
		Left	0.371	0.293	0.097	0.664	0.468	0.761
	LTE Band 2	Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.842	-	-	0.842	0.842	0.842
		Front	0.315	0.073	0.012	0.388	0.327	0.400
		Rear	0.685	0.170	0.211	0.855	0.866	1.066
	LTE Band 41	Right	-	-	-	-	-	-
		Left	0.250	0.293	0.097	0.543	0.347	0.640
		Top	-	0.089	0.013	0.089	0.013	0.102
		Bottom	0.480	-	-	0.480	0.480	0.480
	LTE Band 41	Front	0.150	0.073	0.012	0.223	0.162	0.235
		Rear	0.391	0.170	0.211	0.551	0.602	0.772
		Right	-	-	-	-	-	-
		Left	0.103	0.293	0.097	0.396	0.200	0.493

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)		
Hotspot SAR	GPRS 850	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.060	-	-	0.060	0.060	0.060
		Front	0.047	0.018	0.041	0.065	0.088	0.106
		Rear	0.127	0.030	0.380	0.157	0.537	0.537
		Right	0.082	-	-	0.082	0.082	0.082
		Left	-	0.052	0.117	0.052	0.117	0.169
	GPRS 1900	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.619	-	-	0.619	0.619	0.619
		Front	0.269	0.018	0.041	0.287	0.310	0.328
		Rear	0.518	0.030	0.380	0.548	0.898	0.928
		Right	-	-	-	-	-	-
		Left	0.171	0.052	0.117	0.223	0.288	0.340
	WCDMA 850	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.018	0.041	0.247	0.270	0.288
		Rear	0.582	0.030	0.380	0.612	0.962	0.992
		Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.052	0.117	0.052	0.117	0.169
	WCDMA 1900	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	1.095	-	-	1.095	1.095	1.095
		Front	0.383	0.018	0.041	0.401	0.424	0.442
		Rear	0.719	0.030	0.380	0.749	1.099	1.129
		Right	-	-	-	-	-	-
		Left	0.281	0.052	0.117	0.333	0.398	0.450
	LTE Band 12	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.113	-	-	0.113	0.113	0.113
		Front	0.082	0.018	0.041	0.100	0.123	0.141
		Rear	0.269	0.030	0.380	0.299	0.649	0.679
		Right	0.107	-	-	0.107	0.107	0.107
		Left	-	0.052	0.117	0.052	0.117	0.169
	LTE Band 13	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.177	-	-	0.177	0.177	0.177
		Front	0.184	0.018	0.041	0.202	0.225	0.243
		Rear	0.454	0.030	0.380	0.484	0.834	0.864
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.052	0.117	0.052	0.117	0.169
	LTE Band 5	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.018	0.041	0.244	0.267	0.285
		Rear	0.533	0.030	0.380	0.563	0.913	0.943
		Right	0.262	-	-	0.262	0.262	0.262
		Left	-	0.052	0.117	0.052	0.117	0.169
	LTE Band 66	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	1.173	-	-	1.173	1.173	1.173
		Front	0.427	0.018	0.041	0.445	0.468	0.486
		Rear	0.877	0.030	0.380	0.907	1.257	1.287
		Right	-	-	-	-	-	-
		Left	0.371	0.052	0.117	0.423	0.498	0.540
	LTE Band 2	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.842	-	-	0.842	0.842	0.842
		Front	0.315	0.018	0.041	0.333	0.356	0.374
		Rear	0.685	0.030	0.380	0.715	1.065	1.095
		Right	-	-	-	-	-	-
		Left	0.250	0.052	0.117	0.302	0.367	0.419
	LTE Band 41	Top	-	0.010	0.113	0.010	0.113	0.123
		Bottom	0.480	-	-	0.480	0.480	0.480
		Front	0.150	0.018	0.041	0.168	0.191	0.209
		Rear	0.391	0.030	0.380	0.421	0.771	0.801
		Right	-	-	-	-	-	-
		Left	0.103	0.052	0.117	0.155	0.220	0.272

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)		
Hotspot SAR	GPRS 850	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.060	-	-	0.060	0.060	0.060
		Front	0.047	0.018	0.008	0.065	0.065	0.073
		Rear	0.127	0.030	0.122	0.157	0.249	0.279
		Right	0.082	-	-	0.082	0.082	0.082
		Left	-	0.052	0.059	0.052	0.059	0.111
	GPRS 1900	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.619	-	-	0.619	0.619	0.619
		Front	0.269	0.018	0.008	0.287	0.277	0.295
		Rear	0.518	0.030	0.122	0.548	0.640	0.670
		Right	-	-	-	-	-	-
		Left	0.171	0.052	0.059	0.223	0.230	0.282
	WCDMA 850	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.018	0.008	0.247	0.237	0.255
		Rear	0.582	0.030	0.122	0.612	0.704	0.734
		Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.052	0.059	0.052	0.059	0.111
	WCDMA 1900	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	1.095	-	-	1.095	1.095	1.095
		Front	0.383	0.018	0.008	0.401	0.391	0.409
		Rear	0.719	0.030	0.122	0.749	0.841	0.871
		Right	-	-	-	-	-	-
		Left	0.281	0.052	0.059	0.333	0.340	0.362
	LTE Band 12	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.113	-	-	0.113	0.113	0.113
		Front	0.082	0.018	0.008	0.100	0.090	0.108
		Rear	0.269	0.030	0.122	0.299	0.391	0.421
		Right	0.107	-	-	0.107	0.107	0.107
		Left	-	0.052	0.059	0.052	0.059	0.111
	LTE Band 13	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.177	-	-	0.177	0.177	0.177
		Front	0.184	0.018	0.008	0.202	0.192	0.210
		Rear	0.454	0.030	0.122	0.484	0.576	0.606
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.052	0.059	0.052	0.059	0.111
	LTE Band 5	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.018	0.008	0.244	0.234	0.252
		Rear	0.533	0.030	0.122	0.563	0.655	0.685
		Right	0.262	-	-	0.262	0.262	0.262
		Left	-	0.052	0.059	0.052	0.059	0.111
	LTE Band 66	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	1.173	-	-	1.173	1.173	1.173
		Front	0.427	0.018	0.008	0.445	0.435	0.453
		Rear	0.877	0.030	0.122	0.907	0.999	1.029
		Right	-	-	-	-	-	-
		Left	0.371	0.052	0.059	0.423	0.430	0.482
	LTE Band 2	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.842	-	-	0.842	0.842	0.842
		Front	0.315	0.018	0.008	0.333	0.323	0.341
		Rear	0.685	0.030	0.122	0.715	0.807	0.837
		Right	-	-	-	-	-	-
		Left	0.250	0.052	0.059	0.302	0.309	0.361
	LTE Band 41	Top	-	0.010	0.030	0.010	0.030	0.040
		Bottom	0.480	-	-	0.480	0.480	0.480
		Front	0.150	0.018	0.008	0.168	0.158	0.176
		Rear	0.391	0.030	0.122	0.421	0.513	0.543
		Right	-	-	-	-	-	-
		Left	0.103	0.052	0.059	0.155	0.162	0.214

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)	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.010	0.155	0.010	0.155	0.165
		Bottom	0.060	-	-	0.060	0.060	0.060
		Front	0.047	0.018	0.053	0.065	0.100	0.118
		Rear	0.127	0.030	0.420	0.547	0.547	0.577
		Right	0.082	-	0.082	0.082	0.082	0.082
		Left	-	0.052	0.166	0.052	0.166	0.218
	GPRS 1900	Top	-	0.010	0.155	0.010	0.155	0.165
		Bottom	0.619	-	-	0.619	0.619	0.619
		Front	0.269	0.018	0.053	0.287	0.322	0.340
		Rear	0.518	0.030	0.420	0.548	0.938	0.968
		Right	-	-	-	-	-	-
	WCDMA 850	Top	0.171	0.052	0.166	0.223	0.337	0.289
		Bottom	0.260	0.010	0.155	0.260	0.155	0.165
		Front	0.229	0.018	0.053	0.247	0.282	0.300
		Rear	0.582	0.030	0.420	0.612	1.002	1.032
		Right	0.320	-	-	0.320	0.320	0.320
	WCDMA 1900	Top	-	0.010	0.155	0.010	0.155	0.165
		Bottom	1.095	-	-	1.095	1.095	1.095
		Front	0.383	0.018	0.053	0.401	0.436	0.454
		Rear	0.719	0.030	0.420	0.749	1.139	1.169
		Right	-	-	-	-	-	-
	LTE Band 12	Top	0.281	0.052	0.166	0.333	0.447	0.499
		Bottom	0.010	0.010	0.155	0.010	0.155	0.165
		Front	0.113	0.082	0.113	0.113	0.113	0.113
		Rear	0.269	0.030	0.053	0.299	0.689	0.719
		Right	0.107	-	-	0.107	0.107	0.107
	LTE Band 13	Top	-	0.052	0.166	0.052	0.166	0.218
		Bottom	0.177	0.010	0.155	0.177	0.177	0.177
		Front	0.184	0.018	0.053	0.202	0.237	0.255
		Rear	0.454	0.030	0.420	0.484	0.874	0.904
		Right	0.163	-	-	0.163	0.163	0.163
	LTE Band 5	Top	-	0.052	0.166	0.052	0.166	0.218
		Bottom	0.244	0.010	0.155	0.244	0.244	0.244
		Front	0.226	0.018	0.053	0.244	0.279	0.297
		Rear	0.533	0.030	0.420	0.563	0.953	0.983
		Right	0.262	-	-	0.262	0.262	0.262
	LTE Band 66	Top	-	0.052	0.166	0.052	0.166	0.218
		Bottom	1.173	0.010	0.155	1.173	1.173	1.173
		Front	0.427	0.018	0.053	0.445	0.480	0.498
		Rear	0.877	0.030	0.420	0.907	1.297	1.327
		Right	0.371	-	-	0.371	0.371	0.371
	LTE Band 2	Top	-	0.052	0.166	0.052	0.166	0.218
		Bottom	0.842	0.010	0.155	0.842	0.842	0.842
		Front	0.315	0.018	0.053	0.333	0.368	0.386
		Rear	0.685	0.030	0.420	0.715	1.105	1.135
		Right	0.250	-	-	0.250	0.250	0.250
	LTE Band 41	Top	-	0.010	0.155	0.010	0.155	0.165
		Bottom	0.480	-	-	0.480	0.480	0.480
		Front	0.150	0.018	0.053	0.168	0.203	0.221
		Rear	0.391	0.030	0.420	0.421	0.811	0.841
		Left	0.103	0.052	0.166	0.155	0.269	0.321

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)	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.010	0.050	0.010	0.050	0.060
		Bottom	0.060	-	-	0.060	0.060	0.060
		Front	0.047	0.018	0.025	0.065	0.072	0.090
		Rear	0.127	0.030	0.125	0.157	0.252	0.282
		Right	0.082	-	0.082	0.082	0.082	0.082
	GPRS 1900	Top	-	0.010	0.050	0.010	0.050	0.060
		Bottom	0.619	-	-	0.619	0.619	0.619
		Front	0.269	0.018	0.025	0.287	0.294	0.312
		Rear	0.518	0.030	0.125	0.548	0.643	0.673
		Right	-	-	-	-	-	-
	WCDMA 850	Top	0.171	0.052	0.092	0.223	0.263	0.315
		Bottom	0.260	0.010	0.050	0.260	0.050	0.060
		Front	0.229	0.018	0.025	0.247	0.254	0.272
		Rear	0.582	0.030	0.125	0.612	0.707	0.737
		Right	0.320	-	-	0.320	0.320	0.320
	WCDMA 1900	Top	-	0.052	0.092	0.052	0.092	0.144
		Bottom	1.095	0.010	0.050	1.095	0.050	0.060
		Front	0.383	0.018	0.025	0.401	0.408	0.426
		Rear	0.719	0.030	0.125	0.749	0.844	0.874
		Right	-	-	-	-	-	-
	LTE Band 12	Top	0.281	0.052	0.092	0.333	0.373	0.425
		Bottom	0.010	0.010	0.050	0.010	0.050	0.060
		Front	0.113	0.082	0.113	0.113	0.113	0.113
		Rear	0.269	0.030	0.025	0.299	0.394	0.424
		Right	0.107	-	-	0.107	0.107	0.107
	LTE Band 13	Top	-	0.052	0.092	0.052	0.092	0.144
		Bottom	0.177	0.010	0.050	0.177	0.177	0.177
		Front	0.184	0.018	0.025	0.202	0.237	0.255
		Rear	0.454	0.030	0.125	0.484	0.874	0.904
		Right	0.163	-	-	0.163	0.163	0.163
	LTE Band 5	Top	-	0.052	0.092	0.052	0.092	0.144
		Bottom	0.244	0.010	0.050	0.244	0.244	0.244
		Front	0.226	0.018	0.025	0.244	0.251	0.269
		Rear	0.533	0.030	0.125	0.563	0.658	0.688
		Right	0.262	-	-	0.262	0.262	0.262
	LTE Band 66	Top	-	0.052	0.092	0.052	0.092	0.144
		Bottom	1.173	0.010	0.050	1.173	1.173	1.173
		Front	0.427	0.018	0.025	0.445	0.452	0.470
		Rear	0.877	0.030	0.125	0.907	1.002	1.032
		Right	0.371	-	-	0.371	0.371	0.371
	LTE Band 2	Top	-	0.052	0.092	0.052	0.092	0.144
		Bottom	0.842	0.010	0.050	0.842	0.842	0.842
		Front	0.315	0.018	0.025	0.333	0.340	0.358
		Rear	0.685	0.030	0.125	0.715	0.810	0.840
		Right	0.250	-	-	0.250	0.250	0.250
	LTE Band 41	Top	-	0.010	0.050	0.010	0.050	0.060
		Bottom	0.480	-	-	0.480	0.480	0.480
		Front	0.150	0.018	0.025	0.168	0.175	0.193
		Rear	0.391	0.030	0.125	0.421	0.516	0.546
		Left	0.103	0.052	0.092	0.155	0.195	0.247

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)		
Hotspot SAR	GPRS 850	Top	1	2	3	1+2	1+3	1+2+3
		Bottom	-	0.010	0.013	0.010	0.013	0.023
		Front	0.060	-	-	0.060	0.060	0.060
		Rear	0.047	0.018	0.012	0.065	0.059	0.077
		Right	0.127	0.030	0.211	0.157	0.338	0.368
	GPRS 1900	Left	0.082	-	-	0.082	0.082	0.082
		Top	-	0.052	0.097	0.052	0.097	0.149
		Bottom	-	0.010	0.013	0.010	0.013	0.023
		Front	0.619	-	-	0.619	0.619	0.619
		Rear	0.269	0.018	0.012	0.287	0.281	0.299
	WCDMA 850	Right	0.518	0.030	0.211	0.548	0.729	0.759
		Left	0.171	0.052	0.097	0.223	0.268	0.320
		Top	-	0.010	0.013	0.010	0.013	0.023
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.018	0.012	0.247	0.241	0.259
	WCDMA 1900	Rear	0.582	0.030	0.211	0.612	0.793	0.823
		Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.052	0.097	0.052	0.097	0.149
		Top	-	0.010	0.013	0.010	0.013	0.023
		Bottom	1.095	-	-	1.095	1.095	1.095
	LTE Band 12	Front	0.383	0.018	0.012	0.401	0.395	0.413
		Rear	0.719	0.030	0.211	0.749	0.930	0.960
		Right	0.281	0.052	0.097	0.333	0.378	0.430
		Left	-	0.010	0.013	0.010	0.013	0.023
		Top	0.113	-	-	0.113	0.113	0.113
	LTE Band 13	Bottom	0.082	0.018	0.012	0.100	0.094	0.112
		Front	0.269	0.030	0.211	0.299	0.480	0.510
		Rear	0.107	-	-	0.107	0.107	0.107
		Left	-	0.052	0.097	0.052	0.097	0.149
		Top	-	0.010	0.013	0.010	0.013	0.023
	LTE Band 5	Bottom	0.177	-	-	0.177	0.177	0.177
		Front	0.184	0.018	0.012	0.202	0.196	0.214
		Rear	0.454	0.030	0.211	0.484	0.665	0.695
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.052	0.097	0.052	0.097	0.149
	LTE Band 66	Top	-	0.010	0.013	0.010	0.013	0.023
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.018	0.012	0.244	0.238	0.256
		Rear	0.533	0.030	0.211	0.563	0.744	0.774
		Right	0.262	-	-	0.262	0.262	0.262
	LTE Band 2	Left	-	0.052	0.097	0.052	0.097	0.149
		Top	-	0.010	0.013	0.010	0.013	0.023
		Bottom	1.173	-	-	1.173	1.173	1.173
		Front	0.427	0.018	0.012	0.445	0.439	0.457
		Rear	0.877	0.030	0.211	0.907	1.088	1.118
	LTE Band 41	Right	0.371	0.052	0.097	0.423	0.468	0.520
		Left	-	0.010	0.013	0.010	0.013	0.023
		Top	0.842	-	-	0.842	0.842	0.842
		Bottom	0.315	0.018	0.012	0.333	0.327	0.345
		Front	0.685	0.030	0.211	0.715	0.896	0.926
	LTE Band 41	Rear	-	-	-	-	-	-
		Right	-	-	-	-	-	-
		Left	0.250	0.052	0.097	0.302	0.347	0.399
		Top	-	0.010	0.013	0.010	0.013	0.023
		Bottom	0.480	-	-	0.480	0.480	0.480
	LTE Band 41	Front	0.150	0.018	0.012	0.168	0.162	0.180
		Rear	0.391	0.030	0.211	0.421	0.602	0.632
		Right	-	-	-	-	-	-
		Left	0.103	0.052	0.097	0.155	0.200	0.252

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)		
Hotspot SAR	GPRS 850	Top	1	2	3	1+2	1+3	1+2+3
		Bottom	-	0.010	0.067	0.010	0.067	0.077
		Front	0.060	-	-	0.060	0.060	0.060
		Rear	0.047	0.018	0.038	0.065	0.085	0.103
		Right	0.127	0.030	0.339	0.157	0.466	0.466
	GPRS 1900	Left	0.082	-	-	0.082	0.082	0.082
		Top	-	0.052	0.202	0.052	0.202	0.254
		Bottom	-	0.010	0.067	0.010	0.067	0.077
		Front	0.619	-	-	0.619	0.619	0.619
		Rear	0.269	0.018	0.038	0.287	0.297	0.326
	WCDMA 850	Right	0.518	0.030	0.339	0.548	0.857	0.887
		Left	0.171	0.052	0.202	0.223	0.268	0.320
		Top	-	0.010	0.067	0.010	0.067	0.077
		Bottom	0.260	-	-	0.260	0.260	0.260
		Front	0.229	0.018	0.038	0.247	0.267	0.285
	WCDMA 1900	Rear	0.582	0.030	0.339	0.612	0.921	0.951
		Right	0.320	-	-	0.320	0.320	0.320
		Left	-	0.052	0.202	0.052	0.202	0.254
		Top	-	0.010	0.067	0.010	0.067	0.077
		Bottom	1.095	-	-	1.095	1.095	1.095
	LTE Band 12	Front	0.383	0.018	0.038	0.401	0.421	0.439
		Rear	0.719	0.030	0.339	0.749	1.058	1.088
		Right	0.281	0.052	0.202	0.333	0.483	0.535
		Left	-	0.010	0.067	0.010	0.067	0.077
		Top	0.113	-	-	0.113	0.113	0.113
	LTE Band 13	Bottom	0.082	0.018	0.038	0.100	0.120	0.138
		Front	0.269	0.030	0.339	0.299	0.608	0.638
		Rear	0.107	-	-	0.107	0.107	0.107
		Left	-	0.052	0.202	0.052	0.202	0.254
		Top	-	0.010	0.067	0.010	0.067	0.077
	LTE Band 5	Bottom	0.177	-	-	0.177	0.177	0.177
		Front	0.184	0.018	0.038	0.202	0.222	0.240
		Rear	0.454	0.030	0.339	0.484	0.793	0.823
		Right	0.163	-	-	0.163	0.163	0.163
		Left	-	0.052	0.202	0.052	0.202	0.254
	LTE Band 66	Top	-	0.010	0.067	0.010	0.067	0.077
		Bottom	0.244	-	-	0.244	0.244	0.244
		Front	0.226	0.018	0.038	0.244	0.264	0.282
		Rear	0.533	0.030	0.339	0.563	0.872	0.902
		Right	0.262	-	-	0.262	0.262	0.262
	LTE Band 2	Left	-	0.052	0.202	0.052	0.202	0.254
		Top	-	0.010	0.067	0.010	0.067	0.077
		Bottom	1.173	-	-	1.173	1.173	1.173
		Front	0.427	0.018	0.038	0.445	0.465	0.483
		Rear	0.877	0.030	0.339	0.907	1.216	1.246
	LTE Band 41	Right	0.371	0.052	0.202	0.423	0.573	0.625
		Left	-	0.010	0.067	0.010	0.067	0.077
		Top	0.842	-	-	0.842	0.842	0.842
		Bottom	0.315	0.018	0.038	0.333	0.353	0.371
		Front	0.685	0.030	0.339	0.715	1.024	1.054
	LTE Band 41	Rear	-	-	-	-	-	-
		Right	-	-	-	-	-	-
		Left	0.250	0.052	0.202	0.302	0.452	0.504
		Top	-	0.010	0.067	0.010	0.067	0.077
		Bottom	0.480	-	-	0.480	0.480	0.480
	LTE Band 41	Front	0.150	0.018	0.038	0.168	0.188	0.206
		Rear	0.391	0.030	0.339	0.421	0.730	0.760
		Right	-	-	-	-	-	-
		Left	0.103	0.052	0.202	0.155	0.305	0.357

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)		
Hotspot SAR	GPRS 850	Top	1	2	3	1+2	1+3	1+2+3
		Bottom	0.060	0.010	0.107	0.010	0.107	0.117
		Front	0.047	0.018	0.026	0.065	0.073	0.091
		Rear	0.127	0.030	0.091	0.157	0.218	0.248
		Right	0.082	-	-	0.082	0.082	0.082
		Left	-	0.052	0.014	0.052	0.014	0.066
	GPRS 1900	Top	-	0.010	0.107	0.010	0.107	0.117
		Bottom	0.619	-	-	0.619	0.619	0.619
		Front	0.269	0.018	0.026	0.287	0.295	0.313
		Rear	0.518	0.030	0.091	0.548	0.609	0.639
		Right	-	-	-	-	-	-
	WCDMA 850	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.260	0.010	0.107	0.010	0.107	0.117
		Front	0.229	0.018	0.026	0.247	0.255	0.273
		Rear	0.582	0.030	0.091	0.612	0.673	0.703
		Right	0.320	-	-	0.320	0.320	0.320
	WCDMA 1900	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.010	0.010	0.107	0.010	0.107	0.117
		Front	1.095	-	-	1.095	1.095	1.095
		Rear	0.383	0.018	0.026	0.401	0.409	0.427
		Right	0.719	0.030	0.091	0.749	0.810	0.840
	LTE Band 12	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.113	-	-	0.113	0.113	0.113
		Front	0.082	0.018	0.026	0.100	0.108	0.126
		Rear	0.269	0.030	0.091	0.299	0.360	0.390
		Right	0.107	-	-	0.107	0.107	0.107
	LTE Band 13	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.177	0.010	0.107	0.010	0.107	0.117
		Front	0.184	0.018	0.026	0.202	0.210	0.228
		Rear	0.454	0.030	0.091	0.484	0.545	0.575
		Right	0.163	-	-	0.163	0.163	0.163
	LTE Band 5	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.244	0.010	0.107	0.010	0.107	0.117
		Front	0.226	0.018	0.026	0.244	0.244	0.244
		Rear	0.533	0.030	0.091	0.563	0.624	0.654
		Right	0.262	-	-	0.262	0.262	0.262
	LTE Band 66	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.010	0.010	0.107	0.010	0.107	0.117
		Front	1.173	-	-	1.173	1.173	1.173
		Rear	0.427	0.018	0.026	0.445	0.453	0.471
		Right	0.877	0.030	0.091	0.907	0.968	0.998
	LTE Band 2	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.371	0.010	0.107	0.010	0.107	0.117
		Front	0.842	-	-	0.842	0.842	0.842
		Rear	0.315	0.018	0.026	0.333	0.341	0.359
		Right	0.685	0.030	0.091	0.715	0.776	0.806
	LTE Band 41	Top	-	0.052	0.014	0.052	0.014	0.066
		Bottom	0.250	0.010	0.107	0.010	0.107	0.117
		Front	0.480	-	-	0.480	0.480	0.480
		Rear	0.150	0.018	0.026	0.168	0.176	0.194
		Right	0.391	0.030	0.091	0.421	0.482	0.512
		Top	-	-	-	-	-	-
		Bottom	0.103	0.052	0.014	0.155	0.117	0.169
		Front	-	-	-	-	-	-
		Rear	-	-	-	-	-	-
		Right	-	-	-	-	-	-

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)
Hotspot SAR	GPRS 850	Top	-	0.089	0.089
		Bottom	0.060	-	0.060
		Front	0.047	0.073	0.120
		Rear	0.127	0.170	0.297
		Right	0.082	-	0.082
	GPRS 1900	Top	-	0.089	0.089
		Bottom	0.619	-	0.619
		Front	0.269	0.073	0.342
		Rear	0.518	0.170	0.688
		Right	-	-	-
	WCDMA 850	Top	-	0.089	0.089
		Bottom	0.260	-	0.260
		Front	0.229	0.073	0.302
		Rear	0.582	0.170	0.752
		Right	0.320	-	0.320
	WCDMA 1900	Top	-	0.089	0.089
		Bottom	1.095	-	1.095
		Front	0.383	0.073	0.456
		Rear	0.719	0.170	0.889
		Right	-	-	-
	LTE Band 12	Top	-	0.089	0.089
		Bottom	0.113	-	0.113
		Front	0.082	0.073	0.155
		Rear	0.269	0.170	0.439
		Right	0.107	-	0.107
	LTE Band 13	Top	-	0.089	0.089
		Bottom	0.177	-	0.177
		Front	0.184	0.073	0.257
		Rear	0.454	0.170	0.624
		Right	0.163	-	0.163
	LTE Band 5	Top	-	0.089	0.089
		Bottom	0.244	-	0.244
		Front	0.226	0.073	0.299
		Rear	0.533	0.170	0.703
		Right	0.262	-	0.262
	LTE Band 66	Top	-	0.089	0.089
		Bottom	0.010	0.089	0.099
		Front	1.173	-	1.173
		Rear	0.427	0.073	0.500
		Right	0.877	0.170	1.047
	LTE Band 2	Top	-	0.089	0.089
		Bottom	0.371	0.089	0.460
		Front	0.842	-	0.842
		Rear	0.315	0.073	0.388
		Right	0.685	0.170	0.855
	LTE Band 41	Top	-	0.089	0.089
		Bottom	0.250	-	0.250
		Front	0.480	-	0.480
		Rear	0.150	0.073	0.223
		Right	0.391	0.170	0.561
		Top	-	0.089	0.089
		Bottom	0.103	0.293	0.396
		Front	-	-	-
		Rear	-	-	-
		Right	-	-	-

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)
Hotspot SAR	GPRS 850	Top	1	2	1+2
		Bottom	0.060	0.107	0.107
		Front	0.047	0.026	0.073
		Rear	0.127	0.091	0.218
		Right	0.082	0.014	0.082
	GPRS 1900	Left	-	0.107	0.107
		Top	-	0.107	0.107
		Bottom	0.619	-	0.619
		Front	0.269	0.026	0.295
		Rear	0.518	0.091	0.609
	WCDMA 850	Right	-	0.014	0.014
		Left	0.171	0.014	0.185
		Top	-	0.107	0.107
		Bottom	0.260	-	0.260
		Front	0.229	0.026	0.255
	WCDMA 1900	Rear	0.582	0.091	0.673
		Right	0.320	-	0.320
		Left	-	0.014	0.014
		Top	-	0.107	0.107
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.026	0.409
		Rear	0.719	0.091	0.810
		Right	-	0.014	0.014
		Left	0.281	0.014	0.295
		Top	-	0.107	0.107
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.026	0.108
		Rear	0.269	0.091	0.360
		Right	0.107	-	0.107
		Left	-	0.014	0.014
	LTE Band 5	Top	-	0.107	0.107
		Bottom	0.177	-	0.177
		Front	0.184	0.026	0.210
		Rear	0.454	0.091	0.545
		Right	-	-	0.163
	LTE Band 66	Left	-	0.014	0.014
		Top	-	0.107	0.107
		Bottom	0.244	-	0.244
		Front	0.226	0.026	0.252
		Rear	0.533	0.091	0.624
	LTE Band 2	Right	0.262	-	0.262
		Left	-	0.014	0.014
		Top	-	0.107	0.107
		Bottom	1.173	-	1.173
		Front	0.427	0.026	0.453
	LTE Band 41	Rear	0.877	0.091	0.968
		Right	-	0.014	0.014
		Left	0.371	0.014	0.385
		Top	-	0.107	0.107
		Bottom	0.842	-	0.842
	LTE Band 13	Front	0.315	0.026	0.341
		Rear	0.685	0.091	0.776
		Right	-	-	-
		Left	-	0.014	0.014
		Top	0.250	0.107	0.264
	LTE Band 5	Bottom	-	0.107	0.107
		Front	0.480	-	0.480
		Rear	0.150	0.026	0.176
		Right	0.391	0.091	0.482
		Left	-	-	-
	LTE Band 66	Top	0.103	0.014	0.117
		Bottom	-	-	-
		Front	-	-	-
		Rear	-	-	-
		Right	-	-	-

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)
Hotspot SAR	GPRS 850	Top	1	2	1+2
		Bottom	0.060	0.161	0.161
		Front	0.047	0.073	0.120
		Rear	0.127	0.136	0.263
		Right	0.082	0.014	0.082
	GPRS 1900	Left	-	0.230	0.230
		Top	-	0.161	0.161
		Bottom	0.619	-	0.619
		Front	0.269	0.073	0.342
		Rear	0.518	0.136	0.654
	WCDMA 850	Right	-	-	-
		Left	0.171	0.230	0.401
		Top	-	0.161	0.161
		Bottom	0.260	-	0.260
		Front	0.229	0.073	0.302
	WCDMA 1900	Rear	0.582	0.136	0.718
		Right	0.320	-	0.320
		Left	-	0.230	0.230
		Top	-	0.161	0.161
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.073	0.456
		Rear	0.719	0.136	0.855
		Right	-	-	-
		Left	0.281	0.230	0.511
		Top	-	0.161	0.161
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.073	0.155
		Rear	0.269	0.136	0.405
		Right	0.107	-	0.107
		Left	-	0.230	0.230
	LTE Band 5	Top	-	0.161	0.161
		Bottom	0.177	-	0.177
		Front	0.184	0.073	0.257
		Rear	0.454	0.136	0.590
		Right	0.163	-	0.163
	LTE Band 66	Left	-	0.230	0.230
		Top	-	0.161	0.161
		Bottom	0.244	-	0.244
		Front	0.226	0.073	0.299
		Rear	0.533	0.136	0.669
	LTE Band 2	Right	0.262	-	0.262
		Left	-	0.230	0.230
		Top	-	0.161	0.161
		Bottom	1.173	-	1.173
		Front	0.427	0.073	0.500
	LTE Band 41	Rear	0.877	0.136	1.013
		Right	-	-	-
		Left	0.371	0.230	0.601
		Top	-	0.161	0.161
		Bottom	0.842	-	0.842
	LTE Band 13	Front	0.315	0.073	0.388
		Rear	0.685	0.136	0.821
		Right	-	-	-
		Left	0.250	0.230	0.480
		Top	-	0.161	0.161
	LTE Band 5	Bottom	-	0.161	0.161
		Front	0.480	-	0.480
		Rear	0.150	0.073	0.223
		Right	0.391	0.136	0.527
		Left	-	-	-
	LTE Band 66	Top	0.103	0.230	0.333
		Bottom	-	-	-
		Front	-	-	-
		Rear	-	-	-
		Right	-	-	-

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	-	0.113	0.113
		Bottom	0.060	-	0.060
		Front	0.047	0.041	0.088
		Rear	0.127	0.380	0.507
		Right	0.082	-	0.082
	GPRS 1900	Left	-	0.117	0.117
		Top	-	0.113	0.113
		Bottom	0.619	-	0.619
		Front	0.269	0.041	0.310
		Rear	0.518	0.380	0.898
	WCDMA 850	Right	-	0.117	0.117
		Left	0.171	-	0.171
		Top	-	0.113	0.113
		Bottom	0.260	-	0.260
		Front	0.229	0.041	0.270
	WCDMA 1900	Rear	0.582	0.380	0.962
		Right	0.320	-	0.320
		Left	-	0.117	0.117
		Top	-	0.113	0.113
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.041	0.424
		Rear	0.719	0.380	1.099
		Right	-	0.117	0.117
		Left	0.281	-	0.281
		Top	-	0.113	0.113
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.041	0.123
		Rear	0.269	0.380	0.649
		Right	0.107	-	0.107
		Left	-	0.117	0.117
	LTE Band 5	Top	-	0.113	0.113
		Bottom	0.177	-	0.177
		Front	0.184	0.041	0.225
		Rear	0.454	0.380	0.834
		Right	-	0.117	0.117
	LTE Band 66	Left	0.163	-	0.163
		Top	-	0.113	0.113
		Bottom	0.244	-	0.244
		Front	0.226	0.041	0.267
		Rear	0.533	0.380	0.913
	LTE Band 2	Right	0.262	-	0.262
		Left	-	0.117	0.117
		Top	-	0.113	0.113
		Bottom	1.173	-	1.173
		Front	0.427	0.041	0.468
	LTE Band 41	Rear	0.877	0.380	1.257
		Right	-	0.117	0.117
		Left	0.371	-	0.371
		Top	-	0.113	0.113
		Bottom	0.842	-	0.842
	LTE Band 2	Front	0.315	0.041	0.356
		Rear	0.685	0.380	1.065
		Right	-	0.117	0.117
		Left	-	0.113	0.113
		Top	0.250	-	0.250
	LTE Band 41	Bottom	0.480	-	0.480
		Front	0.150	0.041	0.191
		Rear	0.391	0.380	0.771
		Right	-	0.117	0.117
		Left	0.103	-	0.103

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	-	0.030	0.030
		Bottom	0.060	-	0.060
		Front	0.047	0.008	0.055
		Rear	0.127	0.122	0.249
		Right	0.082	-	0.082
	GPRS 1900	Left	-	0.059	0.059
		Top	-	0.030	0.030
		Bottom	0.619	-	0.619
		Front	0.269	0.008	0.277
		Rear	0.518	0.122	0.640
	WCDMA 850	Right	-	0.059	0.059
		Left	0.171	-	0.171
		Top	-	0.030	0.030
		Bottom	0.260	-	0.260
		Front	0.229	0.008	0.237
	WCDMA 1900	Rear	0.582	0.122	0.704
		Right	0.320	-	0.320
		Left	-	0.059	0.059
		Top	-	0.030	0.030
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.008	0.391
		Rear	0.719	0.122	0.841
		Right	-	0.059	0.059
		Left	0.281	-	0.281
		Top	-	0.030	0.030
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.008	0.090
		Rear	0.269	0.122	0.391
		Right	0.107	-	0.107
		Left	-	0.059	0.059
	LTE Band 5	Top	-	0.030	0.030
		Bottom	0.177	-	0.177
		Front	0.184	0.008	0.192
		Rear	0.454	0.122	0.576
		Right	-	0.059	0.059
	LTE Band 66	Left	0.163	-	0.163
		Top	-	0.030	0.030
		Bottom	0.244	-	0.244
		Front	0.226	0.008	0.234
		Rear	0.533	0.122	0.655
	LTE Band 2	Right	0.262	-	0.262
		Left	-	0.059	0.059
		Top	-	0.030	0.030
		Bottom	1.173	-	1.173
		Front	0.427	0.008	0.435
	LTE Band 41	Rear	0.877	0.122	0.999
		Right	-	0.059	0.059
		Left	0.371	-	0.371
		Top	-	0.030	0.030
		Bottom	0.842	-	0.842
	LTE Band 2	Front	0.315	0.008	0.323
		Rear	0.685	0.122	0.807
		Right	-	0.059	0.059
		Left	0.250	-	0.250
		Top	-	0.030	0.030
	LTE Band 41	Bottom	0.480	-	0.480
		Front	0.150	0.008	0.158
		Rear	0.391	0.122	0.513
		Right	-	0.059	0.059
		Left	0.103	-	0.103

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)
Hotspot SAR	GPRS 850	Top	1	2	1+2
		Bottom	-	0.155	0.155
		Front	0.060	-	0.060
		Rear	0.047	0.053	0.100
		Right	0.127	0.420	0.547
	GPRS 1900	Left	0.082	0.166	0.248
		Top	-	0.155	0.155
		Bottom	0.619	-	0.619
		Front	0.269	0.053	0.322
		Rear	0.518	0.420	0.938
	WCDMA 850	Right	-	0.166	0.166
		Left	0.171	0.166	0.337
		Top	-	0.155	0.155
		Bottom	0.260	-	0.260
		Front	0.229	0.053	0.282
	WCDMA 1900	Rear	0.582	0.420	1.002
		Right	0.320	-	0.320
		Left	-	0.166	0.166
		Top	-	0.155	0.155
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.053	0.436
		Rear	0.719	0.420	1.139
		Right	-	0.166	0.166
		Left	0.281	0.166	0.447
		Top	-	0.155	0.155
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.053	0.135
		Rear	0.269	0.420	0.689
		Right	0.107	-	0.107
		Left	-	0.166	0.166
	LTE Band 5	Top	-	0.155	0.155
		Bottom	0.244	-	0.244
		Front	0.226	0.053	0.279
		Rear	0.533	0.420	0.953
		Right	0.262	-	0.262
	LTE Band 66	Left	-	0.166	0.166
		Top	-	0.155	0.155
		Bottom	1.173	-	1.173
		Front	0.427	0.053	0.480
		Rear	0.877	0.420	1.297
	LTE Band 2	Right	-	0.166	0.166
		Left	0.371	0.166	0.537
		Top	-	0.155	0.155
		Bottom	0.842	-	0.842
		Front	0.315	0.053	0.368
	LTE Band 41	Rear	0.685	0.420	1.105
		Right	-	-	-
		Left	0.250	0.166	0.416
		Top	-	0.155	0.155
		Bottom	0.480	-	0.480
	LTE Band 13	Front	0.150	0.053	0.203
		Rear	0.391	0.420	0.811
		Right	-	-	-
		Left	0.103	0.166	0.269

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)
Hotspot SAR	GPRS 850	Top	-	0.050	0.050
		Bottom	0.060	-	0.060
		Front	0.047	0.025	0.072
		Rear	0.127	0.125	0.252
		Right	0.082	-	0.082
	GPRS 1900	Left	-	0.092	0.092
		Top	-	0.050	0.050
		Bottom	0.619	-	0.619
		Front	0.269	0.025	0.294
		Rear	0.518	0.125	0.643
	WCDMA 850	Right	-	-	-
		Left	0.171	0.092	0.263
		Top	-	0.050	0.050
		Bottom	0.260	-	0.260
		Front	0.229	0.025	0.254
	WCDMA 1900	Rear	0.582	0.125	0.707
		Right	0.320	-	0.320
		Left	-	0.092	0.092
		Top	-	0.050	0.050
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.025	0.408
		Rear	0.719	0.125	0.844
		Right	-	-	-
		Left	0.281	0.092	0.373
		Top	-	0.050	0.050
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.025	0.107
		Rear	0.269	0.125	0.394
		Right	0.107	-	0.107
		Left	-	0.092	0.092
	LTE Band 5	Top	-	0.050	0.050
		Bottom	0.244	-	0.244
		Front	0.226	0.025	0.251
		Rear	0.533	0.125	0.658
		Right	0.262	-	0.262
	LTE Band 66	Left	-	0.092	0.092
		Top	-	0.050	0.050
		Bottom	1.173	-	1.173
		Front	0.427	0.025	0.452
		Rear	0.877	0.125	1.002
	LTE Band 2	Right	-	-	-
		Left	0.371	0.092	0.463
		Top	-	0.050	0.050
		Bottom	0.842	-	0.842
		Front	0.315	0.025	0.340
	LTE Band 41	Rear	0.685	0.125	0.810
		Right	-	-	-
		Left	0.250	0.092	0.342
		Top	-	0.050	0.050
		Bottom	0.480	-	0.480
	LTE Band 13	Front	0.150	0.025	0.175
		Rear	0.391	0.125	0.516
		Right	-	-	-
		Left	0.103	0.092	0.195

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)
Hotspot SAR	GPRS 850	Top	-	0.013	0.013
		Bottom	0.060	-	0.060
		Front	0.047	0.012	0.059
		Rear	0.127	0.211	0.338
		Right	0.082	-	0.082
	GPRS 1900	Top	-	0.013	0.013
		Bottom	0.619	-	0.619
		Front	0.269	0.012	0.281
		Rear	0.518	0.211	0.729
		Right	-	-	-
	WCDMA 850	Top	-	0.013	0.013
		Bottom	0.260	-	0.260
		Front	0.229	0.012	0.241
		Rear	0.582	0.211	0.793
		Right	0.320	-	0.320
	WCDMA 1900	Top	-	0.013	0.013
		Bottom	1.095	-	1.095
		Front	0.383	0.012	0.395
		Rear	0.719	0.211	0.930
		Right	-	-	-
	LTE Band 12	Top	-	0.013	0.013
		Bottom	0.113	-	0.113
		Front	0.082	0.012	0.094
		Rear	0.269	0.211	0.480
		Right	0.107	-	0.107
	LTE Band 13	Top	-	0.013	0.013
		Bottom	0.177	-	0.177
		Front	0.184	0.012	0.196
		Rear	0.454	0.211	0.665
		Right	-	-	-
	LTE Band 5	Top	-	0.013	0.013
		Bottom	0.244	-	0.244
		Front	0.226	0.012	0.238
		Rear	0.533	0.211	0.744
		Right	0.262	-	0.262
	LTE Band 66	Top	-	0.013	0.013
		Bottom	1.173	-	1.173
		Front	0.427	0.012	0.439
		Rear	0.877	0.211	1.088
		Right	-	-	-
	LTE Band 2	Top	-	0.013	0.013
		Bottom	0.842	-	0.842
		Front	0.315	0.012	0.327
		Rear	0.685	0.211	0.896
		Right	-	-	-
	LTE Band 41	Top	-	0.013	0.013
		Bottom	0.480	-	0.480
		Front	0.150	0.012	0.162
		Rear	0.391	0.211	0.602
		Right	-	-	-
		Top	-	0.097	0.097
		Bottom	0.103	-	0.103
		Front	-	-	-
		Rear	-	-	-
		Right	-	-	-

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)
Hotspot SAR	GPRS 850	Top	-	0.067	0.067
		Bottom	0.060	-	0.060
		Front	0.047	0.038	0.085
		Rear	0.127	0.339	0.466
		Right	0.082	-	0.082
	GPRS 1900	Top	-	0.067	0.067
		Bottom	0.619	-	0.619
		Front	0.269	0.038	0.307
		Rear	0.518	0.339	0.857
		Right	-	-	-
	WCDMA 850	Top	-	0.067	0.067
		Bottom	0.260	-	0.260
		Front	0.229	0.038	0.267
		Rear	0.582	0.339	0.921
		Right	0.320	-	0.320
	WCDMA 1900	Top	-	0.067	0.067
		Bottom	1.095	-	1.095
		Front	0.383	0.038	0.421
		Rear	0.719	0.339	1.058
		Right	-	-	-
	LTE Band 12	Top	-	0.067	0.067
		Bottom	0.113	-	0.113
		Front	0.082	0.038	0.120
		Rear	0.269	0.339	0.608
		Right	0.107	-	0.107
	LTE Band 13	Top	-	0.067	0.067
		Bottom	0.177	-	0.177
		Front	0.184	0.038	0.222
		Rear	0.454	0.339	0.793
		Right	0.163	-	0.163
	LTE Band 5	Top	-	0.067	0.067
		Bottom	0.244	-	0.244
		Front	0.226	0.038	0.264
		Rear	0.533	0.339	0.872
		Right	0.262	-	0.262
	LTE Band 66	Top	-	0.067	0.067
		Bottom	1.173	-	1.173
		Front	0.427	0.038	0.465
		Rear	0.877	0.339	1.216
		Right	-	-	-
	LTE Band 2	Top	-	0.067	0.067
		Bottom	0.842	-	0.842
		Front	0.315	0.038	0.353
		Rear	0.685	0.339	1.024
		Right	-	-	-
	LTE Band 41	Top	-	0.067	0.067
		Bottom	0.480	-	0.480
		Front	0.150	0.038	0.188
		Rear	0.391	0.339	0.730
		Right	-	-	-
		Top	-	0.202	0.202
		Bottom	0.103	-	0.103
		Front	-	-	-
		Rear	-	-	-
		Right	-	-	-

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)
Hotspot SAR	GPRS 850	Top	1	2	1+2
		Bottom	0.060	0.010	0.070
		Front	0.047	0.018	0.065
		Rear	0.127	0.030	0.157
		Right	0.062	-	0.062
	GPRS 1900	Left	-	0.052	0.052
		Top	-	0.010	0.010
		Bottom	0.619	-	0.619
		Front	0.269	0.018	0.287
		Rear	0.518	0.030	0.548
	WCDMA 850	Right	-	-	-
		Left	0.171	0.052	0.223
		Top	-	0.010	0.010
		Bottom	0.260	-	0.260
		Front	0.229	0.018	0.247
	WCDMA 1900	Rear	0.582	0.030	0.612
		Right	0.320	-	0.320
		Left	-	0.052	0.052
		Top	-	0.010	0.010
		Bottom	1.095	-	1.095
	LTE Band 12	Front	0.383	0.018	0.401
		Rear	0.719	0.030	0.749
		Right	-	-	-
		Left	0.281	0.052	0.333
		Top	-	0.010	0.010
	LTE Band 13	Bottom	0.113	-	0.113
		Front	0.082	0.018	0.100
		Rear	0.269	0.030	0.299
		Right	0.107	-	0.107
		Left	-	0.052	0.052
	LTE Band 5	Top	-	0.010	0.010
		Bottom	0.244	-	0.244
		Front	0.226	0.018	0.244
		Rear	0.533	0.030	0.563
		Right	0.262	-	0.262
	LTE Band 66	Left	-	0.052	0.052
		Top	-	0.010	0.010
		Bottom	1.173	-	1.173
		Front	0.427	0.018	0.445
		Rear	0.877	0.030	0.907
	LTE Band 2	Right	0.371	-	0.371
		Left	-	0.052	0.052
		Top	-	0.010	0.010
		Bottom	0.842	-	0.842
		Front	0.315	0.018	0.333
	LTE Band 41	Rear	0.685	0.030	0.715
		Right	-	-	-
		Left	-	-	-
		Top	0.250	0.052	0.302
		Bottom	0.480	0.010	0.490
	LTE Band 41	Front	0.150	0.018	0.168
		Rear	0.391	0.030	0.421
		Right	-	-	-
		Left	0.103	0.052	0.155

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)
Hotspot SAR	5.2G W-LAN Ant.2	Top	0.089	0.030	0.119
		Bottom	-	-	-
		Front	0.073	0.008	0.081
		Rear	0.170	0.122	0.292
		Right	-	-	-
		Left	0.293	0.059	0.352
		Top	0.089	0.013	0.102
	5.8G W-LAN Ant.2	Bottom	-	-	-
		Front	0.073	0.012	0.085
		Rear	0.170	0.211	0.381
		Right	-	-	-
		Left	0.293	-	0.293
		Top	-	0.097	0.097
		Bottom	-	-	-

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)
Hotspot SAR	5.2G W-LAN Ant.1	Top	1	2	1+2
		Bottom	0.010	0.113	0.123
		Front	0.018	0.041	0.059
		Rear	0.030	0.380	0.410
		Right	-	-	-
		Left	0.052	0.117	0.169
		Top	0.010	0.059	0.069
	5.8G W-LAN Ant.1	Bottom	-	-	-
		Front	0.018	0.025	0.043
		Rear	0.030	0.125	0.155
		Right	-	-	-
		Left	-	-	-
		Top	0.052	0.092	0.144
		Bottom	-	-	-

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)
Hotspot SAR	5.2G W-LAN Ant.2	Top	1	2	1+2
		Bottom	0.010	0.030	0.040
		Front	0.018	0.008	0.026
		Rear	0.030	0.122	0.152
		Right	-	-	-
		Left	0.052	0.059	0.111
		Top	0.010	0.013	0.023
	5.8G W-LAN Ant.2	Bottom	-	-	-
		Front	0.018	0.012	0.030
		Rear	0.030	0.211	0.241
		Right	-	-	-
		Left	0.052	0.097	0.149
		Top	-	-	-
		Bottom	-	-	-

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)
Hotspot SAR	5.2G W-LAN MIMO	Top	1	2	1+2
		Bottom	0.010	0.155	0.165
		Front	0.018	0.053	0.071
		Rear	0.030	0.420	0.450
		Right	-	-	-
		Left	0.052	0.166	0.218
		Top	0.010	0.067	0.077
	5.8G W-LAN MIMO	Bottom	-	-	-
		Front	0.018	0.038	0.056
		Rear	0.030	0.339	0.369
		Right	-	-	-
		Left	0.052	0.202	0.254
		Top	-	-	-
		Bottom	-	-	-

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	0.010	0.107	0.117
		Bottom	-	-	-
		Front	0.018	0.026	0.044
		Rear	0.030	0.091	0.121
		Right	-	-	-
		Left	0.062	0.014	0.066

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 Body-Worn 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)	
1 770.0	132572	LTE B66	-	-	10 mm [Rear]	0.823	0.820	1.00	-	-	-	-
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 13.2 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)	
1 852.4	9262	WCDMA 1900	RMC	-	10 mm [Bottom]	1.070	1.050	1.02	-	-	-	-
1 770.0	132572	LTE B66	-	-	10 mm [Bottom]	1.130	1.120	1.01	-	-	-	-
1 860.0	18700	LTE B2	-	-	10 mm [Bottom]	0.829	0.823	1.01	-	-	-	-
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	TX90XL	N/A	N/A	F13/5P9GA1/A/01
☒ Robot	SPEAG	TX90XL	N/A	N/A	F13/5RR2A1/A/01
☒ Robot Controller	SPEAG	CS8C	N/A	N/A	F13/5P9GA1/C/01
☒ Robot Controller	SPEAG	CS8C	N/A	N/A	F13/5RR2A1/C/01
☒ Joystick	SPEAG	N/A	N/A	N/A	S-12450905
☒ Joystick	SPEAG	N/A	N/A	N/A	S-13200990
☒ Intel Core i7-3 770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
☒ Intel Core i7-3 770 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	SD000H01HA	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	1782
☒ Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1783
☒ Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1785
☒ Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1786
☒ Data Acquisition Electronics	SPEAG	DAE3V1	2019-11-19	2020-11-19	520
☒ Data Acquisition Electronics	SPEAG	DAE4V1	2020-05-25	2021-05-25	1392
☒ Dosimetric E-Field Probe	SPEAG	ES3DV3	2020-03-25	2021-03-25	3328
☒ Dosimetric E-Field Probe	SPEAG	EX3DV4	2019-09-27	2020-09-27	3933
☒ Dosimetric E-Field Probe	SPEAG	EX3DV4	2020-05-27	2021-05-27	3866
☒ 750MHz SAR Dipole	SPEAG	D750V3	2020-01-22	2022-01-22	1049
☒ 835MHz SAR Dipole	SPEAG	D835V2	2020-05-19	2022-05-19	4d159
☒ 1800MHz SAR Dipole	SPEAG	D1800V2	2020-03-20	2022-03-20	2d202
☒ 1900MHz SAR Dipole	SPEAG	D1900V2	2020-05-19	2022-05-19	5d176
☒ 2450MHz SAR Dipole	SPEAG	D2450V2	2019-09-19	2021-09-19	726
☒ 2600MHz 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)	WEINSCHTEL	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):

- 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.
- 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: 3328)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about } 95\% \text{ } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about } 95\% \text{ } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

750 MHz Body (SN: 3328)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.2	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	1.8	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Head (SN: 3328)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	3.9	Normal	1	0.23	0.26	0.9	1.0	10
Temp. unc. - Conductivity	1.7	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.8	Rectangular	$\sqrt{3}$	0.23	0.26	0.2	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

= 24 % (The confidence level is about 95 % $k = 2$)

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

= 22 % (The confidence level is about 95 % $k = 2$)

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Body (SN: 3328)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2)$$

1 800 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.3	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	2.0	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.1	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

1 800 MHz Body (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	3.9	Normal	1	0.23	0.26	0.9	1.0	10
Temp. unc. - Conductivity	1.9	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

1 900 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	2.0	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

1 900 MHz Body (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

2 450 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.3	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	1.8	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.7	Rectangular	$\sqrt{3}$	0.23	0.26	0.2	0.3	∞
Combined Standard Uncertainty						12	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

= 24 % (The confidence level is about 95 % $k = 2$)

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

= 24 % (The confidence level is about 95 % $k = 2$)

The above measurement uncertainties are according to IEEE Std 1528

2 450 MHz Body (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.3	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	1.8	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

2 600 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	2.0	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about } 95\% \text{ } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about } 95\% \text{ } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

2 600 MHz Body (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.3	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	2.0	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	11	330
Expanded Uncertainty (k=2)						24	22	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 11\%$$

$$= 22\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

5 200 MHz Body (SN: 3866)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

5 300 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.2	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	1.8	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.8	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

= 24 % (The confidence level is about 95 % $k = 2$)

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

= 24 % (The confidence level is about 95 % $k = 2$)

The above measurement uncertainties are according to IEEE Std 1528

5 300 MHz Body (SN: 3866)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.1	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

5 500 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

5 500 MHz Body (SN: 3866)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

5 600 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.3	Normal	1	0.23	0.26	1.0	1.1	10
Temp. unc. - Conductivity	1.8	Rectangular	$\sqrt{3}$	0.78	0.71	0.8	0.7	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12.	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

5 600 MHz Body (SN: 3866)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
Liquid conductivity (Meas.)	4.0	Normal	1	0.78	0.71	3.0	2.8	10
Liquid permittivity (Target)	5.0	Rectangular	$\sqrt{3}$	0.60	0.49	1.7	1.4	∞
Liquid permittivity (Meas.)	4.2	Normal	1	0.23	0.26	0.9	1.0	10
Temp. unc. - Conductivity	2.0	Rectangular	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	2.0	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

The above measurement uncertainties are according to IEEE Std 1528

5 800 MHz Head (SN: 3933)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	1.7	Rectangular	$\sqrt{3}$	0.23	0.26	0.2	0.3	∞
Combined Standard Uncertainty						12	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2)$$

The above measurement uncertainties are according to IEEE Std 1528

5 800 MHz Body (SN: 3866)

Error Description	Uncertainty value $\pm\%$	Probability Distribution	Divisor	(Ci) 1 g	(Ci) 10 g	Standard 1 g ($\pm\%$)	Standard 10 g ($\pm\%$)	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	$\sqrt{3}$	1	1	1.2	1.2	∞
Probe Linearity	0.3	Normal	1	1	1	0.3	0.3	∞
Probe modulation response	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Detection limits	0.25	Rectangular	$\sqrt{3}$	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response time	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Integration time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5	∞
RF Ambient Conditions – Noise	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.8	Rectangular	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe Positioning	6.7	Rectangular	$\sqrt{3}$	1	1	3.9	3.9	∞
Algorithms for Max. SAR Eval.	4.0	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	1	1	2.9	2.9	∞
SAR Scaling	0.0	Rectangular	$\sqrt{3}$	1	1	0.0	0.0	∞
Physical Parameters								
Phantom Shell	7.6	Rectangular	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	0.9	0.8	∞
Temp. unc. - Permittivity	1.9	Rectangular	$\sqrt{3}$	0.23	0.26	0.3	0.3	∞
Combined Standard Uncertainty						12.	12	330
Expanded Uncertainty (k=2)						24	24	

$$U(1\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

$$U(10\text{ g}) = k \cdot u_c$$

$$= 2 \cdot 12\%$$

$$= 24\% \text{ (The confidence level is about 95 \% } k = 2 \text{)}$$

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. Hartsgrrove, 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 Hochschule 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
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	
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			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
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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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., $\vartheta = 0$ 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:

- 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
- 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
- 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
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,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.
- DCP_{x,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
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,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 $f \leq 800$ 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 NORM_{x,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 NORM_x (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 ($\mu\text{V}/(\text{V}/\text{m})^2$) ^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 $\sqrt{\mu\text{V}}$	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 E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ES3DV3-- SN:3328

March 25, 2020

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

ES3DV3- SN:3328

March 25, 2020

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.

ES3DV3- SN:3328

March 25, 2020

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.

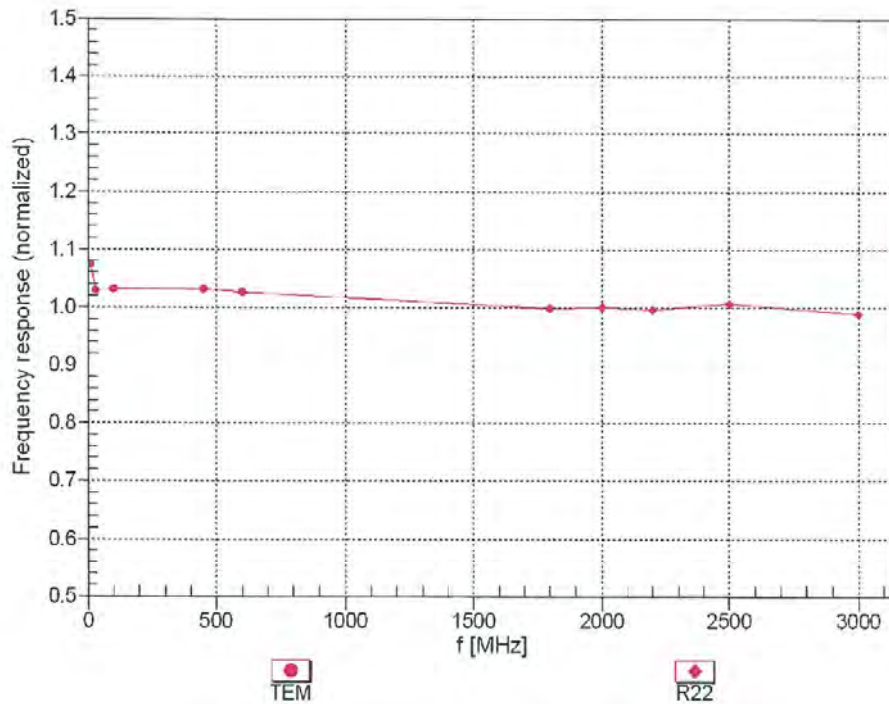
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty 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: $\pm 6.3\%$ ($k=2$)

ES3DV3-SN:3328

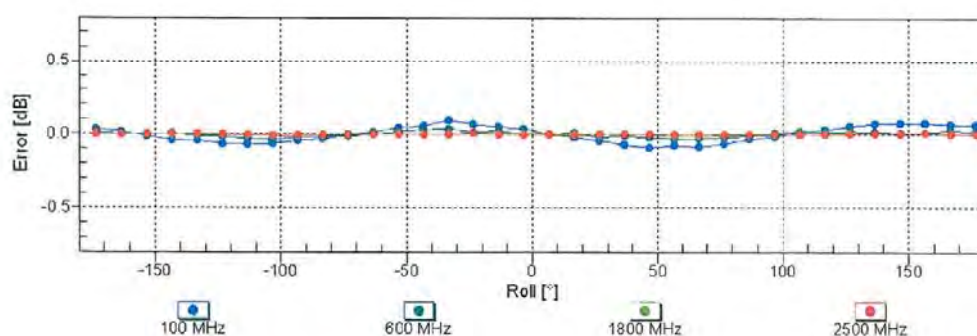
March 25, 2020

Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM



f=1800 MHz,R22

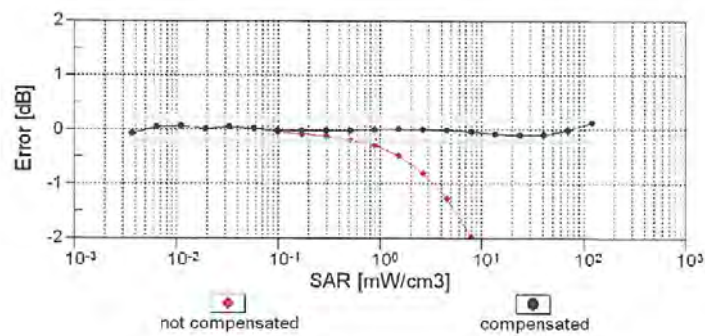
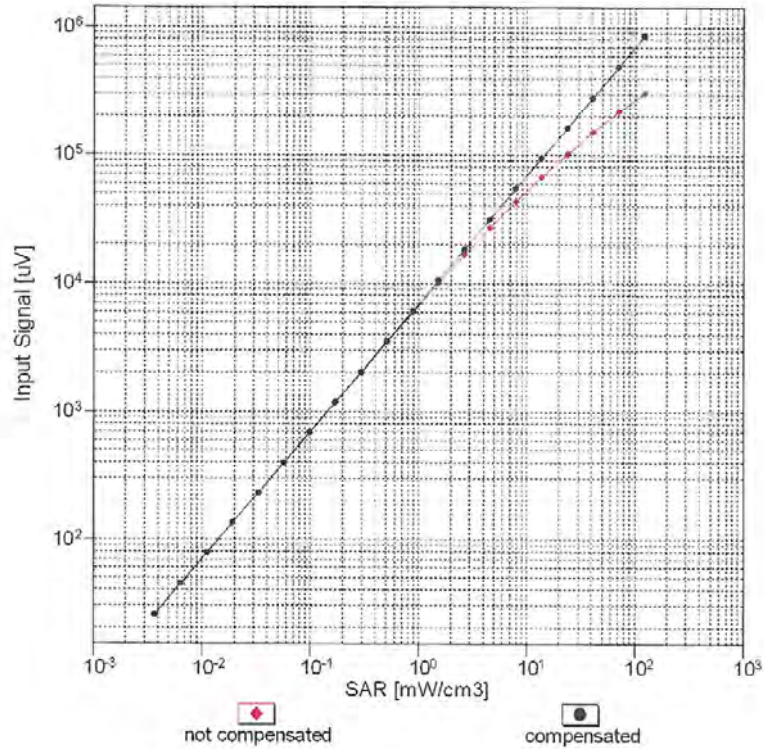


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

ES3DV3- SN:3328

March 25, 2020

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

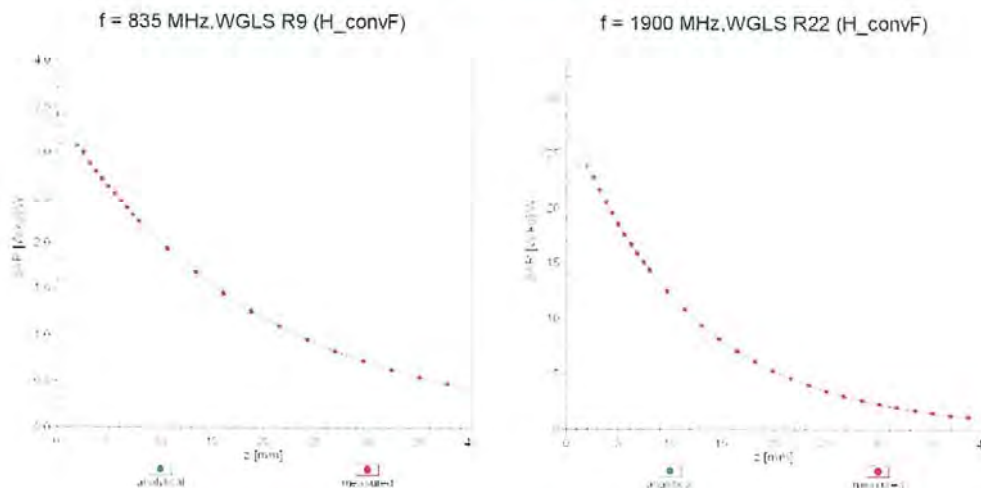


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

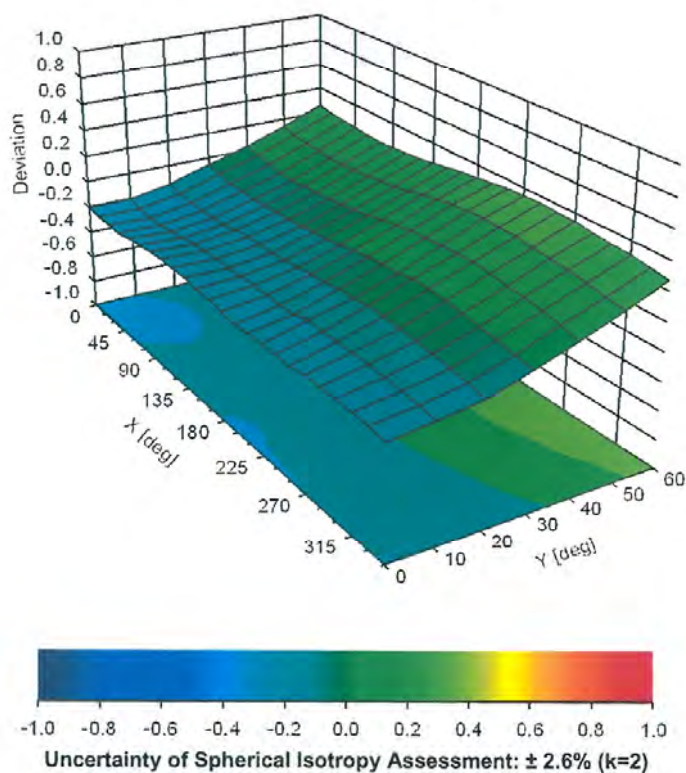
ES3DV3- SN:3328

March 25, 2020

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ , θ), f = 900 MHz



**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: **EX3-3933_Sep19**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3933**

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: **September 27, 2019**

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 ($22 \pm 3^\circ\text{C}$) 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	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
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-18)	In house check: Oct-19

Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	
Issued: September 30, 2019			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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., $\vartheta = 0$ 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:

- 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
- 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
- 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
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,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.
- DCP_{x,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
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,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 $f \leq 800$ 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 NORM_{x,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 NORM_x (no uncertainty required).

EX3DV4 – SN:3933

September 27, 2019

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3933

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.49	0.52	0.19	± 10.1 %
DCP (mV) ^B	105.1	100.3	95.6	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB/μV	C	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	163.3	± 2.2 %	± 4.7 %
		Y	0.00	0.00	1.00		166.6		
		Z	0.00	0.00	1.00		158.8		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	15.00	90.30	22.21	10.00	60.0	± 3.2 %	± 9.6 %
		Y	15.00	89.45	22.16		60.0		
		Z	15.00	90.07	22.52		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	15.00	93.23	22.50	6.99	80.0	± 2.1 %	± 9.6 %
		Y	15.00	90.02	21.08		80.0		
		Z	15.00	92.33	21.94		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	15.00	102.11	25.43	3.98	95.0	± 2.4 %	± 9.6 %
		Y	15.00	91.85	20.31		95.0		
		Z	15.00	161.21	54.32		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	15.00	127.83	36.23	2.22	120.0	± 3.0 %	± 9.6 %
		Y	15.00	100.88	23.08		120.0		
		Z	0.11	60.00	30.00		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	15.00	94.61	19.88	0.00	150.0	± 4.9 %	± 9.6 %
		Y	0.98	66.33	11.74		150.0		
		Z	0.03	60.00	30.00		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	4.47	82.57	22.97	0.00	150.0	± 4.7 %	± 9.6 %
		Y	2.77	72.49	18.16		150.0		
		Z	15.00	116.88	37.35		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	3.14	73.89	21.30	3.01	150.0	± 3.7 %	± 9.6 %
		Y	3.97	75.80	21.70		150.0		
		Z	15.00	121.14	42.19		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	4.01	70.75	18.20	0.00	150.0	± 3.5 %	± 9.6 %
		Y	3.70	68.48	16.76		150.0		
		Z	6.59	83.14	25.05		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.96	67.04	16.71	0.00	150.0	± 4.5 %	± 9.6 %
		Y	4.95	66.11	16.05		150.0		
		Z	5.53	71.03	19.84		150.0		

Note: For details on UID parameters see Appendix

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 E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4– SN:3933

September 27, 2019

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3933

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 ms. V^{-2}	T2 ms. V^{-1}	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	37.1	274.02	35.44	16.09	0.81	5.10	0.05	0.40	1.01
Y	48.6	371.39	37.26	21.32	1.16	5.10	0.67	0.53	1.01
Z	27.0	217.61	42.23	8.67	1.66	5.07	0.00	0.24	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	76.2
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

EX3DV4- SN:3933

September 27, 2019

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3933

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	10.68	10.68	10.68	0.45	0.86	± 12.0 %
835	41.5	0.90	10.32	10.32	10.32	0.41	0.90	± 12.0 %
900	41.5	0.97	10.01	10.01	10.01	0.52	0.80	± 12.0 %
1750	40.1	1.37	8.87	8.87	8.87	0.34	0.87	± 12.0 %
1900	40.0	1.40	8.57	8.57	8.57	0.30	0.87	± 12.0 %
2300	39.5	1.67	8.19	8.19	8.19	0.29	0.90	± 12.0 %
2450	39.2	1.80	7.84	7.84	7.84	0.33	0.90	± 12.0 %
2600	39.0	1.96	7.62	7.62	7.62	0.25	0.90	± 12.0 %
3500	37.9	2.91	7.27	7.27	7.27	0.30	1.35	± 13.1 %
3700	37.7	3.12	6.99	6.99	6.99	0.30	1.35	± 13.1 %
5200	36.0	4.66	5.29	5.29	5.29	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.10	5.10	5.10	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.95	4.95	4.95	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.80	4.80	4.80	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.75	4.75	4.75	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.

EX3DV4– SN:3933

September 27, 2019

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3933

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	10.44	10.44	10.44	0.45	0.80	± 12.0 %
835	55.2	0.97	10.24	10.24	10.24	0.40	0.80	± 12.0 %
900	55.0	1.05	10.14	10.14	10.14	0.47	0.80	± 12.0 %
1750	53.4	1.49	8.64	8.64	8.64	0.40	0.87	± 12.0 %
1900	53.3	1.52	8.15	8.15	8.15	0.40	0.87	± 12.0 %
2300	52.9	1.81	7.94	7.94	7.94	0.39	0.90	± 12.0 %
2450	52.7	1.95	7.75	7.75	7.75	0.38	0.90	± 12.0 %
2600	52.5	2.16	7.57	7.57	7.57	0.31	0.90	± 12.0 %
3500	51.3	3.31	6.88	6.88	6.88	0.40	1.35	± 13.1 %
3700	51.0	3.55	6.82	6.82	6.82	0.40	1.35	± 13.1 %
5200	49.0	5.30	4.66	4.66	4.66	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.56	4.56	4.56	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.20	4.20	4.20	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.05	4.05	4.05	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.13	4.13	4.13	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.

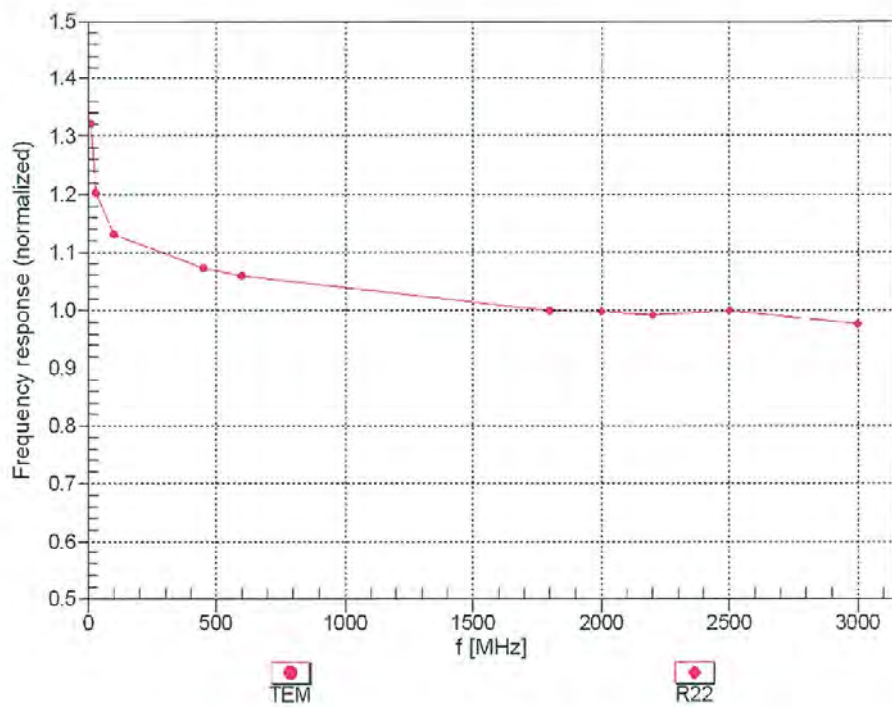
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty 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:3933

September 27, 2019

Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

EX3DV4- SN:3933

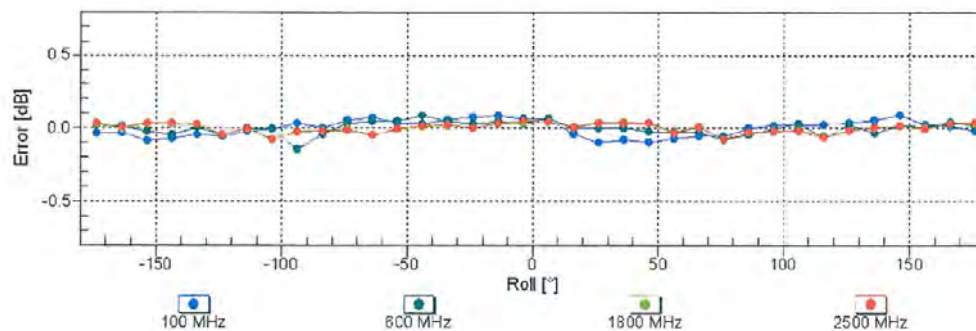
September 27, 2019

Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM



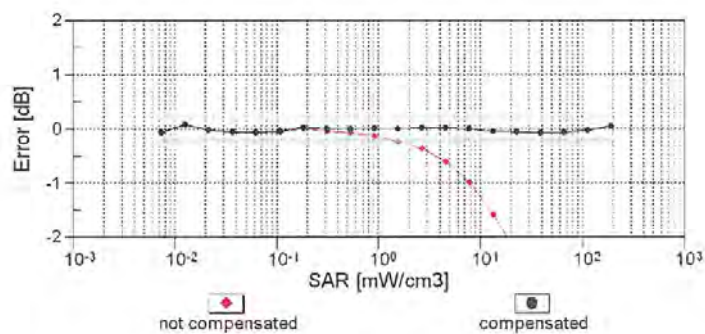
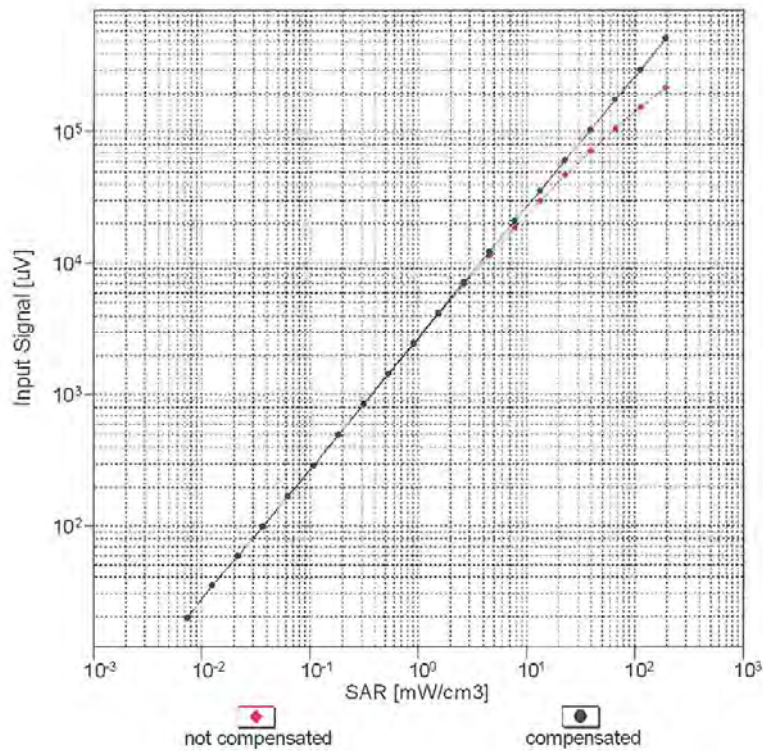
f=1800 MHz,R22

Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

EX3DV4- SN:3933

September 27, 2019

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

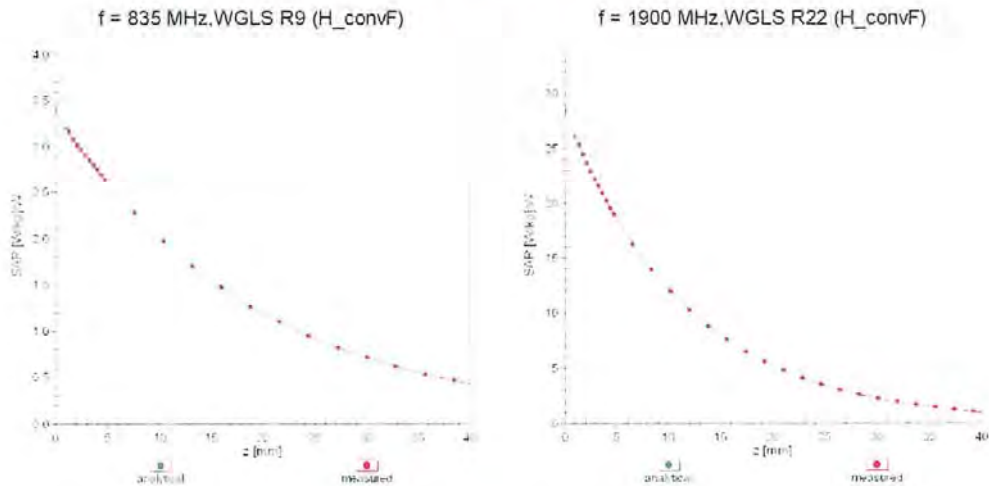


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

EX3DV4- SN:3933

September 27, 2019

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$

