TEST REPORT

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1. Report No : DRRFCC1909-0082(1)
2. Customer
   - Name : Point Mobile Co., LTD.
   - Address : B-9F, Kabul Great Valley 32 Digital-ro 9-gil, Geumcheon-gu Seoul South Korea 153-709
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : Mobile Computer / PM90G
   FCC ID : V2X-PM90G
5. Test Method Used : IEEE 1528-2013, FCC SAR KDB Publications (Details in test report)
   Test Specification : CFR §2.1093
6. Date of Test : 2019.07.09 ~ 2019.08.27
7. Testing Environment : Refer to appended test report.
8. Test Result : Refer to attached test report.

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

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2019 . 09 . 26 .

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

Test Report Version

Test Report No.	Date	Description
DRRFCC1909-0082	Sep. 24, 2019	Initial issue
DRRFCC1909-0082(1)	Sep. 26, 2019	Revise of Customer Name

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1. DESCRIPTION OF DEVICE

1.1 General Information

EUT type	Mobile Computer				
FCC ID	V2X-PM90G				
Equipment model name	PM90G				
Equipment add model name	N/A				
Equipment serial no.	Identical prototype				
Mode(s) of Operation	GSM 850, GSM 1900, WCDMA 850, WCDMA 1700, WCDMA 1900, LTE Band 12, 17, 13, 14, 26, 5, 4, 25, 2, 7, 41, 2.4 G W-LAN (802.11b/g/n-HT20/n-HT40/ac-VHT20/ac-VHT40), 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 ~ 848.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1850.2 ~ 1909.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	826.4 ~ 846.6 MHz
	WCDMA 1700	WCDMA	Voice/Data	-	1712.4 ~ 1752.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1852.4 ~ 1907.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	699.7 ~ 715.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	706.5 ~ 713.5 MHz
	LTE Band 13	LTE	Voice/Data	5/10MHz	779.5 ~ 784.5 MHz
	LTE Band 14	LTE	Voice/Data	5/10MHz	790.5 ~ 795.5 MHz
	LTE Band 26	LTE	Voice/Data	1.4/3/5/10/15MHz	814.7 ~ 848.3 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	824.7 ~ 848.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1710.7 ~ 1754.3 MHz
	LTE Band 25	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1850.7 ~ 1914.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1850.7 ~ 1909.3 MHz
	LTE Band 7	LTE	Voice/Data	5/10/15/20MHz	2502.5 ~ 2567.5 MHz
	LTE Band 41	LTE	Voice/Data	5/10/15/20MHz	2498.5 ~ 2687.5 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2412 ~ 2462 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5180 ~ 5240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5190 ~ 5230 MHz
		802.11ac	Voice/Data	VHT80	5210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5260 ~ 5320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5270 ~ 5310 MHz
		802.11ac	Voice/Data	VHT80	5290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5500 ~ 5720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5510 ~ 5710 MHz
		802.11ac	Voice/Data	VHT80	5530 ~ 5690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5745 ~ 5825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5755 ~ 5795 MHz
		802.11ac	Voice/Data	VHT80	5775 MHz
	Bluetooth	-	Data	-	2402 ~ 2480 MHz
RX Frequency Range	GSM 850	GSM/GPRS/EDGE	Voice/Data	-	869.2 ~ 893.8 MHz
	GSM 1900	GSM/GPRS/EDGE	Voice/Data	-	1930.2 ~ 1989.8 MHz
	WCDMA 850	WCDMA	Voice/Data	-	871.4 ~ 891.6 MHz
	WCDMA 1700	WCDMA	Voice/Data	-	2112.4 ~ 2152.6 MHz
	WCDMA 1900	WCDMA	Voice/Data	-	1932.4 ~ 1987.6 MHz
	LTE Band 12	LTE	Voice/Data	1.4/3/5/10MHz	729.7 ~ 745.3 MHz
	LTE Band 17	LTE	Voice/Data	5/10MHz	736.5 ~ 743.5 MHz
	LTE Band 13	LTE	Voice/Data	5/10MHz	748.5 ~ 753.5 MHz
	LTE Band 14	LTE	Voice/Data	5/10MHz	760.5 ~ 765.5 MHz
	LTE Band 26	LTE	Voice/Data	1.4/3/5/10/15MHz	859.7 ~ 893.3 MHz
	LTE Band 5	LTE	Voice/Data	1.4/3/5/10MHz	869.7 ~ 893.3 MHz
	LTE Band 4	LTE	Voice/Data	1.4/3/5/10/15/20MHz	2110.7 ~ 2154.3 MHz
	LTE Band 25	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1930.7 ~ 1994.3 MHz
	LTE Band 2	LTE	Voice/Data	1.4/3/5/10/15/20MHz	1930.7 ~ 1989.3 MHz
	LTE Band 7	LTE	Voice/Data	5/10/15/20MHz	2622.5 ~ 2687.5 MHz
	LTE Band 41	LTE	Voice/Data	5/10/15/20MHz	2498.5 ~ 2687.5 MHz
	2.4 GHz W-LAN	802.11b/g/n/ac	Voice/Data	HT20/VHT20	2412 ~ 2462 MHz
	5.2 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5180 ~ 5240 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5190 ~ 5230 MHz
		802.11ac	Voice/Data	VHT80	5210 MHz
	5.3 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT200	5260 ~ 5320 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5270 ~ 5310 MHz
		802.11ac	Voice/Data	VHT80	5290 MHz
	5.6 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5500 ~ 5720 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5510 ~ 5710 MHz
		802.11ac	Voice/Data	VHT80	5530 ~ 5690 MHz
	5.8 GHz W-LAN	802.11a/n/ac	Voice/Data	HT20/VHT20	5745 ~ 5825 MHz
		802.11n/ac	Voice/Data	HT40/VHT40	5755 ~ 5795 MHz
		802.11ac	Voice/Data	VHT80	5775 MHz
	Bluetooth	-	Data	-	2402 ~ 2480 MHz

SAR Summary Table

Equipment Class	Band	Reported SAR			
		1g SAR (W/kg)			10g SAR (W/kg)
		Head	Body-Worn	Hotspot	Phablet
PCE	GSM 850	0.28	0.19	-	-
PCE	GPRS 850	0.38	0.30	0.44	-
PCE	GSM 1900	0.20	0.22	-	-
PCE	GPRS 1900	0.24	0.27	0.55	-
PCE	WCDMA 850	0.35	0.29	0.52	-
PCE	WCDMA 1700	0.63	0.45	0.97	-
PCE	WCDMA 1900	0.47	0.53	0.93	-
PCE	LTE Band 12	0.19	0.26	0.37	-
PCE	LTE Band 17	-	-	-	-
PCE	LTE Band 13	0.26	0.35	0.42	-
PCE	LTE Band 14	0.28	0.26	0.35	
PCE	LTE Band 26	0.35	0.30	0.44	-
PCE	LTE Band 5	-	-	-	-
PCE	LTE Band 4	0.30	0.30	0.60	-
PCE	LTE Band 25	0.32	0.46	0.89	-
PCE	LTE Band 2	-	-	-	-
PCE	LTE Band 7	0.15	1.05	**1.31**	**2.14**
PCE	LTE Band 41	0.10	**1.07**	0.90	1.49
DTS	2.4 GHz W-LAN	0.28	< 0.1	0.12	-
U-NII-1	5.2 GHz W-LAN	-	-	0.68	-
U-NII-2A	5.3 GHz W-LAN	**1.11**	0.25	-	1.30
U-NII-2C	5.6 GHz W-LAN	1.08	0.37	-	1.56
U-NII-3	5.8 GHz W-LAN	0.72	0.18	0.83	-
DSS	Bluetooth	< 0.1	< 0.1	< 0.1	-
Simultaneous SAR per KDB 690783 D01v01r03		**1.55**	**1.44**	**1.57**	**2.44**

FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter(DSS) Digital Transmission System(DTS) Unlicensed National Information Infrastructure (UNII)
Date(s) of Tests	2019.07.09 ~ 2019.08.27
Antenna Type	Internal Antenna
Functions	● GSM/GPRS/EDGE (GPRS/EDGE Class: 33) supported. * DTM not supported. ● No simultaneous transmission between BT & 2.4GHz WLAN ● Simultaneous transmission between [GSM, WCDMA voice & WLAN], [GPRS, WCDMA & WLAN], [LTE & WLAN]. ● VoIP is supported. ● W-LAN 2.4GHz is supported Hotspot. ● W-LAN 5 GHz is supported Hotspot in UNII B1, B3.

1.2 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. Detailed descriptions of the power reduction mechanism are included in the operational description.

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 V2X-PM90G_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	O
GSM/GPRS/EDGE 1900	X	O	O	O	O	O
WCDMA 850	X	O	O	O	O	O
WCDMA 1700	X	O	O	O	O	O
WCDMA 1900	X	O	O	O	O	O
LTE Band 12	X	O	O	O	O	O
LTE Band 17	X	O	O	O	O	O
LTE Band 13	X	O	O	O	O	O
LTE Band 14	X	O	O	O	O	O
LTE Band 26	X	O	O	O	O	O
LTE Band 5	X	O	O	O	O	O
LTE Band 4	X	O	O	O	O	O
LTE Band 25	X	O	O	O	O	O
LTE Band 2	X	O	O	O	O	O
LTE Band 7	X	O	O	O	O	O
LTE Band 41	X	O	O	O	O	O
2.4G W-LAN	O	X	O	O	X	O
5G W-LAN	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 V2X-PM90G_Antenna Location.

1.5 Simultaneous Transmission Capabilities

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

1.6 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

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

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

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, body-worn **Bluetooth SAR was not required; [(3/15)*√2.480] = 0.3 (< 3.0)** and hotspot **Bluetooth SAR was not required; [(3/10)*√2.480] = 0.5 (< 3.0)**. Per KDB Publication 447498 D01 v06, the maximum power of the channel was rounded to the nearest mW before calculation.

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

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

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, phablet **Bluetooth SAR was not required; [(3/5)*√2.480] = 1.0 (< 7.5)**. Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a “phablet” since the diagonal dimension is greater than 160 mm and less than 200 mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-2A & U-NII-2C 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 lager transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

1.7 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01 (3G SAR Procedures)
- FCC KDB Publication 941225 D05v02r05 (SAR for LTE Devices)
- FCC KDB Publication 941225 D05Av01r02 (LTE Rel.10 KDB Inquiry Sheet)
- FCC KDB Publication 941225 D06v02r01(Hotspot Mode)
- FCC KDB Publication 248227 D01v02r02 (802.11 Wi-Fi SAR)
- FCC KDB Publication 447498 D01v06 (General RF Exposure Guidance)
- FCC KDB Publication 648474 D04v01r03 (Handset SAR)
- FCC KDB Publication 690783 D01v01r03 (SAR Listings on Grants)
- FCC KDB Publication 865664 D01v01r04 (SAR Measurement 100 MHz to 6 GHz)
- FCC KDB Publication 865664 D02v01r02 (RF Exposure Reporting)
- October 2013 TCB Workshop Notes (GPRS testing criteria)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- April 2019 TCB Workshop Notes (Tissue Simulating Liquids)

1.8 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 11.

2. LTE INFORMATION

LTE Information	
FCC ID	**V2X-PM90G**
Form Factor	Mobile Computer
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 14 (790.5 ~ 795.5 MHz) LTE Band 26 (Cell) (814.7 ~ 848.3 MHz) LTE Band 5 (Cell) (824.7 ~ 848.3 MHz) LTE Band 4 (AWS) (1710.7 ~ 1754.3 MHz) LTE Band 25 (PCS) (1850.7 ~ 1914.3 MHz) LTE Band 2 (PCS) (1850.7 ~ 1909.3 MHz) LTE Band 7 (2502.5 ~ 2567.5 MHz) LTE Band 41 (2498.5 ~ 2687.5 MHz)
Channel Bandwidths	LTE Band 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 14 : 5 MHz, 10 MHz LTE Band 26 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz LTE Band 5 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 4 : 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 25 : 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 7: 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 14: 5 MHz	790.5(23305)	N/A	793.0(23330)[Note3]	N/A	795.5(23355)
LTE Band 14: 10 MHz	N/A	N/A	**793.0(23330)**	N/A	N/A
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)	N/A	831.5 (26865)	N/A	848.3 (27033)
LTE Band 26 (Cell): 3 MHz	815.5 (26705)	N/A	831.5 (26865)	N/A	847.5 (27025)
LTE Band 26 (Cell): 5 MHz	816.5 (26715)	N/A	831.5 (26865)	N/A	846.5 (27015)
LTE Band 26 (Cell): 10 MHz	819.0 (26740)	N/A	831.5 (26865)	N/A	844.0 (26990)
LTE Band 26 (Cell): 15 MHz	821.5 (26765)	N/A	**831.5 (26865)** [Note4]	N/A	841.5 (26965)
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)**[Note5]	N/A	844.0 (20600)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	N/A	1732.5 (20175)	N/A	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	N/A	1732.5 (20175)	N/A	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	N/A	1732.5 (20175)	N/A	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715.0 (20000)	N/A	1732.5 (20175)	N/A	1750.0 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	N/A	1732.5 (20175)	N/A	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720.0 (20050)	N/A	**1732.5 (20175)** [Note6]	N/A	1745.0 (20300)
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)	N/A	1882.5 (26365)	N/A	1914.3 (26683)
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)	N/A	1882.5 (26365)	N/A	1913.5 (26675)
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)	N/A	1882.5 (26365)	N/A	1912.5 (26665)
LTE Band 25 (PCS): 10 MHz	1855.0 (26090)	N/A	1882.5 (26365)	N/A	1910.0 (26640)
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)	N/A	1882.5 (26365)	N/A	1907.5 (26615)
LTE Band 25 (PCS): 20 MHz	**1860.0 (26140)**	N/A	**1882.5 (26365)**	N/A	**1905.0 (26590)**
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 7: 5 MHz	2502.5 (20775)	N/A	2535.0 (21100)	N/A	2567.5 (21425)
LTE Band 7: 10 MHz	2505.0 (20800)	N/A	2535.0 (21100)	N/A	2565.0 (21400)
LTE Band 7: 15 MHz	2507.5 (20825)	N/A	2535.0 (21100)	N/A	2562.5 (21375)
LTE Band 7: 20 MHz	**2510.0 (20850)**	N/A	**2535.0 (21100)**	N/A	**2560.0 (21350)**
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	6
Modulations Supported in UL	QPSK, 16QAM, 64QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	Yes
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Carrier Aggregation Possible Combinations	LTE Carrier Aggregation is not supported.
LTE Additional Information	This device does not support CA features on 3GPP Release 10. All uplink communications are identical to the Release 8 Specifications. The following LTE Release 10 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 B14 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.
4. LTE B26(Cell) can not contain three non-overlapping channels of 15 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.
5. 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.
6. 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)

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

Fig. 3.1 SAR Mathematical Equation

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

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

where:

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

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

4. DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4.1) and IEEE1528-2013.

2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.

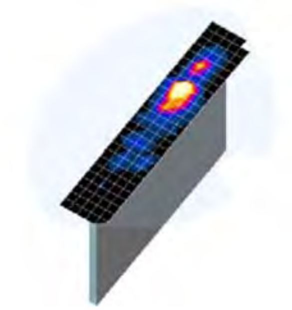

Figure 4.1
Sample SAR Area Scan

3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4.1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

   a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4.1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).

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

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 mm ± 1 mm</td><td>½·δ·ln(2) mm ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

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

5. DEFINITION OF REFERENCE POINTS

5.1 Ear Reference Point

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

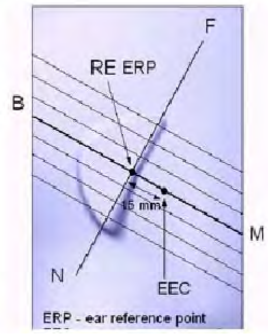

Figure 5.1 Close-up side view of ERP

5.2 Handset Reference Points

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

Figure 5.2 Front, back and side view SAM Twin Phantom

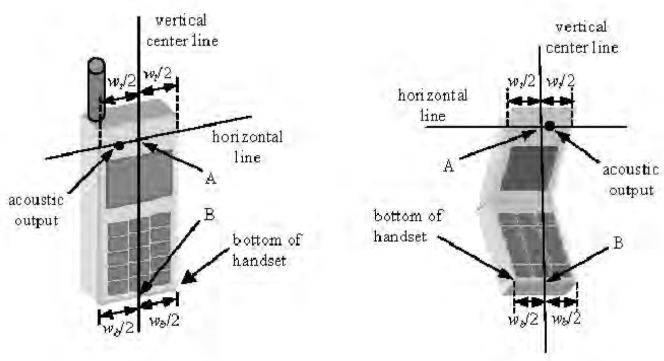

Figure 5.3 Handset Vertical Center & Horizontal Line Reference Points

6. TEST CONFIGURATION POSITIONS FOR HANDSETS

6.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02.

6.2 Positioning for Cheek/Touch

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

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

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

6.3 Positioning for Ear / 15 ° Tilt

With the test device aligned in the "Cheek/Touch Position":

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

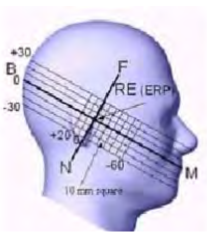

Figure 6.2 Side view w/relevant markings

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

6.4 Body-Worn Accessory Configurations

Figure 6.4 Sample Body-Worn Diagram

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

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

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

6.5 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

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

6.6 Wireless Router Configurations

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

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

6.7 Phablet Configurations

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

7. RF EXPOSURE LIMITS

Uncontrolled Environment:

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

Controlled Environment:

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

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

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

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

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

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

8. FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 Procedures Used to Establish RF Signal for SAR

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

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

8.3 SAR Measurement Conditions for WCDMA (UMTS)

8.3.1 Output Power Verification

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

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

8.3.2 Head SAR Measurements for Handsets

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than 0.25 dB higher than that measured in12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4 kbps SRB (signaling radio bearer) using the exposure configuration that resulted in the highest SAR for that RF channel in the 12.2 kbps RMC mode.

8.3.3 Body SAR Measurements

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

8.3.4 Release 5 HSDPA Data Devices

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

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

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$.
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	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

Figure 9.2 Table 2

8.3.6 SAR Measurement Conditions for DC-HSDPA

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

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

8.4 SAR Measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05v02r05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The call simulator was used for LTE output power measurement and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.4.1 Spectrum Plots for RB Configurations

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

8.4.2 MPR

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

8.4.3 A-MPR

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

8.4.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r05:

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

8.4.5 64QAM uplink

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

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

8.4.6 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).

<table>
<tr><th rowspan="3">Special subframe configuration</th><th colspan="3">Normal cyclic prefix in downlink</th><th colspan="3">Extended cyclic prefix in downlink</th></tr>
<tr><th rowspan="2">DwPTS</th><th colspan="2">UpPTS</th><th rowspan="2">DwPTS</th><th colspan="2">UpPTS</th></tr>
<tr><th>Normal cyclic prefix in uplink</th><th>Extended cyclic prefix in uplink</th><th>Normal cyclic prefix in uplink</th><th>Extended cyclic prefix in uplink</th></tr>
<tr><td>0</td><td>$6592 \cdot T_s$</td><td rowspan="5">$2192 \cdot T_s$</td><td rowspan="5">$2560 \cdot T_s$</td><td>$7680 \cdot T_s$</td><td rowspan="4">$2192 \cdot T_s$</td><td rowspan="4">$2560 \cdot T_s$</td></tr>
<tr><td>1</td><td>$19760 \cdot T_s$</td><td>$20480 \cdot T_s$</td></tr>
<tr><td>2</td><td>$21952 \cdot T_s$</td><td>$23040 \cdot T_s$</td></tr>
<tr><td>3</td><td>$24144 \cdot T_s$</td><td>$25600 \cdot T_s$</td></tr>
<tr><td>4</td><td>$26336 \cdot T_s$</td><td>$7680 \cdot T_s$</td><td rowspan="3">$4384 \cdot T_s$</td><td rowspan="3">$5120 \cdot T_s$</td></tr>
<tr><td>5</td><td>$6592 \cdot T_s$</td><td rowspan="4">$4384 \cdot T_s$</td><td rowspan="4">$5120 \cdot T_s$</td><td>$20480 \cdot T_s$</td></tr>
<tr><td>6</td><td>$19760 \cdot T_s$</td><td>$23040 \cdot T_s$</td></tr>
<tr><td>7</td><td>$21952 \cdot T_s$</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>8</td><td>$24144 \cdot T_s$</td><td>-</td><td>-</td><td>-</td></tr>
</table>

Table 4.2-2: Uplink-downlink configurations.

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

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

Ts = 1/(15000 * 2048) seconds

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

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

8.5 SAR Testing with 802.11 Transmitters

The normal network operating configurations are not suitable for measuring the SAR of 802.11 b/g/n transmitters. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227D01v02r02 for more details.

8.5.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

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

8.5.2 U-NII and U-NII-2A

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

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

8.5.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements.

When Terminal Doppler Weather Rader (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.

Unless band gap channels are permanently disabled, SAR must be considered for these channels. When band gap channels are disabled, each band is tested independently according to the normally required OFDM SAR measurements and probe calibration frequency points requirements.

8.5.4 Initial Test Position Procedure

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

8.5.5 2.4 GHz SAR Test Requirements

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

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
2) When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

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

8.5.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a and 802.11n or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 80211n or 802.11g then 802.11n is used for SAR measurement. When the maximum output power ware the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.5.7 Initial Test Configuration Procedure

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

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required.
Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured.

8.5.8 Subsequent Test Configuration Procedures

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

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	33.0	33.0	31.0	28.5	27.0	26.5	26.5	26.5	26.5
	Nominal	32.5	32.5	30.5	28.0	26.5	26.0	26.0	26.0	26.0
GSM/GPRSEDGE 1900	Maximum	30.0	30.0	28.2	26.0	24.0	25.5	25.5	25.5	25.5
	Nominal	29.5	29.5	27.7	25.5	23.5	25.0	25.0	25.0	25.0

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	32.65	32.70	30.53	28.24	26.37	26.22	26.08	25.94	25.71
	190	32.61	32.58	30.46	28.38	26.51	26.20	26.01	25.81	25.70
	251	32.49	32.49	30.50	28.39	26.54	26.34	26.22	26.07	25.77
PCS 1900	512	29.77	29.75	27.95	25.88	23.80	24.87	24.61	24.46	24.34
	661	29.72	29.74	27.78	25.63	23.40	24.85	24.66	24.42	24.09
	810	29.51	29.50	27.30	25.12	22.89	24.79	24.57	24.30	24.07
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	23.62	23.67	24.51	23.98	23.36	17.19	20.06	21.68	22.70
	190	23.58	23.55	24.44	24.12	23.50	17.17	19.99	21.55	22.69
	251	23.46	23.46	24.48	24.13	23.53	17.31	20.20	21.81	22.76
PCS 1900	512	20.74	20.72	21.93	21.62	20.79	15.84	18.59	20.20	21.33
	661	20.69	20.71	21.76	21.37	20.39	15.82	18.64	20.16	21.08
	810	20.48	20.47	21.28	20.86	19.88	15.76	18.55	20.04	21.06
GSM850	Frame Avg. Targets:	23.47	23.47	24.48	23.74	23.49	16.97	19.98	21.74	22.99
PCS 1900		20.47	20.47	21.68	21.24	20.49	15.97	18.98	20.74	21.99

Table 9.1.2 GSM Conducted Power

Note:

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

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

Figure 9.1 Power Measurement Setup

9.2 WCDMA Nominal and Maximum Output Power Spec and Conducted Powers

3GPP Release Version	Mode			Cellular Band (dBm)	AWS Band (dBm)	PCS Band (dBm)	3GPP MPR (dB)
99	WCDMA	Voice	Maximum	24.0	24.0	24.0	-
			Nominal	23.5	23.5	23.5	
5	HSDPA	Subtest 1	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
5		Subtest 2	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
5		Subtest 3	Maximum	23.5	23.5	23.5	0.5
			Nominal	23.0	23.0	23.0	
5		Subtest 4	Maximum	23.5	23.5	23.5	0.5
			Nominal	23.0	23.0	23.0	
6	HSUPA	Subtest 1	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
6		Subtest 2	Maximum	22.0	22.0	22.0	2
			Nominal	21.5	21.5	21.5	
6		Subtest 3	Maximum	23.0	23.0	23.0	1
			Nominal	22.5	22.5	22.5	
6		Subtest 4	Maximum	22.0	22.0	22.0	2
			Nominal	21.5	21.5	21.5	
6		Subtest 5	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
8	DC-HSDPA	Subtest 1	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
8		Subtest 2	Maximum	24.0	24.0	24.0	0
			Nominal	23.5	23.5	23.5	
8		Subtest 3	Maximum	23.5	23.5	23.5	0.5
			Nominal	23.0	23.0	23.0	
8		Subtest 4	Maximum	23.5	23.5	23.5	0.5
			Nominal	23.0	23.0	23.0	

Table 9.2.1 WCDMA Nominal and Maximum Output Power Spec

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band (dBm)			AWS Band (dBm)			PCS Band (dBm)			3GPP MPR (dB)
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.82	23.85	23.76	23.35	23.37	23.38	23.88	23.89	23.84	-
99		12.2 kbps AMR	23.72	23.74	23.68	23.30	23.31	23.34	23.71	23.74	23.75	-
5	HSDPA	Subtest 1	22.33	22.35	22.25	22.30	22.34	22.35	22.38	22.41	22.30	0
5		Subtest 2	22.33	22.34	22.27	22.29	22.32	22.36	22.39	22.42	22.28	0
5		Subtest 3	21.83	21.86	21.74	21.80	21.84	21.87	21.90	21.95	21.81	0.5
5		Subtest 4	21.84	21.86	21.76	21.80	21.80	21.88	21.93	21.92	21.80	0.5
6	HSUPA	Subtest 1	22.31	22.37	22.26	22.28	22.31	22.37	22.39	22.41	22.28	0
6		Subtest 2	20.34	20.34	20.26	20.32	20.32	20.41	21.42	20.42	20.31	2
6		Subtest 3	21.32	21.37	21.24	21.30	21.32	21.36	21.40	21.43	21.29	1
6		Subtest 4	20.33	20.35	20.26	20.31	20.33	20.41	20.39	20.43	20.30	2
6		Subtest 5	22.32	22.35	22.23	22.30	22.29	22.36	22.39	22.42	22.28	0
8	DC-HSDPA	Subtest 1	22.28	22.31	22.18	22.29	22.30	22.23	22.37	22.35	22.25	0
8		Subtest 2	22.29	22.30	22.17	22.27	22.32	22.28	22.34	22.31	22.28	0
8		Subtest 3	21.86	21.83	21.79	21.81	21.85	21.79	21.86	21.83	21.81	0.5
8		Subtest 4	21.84	21.85	21.78	21.83	21.87	21.80	21.83	21.86	21.80	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	23.0
	Nominal	22.5

Table 9.3.1.1 Nominal and Maximum Output Power Spec

1) LTE Band 12

LTE Band 12 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23095 (707.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	22.49	≤ 1	0
	1	**25**	**22.61**		
	1	49	22.59		
	25	0	21.64		1
	25	12	21.68		
	25	**25**	**21.69**		
	50	0	21.63		1
16QAM	1	0	21.48	≤ 1	1
	1	25	21.52		
	1	49	21.57		
	25	0	20.58	≤ 2	2
	25	12	20.56		
	25	25	20.50		
	50	0	20.61		2
64QAM	1	0	20.38	≤ 2	2
	1	25	20.48		
	1	49	20.42		
	25	0	19.56	≤ 3	3
	25	12	19.58		
	25	25	19.53		
	50	0	19.63		3

Table 9.3.1.2 LTE Conducted Power

Note : LTE B12 can not contain three non-overlapping channels of 10 MHz bandwidth.
Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

LTE Band 12 Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.50	22.57	22.48	≤ 1	0
	1	12	22.61	22.64	22.64		
	1	24	22.59	22.58	22.58		
	12	0	21.56	21.65	21.52		1
	12	6	21.58	21.66	21.64		
	12	13	21.68	21.66	21.62		
	25	0	21.69	21.66	21.52		1
16QAM	1	0	21.62	21.69	21.65	≤ 1	1
	1	12	21.76	21.81	21.82		
	1	24	21.72	21.76	21.65		
	12	0	20.56	20.63	20.51	≤ 2	2
	12	6	20.60	20.68	20.66		
	12	13	20.68	20.63	20.62		
	25	0	20.69	20.68	20.55		2
64QAM	1	0	20.60	20.64	20.55	≤ 2	2
	1	12	20.74	20.72	20.77		
	1	24	20.71	20.68	20.62		
	12	0	19.60	19.68	19.55	≤ 3	3
	12	6	19.62	19.70	19.70		
	12	13	19.72	19.68	19.65		
	15	0	19.69	19.67	19.55		3

Table 9.3.1.3 LTE Conducted Power

LTE Band 12 Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.51	22.59	22.54	≤ 1	0
	1	7	22.52	22.60	22.58		
	1	14	22.52	22.62	22.54		
	8	0	21.61	21.61	21.56		1
	8	4	21.62	21.66	21.60		
	8	7	21.53	21.61	21.58		
	15	0	21.63	21.66	21.60		1
16QAM	1	0	21.67	21.68	21.74	≤ 1	1
	1	7	21.63	21.77	21.66		
	1	14	21.66	21.71	21.66		
	8	0	20.57	20.63	20.62	≤ 2	2
	8	4	20.64	20.66	20.67		
	8	7	20.59	20.67	20.60		
	15	0	20.64	20.68	20.66		2
64QAM	1	0	20.66	20.68	20.66	≤ 2	2
	1	7	20.63	20.72	20.65		
	1	14	20.66	20.72	20.64		
	8	0	19.57	19.65	19.64	≤ 3	3
	8	4	19.61	19.68	19.61		
	8	7	19.60	19.68	19.62		
	15	0	19.61	19.67	19.63		3

Table 9.3.1.4 LTE Conducted Power

LTE Band 12 Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.48	22.49	22.51	≤ 1	0
	1	2	22.52	22.58	22.55		
	1	5	22.50	22.48	22.47		
	3	0	22.48	22.53	22.49		0
	3	2	22.53	22.58	22.58		
	3	3	22.50	22.53	22.49		
	6	0	21.49	21.57	21.54		1
16QAM	1	0	21.63	21.63	21.63	≤ 1	1
	1	2	21.65	21.74	21.67		
	1	5	21.67	21.65	21.63		
	3	0	21.48	21.54	21.45		1
	3	2	21.56	21.58	21.53		
	3	3	21.53	21.52	21.47		
	6	0	20.60	20.66	20.60	≤ 2	2
64QAM	1	0	20.61	20.63	20.61	≤ 2	2
	1	2	20.70	20.69	20.60		
	1	5	20.63	20.57	20.54		
	3	0	20.62	20.64	20.60		2
	3	2	20.64	20.69	20.63		
	3	3	20.60	20.64	20.61		
	6	0	19.56	19.64	19.55	≤ 3	3

Table 9.3.1.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 13	Maximum	23.3
	Nominal	22.8

Table 9.3.2.1 Nominal and Maximum Output Power Spec

2) LTE Band 13

LTE Band 13 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	22.98	≤ 1	0
	1	**25**	**23.11**		
	1	49	22.98		
	25	0	21.79		1
	25	**12**	**21.82**		
	25	25	21.75		
	50	0	21.79		1
16QAM	1	0	22.01	≤ 1	1
	1	25	22.12		
	1	49	22.03		
	25	0	20.92	≤ 2	2
	25	12	20.90		
	25	25	20.87		
	50	0	20.89		2
64QAM	1	0	20.98	≤ 2	2
	1	25	21.09		
	1	49	20.99		
	25	0	19.92	≤ 3	3
	25	12	19.96		
	25	25	19.88		
	50	0	19.89		3

Table 9.3.2.2 LTE Conducted Power

LTE Band 13 Conducted Power– 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	22.89	≤ 1	0
	1	12	23.01		
	1	24	22.98		
	12	0	21.68		1
	12	6	21.78		
	12	13	21.69		
	25	0	21.65		1
16QAM	1	0	21.84	≤ 1	1
	1	12	21.98		
	1	24	21.89		
	12	0	20.67	≤ 2	2
	12	6	20.68		
	12	13	20.65		
	25	0	20.61		2
64QAM	1	0	20.74	≤ 2	2
	1	12	20.94		
	1	24	20.86		
	12	0	19.87	≤ 3	3
	12	6	19.68		
	12	13	19.87		
	15	0	19.63		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 14	Maximum	23.3
	Nominal	22.8

Table 9.3.3.1 Nominal and Maximum Output Power Spec

3) LTE Band 14

LTE Band 14 Conducted Power– 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23330 (793.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	23.07	≤ 1	0
	1	**25**	**23.21**		
	1	49	23.08		
	25	0	21.85		1
	25	**12**	**21.88**		
	25	25	21.84		
	50	0	21.89		1
16QAM	1	0	22.06	≤ 1	1
	1	25	22.20		
	1	49	22.11		
	25	0	21.03	≤ 2	2
	25	12	21.03		
	25	25	20.97		
	50	0	21.01		2
64QAM	1	0	21.06	≤ 2	2
	1	25	21.14		
	1	49	21.11		
	25	0	20.03	≤ 3	3
	25	12	20.04		
	25	25	20.02		
	50	0	20.00		3

Table 9.3.3.2 LTE Conducted Power

LTE Band 14 Conducted Power– 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23330 (793.0 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	23.01	≤ 1	0
	1	12	23.07		
	1	24	23.05		
	12	0	21.79		1
	12	6	21.79		
	12	13	21.88		
	25	0	21.91		1
16QAM	1	0	21.97	≤ 1	1
	1	12	22.01		
	1	24	22.03		
	12	0	20.78	≤ 2	2
	12	6	20.68		
	12	13	20.87		
	25	0	20.90		2
64QAM	1	0	20.95	≤ 2	2
	1	12	21.03		
	1	24	21.01		
	12	0	19.89	≤ 3	3
	12	6	19.78		
	12	13	19.88		
	15	0	19.92		3

Table 9.3.3.3 LTE Conducted Power

Note : LTE B14 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 26	Maximum	23.5
	Nominal	23.0

Table 9.3.4.1 Nominal and Maximum Output Power Spec

4) LTE Band 26 (Cell)

LTE Band 26 (Cell) Conducted Power– 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	**1**	**0**	**23.49**	≤ 1	0
	1	36	23.41		
	1	74	23.30		
	36	**0**	**22.22**		1
	36	18	22.20		
	36	37	22.09		
	75	0	22.12		1
16QAM	1	0	22.49	≤ 1	1
	1	36	22.50		
	1	74	22.36		
	36	0	21.32	≤ 2	2
	36	18	21.28		
	36	37	21.20		
	75	0	21.28		2
64QAM	1	0	21.48	≤ 2	2
	1	36	21.41		
	1	74	21.34		
	36	0	20.34	≤ 3	3
	36	18	20.33		
	36	37	20.23		
	75	0	20.28		3

Table 9.3.4.2 LTE Conducted Power

Note : LTE B26 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 26 (Cell) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.48	23.35	23.45	≤ 1	0
	1	25	23.44	23.42	23.36		
	1	49	23.36	23.28	23.27		
	25	0	22.24	22.27	22.18		1
	25	12	22.25	22.23	22.17		
	25	25	22.15	22.18	22.13		
	50	0	22.21	22.19	22.17		1
16QAM	1	0	22.44	22.38	22.43	≤ 1	1
	1	25	22.46	22.36	22.33		
	1	49	22.44	22.21	22.19		
	25	0	21.31	21.25	21.27	≤ 2	2
	25	12	21.29	21.13	21.23		
	25	25	21.23	21.15	21.16		
	50	0	21.27	21.08	21.25		2
64QAM	1	0	21.42	21.29	21.43	≤ 2	2
	1	25	21.42	21.35	21.29		
	1	49	21.36	21.18	21.15		
	25	0	20.32	20.18	20.25	≤ 3	3
	25	12	20.34	20.05	20.25		
	25	25	20.26	20.18	20.19		
	50	0	20.30	20.01	20.26		3

Table 9.3.4.3 LTE Conducted Power

LTE Band 26 (Cell) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26715 (816.5 MHz)	26865 (831.5 MHz)	27015 (846.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.46	23.42	23.34	≤ 1	0
	1	12	23.47	23.38	23.40		
	1	24	23.39	23.41	23.29		
	12	0	22.24	22.21	22.13		1
	12	6	22.24	22.18	22.10		
	12	13	22.22	22.19	22.06		
	25	0	22.24	22.16	22.15		1
16QAM	1	0	22.43	22.38	22.30	≤ 1	1
	1	12	22.49	22.31	22.29		
	1	24	22.42	22.35	22.17		
	12	0	21.32	21.18	21.18	≤ 2	2
	12	6	21.32	21.16	21.17		
	12	13	21.28	21.15	21.14		
	25	0	21.29	21.08	21.16		2
64QAM	1	0	21.42	21.26	21.29	≤ 2	2
	1	12	21.48	21.28	21.29		
	1	24	21.37	21.26	21.18		
	12	0	20.34	20.18	20.26	≤ 3	3
	12	6	20.37	20.13	20.25		
	12	13	20.37	20.08	20.18		
	25	0	20.31	20.07	20.16		3

Table 9.3.4.4 LTE Conducted Power

LTE Band 26 (Cell) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26705 (815.5 MHz)	26865 (831.5 MHz)	27025 (847.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.47	23.45	23.44	0	0
	1	7	23.46	23.43	23.30		
	1	14	23.44	23.41	23.27		
	8	0	22.20	22.18	22.05	0-1	1
	8	4	22.24	22.19	22.09		
	8	7	22.20	22.16	22.08		
	15	0	22.26	22.13	22.11	0-1	1
16QAM	1	0	22.44	22.41	22.25	0-1	1
	1	7	22.46	22.32	22.25		
	1	14	22.43	22.38	22.21		
	8	0	21.32	21.08	21.16	0-2	2
	8	4	21.35	21.16	21.19		
	8	7	21.31	21.14	21.14		
	15	0	21.31	21.09	21.22	0-2	2
64QAM	1	0	21.44	21.35	21.26	0-2	2
	1	7	21.44	21.28	21.23		
	1	14	21.43	21.32	21.22		
	8	0	20.36	20.06	20.20	0-3	3
	8	4	20.38	20.18	20.22		
	8	7	20.34	20.13	20.19		
	15	0	20.33	20.07	20.20	0-3	3

Table 9.3.4.5 LTE Conducted Power

LTE Band 26 (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)
			26697 (814.7 MHz)	26865 (831.5 MHz)	27033 (848.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.37	23.28	23.27	0	0
	1	2	23.46	23.38	23.31		
	1	5	23.36	23.37	23.20		
	3	0	23.13	23.12	22.99	0	0
	3	2	23.16	23.15	23.04		
	3	3	23.12	23.08	23.00		
	6	0	22.19	22.16	22.02	0-1	1
16QAM	1	0	22.38	22.18	22.13	0-1	1
	1	2	22.44	22.26	22.21		
	1	5	22.37	22.31	22.13		
	3	0	22.21	22.08	22.00	0-1	1
	3	2	22.24	22.06	22.02		
	3	3	22.18	22.01	22.01		
	6	0	21.32	21.09	21.14	0-2	2
64QAM	1	0	21.37	21.15	21.18	0-2	2
	1	2	21.45	21.21	21.21		
	1	5	21.37	21.28	21.16		
	3	0	21.25	21.03	21.18	0-2	2
	3	2	21.28	21.01	21.21		
	3	3	21.26	21.03	21.17		
	6	0	20.26	20.07	20.12	0-3	3

Table 9.3.4.6 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 4	Maximum	23.3
	Nominal	22.8

Table 9.3.5.1 Nominal and Maximum Output Power Spec

5) LTE Band 4 (AWS)

LTE Band 4 (AWS) Conducted Power– 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20175 (1732.5 MHz) Conducted Power (dBm)	MPR Allowed Per 3GPP(dB)	MPR (dB)
QPSK	1	0	23.18	≤ 1	0
	1	**50**	23.19		
	1	99	23.17		
	50	0	21.95		1
	50	**25**	21.96		
	50	50	21.86		
	100	0	21.87		1
16QAM	1	0	22.28	≤ 1	1
	1	50	22.27		
	1	99	22.16		
	50	0	21.06	≤ 2	2
	50	25	21.05		
	50	50	20.98		
	100	0	20.99		2
64QAM	1	0	21.28	≤ 2	2
	1	50	21.27		
	1	99	21.12		
	50	0	20.05	≤ 3	3
	50	25	20.06		
	50	50	19.98		
	100	0	19.99		3

Table 9.3.5.2 LTE Conducted Power

Note: LTE B4 (AWS) can not contain three non-overlapping channels of 20 MHz bandwidth.
Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

LTE Band 4 (AWS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20025 (1717.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20325 (1747.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	23.02	23.05	23.03	≤ 1	0
	1	36	23.08	23.06	23.06		
	1	74	23.09	23.04	23.05		
	36	0	21.85	21.95	21.92		1
	36	18	21.99	21.93	21.97		
	36	37	21.95	21.89	21.92		
	75	0	21.95	21.89	21.83		1
16QAM	1	0	22.14	22.19	22.13	≤ 1	1
	1	36	22.11	22.18	22.18		
	1	74	22.12	22.16	22.14		
	36	0	20.98	21.07	20.99	≤ 2	2
	36	18	21.12	21.07	21.10		
	36	37	21.07	20.99	21.04		
	75	0	21.06	21.00	20.95		2
64QAM	1	0	21.12	21.18	21.13	≤ 2	2
	1	36	21.17	21.13	21.15		
	1	74	21.16	21.01	21.12		
	36	0	20.00	20.08	20.00	≤ 3	3
	36	18	20.12	20.08	20.14		
	36	37	20.09	20.02	20.03		
	75	0	20.06	20.00	19.96		3

Table 9.3.5.3 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20000 (1715.0 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20350 (1750.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.98	22.98	23.06	≤ 1	0
	1	25	22.95	23.05	23.07		
	1	49	22.96	23.02	23.04		
	25	0	21.77	21.91	21.98		1
	25	12	21.76	21.92	21.96		
	25	25	21.74	21.89	21.93		
	50	0	21.78	21.93	21.94		1
16QAM	1	0	22.13	22.17	22.17	≤ 1	1
	1	25	22.13	22.18	22.19		
	1	49	22.09	22.19	22.24		
	25	0	20.88	21.04	21.09	≤ 2	2
	25	12	20.90	21.04	21.06		
	25	25	20.84	20.97	21.05		
	50	0	20.85	20.99	21.07		2
64QAM	1	0	21.09	21.14	21.16	≤ 2	2
	1	25	21.07	21.19	21.23		
	1	49	20.99	21.13	21.18		
	25	0	19.90	20.04	20.10	≤ 3	3
	25	12	19.90	20.05	20.07		
	25	25	19.84	19.97	20.02		
	50	0	19.85	19.99	20.07		3

Table 9.3.5.4 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19975 (1712.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20375 (1752.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.98	23.01	23.06	≤ 1	0
	1	12	22.99	23.03	23.07		
	1	24	22.89	23.01	23.04		
	12	0	21.78	21.93	21.95		1
	12	6	21.78	21.93	21.96		
	12	13	21.78	21.88	21.91		
	25	0	21.78	21.88	21.92		1
16QAM	1	0	22.11	22.19	22.21	≤ 1	1
	1	12	22.18	22.16	22.19		
	1	24	22.09	22.15	22.18		
	12	0	20.89	21.06	21.04	≤ 2	2
	12	6	20.89	21.06	21.07		
	12	13	20.86	20.99	21.02		
	25	0	20.86	21.01	21.04		2
64QAM	1	0	21.07	21.11	21.22	≤ 2	2
	1	12	21.14	21.19	21.26		
	1	24	21.00	21.09	21.15		
	12	0	19.94	20.09	20.08	≤ 3	3
	12	6	19.97	20.10	20.12		
	12	13	19.92	20.04	20.08		
	25	0	19.88	20.01	20.03		3

Table 9.3.5.5 LTE Conducted Power

LTE Band 4 (AWS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19965 (1711.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20385 (1753.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.98	23.06	23.06	≤ 1	0
	1	7	22.97	23.08	23.05		
	1	14	22.96	23.05	23.08		
	8	0	21.76	21.88	21.90		1
	8	4	21.79	21.92	21.98		
	8	7	21.74	21.90	21.96		
	15	0	21.78	21.92	21.92		1
16QAM	1	0	22.08	22.23	22.19	≤ 1	1
	1	7	22.15	22.27	22.18		
	1	14	22.07	22.22	22.28		
	8	0	20.92	21.07	21.10	≤ 2	2
	8	4	20.95	21.08	21.10		
	8	7	20.88	21.05	21.09		
	15	0	20.91	21.06	21.06		2
64QAM	1	0	21.09	21.21	21.22	≤ 2	2
	1	7	21.08	21.24	21.19		
	1	14	21.03	21.16	21.25		
	8	0	19.94	20.05	20.09	≤ 3	3
	8	4	19.98	20.10	20.14		
	8	7	19.92	20.08	20.09		
	15	0	19.88	20.02	20.05		3

Table 9.3.5.6 LTE Conducted Power

TE Band 4 (AWS) Conducted Power– 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 19957 (1710.7 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20393 (1754.3 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	22.89	22.96	23.01	≤ 1	0
	1	2	22.91	22.97	23.05		
	1	5	22.87	22.98	22.98		
	3	0	22.72	22.82	22.86		0
	3	2	22.75	22.87	22.90		
	3	3	22.73	22.83	22.84		
	6	0	21.72	21.85	21.87		1
16QAM	1	0	22.06	22.12	22.19	≤ 1	1
	1	2	22.10	22.14	22.18		
	1	5	22.05	22.16	22.12		
	3	0	21.82	21.99	21.99		1
	3	2	21.84	22.03	22.04		
	3	3	21.84	21.93	21.98		
	6	0	20.88	21.01	21.05	≤ 2	2
64QAM	1	0	20.99	21.11	21.16	≤ 2	2
	1	2	21.07	21.08	21.16		
	1	5	20.98	21.13	21.17		
	3	0	20.86	21.01	21.03		2
	3	2	20.89	21.05	21.03		
	3	3	20.87	21.02	21.01		
	6	0	19.84	19.94	19.98	≤ 3	3

Table 9.3.5.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 25 (PCS)	Maximum	23.5
	Nominal	23.0

Table 9.3.6.1 Nominal and Maximum Output Power Spec

6) LTE Band 25 (PCS)

LTE Band 25 (PCS) Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.37	23.31	23.08	≤ 1	0
	1	**50**	23.41	23.34	23.10		
	1	99	23.31	23.32	23.05		
	50	0	22.22	22.00	21.96		1
	50	**25**	22.25	22.15	21.94		
	50	50	22.18	22.10	21.93		
	100	**0**	22.18	22.17	21.92		1
16QAM	1	0	22.49	22.48	22.24	≤ 1	1
	1	50	22.48	22.50	22.22		
	1	99	22.46	22.50	22.12		
	50	0	21.34	21.15	21.08	≤ 2	2
	50	25	21.37	21.31	21.08		
	50	50	21.29	21.28	21.02		
	100	0	21.28	21.26	21.01		2
64QAM	1	0	21.49	21.44	21.20	≤ 2	2
	1	50	21.48	21.48	21.16		
	1	99	21.42	21.49	21.12		
	50	0	20.34	20.13	20.05	≤ 3	3
	50	25	20.36	20.16	20.04		
	50	50	20.33	20.11	19.99		
	100	0	20.29	20.30	20.03		3

Table 9.3.6.2 LTE Conducted Power

LTE Band 25 (PCS) Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.30	23.31	23.09	≤ 1	0
	1	36	23.36	23.36	23.11		
	1	74	23.30	23.29	23.01		
	36	0	22.22	22.22	21.94		1
	36	18	22.22	22.22	21.92		
	36	37	22.15	22.21	21.90		
	75	0	22.17	22.19	21.93		1
16QAM	1	0	22.50	22.43	22.24	≤ 1	1
	1	36	22.49	22.46	22.24		
	1	74	22.47	22.49	22.09		
	36	0	21.33	21.31	21.00	≤ 2	2
	36	18	21.36	21.33	21.04		
	36	37	21.33	21.33	20.99		
	75	0	21.32	21.31	20.99		2
64QAM	1	0	21.43	21.45	21.22	≤ 2	2
	1	36	21.48	21.48	21.25		
	1	74	21.44	21.43	21.06		
	36	0	20.34	20.34	20.08	≤ 3	3
	36	18	20.40	20.40	20.07		
	36	37	20.32	20.31	20.03		
	75	0	20.30	20.33	20.03		3

Table 9.3.6.3 LTE Conducted Power

LTE Band 25 (PCS) Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.35	23.39	23.08	≤ 1	0
	1	25	23.26	23.33	23.09		
	1	49	23.30	23.35	23.04		
	25	0	22.15	22.21	21.94		1
	25	12	22.14	22.24	21.95		
	25	25	22.13	22.18	21.92		
	50	0	22.12	22.20	21.90		1
16QAM	1	0	22.45	22.49	22.23	≤ 1	1
	1	25	22.42	22.46	22.25		
	1	49	22.50	22.49	22.09		
	25	0	21.26	21.32	21.00	≤ 2	2
	25	12	21.26	21.33	21.06		
	25	25	21.22	21.28	21.00		
	50	0	21.26	21.30	21.05		2
64QAM	1	0	21.41	21.48	21.20	≤ 2	2
	1	25	21.39	21.42	21.20		
	1	49	21.37	21.49	21.09		
	25	0	20.27	20.33	20.03	≤ 3.	3
	25	12	20.29	20.35	20.08		
	25	25	20.24	20.34	20.02		
	50	0	20.28	20.33	20.04		3

Table 9.3.6.4 LTE Conducted Power

LTE Band 25 (PCS) Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.24	23.32	23.09	≤ 1	0
	1	12	23.31	23.40	23.14		
	1	24	23.19	23.29	23.01		
	12	0	22.12	22.19	21.91		1
	12	6	22.17	22.20	21.94		
	12	13	22.10	22.19	21.90		
	25	0	22.12	22.18	21.93		1
16QAM	1	0	22.33	22.47	22.23	≤ 1	1
	1	12	22.42	22.48	22.28		
	1	24	22.39	22.46	22.12		
	12	0	21.24	21.32	21.04	≤ 2	2
	12	6	21.25	21.35	21.01		
	12	13	21.25	21.28	20.97		
	25	0	21.21	21.30	20.99		2
64QAM	1	0	21.33	21.40	21.18	≤ 2	2
	1	12	21.42	21.48	21.24		
	1	24	21.34	21.36	21.06		
	12	0	20.30	20.35	20.10	≤ 3	3
	12	6	20.31	20.32	20.08		
	12	13	20.29	20.38	20.03		
	25	0	20.25	20.31	20.04		3

Table 9.3.6.5 LTE Conducted Power

LTE Band 25 (PCS) Conducted Power– 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.20	23.28	23.03	≤ 1	0
	1	7	23.22	23.32	23.08		
	1	14	23.18	23.26	23.07		
	8	0	22.07	22.17	21.87		1
	8	4	22.13	22.18	21.90		
	8	7	22.05	22.14	21.88		
	15	0	22.13	22.16	21.93		1
16QAM	1	0	22.36	22.43	22.15	≤ 1	1
	1	7	22.33	22.44	22.19		
	1	14	22.33	22.38	22.12		
	8	0	21.27	21.33	21.00	≤ 2	2
	8	4	21.26	21.37	21.04		
	8	7	21.24	21.34	20.99		
	15	0	21.24	21.32	21.02		2
64QAM	1	0	21.29	21.39	21.18	≤ 2	2
	1	7	21.35	21.42	21.15		
	1	14	21.28	21.40	21.10		
	8	0	20.25	20.33	20.04	≤ 3	3
	8	4	20.30	20.32	20.07		
	8	7	20.19	20.27	20.05		
	15	0	20.27	20.26	20.03		3

Table 9.3.6.6 LTE Conducted Power

LTE Band 25 (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)
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	23.13	23.16	23.04	≤ 1	0
	1	2	23.18	23.25	23.06		
	1	5	23.10	23.15	23.03		
	3	0	22.97	23.02	22.81		0
	3	2	23.02	23.07	22.88		
	3	3	22.96	23.02	22.84		
	6	0	22.03	22.08	21.83		1
16QAM	1	0	22.26	22.36	22.07	≤ 1	1
	1	2	22.35	22.43	22.15		
	1	5	22.29	22.25	22.06		
	3	0	22.13	22.17	21.89		1
	3	2	22.17	22.18	21.94		
	3	3	22.11	22.15	21.91		
	6	0	21.15	21.24	21.02	≤ 2	2
64QAM	1	0	21.28	21.27	21.08	≤ 2	2
	1	2	21.35	21.40	21.15		
	1	5	21.26	21.34	21.07		
	3	0	21.16	21.20	20.98		2
	3	2	21.20	21.24	20.95		
	3	3	21.08	21.21	20.97		
	6	0	20.21	20.22	19.98	≤ 3	3

Table 9.3.6.7 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 7	Maximum	22.0
	Nominal	21.5

Table 9.3.7.1 Nominal and Maximum Output Power Spec

7) LTE Band 7

LTE Band 7 Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	21.49	21.49	21.55	≤ 1	0
	1	50	21.47	21.48	21.67		
	1	**99**	**21.63**	**21.64**	**21.68**		
	50	0	20.57	20.59	20.63		1
	50	25	20.60	20.58	20.68		
	50	**50**	20.70	20.61	**20.77**		
	100	**0**	20.68	20.58	**20.69**		1
16QAM	1	0	20.60	20.60	20.69	≤ 1	1
	1	50	20.59	20.58	20.78		
	1	99	20.73	20.70	20.79		
	50	0	19.65	19.64	19.73	≤ 2	2
	50	25	19.68	19.65	19.75		
	50	50	19.78	19.68	19.84		
	100	0	19.75	19.63	19.73		2
64QAM	1	0	19.59	19.64	19.63	≤ 2	2
	1	50	19.60	19.60	19.80		
	1	99	19.75	19.68	19.79		
	50	0	18.70	18.66	18.74	≤ 3	3
	50	25	18.70	18.68	18.75		
	50	50	18.78	18.68	18.88		
	100	0	18.79	18.67	18.74		3

Table 9.3.7.2 LTE Conducted Power

LTE Band 7 Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	21.47	21.49	21.55	≤ 1	0
	1	36	21.46	21.48	21.65		
	1	74	21.51	21.52	21.66		
	36	0	20.57	20.56	20.60		1
	36	18	20.59	20.56	20.74		
	36	37	20.56	20.54	20.71		
	75	0	20.60	20.56	20.59		1
16QAM	1	0	20.59	20.59	20.64	≤ 1	1
	1	36	20.57	20.60	20.79		
	1	74	20.66	20.63	20.74		
	36	0	19.63	19.64	19.70	≤ 2	2
	36	18	19.66	19.67	19.83		
	36	37	19.64	19.62	19.81		
	75	0	19.62	19.64	19.66		2
64QAM	1	0	19.56	19.59	19.64	≤ 2	2
	1	36	19.61	19.63	19.70		
	1	74	19.58	19.62	19.73		
	36	0	18.69	18.69	18.71	≤ 3	3
	36	18	18.71	18.71	18.84		
	36	37	18.69	18.68	18.83		
	75	0	18.67	18.67	18.71		3

Table 9.3.7.3 LTE Conducted Power

LTE Band 7 Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	21.50	21.50	21.57	≤ 1	0
	1	25	21.48	21.49	21.59		
	1	49	21.52	21.48	21.60		
	25	0	20.56	20.56	20.69		1
	25	12	20.58	20.55	20.69		
	25	25	20.57	20.56	20.69		
	50	0	20.56	20.56	20.68		1
16QAM	1	0	20.57	20.58	20.68	≤ 1	1
	1	25	20.59	20.57	20.69		
	1	49	20.61	20.61	20.69		
	25	0	19.61	19.61	19.78	≤ 2	2
	25	12	19.64	19.66	19.78		
	25	25	19.61	19.62	19.75		
	50	0	19.68	19.63	19.78		2
64QAM	1	0	19.50	19.53	19.68	≤ 2	2
	1	25	19.53	19.53	19.65		
	1	49	19.59	19.56	19.71		
	25	0	18.65	18.66	18.79	≤ 3	3
	25	12	18.68	18.69	18.81		
	25	25	18.63	18.64	18.81		
	50	0	18.66	18.65	18.80		3

Table 9.3.7.4 LTE Conducted Power

LTE Band 7 Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	21.43	21.43	21.55	≤ 1	0
	1	12	21.52	21.53	21.64		
	1	24	21.45	21.45	21.56		
	12	0	20.51	20.50	20.63		1
	12	6	20.58	20.54	20.66		
	12	13	20.53	20.52	20.63		
	25	0	20.53	20.54	20.65		1
16QAM	1	0	20.50	20.55	20.60	≤ 1	1
	1	12	20.56	20.62	20.72		
	1	24	20.55	20.51	20.67		
	12	0	19.59	19.60	19.69	≤ 2	2
	12	6	19.63	19.66	19.74		
	12	13	19.61	19.63	19.69		
	25	0	19.61	19.61	19.69		2
64QAM	1	0	19.50	19.52	19.61	≤ 2	2
	1	12	19.61	19.61	19.67		
	1	24	19.51	19.50	19.63		
	12	0	18.68	18.67	18.76	≤ 3	3
	12	6	18.69	18.54	18.82		
	12	13	18.65	18.71	18.79		
	25	0	18.61	18.65	18.73		3

Table 9.3.7.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 7	Maximum	19.0
	Nominal	18.5

Table 9.3.8.1 Nominal and Maximum Output Power Spec (Hotspot Mode Active)

8) LTE Band 7

LTE Band 7 Conducted Power– 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	18.55	18.33	18.59	≤ 1	0
	1	50	18.41	18.30	18.62		
	1	**99**	18.67	18.48	18.80		
	50	0	17.50	17.36	17.54		1
	50	25	17.61	17.39	17.66		
	50	**50**	17.73	17.49	17.78		
	100	**0**	17.73	17.39	17.74		1
16QAM	1	0	17.49	17.50	17.59	≤ 1	1
	1	50	17.40	17.47	17.62		
	1	99	17.66	17.63	17.61		
	50	0	16.38	16.48	16.40	≤ 2	2
	50	25	16.45	16.51	16.47		
	50	50	16.60	16.53	16.71		
	100	0	16.56	16.40	16.62		2
64QAM	1	0	16.36	16.44	16.55	≤ 2	2
	1	50	16.38	16.33	16.61		
	1	99	16.75	16.52	16.65		
	50	0	15.60	15.36	15.43	≤ 3	3
	50	25	15.64	15.45	15.49		
	50	50	15.83	15.45	15.72		
	100	0	15.81	15.37	15.55		3

Table 9.3.8.2 LTE Conducted Power (Hotspot Mode Active)

LTE Band 7 Conducted Power– 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)				
QPSK	1	0	18.37	18.45	18.30	≤ 1	0
	1	36	18.38	18.42	18.33		
	1	74	18.51	18.45	18.42		
	36	0	17.45	17.34	17.30		1
	36	18	17.48	17.46	17.34		
	36	37	17.42	17.45	17.43		
	75	0	17.41	17.37	17.37		1
16QAM	1	0	17.55	17.44	17.46	≤ 1	1
	1	36	17.51	17.51	17.48		
	1	74	17.54	17.53	17.49		
	36	0	16.35	16.35	16.41	≤ 2	2
	36	18	16.30	16.47	16.47		
	36	37	16.46	16.40	16.50		
	75	0	16.34	16.36	16.40		2
64QAM	1	0	16.50	16.45	16.42	≤ 2	2
	1	36	16.51	16.47	16.48		
	1	74	16.69	16.57	16.52		
	36	0	15.31	15.49	15.44	≤ 3	3
	36	18	15.39	15.56	15.51		
	36	37	15.43	15.61	15.53		
	75	0	15.41	15.45	15.42		3

Table 9.3.8.3 LTE Conducted Power (Hotspot Mode Active)

LTE Band 7 Conducted Power– 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	18.41	18.33	18.30	≤ 1	0
	1	25	18.35	18.37	18.31		
	1	49	18.45	18.40	18.36		
	25	0	17.40	17.36	17.37		1
	25	12	17.43	17.39	17.39		
	25	25	17.45	17.42	17.40		
	50	0	17.44	17.40	17.30		1
16QAM	1	0	17.31	17.37	17.47	≤ 1	1
	1	25	17.33	17.41	17.48		
	1	49	17.41	17.59	17.51		
	25	0	16.52	16.36	16.33	≤ 2	2
	25	12	16.54	16.47	16.35		
	25	25	16.55	16.55	16.36		
	50	0	16.53	16.42	16.32		2
64QAM	1	0	16.47	16.44	16.47	≤ 2	2
	1	25	16.47	16.45	16.49		
	1	49	16.49	16.49	16.51		
	25	0	15.36	15.31	15.30	≤ 3	3
	25	12	15.30	15.33	15.31		
	25	25	15.43	15.36	15.39		
	50	0	15.40	15.32	15.37		3

Table 9.3.8.4 LTE Conducted Power (Hotspot Mode Active)

LTE Band 7 Conducted Power– 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP(dB)	MPR (dB)
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power (dBm)				
QPSK	1	0	18.31	18.33	18.35	≤ 1	0
	1	12	18.33	18.36	18.38		
	1	24	18.38	18.37	18.43		
	12	0	17.32	17.33	17.38		1
	12	6	17.36	17.35	17.44		
	12	13	17.37	17.39	17.46		
	25	0	17.32	17.30	17.37		1
16QAM	1	0	17.34	17.45	17.41	≤ 1	1
	1	12	17.35	17.51	17.51		
	1	24	17.38	17.54	17.59		
	12	0	16.35	16.40	16.44	≤ 2	2
	12	6	16.36	16.42	16.52		
	12	13	16.37	16.44	16.55		
	25	0	16.31	16.31	16.45		2
64QAM	1	0	16.34	16.43	16.51	≤ 2	2
	1	12	16.35	16.46	16.54		
	1	24	16.39	16.49	16.56		
	12	0	15.33	15.34	15.51	≤ 3	3
	12	6	15.35	15.37	15.55		
	12	13	15.39	15.39	15.58		
	25	0	15.32	15.30	15.51		3

Table 9.3.8.5 LTE Conducted Power (Hotspot Mode Active)

Band & Mode		Modulated Average[dBm]
LTE Band 41	Maximum	22.5
	Nominal	22.0

Table 9.3.9.1 Nominal and Maximum Output Power Spec

9) LTE Band 41

LTE Band 41 Conducted Power– 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	**1**	**0**	22.02	22.13	22.16	22.03	22.01	≤ 1	0
	1	50	21.85	22.12	22.00	21.95	21.92		
	1	99	21.80	21.98	21.97	21.97	21.93		
	50	**0**	21.00	21.10	21.11	21.06	21.03		1
	50	25	20.96	21.09	21.06	21.05	21.02		
	50	50	20.91	21.07	21.01	21.03	21.01		
	100	**0**	20.92	21.05	21.09	21.07	21.02		1
16QAM	1	0	21.15	21.08	21.21	21.01	21.16	≤ 1	1
	1	50	20.95	21.09	21.14	21.03	21.10		
	1	99	20.99	21.01	21.15	21.05	21.07		
	50	0	20.15	20.06	20.28	20.01	20.15	≤ 2	2
	50	25	20.08	20.05	20.25	20.03	20.16		
	50	50	20.03	20.04	20.16	20.05	20.14		
	100	0	20.05	20.01	20.21	20.07	20.15		2
64QAM	1	0	20.15	20.04	20.18	20.03	20.03	≤ 2	2
	1	50	20.01	20.06	20.01	20.05	20.06		
	1	99	19.98	20.07	19.97	20.07	20.04		
	50	0	19.15	19.05	19.27	19.03	19.14	≤ 3	3
	50	25	19.07	19.07	19.19	19.05	19.19		
	50	50	19.04	19.03	19.17	19.01	19.16		
	100	0	19.09	19.02	19.23	19.06	19.14		3

Table 9.3.9.2 LTE Conducted Power

LTE Band 41 Conducted Power– 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39725 (2503.5 MHz)	Low-Mid Channel 40173 (2548.3 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41068 (2637.8 MHz)	High Channel 41515 (2682.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	1	0	22.00	22.05	22.13	21.98	21.99	≤ 1	0
	1	36	21.85	22.03	22.00	21.97	21.94		
	1	74	21.84	22.01	22.01	21.95	21.94		
	36	0	20.97	21.08	21.11	21.03	21.04		1
	36	18	20.94	21.09	21.08	20.98	21.02		
	36	37	20.87	21.05	21.03	20.97	20.99		
	75	0	20.95	21.06	21.05	20.99	21.00		1
16QAM	1	0	21.13	21.03	21.29	20.99	21.12	≤ 1	1
	1	36	20.98	21.04	21.18	20.92	21.10		
	1	74	20.95	21.02	21.14	20.93	21.11		
	36	0	20.06	20.06	20.18	20.01	20.11	≤ 2	2
	36	18	20.05	20.07	20.19	20.03	20.12		
	36	37	19.95	20.04	20.15	20.04	20.09		
	75	0	20.05	20.05	20.22	20.06	20.13		2
64QAM	1	0	20.19	20.01	20.14	19.98	20.00	≤ 2	2
	1	36	20.03	20.03	20.02	19.97	20.06		
	1	74	19.94	20.08	20.20	19.99	20.04		
	36	0	19.12	19.05	19.25	19.03	19.16	≤ 3	3
	36	18	19.06	19.06	19.19	19.01	19.17		
	36	37	19.03	19.04	19.16	19.02	19.12		
	75	0	19.06	19.07	19.21	19.05	19.11		3

Table 9.3.9.3 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 (2501.0 MHz)	40160 (2547.0 MHz)	40620 (2593.0 MHz)	41080 (2639.0 MHz)	41540 (2685.0 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	21.96	22.05	22.01	22.04	21.98	≤ 1	0
	1	25	21.87	22.03	22.03	22.01	21.95		
	1	49	21.83	22.01	21.96	21.98	21.94		
	25	0	20.99	21.07	21.03	20.95	21.01		1
	25	12	20.97	20.98	21.07	20.97	21.04		
	25	25	20.88	20.97	21.03	20.98	20.97		
	50	0	20.95	20.99	21.04	20.91	21.00		1
16QAM	1	0	21.10	21.03	21.18	21.02	21.15	≤ 1	1
	1	25	21.01	21.05	21.15	21.03	21.10		
	1	49	20.87	21.07	21.12	21.08	21.05		
	25	0	20.14	20.05	20.20	19.98	20.17	≤ 2	2
	25	12	20.12	20.06	20.23	19.95	20.13		
	25	25	20.04	20.07	20.18	19.96	20.15		
	50	0	20.08	20.01	20.20	19.97	20.14		2
64QAM	1	0	19.98	20.07	20.10	20.01	20.02	≤ 2	2
	1	25	19.99	20.08	20.03	20.05	20.05		
	1	49	20.02	20.09	20.08	20.09	20.08		
	25	0	19.16	19.03	19.16	18.96	19.02	≤ 3	3
	25	12	19.14	19.07	19.26	19.02	19.00		
	25	25	19.06	19.05	19.21	19.03	19.09		
	50	0	19.08	19.06	19.20	19.01	19.11		3

Table 9.3.9.4 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 (2498.5 MHz)	40148 (2545.8 MHz)	40620 (2593.0 MHz)	41093 (2640.3 MHz)	41565 (2687.5 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	21.90	21.99	22.00	22.03	21.94	≤ 1	0
	1	12	21.96	21.97	22.07	22.05	22.04		
	1	24	21.84	22.01	21.96	22.01	21.92		
	12	0	20.96	21.05	21.03	21.03	20.95		1
	12	6	20.98	21.03	21.05	21.05	21.01		
	12	13	20.93	21.01	21.04	21.06	20.96		
	25	0	20.95	21.02	21.04	20.99	20.94		1
16QAM	1	0	21.04	20.89	21.12	21.01	21.11	≤ 1	1
	1	12	21.10	20.87	21.17	21.06	21.15		
	1	24	21.03	21.03	21.06	21.03	21.08		
	12	0	20.11	20.03	20.20	20.05	20.10	≤ 2	2
	12	6	20.11	20.01	20.21	20.06	20.16		
	12	13	20.08	20.05	20.16	20.07	20.11		
	25	0	20.12	20.09	20.22	20.09	20.11		2
64QAM	1	0	20.03	19.97	20.16	20.08	20.08	≤ 2	2
	1	12	20.00	19.99	20.19	20.09	20.21		
	1	24	20.01	19.95	20.15	20.07	20.07		
	12	0	19.15	19.01	19.15	19.07	19.05	≤ 3	3
	12	6	19.16	19.06	19.14	19.06	19.18		
	12	13	19.12	19.08	19.22	18.97	19.14		
	25	0	19.13	19.05	19.17	19.05	19.06		3

Table 9.3.9.5 LTE Conducted Power

Band & Mode		Modulated Average[dBm]
LTE Band 41	Maximum	20.5
	Nominal	20.0

Table 9.3.10.1 Nominal and Maximum Output Power Spec (Hotspot Mode Active)

10) LTE Band 41

LTE Band 41 Conducted Power– 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	**1**	**0**	**20.05**	**20.11**	**20.20**	**20.15**	**20.09**	≤ 1	0
	1	50	20.03	20.06	20.12	20.11	20.05		
	1	99	20.01	20.04	20.15	20.13	20.06		
	50	**0**	**19.03**	**19.08**	**19.22**	**19.19**	**19.10**		1
	50	25	19.01	19.04	19.11	19.18	19.05		
	50	50	19.02	19.01	19.09	19.14	19.04		
	100	**0**	19.00	19.00	**19.20**	19.10	19.01		1
16QAM	1	0	19.01	19.22	19.23	19.32	19.00	≤ 1	1
	1	50	18.84	18.90	19.22	19.30	19.22		
	1	99	18.82	18.89	19.26	19.29	19.22		
	50	0	17.89	18.00	18.13	18.31	18.18	≤ 2	2
	50	25	17.87	17.91	18.11	18.35	18.11		
	50	50	17.85	17.92	18.10	18.31	18.08		
	100	0	17.87	18.01	18.11	18.26	17.90		2
64QAM	1	0	18.02	18.22	18.33	18.05	18.15	≤ 2	2
	1	50	18.01	17.99	18.22	18.02	18.13		
	1	99	18.00	17.91	18.21	18.03	17.97		
	50	0	16.99	17.03	17.09	17.26	17.11	≤ 3	3
	50	25	16.88	16.95	17.08	17.32	17.09		
	50	50	16.86	16.95	17.05	17.28	17.05		
	100	0	16.87	16.93	17.05	17.22	17.01		3

Table 9.3.10.2 LTE Conducted Power (Hotspot Mode Active)

LTE Band 41 Conducted Power– 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39725 (2503.5 MHz)	Low-Mid Channel 40173 (2548.3 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41068 (2637.8 MHz)	High Channel 41515 (2682.5 MHz)	MPR Allowed Per 3GPP(dB)	MPR (dB)
			Conducted Power (dBm)						
QPSK	1	0	20.10	19.90	20.05	20.08	20.10	≤ 1	0
	1	36	19.98	19.86	19.88	20.07	20.16		
	1	74	19.99	19.89	19.98	20.09	20.10		
	36	0	18.95	18.86	19.00	19.12	19.26		1
	36	18	18.92	18.81	18.95	19.05	19.23		
	36	37	18.95	18.85	18.98	19.08	19.25		
	75	0	18.94	18.84	18.98	19.10	19.16		1
16QAM	1	0	19.07	18.97	19.15	19.26	19.28	≤ 1	1
	1	36	18.85	18.95	19.00	19.18	19.19		
	1	74	18.81	18.96	18.99	19.21	19.20		
	36	0	17.86	17.95	18.02	18.16	18.28	≤ 2	2
	36	18	17.84	17.92	17.98	18.19	18.19		
	36	37	17.80	17.94	18.01	18.22	18.23		
	75	0	17.84	17.93	18.01	18.17	18.23		2
64QAM	1	0	17.97	17.87	17.88	18.01	18.18	≤ 2	2
	1	36	17.82	17.83	17.83	17.96	17.99		
	1	74	17.81	17.80	17.82	17.98	18.06		
	36	0	16.96	16.96	17.04	17.18	17.29	≤ 3	3
	36	18	16.83	16.91	16.99	17.19	17.10		
	36	37	16.80	16.95	17.03	17.23	17.24		
	75	0	16.85	16.96	17.04	17.17	17.28		3

Table 9.3.10.3 LTE Conducted Power (Hotspot Mode Active)

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 (2501.0 MHz)	40160 (2547.0 MHz)	40620 (2593.0 MHz)	41080 (2639.0 MHz)	41540 (2685.0 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	19.90	19.90	19.94	20.00	20.06	≤ 1	0
	1	25	19.89	19.81	19.82	19.98	20.11		
	1	49	19.80	19.80	19.91	19.99	20.09		
	25	0	18.91	18.88	18.93	19.05	19.19		1
	25	12	18.88	18.87	18.94	19.08	19.14		
	25	25	18.86	18.80	18.92	19.06	19.15		
	50	0	18.82	18.86	18.92	19.01	19.16		1
16QAM	1	0	18.90	18.98	19.05	19.15	19.25	≤ 1	1
	1	25	18.87	18.97	19.00	19.10	19.30		
	1	49	18.81	18.90	18.99	19.10	19.21		
	25	0	17.85	17.98	17.95	18.15	18.34	≤ 2	2
	25	12	17.83	17.96	18.05	18.18	18.21		
	25	25	17.81	17.90	18.04	18.16	18.19		
	50	0	17.82	17.92	18.01	18.11	18.24		2
64QAM	1	0	17.89	17.86	17.89	17.95	18.16	≤ 2	2
	1	25	17.82	17.81	17.87	17.94	18.11		
	1	49	17.80	17.80	17.88	17.84	18.09		
	25	0	16.94	16.98	17.08	17.17	17.34	≤ 3	3
	25	12	16.92	16.92	17.12	17.20	17.30		
	25	25	16.91	16.88	17.11	17.18	17.28		
	50	0	16.88	16.98	17.11	17.19	17.31		3

Table 9.3.10.4 LTE Conducted Power (Hotspot Mode Active)

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 (2498.5 MHz)	40148 (2545.8 MHz)	40620 (2593.0 MHz)	41093 (2640.3 MHz)	41565 (2687.5 MHz)		
			Conducted Power (dBm)						
QPSK	1	0	19.87	19.88	19.94	20.02	20.13	≤ 1	0
	1	12	19.92	19.85	19.95	20.03	20.08		
	1	24	19.97	19.86	19.87	20.05	20.02		
	12	0	18.88	19.01	19.00	19.10	19.15		1
	12	6	18.94	18.98	18.99	19.08	19.11		
	12	13	18.85	18.94	18.95	19.14	19.14		
	25	0	18.86	18.92	18.94	19.03	19.14		1
16QAM	1	0	18.92	19.04	19.13	19.12	19.21	≤ 1	1
	1	12	19.00	19.05	19.08	19.15	19.20		
	1	24	19.01	18.96	19.06	19.17	19.15		
	12	0	17.98	18.03	18.04	18.15	18.19	≤ 2	2
	12	6	18.08	18.00	18.02	18.18	18.25		
	12	13	17.96	18.06	18.00	18.20	18.18		
	25	0	17.92	18.01	18.03	18.18	18.19		2
64QAM	1	0	17.84	17.85	17.80	17.90	18.04	≤ 2	2
	1	12	17.82	17.83	17.82	17.91	17.94		
	1	24	17.81	17.81	17.86	17.94	17.98		
	12	0	16.90	16.99	17.07	17.16	17.21	≤ 3	3
	12	6	17.03	17.11	17.06	17.18	17.27		
	12	13	16.86	16.97	17.03	17.28	17.21		
	25	0	16.90	17.09	17.04	17.18	17.25		3

Table 9.3.10.5 LTE Conducted Power (Hotspot Mode Active)

9.4 WLAN Nominal and Maximum Output Power Spec and Conducted Powers

Band (GHz)	Mode	Ch	Modulated Average[dBm]	
			Maximum	Nominal
2.4	802.11b	1	16.8	15.8
		6	16.8	15.8
		11	16.8	15.8
	802.11g	1	16.5	15.5
		6	16.5	15.5
		11	16.5	15.5
	802.11n (HT-20)	1	16.0	15.0
		6	16.0	15.0
		11	16.0	15.0
	802.11ac (VHT-20)	1	16.0	15.0
		6	16.0	15.0
		11	16.0	15.0
	802.11n (HT-40)	3	14.0	13.0
		6	16.0	15.0
		9	14.0	13.0
	802.11ac (VHT-40)	3	14.0	13.0
		6	16.0	15.0
		9	14.0	13.0

Table 9.4.1 Nominal and Maximum Output Power Spec

Mode	Freq. (MHz)	Channel	IEEE 802.11 (2.4 GHz) Conducted Power[dBm]
802.11b	2412	1	16.45
	2437	**6**	16.61
	2462	11	16.48
802.11g	2412	1	15.55
	2437	6	15.53
	2462	11	15.57
802.11n (HT-20)	2412	1	15.05
	2437	6	15.26
	2462	11	15.32
802.11ac (VHT-20)	2412	1	14.78
	2437	6	14.80
	2462	11	15.01
802.11n (HT-40)	2422	3	12.79
	2437	6	15.31
	2452	9	12.72
802.11ac (VHT-40)	2422	3	12.70
	2437	6	15.30
	2452	9	12.73

Table 9.4.2 IEEE 802.11 Average RF Power

Band (GHz)	Mode	Ch	Modulated Average[dBm]	
			Maximum	Nominal
5 (UNII)	802.11a	36-165	18.5	17.5
	802.11n/ac (20MHz)	36-165	18.0	17.0
	802.11n/ac (40MHz)	38	16.0	15.0
		46, 54	18.0	17.0
		62	16.0	15.0
		102-142	18.0	17.0
		151	17.0	16.0
		159	18.0	17.0
	802.11ac (80MHz)	42	16.0	15.0
		58, 106	15.0	14.0
		122, 138	18.0	17.0
		155	16.0	15.0

Table 9.4.3 Nominal and Maximum Output Power Spec

Mode	Freq. (MHz)	Channel	IEEE 802.11a (5 GHz) Conducted Power[dBm]
802.11a	5180	36	17.49
	5200	**40**	17.51
	5220	44	17.44
	5240	48	17.42
	5260	**52**	17.51
	5280	56	17.49
	5300	**60**	17.52
	5320	64	17.44
	5500	**100**	17.51
	5580	**116**	17.59
	5660	132	17.28
	5720	144	17.22
	5745	149	17.23
	5785	157	17.30
	5825	**165**	17.52

Table 9.4.4 IEEE 802.11a Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11n HT20 (5 GHz) Conducted Power[dBm]
802.11n (HT-20)	5180	36	17.28
	5200	40	17.35
	5220	44	17.25
	5240	48	17.62
	5260	52	16.91
	5280	56	17.01
	5300	60	16.95
	5320	64	17.21
	5500	100	17.19
	5580	116	17.15
	5660	132	17.27
	5720	144	17.30
	5745	149	17.21
	5785	157	17.29
	5825	165	17.15

Table 9.4.5 IEEE 802.11n HT20 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT20 (5 GHz) Conducted Power[dBm]
802.11ac (VHT-20)	5180	36	17.26
	5200	40	17.28
	5220	44	17.31
	5240	48	17.21
	5260	52	17.10
	5280	56	17.02
	5300	60	17.03
	5320	64	17.20
	5500	100	17.16
	5580	116	17.21
	5660	132	16.80
	5720	144	17.11
	5745	149	17.29
	5785	157	17.25
	5825	165	17.21

Table 9.4.6 IEEE 802.11ac VHT20 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11n HT40 (5 GHz) Conducted Power[dBm]
802.11n (HT-40)	5190	38	15.36
	5230	46	17.36
	5270	54	17.36
	5310	62	15.01
	5510	102	16.71
	5550	110	17.48
	5670	134	17.51
	5710	142	17.29
	5755	151	16.95
	5795	159	16.13

Table 9.4.7 IEEE 802.11n HT40 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT40 (5 GHz) Conducted Power[dBm]
802.11ac (VHT-40)	5190	38	15.27
	5230	46	17.32
	5270	54	17.26
	5310	62	15.08
	5510	102	16.27
	5550	110	17.46
	5670	134	17.48
	5710	142	17.30
	5755	151	15.47
	5795	159	16.28

Table 9.4.8 IEEE 802.11ac VHT40 Average RF Power

Mode	Freq. (MHz)	Channel	IEEE 802.11ac VHT80 (5 GHz) Conducted Power[dBm]
802.11ac (VHT-80)	5210	42	15.34
	5290	58	13.58
	5530	106	14.66
	5610	122	17.23
	5690	138	17.87
	5775	155	14.86

Table 9.4.9 IEEE 802.11ac VHT80 Average RF Power

Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, duo to an even number of channels, both channels were measured.
- Output Power and SAR is not required for 802.11 g/n HT20/ac VHT20 channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjust SAR is ≤ 1.2 W/kg.
- The underlined data rate and channel above were tested for SAR.

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

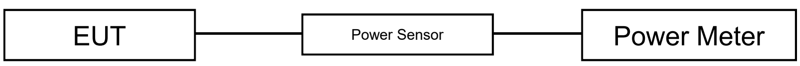

Figure 9.4 Power Measurement Setup

9.5 Bluetooth Conducted Powers

Frame Modulated Average[dBm]		2402 MHz	2441 MHz	2480 MHz
Bluetooth 1 Mbps	Maximum	3.5	4.0	5.0
	Nominal	3.0	3.5	4.5
Bluetooth 2 Mbps	Maximum	0.0	0.5	1.5
	Nominal	-0.5	0.0	1.0
Bluetooth 3 Mbps	Maximum	0.0	0.5	1.5
	Nominal	-0.5	0.0	1.0

Table 9.5.1 Nominal and Maximum Output Power Spec (Frame)

Burst Modulated Average[dBm]		
Bluetooth (LE / 1Mbps)	Maximum	1.5
	Nominal	1.0
Bluetooth (LE / 2Mbps)	Maximum	1.5
	Nominal	1.0

Table 9.5.2 Nominal and Maximum Output Power Spec (Burst)

Channel	Frequency (MHz)	Frame AVG Output Power (1Mbps) (dBm)	Frame AVG Output Power (2Mbps) (dBm)	Frame AVG Output Power (3Mbps) (dBm)
Low	2402	2.12	-1.20	-1.21
Mid	**2441**	2.93	-0.55	-0.56
High	2480	4.29	0.98	0.97

Table 9.5.3 Bluetooth Frame Average RF Power

Channel	Frequency (MHz)	Burst AVG Output Power(LE / 1Mbps) (dBm)	Burst AVG Output Power(LE / 2Mbps) (dBm)
Low	2402	0.54	0.51
Mid	2440	-0.34	-0.41
High	2480	0.65	0.63

Table 9.5.4 Bluetooth LE Burst RF Power

- **Bluetooth Conducted Powers procedures**

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

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

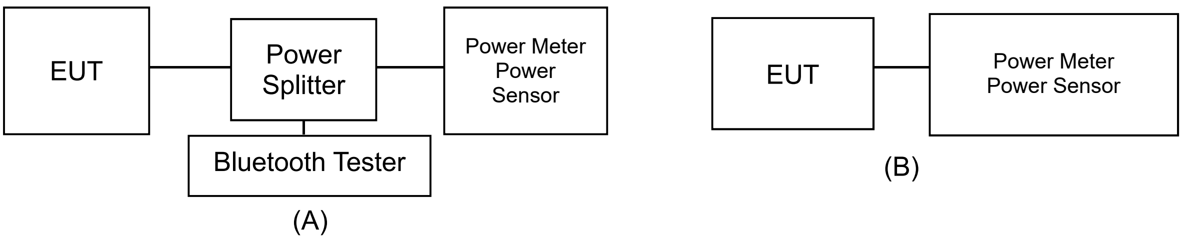

Figure 9.5.1 Average Power Measurement Setup

- **Bluetooth Transmission Plot**

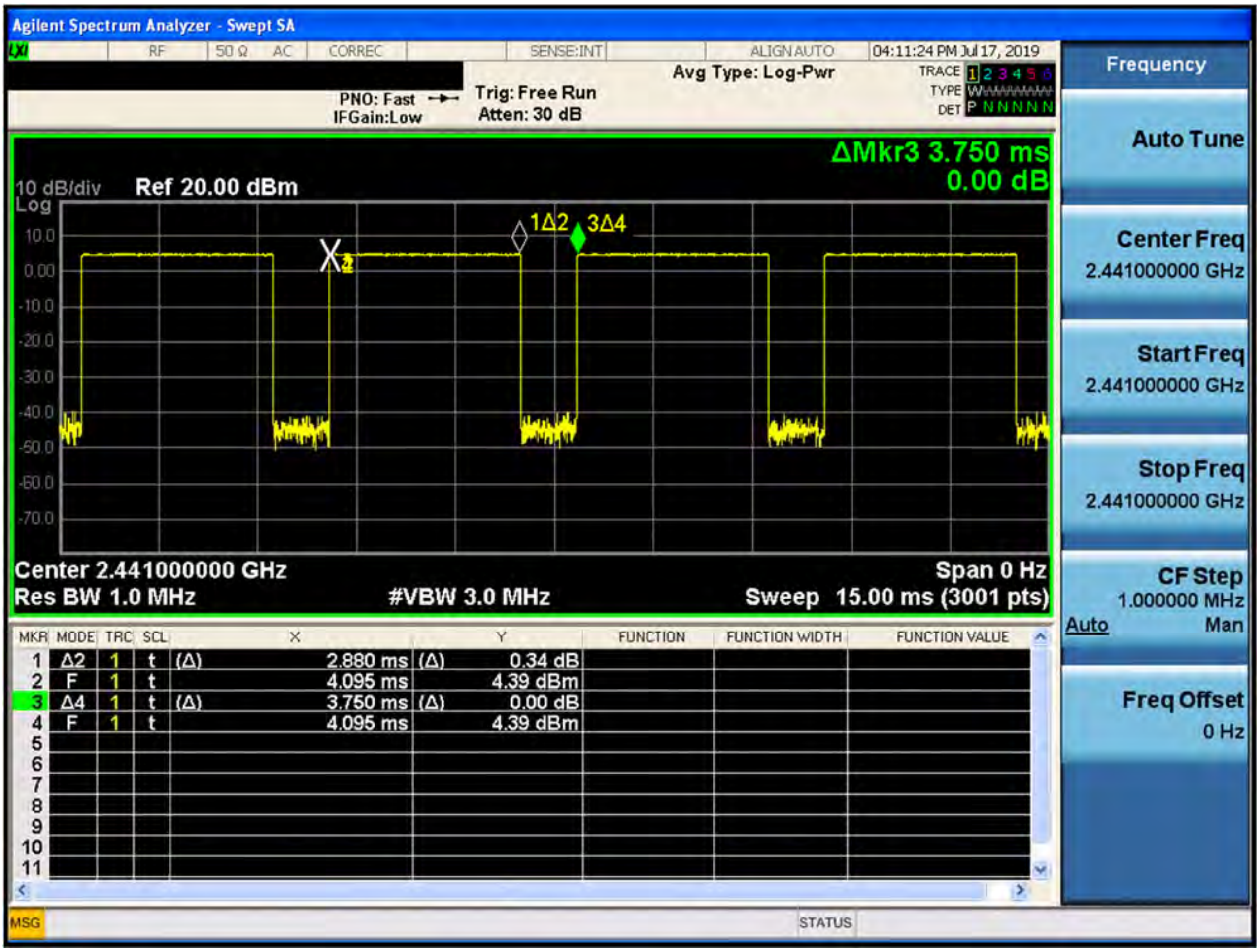

Figure 9.5.2 Bluetooth Transmission Plot

- **Bluetooth Duty Cycle Calculation**

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

10. SYSTEM VERIFICATION

10.1 Tissue Verification

MEASURED TISSUE PARAMETERS										
Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Jul. 30. 2019	750 Head	22.0	21.9	707.5	42.129	0.887	42.824	0.866	1.65	-2.37
				750.0	41.900	0.890	42.276	0.905	0.90	1.69
Aug. 01. 2019	750 Head	22.1	21.8	750.0	41.900	0.890	41.415	0.880	-1.16	-1.12
				782.0	41.749	0.894	40.984	0.910	-1.83	1.79
Aug. 02. 2019	750 Head	21.7	21.5	750.0	41.900	0.890	40.930	0.871	-2.32	-2.13
				793.0	41.700	0.895	40.359	0.910	-3.22	1.68
Jul. 26. 2019	835 Head	22.3	22.8	824.2	41.552	0.899	42.951	0.880	3.37	-2.11
				835.0	41.500	0.900	42.804	0.889	3.14	-1.22
				836.6	41.500	0.901	42.785	0.891	3.10	-1.11
				848.8	41.500	0.914	42.633	0.901	2.73	-1.42
Jul. 29. 2019	835 Head	22.5	22.2	826.4	41.542	0.899	42.472	0.870	2.24	-3.23
				835.0	41.500	0.900	42.359	0.878	2.07	-2.44
				836.6	41.500	0.901	42.344	0.879	2.03	-2.44
				846.6	41.500	0.912	42.223	0.888	1.74	-2.63
Jul. 31. 2019	835 Head	22.3	22.0	814.7	41.600	0.898	43.146	0.880	3.72	-2.00
				831.5	41.500	0.900	42.934	0.895	3.46	-0.56
				835.0	41.500	0.900	42.895	0.898	3.36	-0.22
				848.3	41.500	0.914	42.731	0.911	2.97	-0.33
Aug. 12. 2019	1800 Head	20.9	20.8	1712.4	40.126	1.350	40.839	1.301	1.78	-3.63
				1720.0	40.114	1.354	40.822	1.310	1.76	-3.25
				1732.4	40.097	1.361	40.805	1.324	1.77	-2.72
				1732.5	40.097	1.361	40.805	1.324	1.77	-2.72
				1745.0	40.079	1.369	40.787	1.337	1.77	-2.34
				1752.6	40.069	1.373	40.777	1.343	1.77	-2.18
				1800.0	40.000	1.400	40.749	1.372	1.87	-2.00
Jul. 15. 2019	1900 Head	21.6	21.5	1850.2	40.000	1.400	40.247	1.356	0.62	-3.14
				1852.4	40.000	1.400	40.239	1.358	0.60	-3.00
				1880.0	40.000	1.400	40.087	1.384	0.22	-1.14
				1900.0	40.000	1.400	39.956	1.401	-0.11	0.07
				1907.6	40.000	1.400	39.911	1.407	-0.22	0.50
				1909.8	40.000	1.400	39.899	1.409	-0.25	0.64
Jul. 17. 2019	1900 Head	21.3	21.2	1860.0	40.000	1.400	40.201	1.366	0.50	-2.43
				1882.5	40.000	1.400	40.071	1.386	0.18	-1.00
				1900.0	40.000	1.400	39.265	1.416	-1.84	1.14
				1905.0	40.000	1.400	39.923	1.405	-0.19	0.36
Aug. 14. 2019	2450 Head	20.4	20.5	2412.0	39.265	1.766	38.539	1.769	-1.85	0.17
				2437.0	39.222	1.788	38.460	1.798	-1.94	0.56
				2450.0	39.200	1.800	38.404	1.812	-2.03	0.67
				2462.0	39.184	1.813	38.345	1.824	-2.14	0.61
Aug. 13 2019	2450 Head	20.4	20.6	2402.0	39.282	1.757	38.527	1.755	-1.92	-0.11
				2441.0	39.215	1.792	38.404	1.802	-2.07	0.56
				2450.0	39.200	1.800	38.366	1.811	-2.13	0.61
				2480.0	39.160	1.832	38.207	1.841	-2.43	0.49
Jul. 09. 2019	2600 Head	21.4	21.2	2510.0	39.120	1.864	40.312	1.858	3.05	-0.32
				2535.0	39.087	1.891	40.227	1.887	2.92	-0.21
				2560.0	39.053	1.917	40.144	1.917	2.79	0.00
				2600.0	39.000	1.960	40.012	1.961	2.59	0.05
Jul. 23. 2019	2600 Head	20.7	20.6	2506.0	39.125	1.860	37.982	1.871	-2.92	0.59
				2549.5	39.068	1.906	37.835	1.919	-3.16	0.68
				2593.0	39.009	1.953	37.689	1.965	-3.38	0.61
				2600.0	39.000	1.960	37.663	1.973	-3.43	0.66
				2636.5	38.955	2.000	37.533	2.013	-3.65	0.65
				2680.0	38.900	2.048	37.390	2.063	-3.88	0.73
Aug. 27 2019	2600 Head	21.7	21.6	2506.0	39.125	1.860	39.646	1.921	1.33	3.28
				2510.0	39.120	1.864	39.633	1.925	1.31	3.27
				2535.0	39.087	1.891	39.546	1.952	1.17	3.23
				2549.5	39.068	1.906	39.456	1.966	0.99	3.15
				2560.0	39.053	1.917	39.440	1.977	0.99	3.13
				2593.0	39.009	1.953	39.306	2.016	0.76	3.23
				2600.0	39.000	1.960	39.278	2.026	0.71	3.37
				2636.5	38.955	2.000	39.155	2.071	0.51	3.55
				2680.0	38.900	2.048	38.990	2.115	0.23	3.27

MEASURED TISSUE PARAMETERS

Date(s)	Tissue Type	Ambient Temp.[°C]	Liquid Temp.[°C]	Measured Frequency [MHz]	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	Er Deviation [%]	σ Deviation [%]
Aug. 15. 2019	5200 Head	22.0	21.9	5180.0	36.020	4.639	37.105	4.539	3.01	-2.16
				5190.0	36.010	4.650	37.089	4.548	3.00	-2.19
				5200.0	36.000	4.660	37.071	4.558	2.97	-2.19
				5210.0	35.990	4.670	37.057	4.569	2.96	-2.16
				5220.0	35.980	4.680	37.040	4.578	2.95	-2.18
				5230.0	35.970	4.690	37.017	4.587	2.91	-2.20
				5240.0	35.960	4.700	36.990	4.600	2.86	-2.13
Aug. 16. 2019	5300 Head	21.2	21.4	5260.0	35.940	4.720	35.636	4.551	-0.85	-3.58
				5270.0	35.930	4.730	35.624	4.561	-0.85	-3.57
				5280.0	35.920	4.740	35.618	4.570	-0.84	-3.59
				5290.0	35.910	4.750	35.600	4.578	-0.86	-3.62
				5300.0	35.900	4.760	35.577	4.588	-0.90	-3.61
				5310.0	35.890	4.770	35.557	4.600	-0.93	-3.56
				5320.0	35.880	4.780	35.546	4.611	-0.93	-3.54
Aug. 14. 2019	5600 Head	22.1	22.3	5500.0	35.650	4.965	34.671	4.988	-2.75	0.46
				5510.0	35.635	4.976	34.647	4.997	-2.77	0.42
				5530.0	35.605	4.997	34.608	5.033	-2.80	0.72
				5550.0	35.575	5.018	34.610	5.054	-2.71	0.72
				5580.0	35.530	5.049	34.541	5.085	-2.78	0.71
				5600.0	35.500	5.070	34.516	5.105	-2.77	0.69
				5660.0	35.440	5.130	34.413	5.163	-2.90	0.64
				5670.0	35.430	5.140	34.393	5.173	-2.93	0.64
				5690.0	35.410	5.160	34.355	5.199	-2.98	0.76
				5710.0	35.390	5.180	34.336	5.219	-2.98	0.75
				5720.0	35.380	5.190	34.317	5.225	-3.00	0.67
Aug. 16. 2019	5800 Head	21.8	21.9	5745.0	35.355	5.215	35.782	5.320	1.21	2.01
				5755.0	35.345	5.225	35.769	5.330	1.20	2.01
				5775.0	35.325	5.245	35.731	5.348	1.15	1.96
				5785.0	35.315	5.255	35.707	5.360	1.11	2.00
				5795.0	35.305	5.265	35.687	5.375	1.08	2.09
				5800.0	35.300	5.270	35.680	5.383	1.08	2.14
				5825.0	35.275	5.296	35.666	5.407	1.11	2.10

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB 865664 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

Measurement Procedure for Tissue verification:

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

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

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

10.2 Test System Verification

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

Table 10.2.1 System Verification Results (1g)

SYSTEM DIPOLE VERIFICATION TARGET & MEASURED												
SAR System #	Freq. [MHz]	SAR Dipole kits	Date(s)	Tissue Type	Ambient Temp. [°C]	Liquid Temp. [°C]	Probe S/N	Input Power (mW)	1 W Target SAR$_{1g}$ (W/kg)	Measured SAR$_{1g}$ (W/kg)	1 W Normalized SAR$_{1g}$ (W/kg)	Deviation [%]
C	750	D750V3, SN:1049	Jul. 30. 2019	Head	22.0	21.9	3866	250	8.38	2.20	8.80	5.01
C	750	D750V3, SN:1049	Aug. 01. 2019	Head	22.1	21.8	3866	250	8.38	2.14	8.56	2.15
C	750	D750V3, SN:1049	Aug. 02. 2019	Head	21.7	21.5	3866	250	8.38	2.11	8.44	0.72
C	835	D835V2, SN:464	Jul. 26. 2019	Head	22.3	22.8	3866	250	9.59	2.37	9.48	-1.15
C	835	D835V2, SN:464	Jul. 29. 2019	Head	22.5	22.2	3866	250	9.59	2.34	9.36	-2.40
C	835	D835V2, SN:464	Jul. 31. 2019	Head	22.3	22.0	3866	250	9.59	2.40	9.60	0.10
E	1800	D1800V2, SN:2d047	Aug. 12. 2019	Head	20.9	20.8	7337	100	38.1	3.51	35.10	-7.87
E	1900	D1900V2, SN:5d176	Jul. 15. 2019	Head	21.6	21.5	7337	100	40.7	3.96	39.60	-2.70
E	1900	D1900V2, SN:5d176	Jul. 17. 2019	Head	21.3	21.2	7337	100	40.7	4.03	40.30	-0.98
D	2450	D2450V2, SN: 920	Aug. 14. 2019	Head	20.4	20.5	3916	100	51.9	5.38	54.20	4.43
D	2450	D2450V2, SN: 920	Aug. 13 2019	Head	20.4	20.6	3916	100	51.9	5.42	54.20	4.43
E	2600	D2600V2, SN: 1016	Jul. 09. 2019	Head	21.4	21.2	7337	100	56.6	6.08	60.80	7.42
E	2600	D2600V2, SN: 1016	Jul. 23. 2019	Head	20.7	20.6	7337	100	56.6	5.90	59.00	4.24
E	2600	D2600V2, SN: 1016	Aug. 27 2019	Head	21.7	21.6	7337	100	56.6	5.94	59.40	4.95
D	5200	D5GHzV2, SN:1103	Aug. 15. 2019	Head	22.0	21.9	3916	100	79.4	8.13	81.30	2.39
D	5300	D5GHzV2, SN:1103	Aug. 16. 2019	Head	21.2	21.4	3916	100	82.4	7.98	79.80	-3.16
B	5500	D5GHzV2, SN:1103	Aug. 14. 2019	Head	22.1	22.3	3933	100	84.0	8.92	89.20	6.19
B	5600	D5GHzV2, SN:1103	Aug. 14. 2019	Head	22.1	22.3	3933	100	84.0	8.81	88.10	4.88
B	5800	D5GHzV2, SN:1103	Aug. 16. 2019	Head	21.8	21.9	3933	100	81.4	8.15	81.50	0.12

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 [%]
E	2600	D2600V2, SN: 1016	Jul. 09. 2019	Head	21.4	21.2	7337	100	25.2	2.68	26.80	6.35
E	2600	D2600V2, SN: 1016	Jul. 23. 2019	Head	20.7	20.6	7337	100	25.2	2.68	26.80	6.35
D	5300	D5GHzV2, SN:1103	Aug. 16. 2019	Head	21.2	21.4	3916	100	23.5	2.31	23.10	-1.70
B	5500	D5GHzV2, SN:1103	Aug. 14. 2019	Head	22.1	22.3	3933	100	23.9	2.57	25.70	7.53
B	5600	D5GHzV2, SN:1103	Aug. 14. 2019	Head	22.1	22.3	3933	100	24.0	2.52	25.20	5.00
B	5800	D5GHzV2, SN:1103	Aug. 16. 2019	Head	21.8	21.9	3933	100	23.2	2.29	22.90	-1.29

Note(s):
1. System Verification was measured with input 250 mW, 100 mW and normalized to 1W.
2. Full system validation status and results can be found in Appendix D.
3. Effective February 19, 2019, FCC has permitted the use of single head-tissue simulating liquid specified in IEC 62209-1 for all SAR tests.

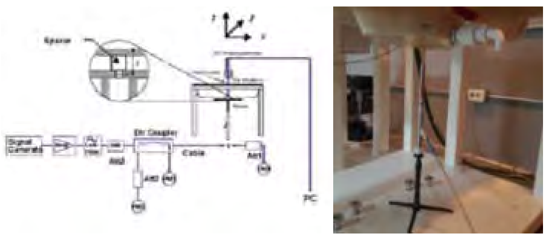

Figure 10.1 Dipole Verification Test Setup Diagram & Photo

11. SAR TEST RESULTS

11.1 Head SAR Results

Table 11.1.1 GSM/GPRS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Phantom Position	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch													
836.6	190	GSM850	GSM	33.00	32.61	0.070	Left Touch	FCC #1	1	1:8.3	0.227	1.094	0.248	
836.6	190	GSM850	GSM	33.00	32.61	0.090	Right Touch	FCC #1	1	1:8.3	0.255	1.094	**0.279**	A1
836.6	190	GSM850	GSM	33.00	32.61	-0.130	Left Tilt	FCC #1	1	1:8.3	0.121	1.094	0.132	
836.6	190	GSM850	GSM	33.00	32.61	0.050	Right Tilt	FCC #1	1	1:8.3	0.119	1.094	0.130	
836.6	190	GSM850	GPRS	31.00	30.46	0.020	Left Touch	FCC #1	2	1:4.15	0.328	1.132	0.371	
836.6	190	GSM850	GPRS	31.00	30.46	-0.150	Right Touch	FCC #1	2	1:4.15	0.332	1.132	**0.376**	A2
836.6	190	GSM850	GPRS	31.00	30.46	-0.020	Left Tilt	FCC #1	2	1:4.15	0.181	1.132	0.205	
836.6	190	GSM850	GPRS	31.00	30.46	0.180	Right Tilt	FCC #1	2	1:4.15	0.157	1.132	0.178	
836.6	190	GSM850	GPRS	31.00	30.46	0.190	Right Touch	FCC #1	2	1:4.15	0.318	1.132	0.360	
ANSI / IEEE C95.1-1992– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram						

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

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	30.00	29.72	-0.120	Left Touch	FCC #1	1	1:8.3	0.187	1.067	**0.200**	A3
1880.0	661	PCS1900	PCS	30.00	29.72	0.150	Right Touch	FCC #1	1	1:8.3	0.121	1.067	0.129	
1880.0	661	PCS1900	PCS	30.00	29.72	0.190	Left Tilt	FCC #1	1	1:8.3	0.068	1.067	0.073	
1880.0	661	PCS1900	PCS	30.00	29.72	0.180	Right Tilt	FCC #1	1	1:8.3	0.055	1.067	0.059	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.080	Left Touch	FCC #1	2	1:4.15	0.221	1.102	**0.244**	A4
1880.0	661	PCS1900	GPRS	28.20	27.78	0.190	Right Touch	FCC #1	2	1:4.15	0.123	1.102	0.136	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.060	Left Tilt	FCC #1	2	1:4.15	0.073	1.102	0.080	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.110	Right Tilt	FCC #1	2	1:4.15	0.056	1.102	0.062	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.060	Left Touch	FCC #1	2	1:4.15	0.207	1.102	0.228	
ANSI / IEEE C95.1-1992– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram						

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

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	24.00	23.85	-0.070	Left Touch	FCC #1	1:1	0.295	1.035	0.305	
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.090	Right Touch	FCC #1	1:1	0.338	1.035	**0.350**	A5
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.060	Left Tilt	FCC #1	1:1	0.180	1.035	0.186	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.100	Right Tilt	FCC #1	1:1	0.167	1.035	0.173	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.060	Right Touch	FCC #1	1:1	0.207	1.035	0.339	
ANSI / IEEE C95.1-1992– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram					

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.4 WCDMA 1700 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												
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.100	Left Touch	FCC #1	1:1	0.546	1.156	**0.631**	A6
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.180	Right Touch	FCC #1	1:1	0.203	1.156	0.235	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	-0.030	Left Tilt	FCC #1	1:1	0.127	1.156	0.147	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.080	Right Tilt	FCC #1	1:1	0.100	1.156	0.116	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	-0.090	Left Touch	FCC #1	1:1	0.421	1.156	0.487	
ANSI / IEEE C95.1-2005– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram					

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.5 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	24.00	23.89	-0.190	Left Touch	FCC #1	1:1	0.457	1.026	**0.469**	A7
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.140	Right Touch	FCC #1	1:1	0.266	1.026	0.273	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.070	Left Tilt	FCC #1	1:1	0.105	1.026	0.108	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.030	Right Tilt	FCC #1	1:1	0.087	1.026	0.089	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.010	Left Touch	FCC #1	1:1	0.388	1.026	0.398	
ANSI / IEEE C95.1-1992– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram					

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.6 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	23.00	22.61	0.030	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.159	1.094	0.174	
707.5	23095	LTE B12	10	22.00	21.69	0.100	1	Left Touch	FCC #1	QPSK	25	25	1:1	0.126	1.074	0.135	
707.5	23095	LTE B12	10	23.00	22.61	0.120	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.172	1.094	**0.188**	A8
707.5	23095	LTE B12	10	22.00	21.69	0.010	1	Right Touch	FCC #1	QPSK	25	25	1:1	0.136	1.074	0.146	
707.5	23095	LTE B12	10	23.00	22.61	0.100	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.097	1.094	0.106	
707.5	23095	LTE B12	10	22.00	21.69	0.130	1	Left Tilt	FCC #1	QPSK	25	25	1:1	0.080	1.074	0.086	
707.5	23095	LTE B12	10	23.00	22.61	-0.150	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.122	1.094	0.133	
707.5	23095	LTE B12	10	22.00	21.69	0.010	1	Right Tilt	FCC #1	QPSK	25	25	1:1	0.072	1.074	0.077	
707.5	23095	LTE B12	10	23.00	22.61	0.140	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.161	1.094	0.176	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.7 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	23.30	23.11	0.100	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.218	1.045	0.228	
782.0	23230	LTE B13	10	22.30	21.82	0.160	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.150	1.117	0.168	
782.0	23230	LTE B13	10	23.30	23.11	-0.120	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.250	1.045	**0.261**	A9
782.0	23230	LTE B13	10	22.30	21.82	0.020	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.198	1.117	0.221	
782.0	23230	LTE B13	10	23.30	23.11	-0.080	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.170	1.045	0.178	
782.0	23230	LTE B13	10	22.30	21.82	-0.060	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.121	1.117	0.135	
782.0	23230	LTE B13	10	23.30	23.11	-0.000	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.135	1.045	0.141	
782.0	23230	LTE B13	10	22.30	21.82	0.080	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.099	1.117	0.111	
782.0	23230	LTE B13	10	23.30	23.11	-0.090	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.245	1.045	0.256	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.8 LTE Band 14 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																
793.0	23330	LTE B14	10	23.30	23.21	-0.180	0	Left Touch	FCC #1	QPSK	1	25	1:1	0.229	1.021	0.234	
793.0	23330	LTE B14	10	22.30	21.88	0.150	1	Left Touch	FCC #1	QPSK	25	12	1:1	0.171	1.102	0.188	
793.0	23330	LTE B14	10	23.30	23.21	0.090	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.274	1.021	**0.280**	A10
793.0	23330	LTE B14	10	22.30	21.88	0.050	1	Right Touch	FCC #1	QPSK	25	12	1:1	0.186	1.102	0.205	
793.0	23330	LTE B14	10	23.30	23.21	-0.140	0	Left Tilt	FCC #1	QPSK	1	25	1:1	0.162	1.021	0.165	
793.0	23330	LTE B14	10	22.30	21.88	0.160	1	Left Tilt	FCC #1	QPSK	25	12	1:1	0.121	1.102	0.133	
793.0	23330	LTE B14	10	23.30	23.21	0.040	0	Right Tilt	FCC #1	QPSK	1	25	1:1	0.145	1.021	0.148	
793.0	23330	LTE B14	10	22.30	21.88	0.060	1	Right Tilt	FCC #1	QPSK	25	12	1:1	0.109	1.102	0.120	
793.0	23330	LTE B14	10	23.30	23.21	0.070	0	Right Touch	FCC #1	QPSK	1	25	1:1	0.266	1.021	0.272	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.9 LTE Band 26 (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																
831.5	26865	LTE B26	15	23.50	23.49	-0.010	0	Left Touch	FCC #1	QPSK	1	0	1:1	0.246	1.002	0.246	
831.5	26865	LTE B26	15	22.50	22.22	-0.050	1	Left Touch	FCC #1	QPSK	25	0	1:1	0.214	1.067	0.228	
831.5	26865	LTE B26	15	23.50	23.49	-0.050	0	Right Touch	FCC #1	QPSK	1	0	1:1	0.344	1.002	**0.345**	A11
831.5	26865	LTE B26	15	22.50	22.22	0.080	1	Right Touch	FCC #1	QPSK	25	0	1:1	0.260	1.067	0.277	
831.5	26865	LTE B26	15	23.50	23.49	-0.020	0	Left Tilt	FCC #1	QPSK	1	0	1:1	0.197	1.002	0.197	
831.5	26865	LTE B26	15	22.50	22.22	0.020	1	Left Tilt	FCC #1	QPSK	25	0	1:1	0.176	1.067	0.188	
831.5	26865	LTE B26	15	23.50	23.49	0.070	0	Right Tilt	FCC #1	QPSK	1	0	1:1	0.187	1.002	0.187	
831.5	26865	LTE B26	15	22.50	22.22	-0.190	1	Right Tilt	FCC #1	QPSK	25	0	1:1	0.153	1.067	0.163	
831.5	26865	LTE B26	15	23.50	23.49	-0.150	0	Right Touch	FCC #1	QPSK	1	0	1:1	0.314	1.002	0.315	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.10 LTE Band 4 (AWS) Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode/ Band	BW [MHz]	Max Allowed Power [dBm]	Cond. PWR [dBm]	Drift Power [dB]	MPR	Position	Device Serial Number	Mod.	RB Size	RB Offs.	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch																
1732.5	20175	LTE B4	20	23.30	23.19	0.170	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.293	1.026	**0.301**	A12
1732.5	20175	LTE B4	20	22.30	21.96	0.030	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.263	1.081	0.284	
1732.5	20175	LTE B4	20	23.30	23.19	-0.130	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.186	1.026	0.191	
1732.5	20175	LTE B4	20	22.30	21.96	0.110	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.165	1.081	0.178	
1732.5	20175	LTE B4	20	23.30	23.19	0.110	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.121	1.026	0.124	
1732.5	20175	LTE B4	20	22.30	21.96	0.150	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.094	1.081	0.102	
1732.5	20175	LTE B4	20	23.30	23.19	0.140	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.100	1.026	0.103	
1732.5	20175	LTE B4	20	22.30	21.96	0.170	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.083	1.081	0.090	
1732.5	20175	LTE B4	20	23.30	23.19	-0.080	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.286	1.026	0.293	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.11 LTE Band 25 (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																
1860.0	26140	LTE B25	20	23.50	23.41	-0.160	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.314	1.021	**0.321**	A13
1860.0	26140	LTE B25	20	22.50	22.25	-0.130	1	Left Touch	FCC #1	QPSK	50	25	1:1	0.240	1.059	0.254	
1860.0	26140	LTE B25	20	23.50	23.41	0.080	0	Right Touch	FCC #1	QPSK	1	50	1:1	0.154	1.021	0.157	
1860.0	26140	LTE B25	20	22.50	22.25	0.030	1	Right Touch	FCC #1	QPSK	50	25	1:1	0.128	1.059	0.136	
1860.0	26140	LTE B25	20	23.50	23.41	0.150	0	Left Tilt	FCC #1	QPSK	1	50	1:1	0.065	1.021	0.066	
1860.0	26140	LTE B25	20	22.50	22.25	0.110	1	Left Tilt	FCC #1	QPSK	50	25	1:1	0.032	1.059	0.034	
1860.0	26140	LTE B25	20	23.50	23.41	-0.010	0	Right Tilt	FCC #1	QPSK	1	50	1:1	0.053	1.021	0.054	
1860.0	26140	LTE B25	20	22.50	22.25	0.150	1	Right Tilt	FCC #1	QPSK	50	25	1:1	0.025	1.059	0.026	
1860.0	26140	LTE B25	20	23.50	23.41	-0.090	0	Left Touch	FCC #1	QPSK	1	50	1:1	0.274	1.021	0.280	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.12 LTE Band 7 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																
2560.0	21350	LTE B7	20	22.00	21.68	0.000	0	Left Touch	FCC #1	QPSK	1	99	1:1	0.139	1.076	**0.150**	A14
2560.0	21350	LTE B7	20	21.00	20.77	0.000	1	Left Touch	FCC #1	QPSK	50	50	1:1	0.112	1.054	0.118	
2560.0	21350	LTE B7	20	22.00	21.68	-0.020	0	Right Touch	FCC #1	QPSK	1	99	1:1	0.088	1.076	0.095	
2560.0	21350	LTE B7	20	21.00	20.77	-0.090	1	Right Touch	FCC #1	QPSK	50	50	1:1	0.073	1.054	0.077	
2560.0	21350	LTE B7	20	22.00	21.68	0.090	0	Left Tilt	FCC #1	QPSK	1	99	1:1	0.044	1.076	0.047	
2560.0	21350	LTE B7	20	21.00	20.77	0.000	1	Left Tilt	FCC #1	QPSK	50	50	1:1	0.036	1.054	0.038	
2560.0	21350	LTE B7	20	22.00	21.68	0.050	0	Right Tilt	FCC #1	QPSK	1	99	1:1	0.061	1.076	0.066	
2560.0	21350	LTE B7	20	21.00	20.77	0.080	1	Right Tilt	FCC #1	QPSK	50	50	1:1	0.042	1.054	0.044	
2560.0	21350	LTE B7	20	22.00	21.68	0.000	0	Left Touch	FCC #1	QPSK	1	99	1:1	0.126	1.076	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. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.13 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																
2593.0	40620	LTE B41	20	22.50	22.16	0.000	0	Left Touch	FCC #1	QPSK	1	0	1:1.58	0.093	1.081	**0.101**	A15
2593.0	40620	LTE B41	20	21.50	21.11	0.000	1	Left Touch	FCC #1	QPSK	50	0	1:1.58	0.045	1.094	0.049	
2593.0	40620	LTE B41	20	22.50	22.16	0.080	0	Right Touch	FCC #1	QPSK	1	0	1:1.58	0.050	1.081	0.054	
2593.0	40620	LTE B41	20	21.50	21.11	0.040	1	Right Touch	FCC #1	QPSK	50	0	1:1.58	0.043	1.094	0.047	
2593.0	40620	LTE B41	20	22.50	22.16	0.110	0	Left Tilt	FCC #1	QPSK	1	0	1:1.58	0.033	1.081	0.036	
2593.0	40620	LTE B41	20	21.50	21.11	0.070	1	Left Tilt	FCC #1	QPSK	50	0	1:1.58	0.022	1.094	0.024	
2593.0	40620	LTE B41	20	22.50	22.16	-0.010	0	Right Tilt	FCC #1	QPSK	1	0	1:1.58	0.036	1.081	0.039	
2593.0	40620	LTE B41	20	21.50	21.11	-0.140	1	Right Tilt	FCC #1	QPSK	50	0	1:1.58	0.026	1.094	0.028	
2593.0	40620	LTE B41	20	22.50	22.16	0.000	0	Left Touch	FCC #1	QPSK	1	0	1:1.58	0.072	1.081	0.078	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.14 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														
2437.0	6	802.11b	16.80	16.61	0.070	Left Touch	FCC #2	0.116	1	99.2	0.116	1.045	1.008	0.122	
2437.0	6	802.11b	16.80	16.61	-0.050	Right Touch	FCC #2	0.266	1	99.2	0.261	1.045	1.008	**0.275**	A16
2437.0	6	802.11b	16.80	16.61	-0.010	Left Tilt	FCC #2	0.104	1	99.2	0.106	1.045	1.008	0.112	
2437.0	6	802.11b	16.80	16.61	0.130	Right Tilt	FCC #2	0.168	1	99.2	0.173	1.045	1.008	0.182	
2437.0	6	802.11b	16.80	16.61	0.140	Right Touch	FCC #2	0.266	1	99.2	0.243	1.045	1.008	0.256	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.

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											
2437.0	6	802.11b	DSSS	16.8	0.275	2437	802.11g	OFDM	16.5	0.933	**0.257**	X
2437.0	6	802.11b	DSSS	16.8	0.275	2437	802.11n	OFDM	16.0	0.832	**0.229**	X
2437.0	6	802.11b	DSSS	16.8	0.275	2437	802.11ac	OFDM	16.0	0.832	**0.229**	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 11.1.15 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														
5300.0	60	802.11a	18.50	17.52	0.120	Left Touch	FCC #2	0.467	6	95.7	0.502	1.253	1.045	0.657	
5260.0	52	802.11a	18.50	17.51	-0.190	Right Touch	FCC #2	0.705	6	95.7	0.751	1.256	1.045	0.986	
5300.0	60	802.11a	18.50	17.52	0.070	Right Touch	FCC #2	0.802	6	95.7	0.849	1.253	1.045	**1.112**	A17
5300.0	60	802.11a	18.50	17.52	0.170	Left Tilt	FCC #2	0.491	6	95.7	0.527	1.253	1.045	0.690	
5300.0	60	802.11a	18.50	17.52	0.070	Right Tilt	FCC #2	0.629	6	95.7	0.658	1.253	1.045	0.862	
5300.0	60	802.11a	18.50	17.52	0.010	Right Touch	FCC #2	0.825	6	95.7	0.834	1.253	1.045	1.092	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure								Head 1.6 W/kg (mW/g) averaged over 1 gram							

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

Adjusted SAR results for UNII-1 and UNII-2A SAR													
FREQUENCY		Mode/ Antenna	Service	Maximum Allowed Power [dBm]	1g Scaled SAR (W/kg)	FREQUENCY [MHz]	Mode	Service	Maximum Allowed Power [dBm	Adjusted Factor	1g Adjusted SAR (W/kg)	SAR for the band with lower maximum output power
MHz	Ch											
5300.0	60	802.11a	OFDM	18.5	1.112	5200	802.11a	OFDM	18.5	1.000	**1.112**	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(s):
1. 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 11.1.16 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														
5580.0	116	802.11a	18.50	17.59	-0.020	Left Touch	FCC #2	0.427	6	95.7	0.451	1.233	1.045	0.581	
5500.0	100	802.11a	18.50	17.51	-0.120	Right Touch	FCC #2	0.801	6	95.7	0.824	1.256	1.045	**1.081**	A18
5580.0	116	802.11a	18.50	17.59	0.010	Right Touch	FCC #2	0.701	6	95.7	0.749	1.233	1.045	0.965	
5580.0	116	802.11a	18.50	17.59	0.040	Left Tilt	FCC #2	0.518	6	95.7	0.522	1.233	1.045	0.673	
5580.0	116	802.11a	18.50	17.59	-0.030	Right Tilt	FCC #2	0.559	6	95.7	0.554	1.233	1.045	0.714	
5500.0	100	802.11a	18.50	17.51	-0.030	Right Touch	FCC #2	0.757	6	95.7	0.773	1.256	1.045	1.015	
5825.0	165	802.11a	18.50	17.52	-0.180	Left Touch	FCC #2	0.264	6	95.9	0.293	1.253	1.043	0.383	
5825.0	165	802.11a	18.50	17.52	0.040	Right Touch	FCC #2	0.512	6	95.9	0.548	1.253	1.043	**0.716**	A19
5825.0	165	802.11a	18.50	17.52	-0.070	Left Tilt	FCC #2	0.400	6	95.9	0.375	1.253	1.043	0.490	
5825.0	165	802.11a	18.50	17.52	0.150	Right Tilt	FCC #2	0.418	6	95.9	0.425	1.253	1.043	0.555	
5825.0	165	802.11a	18.50	17.52	0.070	Right Touch	FCC #2	0.469	6	95.9	0.500	1.253	1.043	0.653	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.1.17 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													
2441.0	39	Bluetooth	4.00	2.93	-0.080	Left Touch	FCC #2	1	76.8	0.010	1.279	1.302	0.017	
2441.0	39	Bluetooth	4.00	2.93	0.110	Right Touch	FCC #2	1	76.8	0.036	1.279	1.302	**0.060**	A20
2441.0	39	Bluetooth	4.00	2.93	0.050	Left Tilt	FCC #2	1	76.8	0.009	1.279	1.302	0.015	
2441.0	39	Bluetooth	4.00	2.93	-0.070	Right Tilt	FCC #2	1	76.8	0.022	1.279	1.302	0.037	
2441.0	39	Bluetooth	4.00	2.93	0.090	Right Touch	FCC #2	1	76.8	0.032	1.279	1.302	0.053	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

11.2 Standalone Body-Worn SAR Worn SAR Results

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

MEASUREMENT RESULTS														
FREQUENCY		Mode/ Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Drift Power [dB]	Spacing [Side]	Device Serial Number	# of Time Slots	Duty Cycle	1g SAR (W/kg)	Scaling Factor	1g Scaled SAR (W/kg)	Plots #
MHz	Ch													
836.6	190	GSM850	GSM	33.00	32.61	-0.170	15 mm [Front]	FCC #1	1	1:8.3	0.160	1.094	0.175	
836.6	190	GSM850	GSM	33.00	32.61	-0.140	15 mm [Rear]	FCC #1	1	1:8.3	0.172	1.094	0.188	
836.6	190	GSM850	GPRS	31.00	30.46	-0.080	15 mm [Front]	FCC #1	2	1:4.15	0.216	1.132	0.245	
836.6	190	GSM850	GPRS	31.00	30.46	-0.060	15 mm [Rear]	FCC #1	2	1:4.15	0.266	1.132	**0.301**	A21
836.6	190	GSM850	GPRS	31.00	30.46	-0.010	15 mm [Rear]	FCC #1	2	1:4.15	0.211	1.132	0.239	
1880.0	661	PCS1900	PCS	30.00	29.72	0.070	15 mm [Front]	FCC #1	1	1:8.3	0.116	1.067	0.124	
1880.0	661	PCS1900	PCS	30.00	29.72	0.060	15 mm [Rear]	FCC #1	1	1:8.3	0.210	1.067	0.224	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.020	15 mm [Front]	FCC #1	2	1:4.15	0.142	1.102	0.156	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.010	15 mm [Rear]	FCC #1	2	1:4.15	0.244	1.102	**0.269**	A22
1880.0	661	PCS1900	GPRS	28.20	27.78	0.020	15 mm [Rear]	FCC #1	2	1:4.15	0.211	1.102	0.233	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.020	15 mm [Front]	FCC #1	N/A	1:1	0.247	1.035	0.256	
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.020	15 mm [Rear]	FCC #1	N/A	1:1	0.280	1.035	**0.290**	A23
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.020	15 mm [Rear]	FCC #1	N/A	1:1	0.246	1.035	0.255	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.000	15 mm [Front]	FCC #1	N/A	1:1	0.294	1.156	0.340	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.000	15 mm [Rear]	FCC #1	N/A	1:1	0.389	1.156	**0.450**	A24
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.010	15 mm [Rear]	FCC #1	N/A	1:1	0.318	1.156	0.368	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.010	15 mm [Front]	FCC #1	N/A	1:1	0.205	1.026	0.210	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.030	15 mm [Rear]	FCC #1	N/A	1:1	0.517	1.026	**0.530**	A25
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.030	15 mm [Rear]	FCC #1	N/A	1:1	0.256	1.026	0.263	
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 the extended battery measurement on the worst case for standard battery measurement.

Table 11.2.2 LTE B12, B13, B14, B26, B4 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	23.00	22.61	0.020	0	15 mm [Front]	FCC #1	QPSK	1	25	1:1	0.127	1.094	0.139	
707.5	23095	LTE B12	10	22.00	21.69	0.010	1	15 mm [Front]	FCC #1	QPSK	25	25	1:1	0.113	1.074	0.121	
707.5	23095	LTE B12	10	23.00	22.61	-0.050	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.237	1.094	**0.259**	A26
707.5	23095	LTE B12	10	22.00	21.69	-0.020	1	15 mm [Rear]	FCC #1	QPSK	25	25	1:1	0.186	1.074	0.200	
707.5	23095	LTE B12	10	23.00	22.61	-0.010	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.199	1.094	0.218	
782.0	23230	LTE B13	10	23.30	23.11	0.030	0	15 mm [Front]	FCC #1	QPSK	1	25	1:1	0.203	1.045	0.212	
782.0	23230	LTE B13	10	22.30	21.82	-0.000	1	15 mm [Front]	FCC #1	QPSK	25	12	1:1	0.160	1.117	0.179	
782.0	23230	LTE B13	10	23.30	23.11	-0.030	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.331	1.045	**0.346**	A27
782.0	23230	LTE B13	10	22.30	21.82	-0.000	1	15 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.273	1.117	0.305	
782.0	23230	LTE B13	10	23.30	23.11	-0.020	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.315	1.045	0.329	
793.0	23330	LTE B14	10	23.30	23.21	-0.070	0	15 mm [Front]	FCC #1	QPSK	1	25	1:1	0.208	1.021	0.212	
793.0	23330	LTE B14	10	22.30	21.88	0.020	1	15 mm [Front]	FCC #1	QPSK	25	12	1:1	0.172	1.102	0.190	
793.0	23330	LTE B14	10	23.30	23.21	-0.010	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.255	1.021	**0.260**	A28
793.0	23330	LTE B14	10	22.30	21.88	-0.020	1	15 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.186	1.102	0.205	
793.0	23330	LTE B14	10	23.30	23.21	-0.030	0	15 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.219	1.021	0.224	
831.5	26865	LTE B26	15	23.50	23.49	-0.030	0	15 mm [Front]	FCC #1	QPSK	1	0	1:1	0.261	1.002	0.262	
831.5	26865	LTE B26	15	22.50	22.22	0.010	1	15 mm [Front]	FCC #1	QPSK	25	0	1:1	0.202	1.067	0.216	
831.5	26865	LTE B26	15	23.50	23.49	-0.130	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.296	1.002	**0.297**	A29
831.5	26865	LTE B26	15	22.50	22.22	0.020	1	15 mm [Rear]	FCC #1	QPSK	25	0	1:1	0.228	1.067	0.243	
831.5	26865	LTE B26	15	23.50	23.49	-0.040	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.270	1.002	0.271	
1732.5	20175	LTE B4	20	23.30	23.19	0.030	0	15 mm [Front]	FCC #1	QPSK	1	50	1:1	0.194	1.026	0.199	
1732.5	20175	LTE B4	20	22.30	21.96	0.030	1	15 mm [Front]	FCC #1	QPSK	50	25	1:1	0.151	1.081	0.163	
1732.5	20175	LTE B4	20	23.30	23.19	-0.000	0	15 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.292	1.026	**0.300**	A30
1732.5	20175	LTE B4	20	22.30	21.96	-0.010	1	15 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.241	1.081	0.261	
1732.5	20175	LTE B4	20	23.30	23.19	0.050	0	15 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.214	1.026	0.220	
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 the extended battery measurement on the worst case for standard battery measurement.

Table 11.2.3 LTE B25, B7, 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																
1860.0	26140	LTE B25	20	23.50	23.41	-0.070	0	15 mm [Front]	FCC #1	QPSK	1	50	1:1	0.174	1.021	0.178	
1860.0	26140	LTE B25	20	22.50	22.25	0.020	1	15 mm [Front]	FCC #1	QPSK	50	25	1:1	0.143	1.059	0.151	
1860.0	26140	LTE B25	20	23.50	23.41	-0.000	0	15 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.452	1.021	**0.461**	A31
1860.0	26140	LTE B25	20	22.50	22.25	0.010	1	15 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.371	1.059	0.393	
1860.0	26140	LTE B25	20	23.50	23.41	0.010	0	15 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.305	1.021	0.311	
2560.0	21350	LTE B7	20	22.00	21.68	0.060	0	15 mm [Front]	FCC #1	QPSK	1	99	1:1	0.116	1.076	0.125	
2560.0	21350	LTE B7	20	21.00	20.77	0.090	1	15 mm [Front]	FCC #1	QPSK	50	50	1:1	0.096	1.054	0.101	
2510.0	20850	LTE B7	20	22.00	21.63	0.040	0	15 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.773	1.089	0.842	
2535.0	21100	LTE B7	20	22.00	21.64	-0.030	0	15 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.925	1.086	1.005	
2560.0	21350	LTE B7	20	22.00	21.68	0.020	0	15 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.976	1.076	**1.050**	A32
2560.0	21350	LTE B7	20	21.00	20.77	0.070	1	15 mm [Rear]	FCC #1	QPSK	50	50	1:1	0.632	1.054	0.666	
2560.0	21350	LTE B7	20	21.00	20.69	0.060	1	15 mm [Rear]	FCC #1	QPSK	100	0	1:1	0.626	1.074	0.672	
2560.0	21350	LTE B7	20	22.00	21.68	0.020	0	15 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.778	1.076	0.837	
2560.0	21350	LTE B7	20	22.00	21.68	0.060	0	15 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.970	1.076	1.044	
2593.0	40620	LTE B41	20	22.50	22.16	0.110	0	15 mm [Front]	FCC #1	QPSK	1	0	1:1.58	0.063	1.081	0.068	
2593.0	40620	LTE B41	20	21.50	21.11	0.160	1	15 mm [Front]	FCC #1	QPSK	50	0	1:1.58	0.053	1.094	0.058	
2506.0	39750	LTE B41	20	22.50	22.02	0.030	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.955	1.117	1.067	
2549.5	40185	LTE B41	20	22.50	22.13	0.030	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.981	1.089	**1.068**	A33
2593.0	40620	LTE B41	20	22.50	22.16	0.000	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.968	1.081	1.046	
2593.0	40620	LTE B41	20	21.50	21.11	-0.020	1	15 mm [Rear]	FCC #1	QPSK	50	0	1:1.58	0.494	1.094	0.540	
2593.0	40620	LTE B41	20	21.50	21.09	-0.010	1	15 mm [Rear]	FCC #1	QPSK	100	0	1:1.58	0.493	1.099	0.542	
2636.5	41055	LTE B41	20	22.50	22.03	0.010	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.836	1.114	0.931	
2680.0	41490	LTE B41	20	22.50	22.01	-0.030	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.920	1.119	1.029	
2549.5	40185	LTE B41	20	22.50	22.13	0.050	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.713	1.089	0.776	
2549.5	40185	LTE B41	20	22.50	22.13	0.030	0	15 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.969	1.089	1.055	
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 the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.

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														
2437.0	6	802.11b	16.80	16.61	0.100	15 mm [Front]	FCC #2	0.036	1	99.2	0.033	1.045	1.008	**0.035**	A34
2437.0	6	802.11b	16.80	16.61	0.120	15 mm [Rear]	FCC #2	0.021	1	99.2	0.017	1.045	1.008	0.018	
2437.0	6	802.11b	16.80	16.61	-0.140	15 mm [Front]	FCC #2	0.032	1	99.2	0.029	1.045	1.008	0.031	
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 the extended battery measurement on the worst case for standard battery measurement.

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											
2437.0	6	802.11b	DSSS	16.8	0.035	2437	802.11g	OFDM	16.5	0.933	**0.033**	X
2437.0	6	802.11b	DSSS	16.8	0.035	2437	802.11n	OFDM	16.0	0.832	**0.029**	X
2437.0	6	802.11b	DSSS	16.8	0.035	2437	802.11ac	OFDM	16.0	0.832	**0.029**	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														
5300.0	60	802.11a	18.50	17.52	-0.000	15 mm [Front]	FCC #2	0.192	6	95.7	0.194	1.253	1.045	**0.254**	A35
5300.0	60	802.11a	18.50	17.52	-0.020	15 mm [Rear]	FCC #2	0.096	6	95.7	0.091	1.253	1.045	0.119	
5300.0	60	802.11a	18.50	17.52	-0.150	15 mm [Front]	FCC #2	0.186	6	95.7	0.184	1.253	1.045	0.241	
ANSI / IEEE C95.1-2005– SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population Exposure**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram							

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

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											
5300.0	60	802.11a	OFDM	18.5	0.254	5200	802.11a	OFDM	18.5	1.000	**0.254**	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(s):
1. 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														
5580.0	116	802.11a	18.50	17.59	-0.030	15 mm [Front]	FCC #2	0.152	6	95.7	0.153	1.233	1.045	0.197	
5580.0	116	802.11a	18.50	17.59	-0.070	15 mm [Rear]	FCC #2	0.282	6	95.7	0.290	1.233	1.045	**0.374**	A36
5580.0	116	802.11a	18.50	17.59	-0.090	15 mm [Rear]	FCC #2	0.285	6	95.7	0.287	1.233	1.045	0.374	
5825.0	165	802.11a	18.50	17.52	-0.160	15 mm [Front]	FCC #2	0.128	6	95.9	0.133	1.253	1.043	0.174	
5825.0	165	802.11a	18.50	17.52	-0.090	15 mm [Rear]	FCC #2	0.148	6	95.9	0.140	1.253	1.043	**0.183**	A37
5825.0	165	802.11a	18.50	17.52	-0.140	15 mm [Rear]	FCC #2	0.144	6	95.9	0.132	1.253	1.043	0.172	
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 the extended battery measurement on the worst case for standard battery measurement.

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													
2441.0	39	Bluetooth	4.00	2.93	-0.080	15 mm [Front]	FCC #2	1	76.8	0.003	1.279	1.302	**0.004**	A38
2441.0	39	Bluetooth	4.00	2.93	0.000	15 mm [Rear]	FCC #2	1	76.8	0.001	1.279	1.302	0.002	
2441.0	39	Bluetooth	4.00	2.93	-0.030	15 mm [Front]	FCC #2	1	76.8	0.002	1.279	1.302	0.003	
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 the extended battery measurement on the worst case for standard battery measurement.

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	31.00	30.46	-0.090	10 mm [Bottom]	FCC #1	2	1:4.15	0.119	1.132	0.135	
836.6	190	GSM850	GPRS	31.00	30.46	-0.050	10 mm [Front]	FCC #1	2	1:4.15	0.160	1.132	0.181	
836.6	190	GSM850	GPRS	31.00	30.46	-0.110	10 mm [Rear]	FCC #1	2	1:4.15	0.384	1.132	**0.435**	A39
836.6	190	GSM850	GPRS	31.00	30.46	-0.070	10 mm [Right]	FCC #1	2	1:4.15	0.177	1.132	0.200	
836.6	190	GSM850	GPRS	31.00	30.46	-0.050	10 mm [Left]	FCC #1	2	1:4.15	0.112	1.132	0.127	
836.6	190	GSM850	GPRS	31.00	30.46	0.020	10 mm [Rear]	FCC #1	2	1:4.15	0.287	1.132	0.325	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.020	10 mm [Bottom]	FCC #1	2	1:4.15	0.277	1.102	0.305	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.050	10 mm [Front]	FCC #1	2	1:4.15	0.186	1.102	0.205	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.030	10 mm [Rear]	FCC #1	2	1:4.15	0.502	1.102	**0.553**	A40
1880.0	661	PCS1900	GPRS	28.20	27.78	0.040	10 mm [Right]	FCC #1	2	1:4.15	0.060	1.102	0.066	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.030	10 mm [Left]	FCC #1	2	1:4.15	0.179	1.102	0.197	
1880.0	661	PCS1900	GPRS	28.20	27.78	0.060	10 mm [Rear]	FCC #1	2	1:4.15	0.373	1.102	0.411	
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.050	10 mm [Bottom]	FCC #1	N/A	1:1	0.159	1.035	0.165	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.010	10 mm [Front]	FCC #1	N/A	1:1	0.230	1.035	0.238	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.020	10 mm [Rear]	FCC #1	N/A	1:1	0.504	1.035	**0.522**	A41
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.010	10 mm [Right]	FCC #1	N/A	1:1	0.276	1.035	0.286	
836.6	4183	WCDMA 850	RMC	24.00	23.85	-0.050	10 mm [Left]	FCC #1	N/A	1:1	0.184	1.035	0.190	
836.6	4183	WCDMA 850	RMC	24.00	23.85	0.000	10 mm [Rear]	FCC #1	N/A	1:1	0.327	1.035	0.338	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	-0.070	10 mm [Bottom]	FCC #1	N/A	1:1	0.355	1.156	0.410	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.010	10 mm [Front]	FCC #1	N/A	1:1	0.400	1.156	0.462	
1712.4	1312	WCDMA 1700	RMC	24.00	23.35	0.050	10 mm [Rear]	FCC #1	N/A	1:1	0.588	1.161	0.683	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	-0.010	10 mm [Rear]	FCC #1	N/A	1:1	0.729	1.156	0.843	
1752.6	1513	WCDMA 1700	RMC	24.00	23.38	0.030	10 mm [Rear]	FCC #1	N/A	1:1	0.845	1.153	**0.974**	A42
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	-0.000	10 mm [Right]	FCC #1	N/A	1:1	0.132	1.156	0.153	
1732.4	1412	WCDMA 1700	RMC	24.00	23.37	0.020	10 mm [Left]	FCC #1	N/A	1:1	0.346	1.156	0.400	
1752.6	1513	WCDMA 1700	RMC	24.00	23.38	0.010	10 mm [Rear]	FCC #1	N/A	1:1	0.524	1.153	0.604	
1752.6	1513	WCDMA 1700	RMC	24.00	23.38	0.000	10 mm [Rear]	FCC #1	N/A	1:1	0.821	1.153	0.947	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.050	10 mm [Bottom]	FCC #1	N/A	1:1	0.518	1.026	0.531	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.030	10 mm [Front]	FCC #1	N/A	1:1	0.288	1.026	0.295	
1852.4	9262	WCDMA 1900	RMC	24.00	23.88	0.030	10 mm [Rear]	FCC #1	N/A	1:1	0.761	1.028	0.782	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.040	10 mm [Rear]	FCC #1	N/A	1:1	0.907	1.026	**0.931**	A43
1907.6	9538	WCDMA 1900	RMC	24.00	23.84	-0.020	10 mm [Rear]	FCC #1	N/A	1:1	0.843	1.038	0.875	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.010	10 mm [Right]	FCC #1	N/A	1:1	0.120	1.026	0.123	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	0.030	10 mm [Left]	FCC #1	N/A	1:1	0.279	1.026	0.286	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.000	10 mm [Rear]	FCC #1	N/A	1:1	0.737	1.026	0.756	
1880.0	9400	WCDMA 1900	RMC	24.00	23.89	-0.020	10 mm [Rear]	FCC #1	N/A	1:1	0.904	1.026	0.928	
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 the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.

Table 11.3.2 LTE B12, B13, B14, B26 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	23.00	22.61	-0.000	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.059	1.094	0.065	
707.5	23095	LTE B12	10	22.00	21.69	-0.100	1	10 mm [Bottom]	FCC #1	QPSK	25	25	1:1	0.058	1.074	0.062	
707.5	23095	LTE B12	10	23.00	22.61	-0.010	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.136	1.094	0.149	
707.5	23095	LTE B12	10	22.00	21.69	0.010	1	10 mm [Front]	FCC #1	QPSK	25	25	1:1	0.117	1.074	0.126	
707.5	23095	LTE B12	10	23.00	22.61	-0.070	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.334	1.094	**0.365**	A44
707.5	23095	LTE B12	10	22.00	21.69	-0.030	1	10 mm [Rear]	FCC #1	QPSK	25	25	1:1	0.272	1.074	0.292	
707.5	23095	LTE B12	10	23.00	22.61	0.000	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.171	1.094	0.187	
707.5	23095	LTE B12	10	22.00	21.69	0.040	1	10 mm [Right]	FCC #1	QPSK	25	25	1:1	0.139	1.074	0.149	
707.5	23095	LTE B12	10	23.00	22.61	0.030	0	10 mm [Left]	FCC #1	QPSK	1	25	1:1	0.135	1.094	0.148	
707.5	23095	LTE B12	10	22.00	21.69	-0.050	1	10 mm [Left]	FCC #1	QPSK	25	25	1:1	0.114	1.074	0.122	
707.5	23095	LTE B12	10	23.00	22.61	0.020	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.262	1.094	0.287	
782.0	23230	LTE B13	10	23.30	23.11	0.020	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.128	1.045	0.134	
782.0	23230	LTE B13	10	22.30	21.82	0.030	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.097	1.117	0.108	
782.0	23230	LTE B13	10	23.30	23.11	0.030	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.225	1.045	0.235	
782.0	23230	LTE B13	10	22.30	21.82	0.000	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.182	1.117	0.203	
782.0	23230	LTE B13	10	23.30	23.11	-0.070	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.402	1.045	**0.420**	A45
782.0	23230	LTE B13	10	22.30	21.82	-0.020	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.270	1.117	0.302	
782.0	23230	LTE B13	10	23.30	23.11	-0.020	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.298	1.045	0.311	
782.0	23230	LTE B13	10	22.30	21.82	-0.050	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.230	1.117	0.257	
782.0	23230	LTE B13	10	23.30	23.11	-0.000	0	10 mm [Left]	FCC #1	QPSK	1	25	1:1	0.188	1.045	0.196	
782.0	23230	LTE B13	10	22.30	21.82	-0.010	1	10 mm [Left]	FCC #1	QPSK	25	12	1:1	0.161	1.117	0.180	
782.0	23230	LTE B13	10	23.30	23.11	-0.030	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.348	1.045	0.364	
793.0	23330	LTE B14	10	23.30	23.21	0.030	0	10 mm [Bottom]	FCC #1	QPSK	1	25	1:1	0.120	1.021	0.123	
793.0	23330	LTE B14	10	22.30	21.88	0.030	1	10 mm [Bottom]	FCC #1	QPSK	25	12	1:1	0.089	1.102	0.098	
793.0	23330	LTE B14	10	23.30	23.21	0.010	0	10 mm [Front]	FCC #1	QPSK	1	25	1:1	0.224	1.021	0.229	
793.0	23330	LTE B14	10	22.30	21.88	0.020	1	10 mm [Front]	FCC #1	QPSK	25	12	1:1	0.158	1.102	0.174	
793.0	23330	LTE B14	10	23.30	23.21	-0.030	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.341	1.021	**0.348**	A46
793.0	23330	LTE B14	10	22.30	21.88	-0.030	1	10 mm [Rear]	FCC #1	QPSK	25	12	1:1	0.256	1.102	0.282	
793.0	23330	LTE B14	10	23.30	23.21	0.040	0	10 mm [Right]	FCC #1	QPSK	1	25	1:1	0.270	1.021	0.276	
793.0	23330	LTE B14	10	22.30	21.88	0.030	1	10 mm [Right]	FCC #1	QPSK	25	12	1:1	0.211	1.102	0.233	
793.0	23330	LTE B14	10	23.30	23.21	-0.050	0	10 mm [Left]	FCC #1	QPSK	1	25	1:1	0.213	1.021	0.217	
793.0	23330	LTE B14	10	22.30	21.88	-0.060	1	10 mm [Left]	FCC #1	QPSK	25	12	1:1	0.162	1.102	0.179	
793.0	23330	LTE B14	10	23.30	23.21	-0.030	0	10 mm [Rear]	FCC #1	QPSK	1	25	1:1	0.337	1.021	0.344	
831.5	26865	LTE B26	15	23.50	23.49	-0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.173	1.002	0.173	
831.5	26865	LTE B26	15	22.50	22.22	-0.050	1	10 mm [Bottom]	FCC #1	QPSK	25	0	1:1	0.133	1.067	0.142	
831.5	26865	LTE B26	15	23.50	23.49	0.000	0	10 mm [Front]	FCC #1	QPSK	1	0	1:1	0.303	1.002	0.304	
831.5	26865	LTE B26	15	22.50	22.22	-0.020	1	10 mm [Front]	FCC #1	QPSK	25	0	1:1	0.256	1.067	0.273	
831.5	26865	LTE B26	15	23.50	23.49	-0.020	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.436	1.002	**0.437**	A47
831.5	26865	LTE B26	15	22.50	22.22	-0.080	1	10 mm [Rear]	FCC #1	QPSK	25	0	1:1	0.350	1.067	0.373	
831.5	26865	LTE B26	15	23.50	23.49	-0.020	0	10 mm [Right]	FCC #1	QPSK	1	0	1:1	0.423	1.002	0.424	
831.5	26865	LTE B26	15	22.50	22.22	-0.050	1	10 mm [Right]	FCC #1	QPSK	25	0	1:1	0.326	1.067	0.348	
831.5	26865	LTE B26	15	23.50	23.49	-0.070	0	10 mm [Left]	FCC #1	QPSK	1	0	1:1	0.196	1.002	0.196	
831.5	26865	LTE B26	15	22.50	22.22	0.040	1	10 mm [Left]	FCC #1	QPSK	25	0	1:1	0.142	1.067	0.152	
831.5	26865	LTE B26	15	23.50	23.49	-0.050	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.334	1.002	0.335	
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 the extended battery measurement on the worst case for standard battery measurement.

Table 11.3.3 LTE B4 (AWS) 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																
1732.5	20175	LTE B4	20	23.30	23.19	-0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.357	1.026	0.366	
1732.5	20175	LTE B4	20	22.30	21.96	0.010	1	10 mm [Bottom]	FCC #1	QPSK	50	25	1:1	0.288	1.081	0.311	
1732.5	20175	LTE B4	20	23.30	23.19	0.030	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.289	1.026	0.297	
1732.5	20175	LTE B4	20	22.30	21.96	0.050	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.224	1.081	0.242	
1732.5	20175	LTE B4	20	23.30	23.19	0.030	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.580	1.026	**0.595**	A48
1732.5	20175	LTE B4	20	22.30	21.96	0.000	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.512	1.081	0.553	
1732.5	20175	LTE B4	20	23.30	23.19	0.040	0	10 mm [Right]	FCC #1	QPSK	1	50	1:1	0.134	1.026	0.137	
1732.5	20175	LTE B4	20	22.30	21.96	0.060	1	10 mm [Right]	FCC #1	QPSK	50	25	1:1	0.116	1.081	0.125	
1732.5	20175	LTE B4	20	23.30	23.19	0.010	0	10 mm [Left]	FCC #1	QPSK	1	50	1:1	0.336	1.026	0.345	
1732.5	20175	LTE B4	20	22.30	21.96	0.030	1	10 mm [Left]	FCC #1	QPSK	50	25	1:1	0.275	1.081	0.297	
1732.5	20175	LTE B4	20	23.30	23.19	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.392	1.026	0.402	
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 the extended battery measurement on the worst case for standard battery measurement.

Table 11.3.4 LTE B25 (PCS) 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																
1860.0	26140	LTE B25	20	23.50	23.41	0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	50	1:1	0.520	1.021	0.531	
1860.0	26140	LTE B25	20	22.50	22.25	-0.040	1	10 mm [Bottom]	FCC #1	QPSK	50	25	1:1	0.413	1.059	0.437	
1860.0	26140	LTE B25	20	23.50	23.41	-0.030	0	10 mm [Front]	FCC #1	QPSK	1	50	1:1	0.268	1.021	0.274	
1860.0	26140	LTE B25	20	22.50	22.25	0.030	1	10 mm [Front]	FCC #1	QPSK	50	25	1:1	0.214	1.059	0.227	
1860.0	26140	LTE B25	20	23.50	23.41	0.050	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.844	1.021	0.862	
1860.0	26140	LTE B25	20	22.50	22.25	0.030	1	10 mm [Rear]	FCC #1	QPSK	50	25	1:1	0.695	1.059	0.736	
1860.0	26140	LTE B25	20	22.50	22.18	0.020	1	10 mm [Rear]	FCC #1	QPSK	100	0	1:1	0.675	1.076	0.726	
1882.5	26365	LTE B25	20	23.50	23.34	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.855	1.038	0.887	
1905.0	26590	LTE B25	20	23.50	23.10	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.812	1.096	**0.890**	A49
1860.0	26140	LTE B25	20	23.50	23.41	0.040	0	10 mm [Right]	FCC #1	QPSK	1	50	1:1	0.138	1.021	0.141	
1860.0	26140	LTE B25	20	22.50	22.25	0.080	1	10 mm [Right]	FCC #1	QPSK	50	25	1:1	0.097	1.059	0.103	
1860.0	26140	LTE B25	20	23.50	23.41	-0.010	0	10 mm [Left]	FCC #1	QPSK	1	50	1:1	0.290	1.021	0.296	
1860.0	26140	LTE B25	20	22.50	22.25	0.030	1	10 mm [Left]	FCC #1	QPSK	50	25	1:1	0.210	1.059	0.222	
1905.0	26590	LTE B25	20	23.50	23.10	0.030	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.550	1.096	0.603	
1882.5	26365	LTE B25	20	23.50	23.34	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	50	1:1	0.851	1.038	0.883	
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 the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.

Table 11.3.5 LTE B7 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																
2510.0	20850	LTE B7	20	19.00	18.67	0.030	0	10 mm [Bottom]	FCC #1	QPSK	1	99	1:1	0.732	1.079	0.790	
2535.0	21100	LTE B7	20	19.00	18.48	0.010	0	10 mm [Bottom]	FCC #1	QPSK	1	99	1:1	0.769	1.127	0.867	
2560.0	21350	LTE B7	20	19.00	18.80	0.000	0	10 mm [Bottom]	FCC #1	QPSK	1	99	1:1	0.841	1.047	0.881	
2560.0	21350	LTE B7	20	18.00	17.78	0.010	1	10 mm [Bottom]	FCC #1	QPSK	50	50	1:1	0.679	1.052	0.714	
2560.0	21350	LTE B7	20	18.00	17.74	0.130	1	10 mm [Bottom]	FCC #1	QPSK	100	0	1:1	0.666	1.062	0.707	
2560.0	21350	LTE B7	20	19.00	18.80	0.090	0	10 mm [Front]	FCC #1	QPSK	1	99	1:1	0.127	1.047	0.133	
2560.0	21350	LTE B7	20	18.00	17.78	0.010	1	10 mm [Front]	FCC #1	QPSK	50	50	1:1	0.102	1.052	0.107	
2510.0	20850	LTE B7	20	19.00	18.67	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.180	1.079	1.273	
2510.0	20850	LTE B7	20	18.00	17.73	-0.000	1	10 mm [Rear]	FCC #1	QPSK	50	50	1:1	1.010	1.064	1.075	
2535.0	21100	LTE B7	20	19.00	18.48	-0.020	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.100	1.127	1.240	
2535.0	21100	LTE B7	20	18.00	17.49	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	50	1:1	1.090	1.125	1.226	
2560.0	21350	LTE B7	20	19.00	18.80	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.250	1.047	**1.309**	A50
2560.0	21350	LTE B7	20	18.00	17.78	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	50	1:1	1.080	1.052	1.136	
2560.0	21350	LTE B7	20	18.00	17.74	-0.050	1	10 mm [Rear]	FCC #1	QPSK	100	0	1:1	1.080	1.062	1.147	
2560.0	21350	LTE B7	20	19.00	18.80	0.010	0	10 mm [Right]	FCC #1	QPSK	1	99	1:1	0.071	1.047	0.074	
2560.0	21350	LTE B7	20	18.00	17.78	0.060	1	10 mm [Right]	FCC #1	QPSK	50	50	1:1	0.059	1.052	0.062	
2560.0	21350	LTE B7	20	19.00	18.80	-0.000	0	10 mm [Left]	FCC #1	QPSK	1	99	1:1	0.133	1.047	0.139	
2560.0	21350	LTE B7	20	18.00	17.78	0.030	1	10 mm [Left]	FCC #1	QPSK	50	50	1:1	0.097	1.052	0.102	
2560.0	21350	LTE B7	20	19.00	18.80	0.030	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	0.956	1.047	1.001	
2560.0	21350	LTE B7	20	19.00	18.80	0.010	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.250	1.047	1.309	
2560.0	21350	LTE B7	20	19.00	18.80	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.220	1.047	1.277	
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 the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.
3. Orange entries represent headset measurements.

Table 11.3.6 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																
2593.0	40620	LTE B41	20	20.50	20.20	0.040	0	10 mm [Bottom]	FCC #1	QPSK	1	0	1:1	0.534	1.072	0.572	
2593.0	40620	LTE B41	20	19.50	19.22	0.030	1	10 mm [Bottom]	FCC #1	QPSK	50	0	1:1	0.427	1.067	0.456	
2593.0	40620	LTE B41	20	20.50	20.20	0.110	0	10 mm [Front]	FCC #1	QPSK	1	0	1:1	0.077	1.072	0.083	
2593.0	40620	LTE B41	20	19.50	19.22	0.060	1	10 mm [Front]	FCC #1	QPSK	50	0	1:1	0.063	1.067	0.067	
2506.0	39750	LTE B41	20	20.50	20.05	-0.000	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.810	1.109	**0.898**	A51
2506.0	39750	LTE B41	20	19.50	19.03	-0.040	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.667	1.114	0.743	
2549.5	40185	LTE B41	20	20.50	20.11	-0.030	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.817	1.094	0.894	
2549.5	40185	LTE B41	20	19.50	19.08	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.672	1.102	0.741	
2593.0	40620	LTE B41	20	20.50	20.20	-0.020	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.772	1.072	0.828	
2593.0	40620	LTE B41	20	19.50	19.22	-0.010	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.613	1.067	0.654	
2593.0	40620	LTE B41	20	19.50	19.20	-0.020	1	10 mm [Rear]	FCC #1	QPSK	100	0	1:1	0.662	1.072	0.710	
2636.5	41055	LTE B41	20	20.50	20.15	-0.020	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.646	1.084	0.700	
2636.5	41055	LTE B41	20	19.50	19.19	-0.020	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.646	1.074	0.694	
2680.0	41490	LTE B41	20	20.50	20.09	-0.010	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.692	1.099	0.761	
2680.0	41490	LTE B41	20	19.50	19.10	0.010	1	10 mm [Rear]	FCC #1	QPSK	50	0	1:1	0.341	1.096	0.374	
2593.0	40620	LTE B41	20	20.50	20.20	0.140	0	10 mm [Right]	FCC #1	QPSK	1	0	1:1	0.038	1.072	0.041	
2593.0	40620	LTE B41	20	19.50	19.22	-0.090	1	10 mm [Right]	FCC #1	QPSK	50	0	1:1	0.029	1.067	0.031	
2593.0	40620	LTE B41	20	20.50	20.20	0.130	0	10 mm [Left]	FCC #1	QPSK	1	0	1:1	0.068	1.072	0.073	
2593.0	40620	LTE B41	20	19.50	19.22	0.010	1	10 mm [Left]	FCC #1	QPSK	50	0	1:1	0.055	1.067	0.059	
2506.0	39750	LTE B41	20	20.50	20.05	0.120	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.581	1.109	0.644	
2549.5	40185	LTE B41	20	20.50	20.11	-0.060	0	10 mm [Rear]	FCC #1	QPSK	1	0	1:1	0.809	1.094	0.885	
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 the extended battery measurement on the worst case for standard battery measurement.
2. Yellow entries represent variability measurements.

Table 11.3.7 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														
2437.0	6	802.11b	16.80	16.61	-0.040	10 mm [Top]	FCC #2	0.066	1	99.2	0.065	1.045	1.008	0.068	
2437.0	6	802.11b	16.80	16.61	0.030	10 mm [Front]	FCC #2	0.064	1	99.2	0.058	1.045	1.008	0.061	
2437.0	6	802.11b	16.80	16.61	0.110	10 mm [Rear]	FCC #2	0.032	1	99.2	0.028	1.045	1.008	0.029	
2437.0	6	802.11b	16.80	16.61	-0.090	10 mm [Left]	FCC #2	0.122	1	99.2	0.113	1.045	1.008	**0.119**	A52
2437.0	6	802.11b	16.80	16.61	-0.180	10 mm [Left]	FCC #2	0.110	1	99.2	0.101	1.045	1.008	0.106	
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 the extended battery measurement on the worst case for standard battery measurement.

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											
2437.0	6	802.11b	DSSS	16.8	0.119	2437	802.11g	OFDM	16.5	0.933	**0.111**	X
2437.0	6	802.11b	DSSS	16.8	0.119	2437	802.11n	OFDM	16.0	0.832	**0.099**	X
2437.0	6	802.11b	DSSS	16.8	0.119	2437	802.11ac	OFDM	16.0	0.832	**0.099**	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 11.3.8 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														
5200.0	40	802.11a	18.50	17.51	0.010	10 mm [Top]	FCC #2	0.108	6	95.7	0.108	1.256	1.045	0.142	
5200.0	40	802.11a	18.50	17.51	-0.160	10 mm [Front]	FCC #2	0.276	6	95.7	0.277	1.256	1.045	0.364	
5200.0	40	802.11a	18.50	17.51	-0.050	10 mm [Rear]	FCC #2	0.102	6	95.7	0.098	1.256	1.045	0.129	
5200.0	40	802.11a	18.50	17.51	0.000	10 mm [Left]	FCC #2	0.516	6	95.7	0.518	1.256	1.045	**0.680**	A53
5200.0	40	802.11a	18.50	17.51	-0.050	10 mm [Left]	FCC #2	0.364	6	95.7	0.361	1.256	1.045	0.474	
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 the extended battery measurement on the worst case for standard battery measurement.

Table 11.3.9 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														
5825.0	165	802.11a	18.50	17.52	-0.140	10 mm [Top]	FCC #2	0.171	6	95.9	0.173	1.253	1.043	0.226	
5825.0	165	802.11a	18.50	17.52	-0.060	10 mm [Front]	FCC #2	0.146	6	95.9	0.147	1.253	1.043	0.192	
5825.0	165	802.11a	18.50	17.52	-0.140	10 mm [Rear]	FCC #2	0.188	6	95.9	0.194	1.253	1.043	0.253	
5825.0	165	802.11a	18.50	17.52	-0.170	10 mm [Left]	FCC #2	0.611	6	95.9	0.632	1.253	1.043	**0.826**	A54
5825.0	165	802.11a	18.50	17.52	-0.040	10 mm [Left]	FCC #2	0.535	6	95.9	0.563	1.253	1.043	0.736	
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 the extended battery measurement on the worst case for standard battery measurement.
2. UNII-3 Band CH 165(5825 MHz) is not support Hotspot mode as described on operational description, so other required CHs are tested.

Table 11.3.10 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													
2441.0	39	Bluetooth	4.00	2.93	0.120	10 mm [Top]	FCC #2	1	76.8	0.009	1.279	1.302	0.015	
2441.0	39	Bluetooth	4.00	2.93	-0.010	10 mm [Front]	FCC #2	1	76.8	0.008	1.279	1.302	0.013	
2441.0	39	Bluetooth	4.00	2.93	0.000	10 mm [Rear]	FCC #2	1	76.8	0.002	1.279	1.302	0.003	
2441.0	39	Bluetooth	4.00	2.93	0.030	10 mm [Left]	FCC #2	1	76.8	0.016	1.279	1.302	**0.027**	A55
2441.0	39	Bluetooth	4.00	2.93	-0.010	10 mm [Left]	FCC #2	1	76.8	0.016	1.279	1.302	0.027	
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 the extended battery measurement on the worst case for standard battery measurement.

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 LTE B7 Phablet 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																
2560.0	21350	LTE B7	20	22.00	21.68	-0.070	0	0 mm [Bottom]	FCC #1	QPSK	1	99	1:1	1.330	1.076	1.431	
2560.0	21350	LTE B7	20	21.00	20.77	-0.040	1	0 mm [Bottom]	FCC #1	QPSK	50	50	1:1	1.090	1.054	1.149	
2560.0	21350	LTE B7	20	22.00	21.68	-0.000	0	0 mm [Front]	FCC #1	QPSK	1	99	1:1	0.235	1.076	0.253	
2560.0	21350	LTE B7	20	21.00	20.77	-0.060	1	0 mm [Front]	FCC #1	QPSK	50	50	1:1	0.187	1.054	0.197	
2510.0	20850	LTE B7	20	22.00	21.63	-0.010	0	0 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.860	1.089	2.026	
2535.0	21100	LTE B7	20	22.00	21.64	0.110	0	0 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.970	1.086	**2.139**	A56
2560.0	21350	LTE B7	20	22.00	21.68	0.090	0	0 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.940	1.076	2.087	
2560.0	21350	LTE B7	20	21.00	20.77	0.170	1	0 mm [Rear]	FCC #1	QPSK	50	50	1:1	1.600	1.054	1.686	
2560.0	21350	LTE B7	20	22.00	21.68	0.040	0	0 mm [Right]	FCC #1	QPSK	1	99	1:1	0.087	1.076	0.094	
2560.0	21350	LTE B7	20	21.00	20.77	0.020	1	0 mm [Right]	FCC #1	QPSK	50	50	1:1	0.068	1.054	0.072	
2560.0	21350	LTE B7	20	22.00	21.68	-0.070	0	0 mm [Left]	FCC #1	QPSK	1	99	1:1	0.235	1.076	0.253	
2560.0	21350	LTE B7	20	21.00	20.77	-0.030	1	0 mm [Left]	FCC #1	QPSK	50	50	1:1	0.188	1.054	0.198	
2535.0	21100	LTE B7	20	22.00	21.64	0.050	0	0 mm [Rear]	FCC #1	QPSK	1	99	1:1	1.500	1.086	1.629	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Phablet 4.0 W/kg (mW/g)** averaged over 10 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.4.2 LTE B41 Phablet 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																
2593.0	40620	LTE B41	20	22.50	22.16	0.030	0	0 mm [Bottom]	FCC #1	QPSK	1	0	1:1.58	1.370	1.081	1.481	
2593.0	40620	LTE B41	20	21.50	21.11	0.020	1	0 mm [Bottom]	FCC #1	QPSK	50	0	1:1.58	1.110	1.094	1.214	
2593.0	40620	LTE B41	20	22.50	22.16	0.020	0	0 mm [Front]	FCC #1	QPSK	1	0	1:1.58	0.261	1.081	0.282	
2593.0	40620	LTE B41	20	21.50	21.11	-0.010	1	0 mm [Front]	FCC #1	QPSK	50	0	1:1.58	0.203	1.094	0.222	
2593.0	40620	LTE B41	20	22.50	22.16	-0.180	0	0 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	1.380	1.081	**1.492**	A57
2593.0	40620	LTE B41	20	21.50	21.11	-0.080	1	0 mm [Rear]	FCC #1	QPSK	50	0	1:1.58	1.020	1.094	1.116	
2593.0	40620	LTE B41	20	22.50	22.16	0.060	0	0 mm [Right]	FCC #1	QPSK	1	0	1:1.58	0.056	1.081	0.061	
2593.0	40620	LTE B41	20	21.50	21.11	0.080	1	0 mm [Right]	FCC #1	QPSK	50	0	1:1.58	0.045	1.094	0.049	
2593.0	40620	LTE B41	20	22.50	22.16	0.030	0	0 mm [Left]	FCC #1	QPSK	1	0	1:1.58	0.254	1.081	0.275	
2593.0	40620	LTE B41	20	21.50	21.11	0.070	1	0 mm [Left]	FCC #1	QPSK	50	0	1:1.58	0.202	1.094	0.221	
2593.0	40620	LTE B41	20	22.50	22.16	0.020	0	0 mm [Rear]	FCC #1	QPSK	1	0	1:1.58	0.890	1.081	0.962	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure									**Phablet 4.0 W/kg (mW/g)** averaged over 10 gram								

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.4.3 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 SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR (W/kg)	Plots #
MHz	Ch														
5300.0	60	802.11a	18.50	17.52	0.140	0 mm [Top]	FCC #2	0.193	6	95.7	0.202	1.253	1.045	0.264	
5300.0	60	802.11a	18.50	17.52	0.090	0 mm [Front]	FCC #2	0.470	6	95.7	0.485	1.253	1.045	0.635	
5300.0	60	802.11a	18.50	17.52	-0.010	0 mm [Rear]	FCC #2	0.103	6	95.7	0.106	1.253	1.045	0.139	
5300.0	60	802.11a	18.50	17.52	-0.180	0 mm [Left]	FCC #2	0.906	6	95.7	0.996	1.253	1.045	**1.304**	A58
5300.0	60	802.11a	18.50	17.52	-0.170	0 mm [Left]	FCC #2	0.892	6	95.7	0.985	1.253	1.045	1.290	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure								**Phablet 4.0 W/kg (mW/g)** averaged over 10 gram							

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

Table 11.4.4 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 SAR (W/kg)	Scaling Factor	Scaling Factor (Duty Cycle)	10g Scaled SAR (W/kg)	Plots #
MHz	Ch														
5580.0	116	802.11a	18.50	17.59	-0.190	0 mm [Top]	FCC #2	0.226	6	95.7	0.213	1.233	1.019	0.268	
5580.0	116	802.11a	18.50	17.59	-0.050	0 mm [Front]	FCC #2	0.304	6	95.7	0.334	1.233	1.019	0.420	
5580.0	116	802.11a	18.50	17.59	-0.090	0 mm [Rear]	FCC #2	0.227	6	95.7	0.237	1.233	1.019	0.298	
5580.0	116	802.11a	18.50	17.59	0.020	0 mm [Left]	FCC #2	1.050	6	95.7	1.240	1.233	1.019	**1.558**	A59
5580.0	116	802.11a	18.50	17.59	0.040	0 mm [Left]	FCC #2	1.090	6	95.7	1.180	1.233	1.019	1.483	
ANSI / IEEE C95.1-1992– SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population Exposure								**Phablet 4.0 W/kg (mW/g)** averaged over 10 gram							

Note(s):
1. Blue entries represent the extended battery measurement on the worst case for standard battery measurement.

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 body-worn SAR was > 1.2 W/kg, additional body-worn SAR evaluations using a headset cable were performed.
8. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
9. SAR measurements were performed using the DASY5 automated system. The procedure for spatial peak SAR evaluation has been implemented according to the IEEE 1528 standard. During a maximum search, global and local maxima searches are automatically performed in 2-D after each area scan measurement. The algorithm will find the global maximum and all local maxima within 2 dB of the global maxima for all SAR distributions. All local maxima within 2 dB of the global maximum were searched and passed for the Zoom Scan measurement.

GSM Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. This device supports GSM VOIP in the head and body-worn configurations; therefore GPRS was additionally evaluated for head and body-worn compliance.
3. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR.
4. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). Since the maximum output power variation across the required test channels is not > ½ dB, the middle channel was used for testing.

WCDMA (UMTS) Notes:

1. WCDMA (UMTS) mode in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r05. The general test procedures used for testing can be found in Section 8.4.4.
2. According to FCC KDB 941225 D05v02r05, when the reported SAR is ≤ 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required.
   Otherwise, SAR is required for the remaining required test channels using the 1 RB, 50% RB and 100% RB allocation with highest output power for that channel.
   Only one channel, and as reported SAR values for 1 RB allocation and 50% RB allocation were less than 1.45 W/kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36. 101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
4. A-MPR was disabled for all SAR tests by setting NS=1 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
5. Per KDB Publication 941225 D05Av01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
6. Per FCC KDB Publication 447498 D01v06, when the reported (scaled) for LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
7. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r05. Testing was performed using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633 (cf=1.58).
8. SAR test reduction is applied using the following criteria:
   Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is > 0.8 W/kg, testing for other channels is performed at the highest output power level for 1 RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg, Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg. Testing for 16QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

WLAN Notes:

1. The initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required duo to the maximum allowed powers and the highest reported DSSS SAR when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output and the adjust SAR is ≤ 1.2 W/kg.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg.
4. When the maximum reported 1g averaged SAR ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor to determine compliance.

Bluetooth Notes:

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

12. FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

12.3 Simultaneous Transmission Capabilities

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

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

Table 12.3.1 Simultaneous Transmission Scenarios

No.	Capable TX Configuration	GSM 850/1900 (Voice)	GPRS/EDGE 850/1900 (Data)	WCDMA B5/B4/B2 (Voice)	WCDMA B5/B4/B2 (Data)	LTE B12/B17/B13/B14/ B26/B5/B4/B25/B2/ B7/B41	WIFI 2.4GHz 802.11b/g/n/ac	WIFI 5GHz 802.11a/n/ac	Bluetooth 2.4GHz
1	GSM 850/1900 (Voice)		No	No	No	No	Yes	Yes	Yes
2	GPRS/EDGE 850/1900 (Data)	No		No	No	No	Yes	Yes	Yes
3	WCDMA B5/B4/B2 (Voice)	No	No		No	No	Yes	Yes	Yes
4	WCDMA B5/B4/B2 (Data)	No	No	No		No	Yes	Yes	Yes
5	LTE B12/B17/B13/B14/ B26/B5/B4/B25/B2/ B7/B41	No	No	No	No		Yes	Yes	Yes
6	WIFI 2.4GHz 802.11b/g/n/ac	Yes	Yes	Yes	Yes	Yes		No	No
7	WIFI 5GHz 802.11a/n/ac	Yes	Yes	Yes	Yes	Yes	No		Yes
8	Bluetooth 2.4GHz	Yes	Yes	Yes	Yes	Yes	No	Yes	

Table 12.3.2 Simultaneous SAR Cases

No.	Capable Transmit Configuration	Power conditions								Note
		Head		Body-Worn		Hotspot		Phablet		
		Licensed	Wi-Fi	Licensed	Wi-Fi	Licensed	Wi-Fi	Licensed	Wi-Fi	
1	GSM Voice + Wi-Fi 2.4 GHz	Yes		Yes		N/A		Yes		* Hotspot of UNII-1 & UNII-3 can be operated simultaneous transmission. ^ Reduced - Power reduction is applied in Hotspot Mode Only. - LTE Band 7, LTE Band 41
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
2	GSM Voice + Wi-Fi 5 GHz	Yes		Yes		N/A		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
3	GSM Voice + Bluetooth 2.4 GHz	Yes		Yes		N/A		Yes		
		Normal	N/A	Normal	N/A	Normal	N/A	Normal	N/A	
7	GSM Voice + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes		Yes		N/A		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
8	WCDMA + Wi-Fi 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
9	WCDMA + Wi-Fi 5 GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
10	WCDMA + Bluetooth 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	N/A	Normal	N/A	Normal	N/A	Normal	N/A	
14	WCMDA + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
15	LTE + Wi-Fi 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	Normal	Normal	Normal	Reduced^	Normal	Normal	Normal	
16	LTE + Wi-Fi 5 GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Reduced^	Normal	Normal	Normal	
17	LTE + Bluetooth 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	N/A	Normal	N/A	Reduced^	N/A	Normal	N/A	
21	LTE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Reduced^	Normal	Normal	Normal	
22	GPRS/EDGE + Wi-Fi 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
23	GPRS/EDGE + Wi-Fi 5 GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
24	GPRS/EDGE + Bluetooth 2.4 GHz	Yes		Yes		Yes		Yes		
		Normal	N/A	Normal	N/A	Normal	N/A	Normal	N/A	
28	GPRS/EDGE + Bluetooth 2.4 GHz + Wi-Fi 5GHz	Yes		Yes		Yes*		Yes		
		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	

Notes:

1. WiFi 2.4GHz is supported Hotspot and WiFi-Direct(GO/GC).
2. WiFi 5GHz is supported Hotspot in UNII B1,B3 and WiFi-Direct(GO/GC) in UNII B1,B3.
3. LTE, WCDMA, GPRS/EDGE is supported Hotspot.
4. VoIP is supported in LTE, WCDMA, GSM
5. Bluetooth and WiFi can not transmit simultaneously at 2.4G band.
6. GSM, WCDMA and LTE can not transmit simultaneously since they share the same chip.
7. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
8. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Simultaneous transmission scenarios involving WIFI direct are included in the above table.

12.4 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.3G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.248	0.017	0.657	0.265	0.905	0.922
		Right Touch	0.279	0.060	1.112	0.339	1.391	**1.451**
		Left Tilt	0.132	0.015	0.690	0.147	0.822	0.837
		Right Tilt	0.130	0.037	0.862	0.167	0.992	1.029
	GPRS 850	Left Touch	0.371	0.017	0.657	0.388	1.028	1.045
		Right Touch	**0.376**	**0.060**	**1.112**	0.436	1.488	1.548
		Left Tilt	0.205	0.015	0.690	0.220	0.895	0.910
		Right Tilt	0.178	0.037	0.862	0.215	1.040	1.077
	GSM 1900	Left Touch	0.200	0.017	0.657	0.217	0.857	0.874
		Right Touch	0.129	0.060	1.112	0.189	1.241	**1.301**
		Left Tilt	0.073	0.015	0.690	0.088	0.763	0.778
		Right Tilt	0.059	0.037	0.862	0.096	0.921	0.958
	GPRS 1900	Left Touch	0.244	0.017	0.657	0.261	0.901	0.918
		Right Touch	0.136	0.060	1.112	0.196	1.248	**1.308**
		Left Tilt	0.080	0.015	0.690	0.095	0.770	0.785
		Right Tilt	0.062	0.037	0.862	0.099	0.924	0.961
	WCDMA 850	Left Touch	0.305	0.017	0.657	0.322	0.962	0.979
		Right Touch	0.350	0.060	1.112	0.410	1.462	**1.522**
		Left Tilt	0.186	0.015	0.690	0.201	0.876	0.891
		Right Tilt	0.173	0.037	0.862	0.210	1.035	1.072
	WCDMA 1700	Left Touch	0.631	0.017	0.657	0.648	1.288	1.305
		Right Touch	0.235	0.060	1.112	0.295	1.347	**1.407**
		Left Tilt	0.147	0.015	0.690	0.162	0.837	0.852
		Right Tilt	0.116	0.037	0.862	0.153	0.978	1.015
	WCDMA 1900	Left Touch	0.469	0.017	0.657	0.486	1.126	1.143
		Right Touch	0.273	0.060	1.112	0.333	1.385	**1.445**
		Left Tilt	0.108	0.015	0.690	0.123	0.798	0.813
		Right Tilt	0.089	0.037	0.862	0.126	0.951	0.988
	LTE Band 12	Left Touch	0.174	0.017	0.657	0.191	0.831	0.848
		Right Touch	0.188	0.060	1.112	0.248	1.300	**1.360**
		Left Tilt	0.106	0.015	0.690	0.121	0.796	0.811
		Right Tilt	0.133	0.037	0.862	0.170	0.995	1.032
	LTE Band 13	Left Touch	0.228	0.017	0.657	0.245	0.885	0.902
		Right Touch	0.261	0.060	1.112	0.321	1.373	**1.433**
		Left Tilt	0.178	0.015	0.690	0.193	0.868	0.883
		Right Tilt	0.141	0.037	0.862	0.178	1.003	1.040
	LTE Band 14	Left Touch	0.234	0.017	0.657	0.251	0.891	0.908
		Right Touch	0.280	0.060	1.112	0.340	1.392	**1.452**
		Left Tilt	0.165	0.015	0.690	0.180	0.855	0.870
		Right Tilt	0.148	0.037	0.862	0.185	1.010	1.047
	LTE Band 26	Left Touch	0.246	0.017	0.657	0.263	0.903	0.920
		Right Touch	0.345	0.060	1.112	0.405	1.457	**1.517**
		Left Tilt	0.197	0.015	0.690	0.212	0.887	0.902
		Right Tilt	0.187	0.037	0.862	0.224	1.049	1.086
	LTE Band 4	Left Touch	0.301	0.017	0.657	0.318	0.958	0.975
		Right Touch	0.191	0.060	1.112	0.251	1.303	**1.363**
		Left Tilt	0.124	0.015	0.690	0.139	0.814	0.829
		Right Tilt	0.103	0.037	0.862	0.140	0.965	1.002
	LTE Band 25	Left Touch	0.321	0.017	0.657	0.338	0.978	0.995
		Right Touch	0.157	0.060	1.112	0.217	1.269	**1.329**
		Left Tilt	0.066	0.015	0.690	0.081	0.756	0.771
		Right Tilt	0.054	0.037	0.862	0.091	0.916	0.953
	LTE Band 7	Left Touch	0.150	0.017	0.657	0.167	0.807	0.824
		Right Touch	0.095	0.060	1.112	0.155	1.207	**1.267**
		Left Tilt	0.047	0.015	0.690	0.062	0.737	0.752
		Right Tilt	0.066	0.037	0.862	0.103	0.928	0.965
	LTE Band 41	Left Touch	0.101	0.017	0.657	0.118	0.758	0.775
		Right Touch	0.054	0.060	1.112	0.114	1.166	**1.226**
		Left Tilt	0.036	0.015	0.690	0.051	0.726	0.741
		Right Tilt	0.039	0.037	0.862	0.076	0.901	0.938

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.6G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.248	0.017	0.581	0.265	0.829	0.846
		Right Touch	0.279	0.060	1.081	0.339	1.360	**1.420**
		Left Tilt	0.132	0.015	0.673	0.147	0.805	0.820
		Right Tilt	0.130	0.037	0.714	0.167	0.844	0.881
	GPRS 850	Left Touch	0.371	0.017	0.581	0.388	0.952	0.969
		Right Touch	0.376	0.060	1.081	0.436	1.457	**1.517**
		Left Tilt	0.205	0.015	0.673	0.220	0.878	0.893
		Right Tilt	0.178	0.037	0.714	0.215	0.892	0.929
	GSM 1900	Left Touch	0.200	0.017	0.581	0.217	0.781	0.798
		Right Touch	0.129	0.060	1.081	0.189	1.210	**1.270**
		Left Tilt	0.073	0.015	0.673	0.088	0.746	0.761
		Right Tilt	0.059	0.037	0.714	0.096	0.773	0.810
	GPRS 1900	Left Touch	0.244	0.017	0.581	0.261	0.825	0.842
		Right Touch	0.136	0.060	1.081	0.196	1.217	**1.277**
		Left Tilt	0.080	0.015	0.673	0.095	0.753	0.768
		Right Tilt	0.062	0.037	0.714	0.099	0.776	0.813
	WCDMA 850	Left Touch	0.305	0.017	0.581	0.322	0.886	0.903
		Right Touch	0.350	0.060	1.081	0.410	1.431	**1.491**
		Left Tilt	0.186	0.015	0.673	0.201	0.859	0.874
		Right Tilt	0.173	0.037	0.714	0.210	0.887	0.924
	WCDMA 1700	Left Touch	0.631	0.017	0.581	0.648	1.212	1.229
		Right Touch	0.235	0.060	1.081	0.295	1.316	**1.376**
		Left Tilt	0.147	0.015	0.673	0.162	0.820	0.835
		Right Tilt	0.116	0.037	0.714	0.153	0.830	0.867
	WCDMA 1900	Left Touch	0.469	0.017	0.581	0.486	1.050	1.067
		Right Touch	0.273	0.060	1.081	0.333	1.354	**1.414**
		Left Tilt	0.108	0.015	0.673	0.123	0.781	0.796
		Right Tilt	0.089	0.037	0.714	0.126	0.803	0.840
	LTE Band 12	Left Touch	0.174	0.017	0.581	0.191	0.755	0.772
		Right Touch	0.188	0.060	1.081	0.248	1.269	**1.329**
		Left Tilt	0.106	0.015	0.673	0.121	0.779	0.794
		Right Tilt	0.133	0.037	0.714	0.170	0.847	0.884
	LTE Band 13	Left Touch	0.228	0.017	0.581	0.245	0.809	0.826
		Right Touch	0.261	0.060	1.081	0.321	1.342	**1.402**
		Left Tilt	0.178	0.015	0.673	0.193	0.851	0.866
		Right Tilt	0.141	0.037	0.714	0.178	0.855	0.892
	LTE Band 14	Left Touch	0.234	0.017	0.581	0.251	0.815	0.832
		Right Touch	0.280	0.060	1.081	0.340	1.361	**1.421**
		Left Tilt	0.165	0.015	0.673	0.180	0.838	0.853
		Right Tilt	0.148	0.037	0.714	0.185	0.862	0.899
	LTE Band 26	Left Touch	0.246	0.017	0.581	0.263	0.827	0.844
		Right Touch	0.345	0.060	1.081	0.405	1.426	**1.486**
		Left Tilt	0.197	0.015	0.673	0.212	0.870	0.885
		Right Tilt	0.187	0.037	0.714	0.224	0.901	0.938
	LTE Band 4	Left Touch	0.301	0.017	0.581	0.318	0.882	0.899
		Right Touch	0.191	0.060	1.081	0.251	1.272	**1.332**
		Left Tilt	0.124	0.015	0.673	0.139	0.797	0.812
		Right Tilt	0.103	0.037	0.714	0.140	0.817	0.854
	LTE Band 25	Left Touch	0.321	0.017	0.581	0.338	0.902	0.919
		Right Touch	0.157	0.060	1.081	0.217	1.238	**1.298**
		Left Tilt	0.066	0.015	0.673	0.081	0.739	0.754
		Right Tilt	0.054	0.037	0.714	0.091	0.768	0.805
	LTE Band 7	Left Touch	0.150	0.017	0.581	0.167	0.731	0.748
		Right Touch	0.095	0.060	1.081	0.155	1.176	**1.236**
		Left Tilt	0.047	0.015	0.673	0.062	0.720	0.735
		Right Tilt	0.066	0.037	0.714	0.103	0.780	0.817
	LTE Band 41	Left Touch	0.101	0.017	0.581	0.118	0.682	0.699
		Right Touch	0.054	0.060	1.081	0.114	1.135	**1.195**
		Left Tilt	0.036	0.015	0.673	0.051	0.709	0.724
		Right Tilt	0.039	0.037	0.714	0.076	0.753	0.790

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	Left Touch	0.248	0.017	0.383	0.265	0.631	0.648
		Right Touch	0.279	0.060	0.716	0.339	0.995	**1.055**
		Left Tilt	0.132	0.015	0.490	0.147	0.622	0.637
		Right Tilt	0.130	0.037	0.555	0.167	0.685	0.722
	GPRS 850	Left Touch	0.371	0.017	0.383	0.388	0.754	0.771
		Right Touch	0.376	0.060	0.716	0.436	1.092	**1.152**
		Left Tilt	0.205	0.015	0.490	0.220	0.695	0.710
		Right Tilt	0.178	0.037	0.555	0.215	0.733	0.770
	GSM 1900	Left Touch	0.200	0.017	0.383	0.217	0.583	0.600
		Right Touch	0.129	0.060	0.716	0.189	0.845	**0.905**
		Left Tilt	0.073	0.015	0.490	0.088	0.563	0.578
		Right Tilt	0.059	0.037	0.555	0.096	0.614	0.651
	GPRS 1900	Left Touch	0.244	0.017	0.383	0.261	0.627	0.644
		Right Touch	0.136	0.060	0.716	0.196	0.852	**0.912**
		Left Tilt	0.080	0.015	0.490	0.095	0.570	0.585
		Right Tilt	0.062	0.037	0.555	0.099	0.617	0.654
	WCDMA 850	Left Touch	0.305	0.017	0.383	0.322	0.688	0.705
		Right Touch	0.350	0.060	0.716	0.410	1.066	**1.126**
		Left Tilt	0.186	0.015	0.490	0.201	0.676	0.691
		Right Tilt	0.173	0.037	0.555	0.210	0.728	0.765
	WCDMA 1700	Left Touch	0.631	0.017	0.383	0.648	1.014	**1.031**
		Right Touch	0.235	0.060	0.716	0.295	0.951	1.011
		Left Tilt	0.147	0.015	0.490	0.162	0.637	0.652
		Right Tilt	0.116	0.037	0.555	0.153	0.671	0.708
	WCDMA 1900	Left Touch	0.469	0.017	0.383	0.486	0.852	0.869
		Right Touch	0.273	0.060	0.716	0.333	0.989	**1.049**
		Left Tilt	0.108	0.015	0.490	0.123	0.598	0.613
		Right Tilt	0.089	0.037	0.555	0.126	0.644	0.681
	LTE Band 12	Left Touch	0.174	0.017	0.383	0.191	0.557	0.574
		Right Touch	0.188	0.060	0.716	0.248	0.904	**0.964**
		Left Tilt	0.106	0.015	0.490	0.121	0.596	0.611
		Right Tilt	0.133	0.037	0.555	0.170	0.688	0.725
	LTE Band 13	Left Touch	0.228	0.017	0.383	0.245	0.611	0.628
		Right Touch	0.261	0.060	0.716	0.321	0.977	**1.037**
		Left Tilt	0.178	0.015	0.490	0.193	0.668	0.683
		Right Tilt	0.141	0.037	0.555	0.178	0.696	0.733
	LTE Band 14	Left Touch	0.234	0.017	0.383	0.251	0.617	0.634
		Right Touch	0.280	0.060	0.716	0.340	0.996	**1.056**
		Left Tilt	0.165	0.015	0.490	0.180	0.655	0.670
		Right Tilt	0.148	0.037	0.555	0.185	0.703	0.740
	LTE Band 26	Left Touch	0.246	0.017	0.383	0.263	0.629	0.646
		Right Touch	0.345	0.060	0.716	0.405	1.061	**1.121**
		Left Tilt	0.197	0.015	0.490	0.212	0.687	0.702
		Right Tilt	0.187	0.037	0.555	0.224	0.742	0.779
	LTE Band 4	Left Touch	0.301	0.017	0.383	0.318	0.684	0.701
		Right Touch	0.191	0.060	0.716	0.251	0.907	**0.967**
		Left Tilt	0.124	0.015	0.490	0.139	0.614	0.629
		Right Tilt	0.103	0.037	0.555	0.140	0.658	0.695
	LTE Band 25	Left Touch	0.321	0.017	0.383	0.338	0.704	0.721
		Right Touch	0.157	0.060	0.716	0.217	0.873	**0.933**
		Left Tilt	0.066	0.015	0.490	0.081	0.556	0.571
		Right Tilt	0.054	0.037	0.555	0.091	0.609	0.646
	LTE Band 7	Left Touch	0.150	0.017	0.383	0.167	0.533	0.550
		Right Touch	0.095	0.060	0.716	0.155	0.811	**0.871**
		Left Tilt	0.047	0.015	0.490	0.062	0.537	0.552
		Right Tilt	0.066	0.037	0.555	0.103	0.621	0.658
	LTE Band 41	Left Touch	0.101	0.017	0.383	0.118	0.484	0.501
		Right Touch	0.054	0.060	0.716	0.114	0.770	**0.830**
		Left Tilt	0.036	0.015	0.490	0.051	0.526	0.541
		Right Tilt	0.039	0.037	0.555	0.076	0.594	0.631

Table 12.4.4 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.248	0.122	0.370
		Right Touch	0.279	0.275	**0.554**
		Left Tilt	0.132	0.112	0.244
		Right Tilt	0.130	0.182	0.312
	GPRS 850	Left Touch	0.371	0.122	0.493
		Right Touch	0.376	0.275	**0.651**
		Left Tilt	0.205	0.112	0.317
		Right Tilt	0.178	0.182	0.360
	GSM 1900	Left Touch	0.200	0.122	0.322
		Right Touch	0.129	0.275	**0.404**
		Left Tilt	0.073	0.112	0.185
		Right Tilt	0.059	0.182	0.241
	GPRS 1900	Left Touch	0.244	0.122	0.366
		Right Touch	0.136	0.275	**0.411**
		Left Tilt	0.080	0.112	0.192
		Right Tilt	0.062	0.182	0.244
	WCDMA 850	Left Touch	0.305	0.122	0.427
		Right Touch	0.350	0.275	**0.625**
		Left Tilt	0.186	0.112	0.298
		Right Tilt	0.173	0.182	0.355
	WCDMA 1700	Left Touch	0.631	0.122	**0.753**
		Right Touch	0.235	0.275	0.510
		Left Tilt	0.147	0.112	0.259
		Right Tilt	0.116	0.182	0.298
	WCDMA 1900	Left Touch	0.469	0.122	**0.591**
		Right Touch	0.273	0.275	0.548
		Left Tilt	0.108	0.112	0.220
		Right Tilt	0.089	0.182	0.271
	LTE Band 12	Left Touch	0.174	0.122	0.296
		Right Touch	0.188	0.275	**0.463**
		Left Tilt	0.106	0.112	0.218
		Right Tilt	0.133	0.182	0.315
	LTE Band 13	Left Touch	0.228	0.122	0.350
		Right Touch	0.261	0.275	**0.536**
		Left Tilt	0.178	0.112	0.290
		Right Tilt	0.141	0.182	0.323
	LTE Band 14	Left Touch	0.234	0.122	0.356
		Right Touch	0.280	0.275	**0.555**
		Left Tilt	0.165	0.112	0.277
		Right Tilt	0.148	0.182	0.330
	LTE Band 26	Left Touch	0.246	0.122	0.368
		Right Touch	0.345	0.275	**0.620**
		Left Tilt	0.197	0.112	0.309
		Right Tilt	0.187	0.182	0.369
	LTE Band 4	Left Touch	0.301	0.122	0.423
		Right Touch	0.191	0.275	**0.466**
		Left Tilt	0.124	0.112	0.236
		Right Tilt	0.103	0.182	0.285
	LTE Band 25	Left Touch	0.321	0.122	**0.443**
		Right Touch	0.157	0.275	0.432
		Left Tilt	0.066	0.112	0.178
		Right Tilt	0.054	0.182	0.236
	LTE Band 7	Left Touch	0.150	0.122	0.272
		Right Touch	0.095	0.275	**0.370**
		Left Tilt	0.047	0.112	0.159
		Right Tilt	0.066	0.182	0.248
	LTE Band 41	Left Touch	0.101	0.122	0.223
		Right Touch	0.054	0.275	**0.329**
		Left Tilt	0.036	0.112	0.148
		Right Tilt	0.039	0.182	0.221

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.248	0.657	0.905
		Right Touch	0.279	1.112	**1.391**
		Left Tilt	0.132	0.690	0.822
		Right Tilt	0.130	0.862	0.992
	GPRS 850	Left Touch	0.371	0.657	1.028
		Right Touch	0.376	1.112	**1.488**
		Left Tilt	0.205	0.690	0.895
		Right Tilt	0.178	0.862	1.040
	GSM 1900	Left Touch	0.200	0.657	0.857
		Right Touch	0.129	1.112	**1.241**
		Left Tilt	0.073	0.690	0.763
		Right Tilt	0.059	0.862	0.921
	GPRS 1900	Left Touch	0.244	0.657	0.901
		Right Touch	0.136	1.112	**1.248**
		Left Tilt	0.080	0.690	0.770
		Right Tilt	0.062	0.862	0.924
	WCDMA 850	Left Touch	0.305	0.657	0.962
		Right Touch	0.350	1.112	**1.462**
		Left Tilt	0.186	0.690	0.876
		Right Tilt	0.173	0.862	1.035
	WCDMA 1700	Left Touch	0.631	0.657	1.288
		Right Touch	0.235	1.112	**1.347**
		Left Tilt	0.147	0.690	0.837
		Right Tilt	0.116	0.862	0.978
	WCDMA 1900	Left Touch	0.469	0.657	1.126
		Right Touch	0.273	1.112	**1.385**
		Left Tilt	0.108	0.690	0.798
		Right Tilt	0.089	0.862	0.951
	LTE Band 12	Left Touch	0.174	0.657	0.831
		Right Touch	0.188	1.112	**1.300**
		Left Tilt	0.106	0.690	0.796
		Right Tilt	0.133	0.862	0.995
	LTE Band 13	Left Touch	0.228	0.657	0.885
		Right Touch	0.261	1.112	**1.373**
		Left Tilt	0.178	0.690	0.868
		Right Tilt	0.141	0.862	1.003
	LTE Band 14	Left Touch	0.234	0.657	0.891
		Right Touch	0.280	1.112	**1.392**
		Left Tilt	0.165	0.690	0.855
		Right Tilt	0.148	0.862	1.010
	LTE Band 26	Left Touch	0.246	0.657	0.903
		Right Touch	0.345	1.112	**1.457**
		Left Tilt	0.197	0.690	0.887
		Right Tilt	0.187	0.862	1.049
	LTE Band 4	Left Touch	0.301	0.657	0.958
		Right Touch	0.191	1.112	**1.303**
		Left Tilt	0.124	0.690	0.814
		Right Tilt	0.103	0.862	0.965
	LTE Band 25	Left Touch	0.321	0.657	0.978
		Right Touch	0.157	1.112	**1.269**
		Left Tilt	0.066	0.690	0.756
		Right Tilt	0.054	0.862	0.916
	LTE Band 7	Left Touch	0.150	0.657	0.807
		Right Touch	0.095	1.112	**1.207**
		Left Tilt	0.047	0.690	0.737
		Right Tilt	0.066	0.862	0.928
	LTE Band 41	Left Touch	0.101	0.657	0.758
		Right Touch	0.054	1.112	**1.166**
		Left Tilt	0.036	0.690	0.726
		Right Tilt	0.039	0.862	0.901

Table 12.4.6 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.248	0.581	0.829
		Right Touch	0.279	1.081	**1.360**
		Left Tilt	0.132	0.673	0.805
		Right Tilt	0.130	0.714	0.844
	GPRS 850	Left Touch	0.371	0.581	0.952
		Right Touch	0.376	1.081	**1.457**
		Left Tilt	0.205	0.673	0.878
		Right Tilt	0.178	0.714	0.892
	GSM 1900	Left Touch	0.200	0.581	0.781
		Right Touch	0.129	1.081	**1.210**
		Left Tilt	0.073	0.673	0.746
		Right Tilt	0.059	0.714	0.773
	GPRS 1900	Left Touch	0.244	0.581	0.825
		Right Touch	0.136	1.081	**1.217**
		Left Tilt	0.080	0.673	0.753
		Right Tilt	0.062	0.714	0.776
	WCDMA 850	Left Touch	0.305	0.581	0.886
		Right Touch	0.350	1.081	**1.431**
		Left Tilt	0.186	0.673	0.859
		Right Tilt	0.173	0.714	0.887
	WCDMA 1700	Left Touch	0.631	0.581	1.212
		Right Touch	0.235	1.081	**1.316**
		Left Tilt	0.147	0.673	0.820
		Right Tilt	0.116	0.714	0.830
	WCDMA 1900	Left Touch	0.469	0.581	1.050
		Right Touch	0.273	1.081	**1.354**
		Left Tilt	0.108	0.673	0.781
		Right Tilt	0.089	0.714	0.803
	LTE Band 12	Left Touch	0.174	0.581	0.755
		Right Touch	0.188	1.081	**1.269**
		Left Tilt	0.106	0.673	0.779
		Right Tilt	0.133	0.714	0.847
	LTE Band 13	Left Touch	0.228	0.581	0.809
		Right Touch	0.261	1.081	**1.342**
		Left Tilt	0.178	0.673	0.851
		Right Tilt	0.141	0.714	0.855
	LTE Band 14	Left Touch	0.234	0.581	0.815
		Right Touch	0.280	1.081	**1.361**
		Left Tilt	0.165	0.673	0.838
		Right Tilt	0.148	0.714	0.862
	LTE Band 26	Left Touch	0.246	0.581	0.827
		Right Touch	0.345	1.081	**1.426**
		Left Tilt	0.197	0.673	0.870
		Right Tilt	0.187	0.714	0.901
	LTE Band 4	Left Touch	0.301	0.581	0.882
		Right Touch	0.191	1.081	**1.272**
		Left Tilt	0.124	0.673	0.797
		Right Tilt	0.103	0.714	0.817
	LTE Band 25	Left Touch	0.321	0.581	0.902
		Right Touch	0.157	1.081	**1.238**
		Left Tilt	0.066	0.673	0.739
		Right Tilt	0.054	0.714	0.768
	LTE Band 7	Left Touch	0.150	0.581	0.731
		Right Touch	0.095	1.081	**1.176**
		Left Tilt	0.047	0.673	0.720
		Right Tilt	0.066	0.714	0.780
	LTE Band 41	Left Touch	0.101	0.581	0.682
		Right Touch	0.054	1.081	**1.135**
		Left Tilt	0.036	0.673	0.709
		Right Tilt	0.039	0.714	0.753

Table 12.4.7 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN (Held to Ear)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	GSM 850	Left Touch	0.248	0.383	0.631
		Right Touch	0.279	0.716	**0.995**
		Left Tilt	0.132	0.490	0.622
		Right Tilt	0.130	0.555	0.685
	GPRS 850	Left Touch	0.371	0.383	0.754
		Right Touch	0.376	0.716	**1.092**
		Left Tilt	0.205	0.490	0.695
		Right Tilt	0.178	0.555	0.733
	GSM 1900	Left Touch	0.200	0.383	0.583
		Right Touch	0.129	0.716	**0.845**
		Left Tilt	0.073	0.490	0.563
		Right Tilt	0.059	0.555	0.614
	GPRS 1900	Left Touch	0.244	0.383	0.627
		Right Touch	0.136	0.716	**0.852**
		Left Tilt	0.080	0.490	0.570
		Right Tilt	0.062	0.555	0.617
	WCDMA 850	Left Touch	0.305	0.383	0.688
		Right Touch	0.350	0.716	**1.066**
		Left Tilt	0.186	0.490	0.676
		Right Tilt	0.173	0.555	0.728
	WCDMA 1700	Left Touch	0.631	0.383	**1.014**
		Right Touch	0.235	0.716	0.951
		Left Tilt	0.147	0.490	0.637
		Right Tilt	0.116	0.555	0.671
	WCDMA 1900	Left Touch	0.469	0.383	0.852
		Right Touch	0.273	0.716	**0.989**
		Left Tilt	0.108	0.490	0.598
		Right Tilt	0.089	0.555	0.644
	LTE Band 12	Left Touch	0.174	0.383	0.557
		Right Touch	0.188	0.716	**0.904**
		Left Tilt	0.106	0.490	0.596
		Right Tilt	0.133	0.555	0.688
	LTE Band 13	Left Touch	0.228	0.383	0.611
		Right Touch	0.261	0.716	**0.977**
		Left Tilt	0.178	0.490	0.668
		Right Tilt	0.141	0.555	0.696
	LTE Band 14	Left Touch	0.234	0.383	0.617
		Right Touch	0.280	0.716	**0.996**
		Left Tilt	0.165	0.490	0.655
		Right Tilt	0.148	0.555	0.703
	LTE Band 26	Left Touch	0.246	0.383	0.629
		Right Touch	0.345	0.716	**1.061**
		Left Tilt	0.197	0.490	0.687
		Right Tilt	0.187	0.555	0.742
	LTE Band 4	Left Touch	0.301	0.383	0.684
		Right Touch	0.191	0.716	**0.907**
		Left Tilt	0.124	0.490	0.614
		Right Tilt	0.103	0.555	0.658
	LTE Band 25	Left Touch	0.321	0.383	0.704
		Right Touch	0.157	0.716	**0.873**
		Left Tilt	0.066	0.490	0.556
		Right Tilt	0.054	0.555	0.609
	LTE Band 7	Left Touch	0.150	0.383	0.533
		Right Touch	0.095	0.716	**0.811**
		Left Tilt	0.047	0.490	0.537
		Right Tilt	0.066	0.555	0.621
	LTE Band 41	Left Touch	0.101	0.383	0.484
		Right Touch	0.054	0.716	**0.770**
		Left Tilt	0.036	0.490	0.526
		Right Tilt	0.039	0.555	0.594

Table 12.4.8 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	0.248	0.017	0.265
		Right Touch	0.279	0.060	**0.339**
		Left Tilt	0.132	0.015	0.147
		Right Tilt	0.130	0.037	0.167
	GPRS 850	Left Touch	0.371	0.017	0.388
		Right Touch	0.376	0.060	**0.436**
		Left Tilt	0.205	0.015	0.220
		Right Tilt	0.178	0.037	0.215
	GSM 1900	Left Touch	0.200	0.017	**0.217**
		Right Touch	0.129	0.060	0.189
		Left Tilt	0.073	0.015	0.088
		Right Tilt	0.059	0.037	0.096
	GPRS 1900	Left Touch	0.244	0.017	**0.261**
		Right Touch	0.136	0.060	0.196
		Left Tilt	0.080	0.015	0.095
		Right Tilt	0.062	0.037	0.099
	WCDMA 850	Left Touch	0.305	0.017	0.322
		Right Touch	0.350	0.060	**0.410**
		Left Tilt	0.186	0.015	0.201
		Right Tilt	0.173	0.037	0.210
	WCDMA 1700	Left Touch	0.631	0.017	**0.648**
		Right Touch	0.235	0.060	0.295
		Left Tilt	0.147	0.015	0.162
		Right Tilt	0.116	0.037	0.153
	WCDMA 1900	Left Touch	0.469	0.017	**0.486**
		Right Touch	0.273	0.060	0.333
		Left Tilt	0.108	0.015	0.123
		Right Tilt	0.089	0.037	0.126
	LTE Band 12	Left Touch	0.174	0.017	0.191
		Right Touch	0.188	0.060	**0.248**
		Left Tilt	0.106	0.015	0.121
		Right Tilt	0.133	0.037	0.170
	LTE Band 13	Left Touch	0.228	0.017	0.245
		Right Touch	0.261	0.060	**0.321**
		Left Tilt	0.178	0.015	0.193
		Right Tilt	0.141	0.037	0.178
	LTE Band 14	Left Touch	0.234	0.017	0.251
		Right Touch	0.280	0.060	**0.340**
		Left Tilt	0.165	0.015	0.180
		Right Tilt	0.148	0.037	0.185
	LTE Band 26	Left Touch	0.246	0.017	0.263
		Right Touch	0.345	0.060	**0.405**
		Left Tilt	0.197	0.015	0.212
		Right Tilt	0.187	0.037	0.224
	LTE Band 4	Left Touch	0.301	0.017	**0.318**
		Right Touch	0.191	0.060	0.251
		Left Tilt	0.124	0.015	0.139
		Right Tilt	0.103	0.037	0.140
	LTE Band 25	Left Touch	0.321	0.017	**0.338**
		Right Touch	0.157	0.060	0.217
		Left Tilt	0.066	0.015	0.081
		Right Tilt	0.054	0.037	0.091
	LTE Band 7	Left Touch	0.150	0.017	**0.167**
		Right Touch	0.095	0.060	0.155
		Left Tilt	0.047	0.015	0.062
		Right Tilt	0.066	0.037	0.103
	LTE Band 41	Left Touch	0.101	0.017	**0.118**
		Right Touch	0.054	0.060	0.114
		Left Tilt	0.036	0.015	0.051
		Right Tilt	0.039	0.037	0.076

Table 12.4.9 Simultaneous Transmission Scenario : Bluetooth + 5 GHz W-LAN (Held to Ear)

Exposure Condition	Mode	Configuration	Bluetooth SAR (W/kg)	5G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Head SAR	5.2G W-LAN	Left Touch	0.017	0.657	0.674
		Right Touch	0.060	1.112	**1.172**
		Left Tilt	0.015	0.690	0.705
		Right Tilt	0.037	0.862	0.899
	5.6G W-LAN	Left Touch	0.017	0.581	0.598
		Right Touch	0.060	1.081	**1.141**
		Left Tilt	0.015	0.673	0.688
		Right Tilt	0.037	0.714	0.751
	5.8G W-LAN	Left Touch	0.017	0.383	0.400
		Right Touch	0.060	0.716	**0.776**
		Left Tilt	0.015	0.490	0.505
		Right Tilt	0.037	0.555	0.592

12.5 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.3G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.175	0.004	0.254	0.179	0.429	**0.433**
		Rear	0.188	0.002	0.119	0.190	0.307	0.309
	GPRS 850	Front	0.245	0.004	0.254	0.249	0.499	**0.503**
		Rear	0.301	0.002	0.119	0.303	0.420	0.422
	GSM 1900	Front	0.124	0.004	0.254	0.128	0.378	**0.382**
		Rear	0.224	0.002	0.119	0.226	0.343	0.345
	GPRS 1900	Front	0.156	0.004	0.254	0.160	0.410	**0.414**
		Rear	0.269	0.002	0.119	0.271	0.388	0.390
	WCDMA 850	Front	0.256	0.004	0.254	0.260	0.510	**0.514**
		Rear	0.290	0.002	0.119	0.292	0.409	0.411
	WCDMA 1700	Front	0.340	0.004	0.254	0.344	0.594	**0.598**
		Rear	0.450	0.002	0.119	0.452	0.569	0.571
	WCDMA 1900	Front	0.210	0.004	0.254	0.214	0.464	0.468
		Rear	0.530	0.002	0.119	0.532	0.649	**0.651**
	LTE Band 12	Front	0.139	0.004	0.254	0.143	0.393	**0.397**
		Rear	0.259	0.002	0.119	0.261	0.378	0.380
	LTE Band 13	Front	0.212	0.004	0.254	0.216	0.466	**0.470**
		Rear	0.346	0.002	0.119	0.348	0.465	0.467
	LTE Band 14	Front	0.212	0.004	0.254	0.216	0.466	**0.470**
		Rear	0.260	0.002	0.119	0.262	0.379	0.381
	LTE Band 26	Front	0.262	0.004	0.254	0.266	0.516	**0.520**
		Rear	0.297	0.002	0.119	0.299	0.416	0.418
	LTE Band 4	Front	0.199	0.004	0.254	0.203	0.453	**0.457**
		Rear	0.300	0.002	0.119	0.302	0.419	0.421
	LTE Band 25	Front	0.178	0.004	0.254	0.182	0.432	0.436
		Rear	0.461	0.002	0.119	0.463	0.580	**0.582**
	LTE Band 7	Front	0.125	0.004	0.254	0.129	0.379	0.383
		Rear	1.050	0.002	0.119	1.052	1.169	**1.171**
	LTE Band 41	Front	0.068	0.004	0.254	0.072	0.322	0.326
		Rear	1.068	0.002	0.119	1.070	1.187	**1.189**

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.6G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.175	0.004	0.197	0.179	0.372	0.376
		Rear	0.188	0.002	0.374	0.190	0.562	**0.564**
	GPRS 850	Front	0.245	0.004	0.197	0.249	0.442	0.446
		Rear	0.301	0.002	0.374	0.303	0.675	**0.677**
	GSM 1900	Front	0.124	0.004	0.197	0.128	0.321	0.325
		Rear	0.224	0.002	0.374	0.226	0.598	**0.600**
	GPRS 1900	Front	0.156	0.004	0.197	0.160	0.353	0.357
		Rear	0.269	0.002	0.374	0.271	0.643	**0.645**
	WCDMA 850	Front	0.256	0.004	0.197	0.260	0.453	0.457
		Rear	0.290	0.002	0.374	0.292	0.664	**0.666**
	WCDMA 1700	Front	0.340	0.004	0.197	0.344	0.537	0.541
		Rear	0.450	0.002	0.374	0.452	0.824	**0.826**
	WCDMA 1900	Front	0.210	0.004	0.197	0.214	0.407	0.411
		Rear	0.530	0.002	0.374	0.532	0.904	**0.906**
	LTE Band 12	Front	0.139	0.004	0.197	0.143	0.336	0.340
		Rear	0.259	0.002	0.374	0.261	0.633	**0.635**
	LTE Band 13	Front	0.212	0.004	0.197	0.216	0.409	0.413
		Rear	0.346	0.002	0.374	0.348	0.720	**0.722**
	LTE Band 14	Front	0.212	0.004	0.197	0.216	0.409	0.413
		Rear	0.260	0.002	0.374	0.262	0.634	**0.636**
	LTE Band 26	Front	0.262	0.004	0.197	0.266	0.459	0.463
		Rear	0.297	0.002	0.374	0.299	0.671	**0.673**
	LTE Band 4	Front	0.199	0.004	0.197	0.203	0.396	0.400
		Rear	0.300	0.002	0.374	0.302	0.674	**0.676**
	LTE Band 25	Front	0.178	0.004	0.197	0.182	0.375	0.379
		Rear	0.461	0.002	0.374	0.463	0.835	**0.837**
	LTE Band 7	Front	0.125	0.004	0.197	0.129	0.322	0.326
		Rear	1.050	0.002	0.374	1.052	1.424	**1.426**
	LTE Band 41	Front	0.068	0.004	0.197	0.072	0.265	0.269
		Rear	**1.068**	**0.002**	**0.374**	**1.070**	**1.442**	**1.444**

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM 850	Front	0.175	0.004	0.174	0.179	0.349	0.353
		Rear	0.188	0.002	0.183	0.190	0.371	**0.373**
	GPRS 850	Front	0.245	0.004	0.174	0.249	0.419	0.423
		Rear	0.301	0.002	0.183	0.303	0.484	**0.486**
	GSM 1900	Front	0.124	0.004	0.174	0.128	0.298	0.302
		Rear	0.224	0.002	0.183	0.226	0.407	**0.409**
	GPRS 1900	Front	0.156	0.004	0.174	0.160	0.330	0.334
		Rear	0.269	0.002	0.183	0.271	0.452	**0.454**
	WCDMA 850	Front	0.256	0.004	0.174	0.260	0.430	0.434
		Rear	0.290	0.002	0.183	0.292	0.473	**0.475**
	WCDMA 1700	Front	0.340	0.004	0.174	0.344	0.514	0.518
		Rear	0.450	0.002	0.183	0.452	0.633	**0.635**
	WCDMA 1900	Front	0.210	0.004	0.174	0.214	0.384	0.388
		Rear	0.530	0.002	0.183	0.532	0.713	**0.715**
	LTE Band 12	Front	0.139	0.004	0.174	0.143	0.313	0.317
		Rear	0.259	0.002	0.183	0.261	0.442	**0.444**
	LTE Band 13	Front	0.212	0.004	0.174	0.216	0.386	0.390
		Rear	0.346	0.002	0.183	0.348	0.529	**0.531**
	LTE Band 14	Front	0.212	0.004	0.174	0.216	0.386	0.390
		Rear	0.260	0.002	0.183	0.262	0.443	**0.445**
	LTE Band 26	Front	0.262	0.004	0.174	0.266	0.436	0.440
		Rear	0.297	0.002	0.183	0.299	0.480	**0.482**
	LTE Band 4	Front	0.199	0.004	0.174	0.203	0.373	0.377
		Rear	0.300	0.002	0.183	0.302	0.483	**0.485**
	LTE Band 25	Front	0.178	0.004	0.174	0.182	0.352	0.356
		Rear	0.461	0.002	0.183	0.463	0.644	**0.646**
	LTE Band 7	Front	0.125	0.004	0.174	0.129	0.299	0.303
		Rear	1.050	0.002	0.183	1.052	1.233	**1.235**
	LTE Band 41	Front	0.068	0.004	0.174	0.072	0.242	0.246
		Rear	1.068	0.002	0.183	1.070	1.251	**1.253**

Table 12.5.4 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.175	0.035	**0.210**
		Rear	0.188	0.018	0.206
	GPRS 850	Front	0.245	0.035	0.280
		Rear	0.301	0.018	**0.319**
	GSM 1900	Front	0.124	0.035	0.159
		Rear	0.224	0.018	**0.242**
	GPRS 1900	Front	0.156	0.035	0.191
		Rear	0.269	0.018	**0.287**
	WCDMA 850	Front	0.256	0.035	0.291
		Rear	0.290	0.018	**0.308**
	WCDMA 1700	Front	0.340	0.035	0.375
		Rear	0.450	0.018	**0.468**
	WCDMA 1900	Front	0.210	0.035	0.245
		Rear	0.530	0.018	**0.548**
	LTE Band 12	Front	0.139	0.035	0.174
		Rear	0.259	0.018	**0.277**
	LTE Band 13	Front	0.212	0.035	0.247
		Rear	0.346	0.018	**0.364**
	LTE Band 14	Front	0.212	0.035	0.247
		Rear	0.260	0.018	**0.278**
	LTE Band 26	Front	0.262	0.035	0.297
		Rear	0.297	0.018	**0.315**
	LTE Band 4	Front	0.199	0.035	0.234
		Rear	0.300	0.018	**0.318**
	LTE Band 25	Front	0.178	0.035	0.213
		Rear	0.461	0.018	**0.479**
	LTE Band 7	Front	0.125	0.035	0.160
		Rear	1.050	0.018	**1.068**
	LTE Band 41	Front	0.068	0.035	0.103
		Rear	1.068	0.018	**1.086**

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.175	0.254	**0.429**
		Rear	0.188	0.119	0.307
	GPRS 850	Front	0.245	0.254	**0.499**
		Rear	0.301	0.119	0.420
	GSM 1900	Front	0.124	0.254	**0.378**
		Rear	0.224	0.119	0.343
	GPRS 1900	Front	0.156	0.254	**0.410**
		Rear	0.269	0.119	0.388
	WCDMA 850	Front	0.256	0.254	**0.510**
		Rear	0.290	0.119	0.409
	WCDMA 1700	Front	0.340	0.254	**0.594**
		Rear	0.450	0.119	0.569
	WCDMA 1900	Front	0.210	0.254	0.464
		Rear	0.530	0.119	**0.649**
	LTE Band 12	Front	0.139	0.254	**0.393**
		Rear	0.259	0.119	0.378
	LTE Band 13	Front	0.212	0.254	**0.466**
		Rear	0.346	0.119	0.465
	LTE Band 14	Front	0.212	0.254	**0.466**
		Rear	0.260	0.119	0.379
	LTE Band 26	Front	0.262	0.254	**0.516**
		Rear	0.297	0.119	0.416
	LTE Band 4	Front	0.199	0.254	**0.453**
		Rear	0.300	0.119	0.419
	LTE Band 25	Front	0.178	0.254	0.432
		Rear	0.461	0.119	**0.580**
	LTE Band 7	Front	0.125	0.254	0.379
		Rear	1.050	0.119	**1.169**
	LTE Band 41	Front	0.068	0.254	0.322
		Rear	1.068	0.119	**1.187**

Table 12.5.6 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.175	0.197	0.372
		Rear	0.188	0.374	**0.562**
	GPRS 850	Front	0.245	0.197	0.442
		Rear	0.301	0.374	**0.675**
	GSM 1900	Front	0.124	0.197	0.321
		Rear	0.224	0.374	**0.598**
	GPRS 1900	Front	0.156	0.197	0.353
		Rear	0.269	0.374	**0.643**
	WCDMA 850	Front	0.256	0.197	0.453
		Rear	0.290	0.374	**0.664**
	WCDMA 1700	Front	0.340	0.197	0.537
		Rear	0.450	0.374	**0.824**
	WCDMA 1900	Front	0.210	0.197	0.407
		Rear	0.530	0.374	**0.904**
	LTE Band 12	Front	0.139	0.197	0.336
		Rear	0.259	0.374	**0.633**
	LTE Band 13	Front	0.212	0.197	0.409
		Rear	0.346	0.374	**0.720**
	LTE Band 14	Front	0.212	0.197	0.409
		Rear	0.260	0.374	**0.634**
	LTE Band 26	Front	0.262	0.197	0.459
		Rear	0.297	0.374	**0.671**
	LTE Band 4	Front	0.199	0.197	0.396
		Rear	0.300	0.374	**0.674**
	LTE Band 25	Front	0.178	0.197	0.375
		Rear	0.461	0.374	**0.835**
	LTE Band 7	Front	0.125	0.197	0.322
		Rear	1.050	0.374	**1.424**
	LTE Band 41	Front	0.068	0.197	0.265
		Rear	1.068	0.374	**1.442**

Table 12.5.7 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.175	0.174	0.349
		Rear	0.188	0.183	**0.371**
	GPRS 850	Front	0.245	0.174	0.419
		Rear	0.301	0.183	**0.484**
	GSM 1900	Front	0.124	0.174	0.298
		Rear	0.224	0.183	**0.407**
	GPRS 1900	Front	0.156	0.174	0.330
		Rear	0.269	0.183	**0.452**
	WCDMA 850	Front	0.256	0.174	0.430
		Rear	0.290	0.183	**0.473**
	WCDMA 1700	Front	0.340	0.174	0.514
		Rear	0.450	0.183	**0.633**
	WCDMA 1900	Front	0.210	0.174	0.384
		Rear	0.530	0.183	**0.713**
	LTE Band 12	Front	0.139	0.174	0.313
		Rear	0.259	0.183	**0.442**
	LTE Band 13	Front	0.212	0.174	0.386
		Rear	0.346	0.183	**0.529**
	LTE Band 14	Front	0.212	0.174	0.386
		Rear	0.260	0.183	**0.443**
	LTE Band 26	Front	0.262	0.174	0.436
		Rear	0.297	0.183	**0.480**
	LTE Band 4	Front	0.199	0.174	0.373
		Rear	0.300	0.183	**0.483**
	LTE Band 25	Front	0.178	0.174	0.352
		Rear	0.461	0.183	**0.644**
	LTE Band 7	Front	0.125	0.174	0.299
		Rear	1.050	0.183	**1.233**
	LTE Band 41	Front	0.068	0.174	0.242
		Rear	1.068	0.183	**1.251**

Table 12.5.8 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	GSM 850	Front	0.175	0.004	0.179
		Rear	0.188	0.002	**0.190**
	GPRS 850	Front	0.245	0.004	0.249
		Rear	0.301	0.002	**0.303**
	GSM 1900	Front	0.124	0.004	0.128
		Rear	0.224	0.002	**0.226**
	GPRS 1900	Front	0.156	0.004	0.160
		Rear	0.269	0.002	**0.271**
	WCDMA 850	Front	0.256	0.004	0.260
		Rear	0.290	0.002	**0.292**
	WCDMA 1700	Front	0.340	0.004	0.344
		Rear	0.450	0.002	**0.452**
	WCDMA 1900	Front	0.210	0.004	0.214
		Rear	0.530	0.002	**0.532**
	LTE Band 12	Front	0.139	0.004	0.143
		Rear	0.259	0.002	**0.261**
	LTE Band 13	Front	0.212	0.004	0.216
		Rear	0.346	0.002	**0.348**
	LTE Band 14	Front	0.212	0.004	0.216
		Rear	0.260	0.002	**0.262**
	LTE Band 26	Front	0.262	0.004	0.266
		Rear	0.297	0.002	**0.299**
	LTE Band 4	Front	0.199	0.004	0.203
		Rear	0.300	0.002	**0.302**
	LTE Band 25	Front	0.178	0.004	0.182
		Rear	0.461	0.002	**0.463**
	LTE Band 7	Front	0.125	0.004	0.129
		Rear	1.050	0.002	**1.052**
	LTE Band 41	Front	0.068	0.004	0.072
		Rear	1.068	0.002	**1.070**

Table 12.5.9 Simultaneous Transmission Scenario : Bluetooth + 5 GHz W-LAN (Body-Worn at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth SAR (W/kg)	5G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Body-Worn SAR	5.3G W-LAN	Front	0.004	0.254	**0.258**
		Rear	0.002	0.119	0.121
	5.6G W-LAN	Front	0.004	0.197	0.201
		Rear	0.002	0.374	**0.376**
	5.8G W-LAN	Front	0.004	0.174	0.178
		Rear	0.002	0.183	**0.185**

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 + Bluetooth + 5.2 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.2G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.135	-	-	0.135	0.135	0.135
		Front	0.181	0.013	0.364	0.194	0.545	0.558
		Rear	0.435	0.003	0.129	0.438	0.564	0.567
		Right	0.200	-	-	0.200	0.200	0.200
		Left	0.127	0.027	0.680	0.154	0.807	**0.834**
	GPRS 1900	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.305	-	-	0.305	0.305	0.305
		Front	0.205	0.013	0.364	0.218	0.569	0.582
		Rear	0.553	0.003	0.129	0.556	0.682	0.685
		Right	0.066	-	-	0.066	0.066	0.066
		Left	0.197	0.027	0.680	0.224	0.877	**0.904**
	WCDMA 850	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.165	-	-	0.165	0.165	0.165
		Front	0.238	0.013	0.364	0.251	0.602	0.615
		Rear	0.522	0.003	0.129	0.525	0.651	0.654
		Right	0.286	-	-	0.286	0.286	0.286
		Left	0.190	0.027	0.680	0.217	0.870	**0.897**
	WCDMA 1700	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.410	-	-	0.410	0.410	0.410
		Front	0.462	0.013	0.364	0.475	0.826	0.839
		Rear	0.974	0.003	0.129	0.977	1.103	1.106
		Right	0.153	-	-	0.153	0.153	0.153
		Left	0.400	0.027	0.680	0.427	1.080	**1.107**
	WCDMA 1900	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.531	-	-	0.531	0.531	0.531
		Front	0.295	0.013	0.364	0.308	0.659	0.672
		Rear	0.931	0.003	0.129	0.934	1.060	**1.063**
		Right	0.123	-	-	0.123	0.123	0.123
		Left	0.286	0.027	0.680	0.313	0.966	0.993
	LTE Band 12	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.065	-	-	0.065	0.065	0.065
		Front	0.149	0.013	0.364	0.162	0.513	0.526
		Rear	0.365	0.003	0.129	0.368	0.494	0.497
		Right	0.187	-	-	0.187	0.187	0.187
		Left	0.148	0.027	0.680	0.175	0.828	**0.855**
	LTE Band 13	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.134	-	-	0.134	0.134	0.134
		Front	0.235	0.013	0.364	0.248	0.599	0.612
		Rear	0.420	0.003	0.129	0.423	0.549	0.552
		Right	0.311	-	-	0.311	0.311	0.311
		Left	0.196	0.027	0.680	0.223	0.876	**0.903**
	LTE Band 14	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.123	-	-	0.123	0.123	0.123
		Front	0.229	0.013	0.364	0.242	0.593	0.606
		Rear	0.348	0.003	0.129	0.351	0.477	0.480
		Right	0.276	-	-	0.276	0.276	0.276
		Left	0.217	0.027	0.680	0.244	0.897	**0.924**
	LTE Band 26	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.173	-	-	0.173	0.173	0.173
		Front	0.304	0.013	0.364	0.317	0.668	0.681
		Rear	0.437	0.003	0.129	0.440	0.566	0.569
		Right	0.424	-	-	0.424	0.424	0.424
		Left	0.196	0.027	0.680	0.223	0.876	**0.903**
	LTE Band 4	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.366	-	-	0.366	0.366	0.366
		Front	0.297	0.013	0.364	0.310	0.661	0.674
		Rear	0.595	0.003	0.129	0.598	0.724	0.727
		Right	0.137	-	-	0.137	0.137	0.137
		Left	0.345	0.027	0.680	0.372	1.025	**1.052**
	LTE Band 25	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.531	-	-	0.531	0.531	0.531
		Front	0.274	0.013	0.364	0.287	0.638	0.651
		Rear	0.890	0.003	0.129	0.893	1.019	**1.022**
		Right	0.141	-	-	0.141	0.141	0.141
		Left	0.296	0.027	0.680	0.323	0.976	1.003
	LTE Band 7	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.881	-	-	0.881	0.881	0.881
		Front	0.133	0.013	0.364	0.146	0.497	0.510
		Rear	1.309	0.003	0.129	1.312	1.438	**1.441**
		Right	0.074	-	-	0.074	0.074	0.074
		Left	0.139	0.027	0.680	0.166	0.819	0.846
	LTE Band 41	Top	-	0.015	0.142	0.015	0.142	0.157
		Bottom	0.572	-	-	0.572	0.572	0.572
		Front	0.083	0.013	0.364	0.096	0.447	0.460
		Rear	0.898	0.003	0.129	0.901	1.027	**1.030**
		Right	0.041	-	-	0.041	0.041	0.041
		Left	0.073	0.027	0.680	0.100	0.753	0.780

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)		
			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.135	-	-	0.135	0.135	0.135
		Front	0.181	0.013	0.192	0.194	0.373	0.386
		Rear	0.435	0.003	0.253	0.438	0.688	0.691
		Right	0.200	-	-	0.200	0.200	0.200
		Left	0.127	0.027	0.826	0.154	0.953	**0.980**
	GPRS 1900	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.305	-	-	0.305	0.305	0.305
		Front	0.205	0.013	0.192	0.218	0.397	0.410
		Rear	0.553	0.003	0.253	0.556	0.806	0.809
		Right	0.066	-	-	0.066	0.066	0.066
		Left	0.197	0.027	0.826	0.224	1.023	**1.050**
	WCDMA 850	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.165	-	-	0.165	0.165	0.165
		Front	0.238	0.013	0.192	0.251	0.430	0.443
		Rear	0.522	0.003	0.253	0.525	0.775	0.778
		Right	0.286	-	-	0.286	0.286	0.286
		Left	0.190	0.027	0.826	0.217	1.016	**1.043**
	WCDMA 1700	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.410	-	-	0.410	0.410	0.410
		Front	0.462	0.013	0.192	0.475	0.654	0.667
		Rear	0.974	0.003	0.253	0.977	1.227	1.230
		Right	0.153	-	-	0.153	0.153	0.153
		Left	0.400	0.027	0.826	0.427	1.226	**1.253**
	WCDMA 1900	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.531	-	-	0.531	0.531	0.531
		Front	0.295	0.013	0.192	0.308	0.487	0.500
		Rear	0.931	0.003	0.253	0.934	1.184	**1.187**
		Right	0.123	-	-	0.123	0.123	0.123
		Left	0.286	0.027	0.826	0.313	1.112	1.139
	LTE Band 12	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.065	-	-	0.065	0.065	0.065
		Front	0.149	0.013	0.192	0.162	0.341	0.354
		Rear	0.365	0.003	0.253	0.368	0.618	0.621
		Right	0.187	-	-	0.187	0.187	0.187
		Left	0.148	0.027	0.826	0.175	0.974	**1.001**
	LTE Band 13	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.134	-	-	0.134	0.134	0.134
		Front	0.235	0.013	0.192	0.248	0.427	0.440
		Rear	0.420	0.003	0.253	0.423	0.673	0.676
		Right	0.311	-	-	0.311	0.311	0.311
		Left	0.196	0.027	0.826	0.223	1.022	**1.049**
	LTE Band 14	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.123	-	-	0.123	0.123	0.123
		Front	0.229	0.013	0.192	0.242	0.421	0.434
		Rear	0.348	0.003	0.253	0.351	0.601	0.604
		Right	0.276	-	-	0.276	0.276	0.276
		Left	0.217	0.027	0.826	0.244	1.043	**1.070**
	LTE Band 26	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.173	-	-	0.173	0.173	0.173
		Front	0.304	0.013	0.192	0.317	0.496	0.509
		Rear	0.437	0.003	0.253	0.440	0.690	0.693
		Right	0.424	-	-	0.424	0.424	0.424
		Left	0.196	0.027	0.826	0.223	1.022	**1.049**
	LTE Band 4	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.366	-	-	0.366	0.366	0.366
		Front	0.297	0.013	0.192	0.310	0.489	0.502
		Rear	0.595	0.003	0.253	0.598	0.848	0.851
		Right	0.137	-	-	0.137	0.137	0.137
		Left	0.345	0.027	0.826	0.372	1.171	**1.198**
	LTE Band 25	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.531	-	-	0.531	0.531	0.531
		Front	0.274	0.013	0.192	0.287	0.466	0.479
		Rear	0.890	0.003	0.253	0.893	1.143	1.146
		Right	0.141	-	-	0.141	0.141	0.141
		Left	0.296	0.027	0.826	0.323	1.122	**1.149**
	LTE Band 7	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.881	-	-	0.881	0.881	0.881
		Front	0.133	0.013	0.192	0.146	0.325	0.338
		Rear	**1.309**	**0.003**	**0.253**	**1.312**	**1.562**	1.565
		Right	0.074	-	-	0.074	0.074	0.074
		Left	0.139	0.027	0.826	0.166	0.965	0.992
	LTE Band 41	Top	-	0.015	0.226	0.015	0.226	0.241
		Bottom	0.572	-	-	0.572	0.572	0.572
		Front	0.083	0.013	0.192	0.096	0.275	0.288
		Rear	0.898	0.003	0.253	0.901	1.151	**1.154**
		Right	0.041	-	-	0.041	0.041	0.041
		Left	0.073	0.027	0.826	0.100	0.899	0.926

Table 12.6.3 Simultaneous Transmission Scenario : 2G/3G/4G + 2.4 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	2.4G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.068	0.068
		Bottom	0.135	-	0.135
		Front	0.181	0.061	0.242
		Rear	0.435	0.029	**0.464**
		Right	0.200	-	0.200
		Left	0.127	0.119	0.246
	GPRS 1900	Top	-	0.068	0.068
		Bottom	0.305	-	0.305
		Front	0.205	0.061	0.266
		Rear	0.553	0.029	**0.582**
		Right	0.066	-	0.066
		Left	0.197	0.119	0.316
	WCDMA 850	Top	-	0.068	0.068
		Bottom	0.165	-	0.165
		Front	0.238	0.061	0.299
		Rear	0.522	0.029	**0.551**
		Right	0.286	-	0.286
		Left	0.190	0.119	0.309
	WCDMA 1700	Top	-	0.068	0.068
		Bottom	0.410	-	0.410
		Front	0.462	0.061	0.523
		Rear	0.974	0.029	**1.003**
		Right	0.153	-	0.153
		Left	0.400	0.119	0.519
	WCDMA 1900	Top	-	0.068	0.068
		Bottom	0.531	-	0.531
		Front	0.295	0.061	0.356
		Rear	0.931	0.029	**0.960**
		Right	0.123	-	0.123
		Left	0.286	0.119	0.405
	LTE Band 12	Top	-	0.068	0.068
		Bottom	0.065	-	0.065
		Front	0.149	0.061	0.210
		Rear	0.365	0.029	**0.394**
		Right	0.187	-	0.187
		Left	0.148	0.119	0.267
	LTE Band 13	Top	-	0.068	0.068
		Bottom	0.134	-	0.134
		Front	0.235	0.061	0.296
		Rear	0.420	0.029	**0.449**
		Right	0.311	-	0.311
		Left	0.196	0.119	0.315
	LTE Band 14	Top	-	0.068	0.068
		Bottom	0.123	-	0.123
		Front	0.229	0.061	0.290
		Rear	0.348	0.029	**0.377**
		Right	0.276	-	0.276
		Left	0.217	0.119	0.336
	LTE Band 26	Top	-	0.068	0.068
		Bottom	0.173	-	0.173
		Front	0.304	0.061	0.365
		Rear	0.437	0.029	**0.466**
		Right	0.424	-	0.424
		Left	0.196	0.119	0.315
	LTE Band 4	Top	-	0.068	0.068
		Bottom	0.366	-	0.366
		Front	0.297	0.061	0.358
		Rear	0.595	0.029	**0.624**
		Right	0.137	-	0.137
		Left	0.345	0.119	0.464
	LTE Band 25	Top	-	0.068	0.068
		Bottom	0.531	-	0.531
		Front	0.274	0.061	0.335
		Rear	0.890	0.029	**0.919**
		Right	0.141	-	0.141
		Left	0.296	0.119	0.415
	LTE Band 7	Top	-	0.068	0.068
		Bottom	0.881	-	0.881
		Front	0.133	0.061	0.194
		Rear	1.309	0.029	**1.338**
		Right	0.074	-	0.074
		Left	0.139	0.119	0.258
	LTE Band 41	Top	-	0.068	0.068
		Bottom	0.572	-	0.572
		Front	0.083	0.061	0.144
		Rear	0.898	0.029	**0.927**
		Right	0.041	-	0.041
		Left	0.073	0.119	0.192

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

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.2G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.142	0.142
		Bottom	0.135	-	0.135
		Front	0.181	0.364	0.545
		Rear	0.435	0.129	0.564
		Right	0.200	-	0.200
		Left	0.127	0.680	**0.807**
	GPRS 1900	Top	-	0.142	0.142
		Bottom	0.305	-	0.305
		Front	0.205	0.364	0.569
		Rear	0.553	0.129	0.682
		Right	0.066	-	0.066
		Left	0.197	0.680	**0.877**
	WCDMA 850	Top	-	0.142	0.142
		Bottom	0.165	-	0.165
		Front	0.238	0.364	0.602
		Rear	0.522	0.129	0.651
		Right	0.286	-	0.286
		Left	0.190	0.680	**0.870**
	WCDMA 1700	Top	-	0.142	0.142
		Bottom	0.410	-	0.410
		Front	0.462	0.364	0.826
		Rear	0.974	0.129	**1.103**
		Right	0.153	-	0.153
		Left	0.400	0.680	1.080
	WCDMA 1900	Top	-	0.142	0.142
		Bottom	0.531	-	0.531
		Front	0.295	0.364	0.659
		Rear	0.931	0.129	**1.060**
		Right	0.123	-	0.123
		Left	0.286	0.680	0.966
	LTE Band 12	Top	-	0.142	0.142
		Bottom	0.065	-	0.065
		Front	0.149	0.364	0.513
		Rear	0.365	0.129	0.494
		Right	0.187	-	0.187
		Left	0.148	0.680	**0.828**
	LTE Band 13	Top	-	0.142	0.142
		Bottom	0.134	-	0.134
		Front	0.235	0.364	0.599
		Rear	0.420	0.129	0.549
		Right	0.311	-	0.311
		Left	0.196	0.680	**0.876**
	LTE Band 14	Top	-	0.142	0.142
		Bottom	0.123	-	0.123
		Front	0.229	0.364	0.593
		Rear	0.348	0.129	0.477
		Right	0.276	-	0.276
		Left	0.217	0.680	**0.897**
	LTE Band 26	Top	-	0.142	0.142
		Bottom	0.173	-	0.173
		Front	0.304	0.364	0.668
		Rear	0.437	0.129	0.566
		Right	0.424	-	0.424
		Left	0.196	0.680	**0.876**
	LTE Band 4	Top	-	0.142	0.142
		Bottom	0.366	-	0.366
		Front	0.297	0.364	0.661
		Rear	0.595	0.129	0.724
		Right	0.137	-	0.137
		Left	0.345	0.680	**1.025**
	LTE Band 25	Top	-	0.142	0.142
		Bottom	0.531	-	0.531
		Front	0.274	0.364	0.638
		Rear	0.890	0.129	**1.019**
		Right	0.141	-	0.141
		Left	0.296	0.680	0.976
	LTE Band 7	Top	-	0.142	0.142
		Bottom	0.881	-	0.881
		Front	0.133	0.364	0.497
		Rear	1.309	0.129	**1.438**
		Right	0.074	-	0.074
		Left	0.139	0.680	0.819
	LTE Band 41	Top	-	0.142	0.142
		Bottom	0.572	-	0.572
		Front	0.083	0.364	0.447
		Rear	0.898	0.129	**1.027**
		Right	0.041	-	0.041
		Left	0.073	0.680	0.753

Table 12.6.5 Simultaneous Transmission Scenario : 2G/3G/4G + 5.8 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.8G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.226	0.226
		Bottom	0.135	-	0.135
		Front	0.181	0.192	0.373
		Rear	0.435	0.253	0.688
		Right	0.200	-	0.200
		Left	0.127	0.826	**0.953**
	GPRS 1900	Top	-	0.226	0.226
		Bottom	0.305	-	0.305
		Front	0.205	0.192	0.397
		Rear	0.553	0.253	0.806
		Right	0.066	-	0.066
		Left	0.197	0.826	**1.023**
	WCDMA 850	Top	-	0.226	0.226
		Bottom	0.165	-	0.165
		Front	0.238	0.192	0.430
		Rear	0.522	0.253	0.775
		Right	0.286	-	0.286
		Left	0.190	0.826	**1.016**
	WCDMA 1700	Top	-	0.226	0.226
		Bottom	0.410	-	0.410
		Front	0.462	0.192	0.654
		Rear	0.974	0.253	**1.227**
		Right	0.153	-	0.153
		Left	0.400	0.826	1.226
	WCDMA 1900	Top	-	0.226	0.226
		Bottom	0.531	-	0.531
		Front	0.295	0.192	0.487
		Rear	0.931	0.253	**1.184**
		Right	0.123	-	0.123
		Left	0.286	0.826	1.112
	LTE Band 12	Top	-	0.226	0.226
		Bottom	0.065	-	0.065
		Front	0.149	0.192	0.341
		Rear	0.365	0.253	0.618
		Right	0.187	-	0.187
		Left	0.148	0.826	**0.974**
	LTE Band 13	Top	-	0.226	0.226
		Bottom	0.134	-	0.134
		Front	0.235	0.192	0.427
		Rear	0.420	0.253	0.673
		Right	0.311	-	0.311
		Left	0.196	0.826	**1.022**
	LTE Band 14	Top	-	0.226	0.226
		Bottom	0.123	-	0.123
		Front	0.229	0.192	0.421
		Rear	0.348	0.253	0.601
		Right	0.276	-	0.276
		Left	0.217	0.826	**1.043**
	LTE Band 26	Top	-	0.226	0.226
		Bottom	0.173	-	0.173
		Front	0.304	0.192	0.496
		Rear	0.437	0.253	0.690
		Right	0.424	-	0.424
		Left	0.196	0.826	**1.022**
	LTE Band 4	Top	-	0.226	0.226
		Bottom	0.366	-	0.366
		Front	0.297	0.192	0.489
		Rear	0.595	0.253	0.848
		Right	0.137	-	0.137
		Left	0.345	0.826	**1.171**
	LTE Band 25	Top	-	0.226	0.226
		Bottom	0.531	-	0.531
		Front	0.274	0.192	0.466
		Rear	0.890	0.253	**1.143**
		Right	0.141	-	0.141
		Left	0.296	0.826	1.122
	LTE Band 7	Top	-	0.226	0.226
		Bottom	0.881	-	0.881
		Front	0.133	0.192	0.325
		Rear	1.309	0.253	**1.562**
		Right	0.074	-	0.074
		Left	0.139	0.826	0.965
	LTE Band 41	Top	-	0.226	0.226
		Bottom	0.572	-	0.572
		Front	0.083	0.192	0.275
		Rear	0.898	0.253	**1.151**
		Right	0.041	-	0.041
		Left	0.073	0.826	0.899

Table 12.6.6 Simultaneous Transmission Scenario : 2G/3G/4G + Bluetooth (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	GPRS 850	Top	-	0.015	0.015
		Bottom	0.135	-	0.135
		Front	0.181	0.013	0.194
		Rear	0.435	0.003	**0.438**
		Right	0.200	-	0.200
		Left	0.127	0.027	0.154
	GPRS 1900	Top	-	0.015	0.015
		Bottom	0.305	-	0.305
		Front	0.205	0.013	0.218
		Rear	0.553	0.003	**0.556**
		Right	0.066	-	0.066
		Left	0.197	0.027	0.224
	WCDMA 850	Top	-	0.015	0.015
		Bottom	0.165	-	0.165
		Front	0.238	0.013	0.251
		Rear	0.522	0.003	**0.525**
		Right	0.286	-	0.286
		Left	0.190	0.027	0.217
	WCDMA 1700	Top	-	0.015	0.015
		Bottom	0.410	-	0.410
		Front	0.462	0.013	0.475
		Rear	0.974	0.003	**0.977**
		Right	0.153	-	0.153
		Left	0.400	0.027	0.427
	WCDMA 1900	Top	-	0.015	0.015
		Bottom	0.531	-	0.531
		Front	0.295	0.013	0.308
		Rear	0.931	0.003	**0.934**
		Right	0.123	-	0.123
		Left	0.286	0.027	0.313
	LTE Band 12	Top	-	0.015	0.015
		Bottom	0.065	-	0.065
		Front	0.149	0.013	0.162
		Rear	0.365	0.003	**0.368**
		Right	0.187	-	0.187
		Left	0.148	0.027	0.175
	LTE Band 13	Top	-	0.015	0.015
		Bottom	0.134	-	0.134
		Front	0.235	0.013	0.248
		Rear	0.420	0.003	**0.423**
		Right	0.311	-	0.311
		Left	0.196	0.027	0.223
	LTE Band 14	Top	-	0.015	0.015
		Bottom	0.123	-	0.123
		Front	0.229	0.013	0.242
		Rear	0.348	0.003	**0.351**
		Right	0.276	-	0.276
		Left	0.217	0.027	0.244
	LTE Band 26	Top	-	0.015	0.015
		Bottom	0.173	-	0.173
		Front	0.304	0.013	0.317
		Rear	0.437	0.003	**0.440**
		Right	0.424	-	0.424
		Left	0.196	0.027	0.223
	LTE Band 4	Top	-	0.015	0.015
		Bottom	0.366	-	0.366
		Front	0.297	0.013	0.310
		Rear	0.595	0.003	**0.598**
		Right	0.137	-	0.137
		Left	0.345	0.027	0.372
	LTE Band 25	Top	-	0.015	0.015
		Bottom	0.531	-	0.531
		Front	0.274	0.013	0.287
		Rear	0.890	0.003	**0.893**
		Right	0.141	-	0.141
		Left	0.296	0.027	0.323
	LTE Band 7	Top	-	0.015	0.015
		Bottom	0.881	-	0.881
		Front	0.133	0.013	0.146
		Rear	1.309	0.003	**1.312**
		Right	0.074	-	0.074
		Left	0.139	0.027	0.166
	LTE Band 41	Top	-	0.015	0.015
		Bottom	0.572	-	0.572
		Front	0.083	0.013	0.096
		Rear	0.898	0.003	**0.901**
		Right	0.041	-	0.041
		Left	0.073	0.027	0.100

Table 12.6.7 Simultaneous Transmission Scenario : Bluetooth + 5 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	Bluetooth SAR (W/kg)	5G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	5.2G W-LAN	Top	0.015	0.142	0.157
		Bottom	-	-	-
		Front	0.013	0.364	0.377
		Rear	0.003	0.129	0.132
		Right	-	-	-
		Left	0.027	0.680	**0.707**
	5.8G W-LAN	Top	0.015	0.226	0.241
		Bottom	-	-	-
		Front	0.013	0.192	0.205
		Rear	0.003	0.253	0.256
		Right	-	-	-
		Left	0.027	0.826	**0.853**

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 beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

For SAR summation, the highest reported SAR across all test distances was used as the most conservative evaluation for simultaneous transmission analysis for each device edge.

Table 12.7.1 Simultaneous Transmission Scenario : 2G/3G/4G + 5.3 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.3G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	LTE Band 7	Top	-	0.264	0.264
		Bottom	1.431	-	1.431
		Front	0.253	0.635	0.888
		Rear	2.139	0.139	**2.278**
		Right	0.094	-	0.094
		Left	0.253	1.304	1.557
	LTE Band 41	Top	-	0.264	0.264
		Bottom	1.481	-	1.481
		Front	0.282	0.635	0.917
		Rear	1.492	0.139	**1.631**
		Right	0.061	-	0.061
		Left	0.275	1.304	1.579

Table 12.7.2 Simultaneous Transmission Scenario : 2G/3G/4G + 5.6 GHz W-LAN (Hotspot at 10 mm)

Exposure Condition	Mode	Configuration	2G/3G/4G SAR (W/kg)	5.6G W-LAN SAR (W/kg)	ΣSAR (W/kg)
			1	2	1+2
Hotspot SAR	LTE Band 7	Top	-	0.268	0.268
		Bottom	1.431	-	1.431
		Front	0.253	0.420	0.673
		Rear	**2.139**	**0.298**	**2.437**
		Right	0.094	-	0.094
		Left	0.253	1.558	1.811
	LTE Band 41	Top	-	0.268	0.268
		Bottom	1.481	-	1.481
		Front	0.282	0.420	0.702
		Rear	1.492	0.298	1.790
		Right	0.061	-	0.061
		Left	0.275	1.558	**1.833**

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)	
2560.0	21350	LTE B7	-	-	15 mm [Rear]	0.976	0.970	1.01	-	-	-	-
2549.5	40185	LTE B41	-	-	15 mm [Rear]	0.981	0.969	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					

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)	
1752.6	1513	WCDMA 1700	RMC	-	10 mm [Rear]	0.845	0.821	1.03	-	-	-	-
1880.0	9400	WCDMA 1900	RMC	-	10 mm [Rear]	0.907	0.904	1.00	-	-	-	-
1882.5	26365	LTE B25	-	-	10 mm [Rear]	0.855	0.851	1.00	-	-	-	-
2560.0	21350	LTE B7	-	-	10 mm [Rear]	1.250	1.250	1.00	-	-	-	-
2549.5	40185	LTE B41	-	-	10 mm [Rear]	0.817	0.809	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
⊠	SEMITEC Engineering	SEMITEC	N/A	N/A	N/A	Shield Room
⊠	SEMITEC Engineering	SEMITEC	N/A	N/A	N/A	Shield Room
⊠	Robot	SPEAG	TX90XL	N/A	N/A	F13/5P9GA1/A/01
⊠	Robot	SPEAG	TX60L	N/A	N/A	F15/50NHA1/A/01
⊠	Robot	SPEAG	TX90XL	N/A	N/A	F13/5RR2A1/A/01
⊠	Robot	SPEAG	TX60L	N/A	N/A	F14/5VR2A1/A/01
⊠	Robot Controller	SPEAG	CS8C	N/A	N/A	F13/5P9GA1/C/01
⊠	Robot Controller	SPEAG	CS8C	N/A	N/A	F15/50NHA1/C/01
⊠	Robot Controller	SPEAG	CS8C	N/A	N/A	F13/5RR2A1/C/01
⊠	Robot Controller	SPEAG	CS8C	N/A	N/A	F14/5VR2A1/C/01
⊠	Joystick	SPEAG	N/A	N/A	N/A	S-12450905
⊠	Joystick	SPEAG	P21142605A	N/A	N/A	005695
⊠	Joystick	SPEAG	N/A	N/A	N/A	S-13200990
⊠	Joystick	SPEAG	N/A	N/A	N/A	D21142605A
⊠	Intel Core i7-3770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
⊠	Intel Core i7-3770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
⊠	Intel Core i7-3770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
⊠	Intel Core i7-4770 3.40 GHz Windows 7 Professional	N/A	N/A	N/A	N/A	N/A
⊠	Probe Alignment Unit LB	N/A	N/A	N/A	N/A	SE UKS 030 AA
⊠	Probe Alignment Unit LB	N/A	N/A	N/A	N/A	SE UKS 030 AA
⊠	Probe Alignment Unit LB	N/A	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
⊠	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	1895
⊠	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1785
⊠	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1786
⊠	Twin SAM Phantom	SPEAG	QD000P40CD	N/A	N/A	1220
⊠	Data Acquisition Electronics	SPEAG	DAE4V1	2019-03-20	2020-03-20	1394
⊠	Data Acquisition Electronics	SPEAG	DAE4V1	2018-09-19	2019-09-19	1453
⊠	Data Acquisition Electronics	SPEAG	DAE4V1	2019-05-23	2020-05-23	1392
⊠	Data Acquisition Electronics	SPEAG	DAE4V1	2019-04-18	2020-04-18	1391
⊠	Dosimetric E-Field Probe	SPEAG	EX3DV4	2019-05-28	2020-05-28	3866
⊠	Dosimetric E-Field Probe	SPEAG	EX3DV4	2018-11-22	2019-11-22	7337
⊠	Dosimetric E-Field Probe	SPEAG	EX3DV4	2019-04-25	2020-04-25	3916
⊠	Dosimetric E-Field Probe	SPEAG	EX3DV4	2018-09-25	2019-09-25	3933
⊠	750MHz SAR Dipole	SPEAG	D750V3	2019-01-25	2021-01-25	1049
⊠	835MHz SAR Dipole	SPEAG	D835V2	2019-07-18	2020-07-18	464
⊠	1800MHz SAR Dipole	SPEAG	D1800V2	2019-04-24	2021-04-24	2d047
⊠	1900MHz SAR Dipole	SPEAG	D1900V2	2018-08-27	2020-08-27	5d176
⊠	2450MHz SAR Dipole	SPEAG	D2450V2	2018-08-24	2020-08-24	920
⊠	2600MHz SAR Dipole	SPEAG	D2600V2	2019-02-27	2021-02-27	1016
⊠	5GHz SAR Dipole	SPEAG	D5GHzV2	2019-02-28	2021-02-28	1103
⊠	Network Analyzer	Agilent	E5071C	2019-06-24	2020-06-24	MY46106970
⊠	Signal Generator	Agilent	E4438C	2019-06-24	2020-06-24	US41461520
⊠	Amplifier	RFBAY.Inc	MPA-40-40	2018-12-20	2019-12-20	21151801
⊠	Amplifier	EMPOWER	BBS3Q7ELU	2019-06-24	2020-06-24	1020
⊠	High Power RF Amplifier	EMPOWER	BBS3Q8CCJ	2019-06-24	2020-06-24	1005
⊠	Power Meter	HP	EPM-442A	2018-12-19	2019-12-19	GB37170267
⊠	Power Meter	HP	EPM-442A	2018-12-18	2019-12-18	GB37170413
⊠	Power Sensor	HP	8481A	2018-12-18	2019-12-18	US37294267
⊠	Power Sensor	HP	8481A	2018-12-19	2019-12-19	3318A96566
⊠	Power Sensor	HP	8481A	2018-12-19	2019-12-19	2702A65976
⊠	Dual Directional Coupler	Agilent	778D-012	2018-12-19	2019-12-19	50228
⊠	Directional Coupler	HP	772D	2019-06-24	2020-06-24	2889A01064
⊠	Low Pass Filter 1GHz	Wainwright Instruments	WLK6-1000-1400-9000-60SS	2019-06-24	2020-06-24	165
⊠	Low Pass Filter 1.5GHz	Micro LAB	LA-15N	2019-06-24	2020-06-24	2
⊠	Low Pass Filter 3.0GHz	Micro LAB	LA-30N	2019-06-24	2020-06-24	2
⊠	Low Pass Filter 6.0GHz	Micro LAB	LA-60N	2018-12-19	2019-12-19	03942
⊠	Attenuators(10 dB)	WEINSCHEL	23-10-34	2018-12-19	2019-12-19	BP4387
⊠	Attenuators	Cernexwave	CFADC2603U5	2019-06-27	2020-06-27	C11740
⊠	Dielectric Probe kit	SPEAG	DAK-3.5	2018-11-20	2019-11-20	1092
⊠	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	2019-06-28	2020-06-28	GB41321164
⊠	Radio Communication Analyzer	Agilent	E5515E	2019-06-28	2020-06-28	MY52113012
⊠	Wideband Radio Communication Tester	Rohde Schwarz	CMW500	2018-12-19	2019-12-19	101414
⊠	Power Splitter	Anritsu	K241B	2018-12-18	2019-12-18	1301183
⊠	Bluetooth Tester	TESCOM	TC-3000B	2018-12-18	2019-12-18	3000B770243

NOTE(S):
1. The E-field probe was calibrated by SPEAG, by temperature measurement procedure. Dipole Verification measurement is performed by DT&C before each test. The brain and muscle simulating material are calibrated by DT&C using the dielectric probe system and network analyzer to determine the conductivity and permittivity (dielectric constant) of the brain and muscle-equivalent material. Each equipment item was used solely within its respective calibration period.
2. CBT(Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

15. MEASUREMENT UNCERTAINTIES

750 MHz Head (SN: 3866)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.7	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

835 MHz Head (SN: 3866)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 2.0	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1800 MHz Head (SN: 7337)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

1900 MHz Head (SN: 7337)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.0	Normal	1	0.78	0.71	± 3.1 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.2	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

2450 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.1	Normal	1	0.78	0.71	± 3.2 %	± 2.9 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

2600 MHz Head (SN: 7337)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.0	Normal	1	1	1	± 6.0 %	± 6.0 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.1	Normal	1	0.78	0.71	± 3.2 %	± 2.9 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.9	Rectangular	√3	0.78	0.71	± 0.9 %	± 0.8 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.6 %**	**± 11.4 %**	330
Expanded Uncertainty (k=2)						**± 23.2 %**	**± 22.8 %**	

The above measurement uncertainties are according to IEEE Std 1528

5200 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 3.8	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5300 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.8	Normal	1	0.78	0.71	± 3.0 %	± 2.7 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.1	Normal	1	0.23	0.26	± 0.9 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.8	Rectangular	√3	0.23	0.26	± 0.2 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5500 MHz Head (SN: 3916)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.2	Normal	1	0.78	0.71	± 3.3 %	± 3.0 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.7	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.8 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.6 %**	

The above measurement uncertainties are according to IEEE Std 1528

5600 MHz Head (SN: 3933)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 3.9	Normal	1	0.78	0.71	± 3.0 %	± 2.8 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.2	Normal	1	0.23	0.26	± 1.0 %	± 1.1 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 1.9	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 11.9 %**	**± 11.7 %**	330
Expanded Uncertainty (k=2)						**± 23.8 %**	**± 23.4 %**	

The above measurement uncertainties are according to IEEE Std 1528

5800 MHz Head (SN: 3933)

Error Description	Uncertainty value ±%	Probability Distribution	Divisor	(Ci) 1g	(Ci) 10g	Standard (1g)	Standard (10g)	vi 2 or Veff
Measurement System								
Probe calibration	± 6.55	Normal	1	1	1	± 6.6 %	± 6.6 %	∞
Isotropy	± 1.3	Normal	1	1	1	± 1.3 %	± 1.3 %	∞
Boundary Effects	± 2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %	∞
Probe Linearity	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Probe modulation response	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Detection limits	± 0.25	Rectangular	√3	1	1	± 0.14 %	± 0.14 %	∞
Readout Electronics	± 0.3	Normal	1	1	1	± 0.3 %	± 0.3 %	∞
Response time	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Integration time	± 2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Conditions – Noise	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Conditions – Reflections	± 3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.8	Rectangular	√3	1	1	± 0.46 %	± 0.46 %	∞
Probe Positioning	± 6.7	Rectangular	√3	1	1	± 3.9 %	± 3.9 %	∞
Algorithms for Max. SAR Eval.	± 4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %	∞
Test Sample Related								
Device Positioning	± 2.9	Normal	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6	Normal	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %	∞
SAR Scaling	± 0.0	Rectangular	√3	1	1	± 0.0 %	± 0.0 %	∞
Physical Parameters								
Phantom Shell	± 7.6	Rectangular	√3	1	1	± 4.4 %	± 4.4 %	∞
SAR correction	± 0.0	Normal	1	1	0.84	± 0.0 %	± 0.0 %	∞
Liquid conductivity (Target)	± 5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %	∞
Liquid conductivity (Meas.)	± 4.3	Normal	1	0.78	0.71	± 3.4 %	± 3.1 %	10
Liquid permittivity (Target)	± 5.0	Rectangular	√3	0.60	0.49	± 1.7 %	± 1.4 %	∞
Liquid permittivity (Meas.)	± 4.0	Normal	1	0.23	0.26	± 0.9 %	± 1.0 %	10
Temp. unc. - Conductivity	± 1.8	Rectangular	√3	0.78	0.71	± 0.8 %	± 0.7 %	∞
Temp. unc. - Permittivity	± 2.0	Rectangular	√3	0.23	0.26	± 0.3 %	± 0.3 %	∞
Combined Standard Uncertainty						**± 12.0 %**	**± 11.8 %**	330
Expanded Uncertainty (k=2)						**± 24.0 %**	**± 23.6 %**	

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

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APPENDIX A. – Probe Calibration Data

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

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

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

Accreditation No.: **SCS 0108**

Client **DT&C (Dymstec)**

Certificate No: **EX3-3916_Apr19**

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3916

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

Calibration date: April 25, 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 ± 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	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

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

Issued: April 27, 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

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

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

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.56	0.48	0.52	± 10.1 %
DCP (mV)[B]	101.7	96.9	104.5	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	146.1	±3.8 %	± 4.7 %
		Y	0.0	0.0	1.0		139.8		
		Y	0.0	0.0	1.0		143.5		

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

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

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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	90.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
2450	39.2	1.80	7.66	7.66	7.66	0.39	0.85	± 12.0 %
2600	39.0	1.96	7.46	7.46	7.46	0.36	0.86	± 12.0 %
5200	36.0	4.66	5.14	5.14	5.14	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.94	4.94	4.94	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.89	4.89	4.89	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.75	4.75	4.75	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.82	4.82	4.82	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:3916 April 25, 2019

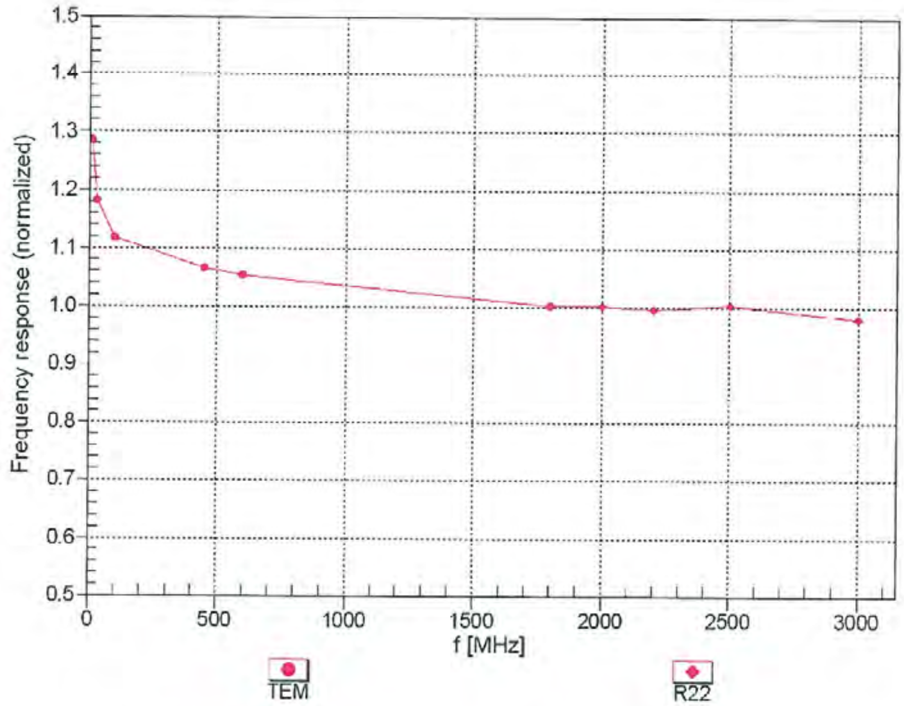
DASY/EASY - Parameters of Probe: EX3DV4 - SN:3916

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
2450	52.7	1.95	7.62	7.62	7.62	0.34	0.85	± 12.0 %
2600	52.5	2.16	7.42	7.42	7.42	0.22	1.03	± 12.0 %
5200	49.0	5.30	4.56	4.56	4.56	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.37	4.37	4.37	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.14	4.14	4.14	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.00	4.00	4.00	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.23	4.23	4.23	0.50	1.90	± 13.1 %

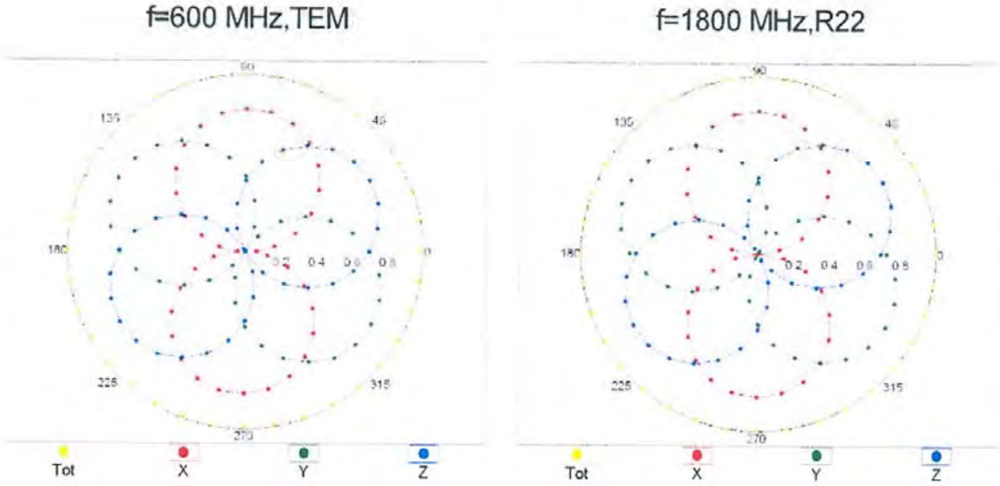
[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz 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.

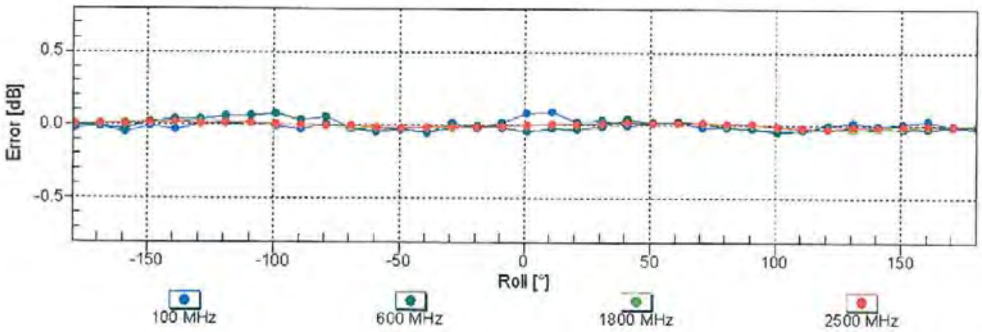
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

Receiving Pattern (ϕ), $\vartheta = 0°$

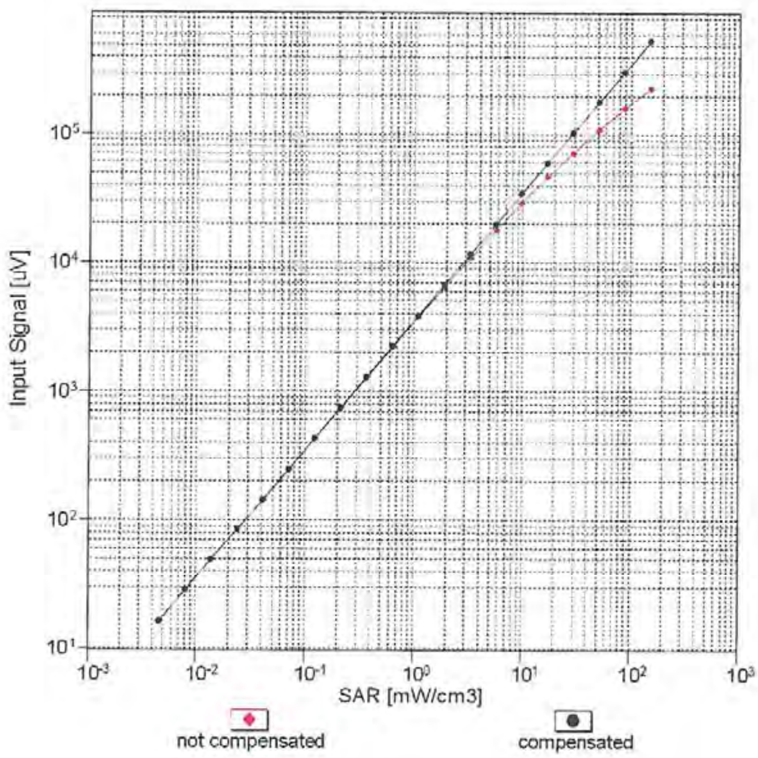


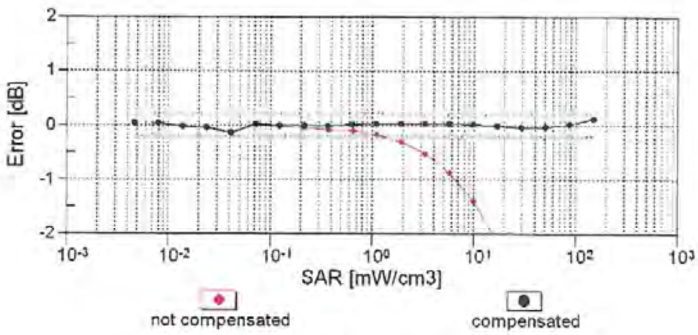


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)



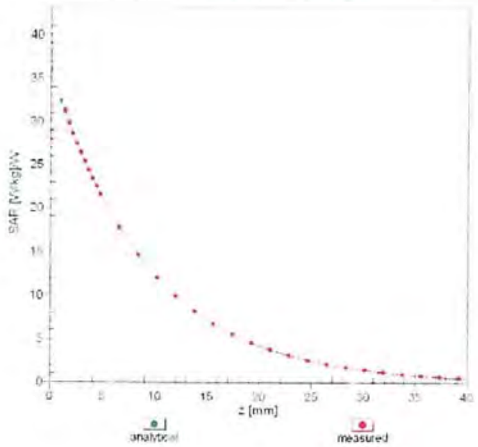


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

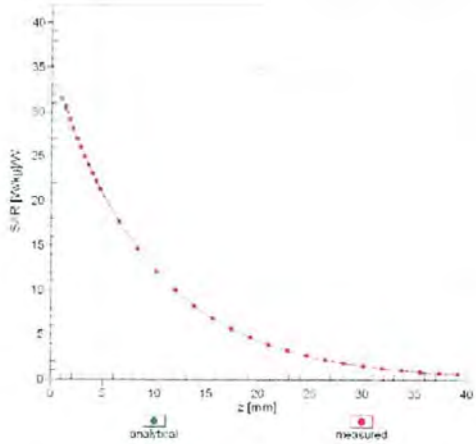
EX3DV4– SN:3916 April 25, 2019

Conversion Factor Assessment

f = 2450 MHz,WGLS R22 (H_convF)

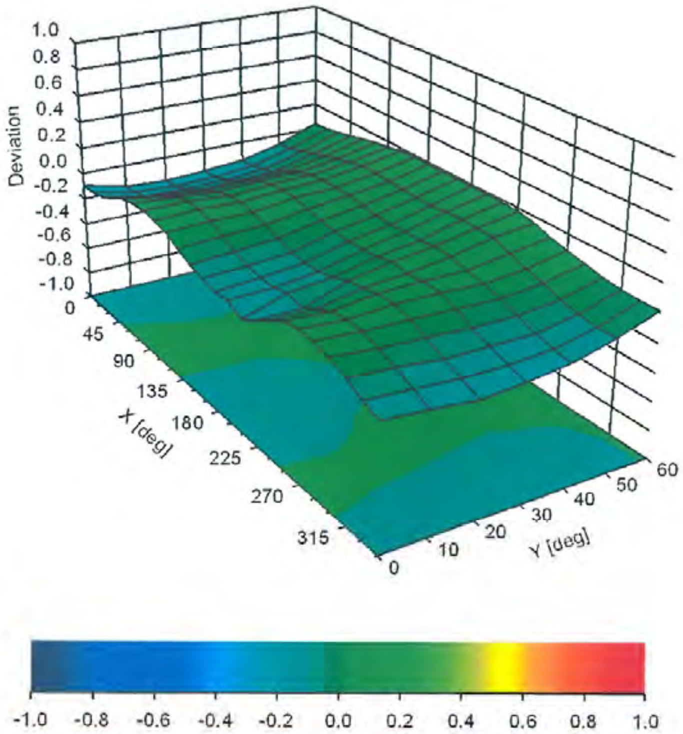


f = 2450 MHz,WGLS R22 (M_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

Certificate No: EX3-3916_Apr19 Page 10 of 10

Calibration Laboratory of
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Accreditation No.: **SCS 0108**

Client **DT&C (Dymstec)**

Certificate No: **EX3-7337_Nov18**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7337
Calibration procedure(s)	QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	November 22, 2018

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: November 22, 2018

Calibration Laboratory of
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Accreditation No.: SCS 0108

Glossary:

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

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

Methods Applied and Interpretation of Parameters:

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

Probe EX3DV4

SN:7337

Manufactured: July 23, 2014
Calibrated: November 22, 2018

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7337

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.53	0.59	0.56	± 10.1 %
DCP (mV)[B]	98.7	97.6	100.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	148.8	±3.5 %
		Y	0.0	0.0	1.0		159.0	
		Z	0.0	0.0	1.0		150.6	

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

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7337

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)
835	41.5	0.90	10.16	10.16	10.16	0.60	0.80	± 12.0 %
900	41.5	0.97	10.04	10.04	10.04	0.38	1.02	± 12.0 %
1750	40.1	1.37	8.96	8.96	8.96	0.37	0.87	± 12.0 %
1900	40.0	1.40	8.49	8.49	8.49	0.38	0.85	± 12.0 %
2450	39.2	1.80	7.66	7.66	7.66	0.42	0.86	± 12.0 %
2600	39.0	1.96	7.43	7.43	7.43	0.36	0.96	± 12.0 %
5200	36.0	4.66	5.67	5.67	5.67	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.46	5.46	5.46	0.40	1.80	± 13.1 %
5500	35.6	4.96	5.05	5.05	5.05	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.86	4.86	4.86	0.40	1.80	± 13.1 %
5800	35.3	5.27	5.06	5.06	5.06	0.40	1.80	± 13.1 %

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

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

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7337

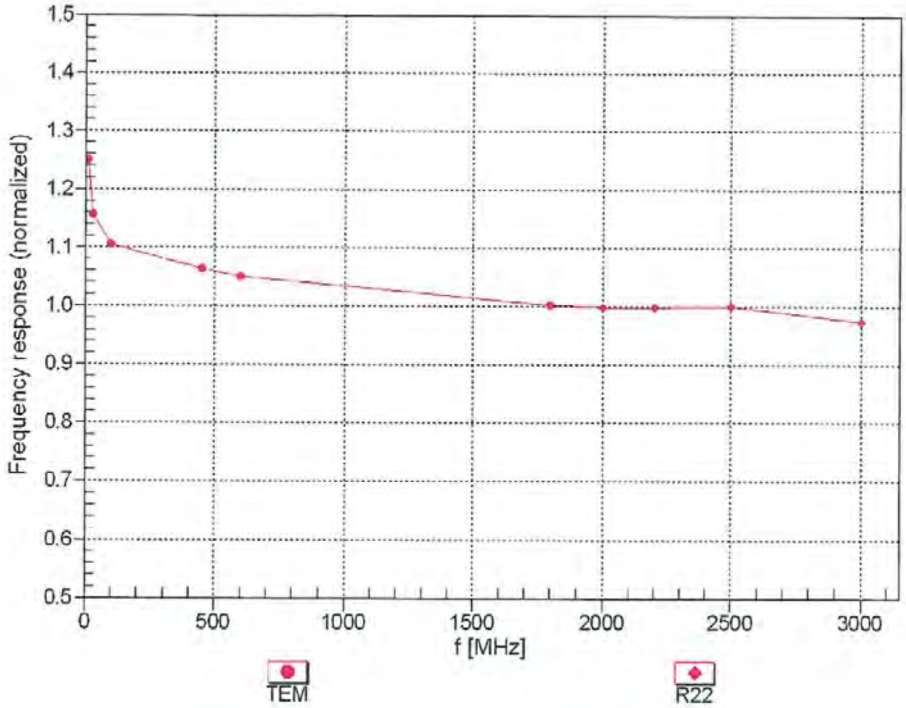
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
835	55.2	0.97	10.23	10.23	10.23	0.51	0.80	± 12.0 %
900	55.0	1.05	10.13	10.13	10.13	0.43	0.80	± 12.0 %
1750	53.4	1.49	8.42	8.42	8.42	0.41	0.83	± 12.0 %
1900	53.3	1.52	8.03	8.03	8.03	0.43	0.86	± 12.0 %
2450	52.7	1.95	7.74	7.74	7.74	0.39	0.95	± 12.0 %
2600	52.5	2.16	7.59	7.59	7.59	0.23	1.05	± 12.0 %
5200	49.0	5.30	5.15	5.15	5.15	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.95	4.95	4.95	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.45	4.45	4.45	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.28	4.28	4.28	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.55	4.55	4.55	0.50	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

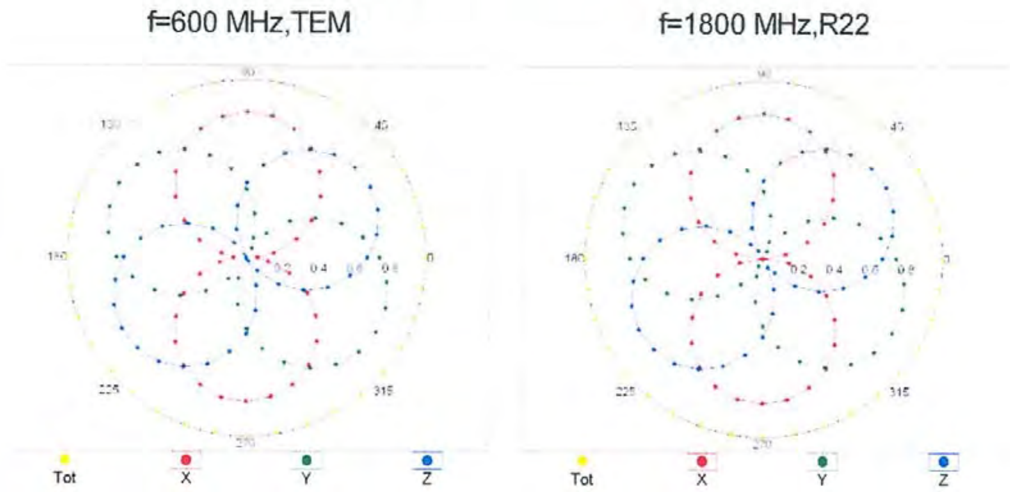
EX3DV4– SN:7337 November 22, 2018

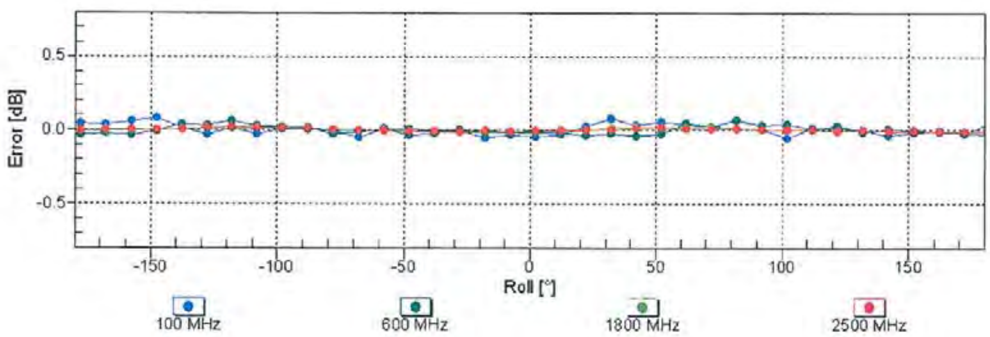
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

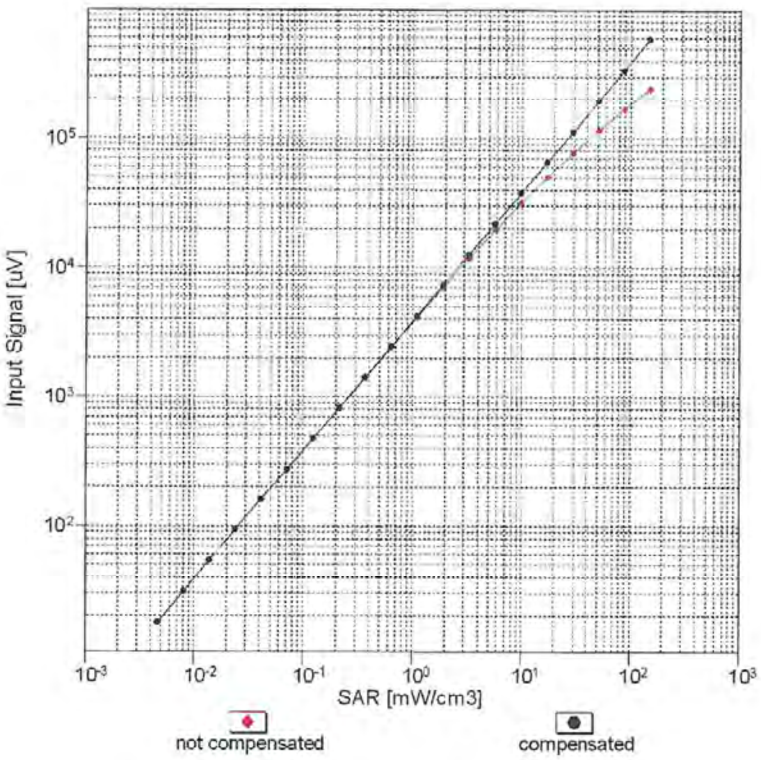
Receiving Pattern (ϕ), ϑ = 0°

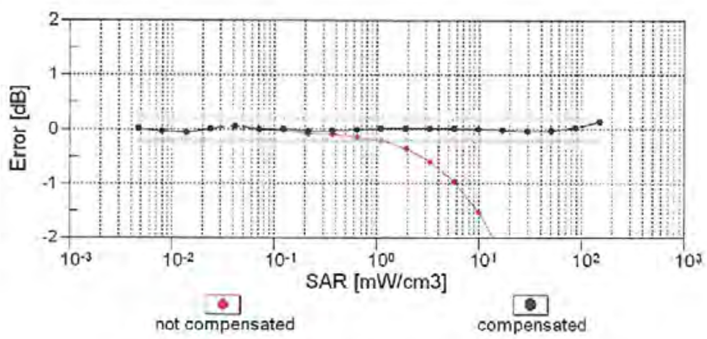




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

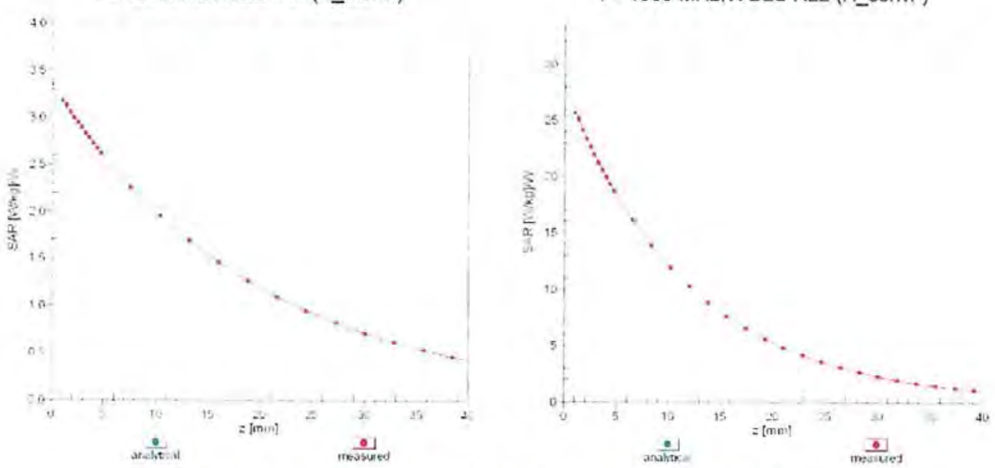
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





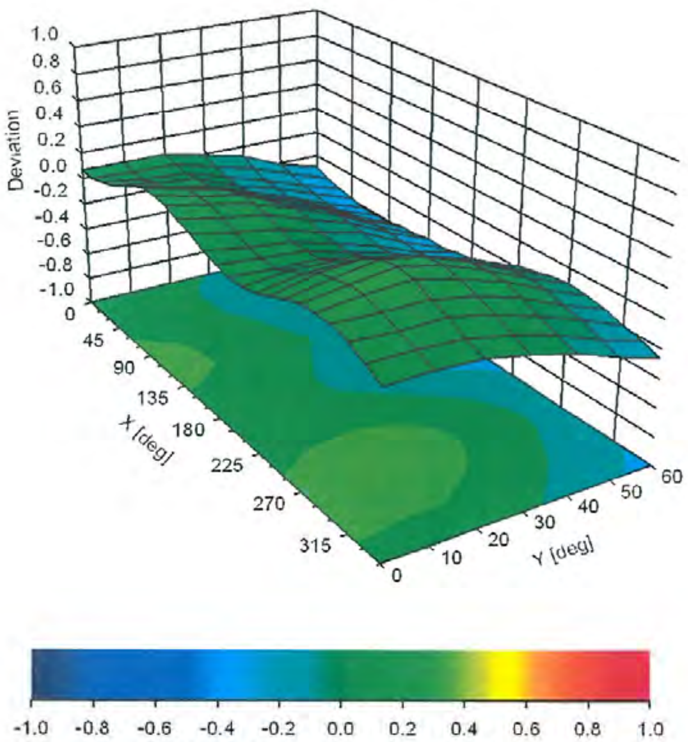
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (φ, ϑ), f = 900 MHz



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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7337

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	62.1
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