



SAR EVALUATION REPORT

Applicant Name:
LG Electronics U.S.A., Inc.
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Englewood Cliffs, NJ 07632
United States

Date of Testing:
07/08/20 – 08/31/20
Test Site/Location:
PCTEST, Columbia, MD, USA
Document Serial No.:
1M2006150096-01-R2.ZNF

FCC ID: **ZNFF100VM**

APPLICANT: **LG ELECTRONICS U.S.A., INC.**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-F100VM
Additional Model(s): LMF100VM, F100VM, LM-F101V, LMF101V, F101V

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	< 0.1	0.49	0.52	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	< 0.1	0.80	0.84	2.99
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	< 0.1	0.42	0.42	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.43	0.72	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	< 0.1	0.51	0.51	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	< 0.1	0.82	1.00	2.26
PCE	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.75	1.06	2.99
PCE	LTE Band 12	699.7 - 715.3 MHz	< 0.1	0.35	0.35	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	< 0.1	0.47	0.47	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	< 0.1	0.36	0.36	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	< 0.1	0.51	0.51	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.10	0.75	0.90	2.20
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.12	0.65	0.91	2.79
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.57	0.69	2.60
CBE	LTE Band 48	3552.5 - 3697.5 MHz	0.89	0.19	0.35	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.27	0.52	2.29
PCE	NR Band n5 (Cell)	826.5 - 846.5 MHz	< 0.1	0.43	0.43	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.15	0.25	0.60	N/A
PCE	NR Band n2 (PCS)	1852.5 - 1907.5 MHz	0.19	0.21	0.56	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.83	0.23	0.44	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.17	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.35	0.17	N/A	0.36
NII	U-NII-2C	5500 - 5720 MHz	0.18	0.19	N/A	0.66
NII	U-NII-3	5745 - 5825 MHz	0.16	0.19	0.19	N/A
DSS/DTs	Bluetooth	2402 - 2480 MHz	0.18	< 0.1	0.11	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.59	1.24	1.58	3.58

Note: This revised Test Report (S/N: 1M2006150096-01-R2.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.
This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.10 of this report; for North American frequency bands only.
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.


Randy Ortañez
President



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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
Cell. CDMA/EVDO	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 14	Voice/Data	790.5 - 795.5 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n5 (Cell)	Data	826.5 - 846.5 MHz
NR Band n66 (AWS)	Data	1712.5 - 1777.5 MHz
NR Band n2 (PCS)	Data	1852.5 - 1907.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
WMC	Data	500 Hz - 4 kHz
NR Band n260	Data	37000 - 40000 MHz
NR Band n261	Data	27500 - 28350 MHz

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1.2 Time-Averaging Algorithm for RF Exposure Compliance

The equipment under test (EUT) contains:

Qualcomm® SM7250 modem supporting 2G/3G/4G/5G NR WWAN technologies

Qualcomm® SM7250 modem is enabled with Qualcomm® Smart Transmit feature. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time. Refer to Compliance Summary document for detailed description of Qualcomm® Smart Transmit feature (report SN could be found in Section 1.12 – Bibliography).

Note that WLAN operations are not enabled with Smart Transmit.

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of *SAR_{design target}*, below the predefined time-averaged power limit (i.e., P_{limit} for sub-6 radio, and input.power.limit for 5G mmW NR), for each characterized technology and band (see RF Exposure Part 0 Test Report, report SN could be found in Section 1.12 - Bibliography).

Smart Transmit allows the device to transmit at higher power instantaneously, as high as P_{max} , when needed, but enforces power limiting to maintain time-averaged transmit power to P_{limit} . Below table shows P_{limit} EFS settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (Device State Index DSI). Note that the device uncertainty for sub-6GHz WWAN is +1.0/-1.0 dB for this EUT.

Exposure Scenario:		Head	Body-Worn	Phablet	Head Swivel	Phablet Swivel	Hotspot	Phablet	Maximum Tune-Up Output Power*
Averaging Volume:		1g	1g	10g	1g	10g	1g	10g	
Spacing:		0 mm	10 mm	3, 0, 3 mm	0 mm	3, 1, 3 mm	10 mm	0 mm	
DSI:		1			7		5	8	
Technology/Band	Antenna	Plimit							Pmax
CDMA/EVDO BC0	1	28.2			28.1		28.2		24.5
CDMA/EVDO BC1	2	26.7			24.5		22.5		24.5
GSM/GPRS/EDGE 850 MHz	1	32.0			30.6		32.0		24.8
GSM/GPRS/EDGE 1900 MHz	2	24.5			24.0		24.5		21.8
UMTS B5	1	28.6			27.7		28.6		24.5
UMTS B4	2	26.3			24.5		22.5		24.5
UMTS B2	2	26.7			24.5		22.5		24.5
LTE FDD B12	1	28.8			28.3		28.8		24.5
LTE FDD B12 ULCA	1	29.3			28.1		28.8		22.5
LTE FDD B13	1	28.9			30.3		28.9		24.5
LTE FDD B14	1	29.8			29.3		29.8		24.5
LTE FDD B5	1	30.8			29.7		30.8		24.5
LTE FDD B5 ULCA	1	30.9			29.4		30.8		22.5
LTE FDD B66/B4	2	25.4			24.5		22.5		24.5
LTE FDD B66 ULCA	3	24.8			24.4		24.8		22.5
LTE FDD B66 EN-DC	3	22.5			22.5		22.5		24.5
LTE FDD B2	2	25.7			23.7		22.5		24.5
LTE FDD B2 ULCA	3	23.5			24.7		23.5		17.0
LTE FDD B2 EN-DC	3	22.5			22.5		22.5		24.5
LTE FDD B30	2	27.0			26.2		24.0		24.5
LTE FDD B30 EN-DC	1	22.5			22.5		22.5		24.5
LTE TDD B48	9	19.5			19.5		19.5		21.0
LTE TDD B41	2	27.2			24.1		22.0		22.5
NR FDD n5	1	29.3			29.2		29.3		24.5
NR FDD n66	3	22.5			22.5		22.5		24.5
NR FDD n2	3	22.5			22.5		22.5		24.5

*Note all P_{limit} EFS and maximum tune up output power P_{max} levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (for e.g., GSM & LTE TDD). LTE B12/B5/B2/B66 is defined by ULCA PCC and Standalone, and LTE B12/B5/B2/B66 ULCA is defined by ULCA SCC. When they are operated by ULCA, the max power is 22.5 dBm (2 dB lower than standalone power).

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*Maximum tune up output power P_{max} is used to configure EUT during RF tune up procedure. The maximum allowed output power is equal to maximum Tune up output power + 1.0dB device design uncertainty. For interband-ULCA scenarios, LTE Band 66/2/5/12 as SCC will operate as maximum allowed output power limited at 17.7 dBm according to software implementation in this model.

The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G WWAN technology, band, and DSI = minimum of " P_{limit} EFS" and "Maximum tune up output power P_{max} " +1.0/-1.0 dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB Publication 447498 D01v06.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

Measurement Condition: All conducted power and SAR measurements in this report (Part 1 test) were performed by setting *Reserve_power_margin* (Smart Transmit EFS entry) to 0dB.

1.3 Power Reduction for SAR

This device uses an independent fixed level power reduction mechanism for WLAN operations when 5G NR FR2 is active. Detailed descriptions of the power reduction mechanism are included in the operational description.

1.4 Mechanical Modes

This device supports four different mechanical modes: normal mode, normal mode + pop up, swivel mode, swivel mode + pop up. Per FCC guidance, SAR with the mechanical mode 3 was measured for the configurations with the highest reported SAR from mechanical mode 1 for each wireless technology, frequency band, operating mode, and applicable exposure condition (head, phablet). Additionally, overall worst-case hotspot and phablet (between normal and swivel modes) was checked for mechanical mode 2 (normal mode + pop-up) or mechanical mode 4 (swivel mode + pop-up). Full SAR tests were additionally performed for any mechanical mode 3 test configurations with 1g SAR >1.2 W/kg or 10g SAR >3.0 W/kg. For WIFI/BT and LTE B48 phablet, if the worst case was right edge or left edge, the second-worst case was considered for SAR testing with mechanical mode 3 since swivel mode checks can only be performed for TX antennas in the grip portion of the DUT (Antennas 1, 2, 3, and 13). There are no TX antennas present in the swivel-display. Appendix E contains positioning information in mechanical modes 2, 3, and 4.

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1.5 Nominal and Maximum Output Power Specifications

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

1.5.1 2G/3G/4G/5G Output Power

CDMA BC0 (835 MHz)						
Power Level		Modulated Average Output Power (in dBm)				
		1x-RTT	EVDO Rev 0	EVDO Rev A		
All DSI	Max allowed power	25.5	25.5	25.5		
	Nominal	24.5	24.5	24.5		
CDMA BC1 (1900 MHz)						
Power Level		Modulated Average Output Power (in dBm)				
		1x-RTT	EVDO Rev 0	EVDO Rev A		
DSI = 1 (Head, Bodyworn, or Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5		
	Nominal	24.5	24.5	24.5		
DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5		
	Nominal	22.5	22.5	22.5		

GSM/GPRS/EDGE 850						
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)		Data - Burst Average 8-PSK (in dBm)	
		1 TX Slot	1 TX Slots	2 TX Slots	1 TX Slots	2 TX Slots
All DSI	Max allowed power	34.0	34.0	32.0	27.0	27.0
	Nominal	33.0	33.0	31.0	26.0	26.0

GSM/GPRS/EDGE 1900						
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)		Data - Burst Average 8-PSK (in dBm)	
		1 TX Slot	1 TX Slots	2 TX Slots	1 TX Slots	2 TX Slots
All DSI	Max allowed power	31.0	31.0	29.0	26.0	26.0
	Nominal	30.0	30.0	28.0	25.0	25.0

UMTS Band 5 (850 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
Max	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
UMTS Band 4 (1750 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
DSI = 1 (Head, Bodyworn, or Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
UMTS Band 2 (1900 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
DSI = 1 (Head, Bodyworn, or Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

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Mode / Band		Modulated Average Output Power (in dBm)		
		DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel);
LTE FDD Band 12	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
LTE FDD Band 13	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
LTE FDD Band 14	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
LTE FDD Band 5	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
LTE FDD Band 4	Max allowed power	25.5	23.5	25.5
	Nominal	24.5	22.5	24.5
LTE FDD Band 66	Max allowed power	25.5	23.5	25.5
	Nominal	24.5	22.5	24.5
LTE FDD Band 2	Max allowed power	25.5	23.5	24.7
	Nominal	24.5	22.5	23.7
LTE FDD Band 30	Max allowed power	25.5	25.0	25.5
	Nominal	24.5	24.0	24.5
LTE TDD Band 48	Max allowed power	22.5	22.5	22.5
	Nominal	21.5	21.5	21.5
LTE TDD Band 41	Max allowed power	25.5	25.0	25.5
	Nominal	24.5	24.0	24.5

Mode / Band		Modulated Average Output Power (in dBm)		
		DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel);
NR FDD Band n5	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
NR FDD Band n66	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
NR FDD Band n2	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

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The below tables are applicable in the following condition:

- Inter-band ULCA Active for combos CA 12A-66A, CA 2A-12A, CA 2A-5A, CA 5A-66A, CA 2A-66A

Mode / Band		Modulated Average Output Power (in dBm)		
		DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	DSI = 7 (Swivel);
LTE FDD Band 12 as PCC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 5 as PCC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 66 as PCC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 2 as PCC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 12 as SCC	Max allowed power	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0
LTE FDD Band 5 as SCC	Max allowed power	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0
LTE FDD Band 66 as SCC	Max allowed power	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0
LTE FDD Band 2 as SCC	Max allowed power	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0

Note: For 2A-66A uplink conditions, LTE Band 2 PCC/SCC operate using Antenna 3 and LTE B66 PCC/SCC operate using Antenna 2. For other uplink conditions, LTE B66 and LTE B2 PCC/SCC operate using Antenna 3. A diagram showing the location of the device antennas can be found in Appendix E.

The below tables are applicable in the following condition:

- EN-DC active with LTE Band 2/66/30 as an anchor band for NR Band n5.

Mode / Band		Modulated Average Output Power (in dBm)		
		DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	DSI = 7 (Swivel);
LTE FDD Band 66 as Anchor Band in EN-DC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 2 as Anchor Band in EN-DC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5
LTE FDD Band 30 as Anchor Band in EN-DC	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

Note: For LTE Band 66/2/30 as LTE Anchor for NR Band n5, LTE Band 66/2 will transmit from Antenna 3 and LTE Band 30 will transmit from Antenna 1. A diagram showing the location of the device antennas can be found in Appendix E.

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1.5.2 Maximum Bluetooth and SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (in dBm)																							
		SISO								SISO								MIMO							
		Antenna 1								Antenna 2															
		b		g		n		ac		b		g		n		ac		b		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	19.0	18.0	16.0	15.0	15.0	14.0	15.0	14.0	19.0	18.0	16.0	15.0	15.0	14.0	15.0	14.0	22.0	21.0	19.0	18.0	18.0	17.0	18.0	17.0

Mode	Band	IEEE 802.11 (in dBm)																	
		SISO						SISO						MIMO					
		Antenna 1						Antenna 2											
		a		n		ac		a		n		ac		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WiFi (20MHz BW)	5200 MHz	17.0	16.0	16.0	15.0	16.0	15.0	17.0	16.0	16.0	15.0	16.0	15.0	20.0	19.0	19.0	18.0	19.0	18.0
	5300 MHz	17.0	16.0	16.0	15.0	16.0	15.0	17.0	16.0	16.0	15.0	16.0	15.0	20.0	19.0	19.0	18.0	19.0	18.0
	5500 MHz	17.0	16.0	16.0	15.0	16.0	15.0	17.0	16.0	16.0	15.0	16.0	15.0	20.0	19.0	19.0	18.0	19.0	18.0
	5800 MHz	17.0	16.0	16.0	15.0	16.0	15.0	17.0	16.0	16.0	15.0	16.0	15.0	20.0	19.0	19.0	18.0	19.0	18.0
5 GHz WiFi (40MHz BW)	5200 MHz			16.0 ch. 38: 14.0	15.0 13.0	16.0 ch. 38: 14.0	15.0 13.0			16.0 ch. 38: 14.0	15.0 13.0	16.0 ch. 38: 14.0	15.0 13.0			19.0 ch. 38: 17.0	18.0 16.0	19.0 ch. 38: 17.0	18.0 16.0
	5300 MHz			16.0 ch. 62: 14.0	15.0 13.0	16.0 ch. 62: 14.0	15.0 13.0			16.0 ch. 62: 14.0	15.0 13.0	16.0 ch. 62: 14.0	15.0 13.0			19.0 ch. 62: 17.0	18.0 16.0	19.0 ch. 62: 17.0	18.0 16.0
	5500 MHz			16.0 ch. 102: 14.0	15.0 13.0	16.0 ch. 102: 14.0	15.0 13.0			16.0 ch. 102: 14.0	15.0 13.0	16.0 ch. 102: 14.0	15.0 13.0			19.0 ch. 102: 17.0	18.0 16.0	19.0 ch. 102: 17.0	18.0 16.0
	5800 MHz			16.0	15.0	16.0	15.0			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
5 GHz WiFi (80MHz BW)	5200 MHz					13.0	12.0					13.0	12.0					16.0	15.0
	5300 MHz					13.0	12.0					13.0	12.0					16.0	15.0
	5500 MHz					15.0	14.0					15.0	14.0					18.0	17.0
	5800 MHz					ch. 106: 13.0	12.0					ch. 106: 13.0	12.0					ch. 106: 16.0	15.0

Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth 1 Mbps (GFSK)	Maximum	12.0
	Nominal	11.0
Bluetooth 2 Mbps (DPSK)	Maximum	11.5
	Nominal	10.5
Bluetooth 3 Mbps (8DPSK)	Maximum	11.5
	Nominal	10.5
Bluetooth LE	Maximum	9.5
	Nominal	8.5

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1.5.3 Reduced SISO/MIMO WLAN Output Power

The below tables are applicable in the following conditions:

- During simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN and/or NR FR2 active

Mode	Band	IEEE 802.11 (in dBm)																							
		SISO												MIMO											
		Antenna 1								Antenna 2															
		b		g		n		ac		b		g		n		ac		b		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0

1.6 DUT Antenna Locations

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

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
Cell. EVDO	Yes	Yes	No	Yes	Yes	No
PCS EVDO	Yes	Yes	No	Yes	No	Yes
GPRS 850	Yes	Yes	No	Yes	Yes	No
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	No
UMTS 1750	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	No
LTE Band 13	Yes	Yes	No	Yes	Yes	No
LTE Band 14	Yes	Yes	No	Yes	Yes	No
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS)	Yes	Yes	No	Yes	No	Yes
LTE Band 66 (AWS) Ant 3	Yes	Yes	No	Yes	Yes	No
LTE Band 2 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 2 (PCS) Ant 3	Yes	Yes	No	Yes	Yes	No
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 30 Ant 1	Yes	Yes	No	Yes	Yes	No
LTE Band 48	Yes	Yes	Yes	No	Yes	No
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n5 (Cell)	Yes	Yes	No	Yes	Yes	No
NR Band n66 (AWS)	Yes	Yes	No	Yes	Yes	No
NR Band n2 (PCS)	Yes	Yes	No	Yes	Yes	No
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-2A, U-NII-2C operations are disabled.

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1.7 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in Appendix E.

1.8 Simultaneous Transmission Capabilities

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

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v06 4.3.2 procedures.

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
7	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
9	1x CDMA voice + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	N/A	Yes	
10	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
11	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
12	GSM voice + 2.4 GHz Bluetooth	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
13	GSM voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
14	GSM voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
15	GSM voice + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
16	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
17	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
18	GSM voice + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	N/A	Yes	
19	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
20	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
21	UMTS + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
22	UMTS + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
23	UMTS + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
24	UMTS + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
25	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
26	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
27	UMTS + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	Yes	Yes	
28	LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
29	LTE + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
30	LTE + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
31	LTE + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
32	LTE + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
33	LTE + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
34	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
35	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
36	LTE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	Yes	Yes	
37	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
38	CDMA/EVDO data + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
39	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
40	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
41	CDMA/EVDO data + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
42	CDMA/EVDO data + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
43	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
44	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
45	CDMA/EVDO data + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
46	GPRS/EDGE + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
47	GPRS/EDGE + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
48	GPRS/EDGE + 2.4 GHz Bluetooth	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
49	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
50	GPRS/EDGE + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
51	GPRS/EDGE + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
52	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
53	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes**	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
54	GPRS/EDGE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
55	LTE + 5G NR	Yes	Yes	N/A	Yes	
56	LTE + 5G NR + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
57	LTE + 5G NR + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
58	LTE + 5G NR + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
59	LTE + 5G NR + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
60	LTE + 5G NR + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
61	LTE + 5G NR + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
62	LTE + 5G NR + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
63	LTE + 5G NR + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
64	LTE + 5G NR + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	Yes	Yes	

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1. 2.4 GHz WLAN antenna 1 and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. 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.
3. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
4. 5 GHz Wireless Router is only supported for the U-NII-1 and U-NII-3 by S/W, therefore U-NII-2A, and U-NII-2C were not evaluated for wireless router conditions.
5. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac. 802.11a/g/n/ac supports CDD and STBC and 802.11n/ac additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
6. This device supports VOLTE.
7. This device supports VOWIFI.
8. This device supports Bluetooth Tethering.
9. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands shown in the NR FR1 Checklist.
10. LTE operations in the table above include intra-band and inter-band ULCA operations with 2 carriers transmitting in the uplink.
11. 5G NR FR2 n260 and n261 cannot transmit simultaneously
12. LTE + 5G NR FR2 n260 and n261 operations are possible only with LTE B2/4/5/12/13/48/66 under EN-DC mode.

1.9 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, head and body-worn 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 and U-NII-2C WIFI, only 2.4 GHz, U-NII-1, and 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 Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. 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 WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz WLAN, Bluetooth, U-NII-1, and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

This device supports IEEE 802.11ac with the following features:

- a) Up to 80 MHz Bandwidth only for 5GHz
- b) Up to 20 MHz Bandwidth only for 2.4 GHz
- c) No aggregate channel configurations
- d) 2 Tx antenna output
- e) Up to 1024 QAM is supported
- f) TDWR and Band gap channels are supported
- g) MU-MIMO UL Operations are not supported

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(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.

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

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

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, 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. The downlink carrier aggregation exclusion analysis can be found in Appendix F.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

This device supports intra-band LTE Carrier Aggregation (CA) for LTE Band 5 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

This device supports uplink inter-band LTE Carrier Aggregation (CA) for LTE Bands 12, 5, 2, 66 with two component carriers in the uplink. For 2A-66A uplink conditions, LTE Band 2 PCC/SCC operate using Antenna 3 and LTE Band 66 PCC/SCC operate using Antenna 2. For other uplink conditions, LTE B66 and LTE B2 PCC/SCC operate using Antenna 3. SAR tests were performed separately for antenna 3 for LTE Band 2 and LTE Band 66.

This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

NR implementation is limited to EN-DC operations only, with LTE Bands shown in the NR FR1 Checklist acting as anchor bands. Per FCC Guidance, SAR tests for NR Bands and LTE Anchor Bands were performed separately due to equipment limitations in SAR probe calibration factors. Please see Section 11 for more details.

This device supports 64QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64QAM is

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≤ ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05. This device supports 5G NR for Bands n260, and n261. RF Exposure assessment and simultaneous transmission analysis for these bands can be found in the Near Field PD Report (report SN can be found in Section 1.12 – Bibliography).

1.10 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE 4x4 Downlink MIMO)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)

1.11 Device Serial Numbers

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

1.12 Bibliography

Report Type	Report Serial Number
SAR Part 0 Test Report	Rev.A
Power Density Part 0 Test Report	Rev.A
Power Density Part 1 Test Report	1M2006150096-22-R2.ZNF
RF Exposure Part 2 Test Report	1M2006150096-23-R1.ZNF
RF Exposure Compliance Summary Report	1M2006150096-24-R1.ZNF

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2 LTE AND NR INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 14 (790.5 - 795.5 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 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 13: 5 MHz, 10 MHz				
	LTE Band 14: 5 MHz, 10 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 48: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)		715.3 (23173)
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)		714.5 (23165)
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)		713.5 (23155)
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)		711 (23130)
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)		784.5 (23255)
LTE Band 13: 10 MHz	N/A		782 (23230)		N/A
LTE Band 14: 5 MHz	790.5 (23305)		793 (23330)		795.5 (23355)
LTE Band 14: 10 MHz	N/A		793 (23330)		N/A
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)		848.3 (20643)
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)		847.5 (20635)
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)		846.5 (20625)
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)		844 (20600)
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)		1779.3 (132665)
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)		1778.5 (132657)
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)		1777.5 (132647)
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)		1775 (132622)
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)		1772.5 (132597)
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)		1770 (132572)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)		1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)		1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)		1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)		1750 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)		1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)		1745 (20300)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)		1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)		1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)		1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)		1905 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)		1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)		1900 (19100)
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)		2312.5 (27735)
LTE Band 30: 10 MHz	N/A		2310 (27710)		N/A
LTE Band 48: 5 MHz	3552.5 (55265)	3600.8 (55748)	N/A	3649.2 (56232)	3697.5 (56715)
LTE Band 48: 10 MHz	3555 (55290)	3601.7 (55757)	N/A	3648.3 (56223)	3695 (56690)
LTE Band 48: 15 MHz	3557.5 (55315)	3602.5 (55765)	N/A	3647.5 (56215)	3692.5 (56665)
LTE Band 48: 20 MHz	3560 (55340)	3603.3 (55773)	N/A	3646.7 (56207)	3690 (56640)
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 18, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation, downlink MIMO, LAA features as shown in section 9 and Appendix F. All other uplink communications are identical to the Release 8 specification. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

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NR Information			
Form Factor	Portable Handset		
Frequency Range of each NR transmission band	NR Band n5 (Cell) (826.5 - 846.5 MHz)		
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)		
	NR Band n2 (PCS) (1852.5 - 1907.5 MHz)		
Channel Bandwidths	NR Band n5 (Cell): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n2 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
Channel Numbers and Frequencies (MHz)	Low	Mid	High
NR Band n5 (Cell): 5 MHz	826.5 (165300)	836.5 (167300)	846.5 (169300)
NR Band n5 (Cell): 10 MHz	829 (165800)	836.5 (167300)	844 (168800)
NR Band n5 (Cell): 15 MHz	831.5 (166300)	836.5 (167300)	841.5 (168300)
NR Band n5 (Cell): 20 MHz	834 (166800)	836.5 (167300)	839 (167800)
NR Band n66 (AWS): 5 MHz	1712.5 (342500)	1745 (349000)	1777.5 (355500)
NR Band n66 (AWS): 10 MHz	1715 (343000)	1745 (349000)	1775 (355000)
NR Band n66 (AWS): 15 MHz	1717.5 (343500)	1745 (349000)	1772.5 (354500)
NR Band n66 (AWS): 20 MHz	1720 (344000)	1745 (349000)	1770 (354000)
NR Band n2 (PCS): 5 MHz	1852.5 (370500)	1880 (376000)	1907.5 (381500)
NR Band n2 (PCS): 10 MHz	1855 (371000)	1880 (376000)	1905 (381000)
NR Band n2 (PCS): 15 MHz	1857.5 (371500)	1880 (376000)	1902.5 (380500)
NR Band n2 (PCS): 20 MHz	1860 (372000)	1880 (376000)	1900 (380000)
SCS for NR Band n5/n66/n2	15 kHz		
Modulations Supported in UL	DFT-s-OFDM: $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM		
A-MPR (Additional MPR) disabled for SAR Testing?	YES		
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations		
LTE Anchor Bands for NR Band n5 (Cell)	LTE Band 66/2/30/48		
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 12/13/14/5/2/30		
LTE Anchor Bands for NR Band n2 (PCS)	LTE Band 12/13/14/5/66/30		

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3 INTRODUCTION

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [22]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

3.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 3-1).

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

- σ = conductivity of the tissue-simulating material (S/m)
- ρ = mass density of the tissue-simulating material (kg/m³)
- E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

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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 IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):
 - a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
 - b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
 - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

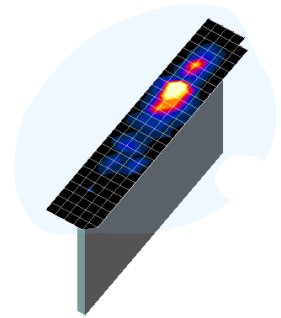


Figure 4-1
Sample SAR Area Scan

Table 4-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{3\text{freq}}, \Delta y_{3\text{freq}}$)	Maximum Zoom Scan Resolution (mm) ($\Delta x_{\text{zoomTV}}, \Delta y_{\text{zoom}}$)	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
				$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

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5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

Figure 5-2 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 ERP is 15mm 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), also called the Reference Pivoting Line, is not perpendicular to the reference plane (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 [5].

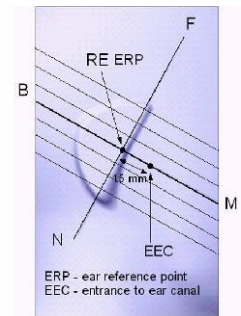


Figure 5-1
Close-Up Side view
of ERP

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 acoustic output located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (See Figure 5-3). The acoustic output was then located at the same level as the center of the ear reference point. The test device was positioned so that the “vertical centerline” was bisecting the front surface of the handset at its 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 of SAM Twin Phantom

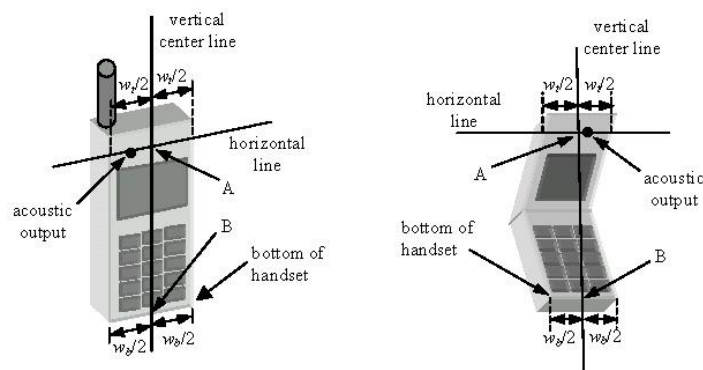


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

1. The test device was positioned with the device 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.

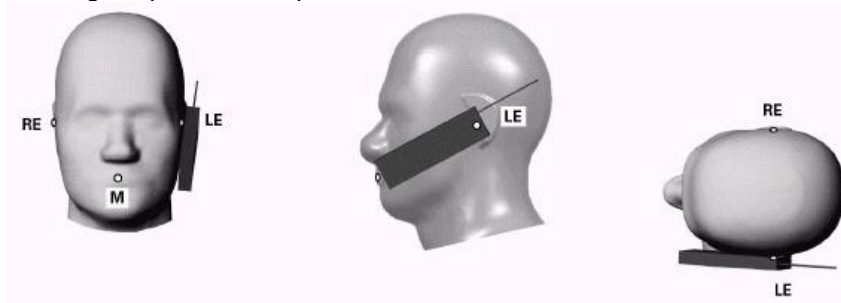


Figure 6-1 Front, Side and Top View of Cheek Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical with respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line 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 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 degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched 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. In this situation, 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 6-2).

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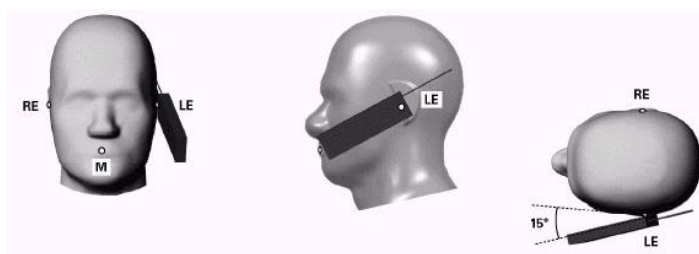


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

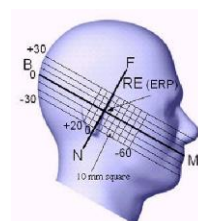


Figure 6-3 Side view w/ relevant markings

6.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones. Per IEEE 1528-2013, a rotated SAM phantom is necessary to allow probe access to such regions. Both SAM heads of the TwinSAM-Chin20 are rotated 20 degrees around the NF line. Each head can be removed from the table for emptying and cleaning.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR location identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

6.5 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-4). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

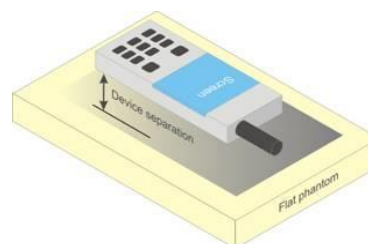


Figure 6-4 Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that

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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.

6.6 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 1g body and 10g 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.

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from the front, back 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. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

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 transmitters 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 frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

6.8 Phablet Configurations

For smart phones with a display diagonal dimension $> 150 \text{ mm}$ or an overall diagonal dimension $> 160 \text{ mm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

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6.9 Proximity Sensor Considerations

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

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

The sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the sensor entirely covers the antennas.

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7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

Table 7-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT <i>General Population</i> (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT <i>Occupational</i> (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

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

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8 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are 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 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

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

8.4 SAR Measurement Conditions for CDMA2000

The following procedures were performed according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

8.4.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.” Maximum output power is verified on the High, Middle and Low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in the “All Up” condition.

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1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 8-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH₀ and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH₀ data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 8-2 was applied.

Table 8-1
Parameters for Max. Power for RC1

Parameter	Units	Value
I_{or}	dBm/1.23 MHz	-104
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
I_{or}	dBm/1.23 MHz	-86
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

5. FCHs were configured at full rate for maximum SAR with “All Up” power control bits.

8.4.2 Head SAR Measurements

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

Head SAR is additionally evaluated using EVDO Rev. A to support compliance for VoIP operations. See Section 8.4.5 for EVDO Rev. A configuration parameters.

8.4.3 Body-worn SAR Measurements

SAR for body-worn exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH_n), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCH_n), with FCH at full rate and SCH₀ enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

8.4.4 Body-worn SAR Measurements for EVDO Devices

For handsets with EVDO capabilities, the 3G SAR test reduction procedure is applied to EVDO Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied to Rev. A, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode.

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When SAR is required for EVDO Rev. A, SAR is measured with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or 1x RTT RC3, as appropriate.

8.4.5 Body SAR Measurements for EVDO Hotspot

Hotspot Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode; otherwise, SAR is measured for Rev. A using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations; and a Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots in Subtype 2 Physical Layer configurations.

For EVDO data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with EVDO Rev. 0 and Rev. A as the respective primary modes. Otherwise, the 'Body-Worn Accessory SAR' procedures in the '3GPP2 CDMA 2000 1x Handsets' section are applied.

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCH_n 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.

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1s". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all "1s". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCH_n configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCH_n, for the highest reported SAR configuration in 12.2 kbps RMC.

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

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8.5.5 SAR Measurements with Rel 6 HSPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

8.6 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r04 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.6.1 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.

8.6.2 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.

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
- c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB

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and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.

- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05v02r04. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

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

8.7.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not

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required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. Each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

8.7.4 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 positions 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 positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.5 2.4 GHz SAR Test Requirements

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

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

2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

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

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8.7.7 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 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 the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.9 MIMO SAR Considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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9 RF CONDUCTED POWERS

9.1 GSM Conducted Powers

Table 9-1
Measured P_{max}

Maximum Burst-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	34.00	33.99	32.00	26.95	26.79
	190	33.89	33.58	31.63	26.87	26.59
	251	33.53	33.42	31.11	26.52	26.18
GSM 1900	512	30.65	30.66	28.46	25.66	25.35
	661	30.55	30.58	28.54	25.60	25.38
	810	30.40	30.43	28.47	25.46	25.24

Calculated Maximum Frame-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	24.80	24.79	25.81	17.75	20.60
	190	24.69	24.38	25.44	17.67	20.40
	251	24.33	24.22	24.92	17.32	19.99
GSM 1900	512	21.45	21.46	22.27	16.46	19.16
	661	21.35	21.38	22.35	16.40	19.19
	810	21.20	21.23	22.28	16.26	19.05

GSM 850	Frame	23.80	23.80	24.81	16.80	19.81
GSM 1900	Avg. Targets:	20.80	20.80	21.81	15.80	18.81

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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/EDGE (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 8-PSK modulation do not have an impact on output power.

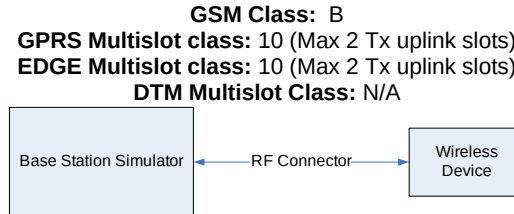


Figure 9-1
Power Measurement Setup

9.2 CDMA Conducted Powers

Table 9-2
Measured P_{max}

				Loopback		Data			
Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	1013	22H	824.7	25.16	25.15	25.11	25.12	25.16	24.84
	384	22H	836.52	25.16	25.14	25.15	25.16	25.20	24.81
	777	22H	848.31	25.10	25.09	25.12	25.12	25.12	25.01
PCS	25	24E	1851.25	24.94	24.94	24.90	24.92	24.62	24.65
	600	24E	1880	24.86	24.86	24.84	24.87	24.46	24.70
	1175	24E	1908.75	24.77	24.76	24.77	24.78	24.33	24.22

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Table 9-3
Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.68	22.63	22.56	22.56	22.60	22.57
	600	24E	1880	22.65	22.62	22.52	22.52	22.63	22.56
	1175	24E	1908.75	22.74	22.72	22.65	22.63	22.67	22.68

Note: RC1 is only applicable for IS-95 compatibility.



Figure 9-2
Power Measurement Setup

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9.3 UMTS Conducted Powers

Table 9-4
Measured P_{max}

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	25.23	24.86	25.25	25.24	25.27	25.29	25.33	25.36	25.37	-
99		12.2 kbps AMR	25.21	25.33	25.25	25.21	25.28	25.24	25.41	25.33	25.20	-
6	HSDPA	Subtest 1	25.02	25.19	25.07	25.12	25.08	25.18	25.31	25.22	25.06	0
6		Subtest 2	25.15	25.13	25.06	25.11	25.20	25.04	25.34	25.22	25.13	0
6		Subtest 3	24.63	24.65	24.56	24.60	24.70	24.62	24.81	24.46	24.59	0.5
6		Subtest 4	24.62	24.33	24.56	24.63	24.69	24.67	24.80	24.54	24.56	0.5
6	HSUPA	Subtest 1	24.61	24.60	24.50	24.55	24.51	24.58	24.73	24.64	24.49	0
6		Subtest 2	23.19	23.18	23.10	23.16	23.16	23.20	23.33	23.22	23.12	2
6		Subtest 3	23.60	23.56	23.51	24.14	24.23	24.17	24.31	24.21	24.12	1
6		Subtest 4	23.16	23.21	23.11	23.16	23.23	23.20	23.31	23.20	23.11	2
6		Subtest 5	25.20	25.19	25.12	25.17	25.23	25.18	25.34	25.22	25.13	0

Table 9-5
Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.04	23.07	23.05	23.15	23.07	23.05	-
99		12.2 kbps AMR	22.96	22.99	23.03	23.11	23.07	22.98	-
6	HSDPA	Subtest 1	22.93	23.11	22.88	23.13	22.92	22.88	0
6		Subtest 2	22.98	23.01	23.03	23.16	23.03	22.98	0
6		Subtest 3	22.45	22.51	22.57	22.66	22.46	22.45	0.5
6		Subtest 4	22.46	22.30	22.53	22.50	22.53	22.47	0.5
6	HSUPA	Subtest 1	22.48	22.56	22.52	22.68	22.61	22.53	0
6		Subtest 2	21.10	21.13	21.14	21.16	21.08	21.01	2
6		Subtest 3	21.98	22.04	22.06	22.16	22.08	21.99	1
6		Subtest 4	21.00	21.07	21.11	21.15	21.09	20.81	2
6		Subtest 5	23.01	23.05	23.09	23.05	23.09	23.12	0

This device does not support DC-HSDPA



Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1 LTE Band 12

Table 9-6
LTE Band 12 Measured P_{max} - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.97	0	0
	1	25	25.25		0
	1	49	25.12		0
	25	0	24.18	0-1	1
	25	12	24.13		1
	25	25	24.23		1
	50	0	24.17		1
16QAM	1	0	24.50	0-1	1
	1	25	24.48		1
	1	49	24.48		1
	25	0	23.24	0-2	2
	25	12	23.17		2
	25	25	23.19		2
	50	0	23.13		2
64QAM	1	0	23.48	0-2	2
	1	25	23.38		2
	1	49	23.30		2
	25	0	22.16	0-3	3
	25	12	22.22		3
	25	25	22.21		3
	50	0	22.23		3

Note: LTE Band 12 at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-7
LTE Band 12 Measured P_{max} - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.74	24.93	24.93	0	0
	1	12	24.77	24.98	24.95		0
	1	24	24.71	24.99	24.87		0
	12	0	23.88	24.09	23.94	0-1	1
	12	6	23.95	24.10	23.96		1
	12	13	23.91	24.11	23.93		1
	25	0	24.02	24.08	23.90		1
16QAM	1	0	24.19	24.36	24.33	0-1	1
	1	12	24.17	24.44	24.31		1
	1	24	24.14	24.46	24.33		1
	12	0	22.90	23.17	23.15	0-2	2
	12	6	22.97	23.17	23.17		2
	12	13	22.93	23.18	23.16		2
	25	0	22.98	23.12	22.92		2
64QAM	1	0	22.97	23.14	23.11	0-2	2
	1	12	22.98	23.19	23.15		2
	1	24	22.99	23.17	23.04		2
	12	0	21.95	22.15	21.98	0-3	3
	12	6	22.04	22.18	21.95		3
	12	13	22.00	22.19	21.95		3
	25	0	21.96	22.10	21.96		3

Table 9-8
LTE Band 12 Measured P_{max} - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.84	24.82	24.88	0	0
	1	7	24.86	24.81	24.87		0
	1	14	24.76	24.84	24.87		0
	8	0	23.98	23.90	23.91	0-1	1
	8	4	23.96	23.97	23.99		1
	8	7	23.91	23.94	23.94		1
	15	0	23.92	23.90	23.87		1
16QAM	1	0	24.28	24.10	24.42	0-1	1
	1	7	24.16	24.09	24.30		1
	1	14	24.20	24.10	24.38		1
	8	0	23.07	22.93	23.03	0-2	2
	8	4	23.10	23.04	23.09		2
	8	7	23.06	23.00	23.05		2
	15	0	23.06	22.90	22.97		2
64QAM	1	0	23.20	22.86	22.95	0-2	2
	1	7	23.13	22.88	22.87		2
	1	14	23.12	22.91	22.86		2
	8	0	22.02	21.99	21.99	0-3	3
	8	4	22.00	22.09	22.05		3
	8	7	21.95	22.03	21.97		3
	15	0	22.00	22.07	21.90		3

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Table 9-9
LTE Band 12 Measured P_{max} -1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.73	24.71	24.93	0	0
	1	2	24.75	24.84	24.98		0
	1	5	24.60	24.77	24.91		0
	3	0	24.80	24.75	24.83		0
	3	2	24.82	24.85	24.83		0
	3	3	24.78	24.82	24.78		0
	6	0	23.88	23.82	23.88	0-1	1
16QAM	1	0	24.14	23.96	24.06	0-1	1
	1	2	24.21	24.11	24.11		1
	1	5	24.19	24.00	24.05		1
	3	0	23.90	23.95	24.08		1
	3	2	23.92	24.07	24.12		1
	3	3	23.88	24.06	24.05		1
	6	0	22.97	22.80	22.96	0-2	2
64QAM	1	0	23.09	22.73	23.24	0-2	2
	1	2	23.12	22.90	23.32		2
	1	5	23.11	22.77	23.20		2
	3	0	23.00	22.89	22.98		2
	3	2	23.04	23.01	23.01		2
	3	3	22.97	22.97	22.97		2
	6	0	21.94	21.87	21.80	0-3	3

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9.4.2

LTE Band 13

Table 9-10
LTE Band 13 Measured P_{max} - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.06	0	0
	1	25	25.17		0
	1	49	25.20		0
	25	0	24.22	0-1	1
	25	12	24.17		1
	25	25	24.24		1
	50	0	24.23		1
16QAM	1	0	24.43	0-1	1
	1	25	24.50		1
	1	49	24.49		1
	25	0	23.21	0-2	2
	25	12	23.19		2
	25	25	23.17		2
	50	0	23.18		2
64QAM	1	0	23.48	0-2	2
	1	25	23.40		2
	1	49	23.06		2
	25	0	22.15	0-3	3
	25	12	22.25		3
	25	25	22.25		3
	50	0	22.20		3

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Table 9-11
LTE Band 13 Measured P_{max} - 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.11	0	0
	1	12	25.14		0
	1	24	25.14		0
	12	0	24.15	0-1	1
	12	6	24.22		1
	12	13	24.17		1
	25	0	24.17		1
16QAM	1	0	24.26	0-1	1
	1	12	24.24		1
	1	24	24.27		1
	12	0	23.07	0-2	2
	12	6	23.13		2
	12	13	23.21		2
	25	0	23.21		2
64QAM	1	0	23.38	0-2	2
	1	12	23.40		2
	1	24	23.40		2
	12	0	22.21	0-3	3
	12	6	22.25		3
	12	13	22.27		3
	25	0	22.24		3

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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9.4.3

LTE Band 14

Table 9-12
LTE Band 14 Measured P_{max} - 10 MHz Bandwidth

LTE Band 14 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.10	0	0
	1	25	24.93		0
	1	49	24.87		0
	25	0	24.11	0-1	1
	25	12	24.14		1
	25	25	24.03		1
	50	0	24.02		1
16QAM	1	0	24.45	0-1	1
	1	25	24.41		1
	1	49	24.24		1
	25	0	23.15	0-2	2
	25	12	23.01		2
	25	25	23.07		2
	50	0	23.03		2
64QAM	1	0	23.03	0-2	2
	1	25	23.30		2
	1	49	23.30		2
	25	0	22.09	0-3	3
	25	12	22.13		3
	25	25	22.09		3
	50	0	22.04		3

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Table 9-13
LTE Band 14 Measured P_{max} - 5 MHz Bandwidth

LTE Band 14 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.95	0	0
	1	12	25.07		0
	1	24	24.99		0
	12	0	24.15	0-1	1
	12	6	24.13		1
	12	13	24.08		1
	25	0	24.10		1
16QAM	1	0	24.50	0-1	1
	1	12	24.46		1
	1	24	24.40		1
	12	0	23.39	0-2	2
	12	6	23.37		2
	12	13	23.31		2
	25	0	23.10		2
64QAM	1	0	23.20	0-2	2
	1	12	23.24		2
	1	24	23.13		2
	12	0	22.13	0-3	3
	12	6	22.15		3
	12	13	22.09		3
	25	0	22.10		3

Note: LTE Band 14 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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9.4.4

LTE Band 5 (Cell)

Table 9-14
LTE Band 5 (Cell) Measured P_{max} - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20525 (836.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.00	0	0
	1	25	24.97		0
	1	49	25.05		0
	25	0	24.11	0-1	1
	25	12	24.08		1
	25	25	24.12		1
	50	0	24.00		1
16QAM	1	0	24.47	0-1	1
	1	25	24.48		1
	1	49	24.50		1
	25	0	23.09	0-2	2
	25	12	23.15		2
	25	25	23.13		2
	50	0	23.06		2
64QAM	1	0	23.31	0-2	2
	1	25	23.28		2
	1	49	23.21		2
	25	0	22.15	0-3	3
	25	12	22.13		3
	25	25	22.12		3
	50	0	22.03		3

Note: LTE Band 5 (Cell) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-15
LTE Band 5 (Cell) Measured P_{max} - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20425 (826.5 MHz)	20525 (836.5 MHz)	20625 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.01	24.85	24.90	0	0
	1	12	25.02	24.94	24.99		0
	1	24	25.01	24.91	24.91		0
	12	0	24.08	24.04	24.02	0-1	1
	12	6	24.12	24.09	24.00		1
	12	13	24.11	24.07	23.99		1
	25	0	24.09	24.02	23.99		1
16QAM	1	0	24.45	24.24	24.07	0-1	1
	1	12	24.42	24.29	24.12		1
	1	24	24.42	24.21	24.09		1
	12	0	23.28	23.08	23.00	0-2	2
	12	6	23.34	23.08	23.03		2
	12	13	23.27	23.08	23.06		2
	25	0	23.11	23.13	23.04		2
64QAM	1	0	23.19	23.11	23.13	0-2	2
	1	12	23.25	23.19	23.18		2
	1	24	23.14	23.11	23.14		2
	12	0	22.09	22.12	22.04	0-3	3
	12	6	22.12	22.19	22.11		3
	12	13	22.06	22.22	22.12		3
	25	0	22.14	22.08	22.04		3

Table 9-16
LTE Band 5 (Cell) Measured P_{max} - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.04	24.88	24.84	0	0
	1	7	25.02	24.91	24.79		0
	1	14	25.00	24.92	24.82		0
	8	0	24.08	24.03	23.98	0-1	1
	8	4	24.12	24.11	24.02		1
	8	7	24.07	24.08	24.00		1
	15	0	24.11	24.07	24.02		1
16QAM	1	0	24.50	24.29	24.16	0-1	1
	1	7	24.47	24.30	24.16		1
	1	14	24.50	24.35	24.11		1
	8	0	23.19	23.17	23.05	0-2	2
	8	4	23.23	23.25	23.07		2
	8	7	23.20	23.21	23.03		2
	15	0	23.19	23.18	22.98		2
64QAM	1	0	23.07	23.24	22.86	0-2	2
	1	7	23.00	23.26	22.85		2
	1	14	23.04	23.29	22.86		2
	8	0	22.13	22.08	22.11	0-3	3
	8	4	22.18	22.19	22.10		3
	8	7	22.12	22.15	22.09		3
	15	0	22.14	22.15	22.15		3

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Table 9-17
LTE Band 5 (Cell) Measured P_{max} -1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.92	25.04	24.81	0	0
	1	2	24.98	25.11	24.86		0
	1	5	24.92	25.09	24.79		0
	3	0	24.92	24.93	24.88		0
	3	2	25.00	25.04	24.94		0
	3	3	24.98	24.97	24.87		0
	6	0	24.02	24.02	24.00	0-1	1
16QAM	1	0	24.16	24.23	24.11	0-1	1
	1	2	24.22	24.37	24.18		1
	1	5	24.13	24.31	24.10		1
	3	0	24.16	24.17	23.95		1
	3	2	24.21	24.30	24.00		1
	3	3	24.18	24.25	23.94		1
	6	0	23.03	23.15	22.97	0-2	2
64QAM	1	0	22.93	23.36	23.08	0-2	2
	1	2	23.05	23.50	23.13		2
	1	5	22.90	23.40	23.07		2
	3	0	23.08	23.13	23.12		2
	3	2	23.12	23.26	23.14		2
	3	3	23.10	23.21	23.09		2
	6	0	22.06	21.94	22.03	0-3	3

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LTE Band 66 (AWS)

Table 9-18
LTE Band 66 (AWS) Measured P_{max} - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.73	24.84	25.10	0	0
	1	50	25.08	25.09	25.19		0
	1	99	24.78	24.89	25.13		0
	50	0	24.09	24.14	24.21	0-1	1
	50	25	24.12	24.12	24.25		1
	50	50	24.11	24.17	24.23		1
	100	0	24.10	24.07	24.18		1
16QAM	1	0	24.05	24.19	24.50	0-1	1
	1	50	24.34	24.50	24.48		1
	1	99	24.44	24.31	24.49		1
	50	0	23.07	23.15	23.18	0-2	2
	50	25	23.20	23.19	23.26		2
	50	50	23.13	23.23	23.25		2
	100	0	23.15	23.12	23.15		2
64QAM	1	0	22.96	23.06	23.31	0-2	2
	1	50	23.30	23.45	23.45		2
	1	99	23.16	23.16	23.34		2
	50	0	22.07	22.15	22.20	0-3	3
	50	25	22.26	22.26	22.25		3
	50	50	22.08	22.18	22.28		3
	100	0	22.07	22.07	22.11		3

Table 9-19
LTE Band 66 (AWS) Measured P_{max} - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.82	24.90	25.24	0	0
	1	36	24.91	25.00	25.25		0
	1	74	24.79	24.88	25.18		0
	36	0	24.01	24.11	24.13	0-1	1
	36	18	24.05	24.05	24.14		1
	36	37	24.00	24.06	24.17		1
16QAM	75	0	23.98	24.00	24.16	0-1	1
	1	0	23.74	24.21	24.15		1
	1	36	23.84	24.25	24.18		1
	1	74	23.73	24.15	24.16	0-2	1
	36	0	22.96	23.07	23.18		2
	36	18	23.02	23.05	23.19		2
	36	37	22.96	23.08	23.21		2
64QAM	75	0	23.05	23.04	23.12	0-2	2
	1	0	22.56	22.79	23.43		2
	1	36	22.69	22.89	23.48		2
	1	74	22.57	22.74	23.44	0-3	2
	36	0	22.07	22.11	22.21		3
	36	18	22.12	22.10	22.21		3
	36	37	22.12	22.10	22.19		3
75	0	22.04	22.13	22.16	3		

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Table 9-20
LTE Band 66 (AWS) Measured P_{max} - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.64	24.81	24.77	0	0
	1	25	24.81	24.99	25.03		0
	1	49	24.67	24.90	24.79		0
	25	0	23.97	24.01	24.12	0-1	1
	25	12	23.99	24.06	24.16		1
	25	25	23.91	24.02	24.15		1
	50	0	23.96	24.01	24.09		1
16QAM	1	0	23.61	23.97	23.99	0-1	1
	1	25	23.78	24.22	24.20		1
	1	49	23.63	23.98	23.94		1
	25	0	22.98	23.05	23.21	0-2	2
	25	12	23.10	23.10	23.27		2
	25	25	22.99	23.10	23.22		2
	50	0	22.94	22.99	23.09		2
64QAM	1	0	22.44	22.74	22.84	0-2	2
	1	25	22.70	22.99	23.33		2
	1	49	22.50	22.82	22.97		2
	25	0	22.02	22.03	22.20	0-3	3
	25	12	22.12	22.12	22.25		3
	25	25	22.04	22.07	22.19		3
	50	0	22.00	22.00	22.11		3

Table 9-21
LTE Band 66 (AWS) Measured P_{max} - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.97	25.04	25.11	0	0
	1	12	24.96	25.09	25.09		0
	1	24	24.90	25.05	25.04		0
	12	0	24.05	24.10	24.30	0-1	1
	12	6	24.00	24.10	24.26		1
	12	13	23.97	24.06	24.21		1
	25	0	24.00	24.14	24.28		1
16QAM	1	0	23.82	24.13	24.22	0-1	1
	1	12	23.81	24.21	24.13		1
	1	24	23.70	24.12	24.06		1
	12	0	23.03	23.32	23.29	0-2	2
	12	6	23.01	23.31	23.28		2
	12	13	22.96	23.31	23.23		2
	25	0	23.03	23.13	23.31		2
64QAM	1	0	23.04	22.95	23.12	0-2	2
	1	12	23.07	23.07	23.10		2
	1	24	23.04	22.98	23.02		2
	12	0	22.12	22.14	22.37	0-3	3
	12	6	22.14	22.11	22.35		3
	12	13	22.01	22.05	22.31		3
	25	0	22.02	22.12	22.23		3

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Table 9-22
LTE Band 66 (AWS) Measured P_{max} - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.92	25.02	25.13	0	0	
	1	7	24.82	25.04	25.05		0	
	1	14	24.86	24.96	25.02		0	
	8	0	24.02	24.10	24.30	0-1	1	
	8	4	24.01	24.14	24.23		1	
	8	7	23.93	24.06	24.17		1	
16QAM	15	0	23.98	24.08	24.21	0-1	1	
	1	0	23.92	24.30	24.29		1	
	1	7	23.80	24.24	24.20		1	
	1	14	23.78	24.22	24.13	0-2	1	
	8	0	23.04	23.21	23.39		2	
	8	4	23.06	23.28	23.36		2	
64QAM	8	7	22.99	23.19	23.30	0-2	2	
	15	0	22.98	23.18	23.36		2	
	64QAM	1	0	22.70	22.88	23.27	0-2	2
		1	7	22.70	22.87	23.20		2
		1	14	22.66	22.84	23.15		2
		8	0	22.14	22.13	22.29	0-3	3
8		4	22.11	22.20	22.28	3		
8		7	22.07	22.14	22.24	3		
	15	0	22.13	22.08	22.28		3	

Table 9-23
LTE Band 66 (AWS) Measured P_{max} -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.82	25.09	25.04	0	0
	1	2	24.90	25.14	25.10		0
	1	5	24.83	25.05	24.99		0
	3	0	24.82	25.00	25.08		0
	3	2	24.89	25.03	25.11		0
	3	3	24.87	24.96	25.08		0
	6	0	23.92	24.07	24.41	0-1	1
16QAM	1	0	23.76	24.06	24.11	0-1	1
	1	2	23.82	24.14	24.16		1
	1	5	23.76	24.05	24.12		1
	3	0	23.78	23.98	23.94		1
	3	2	23.82	23.96	23.91		1
	3	3	23.79	23.92	23.88		1
	6	0	22.92	23.22	23.20	0-2	2
64QAM	1	0	22.61	23.27	23.14	0-2	2
	1	2	22.73	23.33	23.18		2
	1	5	22.57	23.23	23.10		2
	3	0	22.80	23.04	23.08		2
	3	2	22.84	23.08	23.07		2
	3	3	22.82	23.06	23.05		2
	6	0	21.97	22.00	22.22	0-3	3

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Table 9-24
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.53	22.61	22.96	0	0
	1	50	22.78	22.86	22.91		0
	1	99	22.63	22.66	22.92		0
	50	0	22.84	22.93	22.95	0-1	0
	50	25	22.93	22.94	22.93		0
	50	50	22.91	22.91	22.94		0
	100	0	22.93	22.93	22.94		0
16QAM	1	0	22.87	22.99	23.38	0-1	0
	1	50	23.11	23.23	23.20		0
	1	99	23.06	23.08	23.37		0
	50	0	22.80	22.88	22.98	0-2	0
	50	25	22.98	22.96	23.04		0
	50	50	22.91	23.04	23.03		0
	100	0	22.94	22.93	22.99		0
64QAM	1	0	22.54	22.63	23.05	0-2	0
	1	50	22.86	22.96	23.02		0
	1	99	22.79	22.80	23.12		0
	50	0	21.88	21.96	22.00	0-3	1
	50	25	21.97	21.99	22.07		1
	50	50	21.92	22.00	22.09		1
	100	0	21.94	21.93	22.02		1

Table 9-25
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.22	22.24	22.44	0	0
	1	36	22.44	22.42	22.50		0
	1	74	22.24	22.18	22.33		0
	36	0	22.44	22.52	22.57	0-1	0
	36	18	22.55	22.55	22.58		0
	36	37	22.44	22.55	22.57		0
	75	0	22.46	22.46	22.52		0
16QAM	1	0	22.83	22.87	23.01	0-1	0
	1	36	22.93	23.04	23.00		0
	1	74	22.71	22.82	22.89		0
	36	0	22.51	22.54	22.65	0-2	0
	36	18	22.60	22.57	22.67		0
	36	37	22.51	22.53	22.63		0
	75	0	22.44	22.46	22.52		0
64QAM	1	0	22.69	22.77	22.89	0-2	0
	1	36	22.88	22.97	22.98		0
	1	74	22.68	22.69	22.86		0
	36	0	22.02	22.07	22.11	0-3	1
	36	18	22.09	22.10	22.12		1
	36	37	22.04	22.07	22.11		1
	75	0	22.04	22.03	22.06		1

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Table 9-26
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.21	22.13	22.27	0	0
	1	25	22.35	22.42	22.49		0
	1	49	22.23	22.23	22.29		0
	25	0	22.40	22.48	22.53	0-1	0
	25	12	22.45	22.55	22.57		0
	25	25	22.37	22.48	22.52		0
50	0	22.41	22.47	22.49	0		
16QAM	1	0	22.83	22.88	22.78	0-1	0
	1	25	23.03	23.11	23.02		0
	1	49	22.84	22.92	22.81		0
	25	0	22.47	22.54	22.52	0-2	0
	25	12	22.56	22.61	22.53		0
	25	25	22.42	22.60	22.54		0
50	0	22.43	22.45	22.45	0		
64QAM	1	0	22.82	22.65	22.79	0-2	0
	1	25	23.04	22.95	23.05		0
	1	49	22.84	22.67	22.84		0
	25	0	21.94	22.00	22.05	0-3	1
	25	12	21.99	22.02	22.10		1
	25	25	21.89	21.99	22.10		1
50	0	21.93	21.95	21.99	1		

Table 9-27
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.46	22.41	22.43	0	0
	1	12	22.44	22.51	22.41		0
	1	24	22.38	22.39	22.32		0
	12	0	22.50	22.55	22.65	0-1	0
	12	6	22.47	22.53	22.63		0
	12	13	22.44	22.50	22.51		0
25	0	22.48	22.51	22.58			
16QAM	1	0	23.04	23.02	23.06	0-1	0
	1	12	23.01	23.09	23.00		0
	1	24	22.93	23.05	22.94		0
	12	0	22.55	22.68	22.66	0-2	0
	12	6	22.55	22.71	22.67		0
	12	13	22.44	22.68	22.57		0
25	0	22.45	22.56	22.57			
64QAM	1	0	22.91	22.93	22.84	0-2	0
	1	12	22.89	23.00	22.83		0
	1	24	22.79	22.91	22.73		0
	12	0	22.08	22.14	22.23	0-3	1
	12	6	22.08	22.10	22.21		1
	12	13	22.00	22.08	22.11		1
25	0	21.96	22.06	22.15			

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Table 9-28
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.39	22.44	22.49	0	0
	1	7	22.23	22.37	22.37		0
	1	14	22.28	22.36	22.36		0
	8	0	22.54	22.59	22.60	0-1	0
	8	4	22.50	22.63	22.61		0
	8	7	22.46	22.56	22.57		0
16QAM	15	0	22.48	22.58	22.56		0
	1	0	23.01	23.17	23.10	0-1	0
	1	7	22.92	23.20	22.99		0
	1	14	22.90	23.10	23.00		0
	8	0	22.57	22.49	22.65	0-2	0
	8	4	22.54	22.57	22.63		0
8	7	22.50	22.47	22.59	0		
64QAM	15	0	22.52	22.63	22.63		0
	1	0	22.98	22.96	23.13	0-2	0
	1	7	22.83	22.92	22.99		0
	1	14	22.94	22.91	23.04		
	8	0	22.14	22.06	22.24	0-3	1
	8	4	22.13	22.12	22.22		1
	8	7	22.08	22.01	22.15		1
	15	0	22.06	22.14	22.18		1

Table 9-29
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.29	22.47	22.48	0	0
	1	2	22.34	22.51	22.56		0
	1	5	22.25	22.40	22.45		0
	3	0	22.32	22.38	22.32		0
	3	2	22.34	22.39	22.35		0
	3	3	22.31	22.35	22.34		0
	6	0	22.45	22.52	22.56	0-1	0
16QAM	1	0	23.05	23.11	22.96	0-1	0
	1	2	23.07	23.18	23.02		0
	1	5	22.99	23.07	22.87		0
	3	0	22.54	22.64	22.65		0
	3	2	22.55	22.63	22.67		0
	3	3	22.49	22.60	22.63		0
64QAM	6	0	22.54	22.69	22.42	0-2	0
	1	0	22.80	23.22	23.21	0-2	0
	1	2	22.85	23.26	23.24		0
	1	5	22.74	23.15	23.14		0
	3	0	22.58	22.66	22.76		0
	3	2	22.55	22.67	22.77		0
	3	3	22.50	22.60	22.70		0
	6	0	21.96	21.96	22.02	0-3	1

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Table 9-30

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max})- 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.41	22.30	22.52	0	0
	1	50	22.58	22.46	22.48		0
	1	99	22.34	22.31	22.39		0
	50	0	22.61	22.59	22.50	0-1	0
	50	25	22.74	22.66	22.68		0
	50	50	22.63	22.60	22.49		0
	100	0	22.57	22.56	22.57		0
16QAM	1	0	22.36	22.29	22.56	0-1	0
	1	50	22.56	22.52	22.51		0
	1	99	22.30	22.31	22.31		0
	50	0	22.58	22.59	22.55	0-2	0
	50	25	22.74	22.63	22.68		0
	50	50	22.63	22.61	22.50		0
	100	0	22.69	22.58	22.65		0
64QAM	1	0	22.57	22.46	22.59	0-2	0
	1	50	22.66	22.62	22.62		0
	1	99	22.52	22.36	22.37		0
	50	0	22.26	22.24	22.16	0-3	1
	50	25	22.30	22.28	22.30		1
	50	50	22.29	22.28	22.18		1
	100	0	22.28	22.14	22.17		1

Table 9-31

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max}) - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.41	22.48	22.46	0	0
	1	36	22.53	22.53	22.39		0
	1	74	22.37	22.41	22.24		0
	36	0	22.75	22.56	22.51	0-1	0
	36	18	22.72	22.61	22.48		0
	36	37	22.63	22.63	22.48		0
	75	0	22.65	22.53	22.44		0
16QAM	1	0	22.77	22.76	22.82	0-1	0
	1	36	22.74	22.78	22.65		0
	1	74	22.54	22.61	22.47		0
	36	0	22.73	22.54	22.54	0-2	0
	36	18	22.71	22.56	22.49		0
	36	37	22.68	22.59	22.50		0
	75	0	22.66	22.56	22.36		0
64QAM	1	0	22.67	22.37	22.66	0-2	0
	1	36	22.70	22.59	22.59		0
	1	74	22.44	22.44	22.40		0
	36	0	22.30	22.21	22.14	0-3	1
	36	18	22.32	22.20	22.08		1
	36	37	22.19	22.27	22.10		1
	75	0	22.26	22.14	22.09		1

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Table 9-32

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max}) - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.27	22.18	22.14	0	0
	1	25	22.64	22.52	22.48		0
	1	49	22.31	22.25	22.09		0
	25	0	22.67	22.55	22.44	0-1	0
	25	12	22.71	22.54	22.47		0
	25	25	22.67	22.64	22.48		0
	50	0	22.63	22.51	22.35		0
16QAM	1	0	22.66	22.56	22.43	0-1	0
	1	25	22.61	22.61	22.48		0
	1	49	22.27	22.27	22.15		0
	25	0	22.67	22.55	22.43	0-2	0
	25	12	22.80	22.62	22.57		0
	25	25	22.58	22.60	22.41		0
	50	0	22.63	22.46	22.30		0
64QAM	1	0	22.42	22.27	22.16	0-2	0
	1	25	22.65	22.63	22.44		0
	1	49	22.48	22.33	22.19		0
	25	0	22.26	22.11	22.08	0-3	1
	25	12	22.27	22.17	22.05		1
	25	25	22.19	22.18	22.02		1
	50	0	22.24	22.05	21.90		1

Table 9-33

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max}) - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	22.78	22.67	22.55	0	0	
	1	12	22.77	22.62	22.58		0	
	1	24	22.59	22.53	22.48		0	
	12	0	22.92	22.72	22.60	0-1	0	
	12	6	22.73	22.70	22.69		0	
	12	13	22.77	22.64	22.55		0	
16QAM	25	0	22.84	22.63	22.58	0-1	0	
	1	0	22.66	22.54	22.62		0	
	1	12	22.65	22.49	22.56		0	
	1	24	22.55	22.47	22.46	0-2	0	
	12	0	22.64	22.57	22.60		0	
	12	6	22.62	22.55	22.57		0	
	12	13	22.68	22.51	22.44		0	
64QAM	25	0	22.81	22.63	22.62	0-2	0	
	1	0	22.84	22.68	22.71		0-3	0
	1	12	22.85	22.74	22.66			0
	1	24	22.60	22.62	22.51	0		
	12	0	22.43	22.30	22.22	1		
	12	6	22.41	22.19	22.17	1		
	12	13	22.34	22.22	22.10	1		
	25	0	22.32	22.21	22.22	1		

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Table 9-34

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max}) - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.89	22.73	22.58	0	0
	1	7	22.74	22.68	22.51		0
	1	14	22.70	22.66	22.45		0
	8	0	22.85	22.78	22.69	0-1	0
	8	4	22.82	22.79	22.57		0
	8	7	22.83	22.74	22.50		0
	15	0	22.82	22.67	22.58		0
16QAM	1	0	22.88	22.62	22.57	0-1	0
	1	7	22.79	22.68	22.47		0
	1	14	22.68	22.63	22.48		0
	8	0	22.73	22.61	22.49	0-2	0
	8	4	22.75	22.66	22.50		0
	8	7	22.69	22.62	22.38		0
	15	0	22.79	22.64	22.53		0
64QAM	1	0	22.85	22.73	22.64	0-2	0
	1	7	22.79	22.74	22.59		0
	1	14	22.62	22.65	22.57		0
	8	0	22.45	22.37	22.29	0-3	1
	8	4	22.46	22.45	22.26		1
	8	7	22.44	22.39	22.20		1
	15	0	22.41	22.34	22.26		1

Table 9-35

LTE Band 66 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 66 as PCC (Measured P_{max}) - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.80	22.63	22.43	0	0
	1	2	22.73	22.64	22.60		0
	1	5	22.57	22.61	22.45		0
	3	0	22.71	22.67	22.42		0
	3	2	22.70	22.66	22.46		0
	3	3	22.67	22.57	22.37		0
	6	0	22.75	22.68	22.52	0-1	0
16QAM	1	0	22.70	22.60	22.55	0-1	0
	1	2	22.86	22.63	22.56		0
	1	5	22.71	22.55	22.49		0
	3	0	22.59	22.53	22.36		0
	3	2	22.62	22.51	22.38		0
	3	3	22.60	22.52	22.28		0
	6	0	22.61	22.54	22.37	0-2	0
64QAM	1	0	22.74	22.58	22.54	0-2	0
	1	2	22.85	22.68	22.59		0
	1	5	22.79	22.69	22.51		0
	3	0	23.03	23.03	22.75		0
	3	2	23.00	22.98	22.87		0
	3	3	23.02	22.90	22.76		0
	6	0	22.26	22.22	22.07	0-3	1

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LTE Band 2 (PCS)

Table 9-36
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.12	24.96	24.85	0	0
	1	50	24.99	24.94	24.77		0
	1	99	25.04	24.88	24.65		0
	50	0	24.03	23.94	23.78	0-1	1
	50	25	24.12	23.90	23.92		1
	50	50	24.16	23.93	23.83		1
	100	0	24.11	23.92	23.81		1
16QAM	1	0	24.38	24.29	24.06	0-1	1
	1	50	24.48	24.36	24.04		1
	1	99	24.44	24.19	24.17		1
	50	0	23.05	22.88	22.84	0-2	2
	50	25	23.17	22.98	22.91		2
	50	50	23.10	22.94	22.94		2
	100	0	23.08	22.88	22.87		2
64QAM	1	0	23.28	23.16	23.07	0-2	2
	1	50	23.35	23.27	23.02		2
	1	99	23.34	23.12	22.94		2
	50	0	22.08	21.92	21.82	0-3	3
	50	25	22.10	22.00	21.94		3
	50	50	22.14	21.94	21.96		3
	100	0	22.10	21.94	21.89		3

Table 9-37
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.81	24.99	24.78	0	0
	1	36	24.96	24.99	24.75		0
	1	74	24.93	24.97	24.78		0
	36	0	24.07	23.82	23.82	0-1	1
	36	18	24.07	23.86	23.87		1
	36	37	24.09	23.90	23.87		1
16QAM	75	0	24.01	23.85	23.85	0-1	1
	1	0	24.23	24.00	23.86		1
	1	36	24.36	24.05	23.84		1
	1	74	24.30	24.05	23.80	0-2	1
	36	0	23.03	22.85	22.81		2
	36	18	23.06	22.93	22.86		2
64QAM	36	37	23.06	22.93	22.89	0-2	2
	75	0	23.05	22.87	22.87		2
	1	0	22.77	23.14	22.57	0-2	2
	1	36	22.87	23.23	22.56		2
	1	74	22.82	23.16	22.51		2
	64QAM	36	0	22.14	21.86	22.09	0-3
36		18	22.09	21.92	22.00	3	
36		37	22.09	21.94	22.00	3	
75		0	22.08	21.90	21.92	3	

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Table 9-38
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.73	24.61	24.97	0	0	
	1	25	25.03	24.97	24.92		0	
	1	49	24.80	24.73	24.91		0	
	25	0	24.06	23.95	23.97	0-1	1	
	25	12	24.16	24.08	24.11		1	
	25	25	24.06	23.96	23.99		1	
16QAM	50	0	24.07	23.96	23.97	0-1	1	
	1	0	24.05	24.15	24.43		1	
	1	25	24.37	24.23	24.38		1	
	1	49	24.12	24.24	24.43	0-2	1	
	25	0	23.13	22.97	22.99		2	
	25	12	23.22	23.07	23.11		2	
64QAM	25	25	23.11	22.96	22.97	0-2	2	
	50	0	23.09	22.95	23.01		2	
	64QAM	1	0	23.14	23.14	23.28	0-2	2
		1	25	23.49	23.49	23.23		2
		1	49	23.22	23.23	23.22		2
		25	0	22.20	22.01	22.14	0-3	3
25		12	22.29	22.10	22.25	3		
25		25	22.20	21.98	22.10	3		
50	0	22.14	21.99	22.03		3		

Table 9-39
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.90	24.91	24.88	0	0
	1	12	24.97	24.94	24.91		0
	1	24	24.87	24.80	24.86		0
	12	0	24.18	24.14	24.05	0-1	1
	12	6	24.22	24.17	24.07		1
	12	13	24.12	23.99	23.99		1
16QAM	25	0	24.15	24.05	24.05	0-1	1
	1	0	24.36	24.25	24.25		1
	1	12	24.34	24.28	24.26		1
	1	24	24.27	24.13	24.20	0-2	1
	12	0	23.15	23.23	23.06		2
	12	6	23.18	23.25	23.09		2
64QAM	12	13	23.06	23.12	23.02	0-2	2
	25	0	23.15	23.09	22.94		2
	1	0	23.46	23.49	23.06		0-2
	1	12	23.46	23.49	23.07	2	
	1	24	23.41	23.37	23.08	2	
	64QAM	12	0	22.21	22.16	22.01	0-3
12		6	22.23	22.23	22.03	3	
12		13	22.15	22.04	21.93	3	
25		0	22.17	22.05	22.01		3

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Table 9-40
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.04	24.97	24.90	0	0
	1	7	25.03	24.91	24.89		0
	1	14	24.98	24.92	24.83		0
	8	0	24.17	24.12	24.01	0-1	1
	8	4	24.21	24.13	24.01		1
	8	7	24.17	24.10	23.99		1
	15	0	24.18	24.14	24.03		1
16QAM	1	0	24.38	24.41	24.18	0-1	1
	1	7	24.34	24.35	24.08		1
	1	14	24.30	24.34	24.08		1
	8	0	23.27	23.30	23.15	0-2	2
	8	4	23.25	23.25	23.12		2
	8	7	23.22	23.22	23.08		2
	15	0	23.09	23.21	22.96		2
64QAM	1	0	23.25	23.28	23.41	0-2	2
	1	7	23.23	23.25	23.29		2
	1	14	23.24	23.17	23.36		2
	8	0	22.18	22.25	22.07	0-3	3
	8	4	22.17	22.25	22.03		3
	8	7	22.15	22.21	22.01		3
	15	0	22.31	22.24	22.18		3

Table 9-41
LTE Band 2 (PCS) Ant 2 Measured P_{max} - 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.03	24.96		0	0
	1	2	25.05	25.01	24.95		0
	1	5	24.96	24.93	24.91		0
	3	0	25.11	24.93	24.90		0
	3	2	25.10	24.99	24.88		0
	3	3	25.07	24.96	24.88		0
	6	0	24.11	24.09	23.94	0-1	1
16QAM	1	0	24.28	24.34	24.16	0-1	1
	1	2	24.30	24.37	24.22		1
	1	5	24.22	24.29	24.12		1
	3	0	23.82	24.03	24.10		1
	3	2	23.86	24.07	24.10		1
	3	3	23.78	24.02	24.08		1
	6	0	23.02	23.09	23.08	0-2	2
64QAM	1	0	23.46	23.25	23.22	0-2	2
	1	2	23.47	23.30	23.23		2
	1	5	23.41	23.22	23.17		2
	3	0	23.20	23.02	22.93		2
	3	2	23.27	23.04	22.90		2
	3	3	23.22	23.01	22.90		2
	6	0	22.38	22.30	22.13	0-3	3

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Table 9-42
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.14	24.15	23.92	0	0
	1	50	24.04	24.09	23.77		0
	1	99	24.07	24.13	23.94		0
	50	0	24.07	24.01	24.04	0-1	0.2
	50	25	24.13	24.15	24.06		0.2
	50	50	24.09	24.05	24.08		0.2
	100	0	24.14	24.10	24.03		0.2
16QAM	1	0	24.03	24.01	24.13	0-1	0.2
	1	50	24.07	23.94	24.12		0.2
	1	99	24.02	24.00	24.14		0.2
	50	0	23.08	23.06	23.09	0-2	1.2
	50	25	23.17	23.15	23.17		1.2
	50	50	23.15	23.14	23.19		1.2
	100	0	23.19	23.07	23.08		1.2
64QAM	1	0	23.29	23.27	22.82	0-2	1.2
	1	50	23.21	23.27	22.88		1.2
	1	99	23.33	23.29	22.88		1.2
	50	0	22.09	22.06	22.12	0-3	2.2
	50	25	22.20	22.18	22.29		2.2
	50	50	22.27	22.25	22.25		2.2
	100	0	22.21	22.03	22.06		2.2

Table 9-43
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.44	24.43	24.35	0	0
	1	36	24.36	24.40	24.32		0
	1	74	24.41	24.36	24.20		0
	36	0	23.90	23.57	23.54	0-1	0.2
	36	18	23.87	23.68	23.59		0.2
	36	37	23.88	23.61	23.63		0.2
	75	0	23.79	23.57	23.65		0.2
16QAM	1	0	23.89	23.73	23.53	0-1	0.2
	1	36	23.96	23.75	23.73		0.2
	1	74	23.57	23.65	23.93		0.2
	36	0	22.84	22.63	22.61	0-2	1.2
	36	18	22.97	22.67	22.74		1.2
	36	37	22.88	22.72	22.70		1.2
	75	0	22.84	22.61	22.70		1.2
64QAM	1	0	22.52	22.62	22.54	0-2	1.2
	1	36	22.56	22.89	22.60		1.2
	1	74	22.78	22.65	22.53		1.2
	36	0	21.82	21.64	21.60	0-3	2.2
	36	18	21.90	21.65	21.69		2.2
	36	37	21.92	21.72	21.72		2.2
	75	0	21.88	21.66	21.65		2.2

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Table 9-44
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.39	24.10	24.38	0	0
	1	25	24.35	24.18	24.25		0
	1	49	24.36	24.15	24.22		0
	25	0	23.79	23.98	23.61	0-1	0.2
	25	12	23.95	23.78	23.59		0.2
	25	25	23.80	23.60	23.55		0.2
16QAM	50	0	23.71	23.67	23.61	0-1	0.2
	1	0	23.79	23.72	23.92		0.2
	1	25	23.92	23.98	23.86		0.2
	1	49	23.86	23.60	23.98	0-2	0.2
	25	0	22.81	22.75	22.60		1.2
	25	12	22.94	22.80	22.74		1.2
64QAM	25	25	22.88	22.63	22.60	0-2	1.2
	50	0	22.76	22.61	22.60		1.2
	1	0	22.62	22.32	22.77	0-2	1.2
	1	25	22.82	22.76	22.61		1.2
	1	49	22.58	22.38	22.63		1.2
	64QAM	25	0	21.90	21.65	21.66	0-3
25		12	22.08	21.84	21.73	2.2	
25		25	21.91	21.68	21.61	2.2	
50		0	21.87	21.77	21.69	2.2	

Table 9-45
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.25	24.26	24.31	0	0	
	1	12	24.30	24.35	24.37		0	
	1	24	24.36	24.38	24.24		0	
	12	0	24.02	23.95	23.78	0-1	0.2	
	12	6	24.06	23.92	23.76		0.2	
	12	13	23.96	23.75	23.74		0.2	
16QAM	25	0	23.95	23.72	23.63	0-1	0.2	
	1	0	24.18	23.84	23.62		0.2	
	1	12	24.11	23.80	23.75		0.2	
	1	24	23.92	23.85	23.96	0-2	0.2	
	12	0	23.09	22.93	22.94		1.2	
	12	6	23.14	22.95	22.92		1.2	
64QAM	12	13	23.03	22.80	22.84	0-2	1.2	
	25	0	23.00	22.78	22.75		1.2	
	64QAM	1	0	22.83	22.68	22.88	0-2	1.2
		1	12	22.85	22.73	22.57		1.2
		1	24	22.70	22.65	22.74		1.2
		64QAM	12	0	22.05	21.95	21.78	0-3
12			6	22.08	21.93	21.80	2.2	
12			13	21.99	21.76	21.69	2.2	
64QAM	25	0	22.04	21.86	21.71		2.2	

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Table 9-46
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.53	24.55	24.40	0	0
	1	7	24.40	24.52	24.38		0
	1	14	24.37	24.43	24.39		0
	8	0	23.92	23.88	23.99	0-1	0.2
	8	4	23.88	23.91	24.02		0.2
	8	7	23.87	23.82	23.79		0.2
	15	0	23.87	23.81	23.71		0.2
16QAM	1	0	24.01	23.75	23.99	0-1	0.2
	1	7	23.86	23.78	24.01		0.2
	1	14	23.86	23.82	23.82		0.2
	8	0	22.79	22.91	22.78	0-2	1.2
	8	4	22.83	22.95	22.77		1.2
	8	7	23.01	23.02	22.81		1.2
	15	0	22.96	22.90	22.82		1.2
64QAM	1	0	22.95	22.88	22.85	0-2	1.2
	1	7	22.95	22.77	22.81		1.2
	1	14	22.91	22.81	22.88		1.2
	8	0	21.85	21.90	21.95	0-3	2.2
	8	4	21.87	22.02	21.94		2.2
	8	7	21.86	22.05	21.89		2.2
	15	0	21.79	21.99	21.77		2.2

Table 9-47
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 7 (Swivel)- 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.28	24.33	24.27	0	0
	1	2	24.38	24.16	24.42		0
	1	5	24.34	24.15	24.33		0
	3	0	24.30	24.13	24.24		0
	3	2	24.36	24.15	24.28		0
	3	3	24.30	24.25	24.25		0
	6	0	24.02	23.80	23.81	0-1	0.2
16QAM	1	0	23.97	23.85	23.85	0-1	0.2
	1	2	23.95	23.86	23.89		0.2
	1	5	23.96	23.85	23.52		0.2
	3	0	23.84	23.72	23.62		0.2
	3	2	23.72	23.67	23.54		0.2
	3	3	23.94	23.55	23.62		0.2
	6	0	22.96	22.77	22.82	0-2	1.2
64QAM	1	0	22.77	22.85	22.96	0-2	1.2
	1	2	22.95	22.85	22.92		1.2
	1	5	22.85	22.78	22.90		1.2
	3	0	22.81	22.77	22.88		1.2
	3	2	23.04	22.75	22.80		1.2
	3	3	22.77	22.76	22.97		1.2
	6	0	22.02	21.80	21.93	0-3	2.2

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Table 9-48
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.88	22.75	22.66	0	0
	1	50	22.78	22.77	22.60		0
	1	99	22.79	22.73	22.62		0
	50	0	22.81	22.70	22.66	0-1	0
	50	25	22.95	22.81	22.76		0
	50	50	22.92	22.79	22.72		0
	100	0	22.87	22.77	22.69		0
16QAM	1	0	23.15	23.09	23.01	0-1	0
	1	50	23.10	23.02	22.92		0
	1	99	23.16	23.10	23.06		0
	50	0	22.86	22.72	22.67	0-2	0
	50	25	22.97	22.80	22.77		0
	50	50	22.92	22.78	22.70		0
	100	0	22.93	22.71	22.69		0
64QAM	1	0	22.99	22.90	22.86	0-2	0
	1	50	23.04	22.95	22.77		0
	1	99	23.02	22.86	22.73		0
	50	0	21.99	21.84	21.79	0-3	1
	50	25	22.07	21.95	21.88		1
	50	50	22.06	21.93	21.85		1
	100	0	22.00	21.88	21.81		1

Table 9-49
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.51	22.55	22.54	0	0
	1	36	22.75	22.63	22.62		0
	1	74	22.66	22.62	22.60		0
	36	0	22.75	22.73	22.71	0-1	0
	36	18	22.85	22.84	22.77		0
	36	37	22.87	22.84	22.81		0
	75	0	22.77	22.77	22.73		0
16QAM	1	0	22.77	22.77	22.73	0-1	0
	1	36	22.93	22.86	22.80		0
	1	74	22.88	22.87	22.87		0
	36	0	22.54	22.42	22.46	0-2	0
	36	18	22.64	22.52	22.60		0
	36	37	22.61	22.50	22.57		0
	75	0	22.49	22.45	22.44		0
64QAM	1	0	22.66	22.72	22.71	0-2	0
	1	36	22.85	22.77	22.75		0
	1	74	22.75	22.76	22.73		0
	36	0	22.15	22.03	22.05	0-3	1
	36	18	22.25	22.16	22.11		1
	36	37	22.22	22.10	22.16		1
	75	0	22.13	22.06	22.10		1

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Table 9-50
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.63	22.64	22.85	0	0
	1	25	22.92	22.80	22.82		0
	1	49	22.67	22.59	22.83		0
	25	0	22.89	22.86	22.85	0-1	0
	25	12	23.00	22.98	22.92		0
	25	25	22.89	22.83	22.82		0
50	0	22.89	22.88	22.86			
16QAM	1	0	22.88	22.78	22.98	0-1	0
	1	25	23.16	23.06	22.98		0
	1	49	22.96	22.87	22.90		0
	25	0	22.56	22.53	22.41	0-2	0
	25	12	22.61	22.60	22.48		0
	25	25	22.53	22.49	22.41		0
50	0	22.50	22.48	22.40			
64QAM	1	0	22.83	22.61	23.09	0-2	0
	1	25	23.21	22.93	23.02		0
	1	49	22.97	22.68	23.03		0
	25	0	22.05	22.02	22.07	0-3	1
	25	12	22.16	22.15	22.14		1
	25	25	22.04	22.02	22.02		1
50	0	22.10	22.02	22.04			

Table 9-51
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.68	22.75	22.59	0	0
	1	12	22.75	22.85	22.66		0
	1	24	22.65	22.70	22.56		0
	12	0	22.94	22.93	22.85	0-1	0
	12	6	22.99	22.95	22.87		0
	12	13	22.92	22.87	22.79		0
16QAM	25	0	22.99	22.88	22.84	0-1	0
	1	0	23.02	23.00	23.11		0
	1	12	23.07	23.02	23.21		0
	1	24	22.99	22.94	23.09	0-2	0
	12	0	22.64	22.70	22.54		0
	12	6	22.66	22.73	22.56		0
64QAM	12	13	22.54	22.62	22.46	0-2	0
	25	0	22.56	22.58	22.50		0
	1	0	23.03	22.93	22.68	0-2	0
	1	12	23.06	22.98	22.72		0
	1	24	22.98	22.92	22.65		0
	12	0	22.26	22.16	22.16	0-3	1
12	6	22.27	22.22	22.20	1		
12	13	22.21	22.13	22.06	1		
25	0	22.15	22.15	22.12	1		

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Table 9-52
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.71	22.67	22.76	0	0
	1	7	22.63	22.66	22.67		0
	1	14	22.68	22.62	22.65		0
	8	0	22.92	22.87	22.80	0-1	0
	8	4	22.90	22.86	22.78		0
	8	7	22.85	22.81	22.75		0
	15	0	22.86	22.82	22.77		0
16QAM	1	0	23.10	23.13	23.07	0-1	0
	1	7	23.06	23.11	23.04		0
	1	14	23.05	23.07	23.00		0
	8	0	22.68	22.53	22.61	0-2	0
	8	4	22.68	22.56	22.61		0
	8	7	22.59	22.49	22.53		0
	15	0	22.65	22.61	22.52		0
64QAM	1	0	23.16	22.97	23.14	0-2	0
	1	7	23.04	22.89	23.15		0
	1	14	23.13	22.82	23.06		0
	8	0	22.32	22.17	22.20	0-3	1
	8	4	22.35	22.14	22.23		1
	8	7	22.30	22.11	22.17		1
	15	0	22.27	22.21	22.10		1

Table 9-53
LTE Band 2 (PCS) Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.81	22.65	22.74	0	0
	1	2	22.88	22.69	22.78		0
	1	5	22.76	22.61	22.69		0
	3	0	22.66	22.66	22.59		0
	3	2	22.66	22.69	22.61		0
	3	3	22.65	22.67	22.57		0
	6	0	22.89	22.83	22.75	0-1	0
16QAM	1	0	23.03	23.17	22.99	0-1	0
	1	2	23.11	23.17	23.01		0
	1	5	22.97	23.10	22.93		0
	3	0	22.66	22.57	22.58		0
	3	2	22.69	22.61	22.58		0
	3	3	22.64	22.55	22.56		0
	6	0	22.47	22.60	22.60	0-2	0
64QAM	1	0	23.25	22.85	23.12	0-2	0
	1	2	23.28	22.94	23.17		0
	1	5	23.23	22.84	23.05		0
	3	0	22.77	22.60	22.59		0
	3	2	22.79	22.62	22.62		0
	3	3	22.75	22.58	22.55		0
	6	0	22.16	22.11	21.97	0-3	1

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Table 9-54
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA
with LTE Band 2 as PCC (Measured P_{max}) PCC - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.42	22.42	22.55	0	0
	1	50	22.41	22.38	22.41		0
	1	99	22.33	22.43	22.35		0
	50	0	22.37	22.41	22.38	0-1	0
	50	25	22.58	22.48	22.59		0
	50	50	22.49	22.54	22.57		0
	100	0	22.46	22.45	22.51		0
16QAM	1	0	22.54	22.72	22.62	0-1	0
	1	50	22.43	22.53	22.54		0
	1	99	22.66	22.62	22.62		0
	50	0	22.38	22.42	22.47	0-2	0
	50	25	22.60	22.51	22.61		0
	50	50	22.53	22.56	22.55		0
	100	0	22.40	22.37	22.47		0
64QAM	1	0	22.20	22.15	22.16	0-2	0
	1	50	22.24	22.18	22.19		0
	1	99	22.17	22.22	22.31		0
	50	0	21.93	21.99	21.98	0-3	1
	50	25	22.07	22.03	22.16		1
	50	50	22.07	22.15	22.06		1
	100	0	22.05	22.00	22.12		1

Table 9-55
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA
with LTE Band 2 as PCC (Measured P_{max}) - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.42	22.44	22.52	0	0
	1	36	22.45	22.53	22.47		0
	1	74	22.41	22.37	22.49		0
	36	0	22.46	22.45	22.40	0-1	0
	36	18	22.62	22.46	22.57		0
	36	37	22.61	22.54	22.58		0
16QAM	75	0	22.53	22.43	22.36	0-1	0
	1	0	22.22	22.57	22.55		0
	1	36	22.49	22.50	22.43		0
	1	74	22.50	22.37	22.40	0-2	0
	36	0	22.38	22.39	22.32		0
	36	18	22.54	22.43	22.49		0
	36	37	22.57	22.49	22.48		0
64QAM	75	0	22.54	22.43	22.46	0-2	0
	1	0	22.28	22.26	22.39		0
	1	36	22.43	22.43	22.44		0
	1	74	22.37	22.42	22.42	0-3	0
	36	0	21.98	21.99	21.95		1
	36	18	22.13	22.07	22.14		1
	36	37	22.10	22.11	22.13		1
	75	0	22.19	22.08	22.03		1

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Table 9-56
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA
with LTE Band 2 as PCC (Measured P_{max}) - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.18	22.17	22.44	0	0
	1	25	22.40	22.54	22.42		0
	1	49	22.19	22.19	22.40		0
	25	0	22.45	22.40	22.31	0-1	0
	25	12	22.63	22.51	22.44		0
	25	25	22.48	22.44	22.45		0
16QAM	50	0	22.56	22.45	22.42	0	
	1	0	22.24	22.28	22.59	0-1	0
	1	25	22.45	22.54	22.52		0
	1	49	22.23	22.18	22.43		0
	25	0	22.50	22.38	22.42	0-2	0
	25	12	22.56	22.52	22.53		0
25	25	22.46	22.46	22.46	0		
64QAM	50	0	22.47	22.39	22.34	0	
	1	0	22.43	22.46	22.67	0-2	0
	1	25	22.83	22.74	22.76		0
	1	49	22.59	22.55	22.72		0
	25	0	22.12	22.06	22.02	0-3	1
	25	12	22.18	22.17	22.14		1
25	25	22.10	22.12	21.84	1		
	50	0	22.11	22.06	22.04	1	

Table 9-57
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA
with LTE Band 2 as PCC (Measured P_{max}) - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	22.44	22.33	22.37	0	0	
	1	12	22.41	22.47	22.36		0	
	1	24	22.33	22.32	22.31		0	
	12	0	22.64	22.56	22.54	0-1	0	
	12	6	22.63	22.51	22.58		0	
	12	13	22.55	22.49	22.46		0	
16QAM	25	0	22.52	22.48	22.54	0-1	0	
	1	0	22.64	22.55	22.68		0	
	1	12	22.67	22.53	22.62		0	
	1	24	22.44	22.42	22.56	0-2	0	
	12	0	22.62	22.51	22.59		0	
	12	6	22.59	22.49	22.63		0	
	12	13	22.48	22.55	22.50		0	
64QAM	25	0	22.58	22.47	22.58	0-2	0	
	1	0	22.73	22.66	22.71		0-2	0
	1	12	22.97	22.97	22.81			0
	1	24	22.78	22.78	22.70	0-3		0
	12	0	22.25	22.15	21.92		1	
	12	6	22.21	22.24	21.87		1	
	12	13	22.22	22.18	21.71		1	
	25	0	22.18	22.14	21.81		1	

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Table 9-58
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 2 as PCC (Measured P_{max}) - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.48	22.37	22.51	0	0
	1	7	22.46	22.46	22.38		0
	1	14	22.45	22.38	22.39		0
	8	0	22.62	22.57	22.62	0-1	0
	8	4	22.54	22.58	22.56		0
	8	7	22.55	22.54	22.55		0
	15	0	22.54	22.51	22.54		0
16QAM	1	0	22.62	22.48	22.62	0-1	0
	1	7	22.59	22.49	22.59		0
	1	14	22.48	22.45	22.56		0
	8	0	22.44	22.38	22.46	0-2	0
	8	4	22.45	22.41	22.44		0
	8	7	22.41	22.36	22.40		0
	15	0	22.49	22.47	22.53		0
64QAM	1	0	22.81	22.74	22.83	0-2	0
	1	7	22.92	22.93	22.86		0
	1	14	22.72	22.77	22.76		0
	8	0	22.18	22.10	21.58	0-3	1
	8	4	22.14	22.16	21.59		1
	8	7	22.14	22.11	21.55		1
	15	0	22.16	22.10	21.60		1

Table 9-59
LTE Band 2 Ant 3 (AWS) for conditions with NR EN-DC (Measured P_{limit} for all DSI) or Inter-band ULCA with LTE Band 2 as PCC (Measured P_{max}) - 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.42	22.36	22.40	0	0
	1	2	22.44	22.50	22.37		0
	1	5	22.33	22.48	22.33		0
	3	0	22.46	22.44	22.41		0
	3	2	22.43	22.45	22.46		0
	3	3	22.37	22.39	22.35		0
	6	0	22.56	22.47	22.52	0-1	0
16QAM	1	0	22.46	22.50	22.37	0-1	0
	1	2	22.49	22.44	22.57		0
	1	5	22.36	22.32	22.40		0
	3	0	22.45	22.47	22.43		0
	3	2	22.53	22.53	22.51		0
	3	3	22.47	22.44	22.39		0
	6	0	22.41	22.40	22.37	0-2	0
64QAM	1	0	22.69	22.84	22.71	0-2	0
	1	2	22.94	22.97	22.86		0
	1	5	22.73	22.74	22.69		0
	3	0	22.77	22.70	22.74		0
	3	2	22.83	22.76	22.78		0
	3	3	22.66	22.67	22.75		0
	6	0	22.23	22.20	21.67	0-3	1

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LTE Band 30

Table 9-60
LTE Band 30 Ant 2 Measured P_{max} - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.05	0	0
	1	25	24.91		0
	1	49	24.94		0
	25	0	24.08	0-1	1
	25	12	24.15		1
	25	25	24.11		1
	50	0	24.01		1
16QAM	1	0	24.50	0-1	1
	1	25	24.36		1
	1	49	24.28		1
	25	0	23.15	0-2	2
	25	12	23.24		2
	25	25	23.10		2
	50	0	23.09		2
64QAM	1	0	23.43	0-2	2
	1	25	23.36		2
	1	49	23.30		2
	25	0	22.17	0-3	3
	25	12	22.21		3
	25	25	22.09		3
	50	0	22.11		3

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Table 9-61
LTE Band 30 Ant 2 Measured P_{max} - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.06	0	0
	1	12	25.08		0
	1	24	24.99		0
	12	0	24.22	0-1	1
	12	6	24.29		1
	12	13	24.18		1
	25	0	24.31		1
16QAM	1	0	24.46	0-1	1
	1	12	24.45		1
	1	24	24.30		1
	12	0	23.24	0-2	2
	12	6	23.25		2
	12	13	23.18		2
	25	0	23.27		2
64QAM	1	0	23.23	0-2	2
	1	12	23.28		2
	1	24	23.15		2
	12	0	22.31	0-3	3
	12	6	22.36		3
	12	13	22.26		3
	25	0	22.24		3

Note: LTE Band 30 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-62
LTE Band 30 Ant 2 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.66	0	0
	1	25	24.71		0
	1	49	24.73		0
	25	0	23.67	0-1	0.5
	25	12	23.74		0.5
	25	25	23.62		0.5
	50	0	23.70		0.5
16QAM	1	0	23.98	0-1	0.5
	1	25	24.00		0.5
	1	49	24.17		0.5
	25	0	22.76	0-2	1.5
	25	12	22.84		1.5
	25	25	22.67		1.5
	50	0	22.72		1.5
64QAM	1	0	22.95	0-2	1.5
	1	25	23.07		1.5
	1	49	23.02		1.5
	25	0	21.68	0-3	2.5
	25	12	21.67		2.5
	25	25	21.64		2.5
	50	0	21.66		2.5

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Table 9-63
LTE Band 30 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.57	0	0
	1	12	24.65		0
	1	24	24.71		0
	12	0	23.62	0-1	0.5
	12	6	23.60		0.5
	12	13	23.59		0.5
	25	0	23.60		0.5
16QAM	1	0	23.89	0-1	0.5
	1	12	23.92		0.5
	1	24	24.15		0.5
	12	0	22.80	0-2	1.5
	12	6	22.71		1.5
	12	13	22.75		1.5
	25	0	22.61		1.5
64QAM	1	0	22.71	0-2	1.5
	1	12	22.85		1.5
	1	24	22.77		1.5
	12	0	21.70	0-3	2.5
	12	6	21.75		2.5
	12	13	21.68		2.5
	25	0	21.60		2.5

Note: LTE Band 30 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-64
LTE Band 30 Ant 1 Measured P_{limit} for all DSI- 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	22.46	0	0
	1	25	22.48		0
	1	49	22.61		0
	25	0	22.53	0-1	0
	25	12	22.57		0
	25	25	22.56		0
	50	0	22.51		0
16QAM	1	0	22.69	0-1	0
	1	25	22.77		0
	1	49	22.65		0
	25	0	22.62	0-2	0
	25	12	22.69		0
	25	25	22.58		0
	50	0	22.63		0
64QAM	1	0	22.69	0-2	0
	1	25	22.89		0
	1	49	22.70		0
	25	0	22.26	0-3	1
	25	12	22.18		1
	25	25	22.20		1
	50	0	22.06		1

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Table 9-65
LTE Band 30 Ant 1 Measured P_{limit} for all DSI- 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	22.55	0	0
	1	12	22.74		0
	1	24	22.57		0
	12	0	22.47	0-1	0
	12	6	22.53		0
	12	13	22.46		0
	25	0	22.55		0
16QAM	1	0	22.44	0-1	0
	1	12	22.78		0
	1	24	22.40		0
	12	0	22.63	0-2	0
	12	6	22.68		0
	12	13	22.62		0
	25	0	22.48		0
64QAM	1	0	22.73	0-2	0
	1	12	22.77		0
	1	24	22.64		0
	12	0	22.04	0-3	1
	12	6	22.15		1
	12	13	22.16		1
	25	0	22.14		1

Note: LTE Band 30 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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LTE Band 48

Table 9-66

LTE Band 48 Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55340 (3560.0 MHz)	55773 (3603.3 MHz)	56207 (3646.7 MHz)	56640 (3690.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	22.00	21.73	21.87		0	0
	1	50	21.99	21.78	21.85	21.68		0
	1	99	22.05	21.77	21.85	21.66		0
	50	0	21.93	21.86	21.78	21.71	0-1	0
	50	25	22.05	21.96	21.89	21.77		0
	50	50	21.97	21.85	21.88	21.74		0
	100	0	21.93	21.89	21.81	21.69		0
16QAM	1	0	22.27	21.76	22.06	21.67	0-1	0
	1	50	22.30	21.76	22.04	21.69		0
	1	99	22.35	21.81	22.04	21.65		0
	50	0	21.56	21.50	21.43	21.38	0-2	0.5
	50	25	21.62	21.58	21.52	21.39		0.5
	50	50	21.65	21.44	21.51	21.37		0.5
	100	0	21.56	21.51	21.45	21.34		0.5
64QAM	1	0	21.50	21.70	21.66	21.55	0-2	0.5
	1	50	21.53	21.73	21.70	21.65		0.5
	1	99	21.57	21.72	21.71	21.63		0.5
	50	0	20.60	20.49	20.52	20.37	0-3	1.5
	50	25	20.67	20.61	20.54	20.43		1.5
	50	50	20.61	20.48	20.55	20.36		1.5
	100	0	20.60	20.52	20.47	20.32		1.5

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Table 9-67

LTE Band 48 Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 48 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55315 (3557.5 MHz)	55765 (3602.5 MHz)	56215 (3647.5 MHz)	56665 (3692.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.80	21.83	21.84	21.77	0	0
	1	36	21.88	21.89	21.84	21.82		0
	1	74	21.81	21.79	21.89	21.73		0
	36	0	21.84	21.92	21.84	21.80	0-1	0
	36	18	21.96	21.93	22.02	21.87		0
	36	37	21.87	21.89	22.00	21.84		0
	75	0	21.88	21.88	21.96	21.76		0
16QAM	1	0	21.96	21.70	22.14	21.94	0-1	0
	1	36	22.00	21.79	22.16	21.98		0
	1	74	21.95	21.82	22.15	21.92		0
	36	0	21.42	21.45	21.31	21.40	0-2	0.5
	36	18	21.51	21.52	21.47	21.42		0.5
	36	37	21.45	21.44	21.43	21.44		0.5
	75	0	21.36	21.36	21.44	21.28		0.5
64QAM	1	0	21.50	21.08	21.32	21.50	0-2	0.5
	1	36	21.59	21.18	21.34	21.64		0.5
	1	74	21.59	21.18	21.34	21.53		0.5
	36	0	20.63	20.62	20.52	20.59	0-3	1.5
	36	18	20.71	20.67	20.70	20.64		1.5
	36	37	20.63	20.57	20.63	20.62		1.5
	75	0	20.60	20.60	20.66	20.50		1.5

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Table 9-68

LTE Band 48 Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 48 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55290 (3555.0 MHz)	55757 (3601.7 MHz)	56223 (3648.3 MHz)	56690 (3695.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.95	21.91	21.91	22.07	0	0
	1	25	21.98	21.93	21.91	21.98		0
	1	49	21.98	21.96	21.94	22.10		0
	25	0	21.82	21.80	21.86	21.75	0-1	0
	25	12	21.96	21.95	22.02	21.97		0
	25	25	21.88	21.92	21.93	21.87		0
	50	0	21.89	21.89	21.94	21.78		0
16QAM	1	0	22.19	21.78	22.16	22.07	0-1	0
	1	25	22.09	21.84	22.16	22.07		0
	1	49	22.14	21.89	22.24	22.11		0
	25	0	21.36	21.31	21.42	21.29	0-2	0.5
	25	12	21.49	21.44	21.56	21.52		0.5
	25	25	21.43	21.40	21.50	21.43		0.5
	50	0	21.39	21.36	21.42	21.29		0.5
64QAM	1	0	21.87	21.22	21.47	21.76	0-2	0.5
	1	25	21.90	21.30	21.49	21.87		0.5
	1	49	21.85	21.35	21.53	21.85		0.5
	25	0	20.50	20.57	20.62	20.44	0-3	1.5
	25	12	20.68	20.72	20.72	20.64		1.5
	25	25	20.63	20.68	20.66	20.59		1.5
	50	0	20.58	20.63	20.64	20.49		1.5

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Table 9-69

LTE Band 48 Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 48 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55265 (3552.5 MHz)	55748 (3600.8 MHz)	56232 (3649.2 MHz)	56715 (3697.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.89	21.75	21.74	21.84	0	0
	1	12	21.93	21.90	21.91	21.91		0
	1	24	21.95	21.90	21.84	21.90		0
	12	0	21.87	21.89	21.92	21.91	0-1	0
	12	6	21.96	21.95	21.98	21.98		0
	12	13	21.97	21.96	21.97	21.92		0
	25	0	21.95	21.94	21.95	21.90		0
16QAM	1	0	22.23	21.90	21.85	22.25	0-1	0
	1	12	22.30	22.03	21.95	22.30		0
	1	24	22.33	22.07	21.92	22.30		0
	12	0	21.40	21.40	21.52	21.38	0-2	0.5
	12	6	21.44	21.48	21.58	21.46		0.5
	12	13	21.45	21.48	21.59	21.46		0.5
	25	0	21.40	21.41	21.49	21.42		0.5
64QAM	1	0	21.25	21.20	21.48	21.23	0-2	0.5
	1	12	21.35	21.34	21.58	21.31		0.5
	1	24	21.35	21.41	21.60	21.33		0.5
	12	0	20.65	20.65	20.61	20.65	0-3	1.5
	12	6	20.74	20.69	20.72	20.71		1.5
	12	13	20.75	20.68	20.70	20.73		1.5
	25	0	20.66	20.63	20.68	20.63		1.5

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LTE Band 41

Table 9-70
LTE Band 41 Measured P_{max} – 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.00	25.09	24.70	24.83	24.61	0	0
	1	50	24.99	24.93	25.01	25.00	24.98		0
	1	99	25.05	25.02	24.66	24.56	24.90		0
	50	0	23.96	24.10	23.96	24.05	23.87	0-1	1
	50	25	24.05	24.22	24.09	24.11	23.99		1
	50	50	24.06	24.17	23.98	23.95	24.04		1
	100	0	24.00	24.11	24.00	24.05	23.97		1
16QAM	1	0	24.02	24.22	23.74	23.95	23.73	0-1	1
	1	50	24.04	24.18	23.99	24.10	24.03		1
	1	99	24.07	24.18	23.72	23.61	23.91		1
	50	0	23.02	23.15	22.96	23.10	22.94	0-2	2
	50	25	23.12	23.24	23.13	23.17	23.05		2
	50	50	23.13	23.19	23.00	23.04	23.09		2
	100	0	23.04	23.12	23.02	23.10	22.95		2
64QAM	1	0	22.51	22.67	22.17	22.46	22.20	0-2	2
	1	50	22.55	22.70	22.51	22.69	22.60		2
	1	99	22.62	22.68	22.48	22.41	22.61		2
	50	0	21.91	22.07	21.85	22.00	22.00	0-3	3
	50	25	22.01	22.16	22.03	22.10	22.05		3
	50	50	22.02	22.31	21.95	21.91	22.09		3
	100	0	22.05	22.03	21.93	22.00	21.97		3

Table 9-71
LTE Band 41 Measured P_{max} – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.93	24.90	24.94	24.97	24.69	0	0
	1	36	25.07	25.11	25.19	24.90	24.99		0
	1	74	25.01	24.85	24.98	24.49	24.86		0
	36	0	24.01	24.00	24.01	23.98	23.83	0-1	1
	36	18	24.12	24.16	24.21	24.11	23.95		1
	36	37	24.10	24.08	24.13	23.80	23.98		1
	75	0	24.05	24.03	24.09	23.85	23.87		1
16QAM	1	0	24.02	23.71	24.01	24.13	23.74	0-1	1
	1	36	24.10	23.95	24.24	24.06	24.02		1
	1	74	24.11	23.67	24.02	23.64	23.93		1
	36	0	23.07	23.07	23.08	22.82	22.90	0-2	2
	36	18	23.18	23.23	23.22	22.89	23.00		2
	36	37	23.14	23.13	23.19	22.71	23.03		2
	75	0	23.02	23.08	23.09	22.83	22.86		2
64QAM	1	0	22.41	22.26	22.45	22.48	22.14	0-2	2
	1	36	22.57	22.34	22.69	22.27	22.40		2
	1	74	22.55	22.28	22.47	22.37	22.35		2
	36	0	21.97	21.95	22.04	22.06	21.91	0-3	3
	36	18	22.10	22.09	22.18	21.95	21.95		3
	36	37	22.06	21.96	22.16	22.03	21.98		3
	75	0	21.96	21.98	22.06	21.94	21.95		3

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Table 9-72
LTE Band 41 Measured P_{max} – 10 MHz Bandwidth

LTE Band 41 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]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.20	24.95	25.06	24.80	24.80	0	0
	1	25	25.18	25.20	25.26	25.03	25.02		0
	1	49	25.12	24.93	24.97	24.81	24.74		0
	25	0	24.01	24.08	24.06	23.99	23.90	0-1	1
	25	12	24.06	24.19	24.10	24.13	23.92		1
	25	25	24.05	24.08	23.97	24.02	23.83		1
	50	0	24.01	24.09	24.06	24.07	23.84		1
16QAM	1	0	24.10	23.69	24.17	24.14	23.83	0-1	1
	1	25	24.00	23.96	24.13	24.11	23.92		1
	1	49	24.10	23.68	24.23	24.13	23.97		1
	25	0	23.06	23.04	22.98	23.05	22.80	0-2	2
	25	12	23.14	23.13	23.23	23.19	22.97		2
	25	25	23.03	23.07	23.04	23.08	22.90		2
	50	0	22.98	23.05	23.03	23.06	22.79		2
64QAM	1	0	22.56	22.33	22.34	22.34	22.47	0-2	2
	1	25	22.43	22.37	22.77	22.35	22.59		2
	1	49	22.32	22.33	22.41	22.34	22.42		2
	25	0	22.20	22.03	22.07	21.96	21.96	0-3	3
	25	12	22.03	22.13	22.25	22.06	22.14		3
	25	25	21.92	22.04	22.20	22.04	22.04		3
	50	0	21.92	22.01	22.01	22.09	22.02		3

Table 9-73
LTE Band 41 Measured P_{max} – 5 MHz Bandwidth

LTE Band 41 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]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.01	25.07	25.22	24.93	24.93	0	0
	1	12	25.16	25.08	25.19	25.03	25.02		0
	1	24	25.11	25.12	25.18	24.97	24.95		0
	12	0	24.02	24.15	24.14	24.06	23.94	0-1	1
	12	6	24.09	24.20	24.22	24.14	23.93		1
	12	13	24.08	24.13	24.18	24.11	23.94		1
	25	0	24.06	24.15	24.19	24.13	23.91		1
16QAM	1	0	24.18	24.20	24.19	24.07	24.02	0-1	1
	1	12	24.18	24.28	24.26	24.04	24.07		1
	1	24	24.15	24.23	24.32	24.08	24.05		1
	12	0	22.93	23.15	23.07	23.19	22.84	0-2	2
	12	6	23.04	23.14	23.15	23.25	22.89		2
	12	13	23.01	23.12	23.11	23.18	22.89		2
	25	0	23.02	23.13	23.15	23.12	22.88		2
64QAM	1	0	22.24	22.31	22.40	22.55	22.30	0-2	2
	1	12	22.28	22.36	22.50	22.59	22.25		2
	1	24	22.33	22.35	22.41	22.58	22.20		2
	12	0	21.98	22.10	22.06	22.02	22.13	0-3	3
	12	6	22.04	22.12	22.18	22.10	22.12		3
	12	13	22.01	22.09	22.06	22.04	22.14		3
	25	0	21.94	22.08	22.02	22.02	22.09		3

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Table 9-74

LTE Band 41 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.17	24.45	23.98	24.25	23.89	0	0
	1	50	24.18	24.35	24.23	24.37	24.25		0
	1	99	24.25	24.27	23.96	23.88	24.12		0
	50	0	23.82	23.95	23.82	23.95	23.79	0-1	0.5
	50	25	23.94	24.02	23.97	24.01	23.91		0.5
	50	50	23.92	23.94	23.91	23.86	23.95		0.5
	100	0	23.86	23.95	23.88	23.93	23.86		0.5
16QAM	1	0	23.78	24.01	23.46	23.70	23.48	0-1	0.5
	1	50	23.77	23.92	23.74	23.85	23.83		0.5
	1	99	23.85	23.81	23.43	23.35	23.69		0.5
	50	0	22.84	23.00	22.82	22.98	22.79	0-2	1.5
	50	25	22.95	23.04	22.99	23.09	22.94		1.5
	50	50	22.95	22.96	22.89	22.87	22.99		1.5
	100	0	22.91	22.95	22.92	23.00	22.91		1.5
64QAM	1	0	22.81	22.97	22.50	22.79	22.50	0-2	1.5
	1	50	22.85	22.93	22.84	22.98	22.87		1.5
	1	99	22.88	22.86	22.57	22.47	22.75		1.5
	50	0	21.90	22.06	21.86	22.05	21.86	0-3	2.5
	50	25	21.98	22.10	22.04	22.13	21.99		2.5
	50	50	22.00	22.02	21.95	21.93	22.05		2.5
	100	0	21.89	21.97	21.92	22.00	21.88		2.5

Table 9-75

LTE Band 41 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.33	24.30	24.34	24.37	24.09	0	0
	1	36	24.47	24.51	24.59	24.30	24.39		0
	1	74	24.41	24.25	24.38	23.89	24.26		0
	36	0	23.71	23.70	23.71	23.68	23.53	0-1	0.5
	36	18	23.82	23.86	23.91	23.81	23.65		0.5
	36	37	23.80	23.78	23.83	23.50	23.68		0.5
	75	0	23.75	23.73	23.79	23.55	23.57		0.5
16QAM	1	0	23.72	23.41	23.71	23.83	23.44	0-1	0.5
	1	36	23.80	23.65	23.94	23.76	23.72		0.5
	1	74	23.81	23.37	23.72	23.34	23.63		0.5
	36	0	22.77	22.77	22.78	22.52	22.60	0-2	1.5
	36	18	22.88	22.93	22.92	22.59	22.70		1.5
	36	37	22.84	22.83	22.89	22.41	22.73		1.5
	75	0	22.72	22.78	22.79	22.53	22.56		1.5
64QAM	1	0	23.01	22.61	23.05	23.08	22.74	0-2	1.5
	1	36	23.17	22.94	23.29	22.62	23.00		1.5
	1	74	23.15	22.63	23.07	22.75	22.95		1.5
	36	0	21.77	21.70	21.79	21.36	21.61	0-3	2.5
	36	18	21.90	21.89	21.93	21.50	21.70		2.5
	36	37	21.86	21.76	21.91	21.33	21.73		2.5
	75	0	21.76	21.78	21.81	21.44	21.60		2.5

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Table 9-76

LTE Band 41 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 41									
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]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.60	24.35	24.46	24.20	24.20	0	0
	1	25	24.58	24.60	24.66	24.43	24.42		0
	1	49	24.52	24.33	24.37	24.21	24.14		0
	25	0	24.01	24.08	24.06	23.99	23.90	0-1	0.5
	25	12	24.06	24.19	24.10	24.13	23.92		0.5
	25	25	24.05	24.08	23.97	24.02	23.83		0.5
	50	0	24.01	24.09	24.06	24.07	23.84		0.5
16QAM	1	0	24.25	23.69	24.17	24.14	23.83	0-1	0.5
	1	25	24.20	23.96	24.13	24.41	24.32		0.5
	1	49	24.35	23.68	24.23	24.13	23.97		0.5
	25	0	23.06	23.04	22.98	23.05	22.80	0-2	1.5
	25	12	23.14	23.13	23.23	23.19	22.97		1.5
	25	25	23.03	23.07	23.04	23.08	22.90		1.5
	50	0	22.98	23.05	23.03	23.06	22.79		1.5
64QAM	1	0	22.81	23.08	23.34	23.09	23.47	0-2	1.5
	1	25	22.68	23.37	23.37	23.35	23.39		1.5
	1	49	22.77	23.13	23.41	23.09	23.22		1.5
	25	0	22.00	22.08	21.87	22.01	21.76	0-3	2.5
	25	12	22.08	22.18	22.15	22.11	21.94		2.5
	25	25	21.97	22.09	22.00	21.99	21.84		2.5
	50	0	21.97	22.06	22.06	22.04	21.82		2.5

Table 9-77

LTE Band 41 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 41 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]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.41	24.47	24.62	24.33	24.33	0	0
	1	12	24.56	24.48	24.59	24.43	24.42		0
	1	24	24.51	24.52	24.58	24.37	24.35		0
	12	0	24.02	24.15	24.14	24.06	23.94	0-1	0.5
	12	6	24.09	24.20	24.22	24.14	23.93		0.5
	12	13	24.08	24.13	24.18	24.11	23.94		0.5
	25	0	24.06	24.15	24.19	24.13	23.91		0.5
16QAM	1	0	24.43	24.20	24.14	24.07	24.27	0-1	0.5
	1	12	24.48	24.28	24.21	24.04	24.32		0.5
	1	24	24.48	24.23	24.17	24.08	24.30		0.5
	12	0	22.93	23.15	23.07	23.19	22.84	0-2	1.5
	12	6	23.04	23.14	23.15	23.25	22.89		1.5
	12	13	23.01	23.12	23.11	23.18	22.89		1.5
	25	0	23.02	23.13	23.15	23.12	22.88		1.5
64QAM	1	0	23.14	23.21	23.30	23.45	23.20	0-2	1.5
	1	12	23.18	23.26	23.40	23.49	23.15		1.5
	1	24	23.23	23.25	23.31	23.48	23.10		1.5
	12	0	22.03	22.15	22.11	22.07	21.93	0-3	2.5
	12	6	22.09	22.17	22.23	22.15	21.92		2.5
	12	13	22.06	22.14	22.11	22.09	21.94		2.5
	25	0	21.99	22.13	22.07	22.07	21.89		2.5

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9.4.10 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-78
LTE Band 5 Uplink Carrier Aggregation Measured P_{max}

Combination	PCC									SCC									Power	
	PCC Band	PCC Bandwidth [MHz]	PCC UL Channel	PCC UL Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC UL Channel	SCC UL Frequency [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_5B	LTE B5	10	20525	836.5	2525	881.5	QPSK	1	49	LTE B5	5	20597	843.7	2597	888.7	QPSK	1	0	25.20	25.05

Notes:

1. This device supports uplink carrier aggregation for LTE CA_5B with a maximum of two component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.



Figure 9-4
Power Measurement Setup

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9.5 NR Conducted Powers

9.5.1 NR Band n5

Table 9-79
NR Band n5 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.99	0	0.0
	1	53	25.36		0.0
	1	104	24.72		0.0
	50	0	24.91	0-0.5	0.0
	50	28	24.88	0	0.0
	50	56	24.81	0-0.5	0.0
	100	0	24.84		0.0
DFT-s-OFDM QPSK	1	1	24.86	0	0.0
	1	53	24.90		0.0
	1	104	24.55		0.0
	50	0	24.22	0-1	1.0
	50	28	24.85	0	0.0
	50	56	24.03	0-1	1.0
	100	0	24.19		1.0
DFT-s-OFDM 16QAM	1	1	23.47	0-1	1.0
CP-OFDM QPSK	1	1	23.22	0-1.5	1.5

Note: NR Band n5 (Cell) at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, 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.

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Table 9-80
NR Band n5 Measured P_{max} for all DSI - 15 MHz Bandwidth
NR Band n5
15 MHz Bandwidth

NR Band n5 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.98	0	0.0
	1	40	24.86		0.0
	1	77	24.73		0.0
	36	0	24.91	0-0.5	0.0
	36	22	24.80	0	0.0
	36	43	24.82	0-0.5	0.0
	75	0	24.87		0.0
DFT-s-OFDM QPSK	1	1	24.86	0	0.0
	1	40	24.83		0.0
	1	77	24.66		0.0
	36	0	24.27	0-1	1.0
	36	22	24.88	0	0.0
	36	43	24.15	0-1	1.0
	75	0	24.26		1.0
DFT-s-OFDM 16QAM	1	1	23.55	0-1	1.0
CP-OFDM QPSK	1	1	23.33	0-1.5	1.5

Note: NR Band n5 (Cell) at 15 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, 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.

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Table 9-81
NR Band n5 Measured P_{max} for all DSI - 10 MHz Bandwidth
NR Band n5
10 MHz Bandwidth

NR Band n5 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.80	0	0.0
	1	26	25.35		0.0
	1	50	24.82		0.0
	25	0	24.80	0-0.5	0.0
	25	14	24.95	0	0.0
	25	27	24.87		0.0
	50	0	24.86		0.0
DFT-s-OFDM QPSK	1	1	24.76	0	0.0
	1	26	24.98		0.0
	1	50	24.69		0.0
	25	0	24.08	0-1	1.0
	25	14	24.90	0	0.0
	25	27	24.16		1.0
	50	0	24.20		1.0
DFT-s-OFDM 16QAM	1	1	23.37	0-1	1.0
CP-OFDM QPSK	1	1	23.21	0-1.5	1.5

Note: NR Band n5 (Cell) at 10 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, 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.

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Table 9-82
NR Band n5 Measured P_{max} for all DSI - 5 MHz Bandwidth

NR Band n5 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	165300 (826.5 MHz)	167300 (836.5 MHz)	169300 (846.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.11	24.86	24.80	0	0.0
	1	13	24.91	24.81	24.73		0.0
	1	23	24.88	24.77	24.71		0.0
	12	0	24.90	24.83	24.77	0-0.5	0.0
	12	7	24.91	24.88	24.80	0	0.0
	12	13	24.79	24.79	24.69	0-0.5	0.0
	25	0	24.88	24.84	24.76		0.0
DFT-s-OFDM QPSK	1	1	25.01	24.76	24.73	0	0.0
	1	13	24.88	24.75	24.64		0.0
	1	23	24.80	24.74	24.63		0.0
	12	0	24.35	24.11	24.13	0-1	1.0
	12	7	24.99	24.86	24.80	0	0.0
	12	13	24.25	24.07	24.01	0-1	1.0
	25	0	24.32	24.16	24.04		1.0
DFT-s-OFDM 16QAM	1	1	23.61	23.35	23.43	0-1	1.0
CP-OFDM QPSK	1	1	23.34	23.19	23.21	0-1.5	1.5

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9.5.2

NR Band n66 (AWS)

Table 9-83

NR Band n66 (AWS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.99	23.06	23.01	0	0.0
	1	53	23.26	23.44	23.35		0.0
	1	104	22.94	23.10	22.92		0.0
	50	0	22.89	22.99	22.94	0-0.5	0.0
	50	28	22.80	22.98	22.91	0	0.0
	50	56	22.89	22.97	22.94	0-0.5	0.0
	100	0	22.80	22.94	22.83		0.0
DFT-s-OFDM QPSK	1	1	23.02	23.11	23.06	0	0.0
	1	53	22.90	23.19	23.15		0.0
	1	104	22.99	23.09	23.03		0.0
	50	0	22.86	22.96	22.92	0-1	0.0
	50	28	22.90	23.09	22.83	0	0.0
	50	56	22.87	22.99	22.88	0-1	0.0
	100	0	22.76	22.93	22.90		0.0
DFT-s-OFDM 16QAM	1	1	22.69	22.85	22.76	0-1	0.0
CP-OFDM QPSK	1	1	22.78	22.84	22.82	0-1.5	0.0

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Table 9-84

NR Band n66 (AWS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

NR Band n66 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343500 (1717.5 MHz)	349000 (1745 MHz)	354500 (1772.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.94	23.08	23.03	0	0.0
	1	40	22.92	22.98	22.89		0.0
	1	77	22.96	23.01	22.87		0.0
	36	0	22.87	23.00	22.90	0-0.5	0.0
	36	22	22.91	23.02	22.94	0	0.0
	36	43	22.94	23.03	22.88	0-0.5	0.0
	75	0	22.91	22.98	22.89		0.0
DFT-s-OFDM QPSK	1	1	23.02	23.13	22.99	0	0.0
	1	40	23.03	23.05	22.97		0.0
	1	77	23.05	23.14	23.01		0.0
	36	0	22.87	23.04	22.90	0-1	0.0
	36	22	22.94	23.03	22.93	0	0.0
	36	43	22.97	23.06	22.92	0-1	0.0
	75	0	22.85	23.04	22.94		0.0
DFT-s-OFDM 16QAM	1	1	23.10	23.25	23.24	0-1	0.0
CP-OFDM QPSK	1	1	22.71	22.88	22.78	0-1.5	0.0

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Table 9-85

NR Band n66 (AWS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

NR Band n66 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343000 (1715 MHz)	349000 (1745 MHz)	355000 (1775 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.83	22.93	22.89	0	0.0
	1	26	22.81	23.01	22.78		0.0
	1	50	22.73	22.88	22.85		0.0
	25	0	22.80	22.87	22.77	0-0.5	0.0
	25	14	22.83	22.93	22.81	0	0.0
	25	27	22.75	22.89	22.76	0-0.5	0.0
	50	0	22.72	22.84	22.74		0.0
DFT-s-OFDM QPSK	1	1	22.93	23.00	22.93	0	0.0
	1	26	23.05	23.22	23.11		0.0
	1	50	22.90	22.95	22.82		0.0
	25	0	22.79	22.97	22.85	0-1	0.0
	25	14	22.80	22.91	22.81	0	0.0
	25	27	22.71	22.92	22.80	0-1	0.0
	50	0	22.81	22.94	22.82		0.0
DFT-s-OFDM 16QAM	1	1	23.08	23.15	23.12	0-1	0.0
CP-OFDM QPSK	1	1	22.60	22.75	22.59	0-1.5	0.0

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Table 9-86

NR Band n66 (AWS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

NR Band n66 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	342500 (1712.5 MHz)	349000 (1745 MHz)	355500 (1777.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.74	22.94	22.75	0	0.0
	1	13	22.82	22.96	22.84		0.0
	1	23	22.83	22.83	22.73		0.0
	12	0	22.71	22.90	22.79	0-0.5	0.0
	12	7	22.73	22.92	22.71	0	0.0
	12	13	22.75	22.94	22.77	0-0.5	0.0
	25	0	22.73	22.93	22.78		0.0
DFT-s-OFDM QPSK	1	1	22.88	23.00	22.98	0	0.0
	1	13	22.90	23.06	22.93		0.0
	1	23	22.92	23.02	22.85		0.0
	12	0	22.72	22.93	22.79	0-1	0.0
	12	7	22.78	22.97	22.81	0	0.0
	12	13	22.81	22.92	22.79	0-1	0.0
	25	0	22.79	22.95	22.82		0.0
DFT-s-OFDM 16QAM	1	1	22.89	23.10	22.90	0-1	0.0
CP-OFDM QPSK	1	1	22.61	22.69	22.57	0-1.5	0.0

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9.5.3

NR Band n2 (PCS)

Table 9-87

NR Band n2 (PCS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

NR Band n2 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376000 (1880 MHz)	380000 (1900 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.49	22.58	22.58	0	0.0
	1	53	22.80	22.87	22.79		0.0
	1	104	22.61	22.59	22.55		0.0
	50	0	22.54	22.68	22.63	0-0.5	0.0
	50	28	22.70	22.69	22.68	0	0.0
	50	56	22.67	22.72	22.66	0-0.5	0.0
	100	0	22.64	22.71	22.63		0.0
DFT-s-OFDM QPSK	1	1	22.68	22.66	22.79	0	0.0
	1	53	22.84	22.99	22.94		0.0
	1	104	22.74	22.77	22.67		0.0
	50	0	22.56	22.67	22.60	0-1	0.0
	50	28	22.57	22.71	22.68	0	0.0
	50	56	22.67	22.73	22.68	0-1	0.0
	100	0	22.60	22.69	22.49		0.0
DFT-s-OFDM 16QAM	1	1	22.56	22.55	22.61	0-1	0.0
CP-OFDM QPSK	1	1	22.39	22.41	22.37	0-1.5	0.0

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Table 9-88

NR Band n2 (PCS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

NR Band n2 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376000 (1880 MHz)	380500 (1902.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.55	22.62	22.52	0	0.0
	1	40	22.63	22.56	22.49		0.0
	1	77	22.69	22.59	22.51		0.0
	36	0	22.59	22.63	22.52	0-0.5	0.0
	36	22	22.68	22.60	22.54	0	0.0
	36	43	22.75	22.66	22.62	0-0.5	0.0
	75	0	22.69	22.67	22.59		0.0
DFT-s-OFDM QPSK	1	1	22.70	22.79	22.65	0	0.0
	1	40	22.80	22.78	22.63		0.0
	1	77	22.85	22.77	22.74		0.0
	36	0	22.55	22.64	22.52	0-1	0.0
	36	22	22.65	22.63	22.55	0	0.0
	36	43	22.69	22.64	22.62	0-1	0.0
	75	0	22.61	22.66	22.57		0.0
DFT-s-OFDM 16QAM	1	1	22.23	22.37	22.27	0-1	0.0
CP-OFDM QPSK	1	1	22.56	22.50	22.51	0-1.5	0.0

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Table 9-89

NR Band n2 (PCS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

NR Band n2 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376000 (1880 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.52	22.49	22.58	0	0.0
	1	26	22.64	22.55	22.61		0.0
	1	50	22.60	22.59	22.49		0.0
	25	0	22.53	22.49	22.55	0-0.5	0.0
	25	14	22.56	22.52	22.53	0	0.0
	25	27	22.57	22.59	22.61	0-0.5	0.0
	50	0	22.62	22.53	22.58		0.0
DFT-s-OFDM QPSK	1	1	22.50	22.64	22.56	0	0.0
	1	26	22.78	22.83	22.85		0.0
	1	50	22.62	22.66	22.60		0.0
	25	0	22.56	22.58	22.56	0-1	0.0
	25	14	22.61	22.64	22.55	0	0.0
	25	27	22.62	22.65	22.57	0-1	0.0
	50	0	22.59	22.64	22.40		0.0
DFT-s-OFDM 16QAM	1	1	22.39	22.44	22.48	0-1	0.0
CP-OFDM QPSK	1	1	22.45	22.53	22.60	0-1.5	0.0

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Table 9-90

NR Band n2 (PCS) Measured P_{limit} for DSI = 1 (Head, Body worn, and Phablet Max), DSI = 7 (Head and Phablet Max Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

NR Band n2 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376000 (1880 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.58	22.45	22.58	0	0.0
	1	13	22.61	22.60	22.60		0.0
	1	23	22.66	22.51	22.64		0.0
	12	0	22.65	22.49	22.59	0-0.5	0.0
	12	7	22.67	22.55	22.62	0	0.0
	12	13	22.67	22.54	22.67	0-0.5	0.0
	25	0	22.63	22.53	22.61		0.0
DFT-s-OFDM QPSK	1	1	22.78	22.52	22.68	0	0.0
	1	13	22.77	22.61	22.79		0.0
	1	23	22.78	22.64	22.77		0.0
	12	0	22.64	22.46	22.56	0-1	0.0
	12	7	22.69	22.53	22.68	0	0.0
	12	13	22.65	22.55	22.62	0-1	0.0
	25	0	22.67	22.57	22.63		0.0
DFT-s-OFDM 16QAM	1	1	22.71	22.39	22.72	0-1	0.0
CP-OFDM QPSK	1	1	22.26	22.45	22.22	0-1.5	0.0

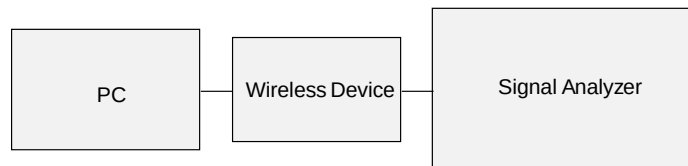


Figure 9-5
Power Measurement Setup

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9.6 WLAN Conducted Powers

Table 9-91
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	18.37	15.59	14.44	14.48
2437	6	18.31	15.44	14.44	14.22
2462	11	18.43	15.79	14.74	14.28

Table 9-92
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	18.88	15.93	14.97	14.95
2437	6	18.80	15.63	14.99	14.94
2462	11	18.87	15.92	14.93	14.89

Table 9-93
2.4 GHz WLAN Reduced Average RF Power– Ant 1

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11b	802.11g
		Average	Average
2412	1	14.28	14.23
2437	6	14.25	14.36
2462	11	14.65	14.73

Table 9-94
2.4 GHz WLAN Reduced Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11b	802.11g
		Average	Average
2412	1	14.06	14.05
2437	6	14.63	14.13
2462	11	14.36	14.69

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Table 9-95
2.4 GHz WLAN Reduced Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	14.44	14.97	17.72
2437	6	14.44	14.99	17.73
2462	11	14.74	14.93	17.85

Table 9-96
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.66	15.40	15.47
5200	40	16.69	15.52	15.51
5220	44	16.74	15.44	15.52
5240	48	16.69	15.55	15.43
5260	52	16.36	15.37	15.29
5280	56	16.33	15.35	15.27
5300	60	16.25	15.81	15.07
5320	64	16.07	15.04	15.03
5500	100	16.43	15.36	15.32
5600	120	16.25	15.22	15.24
5620	124	16.51	15.38	15.41
5720	144	16.86	15.55	15.66
5745	149	16.53	15.35	15.59
5785	157	16.34	15.17	15.27
5825	165	16.33	15.42	15.23

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Table 9-97
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.76	15.72	15.68
5200	40	16.81	15.76	15.87
5220	44	16.88	15.82	15.72
5240	48	16.90	15.75	15.73
5260	52	16.84	15.72	15.76
5280	56	16.96	15.69	15.89
5300	60	16.68	15.58	15.68
5320	64	16.71	15.63	15.69
5500	100	16.98	15.83	15.84
5600	120	16.96	15.91	15.85
5620	124	16.95	15.85	15.93
5720	144	16.93	15.89	15.87
5745	149	16.97	15.81	15.86
5785	157	16.92	15.73	15.68
5825	165	16.79	15.60	15.76

Table 9-98
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11a Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	16.66	16.76	19.72
5200	40	16.69	16.81	19.76
5220	44	16.74	16.88	19.82
5240	48	16.69	16.90	19.81
5260	52	16.36	16.84	19.62
5280	56	16.33	16.96	19.67
5300	60	16.25	16.68	19.48
5320	64	16.07	16.71	19.41
5500	100	16.43	16.98	19.72
5600	120	16.25	16.96	19.63
5620	124	16.51	16.95	19.75
5720	144	16.86	16.93	19.91
5745	149	16.53	16.97	19.77
5785	157	16.34	16.92	19.65
5825	165	16.33	16.79	19.58

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Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

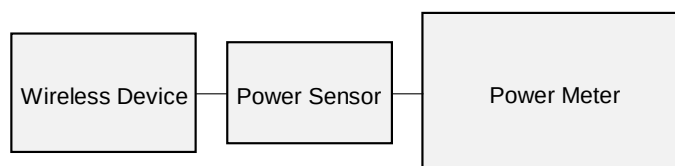


Figure 9-6
Power Measurement Setup

9.7 Bluetooth Conducted Powers

Table 9-99
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Mod.	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	1.0	GFSK	0	9.73	9.398
2441	1.0	GFSK	39	11.15	13.037
2480	1.0	GFSK	78	9.18	8.283
2402	2.0	$\pi/4$ -DQPSK	0	9.15	8.229
2441	2.0	$\pi/4$ -DQPSK	39	10.56	11.375
2480	2.0	$\pi/4$ -DQPSK	78	8.71	7.436
2402	3.0	8DPSK	0	9.25	8.416
2441	3.0	8DPSK	39	10.63	11.560
2480	3.0	8DPSK	78	8.71	7.424

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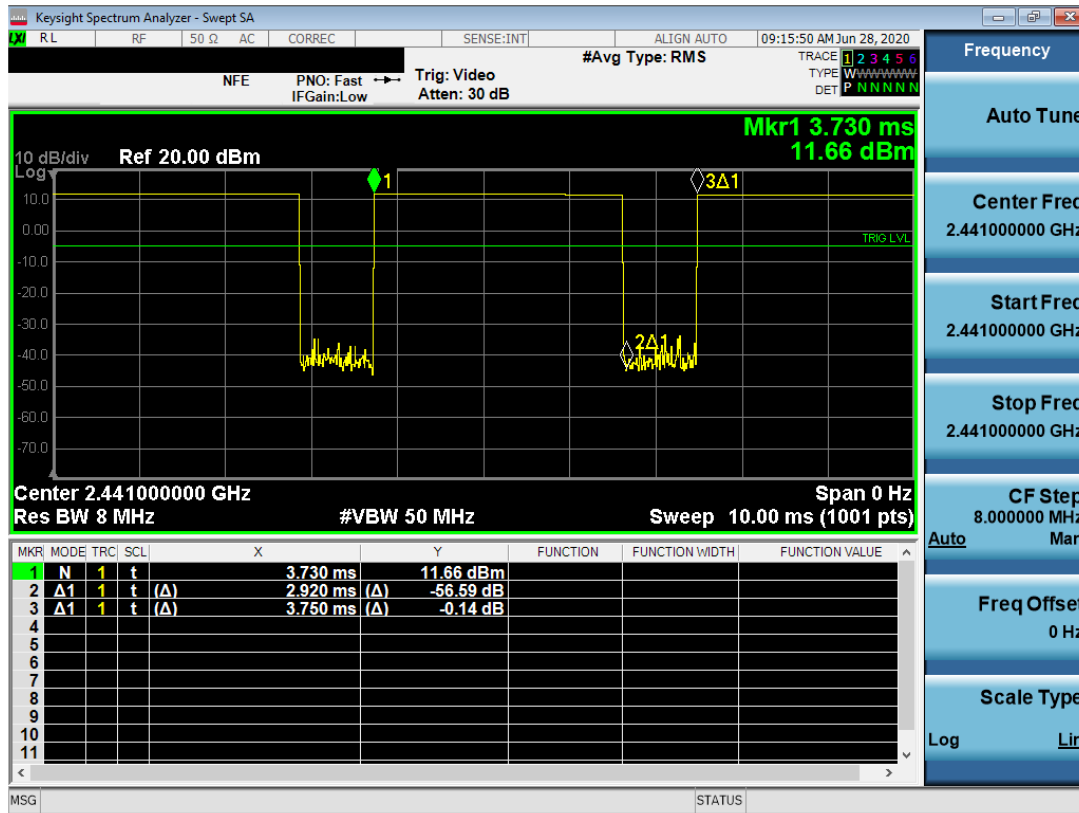


Figure 9-7
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.92 \text{ ms}}{3.75 \text{ ms}} * 100\% = 77.9\%$$

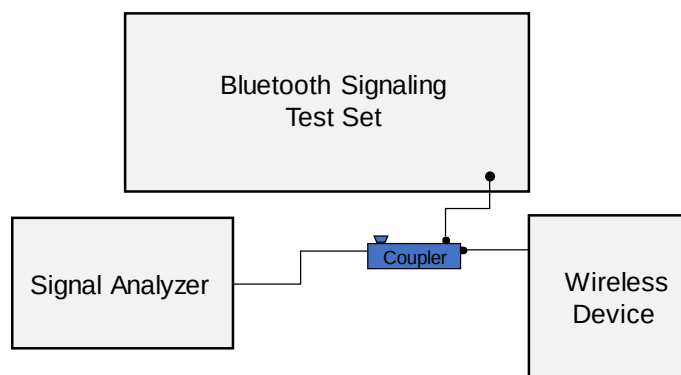


Figure 9-8
Power Measurement Setup

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10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties - Head

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
08/28/2020	750 Head	24	700	0.889	42.541	0.889	42.201	-3.37%	0.81%
			710	0.884	42.508	0.890	42.149	-2.92%	0.85%
			750	0.881	42.449	0.894	41.942	-1.45%	1.21%
			770	0.888	42.388	0.895	41.838	-0.67%	1.31%
			785	0.880	42.526	0.896	41.760	-0.78%	1.36%
			800	0.884	42.289	0.897	41.682	-0.33%	1.46%
8/3/2020	835 Head	21.7	820	0.881	41.531	0.899	41.578	-4.23%	0.85%
			835	0.886	41.288	0.900	41.500	-3.78%	0.93%
			850	0.872	41.854	0.916	41.500	-4.60%	0.85%
08/30/2020	835 Head	22.7	820	0.861	42.451	0.899	41.578	-4.23%	2.10%
			835	0.866	42.402	0.900	41.500	-3.78%	2.17%
			850	0.871	42.353	0.916	41.500	-4.51%	2.05%
08/12/2020	1750 Head	22.8	1710	1.288	41.495	1.348	40.142	-4.45%	3.97%
			1720	1.293	41.481	1.354	40.126	-4.51%	3.89%
			1745	1.308	41.444	1.368	40.087	-4.39%	3.39%
			1750	1.311	41.437	1.371	40.079	-4.38%	3.39%
			1770	1.323	41.407	1.383	40.047	-4.34%	3.40%
			1790	1.335	41.374	1.394	40.016	-4.23%	3.39%
08/25/2020	1750 Head	21.1	1710	1.375	38.455	1.348	40.142	2.00%	-4.20%
			1720	1.389	38.466	1.354	40.126	2.29%	-4.29%
			1745	1.411	38.292	1.358	40.087	3.14%	-4.50%
			1750	1.416	38.256	1.371	40.079	3.28%	-4.55%
			1770	1.436	38.157	1.383	40.047	3.83%	-4.72%
			1790	1.458	38.058	1.394	40.016	4.44%	-4.89%
07/13/2020	1900 Head	23.4	1850	1.333	39.613	1.400	40.000	-4.79%	1.42%
			1880	1.341	39.419	1.400	40.000	-4.21%	1.45%
			1880	1.352	39.394	1.400	40.000	-3.43%	1.52%
			1900	1.363	39.366	1.400	40.000	-2.64%	1.59%
			1905	1.366	39.350	1.400	40.000	-2.47%	1.60%
			1910	1.368	39.350	1.400	40.000	-2.29%	1.63%
8/13/2020	1900 Head	22.1	1890	1.377	39.265	1.400	40.000	-1.64%	1.84%
			1880	1.387	39.222	1.400	40.000	-0.93%	1.95%
			1880	1.408	39.137	1.400	40.000	0.57%	2.15%
			1900	1.429	39.039	1.400	40.000	2.07%	-2.40%
			1905	1.434	39.014	1.400	40.000	2.43%	-2.46%
			1910	1.439	39.003	1.400	40.000	2.79%	-2.52%
08/27/2020	1900 Head	21.3	1880	1.384	39.089	1.400	40.000	-1.14%	1.03%
			1880	1.395	39.045	1.400	40.000	-0.36%	1.14%
			1880	1.417	39.450	1.400	40.000	1.21%	-1.35%
			1900	1.438	39.371	1.400	40.000	2.71%	-1.57%
			1905	1.444	39.348	1.400	40.000	3.114%	-1.63%
			1910	1.449	39.326	1.400	40.000	3.50%	-1.69%
7/13/2020	2450 Head	24.7	2300	1.602	39.535	1.670	39.500	1.32%	0.09%
			2310	1.704	39.498	1.679	39.480	1.49%	0.05%
			2320	1.715	39.462	1.687	39.460	1.69%	0.01%
			2400	1.740	41.003	1.756	39.289	-0.51%	4.36%
			2450	1.780	40.942	1.800	39.200	-1.11%	4.44%
			2480	1.802	40.908	1.833	39.162	-1.69%	4.46%
07/08/2020	2650 Head	22.1	2500	1.817	40.875	1.855	39.136	-2.05%	4.44%
			2510	1.825	40.857	1.865	39.123	-2.20%	4.42%
			2535	1.846	40.817	1.893	39.092	-2.48%	4.41%
			2550	1.859	40.802	1.909	39.073	-2.62%	4.43%
			2560	1.868	40.794	1.920	39.060	-2.71%	4.44%
			2600	1.900	40.740	1.964	39.039	-3.26%	4.44%
8/4/2020	2450 Head	24.1	2650	1.941	40.853	2.018	38.945	-3.82%	4.39%
			2680	1.969	40.802	2.051	38.907	-4.05%	4.36%
			2700	1.984	40.574	2.073	38.882	-4.29%	4.39%
			2400	1.807	39.893	1.769	39.289	2.80%	-0.63%
			2450	1.867	38.764	1.800	39.200	3.72%	-1.11%
			2480	1.900	38.630	1.833	39.162	3.82%	-1.36%
08/20/2020	3600 Head	21.8	2500	1.926	38.549	1.855	39.136	3.83%	-1.50%
			3600	2.800	38.991	2.913	37.929	-2.16%	2.80%
			3650	2.890	38.890	2.964	37.871	-2.50%	2.69%
			3660	2.900	38.872	2.974	37.860	-2.49%	2.67%
			3600	2.932	38.822	3.015	37.814	-2.75%	2.67%
			3650	2.971	38.753	3.086	37.757	-3.10%	2.58%
07/13/2020	5300-5800 Head	21.7	3690	3.004	38.679	3.107	37.711	-3.32%	2.57%
			3700	3.012	38.666	3.117	37.700	-3.37%	2.56%
			5180	4.524	36.794	4.636	36.009	-2.39%	2.18%
			5190	4.531	36.794	4.645	35.998	-2.45%	2.21%
			5200	4.539	36.780	4.655	35.988	-2.49%	2.21%
			5210	4.548	36.758	4.666	35.975	-2.53%	2.18%
07/13/2020	5300-5800 Head	21.7	5220	4.554	36.731	4.676	35.963	-2.61%	2.14%
			5240	4.568	36.676	4.696	35.940	-2.73%	2.05%
			5260	4.583	36.641	4.708	35.929	-2.81%	1.98%
			5280	4.597	36.604	4.717	35.917	-2.84%	1.91%
			5270	4.610	36.579	4.727	35.906	-2.48%	1.87%
			5280	4.621	36.569	4.737	35.894	-2.45%	1.88%
07/13/2020	5300-5800 Head	21.7	5290	4.632	36.563	4.748	35.883	-2.44%	1.90%
			5300	4.644	36.555	4.758	35.871	-2.40%	1.91%
			5310	4.654	36.530	4.768	35.860	-2.39%	1.87%
			5320	4.660	36.503	4.778	35.849	-2.47%	1.82%
			5500	4.808	35.140	4.963	35.643	-2.56%	1.89%
			5510	4.821	35.123	4.973	35.632	-2.49%	1.88%
07/13/2020	5300-5800 Head	21.7	5520	4.860	35.121	4.983	35.620	-2.47%	1.41%
			5530	4.867	35.119	4.994	35.609	-2.54%	1.43%
			5540	4.874	35.103	5.004	35.597	-2.60%	1.42%
			5550	4.881	35.072	5.014	35.586	-2.65%	1.37%
			5560	4.888	35.035	5.024	35.574	-2.71%	1.30%
			5580	4.907	35.991	5.045	35.551	-2.74%	1.24%
07/13/2020	5300-5800 Head	21.7	5600	4.938	35.953	5.065	35.529	-2.51%	1.19%
			5610	4.951	35.912	5.076	35.518	-2.46%	1.14%
			5620	4.960	35.900	5.088	35.506	-2.48%	1.11%
			5640	4.980	35.891	5.106	35.483	-2.47%	1.15%
			5660	4.997	35.841	5.127	35.460	-2.54%	1.07%
			5670	5.003	35.819	5.137	35.449	-2.61%	1.04%
07/13/2020	5300-5800 Head	21.7	5680	5.013	35.804	5.147	35.437	-2.60%	1.04%
			5690	5.023	35.775	5.158	35.426	-2.62%	0.99%
			5700	5.033	35.745	5.168	35.414	-2.61%	0.93%
			5710	5.042	35.720	5.178	35.403	-2.63%	0.90%
			5720	5.055	35.708	5.188	35.391	-2.66%	0.90%
			5745	5.088	35.676	5.214	35.363	-2.42%	0.89%
07/13/2020	5300-5800 Head	21.7	5750	5.092	35.667	5.219	35.357	-2.43%	0.88%
			5765	5.096	35.661	5.224	35.351	-2.47%	0.88%
			5785	5.103	35.647	5.234	35.340	-2.50%	0.87%
			5775	5.112	35.633	5.245	35.329	-2.54%	0.88%
			5785	5.122	35.616	5.256	35.317	-2.53%	0.85%
			5795	5.133	35.594	5.265	35.305	-2.51%	0.82%
07/13/2020	5300-5800 Head	21.7	5800	5.137	35.584	5.270	35.300	-2.52%	0.82%
			5805	5.141	35.579	5.275	35.294	-2.54%	0.81%
			5805	5.151	35.539	5.296	35.271	-2.55%	0.76%

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Table 10-2
Measured Tissue Properties – Body

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
08/20/2020	750 Body	22.4	700	0.964	53.116	0.959	55.726	0.52%	-4.68%
			710	0.968	53.095	0.960	55.687	0.83%	-4.65%
			750	0.982	52.998	0.964	55.531	1.87%	-4.56%
			770	0.989	52.953	0.965	55.453	2.49%	-4.51%
			785	0.995	52.924	0.966	55.395	3.00%	-4.46%
08/24/2020	750 Body	21.7	750	0.947	53.467	0.964	55.531	-1.76%	-3.72%
			785	0.960	53.386	0.966	55.395	-0.62%	-3.63%
			800	0.966	53.350	0.967	55.336	-0.10%	-3.59%
07/22/2020	835 Body	21.5	820	0.977	53.968	0.969	55.258	0.83%	-2.33%
			835	0.983	53.925	0.970	55.200	1.34%	-2.31%
			850	0.990	53.885	0.988	55.154	0.20%	-2.30%
08/20/2020	835 Body	21.6	820	0.938	55.091	0.969	55.258	-3.20%	-0.30%
			835	0.954	54.941	0.970	55.200	-1.65%	-0.47%
			850	0.969	54.785	0.988	55.154	-1.92%	-0.67%
08/26/2020	835 Body	21.9	820	0.942	54.243	0.969	55.258	-2.79%	-1.84%
			835	0.957	54.090	0.970	55.200	-1.34%	-2.01%
			850	0.973	53.929	0.988	55.154	-1.52%	-2.22%
07/29/2020	1750 Body	22.0	1710	1.449	51.279	1.463	53.537	-0.96%	-4.22%
			1720	1.460	51.241	1.469	53.511	-0.61%	-4.24%
			1745	1.488	51.138	1.485	53.445	0.20%	-4.32%
			1750	1.493	51.117	1.488	53.432	0.34%	-4.33%
			1770	1.515	51.035	1.501	53.379	0.93%	-4.39%
08/12/2020	1750 Body	22.1	1790	1.537	50.956	1.514	53.326	1.52%	-4.44%
			1710	1.463	52.489	1.463	53.537	0.00%	-1.96%
			1720	1.469	52.480	1.469	53.511	0.00%	-1.93%
			1745	1.485	52.463	1.485	53.445	0.00%	-1.84%
			1750	1.489	52.462	1.488	53.432	0.07%	-1.82%
08/31/2020	1750 Body	22.0	1770	1.502	52.458	1.501	53.379	0.07%	-1.73%
			1790	1.517	52.446	1.514	53.326	0.20%	-1.65%
			1710	1.456	51.920	1.463	53.537	-0.48%	-3.02%
			1720	1.468	51.893	1.469	53.511	-0.07%	-3.02%
			1745	1.496	51.817	1.485	53.445	0.74%	-3.05%
08/12/2020	1900 Body	24.3	1750	1.501	51.802	1.488	53.432	0.87%	-3.05%
			1770	1.522	51.733	1.501	53.379	1.40%	-3.08%
			1790	1.543	51.642	1.514	53.326	1.92%	-3.16%
			1850	1.522	52.121	1.520	53.300	0.13%	-2.21%
			1860	1.534	52.087	1.520	53.300	0.92%	-2.28%
08/17/2020	1900 Body	23.1	1880	1.554	52.028	1.520	53.300	2.24%	-2.39%
			1900	1.575	51.965	1.520	53.300	3.62%	-2.50%
			1905	1.581	51.949	1.520	53.300	4.01%	-2.53%
			1910	1.587	51.936	1.520	53.300	4.41%	-2.56%
			1850	1.513	51.532	1.520	53.300	-0.46%	-3.32%
08/19/2020	1900 Body	22.4	1860	1.524	51.500	1.520	53.300	0.26%	-3.38%
			1880	1.547	51.444	1.520	53.300	1.78%	-3.48%
			1900	1.568	51.377	1.520	53.300	3.16%	-3.61%
			1905	1.574	51.362	1.520	53.300	3.55%	-3.64%
			1910	1.579	51.346	1.520	53.300	3.88%	-3.67%
08/20/2020	1900 Body	24.8	1850	1.516	51.790	1.520	53.300	-0.26%	-2.83%
			1860	1.528	51.755	1.520	53.300	0.53%	-2.90%
			1880	1.551	51.691	1.520	53.300	2.04%	-3.02%
			1900	1.573	51.623	1.520	53.300	3.49%	-3.15%
			1905	1.579	51.606	1.520	53.300	3.88%	-3.18%
8/24/2020	1900 Body	24.6	1910	1.584	51.590	1.520	53.300	4.21%	-3.21%
			1850	1.509	51.682	1.520	53.300	-0.72%	-3.04%
			1860	1.520	51.649	1.520	53.300	0.00%	-3.10%
			1880	1.542	51.596	1.520	53.300	1.45%	-3.20%
			1900	1.564	51.550	1.520	53.300	2.89%	-3.28%
08/31/2020	1900 Body	24.4	1905	1.570	51.539	1.520	53.300	3.29%	-3.30%
			1910	1.575	51.529	1.520	53.300	3.62%	-3.32%
			1850	1.499	51.023	1.520	53.300	-1.38%	-4.27%
			1860	1.509	50.990	1.520	53.300	-0.72%	-4.33%
			1880	1.530	50.922	1.520	53.300	0.66%	-4.46%

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Table 10-3
Measured Tissue Properties – Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
07/20/2020	2450 Body	23.6	2400	1.975	51.641	1.902	52.767	3.84%	-2.13%
			2450	2.034	51.503	1.950	52.700	4.31%	-2.27%
			2480	2.071	51.411	1.993	52.662	3.91%	-2.38%
			2500	2.095	51.350	2.021	52.636	3.66%	-2.44%
08/13/2020	2450 Body	23.2	2300	1.847	52.552	1.809	52.900	2.10%	-0.66%
			2310	1.859	52.527	1.816	52.887	2.37%	-0.68%
			2320	1.871	52.500	1.826	52.873	2.46%	-0.71%
			2400	1.960	52.285	1.902	52.767	3.05%	-0.91%
			2450	2.018	52.130	1.950	52.700	3.49%	-1.08%
			2480	2.052	52.054	1.993	52.662	2.96%	-1.15%
08/17/2020	2450 Body	23.1	2500	2.076	51.996	2.021	52.636	2.72%	-1.22%
			2400	1.989	53.102	1.902	52.767	4.57%	0.63%
			2450	2.046	52.976	1.950	52.700	4.92%	0.52%
			2480	2.081	52.895	1.993	52.662	4.42%	0.44%
			2500	2.106	52.839	2.021	52.636	4.21%	0.39%
			2510	2.119	52.813	2.035	52.623	4.13%	0.36%
			2535	2.153	52.745	2.071	52.592	3.96%	0.29%
			2550	2.172	52.709	2.092	52.573	3.82%	0.26%
			2560	2.185	52.689	2.106	52.560	3.75%	0.25%
			2600	2.232	52.568	2.163	52.509	3.19%	0.11%
			2650	2.295	52.396	2.234	52.445	2.73%	-0.09%
			2680	2.336	52.307	2.277	52.407	2.59%	-0.19%
08/20/2020	2450 Body	23.2	2700	2.361	52.250	2.305	52.382	2.43%	-0.25%
			2400	1.988	52.189	1.902	52.767	4.52%	-1.10%
			2450	2.046	52.061	1.950	52.700	4.92%	-1.21%
			2480	2.081	51.972	1.993	52.662	4.42%	-1.31%
			2500	2.106	51.911	2.021	52.636	4.21%	-1.38%
			2510	2.118	51.882	2.035	52.623	4.08%	-1.41%
			2535	2.150	51.806	2.071	52.592	3.81%	-1.49%
			2550	2.168	51.766	2.092	52.573	3.63%	-1.54%
			2560	2.180	51.740	2.106	52.560	3.51%	-1.56%
			2600	2.228	51.621	2.163	52.509	3.01%	-1.69%
			2650	2.288	51.458	2.234	52.445	2.42%	-1.88%
08/04/2020	3600 Body	22.5	2680	2.326	51.368	2.277	52.407	2.15%	-1.98%
			2700	2.350	51.306	2.305	52.382	1.95%	-2.05%
			3500	3.373	49.517	3.314	51.321	1.78%	-3.52%
			3550	3.424	49.431	3.372	51.254	1.54%	-3.56%
			3560	3.435	49.422	3.384	51.240	1.51%	-3.55%
			3600	3.476	49.377	3.431	51.186	1.31%	-3.53%
			3650	3.529	49.292	3.489	51.118	1.15%	-3.57%
			3690	3.571	49.223	3.536	51.063	0.99%	-3.60%
			3700	3.580	49.214	3.548	51.050	0.90%	-3.60%

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Table 10-4
Measured Tissue Properties – Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
07/19/2020	5200-5800 Body	23.5	5180	5.383	47.153	5.276	49.041	2.03%	-3.85%
			5190	5.396	47.147	5.288	49.028	2.04%	-3.84%
			5200	5.408	47.143	5.299	49.014	2.06%	-3.82%
			5210	5.420	47.127	5.311	49.001	2.05%	-3.82%
			5220	5.430	47.095	5.323	48.987	2.01%	-3.86%
			5240	5.455	47.027	5.346	48.960	2.04%	-3.95%
			5250	5.469	47.002	5.358	48.947	2.07%	-3.97%
			5260	5.484	46.985	5.369	48.933	2.14%	-3.98%
			5270	5.498	46.976	5.381	48.919	2.17%	-3.97%
			5280	5.516	46.971	5.393	48.906	2.28%	-3.96%
			5290	5.534	46.968	5.404	48.892	2.41%	-3.94%
			5300	5.547	46.956	5.416	48.879	2.42%	-3.93%
			5310	5.555	46.946	5.428	48.865	2.34%	-3.93%
			5320	5.564	46.922	5.439	48.851	2.30%	-3.95%
			5500	5.801	46.600	5.650	48.607	2.67%	-4.13%
			5510	5.817	46.588	5.661	48.594	2.76%	-4.13%
			5520	5.831	46.585	5.673	48.580	2.79%	-4.11%
			5530	5.846	46.585	5.685	48.566	2.83%	-4.08%
			5540	5.856	46.563	5.696	48.553	2.81%	-4.10%
			5550	5.863	46.536	5.708	48.539	2.72%	-4.13%
			5560	5.870	46.509	5.720	48.526	2.62%	-4.16%
			5580	5.904	46.478	5.743	48.499	2.80%	-4.17%
			5600	5.937	46.434	5.766	48.471	2.97%	-4.20%
			5610	5.949	46.413	5.778	48.458	2.96%	-4.22%
			5620	5.964	46.402	5.790	48.444	3.01%	-4.22%
			5640	5.994	46.387	5.813	48.417	3.11%	-4.19%
			5660	6.018	46.347	5.837	48.390	3.10%	-4.22%
			5670	6.029	46.326	5.848	48.376	3.10%	-4.24%
			5680	6.040	46.303	5.860	48.363	3.07%	-4.26%
			5690	6.053	46.286	5.872	48.349	3.08%	-4.27%
			5700	6.069	46.268	5.883	48.336	3.16%	-4.28%
			5710	6.086	46.258	5.895	48.322	3.24%	-4.27%
			5720	6.101	46.241	5.907	48.309	3.28%	-4.28%
			5745	6.136	46.202	5.936	48.275	3.37%	-4.29%
			5750	6.143	46.198	5.942	48.268	3.38%	-4.29%
			5755	6.149	46.194	5.947	48.261	3.40%	-4.28%
			5765	6.162	46.184	5.959	48.248	3.41%	-4.28%
			5775	6.175	46.171	5.971	48.234	3.42%	-4.28%
			5785	6.187	46.154	5.982	48.220	3.43%	-4.28%
			5795	6.199	46.129	5.994	48.207	3.42%	-4.31%
			5800	6.206	46.120	6.000	48.200	3.43%	-4.32%
			5805	6.214	46.113	6.006	48.193	3.46%	-4.32%
			5825	6.244	46.074	6.029	48.166	3.57%	-4.34%
07/27/2020	5200-5800 Body	22.6	5180	5.381	47.071	5.276	49.041	1.99%	-4.02%
			5190	5.389	47.081	5.288	49.028	1.91%	-3.97%
			5200	5.401	47.078	5.299	49.014	1.92%	-3.95%
			5210	5.412	47.044	5.311	49.001	1.90%	-3.99%
			5220	5.422	47.003	5.323	48.987	1.88%	-4.05%
			5240	5.447	46.955	5.346	48.960	1.89%	-4.10%
			5250	5.467	46.929	5.358	48.947	2.03%	-4.12%
			5260	5.485	46.900	5.369	48.933	2.16%	-4.15%
			5270	5.496	46.882	5.381	48.919	2.14%	-4.16%
			5280	5.505	46.881	5.393	48.906	2.08%	-4.14%
			5290	5.519	46.880	5.404	48.892	2.13%	-4.12%
			5300	5.538	46.875	5.416	48.879	2.25%	-4.10%
			5310	5.553	46.862	5.428	48.865	2.30%	-4.10%
			5320	5.559	46.833	5.439	48.851	2.21%	-4.13%
			5500	5.791	46.499	5.650	48.607	2.50%	-4.34%
			5510	5.807	46.481	5.661	48.594	2.58%	-4.35%
			5520	5.821	46.489	5.673	48.580	2.61%	-4.30%
			5530	5.834	46.491	5.685	48.566	2.62%	-4.27%
			5540	5.846	46.481	5.696	48.553	2.63%	-4.27%
			5550	5.861	46.449	5.708	48.539	2.68%	-4.31%
			5560	5.872	46.419	5.720	48.526	2.66%	-4.34%
			5580	5.897	46.391	5.743	48.499	2.68%	-4.35%
			5600	5.931	46.352	5.766	48.471	2.86%	-4.37%
			5610	5.945	46.329	5.778	48.458	2.89%	-4.39%
			5620	5.959	46.320	5.790	48.444	2.90%	-4.38%
			5640	5.991	46.298	5.813	48.417	3.06%	-4.38%
			5660	6.018	46.258	5.837	48.390	3.10%	-4.41%
			5670	6.026	46.240	5.848	48.376	3.04%	-4.42%
			5680	6.039	46.224	5.860	48.363	3.05%	-4.42%
			5690	6.059	46.206	5.872	48.349	3.18%	-4.43%
			5700	6.072	46.176	5.883	48.336	3.21%	-4.47%
			5710	6.078	46.155	5.895	48.322	3.10%	-4.48%
			5720	6.088	46.151	5.907	48.309	3.06%	-4.47%
			5745	6.133	46.129	5.936	48.275	3.32%	-4.45%
			5750	6.139	46.119	5.942	48.268	3.32%	-4.45%
			5755	6.146	46.108	5.947	48.261	3.35%	-4.46%
			5765	6.156	46.097	5.959	48.248	3.31%	-4.46%
			5775	6.170	46.080	5.971	48.234	3.33%	-4.47%
			5785	6.184	46.054	5.982	48.220	3.38%	-4.49%
			5795	6.197	46.043	5.994	48.207	3.39%	-4.49%
			5800	6.203	46.039	6.000	48.200	3.38%	-4.48%
			5805	6.210	46.037	6.006	48.193	3.40%	-4.47%
			5825	6.242	46.000	6.029	48.166	3.53%	-4.50%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 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.

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10.2 Test System Verification

Prior to SAR assessment, the system is verified to $\pm 10\%$ of the SAR measurement on the reference dipole at the time of calibration by the calibration facility. Full system validation status and result summary can be found in Appendix D.

Table 10-5
System Verification Results – 1g

System Verification												
TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
D	750	HEAD	08/28/2020	23.1	22.4	0.200	1003	7488	1.670	8.780	8.350	-4.90%
L	835	HEAD	08/03/2020	22.3	21.4	0.200	4d132	7406	1.950	9.650	9.750	1.04%
D	835	HEAD	08/30/2020	23.2	22.7	0.200	4d047	7488	1.920	9.420	9.600	1.91%
L	1750	HEAD	08/12/2020	24.1	22.2	0.100	1150	7406	3.540	36.500	35.400	-3.01%
L	1750	HEAD	08/25/2020	22.0	21.2	0.100	1150	7406	3.800	36.500	38.000	4.11%
L	1900	HEAD	07/13/2020	23.7	21.6	0.100	5d148	7406	4.000	39.100	40.000	2.30%
E	1900	HEAD	08/13/2020	21.9	22.1	0.100	5d149	3589	3.690	39.300	36.900	-6.11%
L	1900	HEAD	08/27/2020	22.3	21.5	0.100	5d148	7406	3.910	39.100	39.100	0.00%
E	2300	HEAD	07/13/2020	23.6	22.8	0.100	1073	3589	4.850	49.200	48.500	-1.42%
E	2450	HEAD	07/08/2020	24.7	22.1	0.100	981	3589	5.100	52.300	51.000	-2.49%
E	2450	HEAD	08/04/2020	22.8	22.3	0.100	719	3589	5.280	53.100	52.800	-0.56%
E	2600	HEAD	07/08/2020	24.7	22.1	0.100	1004	3589	5.860	55.900	58.600	4.83%
D	3500	HEAD	08/20/2020	22.3	21.8	0.100	1059	7488	6.330	64.600	63.300	-2.01%
D	3700	HEAD	08/20/2020	22.3	21.8	0.100	1018	7488	6.140	65.800	61.400	-6.69%
H	5250	HEAD	07/13/2020	21.7	21.8	0.050	1057	7357	3.820	79.200	76.400	-3.54%
H	5600	HEAD	07/13/2020	21.7	21.8	0.050	1057	7357	3.870	84.100	77.400	-7.97%
H	5750	HEAD	07/13/2020	21.7	21.8	0.050	1057	7357	3.890	80.500	77.800	-3.35%
E	750	BODY	08/20/2020	22.1	22.1	0.200	1161	3589	1.750	8.430	8.750	3.80%
E	750	BODY	08/24/2020	23.1	21.7	0.200	1161	3589	1.790	8.430	8.950	6.17%
P	835	BODY	07/22/2020	22.7	21.5	0.200	4d047	7551	2.020	9.470	10.100	6.65%
P	835	BODY	08/20/2020	22.4	21.6	0.200	4d132	7551	1.950	9.960	9.750	-2.11%
P	835	BODY	08/26/2020	22.9	21.9	0.200	4d132	7551	2.090	9.960	10.450	4.92%
L	1750	BODY	07/29/2020	23.1	22.0	0.100	1148	7406	3.570	36.300	35.700	-1.65%
P	1750	BODY	08/12/2020	22.7	22.3	0.100	1148	7551	3.530	36.300	35.300	-2.75%
I	1750	BODY	08/31/2020	22.1	22.0	0.100	1008	7570	3.920	37.400	39.200	4.81%
J	1900	BODY	08/12/2020	21.9	22.3	0.100	5d149	7571	4.120	39.400	41.200	4.57%
H	1900	BODY	08/17/2020	24.1	23.1	0.100	5d149	7357	4.220	39.400	42.200	7.11%
H	1900	BODY	08/19/2020	24.8	23.5	0.100	5d149	7357	4.260	39.400	42.600	8.12%
J	1900	BODY	08/20/2020	22.5	24.8	0.100	5d080	7571	4.230	39.200	42.300	7.91%
J	1900	BODY	08/31/2020	20.9	22.4	0.100	5d080	7571	4.220	39.200	42.200	7.65%
K	2300	BODY	08/13/2020	22.2	22.1	0.100	1073	7409	5.080	47.700	50.800	6.50%
K	2450	BODY	07/20/2020	23.6	23.6	0.100	719	7409	5.290	50.800	52.900	4.13%
K	2450	BODY	08/13/2020	22.2	22.1	0.100	981	7409	5.040	50.900	50.400	-0.98%
K	2450	BODY	08/17/2020	22.0	22.0	0.100	981	7409	5.300	50.900	53.000	4.13%
K	2600	BODY	08/17/2020	22.0	22.0	0.100	1064	7409	5.590	55.600	55.900	0.54%
D	3500	BODY	08/04/2020	23.7	22.5	0.100	1059	7488	6.420	65.100	64.200	-1.38%
D	3700	BODY	08/04/2020	23.7	22.5	0.100	1018	7488	6.760	64.300	67.600	5.13%
G	5250	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.660	75.600	73.200	-3.17%
G	5600	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.920	78.500	78.400	-0.13%
G	5750	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.670	75.900	73.400	-3.29%

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Table 10-6
System Verification Results – Body 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
L	1750	BODY	07/29/2020	23.1	22.0	0.100	1148	7406	1.930	19.300	19.300	0.00%
I	1750	BODY	08/31/2020	22.1	22.0	0.100	1008	7570	2.050	19.900	20.500	3.02%
J	1900	BODY	08/12/2020	21.9	22.3	0.100	5d149	7571	2.100	20.700	21.000	1.45%
H	1900	BODY	08/17/2020	24.1	23.1	0.100	5d149	7357	2.170	20.700	21.700	4.83%
J	1900	BODY	08/24/2020	22.7	22.6	0.100	5d080	7571	2.120	20.600	21.200	2.91%
K	2300	BODY	08/13/2020	22.2	22.1	0.100	1073	7409	2.410	23.200	24.100	3.88%
K	2450	BODY	08/20/2020	21.9	21.9	0.100	981	7409	2.400	24.200	24.000	-0.83%
K	2600	BODY	08/20/2020	21.9	21.9	0.100	1064	7409	2.490	25.000	24.900	-0.40%
G	5250	BODY	07/27/2020	21.9	22.4	0.050	1237	7538	1.030	21.200	20.600	-2.83%
G	5600	BODY	07/27/2020	21.9	22.4	0.050	1237	7538	1.110	22.000	22.200	0.91%
G	5750	BODY	07/27/2020	21.9	22.4	0.050	1237	7538	1.050	21.200	21.000	-0.94%

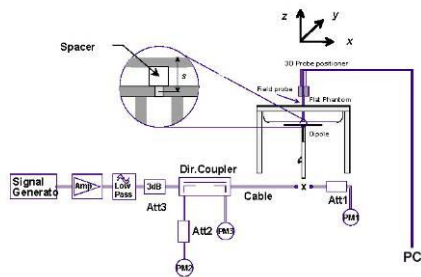


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

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11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
Cell. CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.14	0.18	Right	Cheek	1	00245	1:1	0.039	1.086	0.042	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.14	0.13	Right	Tilt	1	00245	1:1	0.024	1.086	0.026	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.14	0.01	Left	Cheek	1	00245	1:1	0.054	1.086	0.059	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.14	0.13	Left	Tilt	1	00245	1:1	0.027	1.086	0.029	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	24.81	0.09	Right	Cheek	1	00245	1:1	0.041	1.172	0.048	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	24.81	0.21	Right	Tilt	1	00245	1:1	0.023	1.172	0.027	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	24.81	0.08	Left	Cheek	1	00245	1:1	0.054	1.172	0.063	A1
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	24.81	0.16	Left	Cheek	3	00245	1:1	0.042	1.172	0.049	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	24.81	0.14	Left	Tilt	1	00245	1:1	0.024	1.172	0.028	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-2
PCS CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.86	0.13	Right	Cheek	1	00385	1:1	0.046	1.159	0.053	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.86	0.13	Right	Tilt	1	00385	1:1	0.040	1.159	0.046	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.86	0.12	Left	Cheek	1	00385	1:1	0.050	1.159	0.058	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.86	0.04	Left	Tilt	1	00385	1:1	0.045	1.159	0.052	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	24.70	0.13	Right	Cheek	1	00385	1:1	0.054	1.202	0.065	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	24.70	0.17	Right	Tilt	1	00385	1:1	0.037	1.202	0.044	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	24.70	0.12	Left	Cheek	1	00385	1:1	0.059	1.202	0.071	A2
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	24.70	0.12	Left	Cheek	3	00385	1:1	0.053	1.202	0.064	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	24.70	0.04	Left	Tilt	1	00385	1:1	0.047	1.202	0.056	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-3
GSM 850 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	34.0	33.89	-0.01	Right	Cheek	1	00237	1	1:8.3	0.028	1.026	0.029	
836.60	190	GSM 850	GSM	34.0	33.89	-0.11	Right	Tilt	1	00237	1	1:8.3	0.014	1.026	0.014	
836.60	190	GSM 850	GSM	34.0	33.89	0.01	Left	Cheek	1	00237	1	1:8.3	0.037	1.026	0.038	
836.60	190	GSM 850	GSM	34.0	33.89	-0.06	Left	Tilt	1	00237	1	1:8.3	0.017	1.026	0.017	
824.20	128	GSM 850	GPRS	32.0	32.00	-0.14	Right	Cheek	1	00237	2	1:4.15	0.033	1.000	0.033	
824.20	128	GSM 850	GPRS	32.0	32.00	0.05	Right	Tilt	1	00237	2	1:4.15	0.017	1.000	0.017	
824.20	128	GSM 850	GPRS	32.0	32.00	-0.15	Left	Cheek	1	00237	2	1:4.15	0.044	1.000	0.044	
824.20	128	GSM 850	GPRS	32.0	32.00	0.00	Left	Cheek	3	00237	2	1:4.15	0.054	1.000	0.054	A3
824.20	128	GSM 850	GPRS	32.0	32.00	0.14	Left	Tilt	1	00237	2	1:4.15	0.020	1.000	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-4
GSM 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	31.0	30.55	0.06	Right	Cheek	1	00237	1	1:8.3	0.034	1.109	0.038	
1880.00	661	GSM 1900	GSM	31.0	30.55	0.11	Right	Tilt	1	00237	1	1:8.3	0.024	1.109	0.027	
1880.00	661	GSM 1900	GSM	31.0	30.55	0.01	Left	Cheek	1	00237	1	1:8.3	0.039	1.109	0.043	
1880.00	661	GSM 1900	GSM	31.0	30.55	-0.11	Left	Tilt	1	00237	1	1:8.3	0.020	1.109	0.022	
1880.00	661	GSM 1900	GPRS	29.0	28.54	0.19	Right	Cheek	1	00237	2	1:4.15	0.036	1.112	0.040	
1880.00	661	GSM 1900	GPRS	29.0	28.54	0.19	Right	Tilt	1	00237	2	1:4.15	0.022	1.112	0.024	
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.01	Left	Cheek	1	00237	2	1:4.15	0.040	1.112	0.044	A4
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.15	Left	Cheek	3	00237	2	1:4.15	0.028	1.112	0.031	
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.14	Left	Tilt	1	00237	2	1:4.15	0.021	1.112	0.023	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-5
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	24.86	0.13	Right	Cheek	1	00237	1:1	0.042	1.159	0.049	
836.60	4183	UMTS 850	RMC	25.5	24.86	0.15	Right	Tilt	1	00237	1:1	0.025	1.159	0.029	
836.60	4183	UMTS 850	RMC	25.5	24.86	0.09	Left	Cheek	1	00237	1:1	0.053	1.159	0.061	A5
836.60	4183	UMTS 850	RMC	25.5	24.86	0.01	Left	Cheek	3	00237	1:1	0.046	1.159	0.053	
836.60	4183	UMTS 850	RMC	25.5	24.86	0.13	Left	Tilt	1	00237	1:1	0.025	1.159	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-6
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.17	Right	Cheek	1	00385	1:1	0.041	1.054	0.043	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.06	Right	Tilt	1	00385	1:1	0.027	1.054	0.028	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	-0.16	Left	Cheek	1	00385	1:1	0.066	1.054	0.070	A6
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.17	Left	Cheek	3	00385	1:1	0.065	1.054	0.069	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.16	Left	Tilt	1	00385	1:1	0.026	1.054	0.027	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-7
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.12	Right	Cheek	1	00385	1:1	0.066	1.033	0.068	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.12	Right	Tilt	1	00385	1:1	0.051	1.033	0.053	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.16	Left	Cheek	1	00385	1:1	0.071	1.033	0.073	A7
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.04	Left	Cheek	3	00385	1:1	0.070	1.033	0.072	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.19	Left	Tilt	1	00385	1:1	0.055	1.033	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-8
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	1	25.5	25.25	0.12	0	Right	Cheek	QPSK	1	25	00245	1:1	0.026	1.059	0.028	
707.50	23095	Mid	LTE Band 12	10	1	24.5	24.23	0.20	1	Right	Cheek	QPSK	25	25	00245	1:1	0.016	1.064	0.017	
707.50	23095	Mid	LTE Band 12	10	3	25.5	25.25	0.00	0	Right	Cheek	QPSK	1	25	00245	1:1	0.046	1.059	0.049	A8
707.50	23095	Mid	LTE Band 12	10	1	25.5	25.25	0.17	0	Right	Tilt	QPSK	1	25	00245	1:1	0.014	1.059	0.015	
707.50	23095	Mid	LTE Band 12	10	1	24.5	24.23	0.14	1	Right	Tilt	QPSK	25	25	00245	1:1	0.007	1.064	0.007	
707.50	23095	Mid	LTE Band 12	10	1	25.5	25.25	0.20	0	Left	Cheek	QPSK	1	25	00245	1:1	0.012	1.059	0.013	
707.50	23095	Mid	LTE Band 12	10	1	24.5	24.23	0.13	1	Left	Cheek	QPSK	25	25	00245	1:1	0.009	1.064	0.010	
707.50	23095	Mid	LTE Band 12	10	1	25.5	25.25	0.18	0	Left	Tilt	QPSK	1	25	00245	1:1	0.008	1.059	0.008	
707.50	23095	Mid	LTE Band 12	10	1	24.5	24.23	0.15	1	Left	Tilt	QPSK	25	25	00245	1:1	0.004	1.064	0.004	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-9
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.20	0.12	0	Right	Cheek	QPSK	1	49	00245	1:1	0.045	1.072	0.048	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.24	0.13	1	Right	Cheek	QPSK	25	25	00245	1:1	0.026	1.062	0.028	
782.00	23230	Mid	LTE Band 13	10	3	25.5	25.20	0.04	0	Right	Cheek	QPSK	1	49	00245	1:1	0.046	1.072	0.049	A9
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.20	0.14	0	Right	Tilt	QPSK	1	49	00245	1:1	0.031	1.072	0.033	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.24	0.21	1	Right	Tilt	QPSK	25	25	00245	1:1	0.019	1.062	0.020	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.20	0.15	0	Left	Cheek	QPSK	1	49	00245	1:1	0.038	1.072	0.041	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.24	0.16	1	Left	Cheek	QPSK	25	25	00245	1:1	0.023	1.062	0.024	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.20	0.19	0	Left	Tilt	QPSK	1	49	00245	1:1	0.019	1.072	0.020	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.24	0.15	1	Left	Tilt	QPSK	25	25	00245	1:1	0.011	1.062	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-10
LTE Band 14 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
793.00	23330	Mid	LTE Band 14	10	1	25.5	25.10	0.12	0	Right	Cheek	QPSK	1	0	00245	1:1	0.035	1.096	0.038	
793.00	23330	Mid	LTE Band 14	10	1	24.5	24.14	0.00	1	Right	Cheek	QPSK	25	12	00245	1:1	0.028	1.086	0.030	
793.00	23330	Mid	LTE Band 14	10	1	25.5	25.10	0.14	0	Right	Tilt	QPSK	1	0	00245	1:1	0.024	1.096	0.026	
793.00	23330	Mid	LTE Band 14	10	1	24.5	24.14	0.13	1	Right	Tilt	QPSK	25	12	00245	1:1	0.021	1.086	0.023	
793.00	23330	Mid	LTE Band 14	10	1	25.5	25.10	0.16	0	Left	Cheek	QPSK	1	0	00245	1:1	0.040	1.096	0.044	
793.00	23330	Mid	LTE Band 14	10	1	24.5	24.14	0.17	1	Left	Cheek	QPSK	25	12	00245	1:1	0.028	1.086	0.030	
793.00	23330	Mid	LTE Band 14	10	3	25.5	25.10	0.06	0	Left	Cheek	QPSK	1	0	00245	1:1	0.043	1.096	0.047	A10
793.00	23330	Mid	LTE Band 14	10	1	25.5	25.10	0.18	0	Left	Tilt	QPSK	1	0	00245	1:1	0.018	1.096	0.020	
793.00	23330	Mid	LTE Band 14	10	1	24.5	24.14	0.15	1	Left	Tilt	QPSK	25	12	00245	1:1	0.013	1.086	0.014	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-11
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																						
1 CC Uplink / 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.															(W/kg)		(W/kg)		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	25.5	25.05	0.13	0	Right	Cheek	QPSK	1	49	00245	1:1	0.037	1.109	0.041	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	24.5	24.12	0.15	1	Right	Cheek	QPSK	25	25	00245	1:1	0.021	1.091	0.023	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	25.5	25.05	0.10	0	Right	Tilt	QPSK	1	49	00245	1:1	0.030	1.109	0.033	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	24.5	24.12	0.16	1	Right	Tilt	QPSK	25	25	00245	1:1	0.018	1.091	0.020	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	25.5	25.05	0.11	0	Left	Cheek	QPSK	1	49	00245	1:1	0.039	1.109	0.043	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	3	25.5	25.05	0.05	0	Left	Cheek	QPSK	1	49	00245	1:1	0.036	1.109	0.040	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	24.5	24.12	0.14	1	Left	Cheek	QPSK	25	25	00245	1:1	0.030	1.091	0.033	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	25.5	25.20	-0.01	0	Left	Cheek	QPSK	1	49	00245	1:1	0.040	1.072	0.043	A11
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5									1	0						
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	25.5	25.05	0.17	0	Left	Tilt	QPSK	1	49	00245	1:1	0.021	1.109	0.023	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	1	24.5	24.12	0.19	1	Left	Tilt	QPSK	25	25	00245	1:1	0.014	1.091	0.015	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
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Table 11-12
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	-0.06	0	Right	Cheek	Ant 2	QPSK	1	50	00385	1:1	0.037	1.074	0.040	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	-0.06	1	Right	Cheek	Ant 2	QPSK	50	25	00385	1:1	0.032	1.059	0.034	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.13	0	Right	Tilt	Ant 2	QPSK	1	50	00385	1:1	0.024	1.074	0.026	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.17	1	Right	Tilt	Ant 2	QPSK	50	25	00385	1:1	0.021	1.059	0.022	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.07	0	Left	Cheek	Ant 2	QPSK	1	50	00385	1:1	0.051	1.074	0.055	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.04	1	Left	Cheek	Ant 2	QPSK	50	25	00385	1:1	0.034	1.059	0.036	
1770.00	132572	High	LTE Band 66 (AWS)	20	3	25.5	25.19	0.05	0	Left	Cheek	Ant 2	QPSK	1	50	00385	1:1	0.065	1.074	0.070	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.00	0	Left	Tilt	Ant 2	QPSK	1	50	00385	1:1	0.036	1.074	0.039	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.20	1	Left	Tilt	Ant 2	QPSK	50	25	00385	1:1	0.033	1.059	0.035	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.58	-0.04	0	Right	Cheek	Ant 3	QPSK	1	50	04445	1:1	0.078	1.236	0.096	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.74	0.01	0	Right	Cheek	Ant 3	QPSK	50	25	04445	1:1	0.081	1.191	0.096	A12
1720.00	132072	Low	LTE Band 66 (AWS)	20	3	23.5	22.74	0.08	0	Right	Cheek	Ant 3	QPSK	50	25	04445	1:1	0.057	1.191	0.068	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.58	0.02	0	Right	Tilt	Ant 3	QPSK	1	50	04445	1:1	0.032	1.236	0.040	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.74	0.13	0	Right	Tilt	Ant 3	QPSK	50	25	04445	1:1	0.032	1.191	0.038	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.58	0.18	0	Left	Cheek	Ant 3	QPSK	1	50	04445	1:1	0.043	1.236	0.053	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.74	0.12	0	Left	Cheek	Ant 3	QPSK	50	25	04445	1:1	0.045	1.191	0.054	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.58	-0.11	0	Left	Tilt	Ant 3	QPSK	1	50	04445	1:1	0.040	1.236	0.049	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.74	0.09	0	Left	Tilt	Ant 3	QPSK	50	25	04445	1:1	0.043	1.191	0.051	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-13
LTE Band 2 (PCS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)																(W/kg)			
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.13	0	Right	Cheek	Ant 2	QPSK	1	0	00237	1:1	0.065	1.091	0.071	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.20	1	Right	Cheek	Ant 2	QPSK	50	50	00237	1:1	0.042	1.081	0.045	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.13	0	Right	Tilt	Ant 2	QPSK	1	0	00237	1:1	0.051	1.091	0.056	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.17	1	Right	Tilt	Ant 2	QPSK	50	50	00237	1:1	0.033	1.081	0.036	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.09	0	Left	Cheek	Ant 2	QPSK	1	0	00237	1:1	0.069	1.091	0.075	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.13	1	Left	Cheek	Ant 2	QPSK	50	50	00237	1:1	0.053	1.081	0.057	
1860.00	18700	Low	LTE Band 2 (PCS)	20	3	24.7	24.14	0.12	0	Left	Cheek	Ant 2	QPSK	1	0	00237	1:1	0.053	1.138	0.060	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.12	0	Left	Tilt	Ant 2	QPSK	1	0	00237	1:1	0.057	1.091	0.062	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.07	1	Left	Tilt	Ant 2	QPSK	50	50	00237	1:1	0.039	1.081	0.042	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.55	0.08	0	Right	Cheek	Ant 3	QPSK	1	0	04445	1:1	0.097	1.245	0.121	A13
1900.00	19100	High	LTE Band 2 (PCS)	20	3	23.5	22.55	0.10	0	Right	Cheek	Ant 3	QPSK	1	0	04445	1:1	0.050	1.245	0.062	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.59	-0.02	0	Right	Cheek	Ant 3	QPSK	50	25	04445	1:1	0.097	1.233	0.120	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.55	-0.03	0	Right	Tilt	Ant 3	QPSK	1	0	04445	1:1	0.031	1.245	0.039	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.59	0.12	0	Right	Tilt	Ant 3	QPSK	50	25	04445	1:1	0.032	1.233	0.039	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.55	-0.02	0	Left	Cheek	Ant 3	QPSK	1	0	04445	1:1	0.057	1.245	0.071	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.59	0.15	0	Left	Cheek	Ant 3	QPSK	50	25	04445	1:1	0.057	1.233	0.070	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.55	-0.04	0	Left	Tilt	Ant 3	QPSK	1	0	04445	1:1	0.030	1.245	0.037	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.59	0.09	0	Left	Tilt	Ant 3	QPSK	50	25	04445	1:1	0.029	1.233	0.036	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-14
LTE Band 30 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.14	0	Right	Cheek	Ant 2	QPSK	1	0	00245	1:1	0.024	1.109	0.027	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.16	1	Right	Cheek	Ant 2	QPSK	25	12	00245	1:1	0.013	1.084	0.014	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.17	0	Right	Tilt	Ant 2	QPSK	1	0	00245	1:1	0.019	1.109	0.021	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.19	1	Right	Tilt	Ant 2	QPSK	25	12	00245	1:1	0.012	1.084	0.013	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.10	0	Left	Cheek	Ant 2	QPSK	1	0	00245	1:1	0.035	1.109	0.039	A14
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.15	1	Left	Cheek	Ant 2	QPSK	25	12	00245	1:1	0.020	1.084	0.022	
2310.00	27710	Mid	LTE Band 30	10	3	25.5	25.05	0.13	0	Left	Cheek	Ant 2	QPSK	1	0	00245	1:1	0.029	1.109	0.032	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.18	0	Left	Tilt	Ant 2	QPSK	1	0	00245	1:1	0.018	1.109	0.020	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.19	1	Left	Tilt	Ant 2	QPSK	25	12	00245	1:1	0.011	1.084	0.012	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.61	-0.06	0	Right	Cheek	Ant 1	QPSK	1	49	00237	1:1	0.033	1.227	0.040	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.57	0.09	0	Right	Cheek	Ant 1	QPSK	25	12	00237	1:1	0.034	1.239	0.042	
2310.00	27710	Mid	LTE Band 30	10	3	23.5	22.57	0.15	0	Right	Cheek	Ant 1	QPSK	25	12	00237	1:1	0.015	1.239	0.019	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.61	0.14	0	Right	Tilt	Ant 1	QPSK	1	49	00237	1:1	0.016	1.227	0.020	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.57	0.15	0	Right	Tilt	Ant 1	QPSK	25	12	00237	1:1	0.019	1.239	0.024	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.61	0.14	0	Left	Cheek	Ant 1	QPSK	1	49	00237	1:1	0.017	1.227	0.021	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.57	0.16	0	Left	Cheek	Ant 1	QPSK	25	12	00237	1:1	0.019	1.239	0.024	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.61	0.19	0	Left	Tilt	Ant 1	QPSK	1	49	00237	1:1	0.011	1.227	0.013	
2310.00	27710	Mid	LTE Band 30	10	1	23.5	22.57	0.17	0	Left	Tilt	Ant 1	QPSK	25	12	00237	1:1	0.010	1.239	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-15
LTE Band 48 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.08	0	Right	Cheek	QPSK	1	99	00377	1:1.58	0.188	1.109	0.208	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	-0.05	0	Right	Cheek	QPSK	50	25	00377	1:1.58	0.168	1.109	0.186	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.08	0	Right	Tilt	QPSK	1	99	00377	1:1.58	0.135	1.109	0.150	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	-0.11	0	Right	Tilt	QPSK	50	25	00377	1:1.58	0.130	1.109	0.144	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.17	0	Left	Cheek	QPSK	1	99	00377	1:1.58	0.433	1.109	0.480	A68
3560.00	55340	Low	LTE Band 48	20	3	22.5	22.05	-0.13	0	Left	Cheek	QPSK	1	99	00377	1:1.58	0.803	1.109	0.891	A15
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.11	0	Left	Cheek	QPSK	50	25	00377	1:1.58	0.419	1.109	0.465	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.17	0	Left	Tilt	QPSK	1	99	00377	1:1.58	0.308	1.109	0.342	
3560.00	55340	Low	LTE Band 48	20	1	22.5	22.05	0.13	0	Left	Tilt	QPSK	50	25	00377	1:1.58	0.286	1.109	0.317	
3560.00	55340	Low	LTE Band 48	20	3	22.5	22.05	0.17	0	Left	Cheek	QPSK	1	99	00377	1:1.58	0.781	1.109	0.866	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Head									
Spatial Peak											1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population											averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel). 2) Blue entry represents variability measurement.

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Table 11-16
LTE Band 41 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	0.14	0	Right	Cheek	QPSK	1	0	00245	1:1.58	0.048	1.099	0.053	A16
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.17	1	Right	Cheek	QPSK	50	25	00245	1:1.58	0.030	1.067	0.032	
2549.50	40185	Low-Mid	LTE Band 41	20	3	25.5	25.09	0.11	0	Right	Cheek	QPSK	1	0	00245	1:1.58	0.010	1.099	0.011	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	0.14	0	Right	Tilt	QPSK	1	0	00245	1:1.58	0.032	1.099	0.035	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.15	1	Right	Tilt	QPSK	50	25	00245	1:1.58	0.025	1.067	0.027	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	0.17	0	Left	Cheek	QPSK	1	0	00245	1:1.58	0.033	1.099	0.036	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.18	1	Left	Cheek	QPSK	50	25	00245	1:1.58	0.020	1.067	0.021	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	-0.19	0	Left	Tilt	QPSK	1	0	00245	1:1.58	0.019	1.099	0.021	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.19	1	Left	Tilt	QPSK	50	25	00245	1:1.58	0.008	1.067	0.009	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-17
NR Band n5 (Cell) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.90	0.18	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	00237	1:1	0.037	1.148	0.042	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.85	0.20	0	Right	Cheek	DFT-S-OFDM	QPSK	50	28	00237	1:1	0.031	1.161	0.036	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.90	0.13	0	Right	Tilt	DFT-S-OFDM	QPSK	1	53	00237	1:1	0.019	1.148	0.022	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.85	0.16	0	Right	Tilt	DFT-S-OFDM	QPSK	50	28	00237	1:1	0.018	1.161	0.021	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.90	0.02	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	00237	1:1	0.043	1.148	0.049	A17
836.50	167300	Mid	NR Band n5 (Cell)	20	3	25.5	24.90	0.15	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	00237	1:1	0.039	1.148	0.045	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.85	-0.05	0	Left	Cheek	DFT-S-OFDM	QPSK	50	28	00237	1:1	0.041	1.161	0.048	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	24.0	23.22	0.08	1.5	Left	Cheek	CP-OFDM	QPSK	1	1	00237	1:1	0.036	1.197	0.043	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.90	0.11	0	Left	Tilt	DFT-S-OFDM	QPSK	1	53	00237	1:1	0.023	1.148	0.026	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	24.85	0.16	0	Left	Tilt	DFT-S-OFDM	QPSK	50	28	00237	1:1	0.019	1.161	0.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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Table 11-18
NR Band n66 (AWS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.19	0.11	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	04437	1:1	0.138	1.074	0.148	A18
1745.00	349000	Mid	NR Band n66 (AWS)	20	3	23.5	23.19	-0.05	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	04437	1:1	0.061	1.074	0.066	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.09	0.05	0	Right	Cheek	DFT-S-OFDM	QPSK	50	28	04437	1:1	0.114	1.099	0.125	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.84	0.11	0	Right	Cheek	CP-OFDM	QPSK	1	1	04437	1:1	0.087	1.164	0.101	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.19	-0.12	0	Right	Tilt	DFT-S-OFDM	QPSK	1	53	04437	1:1	0.048	1.074	0.052	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.09	0.19	0	Right	Tilt	DFT-S-OFDM	QPSK	50	28	04437	1:1	0.041	1.099	0.045	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.19	-0.13	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	04437	1:1	0.081	1.074	0.087	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.09	-0.16	0	Left	Cheek	DFT-S-OFDM	QPSK	50	28	04437	1:1	0.071	1.099	0.078	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.19	0.18	0	Left	Tilt	DFT-S-OFDM	QPSK	1	53	04437	1:1	0.044	1.074	0.047	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.09	0.13	0	Left	Tilt	DFT-S-OFDM	QPSK	50	28	04437	1:1	0.041	1.099	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-19
NR Band n2 (PCS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Serial Number	Duty Cycle	SAR (lg)	Scaling Factor	Reported SAR (lg)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.99	0.08	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	04445	1:1	0.169	1.125	0.190	A19
1880.00	376000	Mid	NR Band n2 (PCS)	20	3	23.5	22.99	0.12	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	04445	1:1	0.093	1.125	0.105	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.73	-0.01	0	Right	Cheek	DFT-S-OFDM	QPSK	50	56	04445	1:1	0.118	1.194	0.141	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.41	-0.04	0	Right	Cheek	CP-OFDM	QPSK	1	1	04445	1:1	0.108	1.285	0.139	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.99	0.12	0	Right	Tilt	DFT-S-OFDM	QPSK	1	53	04445	1:1	0.027	1.125	0.030	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.73	-0.06	0	Right	Tilt	DFT-S-OFDM	QPSK	50	56	04445	1:1	0.024	1.194	0.029	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.99	0.11	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	04445	1:1	0.085	1.125	0.096	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.73	0.14	0	Left	Cheek	DFT-S-OFDM	QPSK	50	56	04445	1:1	0.068	1.194	0.081	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.99	-0.13	0	Left	Tilt	DFT-S-OFDM	QPSK	1	53	04445	1:1	0.047	1.125	0.053	
1880.00	376000	Mid	NR Band n2 (PCS)	20	1	23.5	22.73	0.03	0	Left	Tilt	DFT-S-OFDM	QPSK	50	56	04445	1:1	0.035	1.194	0.042	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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**Table 11-20
DTS Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	19.0	18.43	0.03	Right	Cheek	1	1	00476	1	98.2	0.651	0.466	1.140	1.018	0.541	A69
2462	11	802.11b	DSSS	22	19.0	18.43	0.12	Right	Cheek	1	3	00476	1	98.2	1.058	0.718	1.140	1.018	0.833	A20
2462	11	802.11b	DSSS	22	19.0	18.43	0.03	Right	Tilt	1	1	00476	1	98.2	0.268	0.183	1.140	1.018	0.212	
2462	11	802.11b	DSSS	22	19.0	18.43	-0.17	Left	Cheek	1	1	00476	1	98.2	0.180	0.162	1.140	1.018	0.188	
2462	11	802.11b	DSSS	22	19.0	18.43	0.12	Left	Tilt	1	1	00476	1	98.2	0.095	-	1.140	1.018	-	
2412	1	802.11b	DSSS	22	19.0	18.88	0.13	Right	Cheek	2	1	00476	1	98.9	0.501	0.312	1.028	1.011	0.324	
2412	1	802.11b	DSSS	22	19.0	18.88	0.12	Right	Tilt	2	1	00476	1	98.9	0.571	0.372	1.028	1.011	0.387	
2412	1	802.11b	DSSS	22	19.0	18.88	0.20	Right	Tilt	2	3	00476	1	98.9	1.081	0.634	1.028	1.011	0.659	
2412	1	802.11b	DSSS	22	19.0	18.88	-0.06	Left	Cheek	2	1	00476	1	98.9	0.228	0.146	1.028	1.011	0.152	
2412	1	802.11b	DSSS	22	19.0	18.88	0.20	Left	Tilt	2	1	00476	1	98.9	0.286	0.192	1.028	1.011	0.200	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entries represent additional Head SAR Position (Mechanical Mode #3: Swivel)

**Table 11-21
DTS MIMO Head SAR for Conditions with 5G NR FR2 Active**

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)	(Power)	(Duty Cycle)	(W/kg)	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	0.11	Right	Cheek	MIMO	1	04395	13	96.9	0.227	-	1.062	1.032	-	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	0.13	Right	Tilt	MIMO	1	04395	13	96.9	0.294	0.158	1.062	1.032	0.173	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	0.07	Right	Tilt	MIMO	3	04395	13	96.9	0.813	0.417	1.062	1.032	0.457	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	0.11	Left	Cheek	MIMO	1	04395	13	96.9	0.091	-	1.062	1.032	-	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	0.20	Left	Tilt	MIMO	1	04395	13	96.9	0.113	-	1.062	1.032	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram												

Notes: 1) Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel). 2) To achieve the 18.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.0 dBm.

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**Table 11-22
NII Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	17.0	16.36	0.16	Right	Cheek	1	1	00476	6	98.5	0.503	0.293	1.159	1.015	0.345	A21
5260	52	802.11a	OFDM	20	17.0	16.36	0.17	Right	Cheek	1	3	00476	6	98.5	0.398	0.218	1.159	1.015	0.256	
5260	52	802.11a	OFDM	20	17.0	16.36	0.19	Right	Tilt	1	1	00476	6	98.5	0.403	-	1.159	1.015	-	
5260	52	802.11a	OFDM	20	17.0	16.36	0.08	Left	Cheek	1	1	00476	6	98.5	0.361	-	1.159	1.015	-	
5260	52	802.11a	OFDM	20	17.0	16.36	0.19	Left	Tilt	1	1	00476	6	98.5	0.371	-	1.159	1.015	-	
5280	56	802.11a	OFDM	20	17.0	16.96	0.17	Right	Cheek	2	1	00476	6	98.5	0.236	-	1.009	1.015	-	
5280	56	802.11a	OFDM	20	17.0	16.96	0.18	Right	Tilt	2	1	00476	6	98.5	0.274	0.136	1.009	1.015	0.139	
5280	56	802.11a	OFDM	20	17.0	16.96	0.18	Right	Tilt	2	3	00476	6	98.5	0.532	0.239	1.009	1.015	0.245	
5280	56	802.11a	OFDM	20	17.0	16.96	0.13	Left	Cheek	2	1	00476	6	98.5	0.223	-	1.009	1.015	-	
5280	56	802.11a	OFDM	20	17.0	16.96	0.19	Left	Tilt	2	1	00476	6	98.5	0.227	-	1.009	1.015	-	
5720	144	802.11a	OFDM	20	17.0	16.86	0.09	Right	Cheek	1	1	00476	6	98.5	0.481	0.174	1.033	1.015	0.182	
5720	144	802.11a	OFDM	20	17.0	16.86	0.18	Right	Tilt	1	1	00476	6	98.5	0.412	-	1.033	1.015	-	
5720	144	802.11a	OFDM	20	17.0	16.86	0.18	Left	Cheek	1	1	00476	6	98.5	0.247	-	1.033	1.015	-	
5720	144	802.11a	OFDM	20	17.0	16.86	0.19	Left	Tilt	1	1	00476	6	98.5	0.245	-	1.033	1.015	-	
5500	100	802.11a	OFDM	20	17.0	16.98	0.19	Right	Cheek	2	1	00476	6	98.5	0.100	-	1.005	1.015	-	
5500	100	802.11a	OFDM	20	17.0	16.98	0.19	Right	Tilt	2	1	00476	6	98.5	0.118	0.053	1.005	1.015	0.054	
5500	100	802.11a	OFDM	20	17.0	16.98	0.19	Left	Cheek	2	1	00476	6	98.5	0.093	-	1.005	1.015	-	
5500	100	802.11a	OFDM	20	17.0	16.98	0.20	Left	Tilt	2	1	00476	6	98.5	0.095	-	1.005	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	0.15	Right	Cheek	1	1	00476	6	98.5	0.292	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	0.08	Right	Tilt	1	1	00476	6	98.5	0.299	0.137	1.114	1.015	0.155	
5745	149	802.11a	OFDM	20	17.0	16.53	0.20	Left	Cheek	1	1	00476	6	98.5	0.222	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	0.19	Left	Tilt	1	1	00476	6	98.5	0.202	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	0.19	Right	Cheek	2	1	00476	6	98.5	0.178	0.089	1.007	1.015	0.091	
5745	149	802.11a	OFDM	20	17.0	16.97	0.20	Right	Tilt	2	1	00476	6	98.5	0.170	-	1.007	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	-0.14	Left	Cheek	2	1	00476	6	98.5	0.098	-	1.007	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	0.20	Left	Tilt	2	1	00476	6	98.5	0.104	-	1.007	1.015	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																				
Spatial Peak									Head											
Uncontrolled Exposure/General Population									1.6 W/kg (mW/g)											
									averaged over 1 gram											

Note: Green entries represent additional Head SAR Position (Mechanical Mode #3: Swivel)

**Table 11-23
DSS Head SAR**

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	12.0	11.15	-0.15	Right	Cheek	1	00476	1	77.9	0.055	1.216	1.284	0.086	
2441.00	39	Bluetooth	FHSS	12.0	11.15	0.14	Right	Cheek	3	00476	1	77.9	0.116	1.216	1.284	0.181	A22
2441.00	39	Bluetooth	FHSS	12.0	11.15	-0.12	Right	Tilt	1	00476	1	77.9	0.022	1.216	1.284	0.034	
2441.00	39	Bluetooth	FHSS	12.0	11.15	0.15	Left	Cheek	1	00476	1	77.9	0.016	1.216	1.284	0.025	
2441.00	39	Bluetooth	FHSS	12.0	11.15	0.19	Left	Tilt	1	00476	1	77.9	0.003	1.216	1.284	0.005	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

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11.2 Standalone Body-Worn SAR Data

Table 11-24
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	TDSO / SO32	25.5	25.16	-0.03	10 mm	04445	N/A	1:1	back	0.449	1.081	0.485	A23
1851.25	25	PCS CDMA	TDSO / SO32	25.5	24.92	0.00	10 mm	00385	N/A	1:1	back	0.587	1.143	0.671	
1880.00	600	PCS CDMA	TDSO / SO32	25.5	24.87	-0.02	10 mm	00385	N/A	1:1	back	0.610	1.156	0.705	
1908.75	1175	PCS CDMA	TDSO / SO32	25.5	24.78	0.04	10 mm	00385	N/A	1:1	back	0.677	1.180	0.799	A25
836.60	190	GSM 850	GSM	34.0	33.89	-0.18	10 mm	00237	1	1:8.3	back	0.188	1.026	0.193	
824.20	128	GSM 850	GPRS	32.0	32.00	-0.09	10 mm	00237	2	1:4.15	back	0.422	1.000	0.422	A27
1880.00	661	GSM 1900	GSM	31.0	30.55	-0.01	10 mm	00237	1	1:8.3	back	0.335	1.109	0.372	
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.15	10 mm	00237	2	1:4.15	back	0.386	1.112	0.429	A28
836.60	4183	UMTS 850	RMC	25.5	24.86	-0.01	10 mm	04445	N/A	1:1	back	0.438	1.159	0.508	A30
1712.40	1312	UMTS 1750	RMC	25.5	25.24	0.05	10 mm	00377	N/A	1:1	back	0.773	1.062	0.821	A31
1732.40	1412	UMTS 1750	RMC	25.5	25.27	-0.03	10 mm	00377	N/A	1:1	back	0.750	1.054	0.791	
1752.60	1513	UMTS 1750	RMC	25.5	25.29	-0.01	10 mm	00377	N/A	1:1	back	0.701	1.050	0.736	
1852.40	9262	UMTS 1900	RMC	25.5	25.33	0.08	10 mm	00385	N/A	1:1	back	0.716	1.040	0.745	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.01	10 mm	00385	N/A	1:1	back	0.717	1.033	0.741	
1907.60	9538	UMTS 1900	RMC	25.5	25.37	0.07	10 mm	00385	N/A	1:1	back	0.731	1.030	0.753	A33
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-25
LTE Band 12/13/14 Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.15	0	00237	QPSK	1	25	10 mm	back	1:1	0.330	1.059	0.349	A35
707.50	23095	Mid	LTE Band 12	10	24.5	24.23	-0.01	1	00237	QPSK	25	25	10 mm	back	1:1	0.207	1.064	0.220	
782.00	23230	Mid	LTE Band 13	10	25.5	25.20	-0.05	0	00237	QPSK	1	49	10 mm	back	1:1	0.435	1.072	0.466	A36
782.00	23230	Mid	LTE Band 13	10	24.5	24.24	0.01	1	00237	QPSK	25	25	10 mm	back	1:1	0.279	1.062	0.296	
793.00	23330	Mid	LTE Band 14	10	25.5	25.10	-0.04	0	00237	QPSK	1	0	10 mm	back	1:1	0.324	1.096	0.355	A37
793.00	23330	Mid	LTE Band 14	10	24.5	24.14	0.04	1	00237	QPSK	25	12	10 mm	back	1:1	0.279	1.086	0.303	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-26
LTE Band 5 Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.05	-0.08	0	04445	QPSK	1	49	10 mm	back	1:1	0.451	1.109	0.500	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.12	-0.14	1	04445	QPSK	25	25	10 mm	back	1:1	0.289	1.091	0.315	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.20	0.10	0	04445	QPSK	1	49	10 mm	back	1:1	0.478	1.072	0.512	A38
	SCC	843.70	20597			5							1	0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Body										
Spatial Peak											1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population											averaged over 1 gram										

Table 11-27
LTE Band 66/2/30 Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	25.08	-0.03	0	Ant 2	00237	QPSK	1	50	10 mm	back	1:1	0.641	1.102	0.706	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.5	25.09	-0.02	0	Ant 2	00237	QPSK	1	50	10 mm	back	1:1	0.683	1.099	0.751	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.19	-0.02	0	Ant 2	00237	QPSK	1	50	10 mm	back	1:1	0.693	1.074	0.744	A39
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.25	0.01	1	Ant 2	00237	QPSK	50	25	10 mm	back	1:1	0.449	1.059	0.475	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.58	0.06	0	Ant 3	04437	QPSK	1	50	10 mm	back	1:1	0.209	1.236	0.258	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.74	-0.02	0	Ant 3	04437	QPSK	50	25	10 mm	back	1:1	0.222	1.191	0.264	
1860.00	18700	Low	LTE Band 2 (PCS)	20	25.5	25.12	0.07	0	Ant 2	00377	QPSK	1	0	10 mm	back	1:1	0.566	1.091	0.618	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	24.96	-0.05	0	Ant 2	00377	QPSK	1	0	10 mm	back	1:1	0.578	1.132	0.654	A41
1900.00	19100	High	LTE Band 2 (PCS)	20	25.5	24.85	0.02	0	Ant 2	00377	QPSK	1	0	10 mm	back	1:1	0.560	1.161	0.650	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.5	24.16	0.00	1	Ant 2	00377	QPSK	50	50	10 mm	back	1:1	0.359	1.081	0.388	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.55	-0.04	0	Ant 3	00385	QPSK	1	0	10 mm	back	1:1	0.240	1.245	0.299	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.59	-0.17	0	Ant 3	00385	QPSK	50	25	10 mm	back	1:1	0.248	1.233	0.306	
2310.00	27710	Mid	LTE Band 30	10	25.5	25.05	-0.13	0	Ant 2	00237	QPSK	1	0	10 mm	back	1:1	0.510	1.109	0.566	A43
2310.00	27710	Mid	LTE Band 30	10	24.5	24.15	0.15	1	Ant 2	00237	QPSK	25	12	10 mm	back	1:1	0.239	1.084	0.259	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.18	0	Ant 1	00237	QPSK	1	49	10 mm	back	1:1	0.075	1.227	0.092	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.57	0.13	0	Ant 1	00237	QPSK	25	12	10 mm	back	1:1	0.089	1.239	0.110	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-28
LTE Band 48/41 Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.05	0	00377	QPSK	1	99	10 mm	back	1:1.58	0.171	1.109	0.190	A45
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.10	0	00377	QPSK	50	25	10 mm	back	1:1.58	0.162	1.109	0.180	
2549.50	40185	Low-Mid	LTE Band 41	20	25.5	25.09	-0.02	0	00237	QPSK	1	0	10 mm	back	1:1.58	0.248	1.099	0.273	A47
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.22	0.05	1	00237	QPSK	50	25	10 mm	back	1:1.58	0.168	1.067	0.179	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-29
NR Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.90	-0.04	0	00245	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.378	1.148	0.434	A49
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.85	0.00	0	00245	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.361	1.161	0.419	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.0	23.22	0.01	1.5	00245	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.223	1.197	0.267	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.19	-0.02	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.203	1.074	0.218	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.09	-0.05	0	04437	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.229	1.099	0.252	A50
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.84	0.04	0	04437	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.173	1.164	0.201	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.99	0.02	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.154	1.125	0.173	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.73	-0.03	0	04437	DFT-S-OFDM	QPSK	50	56	10 mm	back	1:1	0.158	1.194	0.189	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.41	0.18	0	04437	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.161	1.285	0.207	A52
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-30
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	19.0	18.43	0.15	10 mm	1	00476	1	back	98.2	0.271	0.197	1.140	1.018	0.229	A54
2412	1	802.11b	DSSS	22	19.0	18.88	0.08	10 mm	2	00476	1	back	98.9	0.151	0.100	1.028	1.011	0.104	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-31
DTS Body-Worn SAR for Conditions with 5G NR FR2 Active and/or 5 GHz WLAN

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	15.0	14.65	0.07	10 mm	1	00476	1	back	98.2	0.125	0.080	1.084	1.018	0.088	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-32
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)		(W/kg)		
5260	52	802.11a	OFDM	20	17.0	16.36	0.12	10 mm	1	00476	6	back	98.5	0.333	0.142	1.159	1.015	0.167	
5280	56	802.11a	OFDM	20	17.0	16.96	-0.20	10 mm	2	00476	6	back	98.5	0.225	0.100	1.009	1.015	0.102	
5720	144	802.11a	OFDM	20	17.0	16.86	0.07	10 mm	1	00476	6	back	98.5	0.205	0.084	1.033	1.015	0.088	
5500	100	802.11a	OFDM	20	17.0	16.98	-0.07	10 mm	2	00476	6	back	98.5	0.453	0.183	1.005	1.015	0.187	A56
5745	149	802.11a	OFDM	20	17.0	16.53	0.19	10 mm	1	00476	6	back	98.5	0.206	0.088	1.114	1.015	0.100	
5745	149	802.11a	OFDM	20	17.0	16.97	0.15	10 mm	2	00476	6	back	98.5	0.445	0.181	1.007	1.015	0.185	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-33
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate [Mbps]	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.											(W/kg)				
2441	39	Bluetooth	FHSS	12.0	11.15	0.15	10 mm	00476	1	back	77.9	0.029	1.216	1.284	0.045	A58
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram								

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11.3 Standalone Hotspot SAR Data

Table 11-34
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Mechanical Mode	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.20	-0.01	10 mm	1	04445	N/A	1:1	back	0.486	1.072	0.521	A24
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.20	0.00	10 mm	1	04445	N/A	1:1	front	0.208	1.072	0.223	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.20	-0.08	10 mm	1	04445	N/A	1:1	bottom	0.248	1.072	0.266	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.20	0.05	10 mm	1	04445	N/A	1:1	right	0.238	1.072	0.255	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.00	10 mm	1	00385	N/A	1:1	back	0.449	1.222	0.549	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.08	10 mm	1	00385	N/A	1:1	front	0.138	1.222	0.169	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	22.60	-0.06	10 mm	1	00385	N/A	1:1	bottom	0.685	1.230	0.843	A26
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	-0.03	10 mm	1	00385	N/A	1:1	bottom	0.678	1.222	0.829	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.67	-0.04	10 mm	1	00385	N/A	1:1	bottom	0.656	1.211	0.794	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.01	10 mm	1	00385	N/A	1:1	left	0.119	1.222	0.145	
824.20	128	GSM 850	GPRS	32.0	32.00	-0.09	10 mm	1	00237	2	1:4.15	back	0.422	1.000	0.422	A27
824.20	128	GSM 850	GPRS	32.0	32.00	-0.05	10 mm	1	00237	2	1:4.15	front	0.237	1.000	0.237	
824.20	128	GSM 850	GPRS	32.0	32.00	-0.05	10 mm	1	00237	2	1:4.15	bottom	0.184	1.000	0.184	
824.20	128	GSM 850	GPRS	32.0	32.00	0.07	10 mm	1	00237	2	1:4.15	right	0.226	1.000	0.226	
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.15	10 mm	1	00237	2	1:4.15	back	0.386	1.112	0.429	
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.01	10 mm	1	00237	2	1:4.15	front	0.125	1.112	0.139	
1850.20	512	GSM 1900	GPRS	29.0	28.46	-0.07	10 mm	1	00237	2	1:4.15	bottom	0.635	1.132	0.719	A29
1880.00	661	GSM 1900	GPRS	29.0	28.54	-0.05	10 mm	1	00237	2	1:4.15	bottom	0.624	1.112	0.694	
1909.80	810	GSM 1900	GPRS	29.0	28.47	-0.09	10 mm	1	00237	2	1:4.15	bottom	0.562	1.130	0.635	
1880.00	661	GSM 1900	GPRS	29.0	28.54	0.02	10 mm	1	00237	2	1:4.15	left	0.110	1.112	0.122	
836.60	4183	UMTS 850	RMC	25.5	24.86	-0.01	10 mm	1	04445	N/A	1:1	back	0.438	1.159	0.508	A30
836.60	4183	UMTS 850	RMC	25.5	24.86	0.01	10 mm	1	04445	N/A	1:1	front	0.231	1.159	0.268	
836.60	4183	UMTS 850	RMC	25.5	24.86	-0.01	10 mm	1	04445	N/A	1:1	bottom	0.209	1.159	0.242	
836.60	4183	UMTS 850	RMC	25.5	24.86	-0.04	10 mm	1	04445	N/A	1:1	right	0.217	1.159	0.252	
1732.40	1412	UMTS 1750	RMC	23.5	23.07	0.00	10 mm	1	00377	N/A	1:1	back	0.530	1.104	0.585	
1732.40	1412	UMTS 1750	RMC	23.5	23.07	-0.01	10 mm	1	00377	N/A	1:1	front	0.248	1.104	0.274	
1712.40	1312	UMTS 1750	RMC	23.5	23.04	-0.12	10 mm	1	00377	N/A	1:1	bottom	0.824	1.112	0.916	
1732.40	1412	UMTS 1750	RMC	23.5	23.07	-0.03	10 mm	1	00377	N/A	1:1	bottom	0.887	1.104	0.979	
1752.60	1513	UMTS 1750	RMC	23.5	23.05	-0.06	10 mm	1	00377	N/A	1:1	bottom	0.899	1.109	0.997	A32
1732.40	1412	UMTS 1750	RMC	23.5	23.07	0.07	10 mm	1	00377	N/A	1:1	left	0.223	1.104	0.246	
1752.60	1513	UMTS 1750	RMC	23.5	23.05	0.00	10 mm	1	00377	N/A	1:1	bottom	0.893	1.109	0.990	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.02	10 mm	1	00385	N/A	1:1	back	0.474	1.104	0.523	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	0.03	10 mm	1	00385	N/A	1:1	front	0.165	1.104	0.182	
1852.40	9262	UMTS 1900	RMC	23.5	23.15	-0.08	10 mm	1	00385	N/A	1:1	bottom	0.883	1.084	0.957	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.05	10 mm	1	00385	N/A	1:1	bottom	0.962	1.104	1.062	A34
1907.60	9538	UMTS 1900	RMC	23.5	23.05	-0.04	10 mm	1	00385	N/A	1:1	bottom	0.915	1.109	1.015	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.02	10 mm	2	00385	N/A	1:1	bottom	0.944	1.104	1.042	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.03	10 mm	1	00385	N/A	1:1	left	0.138	1.104	0.152	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.02	10 mm	1	00385	N/A	1:1	bottom	0.960	1.104	1.060	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak							Body 1.6 W/kg (mW/g) Uncontrolled Exposure/General Population averaged over 1 gram									

Note: 1) Blue entries represent variability measurements. 2) Purple entry represents additional Hotspot SAR Position (Mechanical Mode #2: Normal mode + Pop-up)

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Table 11-35
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.15	0	00237	QPSK	1	25	10 mm	back	1:1	0.330	1.059	0.349	A35
707.50	23095	Mid	LTE Band 12	10	24.5	24.23	-0.01	1	00237	QPSK	25	25	10 mm	back	1:1	0.207	1.064	0.220	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.05	0	00237	QPSK	1	25	10 mm	front	1:1	0.166	1.059	0.176	
707.50	23095	Mid	LTE Band 12	10	24.5	24.23	0.07	1	00237	QPSK	25	25	10 mm	front	1:1	0.104	1.064	0.111	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	-0.12	0	00237	QPSK	1	25	10 mm	bottom	1:1	0.141	1.059	0.149	
707.50	23095	Mid	LTE Band 12	10	24.5	24.23	0.03	1	00237	QPSK	25	25	10 mm	bottom	1:1	0.092	1.064	0.098	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.03	0	00237	QPSK	1	25	10 mm	right	1:1	0.132	1.059	0.140	
707.50	23095	Mid	LTE Band 12	10	24.5	24.23	0.03	1	00237	QPSK	25	25	10 mm	right	1:1	0.087	1.064	0.093	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																			
Spatial Peak								Body											
Uncontrolled Exposure/General Population								1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-36
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
782.00	23230	Mid	LTE Band 13	10	25.5	25.20	-0.05	0	00237	QPSK	1	49	10 mm	back	1:1	0.435	1.072	0.466	A36
782.00	23230	Mid	LTE Band 13	10	24.5	24.24	0.01	1	00237	QPSK	25	25	10 mm	back	1:1	0.279	1.062	0.296	
782.00	23230	Mid	LTE Band 13	10	25.5	25.20	0.02	0	00237	QPSK	1	49	10 mm	front	1:1	0.201	1.072	0.215	
782.00	23230	Mid	LTE Band 13	10	24.5	24.24	-0.03	1	00237	QPSK	25	25	10 mm	front	1:1	0.128	1.062	0.136	
782.00	23230	Mid	LTE Band 13	10	25.5	25.20	0.09	0	00237	QPSK	1	49	10 mm	bottom	1:1	0.208	1.072	0.223	
782.00	23230	Mid	LTE Band 13	10	24.5	24.24	0.04	1	00237	QPSK	25	25	10 mm	bottom	1:1	0.134	1.062	0.142	
782.00	23230	Mid	LTE Band 13	10	25.5	25.20	-0.03	0	00237	QPSK	1	49	10 mm	right	1:1	0.212	1.072	0.227	
782.00	23230	Mid	LTE Band 13	10	24.5	24.24	-0.01	1	00237	QPSK	25	25	10 mm	right	1:1	0.132	1.062	0.140	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-37
LTE Band 14 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
793.00	23330	Mid	LTE Band 14	10	25.5	25.10	-0.04	0	00237	QPSK	1	0	10 mm	back	1:1	0.324	1.096	0.355	A37
793.00	23330	Mid	LTE Band 14	10	24.5	24.14	0.04	1	00237	QPSK	25	12	10 mm	back	1:1	0.279	1.086	0.303	
793.00	23330	Mid	LTE Band 14	10	25.5	25.10	0.02	0	00237	QPSK	1	0	10 mm	front	1:1	0.177	1.096	0.194	
793.00	23330	Mid	LTE Band 14	10	24.5	24.14	-0.03	1	00237	QPSK	25	12	10 mm	front	1:1	0.128	1.086	0.139	
793.00	23330	Mid	LTE Band 14	10	25.5	25.10	-0.01	0	00237	QPSK	1	0	10 mm	bottom	1:1	0.187	1.096	0.205	
793.00	23330	Mid	LTE Band 14	10	24.5	24.14	-0.02	1	00237	QPSK	25	12	10 mm	bottom	1:1	0.136	1.086	0.148	
793.00	23330	Mid	LTE Band 14	10	25.5	25.10	0.10	0	00237	QPSK	1	0	10 mm	right	1:1	0.191	1.096	0.209	
793.00	23330	Mid	LTE Band 14	10	24.5	24.14	0.16	1	00237	QPSK	25	12	10 mm	right	1:1	0.133	1.086	0.144	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-38
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz		Ch.														(W/kg)		(W/kg)	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.05	-0.08	0	04445	QPSK	1	49	10 mm	back	1:1	0.451	1.109	0.500	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.12	-0.14	1	04445	QPSK	25	25	10 mm	back	1:1	0.289	1.091	0.315	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.20	0.10	0	04445	QPSK	1	49	10 mm	back	1:1	0.478	1.072	0.512	A38
	SCC	843.70	20597			5							1	0							
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.05	0.07	0	04445	QPSK	1	49	10 mm	front	1:1	0.199	1.109	0.221	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.12	0.05	1	04445	QPSK	25	25	10 mm	front	1:1	0.130	1.091	0.142	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.05	-0.08	0	04445	QPSK	1	49	10 mm	bottom	1:1	0.213	1.109	0.236	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.12	0.02	1	04445	QPSK	25	25	10 mm	bottom	1:1	0.139	1.091	0.152	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.05	-0.04	0	04445	QPSK	1	49	10 mm	right	1:1	0.229	1.109	0.254	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.12	-0.03	1	04445	QPSK	25	25	10 mm	right	1:1	0.147	1.091	0.160	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-39
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.96	0.05	0	Ant 2	04437	QPSK	1	0	10 mm	back	1:1	0.540	1.132	0.611	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.95	0.06	0	Ant 2	04437	QPSK	50	0	10 mm	back	1:1	0.526	1.135	0.597	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.96	0.01	0	Ant 2	04437	QPSK	1	0	10 mm	front	1:1	0.218	1.132	0.247	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.95	0.03	0	Ant 2	04437	QPSK	50	0	10 mm	front	1:1	0.208	1.135	0.236	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.78	-0.05	0	Ant 2	04437	QPSK	1	50	10 mm	bottom	1:1	0.751	1.180	0.886	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.5	22.86	-0.08	0	Ant 2	04437	QPSK	1	50	10 mm	bottom	1:1	0.722	1.159	0.837	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.96	-0.03	0	Ant 2	04437	QPSK	1	0	10 mm	bottom	1:1	0.747	1.132	0.846	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.93	-0.03	0	Ant 2	04437	QPSK	50	25	10 mm	bottom	1:1	0.789	1.140	0.899	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.5	22.94	-0.08	0	Ant 2	04437	QPSK	50	25	10 mm	bottom	1:1	0.753	1.138	0.857	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.95	-0.01	0	Ant 2	04437	QPSK	50	0	10 mm	bottom	1:1	0.728	1.135	0.826	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.94	0.00	0	Ant 2	04437	QPSK	100	0	10 mm	bottom	1:1	0.701	1.138	0.798	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.96	0.04	0	Ant 2	04437	QPSK	1	0	10 mm	left	1:1	0.168	1.132	0.190	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.95	0.05	0	Ant 2	04437	QPSK	50	0	10 mm	left	1:1	0.164	1.135	0.186	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.58	0.06	0	Ant 3	04437	QPSK	1	50	10 mm	back	1:1	0.209	1.236	0.258	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.74	-0.02	0	Ant 3	04437	QPSK	50	25	10 mm	back	1:1	0.222	1.191	0.264	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.58	0.07	0	Ant 3	04437	QPSK	1	50	10 mm	front	1:1	0.079	1.236	0.098	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.74	0.07	0	Ant 3	04437	QPSK	50	25	10 mm	front	1:1	0.079	1.191	0.094	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.58	0.00	0	Ant 3	04437	QPSK	1	50	10 mm	bottom	1:1	0.084	1.236	0.104	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.74	0.18	0	Ant 3	04437	QPSK	50	25	10 mm	bottom	1:1	0.083	1.191	0.099	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.58	-0.02	0	Ant 3	04437	QPSK	1	50	10 mm	right	1:1	0.470	1.236	0.581	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.74	-0.01	0	Ant 3	04437	QPSK	50	25	10 mm	right	1:1	0.491	1.191	0.585	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

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Table 11-40
LTE Band 2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.88	-0.04	0	Ant 2	04445	QPSK	1	0	10 mm	back	1:1	0.359	1.153	0.414	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.95	-0.03	0	Ant 2	04445	QPSK	50	25	10 mm	back	1:1	0.345	1.135	0.392	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.88	0.02	0	Ant 2	04445	QPSK	1	0	10 mm	front	1:1	0.147	1.153	0.169	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.95	0.04	0	Ant 2	04445	QPSK	50	25	10 mm	front	1:1	0.143	1.135	0.162	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.88	-0.04	0	Ant 2	04445	QPSK	1	0	10 mm	bottom	1:1	0.724	1.153	0.835	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	23.5	22.77	0.01	0	Ant 2	04445	QPSK	1	50	10 mm	bottom	1:1	0.771	1.183	0.912	A42
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.66	-0.07	0	Ant 2	04445	QPSK	1	0	10 mm	bottom	1:1	0.696	1.213	0.844	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.95	-0.06	0	Ant 2	04445	QPSK	50	25	10 mm	bottom	1:1	0.705	1.135	0.800	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.87	-0.08	0	Ant 2	04445	QPSK	100	0	10 mm	bottom	1:1	0.712	1.156	0.823	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.88	-0.09	0	Ant 2	04445	QPSK	1	0	10 mm	left	1:1	0.117	1.153	0.135	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.95	0.04	0	Ant 2	04445	QPSK	50	25	10 mm	left	1:1	0.115	1.135	0.131	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.55	-0.04	0	Ant 3	00385	QPSK	1	0	10 mm	back	1:1	0.240	1.245	0.299	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.59	-0.17	0	Ant 3	00385	QPSK	50	25	10 mm	back	1:1	0.248	1.233	0.306	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.55	0.07	0	Ant 3	00385	QPSK	1	0	10 mm	front	1:1	0.123	1.245	0.153	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.59	-0.03	0	Ant 3	00385	QPSK	50	25	10 mm	front	1:1	0.127	1.233	0.157	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.55	-0.06	0	Ant 3	00385	QPSK	1	0	10 mm	bottom	1:1	0.104	1.245	0.129	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.59	-0.07	0	Ant 3	00385	QPSK	50	25	10 mm	bottom	1:1	0.113	1.233	0.139	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.5	22.42	0.01	0	Ant 3	00385	QPSK	1	0	10 mm	right	1:1	0.507	1.282	0.650	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	23.5	22.43	0.13	0	Ant 3	00385	QPSK	1	99	10 mm	right	1:1	0.563	1.279	0.720	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.55	0.00	0	Ant 3	00385	QPSK	1	0	10 mm	right	1:1	0.559	1.245	0.696	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.59	-0.03	0	Ant 3	00385	QPSK	50	25	10 mm	right	1:1	0.564	1.233	0.695	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body												
Spatial Peak								1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

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Table 11-41
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)															(W/kg)			
2310.00	27710	Mid	LTE Band 30	10	25.0	24.73	-0.04	0	Ant 2	00237	QPSK	1	49	10 mm	back	1:1	0.380	1.064	0.404	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.74	0.14	0.5	Ant 2	00237	QPSK	25	12	10 mm	back	1:1	0.242	1.191	0.288	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.73	-0.19	0	Ant 2	00237	QPSK	1	49	10 mm	front	1:1	0.160	1.064	0.170	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.74	0.12	0.5	Ant 2	00237	QPSK	25	12	10 mm	front	1:1	0.106	1.191	0.126	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.73	-0.14	0	Ant 2	00237	QPSK	1	49	10 mm	bottom	1:1	0.651	1.064	0.693	A44
2310.00	27710	Mid	LTE Band 30	10	24.5	23.74	-0.02	0.5	Ant 2	00237	QPSK	25	12	10 mm	bottom	1:1	0.430	1.191	0.512	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.73	0.15	0	Ant 2	00237	QPSK	1	49	10 mm	left	1:1	0.095	1.064	0.101	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.74	0.13	0.5	Ant 2	00237	QPSK	25	12	10 mm	left	1:1	0.050	1.191	0.060	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.18	0	Ant 1	00237	QPSK	1	49	10 mm	back	1:1	0.075	1.227	0.092	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.57	0.13	0	Ant 1	00237	QPSK	25	12	10 mm	back	1:1	0.089	1.239	0.110	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.14	0	Ant 1	00237	QPSK	1	49	10 mm	front	1:1	0.028	1.227	0.034	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.57	0.16	0	Ant 1	00237	QPSK	25	12	10 mm	front	1:1	0.025	1.239	0.031	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.12	0	Ant 1	00237	QPSK	1	49	10 mm	bottom	1:1	0.059	1.227	0.072	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.57	-0.19	0	Ant 1	00237	QPSK	25	12	10 mm	bottom	1:1	0.060	1.239	0.074	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	-0.13	0	Ant 1	00237	QPSK	1	49	10 mm	right	1:1	0.089	1.227	0.109	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.57	0.15	0	Ant 1	00237	QPSK	25	12	10 mm	right	1:1	0.082	1.239	0.102	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

Table 11-42
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.05	0	00377	QPSK	1	99	10 mm	back	1:1.58	0.171	1.109	0.190	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.10	0	00377	QPSK	50	25	10 mm	back	1:1.58	0.162	1.109	0.180	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	0.01	0	00377	QPSK	1	99	10 mm	front	1:1.58	0.114	1.109	0.126	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	0.11	0	00377	QPSK	50	25	10 mm	front	1:1.58	0.109	1.109	0.121	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	0.05	0	00377	QPSK	1	99	10 mm	top	1:1.58	0.114	1.109	0.126	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.02	0	00377	QPSK	50	25	10 mm	top	1:1.58	0.107	1.109	0.119	
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.03	0	00377	QPSK	1	99	10 mm	right	1:1.58	0.316	1.109	0.350	A46
3560.00	55340	Low	LTE Band 48	20	22.5	22.05	-0.07	0	00377	QPSK	50	25	10 mm	right	1:1.58	0.300	1.109	0.333	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-43
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.45	-0.06	0	00237	QPSK	1	0	10 mm	back	1:1.58	0.231	1.135	0.262	
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.02	-0.05	0.5	00237	QPSK	50	25	10 mm	back	1:1.58	0.150	1.117	0.168	
2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.45	0.00	0	00237	QPSK	1	0	10 mm	front	1:1.58	0.097	1.135	0.110	
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.02	0.12	0.5	00237	QPSK	50	25	10 mm	front	1:1.58	0.063	1.117	0.070	
2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.45	-0.01	0	00237	QPSK	1	0	10 mm	bottom	1:1.58	0.462	1.135	0.524	A48
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.02	-0.07	0.5	00237	QPSK	50	25	10 mm	bottom	1:1.58	0.297	1.117	0.332	
2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.45	0.04	0	00237	QPSK	1	0	10 mm	left	1:1.58	0.089	1.135	0.101	
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.02	-0.16	0.5	00237	QPSK	50	25	10 mm	left	1:1.58	0.059	1.117	0.066	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-44
NR Band n5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	MPR [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.90	-0.04	0	00245	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.378	1.148	0.434	A49
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.85	0.00	0	00245	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.361	1.161	0.419	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.0	23.22	0.01	1.5	00245	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.223	1.197	0.267	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.90	0.01	0	00245	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.101	1.148	0.116	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.85	0.02	0	00245	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.119	1.161	0.138	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.90	-0.06	0	00245	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.101	1.148	0.116	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.85	-0.02	0	00245	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.095	1.161	0.110	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.90	0.03	0	00245	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.123	1.148	0.141	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	24.85	-0.01	0	00245	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.118	1.161	0.137	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak								Body 1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

Table 11-45
NR Band n66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maxium Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	MPR [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.19	-0.02	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.203	1.074	0.218	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.09	-0.05	0	04437	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.229	1.099	0.252	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.19	0.02	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.110	1.074	0.118	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.09	0.20	0	04437	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.105	1.099	0.115	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.19	-0.04	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.170	1.074	0.183	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.09	-0.15	0	04437	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.171	1.099	0.188	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.19	-0.07	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.533	1.074	0.572	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.09	0.00	0	04437	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.545	1.099	0.599	A51
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.84	-0.04	0	04437	CP-OFDM	QPSK	1	1	10 mm	right	1:1	0.495	1.164	0.576	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body												
Spatial Peak								1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

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Table 11-46
NR Band n2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	MPR [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.99	0.02	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.154	1.125	0.173	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.73	-0.03	0	04437	DFT-S-OFDM	QPSK	50	56	10 mm	back	1:1	0.158	1.194	0.189	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.99	0.07	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.082	1.125	0.092	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.73	-0.02	0	04437	DFT-S-OFDM	QPSK	50	56	10 mm	front	1:1	0.083	1.194	0.099	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.99	0.08	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.088	1.125	0.099	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.73	0.06	0	04437	DFT-S-OFDM	QPSK	50	56	10 mm	bottom	1:1	0.090	1.194	0.107	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.99	-0.05	0	04437	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.421	1.125	0.474	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.73	-0.12	0	04437	DFT-S-OFDM	QPSK	50	56	10 mm	right	1:1	0.436	1.194	0.521	A53
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.41	0.05	0	04437	CP-OFDM	QPSK	1	1	10 mm	right	1:1	0.435	1.285	0.559	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body												
Spatial Peak								1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

Table 11-47
WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	19.0	18.43	0.15	10 mm	1	00476	1	back	98.2	0.271	0.197	1.140	1.018	0.229	
2462	11	802.11b	DSSS	22	19.0	18.43	0.13	10 mm	1	00476	1	front	98.2	0.145	-	1.140	1.018	-	
2462	11	802.11b	DSSS	22	19.0	18.43	0.18	10 mm	1	00476	1	top	98.2	0.154	-	1.140	1.018	-	
2462	11	802.11b	DSSS	22	19.0	18.43	0.13	10 mm	1	00476	1	left	98.2	0.629	0.383	1.140	1.018	0.444	A55
2412	1	802.11b	DSSS	22	19.0	18.88	0.08	10 mm	2	00476	1	back	98.9	0.151	0.100	1.028	1.011	0.104	
2412	1	802.11b	DSSS	22	19.0	18.88	-0.19	10 mm	2	00476	1	front	98.9	0.072	-	1.028	1.011	-	
2412	1	802.11b	DSSS	22	19.0	18.88	0.14	10 mm	2	00476	1	top	98.9	0.342	0.217	1.028	1.011	0.226	
2412	1	802.11b	DSSS	22	19.0	18.88	-0.14	10 mm	2	00476	1	left	98.9	0.043	-	1.028	1.011	-	
5220	44	802.11a	OFDM	20	17.0	16.74	0.11	10 mm	1	00476	6	back	98.5	0.349	0.155	1.062	1.015	0.167	
5220	44	802.11a	OFDM	20	17.0	16.74	0.00	10 mm	1	00476	6	front	98.5	0.130	-	1.062	1.015	-	
5220	44	802.11a	OFDM	20	17.0	16.74	-0.19	10 mm	1	00476	6	top	98.5	0.213	-	1.062	1.015	-	
5220	44	802.11a	OFDM	20	17.0	16.74	-0.01	10 mm	1	00476	6	left	98.5	0.222	-	1.062	1.015	-	
5240	48	802.11a	OFDM	20	17.0	16.90	-0.13	10 mm	2	00476	6	back	98.5	0.173	0.077	1.023	1.015	0.080	
5240	48	802.11a	OFDM	20	17.0	16.90	0.20	10 mm	2	00476	6	front	98.5	0.033	-	1.023	1.015	-	
5240	48	802.11a	OFDM	20	17.0	16.90	0.15	10 mm	2	00476	6	top	98.5	0.082	-	1.023	1.015	-	
5240	48	802.11a	OFDM	20	17.0	16.90	-0.13	10 mm	2	00476	6	left	98.5	0.098	-	1.023	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	0.19	10 mm	1	00476	6	back	98.5	0.206	0.088	1.114	1.015	0.100	
5745	149	802.11a	OFDM	20	17.0	16.53	0.00	10 mm	1	00476	6	front	98.5	0.054	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	0.19	10 mm	1	00476	6	top	98.5	0.082	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.53	-0.14	10 mm	1	00476	6	left	98.5	0.193	-	1.114	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	0.15	10 mm	2	00476	6	back	98.5	0.445	0.181	1.007	1.015	0.185	A57
5745	149	802.11a	OFDM	20	17.0	16.97	-0.19	10 mm	2	00476	6	front	98.5	0.071	-	1.007	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	0.00	10 mm	2	00476	6	top	98.5	0.051	-	1.007	1.015	-	
5745	149	802.11a	OFDM	20	17.0	16.97	-0.11	10 mm	2	00476	6	left	98.5	0.229	-	1.007	1.015	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

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Table 11-48
WLAN Hotspot SAR for Conditions with 5G NR FR2 Active and/or 5 GHz WLAN

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	15.0	14.65	0.07	10 mm	1	00476	1	back	98.2	0.125	0.080	1.084	1.018	0.088	
2462	11	802.11b	DSSS	22	15.0	14.65	0.15	10 mm	1	00476	1	left	98.2	0.269	0.165	1.084	1.018	0.182	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-49
WLAN MIMO Hotspot SAR for Conditions with 5G NR FR2 Active

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2462	11	802.11n	OFDM	20	15.0	14.74	15.0	14.93	-0.18	10 mm	MIMO	00476	13	left	96.9	0.247	0.154	1.062	1.032	0.169	
5220	44	802.11a	OFDM	20	17.0	16.74	17.0	16.88	0.17	10 mm	MIMO	00476	6	left	98.8	0.298	0.138	1.062	1.012	0.148	
5745	149	802.11a	OFDM	20	17.0	16.53	17.0	16.97	-0.19	10 mm	MIMO	00476	6	left	98.8	0.352	0.147	1.114	1.012	0.166	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Body										
Spatial Peak											1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population											averaged over 1 gram										

Note: 1) For 2.4 GHz WLAN, to achieve the 18.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.0 dBm. 2) For 5 GHz WLAN, to achieve the 20.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm.

Table 11-50
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.0	11.15	0.15	10 mm	00476	1	back	77.9	0.029	1.216	1.284	0.045	
2441	39	Bluetooth	FHSS	12.0	11.15	-0.19	10 mm	00476	1	front	77.9	0.017	1.216	1.284	0.027	
2441	39	Bluetooth	FHSS	12.0	11.15	0.12	10 mm	00476	1	top	77.9	0.016	1.216	1.284	0.025	
2441	39	Bluetooth	FHSS	12.0	11.15	-0.03	10 mm	00476	1	left	77.9	0.069	1.216	1.284	0.108	A59
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Body									
Spatial Peak							1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population							averaged over 1 gram									

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11.4 Standalone Phablet SAR Data

Table 11-51
CDMA Phablet SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Mechanical Mode	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.											(W/kg)			
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.46	0.06	3 mm	1	00385	1:1	back	1.290	1.271	1.640	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.46	-0.09	0 mm	1	00385	1:1	front	0.728	1.271	0.925	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.5	24.62	-0.04	3 mm	1	00385	1:1	bottom	1.800	1.225	2.205	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.46	-0.06	3 mm	1	00385	1:1	bottom	1.790	1.271	2.275	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.5	24.33	-0.04	3 mm	1	00385	1:1	bottom	1.570	1.309	2.055	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.46	-0.03	0 mm	1	00385	1:1	left	0.481	1.271	0.611	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	22.60	-0.01	0 mm	1	00385	1:1	back	2.080	1.230	2.558	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.00	0 mm	1	00385	1:1	back	2.360	1.222	2.884	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.67	0.00	0 mm	1	00385	1:1	back	2.110	1.211	2.555	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	22.60	-0.01	0 mm	1	00385	1:1	bottom	2.390	1.230	2.940	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.08	0 mm	1	00385	1:1	bottom	2.420	1.222	2.957	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.67	0.03	0 mm	1	00385	1:1	bottom	2.160	1.211	2.616	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	-0.13	0 mm	3	00385	1:1	bottom	2.450	1.222	2.994	A60
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	22.63	0.11	0 mm	4	00385	1:1	bottom	2.450	1.222	2.994	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams								

Note: 1) Green entry represent additional Phablet SAR Position (Mechanical Mode #3: Swivel) 2) Light orange entry represents additional Phablet SAR Position (Mechanical Mode #4: Swivel mode + Pop-up).

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Table 11-52
UMTS Phablet SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Mechanical Mode	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	-0.08	3 mm	1	00377	1:1	back	1.350	1.054	1.423	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.03	0 mm	1	00377	1:1	front	1.120	1.054	1.180	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	-0.13	3 mm	1	00377	1:1	bottom	1.740	1.054	1.834	
1732.40	1412	UMTS 1750	RMC	25.5	25.27	0.17	0 mm	1	00377	1:1	left	0.876	1.054	0.923	
1712.40	1312	UMTS 1750	RMC	23.5	23.04	-0.05	0 mm	1	00377	1:1	back	1.860	1.112	2.068	
1732.40	1412	UMTS 1750	RMC	23.5	23.07	-0.05	0 mm	1	00377	1:1	back	1.960	1.104	2.164	
1752.60	1513	UMTS 1750	RMC	23.5	23.05	0.00	0 mm	1	00377	1:1	back	1.970	1.109	2.185	
1712.40	1312	UMTS 1750	RMC	23.5	23.04	-0.13	0 mm	1	00377	1:1	bottom	1.680	1.112	1.868	
1732.40	1412	UMTS 1750	RMC	23.5	23.07	-0.10	0 mm	1	00377	1:1	bottom	1.890	1.104	2.087	
1752.60	1513	UMTS 1750	RMC	23.5	23.05	-0.13	0 mm	1	00377	1:1	bottom	2.040	1.109	2.262	A61
1752.60	1513	UMTS 1750	RMC	23.5	23.05	-0.18	0 mm	3	00377	1:1	bottom	1.910	1.109	2.118	
1752.60	1513	UMTS 1750	RMC	23.5	23.05	-0.13	0 mm	1	00377	1:1	bottom	2.020	1.109	2.240	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	-0.20	3 mm	1	00385	1:1	back	1.250	1.033	1.291	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.09	0 mm	1	00385	1:1	front	0.686	1.033	0.709	
1852.40	9262	UMTS 1900	RMC	25.5	25.33	-0.12	3 mm	1	00385	1:1	bottom	2.080	1.040	2.163	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	-0.11	3 mm	1	00385	1:1	bottom	2.110	1.033	2.180	
1907.60	9538	UMTS 1900	RMC	25.5	25.37	-0.09	3 mm	1	00385	1:1	bottom	1.900	1.030	1.957	
1880.00	9400	UMTS 1900	RMC	25.5	25.36	0.05	0 mm	1	00385	1:1	left	0.546	1.033	0.564	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	0.07	0 mm	1	00385	1:1	back	1.720	1.104	1.899	
1852.40	9262	UMTS 1900	RMC	23.5	23.15	-0.01	0 mm	1	00385	1:1	bottom	2.590	1.084	2.808	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.01	0 mm	1	00385	1:1	bottom	2.550	1.104	2.815	
1907.60	9538	UMTS 1900	RMC	23.5	23.05	0.02	0 mm	1	00385	1:1	bottom	2.320	1.109	2.573	
1880.00	9400	UMTS 1900	RMC	23.5	23.07	-0.03	0 mm	3	00385	1:1	bottom	2.710	1.104	2.992	A62
1880.00	9400	UMTS 1900	RMC	23.5	23.07	0.03	0 mm	3	00385	1:1	bottom	2.680	1.104	2.959	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams								

Note: 1) Green entries represent additional Phablet SAR Position (Mechanical Mode #3: Swivel) 2) Blue entry represents variability measurement.

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Table 11-53
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	-0.03	0	Ant 2	04437	QPSK	1	50	3 mm	back	1:1	1.240	1.074	1.332	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	-0.01	1	Ant 2	04437	QPSK	50	25	3 mm	back	1:1	1.030	1.059	1.091	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.03	0	Ant 2	04437	QPSK	1	50	0 mm	front	1:1	1.050	1.074	1.128	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.05	1	Ant 2	04437	QPSK	50	25	0 mm	front	1:1	0.855	1.059	0.905	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.04	0	Ant 2	04437	QPSK	1	50	3 mm	bottom	1:1	1.830	1.074	1.965	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.11	1	Ant 2	04437	QPSK	50	25	3 mm	bottom	1:1	1.610	1.059	1.705	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	25.5	25.19	0.02	0	Ant 2	04437	QPSK	1	50	0 mm	left	1:1	0.913	1.074	0.981	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	24.5	24.25	0.03	1	Ant 2	04437	QPSK	50	25	0 mm	left	1:1	0.798	1.059	0.845	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.96	0.03	0	Ant 2	04437	QPSK	1	0	0 mm	back	1:1	1.690	1.132	1.913	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.95	-0.02	0	Ant 2	04437	QPSK	50	0	0 mm	back	1:1	1.720	1.135	1.952	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.78	0.04	0	Ant 2	04437	QPSK	1	50	0 mm	bottom	1:1	1.800	1.180	2.124	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	23.5	22.86	0.02	0	Ant 2	04437	QPSK	1	50	0 mm	bottom	1:1	1.770	1.159	2.051	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.96	-0.04	0	Ant 2	04437	QPSK	1	0	0 mm	bottom	1:1	1.870	1.132	2.117	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.93	0.08	0	Ant 2	04437	QPSK	50	25	0 mm	bottom	1:1	1.930	1.140	2.200	A63
1720.00	132072	Low	LTE Band 66 (AWS)	20	3	23.5	22.93	-0.04	0	Ant 2	04437	QPSK	50	25	0 mm	bottom	1:1	1.880	1.140	2.143	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	23.5	22.94	-0.13	0	Ant 2	04437	QPSK	50	25	0 mm	bottom	1:1	1.860	1.138	2.117	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.95	-0.08	0	Ant 2	04437	QPSK	50	0	0 mm	bottom	1:1	1.880	1.135	2.134	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.94	-0.12	0	Ant 2	04437	QPSK	100	0	0 mm	bottom	1:1	1.890	1.138	2.151	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak									Phablet 4.0 W/kg (mW/g) averaged over 10 grams												
Uncontrolled Exposure/General Population																					

Note: 1) Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

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Table 11-54
LTE Band 2 (PCS) Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.03	0	Ant 2	04445	QPSK	1	0	3 mm	back	1:1	1.180	1.091	1.287	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.04	1	Ant 2	04445	QPSK	50	50	3 mm	back	1:1	0.714	1.081	0.772	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.01	0	Ant 2	04445	QPSK	1	0	0 mm	front	1:1	0.768	1.091	0.838	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.02	1	Ant 2	04445	QPSK	50	50	0 mm	front	1:1	0.490	1.081	0.530	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	-0.04	0	Ant 2	04445	QPSK	1	0	3 mm	bottom	1:1	2.000	1.091	2.182	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	1	25.5	24.96	-0.10	0	Ant 2	04445	QPSK	1	0	3 mm	bottom	1:1	1.880	1.132	2.128	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	25.5	24.85	-0.13	0	Ant 2	04445	QPSK	1	0	3 mm	bottom	1:1	1.780	1.161	2.067	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	-0.04	1	Ant 2	04445	QPSK	50	50	3 mm	bottom	1:1	1.200	1.081	1.297	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.11	-0.07	1	Ant 2	04445	QPSK	100	0	3 mm	bottom	1:1	1.230	1.094	1.346	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	25.5	25.12	0.18	0	Ant 2	04445	QPSK	1	0	0 mm	left	1:1	0.551	1.091	0.601	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	24.5	24.16	0.19	1	Ant 2	04445	QPSK	50	50	0 mm	left	1:1	0.334	1.081	0.361	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	23.5	22.88	0.21	0	Ant 2	04445	QPSK	1	0	0 mm	back	1:1	1.410	1.153	1.626	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	23.5	22.95	0.20	0	Ant 2	04445	QPSK	50	25	0 mm	back	1:1	1.420	1.135	1.612	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	23.5	22.88	-0.03	0	Ant 2	04445	QPSK	1	0	0 mm	bottom	1:1	2.220	1.153	2.560	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	1	23.5	22.77	-0.17	0	Ant 2	04445	QPSK	1	50	0 mm	bottom	1:1	2.090	1.183	2.472	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.66	-0.17	0	Ant 2	04445	QPSK	1	0	0 mm	bottom	1:1	2.010	1.213	2.438	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	23.5	22.95	-0.10	0	Ant 2	04445	QPSK	50	25	0 mm	bottom	1:1	2.270	1.135	2.576	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	1	23.5	22.81	-0.14	0	Ant 2	04445	QPSK	50	25	0 mm	bottom	1:1	2.200	1.172	2.578	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	3	23.5	22.81	-0.04	0	Ant 2	04445	QPSK	50	25	0 mm	bottom	1:1	2.380	1.172	2.789	A64
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.76	-0.15	0	Ant 2	04445	QPSK	50	25	0 mm	bottom	1:1	2.040	1.186	2.419	
1860.00	18700	Low	LTE Band 2 (PCS)	20	1	23.5	22.87	-0.17	0	Ant 2	04445	QPSK	100	0	0 mm	bottom	1:1	2.230	1.156	2.578	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak										Phablet 4.0 W/kg (mW/g) averaged over 10 grams											
Uncontrolled Exposure/General Population																					

Note: 1) Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

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Table 11-55
LTE Band 30 Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.15	0	Ant 2	00237	QPSK	1	0	3 mm	back	1:1	0.964	1.109	1.069	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.07	1	Ant 2	00237	QPSK	25	12	3 mm	back	1:1	0.603	1.084	0.654	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	-0.14	0	Ant 2	00237	QPSK	1	0	0 mm	front	1:1	0.515	1.109	0.571	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	-0.14	1	Ant 2	00237	QPSK	25	12	0 mm	front	1:1	0.328	1.084	0.356	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	-0.05	0	Ant 2	00237	QPSK	1	0	3 mm	bottom	1:1	1.420	1.109	1.575	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	-0.03	1	Ant 2	00237	QPSK	25	12	3 mm	bottom	1:1	0.915	1.084	0.992	
2310.00	27710	Mid	LTE Band 30	10	1	25.5	25.05	0.04	0	Ant 2	00237	QPSK	1	0	0 mm	left	1:1	0.280	1.109	0.311	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	24.15	0.05	1	Ant 2	00237	QPSK	25	12	0 mm	left	1:1	0.176	1.084	0.191	
2310.00	27710	Mid	LTE Band 30	10	1	25.0	24.73	-0.17	0	Ant 2	00237	QPSK	1	49	0 mm	back	1:1	2.320	1.064	2.468	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	23.74	-0.13	0.5	Ant 2	00237	QPSK	25	12	0 mm	back	1:1	1.500	1.191	1.787	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	23.70	-0.15	0.5	Ant 2	00237	QPSK	50	0	0 mm	back	1:1	1.460	1.202	1.755	
2310.00	27710	Mid	LTE Band 30	10	1	25.0	24.73	-0.17	0	Ant 2	00237	QPSK	1	49	0 mm	bottom	1:1	2.440	1.064	2.596	A65
2310.00	27710	Mid	LTE Band 30	10	3	25.0	24.73	-0.16	0	Ant 2	00237	QPSK	1	49	0 mm	bottom	1:1	1.950	1.064	2.075	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	23.74	0.18	0.5	Ant 2	00237	QPSK	25	12	0 mm	bottom	1:1	1.650	1.191	1.965	
2310.00	27710	Mid	LTE Band 30	10	1	24.5	23.70	0.19	0.5	Ant 2	00237	QPSK	50	0	0 mm	bottom	1:1	1.600	1.202	1.923	
2310.00	27710	Mid	LTE Band 30	10	1	25.0	24.73	-0.07	0	Ant 2	00237	QPSK	1	49	0 mm	bottom	1:1	2.440	1.064	2.596	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams											

Note: 1) Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel). 2) Blue entries represent variability measurements.

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Table 11-56
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	-0.13	0	00237	QPSK	1	0	3 mm	back	1:1.58	0.510	1.099	0.560	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	-0.14	1	00237	QPSK	50	25	3 mm	back	1:1.58	0.342	1.067	0.365	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	0.00	0	00237	QPSK	1	0	0 mm	front	1:1.58	0.315	1.099	0.346	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.01	1	00237	QPSK	50	25	0 mm	front	1:1.58	0.204	1.067	0.218	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	-0.18	0	00237	QPSK	1	0	3 mm	bottom	1:1.58	0.935	1.099	1.028	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	-0.17	1	00237	QPSK	50	25	3 mm	bottom	1:1.58	0.601	1.067	0.641	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.5	25.09	0.07	0	00237	QPSK	1	0	0 mm	left	1:1.58	0.256	1.099	0.281	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.22	0.14	1	00237	QPSK	50	25	0 mm	left	1:1.58	0.162	1.067	0.173	
2506.00	39750	Low	LTE Band 41	20	1	25.0	24.25	-0.17	0	00237	QPSK	1	99	0 mm	back	1:1.58	1.420	1.189	1.688	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.0	24.45	-0.13	0	00237	QPSK	1	0	0 mm	back	1:1.58	1.430	1.135	1.623	
2593.00	40620	Mid	LTE Band 41	20	1	25.0	24.23	0.02	0	00237	QPSK	1	50	0 mm	back	1:1.58	1.550	1.194	1.851	
2636.50	41055	Mid-High	LTE Band 41	20	1	25.0	24.37	0.03	0	00237	QPSK	1	50	0 mm	back	1:1.58	1.640	1.156	1.896	
2636.50	41055	Mid-High	LTE Band 41	20	3	25.0	24.37	0.10	0	00237	QPSK	1	50	0 mm	back	1:1.58	1.980	1.156	2.289	A66
2680.00	41490	High	LTE Band 41	20	1	25.0	24.25	0.07	0	00237	QPSK	1	50	0 mm	back	1:1.58	1.500	1.189	1.784	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.02	-0.18	0.5	00237	QPSK	50	25	0 mm	back	1:1.58	0.925	1.117	1.033	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	23.95	0.05	0.5	00237	QPSK	100	0	0 mm	back	1:1.58	0.916	1.135	1.040	
2506.00	39750	Low	LTE Band 41	20	1	25.0	24.25	-0.11	0	00237	QPSK	1	99	0 mm	bottom	1:1.58	1.420	1.189	1.688	
2549.50	40185	Low-Mid	LTE Band 41	20	1	25.0	24.45	-0.06	0	00237	QPSK	1	0	0 mm	bottom	1:1.58	1.410	1.135	1.600	
2593.00	40620	Mid	LTE Band 41	20	1	25.0	24.23	-0.04	0	00237	QPSK	1	50	0 mm	bottom	1:1.58	1.500	1.194	1.791	
2636.50	41055	Mid-High	LTE Band 41	20	1	25.0	24.37	0.00	0	00237	QPSK	1	50	0 mm	bottom	1:1.58	1.510	1.156	1.746	
2680.00	41490	High	LTE Band 41	20	1	25.0	24.25	-0.04	0	00237	QPSK	1	50	0 mm	bottom	1:1.58	1.220	1.189	1.451	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	24.02	-0.05	0.5	00237	QPSK	50	25	0 mm	bottom	1:1.58	0.938	1.117	1.048	
2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	23.95	-0.02	0.5	00237	QPSK	100	0	0 mm	bottom	1:1.58	0.922	1.135	1.046	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Phablet											
Spatial Peak									4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population									averaged over 10 grams											

Note: 1) Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel).

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Table 11-57
WLAN Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	17.0	16.36	0.14	0 mm	1	1	00476	6	back	98.5	2.165	0.278	1.159	1.015	0.327	
5260	52	802.11a	OFDM	20	17.0	16.36	0.19	0 mm	1	1	00476	6	front	98.5	0.883	0.136	1.159	1.015	0.160	
5260	52	802.11a	OFDM	20	17.0	16.36	-0.16	0 mm	1	1	00476	6	top	98.5	1.076	-	1.159	1.015	-	
5260	52	802.11a	OFDM	20	17.0	16.36	-0.19	0 mm	1	1	00476	6	left	98.5	3.356	0.302	1.159	1.015	0.355	
5280	56	802.11a	OFDM	20	17.0	16.96	-0.19	0 mm	2	1	00476	6	back	98.5	1.657	0.333	1.009	1.015	0.341	
5280	56	802.11a	OFDM	20	17.0	16.96	0.16	0 mm	2	1	00476	6	front	98.5	0.508	0.058	1.009	1.015	0.059	
5280	56	802.11a	OFDM	20	17.0	16.96	0.18	0 mm	2	1	00476	6	top	98.5	1.298	-	1.009	1.015	-	
5280	56	802.11a	OFDM	20	17.0	16.96	-0.19	0 mm	2	1	00476	6	left	98.5	1.776	0.163	1.009	1.015	0.167	
5720	144	802.11a	OFDM	20	17.0	16.86	0.19	0 mm	1	1	00476	6	back	98.5	2.158	0.290	1.033	1.015	0.304	
5720	144	802.11a	OFDM	20	17.0	16.86	-0.17	0 mm	1	1	00476	6	front	98.5	2.269	0.338	1.033	1.015	0.354	
5720	144	802.11a	OFDM	20	17.0	16.86	0.13	0 mm	1	3	00476	6	front	98.5	0.240	0.031	1.033	1.015	0.033	
5720	144	802.11a	OFDM	20	17.0	16.86	0.13	0 mm	1	1	00476	6	top	98.5	3.703	-	1.033	1.015	-	
5720	144	802.11a	OFDM	20	17.0	16.86	-0.15	0 mm	1	1	00476	6	left	98.5	7.455	0.630	1.033	1.015	0.661	A67
5500	100	802.11a	OFDM	20	17.0	16.98	0.15	0 mm	2	1	00476	6	back	98.5	2.348	0.359	1.005	1.015	0.366	
5500	100	802.11a	OFDM	20	17.0	16.98	0.17	0 mm	2	3	00476	6	back	98.5	2.377	0.353	1.005	1.015	0.360	
5500	100	802.11a	OFDM	20	17.0	16.98	0.00	0 mm	2	1	00476	6	front	98.5	0.263	0.029	1.005	1.015	0.030	
5500	100	802.11a	OFDM	20	17.0	16.98	0.13	0 mm	2	1	00476	6	top	98.5	0.625	-	1.005	1.015	-	
5500	100	802.11a	OFDM	20	17.0	16.98	0.18	0 mm	2	1	00476	6	left	98.5	1.167	0.111	1.005	1.015	0.113	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet												
Spatial Peak								4.0 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 10 grams												

Note: 1) Green entries represent additional Phablet SAR Position (Mechanical Mode #3: Swivel)

11.5 SAR Test Notes

General Notes:

- 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.
- Batteries are fully charged at the beginning of the SAR measurements.
- Liquid tissue depth was at least 15.0 cm for all frequencies.
- The orange highlights throughout the report represents the highest SAR per FCC Equipment Class reflected on the FCC Grant.
- 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.
- SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
- 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.
- 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, no additional body-worn SAR evaluations using a headset cable were required.
- Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
- 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 (See Section 6.7 for more details).

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11. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 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. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the 1g thresholds for the equivalent test cases.
13. This device uses Qualcomm Smart Transmit for 2G/3G/4G/5G operations to control and manage transmitting power in real time to ensure RF Exposure compliance. Per FCC Guidance, compliance was assessed at the minimum of the time averaged power and the maximum output power for each band/mode/exposure condition (DSI).
14. SAR with the additional mechanical mode #3 (swivel mode) was measured for the configurations with the highest reported SAR for each wireless technology, frequency band, operating mode for head and phablet exposure conditions.
15. SAR with mechanical mode #2 (normal mode + pop-up) or mechanical mode #4 (swivel mode + pop-up) was measured for the highest overall reported hotspot and phablet SAR configurations.

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 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. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.
4. GPRS was additionally evaluated for head and body-worn exposure conditions to address possible VoIP scenarios.

CDMA Notes:

1. Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03r01.
2. Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO Rev0 and RevA and TDSO / SO32 FCH+SCH SAR tests were not required per the 3G SAR Test Reduction Procedure in FCC KDB Publication 941225 D01v03r01.
3. CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03r01 procedures for data devices. Wireless Router SAR tests for Subtype 2 of Rev.A and 1x RTT configurations were not required per the 3G SAR Test Reduction Policy in KDB Publication 941225 D01v03r01.
4. Head SAR was additionally evaluated using EVDO Rev. A to determine compliance for VoIP operations.
5. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

UMTS Notes:

1. UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.

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- Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

- LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
- 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.
- A-MPR was disabled for all SAR tests by setting NS=01 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).
- Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 and LTE Band 48 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.
- TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
- Per KDB Publication 941225 D05Av01r02, SAR for downlink only 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.
- For LTE Band 5, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

NR Notes:

- NR implementation is limited to EN-DC operations only, with the LTE Bands shown in the NR FR1 checklist acting as anchor bands. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
- Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
- Simultaneous transmission analysis for EN-DC operations is addressed in the Part 2 Test Report (Serial Number can be found in the bibliography in section 1-12).
- This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
- Per FCC Guidance, NR modulations and RB Sizes/Offsets were selected for testing such that configurations with the highest output power were evaluated for SAR tests.

WLAN Notes:

- For held-to-ear, hotspot, and phablet operations, 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 for 1g evaluations, 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.

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2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
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 for 1g evaluations. See Section 8.7.6 for more information.
4. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.

Bluetooth Notes

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 100% transmission duty factor to determine compliance. See Section 9.7 for the time domain plot and calculation for the duty factor of the device.
2. Head and Hotspot Bluetooth SAR were evaluated for BT BR tethering applications.

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G (including scenarios with inter-band ULCA active) and time-averaged RF exposure from 5G NR. Smart Transmit algorithm controls the total RF exposure from both 4G and 5G NR and during inter-band ULCA active conditions to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G operations (including scenarios with inter-band ULCA active) is demonstrated in the Qualcomm Part 2 Report during algorithm validation.

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

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB publication 248227, the worst case WLAN SAR result for the applicable exposure conditions was used for simultaneous transmission analysis.

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12.3 Head SAR Simultaneous Transmission Analysis

Table 12-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Configuration	Mode		2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)											
			1	1	2	1+2	1+3	1+2+3									
Head SAR	Cell. CDMA/EVDO		0.063	0.833	0.659	0.896	0.722	1.555									
	PCS CDMA/EVDO		0.071	0.833	0.659	0.904	0.730	1.563									
	GSM/GPRS 850		0.054	0.833	0.659	0.887	0.713	1.546									
	GSM/GPRS 1900		0.044	0.833	0.659	0.877	0.703	1.536									
	UMTS 850		0.061	0.833	0.659	0.894	0.720	1.553									
	UMTS 1750		0.070	0.833	0.659	0.903	0.729	1.562									
	UMTS 1900		0.073	0.833	0.659	0.906	0.732	1.565									
	LTE Band 12		0.049	0.833	0.659	0.882	0.708	1.541									
	LTE Band 13		0.049	0.833	0.659	0.882	0.708	1.541									
	LTE Band 14		0.047	0.833	0.659	0.880	0.706	1.539									
	LTE Band 5 (Cell)		0.043	0.833	0.659	0.876	0.702	1.535									
	LTE Band 66 (AWS)		0.070	0.833	0.659	0.903	0.729	1.562									
	LTE Band 66 (AWS) Ant 3		0.096	0.833	0.659	0.929	0.755	1.588									
	LTE Band 2 (PCS)		0.075	0.833	0.659	0.908	0.734	1.567									
	LTE Band 2 (PCS) Ant 3		0.121	0.833	0.659	0.954	0.780	See Table Below									
	LTE Band 30		0.039	0.833	0.659	0.872	0.698	1.531									
	LTE Band 30 Ant 1		0.042	0.833	0.659	0.875	0.701	1.534									
	LTE Band 48		0.891	0.833	0.659	See Table Below	1.550	See Table Below									
	LTE Band 41		0.053	0.833	0.659	0.886	0.712	1.545									
	NR Band n5 (Cell)		0.049	0.833	0.659	0.882	0.708	1.541									
NR Band n66 (AWS)		0.148	0.833	0.659	0.981	0.807	See Table Below										
NR Band n2 (PCS)		0.190	0.833	0.659	1.023	0.849	See Table Below										
Simult Tx	Configuration	LTE Band 2 (PCS) Ant 3 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)						
		1	2	3	1+2+3			1	2	3	1+2	1+3	1+2+3				
Head SAR	Right Cheek	0.121	0.833	0.324	1.278	Head SAR	Right Cheek	0.208	0.833	0.324	1.041	0.532	1.365				
		0.039	0.212	0.659	0.910			Head SAR	Right Tilt	0.150	0.212	0.659	0.362	0.809	1.021		
		0.071	0.188	0.152	0.411					Head SAR	Left Cheek	0.891	0.188	0.152	1.079	1.043	1.231
		0.037	0.833*	0.200	1.070							Head SAR	Left Tilt	0.342	0.833*	0.200	1.175
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration							NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2					3	1+2+3		
Head SAR	Right Cheek	0.148	0.833	0.324	1.305	Head SAR	Right Cheek	0.190	0.833	0.324	1.347						
		0.052	0.212	0.659	0.923			Head SAR	Right Tilt	0.030	0.212	0.659	0.901				
		0.087	0.188	0.152	0.427					Head SAR	Left Cheek	0.096	0.188	0.152	0.436		
		0.047	0.833*	0.200	1.080							Head SAR	Left Tilt	0.053	0.833*	0.200	1.086

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Table 12-2
Simultaneous Transmission Scenario with 5 GHz WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	Cell. CDMA/EVDO	0.063	0.345	0.245	0.408	0.308	0.653
	PCS CDMA/EVDO	0.071	0.345	0.245	0.416	0.316	0.661
	GSM/GPRS 850	0.054	0.345	0.245	0.399	0.299	0.644
	GSM/GPRS 1900	0.044	0.345	0.245	0.389	0.289	0.634
	UMTS 850	0.061	0.345	0.245	0.406	0.306	0.651
	UMTS 1750	0.070	0.345	0.245	0.415	0.315	0.660
	UMTS 1900	0.073	0.345	0.245	0.418	0.318	0.663
	LTE Band 12	0.049	0.345	0.245	0.394	0.294	0.639
	LTE Band 13	0.049	0.345	0.245	0.394	0.294	0.639
	LTE Band 14	0.047	0.345	0.245	0.392	0.292	0.637
	LTE Band 5 (Cell)	0.043	0.345	0.245	0.388	0.288	0.633
	LTE Band 66 (AWS)	0.070	0.345	0.245	0.415	0.315	0.660
	LTE Band 66 (AWS) Ant 3	0.096	0.345	0.245	0.441	0.341	0.686
	LTE Band 2 (PCS)	0.075	0.345	0.245	0.420	0.320	0.665
	LTE Band 2 (PCS) Ant 3	0.121	0.345	0.245	0.466	0.366	0.711
	LTE Band 30	0.039	0.345	0.245	0.384	0.284	0.629
	LTE Band 30 Ant 1	0.042	0.345	0.245	0.387	0.287	0.632
	LTE Band 48	0.891	0.345	0.245	1.236	1.136	1.481
	LTE Band 41	0.053	0.345	0.245	0.398	0.298	0.643
	NR Band n5 (Cell)	0.049	0.345	0.245	0.394	0.294	0.639
	NR Band n66 (AWS)	0.148	0.345	0.245	0.493	0.393	0.738
	NR Band n2 (PCS)	0.190	0.345	0.245	0.535	0.435	0.780

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Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	1	2	1+2+3
Head SAR	Cell. CDMA/EVDO	0.063	0.833	0.245	1.141
	PCS CDMA/EVDO	0.071	0.833	0.245	1.149
	GSM/GPRS 850	0.054	0.833	0.245	1.132
	GSM/GPRS 1900	0.044	0.833	0.245	1.122
	UMTS 850	0.061	0.833	0.245	1.139
	UMTS 1750	0.070	0.833	0.245	1.148
	UMTS 1900	0.073	0.833	0.245	1.151
	LTE Band 12	0.049	0.833	0.245	1.127
	LTE Band 13	0.049	0.833	0.245	1.127
	LTE Band 14	0.047	0.833	0.245	1.125
	LTE Band 5 (Cell)	0.043	0.833	0.245	1.121
	LTE Band 66 (AWS)	0.070	0.833	0.245	1.148
	LTE Band 66 (AWS) Ant 3	0.096	0.833	0.245	1.174
	LTE Band 2 (PCS)	0.075	0.833	0.245	1.153
	LTE Band 2 (PCS) Ant 3	0.121	0.833	0.245	1.199
	LTE Band 30	0.039	0.833	0.245	1.117
	LTE Band 30 Ant 1	0.042	0.833	0.245	1.120
	LTE Band 48	0.891	0.833	0.245	See Table Below
	LTE Band 41	0.053	0.833	0.245	1.131
	NR Band n5 (Cell)	0.049	0.833	0.245	1.127
	NR Band n66 (AWS)	0.148	0.833	0.245	1.226
	NR Band n2 (PCS)	0.190	0.833	0.245	1.268

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.208	0.833	0.091	1.132
	Right Tilt	0.150	0.212	0.245	0.607
	Left Cheek	0.891	0.188	0.245*	1.324
	Left Tilt	0.342	0.833*	0.245*	1.420

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Table 12-4
Simultaneous Transmission Scenario with Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	Cell. CDMA/EVDO	0.063	0.181	0.244
	PCS CDMA/EVDO	0.071	0.181	0.252
	GSM/GPRS 850	0.054	0.181	0.235
	GSM/GPRS 1900	0.044	0.181	0.225
	UMTS 850	0.061	0.181	0.242
	UMTS 1750	0.070	0.181	0.251
	UMTS 1900	0.073	0.181	0.254
	LTE Band 12	0.049	0.181	0.230
	LTE Band 13	0.049	0.181	0.230
	LTE Band 14	0.047	0.181	0.228
	LTE Band 5 (Cell)	0.043	0.181	0.224
	LTE Band 66 (AWS)	0.070	0.181	0.251
	LTE Band 66 (AWS) Ant 3	0.096	0.181	0.277
	LTE Band 2 (PCS)	0.075	0.181	0.256
	LTE Band 2 (PCS) Ant 3	0.121	0.181	0.302
	LTE Band 30	0.039	0.181	0.220
	LTE Band 30 Ant 1	0.042	0.181	0.223
	LTE Band 48	0.891	0.181	1.072
	LTE Band 41	0.053	0.181	0.234
	NR Band n5 (Cell)	0.049	0.181	0.230
	NR Band n66 (AWS)	0.148	0.181	0.329
	NR Band n2 (PCS)	0.190	0.181	0.371

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Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Cell. CDMA/EVDO	0.063	0.181	0.659	0.903
	PCS CDMA/EVDO	0.071	0.181	0.659	0.911
	GSM/GPRS 850	0.054	0.181	0.659	0.894
	GSM/GPRS 1900	0.044	0.181	0.659	0.884
	UMTS 850	0.061	0.181	0.659	0.901
	UMTS 1750	0.070	0.181	0.659	0.910
	UMTS 1900	0.073	0.181	0.659	0.913
	LTE Band 12	0.049	0.181	0.659	0.889
	LTE Band 13	0.049	0.181	0.659	0.889
	LTE Band 14	0.047	0.181	0.659	0.887
	LTE Band 5 (Cell)	0.043	0.181	0.659	0.883
	LTE Band 66 (AWS)	0.070	0.181	0.659	0.910
	LTE Band 66 (AWS) Ant 3	0.096	0.181	0.659	0.936
	LTE Band 2 (PCS)	0.075	0.181	0.659	0.915
	LTE Band 2 (PCS) Ant 3	0.121	0.181	0.659	0.961
	LTE Band 30	0.039	0.181	0.659	0.879
	LTE Band 30 Ant 1	0.042	0.181	0.659	0.882
	LTE Band 48	0.891	0.181	0.659	See Table Below
	LTE Band 41	0.053	0.181	0.659	0.893
	NR Band n5 (Cell)	0.049	0.181	0.659	0.889
	NR Band n66 (AWS)	0.148	0.181	0.659	0.988
	NR Band n2 (PCS)	0.190	0.181	0.659	1.030

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.208	0.181	0.324	0.713
	Right Tilt	0.150	0.034	0.659	0.843
	Left Cheek	0.891	0.025	0.152	1.068
	Left Tilt	0.342	0.005	0.200	0.547

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Table 12-6
Simultaneous Transmission Scenario with 5 GHz Antenna 1 WLAN and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Cell. CDMA/EVDO	0.063	0.181	0.345	0.589
	PCS CDMA/EVDO	0.071	0.181	0.345	0.597
	GSM/GPRS 850	0.054	0.181	0.345	0.580
	GSM/GPRS 1900	0.044	0.181	0.345	0.570
	UMTS 850	0.061	0.181	0.345	0.587
	UMTS 1750	0.070	0.181	0.345	0.596
	UMTS 1900	0.073	0.181	0.345	0.599
	LTE Band 12	0.049	0.181	0.345	0.575
	LTE Band 13	0.049	0.181	0.345	0.575
	LTE Band 14	0.047	0.181	0.345	0.573
	LTE Band 5 (Cell)	0.043	0.181	0.345	0.569
	LTE Band 66 (AWS)	0.070	0.181	0.345	0.596
	LTE Band 66 (AWS) Ant 3	0.096	0.181	0.345	0.622
	LTE Band 2 (PCS)	0.075	0.181	0.345	0.601
	LTE Band 2 (PCS) Ant 3	0.121	0.181	0.345	0.647
	LTE Band 30	0.039	0.181	0.345	0.565
	LTE Band 30 Ant 1	0.042	0.181	0.345	0.568
	LTE Band 48	0.891	0.181	0.345	1.417
	LTE Band 41	0.053	0.181	0.345	0.579
	NR Band n5 (Cell)	0.049	0.181	0.345	0.575
	NR Band n66 (AWS)	0.148	0.181	0.345	0.674
	NR Band n2 (PCS)	0.190	0.181	0.345	0.716

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Table 12-7
Simultaneous Transmission Scenario with 5 GHz Antenna 2 WLAN and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Cell. CDMA/EVDO	0.063	0.181	0.245	0.489
	PCS CDMA/EVDO	0.071	0.181	0.245	0.497
	GSM/GPRS 850	0.054	0.181	0.245	0.480
	GSM/GPRS 1900	0.044	0.181	0.245	0.470
	UMTS 850	0.061	0.181	0.245	0.487
	UMTS 1750	0.070	0.181	0.245	0.496
	UMTS 1900	0.073	0.181	0.245	0.499
	LTE Band 12	0.049	0.181	0.245	0.475
	LTE Band 13	0.049	0.181	0.245	0.475
	LTE Band 14	0.047	0.181	0.245	0.473
	LTE Band 5 (Cell)	0.043	0.181	0.245	0.469
	LTE Band 66 (AWS)	0.070	0.181	0.245	0.496
	LTE Band 66 (AWS) Ant 3	0.096	0.181	0.245	0.522
	LTE Band 2 (PCS)	0.075	0.181	0.245	0.501
	LTE Band 2 (PCS) Ant 3	0.121	0.181	0.245	0.547
	LTE Band 30	0.039	0.181	0.245	0.465
	LTE Band 30 Ant 1	0.042	0.181	0.245	0.468
	LTE Band 48	0.891	0.181	0.245	1.317
	LTE Band 41	0.053	0.181	0.245	0.479
	NR Band n5 (Cell)	0.049	0.181	0.245	0.475
	NR Band n66 (AWS)	0.148	0.181	0.245	0.574
	NR Band n2 (PCS)	0.190	0.181	0.245	0.616

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Table 12-8
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Cell. CDMA/EVDO	0.063	0.181	0.345	0.245	0.834
	PCS CDMA/EVDO	0.071	0.181	0.345	0.245	0.842
	GSM/GPRS 850	0.054	0.181	0.345	0.245	0.825
	GSM/GPRS 1900	0.044	0.181	0.345	0.245	0.815
	UMTS 850	0.061	0.181	0.345	0.245	0.832
	UMTS 1750	0.070	0.181	0.345	0.245	0.841
	UMTS 1900	0.073	0.181	0.345	0.245	0.844
	LTE Band 12	0.049	0.181	0.345	0.245	0.820
	LTE Band 13	0.049	0.181	0.345	0.245	0.820
	LTE Band 14	0.047	0.181	0.345	0.245	0.818
	LTE Band 5 (Cell)	0.043	0.181	0.345	0.245	0.814
	LTE Band 66 (AWS)	0.070	0.181	0.345	0.245	0.841
	LTE Band 66 (AWS) Ant 3	0.096	0.181	0.345	0.245	0.867
	LTE Band 2 (PCS)	0.075	0.181	0.345	0.245	0.846
	LTE Band 2 (PCS) Ant 3	0.121	0.181	0.345	0.245	0.892
	LTE Band 30	0.039	0.181	0.345	0.245	0.810
	LTE Band 30 Ant 1	0.042	0.181	0.345	0.245	0.813
	LTE Band 48	0.891	0.181	0.345	0.245	See Table Below
	LTE Band 41	0.053	0.181	0.345	0.245	0.824
	NR Band n5 (Cell)	0.049	0.181	0.345	0.245	0.820
	NR Band n66 (AWS)	0.148	0.181	0.345	0.245	0.919
	NR Band n2 (PCS)	0.190	0.181	0.345	0.245	0.961

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	2	3	1+2+3+4
Head SAR	Right Cheek	0.208	0.181	0.345	0.091	0.825
	Right Tilt	0.150	0.034	0.155	0.245	0.584
	Left Cheek	0.891	0.025	0.345*	0.245*	1.506
	Left Tilt	0.342	0.005	0.345*	0.245*	0.937

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12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.229	0.104	0.714	0.589	0.818
	PCS CDMA	0.799	0.229	0.104	1.028	0.903	1.132
	GSM/GPRS 850	0.422	0.229	0.104	0.651	0.526	0.755
	GSM/GPRS 1900	0.429	0.229	0.104	0.658	0.533	0.762
	UMTS 850	0.508	0.229	0.104	0.737	0.612	0.841
	UMTS 1750	0.821	0.229	0.104	1.050	0.925	1.154
	UMTS 1900	0.753	0.229	0.104	0.982	0.857	1.086
	LTE Band 12	0.349	0.229	0.104	0.578	0.453	0.682
	LTE Band 13	0.466	0.229	0.104	0.695	0.570	0.799
	LTE Band 14	0.355	0.229	0.104	0.584	0.459	0.688
	LTE Band 5 (Cell)	0.512	0.229	0.104	0.741	0.616	0.845
	LTE Band 66 (AWS)	0.751	0.229	0.104	0.980	0.855	1.084
	LTE Band 66 (AWS) Ant 3	0.264	0.229	0.104	0.493	0.368	0.597
	LTE Band 2 (PCS)	0.654	0.229	0.104	0.883	0.758	0.987
	LTE Band 2 (PCS) Ant 3	0.306	0.229	0.104	0.535	0.410	0.639
	LTE Band 30	0.566	0.229	0.104	0.795	0.670	0.899
	LTE Band 30 Ant 1	0.110	0.229	0.104	0.339	0.214	0.443
	LTE Band 48	0.190	0.229	0.104	0.419	0.294	0.523
	LTE Band 41	0.273	0.229	0.104	0.502	0.377	0.606
	NR Band n5 (Cell)	0.434	0.229	0.104	0.663	0.538	0.767
	NR Band n66 (AWS)	0.252	0.229	0.104	0.481	0.356	0.585
	NR Band n2 (PCS)	0.207	0.229	0.104	0.436	0.311	0.540

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Table 12-10
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.167	0.187	0.652	0.672	0.839
	PCS CDMA	0.799	0.167	0.187	0.966	0.986	1.153
	GSM/GPRS 850	0.422	0.167	0.187	0.589	0.609	0.776
	GSM/GPRS 1900	0.429	0.167	0.187	0.596	0.616	0.783
	UMTS 850	0.508	0.167	0.187	0.675	0.695	0.862
	UMTS 1750	0.821	0.167	0.187	0.988	1.008	1.175
	UMTS 1900	0.753	0.167	0.187	0.920	0.940	1.107
	LTE Band 12	0.349	0.167	0.187	0.516	0.536	0.703
	LTE Band 13	0.466	0.167	0.187	0.633	0.653	0.820
	LTE Band 14	0.355	0.167	0.187	0.522	0.542	0.709
	LTE Band 5 (Cell)	0.512	0.167	0.187	0.679	0.699	0.866
	LTE Band 66 (AWS)	0.751	0.167	0.187	0.918	0.938	1.105
	LTE Band 66 (AWS) Ant 3	0.264	0.167	0.187	0.431	0.451	0.618
	LTE Band 2 (PCS)	0.654	0.167	0.187	0.821	0.841	1.008
	LTE Band 2 (PCS) Ant 3	0.306	0.167	0.187	0.473	0.493	0.660
	LTE Band 30	0.566	0.167	0.187	0.733	0.753	0.920
	LTE Band 30 Ant 1	0.110	0.167	0.187	0.277	0.297	0.464
	LTE Band 48	0.190	0.167	0.187	0.357	0.377	0.544
	LTE Band 41	0.273	0.167	0.187	0.440	0.460	0.627
	NR Band n5 (Cell)	0.434	0.167	0.187	0.601	0.621	0.788
	NR Band n66 (AWS)	0.252	0.167	0.187	0.419	0.439	0.606
	NR Band n2 (PCS)	0.207	0.167	0.187	0.374	0.394	0.561

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Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.229	0.187	0.901
	PCS CDMA	0.799	0.229	0.187	1.215
	GSM/GPRS 850	0.422	0.229	0.187	0.838
	GSM/GPRS 1900	0.429	0.229	0.187	0.845
	UMTS 850	0.508	0.229	0.187	0.924
	UMTS 1750	0.821	0.229	0.187	1.237
	UMTS 1900	0.753	0.229	0.187	1.169
	LTE Band 12	0.349	0.229	0.187	0.765
	LTE Band 13	0.466	0.229	0.187	0.882
	LTE Band 14	0.355	0.229	0.187	0.771
	LTE Band 5 (Cell)	0.512	0.229	0.187	0.928
	LTE Band 66 (AWS)	0.751	0.229	0.187	1.167
	LTE Band 66 (AWS) Ant 3	0.264	0.229	0.187	0.680
	LTE Band 2 (PCS)	0.654	0.229	0.187	1.070
	LTE Band 2 (PCS) Ant 3	0.306	0.229	0.187	0.722
	LTE Band 30	0.566	0.229	0.187	0.982
	LTE Band 30 Ant 1	0.110	0.229	0.187	0.526
	LTE Band 48	0.190	0.229	0.187	0.606
	LTE Band 41	0.273	0.229	0.187	0.689
	NR Band n5 (Cell)	0.434	0.229	0.187	0.850
	NR Band n66 (AWS)	0.252	0.229	0.187	0.668
	NR Band n2 (PCS)	0.207	0.229	0.187	0.623

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Table 12-12
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	Cell. CDMA	0.485	0.045	0.530
	PCS CDMA	0.799	0.045	0.844
	GSM/GPRS 850	0.422	0.045	0.467
	GSM/GPRS 1900	0.429	0.045	0.474
	UMTS 850	0.508	0.045	0.553
	UMTS 1750	0.821	0.045	0.866
	UMTS 1900	0.753	0.045	0.798
	LTE Band 12	0.349	0.045	0.394
	LTE Band 13	0.466	0.045	0.511
	LTE Band 14	0.355	0.045	0.400
	LTE Band 5 (Cell)	0.512	0.045	0.557
	LTE Band 66 (AWS)	0.751	0.045	0.796
	LTE Band 66 (AWS) Ant 3	0.264	0.045	0.309
	LTE Band 2 (PCS)	0.654	0.045	0.699
	LTE Band 2 (PCS) Ant 3	0.306	0.045	0.351
	LTE Band 30	0.566	0.045	0.611
	LTE Band 30 Ant 1	0.110	0.045	0.155
	LTE Band 48	0.190	0.045	0.235
	LTE Band 41	0.273	0.045	0.318
	NR Band n5 (Cell)	0.434	0.045	0.479
	NR Band n66 (AWS)	0.252	0.045	0.297
	NR Band n2 (PCS)	0.207	0.045	0.252

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Table 12-13

Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.045	0.104	0.634
	PCS CDMA	0.799	0.045	0.104	0.948
	GSM/GPRS 850	0.422	0.045	0.104	0.571
	GSM/GPRS 1900	0.429	0.045	0.104	0.578
	UMTS 850	0.508	0.045	0.104	0.657
	UMTS 1750	0.821	0.045	0.104	0.970
	UMTS 1900	0.753	0.045	0.104	0.902
	LTE Band 12	0.349	0.045	0.104	0.498
	LTE Band 13	0.466	0.045	0.104	0.615
	LTE Band 14	0.355	0.045	0.104	0.504
	LTE Band 5 (Cell)	0.512	0.045	0.104	0.661
	LTE Band 66 (AWS)	0.751	0.045	0.104	0.900
	LTE Band 66 (AWS) Ant 3	0.264	0.045	0.104	0.413
	LTE Band 2 (PCS)	0.654	0.045	0.104	0.803
	LTE Band 2 (PCS) Ant 3	0.306	0.045	0.104	0.455
	LTE Band 30	0.566	0.045	0.104	0.715
	LTE Band 30 Ant 1	0.110	0.045	0.104	0.259
	LTE Band 48	0.190	0.045	0.104	0.339
	LTE Band 41	0.273	0.045	0.104	0.422
	NR Band n5 (Cell)	0.434	0.045	0.104	0.583
	NR Band n66 (AWS)	0.252	0.045	0.104	0.401
	NR Band n2 (PCS)	0.207	0.045	0.104	0.356

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Table 12-14

Simultaneous Transmission Scenario with 5 GHz Antenna 1 WLAN and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.045	0.167	0.697
	PCS CDMA	0.799	0.045	0.167	1.011
	GSM/GPRS 850	0.422	0.045	0.167	0.634
	GSM/GPRS 1900	0.429	0.045	0.167	0.641
	UMTS 850	0.508	0.045	0.167	0.720
	UMTS 1750	0.821	0.045	0.167	1.033
	UMTS 1900	0.753	0.045	0.167	0.965
	LTE Band 12	0.349	0.045	0.167	0.561
	LTE Band 13	0.466	0.045	0.167	0.678
	LTE Band 14	0.355	0.045	0.167	0.567
	LTE Band 5 (Cell)	0.512	0.045	0.167	0.724
	LTE Band 66 (AWS)	0.751	0.045	0.167	0.963
	LTE Band 66 (AWS) Ant 3	0.264	0.045	0.167	0.476
	LTE Band 2 (PCS)	0.654	0.045	0.167	0.866
	LTE Band 2 (PCS) Ant 3	0.306	0.045	0.167	0.518
	LTE Band 30	0.566	0.045	0.167	0.778
	LTE Band 30 Ant 1	0.110	0.045	0.167	0.322
	LTE Band 48	0.190	0.045	0.167	0.402
	LTE Band 41	0.273	0.045	0.167	0.485
	NR Band n5 (Cell)	0.434	0.045	0.167	0.646
	NR Band n66 (AWS)	0.252	0.045	0.167	0.464
	NR Band n2 (PCS)	0.207	0.045	0.167	0.419

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Table 12-15

Simultaneous Transmission Scenario with 5 GHz Antenna 2 WLAN and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	Cell. CDMA	0.485	0.045	0.187	0.717
	PCS CDMA	0.799	0.045	0.187	1.031
	GSM/GPRS 850	0.422	0.045	0.187	0.654
	GSM/GPRS 1900	0.429	0.045	0.187	0.661
	UMTS 850	0.508	0.045	0.187	0.740
	UMTS 1750	0.821	0.045	0.187	1.053
	UMTS 1900	0.753	0.045	0.187	0.985
	LTE Band 12	0.349	0.045	0.187	0.581
	LTE Band 13	0.466	0.045	0.187	0.698
	LTE Band 14	0.355	0.045	0.187	0.587
	LTE Band 5 (Cell)	0.512	0.045	0.187	0.744
	LTE Band 66 (AWS)	0.751	0.045	0.187	0.983
	LTE Band 66 (AWS) Ant 3	0.264	0.045	0.187	0.496
	LTE Band 2 (PCS)	0.654	0.045	0.187	0.886
	LTE Band 2 (PCS) Ant 3	0.306	0.045	0.187	0.538
	LTE Band 30	0.566	0.045	0.187	0.798
	LTE Band 30 Ant 1	0.110	0.045	0.187	0.342
	LTE Band 48	0.190	0.045	0.187	0.422
	LTE Band 41	0.273	0.045	0.187	0.505
	NR Band n5 (Cell)	0.434	0.045	0.187	0.666
	NR Band n66 (AWS)	0.252	0.045	0.187	0.484
	NR Band n2 (PCS)	0.207	0.045	0.187	0.439

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Table 12-16
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	Cell. CDMA	0.485	0.045	0.167	0.187	0.884
	PCS CDMA	0.799	0.045	0.167	0.187	1.198
	GSM/GPRS 850	0.422	0.045	0.167	0.187	0.821
	GSM/GPRS 1900	0.429	0.045	0.167	0.187	0.828
	UMTS 850	0.508	0.045	0.167	0.187	0.907
	UMTS 1750	0.821	0.045	0.167	0.187	1.220
	UMTS 1900	0.753	0.045	0.167	0.187	1.152
	LTE Band 12	0.349	0.045	0.167	0.187	0.748
	LTE Band 13	0.466	0.045	0.167	0.187	0.865
	LTE Band 14	0.355	0.045	0.167	0.187	0.754
	LTE Band 5 (Cell)	0.512	0.045	0.167	0.187	0.911
	LTE Band 66 (AWS)	0.751	0.045	0.167	0.187	1.150
	LTE Band 66 (AWS) Ant 3	0.264	0.045	0.167	0.187	0.663
	LTE Band 2 (PCS)	0.654	0.045	0.167	0.187	1.053
	LTE Band 2 (PCS) Ant 3	0.306	0.045	0.167	0.187	0.705
	LTE Band 30	0.566	0.045	0.167	0.187	0.965
	LTE Band 30 Ant 1	0.110	0.045	0.167	0.187	0.509
	LTE Band 48	0.190	0.045	0.167	0.187	0.589
	LTE Band 41	0.273	0.045	0.167	0.187	0.672
	NR Band n5 (Cell)	0.434	0.045	0.167	0.187	0.833
	NR Band n66 (AWS)	0.252	0.045	0.167	0.187	0.651
	NR Band n2 (PCS)	0.207	0.045	0.167	0.187	0.419

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12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-17
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot	Cell. EVDO	0.521	0.444	0.226	0.965	0.747	1.191
	PCS EVDO	0.843	0.444	0.226	1.287	1.069	1.513
	GPRS 850	0.422	0.444	0.226	0.866	0.648	1.092
	GPRS 1900	0.719	0.444	0.226	1.163	0.945	1.389
	UMTS 850	0.508	0.444	0.226	0.952	0.734	1.178
	UMTS 1750	0.997	0.444	0.226	1.441	1.223	See Table Below
	UMTS 1900	1.062	0.444	0.226	1.506	1.288	See Table Below
	LTE Band 12	0.349	0.444	0.226	0.793	0.575	1.019
	LTE Band 13	0.466	0.444	0.226	0.910	0.692	1.136
	LTE Band 14	0.355	0.444	0.226	0.799	0.581	1.025
	LTE Band 5 (Cell)	0.512	0.444	0.226	0.956	0.738	1.182
	LTE Band 66 (AWS)	0.899	0.444	0.226	1.343	1.125	1.569
	LTE Band 66 (AWS) Ant 3	0.585	0.444	0.226	1.029	0.811	1.255
	LTE Band 2 (PCS)	0.912	0.444	0.226	1.356	1.138	1.582
	LTE Band 2 (PCS) Ant 3	0.720	0.444	0.226	1.164	0.946	1.390
	LTE Band 30	0.693	0.444	0.226	1.137	0.919	1.363
	LTE Band 30 Ant 1	0.110	0.444	0.226	0.554	0.336	0.780
	LTE Band 48	0.350	0.444	0.226	0.794	0.576	1.020
	LTE Band 41	0.524	0.444	0.226	0.968	0.750	1.194
	NR Band n5 (Cell)	0.434	0.444	0.226	0.878	0.660	1.104
	NR Band n66 (AWS)	0.599	0.444	0.226	1.043	0.825	1.269
	NR Band n2 (PCS)	0.559	0.444	0.226	1.003	0.785	1.229
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3		
Hotspot SAR	Back	0.585	0.229	0.104	0.918		
	Front	0.274	0.444*	0.226*	0.944		
	Top	-	0.444*	0.226	0.670		
	Bottom	0.997	-	-	0.997		
	Right	-	-	-	-		
	Left	0.246	0.444	0.226*	0.916		
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3		
Hotspot SAR	Back	0.523	0.229	0.104	0.856		
	Front	0.182	0.444*	0.226*	0.852		
	Top	-	0.444*	0.226	0.670		
	Bottom	1.062	-	-	1.062		
	Right	-	-	-	-		
	Left	0.152	0.444	0.226*	0.822		

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Table 12-18
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot	Cell. EVDO	0.521	0.167	0.185	0.688	0.706	0.873
	PCS EVDO	0.843	0.167	0.185	1.010	1.028	1.195
	GPRS 850	0.422	0.167	0.185	0.589	0.607	0.774
	GPRS 1900	0.719	0.167	0.185	0.886	0.904	1.071
	UMTS 850	0.508	0.167	0.185	0.675	0.693	0.860
	UMTS 1750	0.997	0.167	0.185	1.164	1.182	1.349
	UMTS 1900	1.062	0.167	0.185	1.229	1.247	1.414
	LTE Band 12	0.349	0.167	0.185	0.516	0.534	0.701
	LTE Band 13	0.466	0.167	0.185	0.633	0.651	0.818
	LTE Band 14	0.355	0.167	0.185	0.522	0.540	0.707
	LTE Band 5 (Cell)	0.512	0.167	0.185	0.679	0.697	0.864
	LTE Band 66 (AWS)	0.899	0.167	0.185	1.066	1.084	1.251
	LTE Band 66 (AWS) Ant 3	0.585	0.167	0.185	0.752	0.770	0.937
	LTE Band 2 (PCS)	0.912	0.167	0.185	1.079	1.097	1.264
	LTE Band 2 (PCS) Ant 3	0.720	0.167	0.185	0.887	0.905	1.072
	LTE Band 30	0.693	0.167	0.185	0.860	0.878	1.045
	LTE Band 30 Ant 1	0.110	0.167	0.185	0.277	0.295	0.462
	LTE Band 48	0.350	0.167	0.185	0.517	0.535	0.702
	LTE Band 41	0.524	0.167	0.185	0.691	0.709	0.876
	NR Band n5 (Cell)	0.434	0.167	0.185	0.601	0.619	0.786
	NR Band n66 (AWS)	0.599	0.167	0.185	0.766	0.784	0.951
	NR Band n2 (PCS)	0.559	0.167	0.185	0.726	0.744	0.911

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Table 12-19
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	Cell. EVDO	0.521	0.444	0.185	1.150
	PCS EVDO	0.843	0.444	0.185	1.472
	GPRS 850	0.422	0.444	0.185	1.051
	GPRS 1900	0.719	0.444	0.185	1.348
	UMTS 850	0.508	0.444	0.185	1.137
	UMTS 1750	0.997	0.444	0.185	See Table Below
	UMTS 1900	1.062	0.444	0.185	See Table Below
	LTE Band 12	0.349	0.444	0.185	0.978
	LTE Band 13	0.466	0.444	0.185	1.095
	LTE Band 14	0.355	0.444	0.185	0.984
	LTE Band 5 (Cell)	0.512	0.444	0.185	1.141
	LTE Band 66 (AWS)	0.899	0.444	0.185	1.528
	LTE Band 66 (AWS) Ant 3	0.585	0.444	0.185	1.214
	LTE Band 2 (PCS)	0.912	0.444	0.185	1.541
	LTE Band 2 (PCS) Ant 3	0.720	0.444	0.185	1.349
	LTE Band 30	0.693	0.444	0.185	1.322
	LTE Band 30 Ant 1	0.110	0.444	0.185	0.739
	LTE Band 48	0.350	0.444	0.185	0.979
	LTE Band 41	0.524	0.444	0.185	1.153
	NR Band n5 (Cell)	0.434	0.444	0.185	1.063
	NR Band n66 (AWS)	0.599	0.444	0.185	1.228
	NR Band n2 (PCS)	0.559	0.444	0.185	1.188

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.585	0.229	0.185	0.999	Hotspot SAR	Back	0.523	0.229	0.185	0.937
	Front	0.274	0.444*	0.185*	0.903		Front	0.182	0.444*	0.185*	0.811
	Top	-	0.444*	0.185*	0.629		Top	-	0.444*	0.185*	0.629
	Bottom	0.997	-	-	0.997		Bottom	1.062	-	-	1.062
	Right	-	-	-	-		Right	-	-	-	-
	Left	0.246	0.444	0.185*	0.875		Left	0.152	0.444	0.185*	0.781

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Table 12-20
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Cell. EVDO	0.521	0.108	0.629
	PCS EVDO	0.843	0.108	0.951
	GPRS 850	0.422	0.108	0.530
	GPRS 1900	0.719	0.108	0.827
	UMTS 850	0.508	0.108	0.616
	UMTS 1750	0.997	0.108	1.105
	UMTS 1900	1.062	0.108	1.170
	LTE Band 12	0.349	0.108	0.457
	LTE Band 13	0.466	0.108	0.574
	LTE Band 14	0.355	0.108	0.463
	LTE Band 5 (Cell)	0.512	0.108	0.620
	LTE Band 66 (AWS)	0.899	0.108	1.007
	LTE Band 66 (AWS) Ant 3	0.585	0.108	0.693
	LTE Band 2 (PCS)	0.912	0.108	1.020
	LTE Band 2 (PCS) Ant 3	0.720	0.108	0.828
	LTE Band 30	0.693	0.108	0.801
	LTE Band 30 Ant 1	0.110	0.108	0.218
	LTE Band 48	0.350	0.108	0.458
	LTE Band 41	0.524	0.108	0.632
	NR Band n5 (Cell)	0.434	0.108	0.542
	NR Band n66 (AWS)	0.599	0.108	0.707
	NR Band n2 (PCS)	0.559	0.108	0.667

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Table 12-21
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	Cell. EVDO	0.521	0.108	0.226	0.855
	PCS EVDO	0.843	0.108	0.226	1.177
	GPRS 850	0.422	0.108	0.226	0.756
	GPRS 1900	0.719	0.108	0.226	1.053
	UMTS 850	0.508	0.108	0.226	0.842
	UMTS 1750	0.997	0.108	0.226	1.331
	UMTS 1900	1.062	0.108	0.226	1.396
	LTE Band 12	0.349	0.108	0.226	0.683
	LTE Band 13	0.466	0.108	0.226	0.800
	LTE Band 14	0.355	0.108	0.226	0.689
	LTE Band 5 (Cell)	0.512	0.108	0.226	0.846
	LTE Band 66 (AWS)	0.899	0.108	0.226	1.233
	LTE Band 66 (AWS) Ant 3	0.585	0.108	0.226	0.919
	LTE Band 2 (PCS)	0.912	0.108	0.226	1.246
	LTE Band 2 (PCS) Ant 3	0.720	0.108	0.226	1.054
	LTE Band 30	0.693	0.108	0.226	1.027
	LTE Band 30 Ant 1	0.110	0.108	0.226	0.444
	LTE Band 48	0.350	0.108	0.226	0.684
	LTE Band 41	0.524	0.108	0.226	0.858
	NR Band n5 (Cell)	0.434	0.108	0.226	0.768
	NR Band n66 (AWS)	0.599	0.108	0.226	0.933
	NR Band n2 (PCS)	0.559	0.108	0.226	0.893

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Table 12-22
Simultaneous Transmission Scenario with 5 GHz Antenna 1 WLAN and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	Cell. EVDO	0.521	0.108	0.167	0.796
	PCS EVDO	0.843	0.108	0.167	1.118
	GPRS 850	0.422	0.108	0.167	0.697
	GPRS 1900	0.719	0.108	0.167	0.994
	UMTS 850	0.508	0.108	0.167	0.783
	UMTS 1750	0.997	0.108	0.167	1.272
	UMTS 1900	1.062	0.108	0.167	1.337
	LTE Band 12	0.349	0.108	0.167	0.624
	LTE Band 13	0.466	0.108	0.167	0.741
	LTE Band 14	0.355	0.108	0.167	0.630
	LTE Band 5 (Cell)	0.512	0.108	0.167	0.787
	LTE Band 66 (AWS)	0.899	0.108	0.167	1.174
	LTE Band 66 (AWS) Ant 3	0.585	0.108	0.167	0.860
	LTE Band 2 (PCS)	0.912	0.108	0.167	1.187
	LTE Band 2 (PCS) Ant 3	0.720	0.108	0.167	0.995
	LTE Band 30	0.693	0.108	0.167	0.968
	LTE Band 30 Ant 1	0.110	0.108	0.167	0.385
	LTE Band 48	0.350	0.108	0.167	0.625
	LTE Band 41	0.524	0.108	0.167	0.799
	NR Band n5 (Cell)	0.434	0.108	0.167	0.709
	NR Band n66 (AWS)	0.599	0.108	0.167	0.874
	NR Band n2 (PCS)	0.559	0.108	0.167	0.834

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Table 12-23
Simultaneous Transmission Scenario with 5 GHz Antenna 2 WLAN and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	Cell. EVDO	0.521	0.108	0.185	0.814
	PCS EVDO	0.843	0.108	0.185	1.136
	GPRS 850	0.422	0.108	0.185	0.715
	GPRS 1900	0.719	0.108	0.185	1.012
	UMTS 850	0.508	0.108	0.185	0.801
	UMTS 1750	0.997	0.108	0.185	1.290
	UMTS 1900	1.062	0.108	0.185	1.355
	LTE Band 12	0.349	0.108	0.185	0.642
	LTE Band 13	0.466	0.108	0.185	0.759
	LTE Band 14	0.355	0.108	0.185	0.648
	LTE Band 5 (Cell)	0.512	0.108	0.185	0.805
	LTE Band 66 (AWS)	0.899	0.108	0.185	1.192
	LTE Band 66 (AWS) Ant 3	0.585	0.108	0.185	0.878
	LTE Band 2 (PCS)	0.912	0.108	0.185	1.205
	LTE Band 2 (PCS) Ant 3	0.720	0.108	0.185	1.013
	LTE Band 30	0.693	0.108	0.185	0.986
	LTE Band 30 Ant 1	0.110	0.108	0.185	0.403
	LTE Band 48	0.350	0.108	0.185	0.643
	LTE Band 41	0.524	0.108	0.185	0.817
	NR Band n5 (Cell)	0.434	0.108	0.185	0.727
	NR Band n66 (AWS)	0.599	0.108	0.185	0.892
	NR Band n2 (PCS)	0.559	0.108	0.185	0.852

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Table 12-24
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Cell. EVDO	0.521	0.108	0.167	0.185	0.981
	PCS EVDO	0.843	0.108	0.167	0.185	1.303
	GPRS 850	0.422	0.108	0.167	0.185	0.882
	GPRS 1900	0.719	0.108	0.167	0.185	1.179
	UMTS 850	0.508	0.108	0.167	0.185	0.968
	UMTS 1750	0.997	0.108	0.167	0.185	1.457
	UMTS 1900	1.062	0.108	0.167	0.185	1.522
	LTE Band 12	0.349	0.108	0.167	0.185	0.809
	LTE Band 13	0.466	0.108	0.167	0.185	0.926
	LTE Band 14	0.355	0.108	0.167	0.185	0.815
	LTE Band 5 (Cell)	0.512	0.108	0.167	0.185	0.972
	LTE Band 66 (AWS)	0.899	0.108	0.167	0.185	1.359
	LTE Band 66 (AWS) Ant 3	0.585	0.108	0.167	0.185	1.045
	LTE Band 2 (PCS)	0.912	0.108	0.167	0.185	1.372
	LTE Band 2 (PCS) Ant 3	0.720	0.108	0.167	0.185	1.180
	LTE Band 30	0.693	0.108	0.167	0.185	1.153
	LTE Band 30 Ant 1	0.110	0.108	0.167	0.185	0.570
	LTE Band 48	0.350	0.108	0.167	0.185	0.810
	LTE Band 41	0.524	0.108	0.167	0.185	0.984
	NR Band n5 (Cell)	0.434	0.108	0.167	0.185	0.894
	NR Band n66 (AWS)	0.599	0.108	0.167	0.185	1.059
	NR Band n2 (PCS)	0.559	0.108	0.167	0.185	1.019

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12.6 Phablet Simultaneous Transmission Analysis

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the 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 12-25
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	2.894	0.327	0.366	3.211	3.250	3.577
	Front	0.925	0.354	0.059	1.279	0.984	1.338
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	2.994	-	-	2.994	2.994	2.994
	Right	-	-	-	-	-	-
	Left	0.611	0.661	0.167	1.272	0.778	1.439
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	2.185	0.327	0.366	2.512	2.551	2.878
	Front	1.180	0.354	0.059	1.534	1.239	1.593
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	2.262	-	-	2.262	2.262	2.262
	Right	-	-	-	-	-	-
	Left	0.923	0.661	0.167	1.584	1.090	1.751
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	1.899	0.327	0.366	2.226	2.265	2.592
	Front	0.709	0.354	0.059	1.063	0.768	1.122
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	2.992	-	-	2.992	2.992	2.992
	Right	-	-	-	-	-	-
	Left	0.564	0.661	0.167	1.225	0.731	1.392
Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	1.952	0.327	0.366	2.279	2.318	2.645
	Front	1.128	0.354	0.059	1.482	1.187	1.541
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	2.200	-	-	2.200	2.200	2.200
	Right	-	-	-	-	-	-
	Left	0.981	0.661	0.167	1.642	1.148	1.809
Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	2.468	0.327	0.366	2.795	2.834	3.161
	Front	0.571	0.354	0.059	0.925	0.630	0.984
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	2.596	-	-	2.596	2.596	2.596
	Right	-	-	-	-	-	-
	Left	0.311	0.661	0.167	0.972	0.478	1.139
Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	Back	2.289	0.327	0.366	2.616	2.655	2.982
	Front	0.346	0.354	0.059	0.700	0.405	0.759
	Top	-	0.661*	0.366*	0.661	0.366	1.027
	Bottom	1.791	-	-	1.791	1.791	1.791
	Right	-	-	-	-	-	-
	Left	0.281	0.661	0.167	0.942	0.448	1.109

12.7 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.

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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 1g 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) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Test Position	Mechanical Mode	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)	
3500	3560.00	55340	LTE Band 48, 20 MHz Bandwidth	QPSK, 1 RB, 99 RB Offset	Left	Cheek	3	0.803	0.781	1.03	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 13-2
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	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)	
1750	1752.60	1513	UMTS 1750	RMC	bottom	10 mm	0.899	0.893	1.01	N/A	N/A	N/A	N/A
1900	1880.00	9400	UMTS 1900	RMC	bottom	10 mm	0.962	0.960	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 13-3
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Mechanical Mode	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	1	bottom	0 mm	2.040	2.020	1.01	N/A	N/A	N/A	N/A
1900	1880.00	9400	UMTS 1900	RMC	3	bottom	0 mm	2.710	2.680	1.01	N/A	N/A	N/A	N/A
2300	2310.00	27710	LTE Band 30, 10 MHz Bandwidth	QPSK, 1 RB, 49 RB Offset	1	bottom	0 mm	2.440	2.440	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Phablet							
Spatial Peak							4.0 W/kg (mW/g)							
Uncontrolled Exposure/General Population							averaged over 10 grams							

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.

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14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85033E	3 5mm Standard Calibration Kit	6/6/2020	Annual	6/6/2021	MY53402352
Agilent	8594A	(84Hz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753ES	Network Analyzer	3/5/2020	Annual	3/5/2021	MY40001472
Agilent	8753ES	S-Parameter Network Analyzer	12/31/2019	Annual	12/31/2020	US39170122
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	E4438C	ESG Vector Signal Generator	12/13/2019	Annual	12/13/2020	MY42082659
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	2/10/2020	Annual	2/10/2021	GB42230325
Agilent	E5515C	Wireless Communications Test Set	2/26/2020	Annual	2/26/2021	GB44400860
Agilent	N4101A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Agilent	N5182A	MXG Vector Signal Generator	2/19/2020	Annual	2/19/2021	MY47420651
Agilent	N9030A	PXA Signal Analyzer (44GHz)	8/17/2020	Annual	8/17/2021	MY52350166
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	MA24106A	USB Power Sensor	10/10/2019	Annual	10/10/2020	1344545
Anritsu	MA24106A	USB Power Sensor	10/10/2019	Annual	10/10/2020	1344559
Anritsu	MA2411B	Pulse Power Sensor	12/4/2019	Annual	12/4/2020	1126068
Anritsu	MA2411B	Pulse Power Sensor	1/21/2020	Annual	1/21/2021	1207470
Anritsu	ML2495A	Power Meter	11/15/2019	Annual	11/15/2020	1099006
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	6200901190
Anritsu	MT8821C	Radio Communication Analyzer	6/15/2020	Annual	6/15/2021	6201381794
Anritsu	MT8821C	Radio Communication Analyzer	2/22/2020	Annual	2/22/2021	6261895213
Anritsu	MT8821C	Radio Communication Analyzer	11/23/2019	Annual	11/23/2020	6262044715
Control Company	4040	Therm / Clock/ Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113269
Control Company	4040	Therm / Clock/ Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113274
Control Company	4040	Therm / Clock/ Humidity Monitor	3/6/2020	Biennial	3/6/2022	200170313
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282744
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282739
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766816
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766817
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight	E4438C	VECTOR SIGNAL GENERATOR	6/22/2020	Annual	6/22/2021	MY45092078
Keylight Technologies	AT/N6705B	DC Power Supply	N/A	N/A	N/A	MY53001315
Keylight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53040599
Keylight Technologies	U3A401A	Digital Multimeter	5/14/2020	Annual	5/14/2022	MY52014070
Insitu	1108-150	Digital Caliper	1/17/2020	Biennial	1/17/2022	409193536
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
MiniCircuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
MiniCircuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
MiniCircuits	NLP-2950+	Low Pass Filter DC to 1700 MHz	CBT	N/A	CBT	N/A
Narda	4D14C-6	4 - 8 GHz SMA & dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	N/A
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	1445
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	10/14/2019	Annual	10/14/2020	166462
Rohde & Schwarz	CMW500	Radio Communication Tester	10/15/2019	Annual	10/15/2020	109366
Rohde & Schwarz	CMW500	Radio Communication Tester	3/27/2020	Annual	3/27/2021	128633
Rohde & Schwarz	CMW500	Radio Communication Tester	5/21/2020	Annual	5/21/2021	128635
Rohde & Schwarz	ZNL66	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
SPEAG	DAK-12	Dielectric Assessment Kit (10MHz - 3GHz)	11/12/2019	Annual	11/12/2020	1121
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1750V2	1750 MHz SAR Dipole	5/12/2020	Annual	5/12/2021	1148
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Triennial	5/23/2021	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	54080
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	54149
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Biennial	2/21/2021	54148
SPEAG	D2300V2	2300 MHz SAR Dipole	8/13/2018	Biennial	8/13/2020	1073
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Triennial	8/16/2021	981
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Triennial	4/11/2021	1004
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Biennial	6/14/2021	1064
SPEAG	D3500V2	3500 MHz SAR Dipole	1/12/2018	Triennial	1/12/2021	1059
SPEAG	D3700V2	3700 MHz SAR Dipole	1/12/2018	Triennial	1/12/2021	1018
SPEAG	D50GHV2	5 GHz SAR Dipole	1/16/2018	Triennial	1/16/2021	1057
SPEAG	D50GHV2	5 GHz SAR Dipole	8/10/2018	Biennial	8/10/2020	1237
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D750V3	750 MHz SAR Dipole	3/16/2020	Annual	3/16/2021	1003
SPEAG	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	4d132
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Biennial	3/13/2021	4d047
SPEAG	DAE4	Das Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Das Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	DAE4	Das Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1558
SPEAG	DAE4	Das Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1368
SPEAG	DAE4	Das Data Acquisition Electronics	4/15/2020	Annual	4/15/2021	1407
SPEAG	DAE4	Das Data Acquisition Electronics	5/20/2020	Annual	5/20/2021	728
SPEAG	DAE4	Das Data Acquisition Electronics	6/18/2020	Annual	6/18/2021	1334
SPEAG	DAE4	Das Data Acquisition Electronics	5/14/2020	Annual	5/14/2021	1583
SPEAG	DAE4	Das Data Acquisition Electronics	12/5/2019	Annual	12/5/2020	1533
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	3589
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	7488
SPEAG	EX3DV4	SAR Probe	4/21/2020	Annual	4/21/2021	7357
SPEAG	EX3DV4	SAR Probe	6/23/2020	Annual	6/23/2021	7406
SPEAG	EX3DV4	SAR Probe	6/23/2020	Annual	6/23/2021	7409
SPEAG	EX3DV4	SAR Probe	5/18/2020	Annual	5/18/2021	7538
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7570
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7571

Notes: 1) Equipment was solely used during its 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. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

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15 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Uncertainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)						RSS	11.5	11.3
Expanded Uncertainty (95% CONFIDENCE LEVEL)						k=2	23.0	22.6

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16 CONCLUSION

16.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

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