



SAR EVALUATION REPORT

Applicant Name:
LG Electronics U.S.A., Inc.
111 Sylvan Avenue, North Building
Englewood Cliffs, NJ 07632
United States

Date of Testing:
03/25/20 – 05/06/20
Test Site/Location:
PCTEST, Columbia, MD, USA
Document Serial No.:
1M2003200048-01-R2.ZNF

FCC ID: **ZNFG900UM**

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-G900UM
Additional Model(s): LMG900UM, G900UM, LM-G900QM, LMG900QM, G900QM, LM-G901V, LMG901V, G901V

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	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.13	0.55	0.55	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.36	0.75	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.17	0.67	0.67	N/A
PCE	UMTS 1755	1712.4 - 1752.6 MHz	0.10	1.02	0.60	2.30
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.10	0.99	0.76	2.76
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	0.15	0.61	0.71	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.11	0.88	0.82	2.84
PCE	LTE Band 71	665.5 - 695.5 MHz	0.16	0.39	0.39	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.14	0.35	0.35	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.15	0.42	0.42	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	0.17	0.49	0.49	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.13	0.70	0.70	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	< 0.1	0.86	0.69	2.15
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	0.13	0.84	0.89	3.14
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.10	1.02	0.81	2.98
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.32	0.71	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	< 0.1	0.42	0.53	3.07
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.27	0.37	2.76
PCE	NR Band n1	665.5 - 695.5 MHz	< 0.1	0.23	0.23	N/A
PCE	NR Band n5 (Cell)	826.5 - 846.5 MHz	0.16	0.60	0.60	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.23	0.57	1.06	2.81
PCE	NR Band n2	1852.5 - 1907.5 MHz	N/A	N/A	N/A	N/A
PCE	NR Band n25	1852.5 - 1912.5 MHz	0.22	0.63	1.12	3.06
PCE	NR Band n41	2506.02 - 2679.99 MHz	< 0.1	0.24	0.24	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.95	0.20	0.44	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.20	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.24	0.39	N/A	1.48
NII	U-NII-2C	5500 - 5720 MHz	0.18	0.10	N/A	0.46
NII	U-NII-3	5745 - 5825 MHz	0.14	0.17	0.17	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	< 0.1	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.26	1.55	1.59	3.05

Note: This revised Test Report (S/N: 1M2003200048-01-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 1.9 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 Ortanez
President



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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
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
Cell. CDMA/EVDO	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 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 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n71	Data	665.5 - 695.5 MHz
NR Band n5	Data	826.5 - 846.5 MHz
NR Band n66	Data	1712.5 - 1777.5 MHz
NR Band n2	Data	1852.5 - 1907.5 MHz
NR Band n25	Data	1852.5 - 1912.5 MHz
NR Band n41	Data	2506.02 - 2679.99 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

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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 1.11 – 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), for each characterized technology and band (see RF Exposure Part 0 Test Report, report SN could be found in Section 1.11 - 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	Hotspot	Phablet	Maximum Tune-Up Output Power*
Averaging Volume:		1g	1g	10g	1g	10g	
Spacing:		0 mm	10 mm	2, 1, 4 mm	10 mm	0 mm	
DSI:		1			5	8	
Technology/Band	Antenna	Plimit					Pmax
GSM/GPRS/EDGE 850 MHz	1	28.6					24.8
GSM/GPRS/EDGE 1900 MHz	2	24.0					22.6
UMTS B5	1	27.2					24.5
UMTS B4	2	24.6			21.5		24.5
UMTS B2	2	24.8			21.5		24.5
CDMA/EVDO BC0	1	26.8					24.5
CDMA/EVDO BC1	2	24.6			21.5		24.5
LTE FDD B71	1	28.6					24.5
LTE FDD B12/B17	1	28.9					24.5
LTE FDD B12 ULCA	1	28.7					17.0
LTE FDD B13	1	28.9					24.5
LTE FDD B14	1	28.6					24.5
LTE FDD B5	1	27.1					24.5
LTE FDD B5 ULCA	1	28.4					17.0
LTE FDD B66/B4	2	24.6			21.5		24.5
LTE FDD B66 ULCA	3	23.3					17.0
LTE FDD B25/B2	2	24.7			21.5		24.5
LTE FDD B2 ULCA	3	23.5					17.0
LTE FDD B30	2	27.1			22.5		22.0
LTE FDD B7	2	27.3			22.5		24.5
LTE TDD B41	2	26.7			22.0		22.5
NR FDD n71	1	29.6					23.8
NR FDD n5	1	27.1					23.8
NR FDD n66	3	23.0					24.5
NR FDD n25/ n2	3	23.5					24.5
NR TDD n41	9	16.7					17.7

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LTE B12(17)/LTE B5/LTE B2(25)/LTE B4(66) is defined by ULCA PCC and Standalone, and LTE B12(17)/LTE B5/LTE B2(25)/LTE B4(66) ULCA is defined by ULCA SCC. When B12/B5/B2/B66 is operated by ULCA, the max power is 22.5dBm (2 dB lower than standalone power).

*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).

*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 during voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

1.4 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.

1.4.1 2G/3G/4G/5G Output Power

GSM/GPRS/EDGE 850										
Device State Index		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	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max allowed power	33.5	33.5	32.0	30.0	29.0	27.5	27.0	26.0	25.0
	Nominal	32.5	32.5	31.0	29.0	28.0	26.5	26.0	25.0	24.0
GSM/GPRS/EDGE 1900										
Device State Index		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	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max allowed power	30.5	30.5	29.0	28.0	26.0	26.5	26.0	25.0	24.0
	Nominal	29.5	29.5	28.0	27.0	25.0	25.5	25.0	24.0	23.0

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UMTS Band 5 (850 MHz)					
Device State Index		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
All DSI	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
UMTS Band 4 (1750 MHz)					
Device State Index		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
DSI = 1 (Head, Bodyworn, or Phablet Max)	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.5	22.5	22.5	22.5
	Nominal	21.5	21.5	21.5	21.5
UMTS Band 2 (1900 MHz)					
Device State Index		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
DSI = 1 (Head, Bodyworn, or Phablet Max)	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.5	22.5	22.5	22.5
	Nominal	21.5	21.5	21.5	21.5

CDMA BC0 (835 MHz)				
Device State Index		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)				
Device State Index		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
DSI = 1 (Head, Bodyworn, or Phablet Max)	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	22.5	22.5	22.5
	Nominal	21.5	21.5	21.5

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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)
LTE FDD Band 71	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 12	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 17	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 13	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 14	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 5	Max allowed power	25.5	25.5
	Nominal	24.5	24.5
LTE FDD Band 4	Max allowed power	25.5	22.5
	Nominal	24.5	21.5
LTE FDD Band 66	Max allowed power	25.5	22.5
	Nominal	24.5	21.5
LTE FDD Band 2	Max allowed power	25.5	22.5
	Nominal	24.5	21.5
LTE FDD Band 25	Max allowed power	25.5	22.5
	Nominal	24.5	21.5
LTE FDD Band 30	Max allowed power	23.0	23.0
	Nominal	22.0	22.0
LTE FDD Band 7	Max allowed power	25.5	23.5
	Nominal	24.5	22.5
LTE TDD Band 41	Max allowed power	25.5	25.0
	Nominal	24.5	24.0

Mode / Band		Modulated Average Output Power (in dBm)	
		DSI = 1 (Head, Body-worn, or Phablet Max); DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	
NR FDD Band n71	Max allowed power	24.8	
	Nominal	23.8	
NR FDD Band n5	Max allowed power	24.8	
	Nominal	23.8	
NR FDD Band n66	Max allowed power	24.0	
	Nominal	23.0	
NR FDD Band n2	Max allowed power	24.5	
	Nominal	23.5	
NR FDD Band n25	Max allowed power	24.5	
	Nominal	23.5	
NR TDD Band n41	Max allowed power	24.0	
	Nominal	23.0	

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

Note: For LTE Band 66/2 as SCC when 2A-66A ULCA Active, LTE Band 66/2 will transmit from Antenna 3. A diagram showing the location of the device antennas can be found in Appendix E.

1.4.2 Maximum Bluetooth and SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (in dBm)													
		SISO								MIMO					
		Antenna 1/ Antenna 2													
		b		g		n		ac		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.
2.4 GHz WIFI	2.45 GHz	20.5	19.5	19.5	18.5	18.5	17.5	18.5	17.5	22.5	21.5	21.5	20.5	21.5	20.5
				ch. 1: 17.0	16.0	ch. 1: 16.0	15.0	ch. 1: 16.0	15.0	ch. 1: 20.0	19.0	ch. 1: 19.0	18.0	ch. 1: 19.0	18.0
				ch. 2: 17.0	16.0	ch. 2: 16.0	15.0	ch. 2: 16.0	15.0	ch. 2: 20.0	19.0	ch. 2: 19.0	18.0	ch. 2: 19.0	18.0
				ch. 10: 17.0	16.0	ch. 10: 16.0	15.0	ch. 10: 16.0	15.0	ch. 10: 20.0	19.0	ch. 10: 19.0	18.0	ch. 10: 19.0	18.0
				ch. 11: 17.0	16.0	ch. 11: 16.0	15.0	ch. 11: 16.0	15.0	ch. 11: 20.0	19.0	ch. 11: 19.0	18.0	ch. 11: 19.0	18.0

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Mode	Band	IEEE 802.11 (in dBm)											
		SISO						MIMO					
		Antenna 1/ Antenna 2											
		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.
5 GHz WIFI (20MHz BW)	5200 MHz	17.0 ch. 40: 19.0	16.0 18.0	17.0 ch. 40: 19.0	16.0 18.0	17.0 ch. 40: 19.0	16.0 18.0	20.0 ch. 40: 22.0	19.0 21.0	20.0 ch. 40: 22.0	19.0 21.0	20.0 ch. 40: 22.0	19.0 21.0
	5300 MHz	17.0 ch. 56: 19.0	16.0 18.0	17.0 ch. 56: 19.0	16.0 18.0	17.0 ch. 56: 19.0	16.0 18.0	20.0 ch. 56: 22.0	19.0 21.0	20.0 ch. 56: 22.0	19.0 21.0	20.0 ch. 56: 22.0	19.0 21.0
	5500 MHz	17.0	16.0	17.0	16.0	17.0	16.0	20.0	19.0	20.0	19.0	20.0	19.0
	5800 MHz	19.0 ch. 149: 17.0 ch. 153: 17.0	18.0 16.0 16.0	19.0 ch. 149: 17.0 ch. 153: 17.0	18.0 16.0 16.0	19.0 ch. 149: 17.0 ch. 153: 17.0	18.0 16.0 16.0	22.0 ch. 149: 20.0 ch. 153: 20.0	21.0 19.0 19.0	22.0 ch. 149: 20.0 ch. 153: 20.0	21.0 19.0 19.0	22.0 ch. 149: 20.0 ch. 153: 20.0	21.0 19.0 19.0
5 GHz WIFI (40MHz BW)	5200 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
	5300 MHz			16.0 ch. 62: 15.0	15.0 14.0	16.0 ch. 62: 15.0	15.0 14.0			19.0 ch. 62: 18.0	18.0 17.0	19.0 ch. 62: 18.0	18.0 17.0
	5500 MHz			16.0 ch. 102: 14.5	15.0 13.5	16.0 ch. 102: 14.5	15.0 13.5			19.0 ch. 102: 17.5	18.0 16.5	19.0 ch. 102: 17.5	18.0 16.5
	5800 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
5 GHz WIFI (80MHz BW)	5200 MHz					14.0	13.0					17.0	16.0
	5300 MHz					14.0	13.0					17.0	16.0
	5500 MHz					14.0	13.0					17.0	16.0
	5800 MHz					14.0	13.0					17.0	16.0

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	11.0
	Nominal	10.0
Bluetooth LE	Maximum	5.0
	Nominal	4.0

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1.4.3 Reduced SISO/MIMO WLAN Output Power

The below tables are applicable in the following conditions:

- Head Conditions
- Head Conditions during simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)													
		SISO								MIMO					
		Antenna 1/ Antenna 2													
		b		g		n		ac		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.
2.4 GHz WIFI	2.45 GHz	16.5	15.5	16.5	15.5	16.5	15.5	16.5	15.5	19.5	18.5	19.5	18.5	19.5	18.5
						ch. 1: 16.0	15.0	ch. 1: 16.0	15.0			ch. 1: 19.0	18.0	ch. 1: 19.0	18.0
						ch. 2: 16.0	15.0	ch. 2: 16.0	15.0			ch. 2: 19.0	18.0	ch. 2: 19.0	18.0
						ch. 10: 16.0	15.0	ch. 10: 16.0	15.0			ch. 10: 19.0	18.0	ch. 10: 19.0	18.0
						ch. 11: 16.0	15.0	ch. 11: 16.0	15.0			ch. 11: 19.0	18.0	ch. 11: 19.0	18.0

Mode	Band	IEEE 802.11 (in dBm)											
		SISO						MIMO					
		Antenna 1/ Antenna 2											
		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.
5 GHz WIFI (20MHz BW)	5200 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5300 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5500 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5800 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
5 GHz WIFI (40MHz BW)	5200 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
	5300 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
	5500 MHz			ch. 62: 15.0	14.0	ch. 62: 15.0	14.0			ch. 62: 18.0	17.0	ch. 62: 18.0	17.0
	5800 MHz			ch. 102: 14.5	13.5	ch. 102: 14.5	13.5			ch. 102: 17.5	16.5	ch. 102: 17.5	16.5
5 GHz WIFI (80MHz BW)	5200 MHz					14.0	13.0					17.0	16.0
	5300 MHz					14.0	13.0					17.0	16.0
	5500 MHz					14.0	13.0					17.0	16.0
	5800 MHz					14.0	13.0					17.0	16.0

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1.5 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
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
Cell. EVDO	Yes	Yes	No	Yes	Yes	No
PCS EVDO	Yes	Yes	No	Yes	No	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	No
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) Ant 2	Yes	Yes	No	Yes	No	Yes
LTE Band 66 (AWS) Ant 3	Yes	Yes	No	No	Yes	No
LTE Band 2 (PCS) Ant 2	Yes	Yes	No	Yes	No	Yes
LTE Band 2 (PCS) Ant 3	Yes	Yes	No	No	Yes	No
LTE Band 25 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 7	Yes	Yes	No	Yes	No	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n71	Yes	Yes	No	Yes	Yes	No
NR Band n5	Yes	Yes	No	Yes	Yes	No
NR Band n66	Yes	Yes	No	No	Yes	No
NR Band n25	Yes	Yes	No	No	Yes	No
NR Band n41	Yes	Yes	No	No	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
5 GHz WLAN MIMO	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.

1.6 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.

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1.7 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 Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	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 Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	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 Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	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 Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	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	LTE + 5G NR	Yes	Yes	N/A	Yes	
38	LTE + 2.4 GHz Wi-Fi + 5G NR	Yes	Yes	Yes	Yes	
39	LTE + 5 GHz Wi-Fi + 5G NR	Yes	Yes	Yes	Yes	
40	LTE + 2.4 GHz Bluetooth + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
41	LTE + 2.4 GHz Wi-Fi MIMO + 5G NR	Yes	Yes	Yes	Yes	
42	LTE + 5 GHz Wi-Fi MIMO + 5G NR	Yes	Yes	Yes	Yes	
43	LTE + 2.4 GHz Wi-Fi Antenna 2 + 2.4 GHz Bluetooth + 5G NR	Yes^	Yes	Yes	Yes	^ Bluetooth Tethering is considered
44	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
45	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
46	LTE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2 + 5G NR	Yes	Yes	Yes	Yes	
47	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
48	CDMA/EVDO data + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
49	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
50	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
51	CDMA/EVDO data + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
52	CDMA/EVDO data + 2.4 GHz Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
53	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
54	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
55	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
56	GPRS/EDGE + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
57	GPRS/EDGE + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
58	GPRS/EDGE + 2.4 GHz Bluetooth	Yes^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
59	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
60	GPRS/EDGE + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
61	GPRS/EDGE + 2.4 GHz Wi-Fi Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
62	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
63	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
64	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

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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 LTE Anchor Bands, B2/B5/B7/B12/B13/B30/B66/B71.
10. LTE operations in the table above include intra-band and inter-band ULCA operations with 2 carriers transmitting in the uplink.

1.8 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.

CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1x Advanced was not more than 0.25 dB higher than the maximum powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg per FCC KDB Publication 941225 D01v03r01.

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 and NR capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE/NR Band falls completely within an LTE/NR band with a larger transmission frequency range, both LTE/NR bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE/NR 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, the SCC operates using Antenna 3. SAR tests were performed separately for antenna 3 for LTE Band 2 and LTE B66.

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 of n71, n5, n66, n2, n25 and n41 is limited to EN-DC operations only, with LTE B2/B5/B7/B12/B13/B30/B66/B71 acting as the anchor bands. Per FCC Guidance, SAR tests were performed separately for NR Bands and LTE Anchor Bands. Please see Section 11 for more details.

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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 $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

1.9 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)
- April 2019 TCB Workshop Notes (Dynamic Antenna Tuning)

1.10 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.

1.11 Bibliography

Report Type	Report Serial Number
RF Exposure Part 0 Test Report	Rev. P
RF Exposure Part 2 Test Report	FA-05260-3 v02
RF Exposure Compliance Summary Report	1M2003200048-13-R1.ZNF

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LTE Information						
Form Factor	Portable Handset					
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)					
	LTE Band 12 (699.7 - 715.3 MHz)					
	LTE Band 17 (706.5 - 713.5 MHz)					
	LTE Band 13 (779.5 - 784.5 MHz)					
	LTE Band 14 (790.5 - 795.5 MHz)					
	LTE Band 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 25 (PCS) (1850.7 - 1914.3 MHz)					
	LTE Band 30 (2307.5 - 2312.5 MHz)					
	LTE Band 7 (2502.5 - 2567.5 MHz)					
	LTE Band 41 (2498.5 - 2687.5 MHz)					
	Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
		LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
LTE Band 17: 5 MHz, 10 MHz						
LTE Band 13: 5 MHz, 10 MHz						
LTE Band 14: 5 MHz, 10 MHz						
LTE Band 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 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 30: 5 MHz, 10 MHz						
LTE Band 7: 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 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)		
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)		
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)		
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)		
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 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)		
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)		
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 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)		
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)		
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)		
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)		
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)		
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)		
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 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)		
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)		
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)		
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)		
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 specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced eCIC, MDH, eMBS, Cross-Carrier Scheduling, Enhanced SC-FDMA.					

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NR Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	NR Band n71 (665.5 - 695.5 MHz)				
	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)				
	NR Band n25 (PCS) (1852.5 - 1912.5 MHz)				
	NR Band n41 (2506.02 - 2679.99 MHz)				
Channel Bandwidths	NR Band n71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	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				
	NR Band n25 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n41: 20 MHz, 40 MHz, 50MHz, 60 MHz, 80 MHz, 90 MHz, 100 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
NR Band n71: 5 MHz	665.5 (133100)		680.5 (136100)	695.5 (139100)	
NR Band n71: 10 MHz	668 (133600)		680.5 (136100)	693 (138600)	
NR Band n71: 15 MHz	670.5 (134100)		680.5 (136100)	690.5 (138100)	
NR Band n71: 20 MHz	673 (134600)		680.5 (136100)	688 (137600)	
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)	
NR Band n25 (PCS): 5 MHz	1852.5 (370500)		1882.5 (376500)	1912.5 (382500)	
NR Band n25 (PCS): 10 MHz	1855 (371000)		1882.5 (376500)	1910 (382000)	
NR Band n25 (PCS): 15 MHz	1857.5 (371500)		1882.5 (376500)	1907.5 (381500)	
NR Band n25 (PCS): 20 MHz	1860 (372000)		1882.5 (376500)	1905 (381000)	
NR Band n41: 20 MHz	2506.02 (501204)	2549.49 (509898)	2592.99 (518598)	2636.49 (527298)	2679.99 (535998)
NR Band n41: 40 MHz	2516.01 (503202)	2567.34 (513468)	N/A	2618.67 (523734)	2670 (534000)
NR Band n41: 50 MHz	2521.02 (504204)		2592.99 (518598)	2664.99 (532998)	
NR Band n41: 60 MHz	2526 (505200)		2592.99 (518598)	2659.98 (531996)	
NR Band n41: 80 MHz	2536.02 (507204)		N/A	2649.99 (529998)	
NR Band n41: 90 MHz	2541 (508200)		N/A	2644.98 (528996)	
NR Band n41: 100 MHz	2546.01 (509202)		2592.99 (518598)	2640 (528000)	
NR Band n71/n5/n66/n2/n25 SCS	15 kHz				
NR Band n41 SCS	30 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 n71	LTE Band 2/7/66				
LTE Anchor Bands for NR Band n5	LTE Band 2/30/66				
LTE Anchor Bands for NR Band n66	LTE Band 2/5/7/12/13/30/71				
LTE Anchor Bands for NR Band n2	LTE Band 5/12/13/30/66				
LTE Anchor Bands for NR Band n25	LTE Band 66				
LTE Anchor Bands for NR Band n41	LTE Band 2/66				

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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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4.1 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.

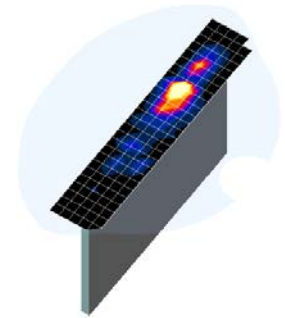


Figure 4-1
Sample SAR Area Scan

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

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	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		
				$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(n-1)^*$	
≤ 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].

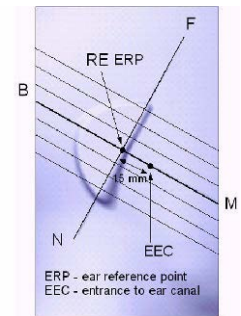


Figure 5-1
Close-Up Side view
of ERP

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

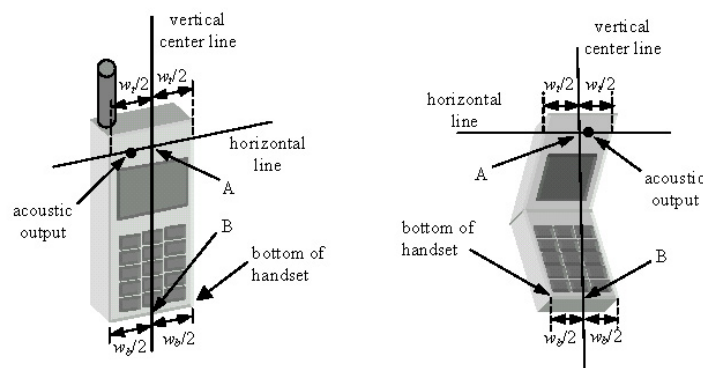


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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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.

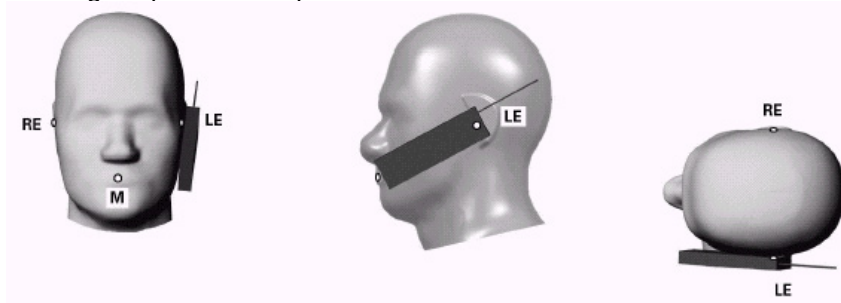


Figure 6-1 Front, Side and Top View of Cheek Position

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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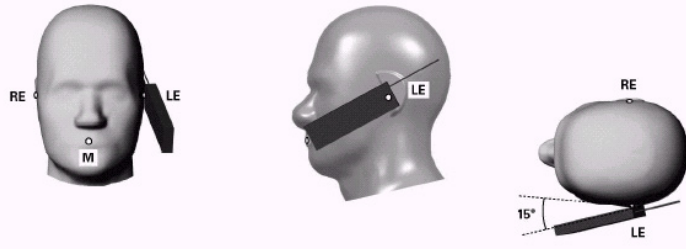


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

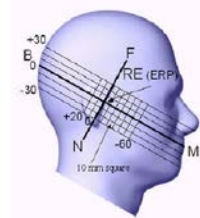


Figure 6-3 Side view w/ relevant markings

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.

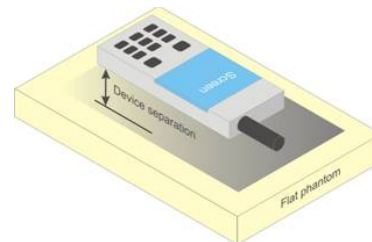


Figure 6-4 Sample Body-Worn Diagram

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.

8.4.6 CDMA2000 1x Advanced

This device additionally supports 1x Advanced. Conducted powers are measured using SO75 with RC8 on the uplink and RC11 on the downlink per FCC KDB Publication 941225 D01v03r01. Smart blanking is disabled for all measurements. The EUT is configured with forward power control Mode 000 and reverse power control at 400 bps. Conducted powers are measured on an Agilent 8960 Series 10 Wireless Communications Test Set, Model E5515C using the CDMA2000 1x Advanced application, Option E1962B-410.

The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The 1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

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, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.5.2 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.

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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.

8.5.5 SAR Measurements with Rel 6 HSUPA

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.

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 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.

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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 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 $\frac{1}{2}$ 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

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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 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.

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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.

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.

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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 $<1.6 \text{ W/kg}$, 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	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	33.27	33.27	31.79	30.00	28.92	26.80	26.71	25.68	24.62
	190	33.10	33.05	31.61	29.78	28.56	26.72	26.62	25.54	24.51
	251	32.88	32.84	31.30	29.55	28.45	26.45	26.32	25.30	24.27
GSM 1900	512	29.67	29.70	28.47	27.55	25.86	24.92	25.12	24.43	23.34
	661	29.69	29.70	28.64	27.68	26.00	25.23	24.88	24.40	23.46
	810	29.52	29.55	28.62	27.42	25.87	25.18	24.84	24.48	23.32

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	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	24.07	24.07	25.60	25.57	25.74	17.60	20.52	21.25	21.44
	190	23.90	23.85	25.42	25.35	25.38	17.52	20.43	21.11	21.33
	251	23.68	23.64	25.11	25.12	25.27	17.25	20.13	20.87	21.09
GSM 1900	512	20.47	20.50	22.28	23.12	22.68	15.72	18.93	20.00	20.16
	661	20.49	20.50	22.45	23.25	22.82	16.03	18.69	19.97	20.28
	810	20.32	20.35	22.43	22.99	22.69	15.98	18.65	20.05	20.14

GSM 850	Frame	23.30	23.30	24.81	24.57	24.82	17.30	19.81	20.57	20.82
GSM 1900	Avg.Targets:	20.30	20.30	21.81	22.57	21.82	16.30	18.81	19.57	19.82

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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.

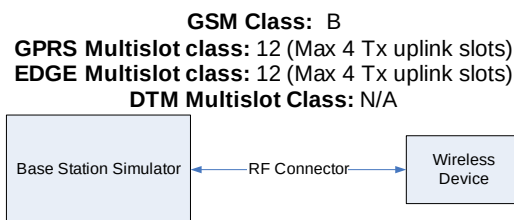


Figure 9-1
Power Measurement Setup

9.2 CDMA Conducted Powers

Table 9-2
Measured P_{max}

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	1013	22H	824.7	25.43	25.40	25.49	25.40	25.36	25.43	25.45
	384	22H	836.52	25.42	25.41	25.50	25.41	25.40	25.46	25.49
	777	22H	848.31	24.82	24.82	24.88	24.82	24.80	24.84	24.88
PCS	25	24E	1851.25	25.17	25.18	25.29	25.19	25.18	25.20	25.21
	600	24E	1880	25.24	25.23	25.34	25.24	25.24	25.26	25.31
	1175	24E	1908.75	25.19	25.20	25.37	25.20	25.22	25.25	25.23

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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]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.21	22.23	22.28	22.23	22.22	22.44	22.45
	600	24E	1880	22.28	22.27	22.14	22.22	22.26	22.50	22.41
	1175	24E	1908.75	22.23	22.24	22.36	22.24	22.26	22.49	22.36

Note: RC1 is only applicable for IS-95 compatibility. For FCC Rule Part 90S, Per FCC KDB Publication 447498 D01v06 4.1.g), only one channel is required since the device operates within the transmission range of 817.90 – 823.10 MHz.



Figure 9-2
Power Measurement Setup

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	25.25	25.29	25.27	25.36	25.36	25.35	25.29	25.35	25.27	-
99		12.2 kbps AMR	25.29	25.25	25.21	25.36	25.32	25.34	25.29	25.34	25.26	-
6	HSDPA	Subtest 1	25.30	25.20	25.20	25.25	25.32	25.33	25.26	25.23	25.21	0
6		Subtest 2	25.33	25.27	25.19	25.21	25.37	25.39	25.27	25.25	25.20	0
6		Subtest 3	24.84	24.70	24.64	24.64	24.67	24.72	24.72	24.74	24.68	0.5
6		Subtest 4	24.82	24.81	24.80	24.59	24.71	24.69	24.67	24.73	24.68	0.5
6	HSUPA	Subtest 1	24.70	24.73	24.62	24.82	24.84	24.85	24.73	24.76	24.71	0
6		Subtest 2	23.32	23.30	23.28	23.39	23.43	23.41	23.34	23.31	23.36	2
6		Subtest 3	24.30	24.28	24.29	24.26	24.42	24.40	24.35	24.36	24.33	1
6		Subtest 4	23.31	23.27	23.21	23.37	23.45	23.40	23.30	23.35	23.34	2
6		Subtest 5	25.33	25.27	25.19	25.22	25.45	25.41	25.37	25.36	25.41	0
8	DC-HSDPA	Subtest 1	25.33	25.19	25.21	25.21	25.26	25.29	25.31	25.34	25.36	0
8		Subtest 2	25.12	25.27	25.24	25.26	25.24	25.31	25.28	25.27	25.31	0
8		Subtest 3	24.79	24.82	24.80	24.74	24.69	24.74	24.69	24.71	24.70	0.5
8		Subtest 4	24.70	24.68	24.71	24.67	24.72	24.67	24.60	24.68	24.70	0.5

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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	22.49	22.50	22.48	22.47	22.50	22.46	-
99		12.2 kbps AMR	22.48	22.49	22.46	22.46	22.50	22.47	-
6	HSDPA	Subtest 1	22.47	22.50	22.46	22.46	22.48	22.46	0
6		Subtest 2	22.41	22.43	22.44	22.47	22.43	22.48	0
6		Subtest 3	21.98	21.96	22.00	21.98	21.96	21.94	0.5
6		Subtest 4	21.95	21.95	21.98	21.95	21.94	21.99	0.5
6	HSUPA	Subtest 1	21.78	21.73	21.76	21.71	21.73	21.74	0
6		Subtest 2	20.48	20.42	20.46	20.43	20.39	20.37	2
6		Subtest 3	21.48	21.46	21.50	21.44	21.46	21.49	1
6		Subtest 4	20.49	20.50	20.47	20.45	20.41	20.37	2
6		Subtest 5	22.50	22.48	22.47	22.46	22.45	22.49	0
8	DC-HSDPA	Subtest 1	22.48	22.45	22.44	22.43	22.49	22.45	0
8		Subtest 2	22.45	22.44	22.45	22.44	22.49	22.50	0
8		Subtest 3	21.98	22.00	21.92	21.89	21.88	21.90	0.5
8		Subtest 4	21.99	21.97	21.84	21.88	21.90	21.94	0.5

DC-HSDPA considerations

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

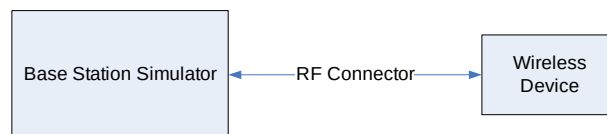


Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1 LTE Band 71

Table 9-6
LTE Band 71 Measured P_{max} - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.20	0	0
	1	50	25.15		0
	1	99	25.25		0
	50	0	24.39	0-1	1
	50	25	24.36		1
	50	50	24.36		1
	100	0	24.29		1
16QAM	1	0	24.43	0-1	1
	1	50	24.50		1
	1	99	24.45		1
	50	0	23.34	0-2	2
	50	25	23.36		2
	50	50	23.35		2
	100	0	23.35		2
64QAM	1	0	23.48	0-2	2
	1	50	23.50		2
	1	99	23.49		2
	50	0	22.37	0-3	3
	50	25	22.43		3
	50	50	22.43		3
	100	0	22.29		3

Note: LTE Band 71 at 20 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 71 Measured P_{max} - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.28	0	0
	1	36	25.42		0
	1	74	25.26		0
	36	0	24.40	0-1	1
	36	18	24.37		1
	36	37	24.38		1
	75	0	24.32		1
16QAM	1	0	24.39	0-1	1
	1	36	24.30		1
	1	74	24.33		1
	36	0	23.39	0-2	2
	36	18	23.38		2
	36	37	23.41		2
	75	0	23.36		2
64QAM	1	0	23.50	0-2	2
	1	36	23.48		2
	1	74	23.39		2
	36	0	22.45	0-3	3
	36	18	22.43		3
	36	37	22.47		3
	75	0	22.46		3

Note: LTE Band 71 at 15 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 9-8
LTE Band 71 Measured P_{max} - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133172 (668.0 MHz)	133297 (680.5 MHz)	133422 (693.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.25	25.06	25.29	0	0
	1	25	25.11	25.17	25.25		0
	1	49	25.11	25.16	25.23		0
	25	0	24.33	24.25	24.29	0-1	1
	25	12	24.29	24.27	24.28		1
	25	25	24.23	24.32	24.30		1
16QAM	50	0	24.23	24.20	24.27		1
	1	0	24.48	24.05	24.41	0-1	1
	1	25	24.50	24.03	24.36		1
	1	49	24.47	24.05	24.33		1
	25	0	23.46	23.41	23.39	0-2	2
	25	12	23.43	23.43	23.42		2
25	25	23.31	23.42	23.45	2		
64QAM	50	0	23.32	23.29	23.24		2
	1	0	23.50	23.48	23.24	0-2	2
	1	25	23.20	23.45	23.46		2
	1	49	23.35	23.14	23.47		2
	25	0	22.46	22.41	22.37	0-3	3
	25	12	22.46	22.46	22.38		3
25	25	22.50	22.42	22.38	3		
	50	0	22.40	22.20	22.27		3

Table 9-9
LTE Band 71 Measured P_{max} - 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133147 (665.5 MHz)	133297 (680.5 MHz)	133447 (695.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.15	25.09	25.18	0	0
	1	12	25.31	25.30	25.17		0
	1	24	25.27	25.26	25.11		0
	12	0	24.21	24.25	24.22	0-1	1
	12	6	24.33	24.32	24.30		1
	12	13	24.32	24.37	24.28		1
16QAM	25	0	24.30	24.30	24.26		1
	1	0	24.47	24.15	24.21	0-1	1
	1	12	24.50	24.38	24.35		1
	1	24	24.49	24.38	24.36		1
	12	0	23.33	23.34	23.34	0-2	2
	12	6	23.46	23.41	23.36		2
12	13	23.42	23.46	23.41	2		
64QAM	25	0	23.48	23.24	23.30		2
	1	0	22.89	23.26	23.37	0-2	2
	1	12	23.20	23.24	23.50		2
	1	24	23.18	23.39	23.24		2
	12	0	21.90	22.32	22.25	0-3	3
	12	6	22.07	22.40	22.38		3
12	13	22.31	22.40	22.34	3		
	25	0	22.04	22.33	22.25		3

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9.4.2

LTE Band 12

Table 9-10
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	25.14	0	0
	1	25	25.09		0
	1	49	25.09		0
	25	0	24.13	0-1	1
	25	12	24.19		1
	25	25	24.18		1
	50	0	24.11		1
16QAM	1	0	24.46	0-1	1
	1	25	24.39		1
	1	49	24.46		1
	25	0	23.11	0-2	2
	25	12	23.18		2
	25	25	23.20		2
	50	0	23.10		2
64QAM	1	0	23.32	0-2	2
	1	25	23.43		2
	1	49	23.37		2
	25	0	22.14	0-3	3
	25	12	22.21		3
	25	25	22.24		3
	50	0	22.19		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 9-11
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	25.18	25.18	25.07	0	0
	1	12	25.25	25.23	25.07		0
	1	24	25.24	25.23	25.05		0
	12	0	24.31	24.29	24.20	0-1	1
	12	6	24.30	24.29	24.25		1
	12	13	24.27	24.32	24.25		1
	25	0	24.28	24.28	24.23		1
16QAM	1	0	24.40	24.27	24.31	0-1	1
	1	12	24.44	24.33	24.25		1
	1	24	24.50	24.34	24.31		1
	12	0	23.42	23.39	23.31	0-2	2
	12	6	23.41	23.40	23.31		2
	12	13	23.39	23.41	23.33		2
	25	0	23.41	23.24	23.27		2
64QAM	1	0	23.42	23.50	23.39	0-2	2
	1	12	23.45	23.47	23.43		2
	1	24	23.44	23.45	23.41		2
	12	0	22.33	22.36	22.30	0-3	3
	12	6	22.29	22.42	22.28		3
	12	13	22.25	22.39	22.27		3
	25	0	22.34	22.34	22.24		3

Table 9-12
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	25.32	25.20	25.22	0	0
	1	7	25.25	25.24	25.20		0
	1	14	25.24	25.23	25.19		0
	8	0	24.35	24.35	24.31	0-1	1
	8	4	24.34	24.34	24.37		1
	8	7	24.31	24.38	24.31		1
	15	0	24.34	24.36	24.30		1
16QAM	1	0	24.38	24.19	24.30	0-1	1
	1	7	24.47	24.14	24.21		1
	1	14	24.39	24.17	24.20		1
	8	0	23.39	23.33	23.34	0-2	2
	8	4	23.50	23.39	23.38		2
	8	7	23.41	23.38	23.34		2
	15	0	23.39	23.32	23.37		2
64QAM	1	0	23.20	23.37	23.25	0-2	2
	1	7	23.15	23.34	23.47		2
	1	14	23.17	23.41	23.39		2
	8	0	22.43	22.40	22.33	0-3	3
	8	4	22.48	22.38	22.44		3
	8	7	22.44	22.43	22.34		3
	15	0	22.43	22.37	22.31		3

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Table 9-13
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	25.05	24.99	25.18	0	0
	1	2	25.10	25.10	25.25		0
	1	5	25.03	25.02	25.20		0
	3	0	25.06	25.10	25.10		0
	3	2	25.11	25.15	25.15		0
	3	3	25.01	25.15	25.08		0
	6	0	24.09	24.15	24.14	0-1	1
16QAM	1	0	24.02	23.90	23.96	0-1	1
	1	2	24.11	24.04	24.01		1
	1	5	24.25	24.00	24.03		1
	3	0	24.43	24.26	24.31		1
	3	2	24.48	24.37	24.36		1
	3	3	24.41	24.30	24.32		1
	6	0	23.06	23.35	23.36	0-2	2
64QAM	1	0	23.30	23.23	23.38	0-2	2
	1	2	23.37	23.36	23.49		2
	1	5	23.40	23.36	23.33		2
	3	0	23.24	23.15	23.48		2
	3	2	23.32	23.28	23.35		2
	3	3	23.26	23.24	23.48		2
	6	0	22.24	22.30	22.16	0-3	3

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LTE Band 13

Table 9-14
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	25.18	0	0
	1	25	25.05		0
	1	49	24.95		0
	25	0	24.15	0-1	1
	25	12	24.19		1
	25	25	24.33		1
	50	0	24.16		1
16QAM	1	0	24.50	0-1	1
	1	25	24.49		1
	1	49	24.44		1
	25	0	23.14	0-2	2
	25	12	23.25		2
	25	25	23.21		2
	50	0	23.15		2
64QAM	1	0	23.36	0-2	2
	1	25	23.50		2
	1	49	23.42		2
	25	0	22.19	0-3	3
	25	12	22.31		3
	25	25	22.29		3
	50	0	22.22		3

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Table 9-15
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	25.28	0	0
	1	12	25.23		0
	1	24	25.20		0
	12	0	24.22	0-1	1
	12	6	24.33		1
	12	13	24.25		1
	25	0	24.30		1
16QAM	1	0	24.35	0-1	1
	1	12	24.50		1
	1	24	24.48		1
	12	0	23.30	0-2	2
	12	6	23.38		2
	12	13	23.43		2
	25	0	23.31		2
64QAM	1	0	23.18	0-2	2
	1	12	23.09		2
	1	24	23.22		2
	12	0	22.15	0-3	3
	12	6	22.33		3
	12	13	22.18		3
	25	0	22.00		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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LTE Band 14

Table 9-16
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	25.30	0	0
	1	25	25.13		0
	1	49	25.12		0
	25	0	24.18	0-1	1
	25	12	24.25		1
	25	25	24.17		1
	50	0	24.16		1
16QAM	1	0	24.50	0-1	1
	1	25	24.46		1
	1	49	24.47		1
	25	0	23.16	0-2	2
	25	12	23.22		2
	25	25	23.14		2
	50	0	23.15		2
64QAM	1	0	23.50	0-2	2
	1	25	23.50		2
	1	49	23.31		2
	25	0	22.23	0-3	3
	25	12	22.31		3
	25	25	22.17		3
	50	0	22.19		3

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Table 9-17
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	25.08	0	0
	1	12	25.17		0
	1	24	25.08		0
	12	0	24.27	0-1	1
	12	6	24.30		1
	12	13	24.23		1
	25	0	24.28		1
16QAM	1	0	24.40	0-1	1
	1	12	24.45		1
	1	24	24.44		1
	12	0	23.41	0-2	2
	12	6	23.37		2
	12	13	23.35		2
	25	0	23.31		2
64QAM	1	0	23.15	0-2	2
	1	12	23.32		2
	1	24	23.14		2
	12	0	22.35	0-3	3
	12	6	22.32		3
	12	13	22.33		3
	25	0	22.22		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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LTE Band 5 (Cell)

Table 9-18
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	24.89		0
	1	49	24.93		0
	25	0	23.96	0-1	1
	25	12	24.02		1
	25	25	23.97		1
	50	0	23.96		1
16QAM	1	0	24.10	0-1	1
	1	25	24.03		1
	1	49	24.06		1
	25	0	23.01	0-2	2
	25	12	23.06		2
	25	25	23.02		2
	50	0	22.98		2
64QAM	1	0	22.89	0-2	2
	1	25	22.93		2
	1	49	22.96		2
	25	0	22.07	0-3	3
	25	12	22.08		3
	25	25	22.09		3
	50	0	22.05		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 9-19
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	25.06	24.95	24.84	0	0
	1	12	25.06	25.04	24.89		0
	1	24	25.08	25.04	24.82		0
	12	0	24.11	24.06	24.06	0-1	1
	12	6	24.16	24.12	24.08		1
	12	13	24.18	24.12	24.06		1
	25	0	24.09	24.06	24.04		1
16QAM	1	0	24.22	24.00	24.06	0-1	1
	1	12	24.19	24.16	24.16		1
	1	24	24.09	24.12	24.07		1
	12	0	23.18	23.12	23.11	0-2	2
	12	6	23.10	23.10	23.11		2
	12	13	23.16	23.16	23.11		2
	25	0	23.20	23.09	23.11		2
64QAM	1	0	23.09	22.98	22.69	0-2	2
	1	12	23.06	23.16	22.91		2
	1	24	23.17	23.21	22.81		2
	12	0	22.12	22.12	21.70	0-3	3
	12	6	22.16	22.19	21.79		3
	12	13	22.16	22.18	21.77		3
	25	0	22.17	22.13	21.70		3

Table 9-20
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	24.97	24.90	24.82	0	0
	1	7	24.99	24.95	24.91		0
	1	14	24.99	24.95	24.95		0
	8	0	24.13	24.01	24.06	0-1	1
	8	4	24.13	24.12	24.08		1
	8	7	24.09	24.03	24.06		1
	15	0	24.11	24.11	24.00		1
16QAM	1	0	24.18	23.83	23.94	0-1	1
	1	7	24.13	23.84	23.97		1
	1	14	24.17	23.83	23.96		1
	8	0	23.18	23.00	23.08	0-2	2
	8	4	23.06	23.06	23.12		2
	8	7	23.17	23.07	23.09		2
	15	0	23.13	23.07	23.07		2
64QAM	1	0	22.90	23.20	22.90	0-2	2
	1	7	22.93	23.13	22.95		2
	1	14	22.92	23.07	22.93		2
	8	0	22.18	22.12	21.79	0-3	3
	8	4	22.06	22.16	21.87		3
	8	7	22.15	22.13	21.88		3
	15	0	22.18	22.15	21.85		3

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Table 9-21
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	24.99	24.83	25.00	0	0
	1	2	25.00	24.92	25.08		0
	1	5	24.94	24.84	25.04		0
	3	0	24.92	24.89	24.96		0
	3	2	25.04	25.04	24.98		0
	3	3	24.97	24.92	24.90		0
	6	0	24.04	23.98	24.01	0-1	1
16QAM	1	0	24.17	23.71	23.82	0-1	1
	1	2	24.16	23.80	23.93		1
	1	5	24.07	23.86	23.83		1
	3	0	24.17	24.10	24.07		1
	3	2	24.19	24.18	24.21		1
	3	3	24.07	24.15	24.12		1
	6	0	23.01	23.18	23.21	0-2	2
64QAM	1	0	22.89	23.08	22.98	0-2	2
	1	2	23.03	23.19	23.10		2
	1	5	22.88	23.17	22.86		2
	3	0	23.20	23.00	23.14		2
	3	2	23.07	23.13	23.13		2
	3	3	23.15	23.05	23.08		2
	6	0	21.96	22.18	21.80	0-3	3

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LTE Band 66 (AWS)

Table 9-22
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	24.83	24.85	25.21	0	0
	1	50	25.07	24.99	25.04		0
	1	99	24.84	24.85	25.07		0
	50	0	24.15	24.21	24.20	0-1	1
	50	25	24.28	24.29	24.30		1
	50	50	24.18	24.22	24.20		1
	100	0	24.22	24.26	24.16		1
16QAM	1	0	24.17	24.23	24.48	0-1	1
	1	50	24.36	24.40	24.50		1
	1	99	24.16	24.21	24.39		1
	50	0	23.18	23.22	23.21	0-2	2
	50	25	23.33	23.30	23.35		2
	50	50	23.15	23.21	23.25		2
	100	0	23.18	23.23	23.16		2
64QAM	1	0	22.81	22.97	23.41	0-2	2
	1	50	23.30	23.35	23.35		2
	1	99	23.04	23.13	23.38		2
	50	0	22.19	22.21	22.23	0-3	3
	50	25	22.32	22.34	22.33		3
	50	50	22.23	22.25	22.23		3
	100	0	22.26	22.27	22.15		3

Table 9-23
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	25.08	24.96	25.13	0	0
	1	36	25.14	25.11	25.18		0
	1	74	24.99	24.97	25.07		0
	36	0	24.24	24.29	24.27	0-1	1
	36	18	24.25	24.15	24.29		1
	36	37	24.27	24.27	24.17		1
	75	0	24.30	24.25	24.24		1
16QAM	1	0	24.13	24.24	24.27	0-1	1
	1	36	24.26	24.09	23.99		1
	1	74	24.12	24.27	24.23		1
	36	0	23.26	23.25	23.25	0-2	2
	36	18	23.28	23.24	23.27		2
	36	37	23.27	23.25	23.29		2
	75	0	23.26	23.28	23.24		2
64QAM	1	0	23.08	23.02	23.19	0-2	2
	1	36	22.99	23.22	23.28		2
	1	74	23.24	22.94	23.17		2
	36	0	22.07	22.16	22.16	0-3	3
	36	18	22.30	22.26	22.25		3
	36	37	22.25	22.25	22.30		3
	75	0	22.29	22.26	22.27		3

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Table 9-24
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	24.86	24.88	24.90	0	0
	1	25	25.02	25.11	25.11		0
	1	49	24.84	24.93	24.88		0
	25	0	24.29	24.20	24.24	0-1	1
	25	12	24.39	24.29	24.28		1
	25	25	24.24	24.25	24.27		1
	50	0	24.30	24.28	24.26		1
16QAM	1	0	24.17	24.39	23.81	0-1	1
	1	25	24.01	24.12	24.10		1
	1	49	24.05	24.40	24.11		1
	25	0	23.38	23.29	23.34	0-2	2
	25	12	23.42	23.38	23.42		2
	25	25	23.32	23.32	23.40		2
	50	0	23.30	23.34	23.29		2
64QAM	1	0	23.21	23.12	23.16	0-2	2
	1	25	23.33	23.15	23.44		2
	1	49	23.19	23.39	23.20		2
	25	0	22.12	22.36	22.34	0-3	3
	25	12	22.43	22.42	22.42		3
	25	25	22.36	22.32	22.38		3
	50	0	22.26	22.34	22.24		3

Table 9-25
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	24.96	25.05	25.28	0	0
	1	12	25.08	25.09	25.31		0
	1	24	25.17	25.02	25.23		0
	12	0	24.34	24.27	24.37	0-1	1
	12	6	24.42	24.32	24.34		1
	12	13	24.30	24.23	24.26		1
	25	0	24.31	24.33	24.31		1
16QAM	1	0	24.33	24.29	24.39	0-1	1
	1	12	24.29	24.34	24.48		1
	1	24	24.27	24.29	24.39		1
	12	0	23.47	23.34	23.50	0-2	2
	12	6	23.46	23.39	23.47		2
	12	13	23.35	23.34	23.42		2
	25	0	23.36	23.37	23.43		2
64QAM	1	0	23.02	23.39	23.41	0-2	2
	1	12	23.17	23.46	23.38		2
	1	24	23.41	23.39	23.38		2
	12	0	22.27	22.31	22.38	0-3	3
	12	6	22.15	22.32	22.41		3
	12	13	22.22	22.29	22.28		3
	25	0	22.09	22.32	22.41		3

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Table 9-26
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	25.03	25.16	25.27	0	0
	1	7	25.15	25.16	25.20		0
	1	14	25.16	25.11	25.14		0
	8	0	24.33	24.28	24.31	0-1	1
	8	4	24.31	24.32	24.35		1
	8	7	24.26	24.26	24.23		1
	15	0	24.34	24.33	24.31		1
16QAM	1	0	24.47	24.24	24.48	0-1	1
	1	7	24.36	24.22	24.39		1
	1	14	24.46	24.13	24.41		1
	8	0	23.44	23.34	23.42	0-2	2
	8	4	23.43	23.41	23.48		2
	8	7	23.40	23.36	23.38		2
	15	0	23.36	23.41	23.35		2
64QAM	1	0	23.11	23.50	23.15	0-2	2
	1	7	23.25	23.50	23.11		2
	1	14	23.07	23.48	23.09		2
	8	0	22.11	22.33	22.46	0-3	3
	8	4	22.23	22.38	22.45		3
	8	7	22.13	22.31	22.40		3
	15	0	22.07	22.33	22.41		3

Table 9-27
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	25.09	25.08	25.27	0	0
	1	2	25.13	25.10	25.28		0
	1	5	25.04	25.04	25.21		0
	3	0	25.17	25.13	25.13		0
	3	2	25.18	25.17	25.18		0
	3	3	25.15	25.14	25.13		0
	6	0	24.26	24.25	24.17	0-1	1
16QAM	1	0	24.20	24.01	24.03	0-1	1
	1	2	24.13	24.05	24.13		1
	1	5	23.97	24.02	24.01		1
	3	0	24.34	24.31	24.38		1
	3	2	24.39	24.39	24.43		1
	3	3	24.29	24.35	24.36		1
64QAM	6	0	23.47	23.44	23.41	0-2	2
	1	0	23.12	23.34	23.43	0-2	2
	1	2	23.15	23.40	23.49		2
	1	5	23.13	23.32	23.38		2
	3	0	23.36	23.29	23.45		2
	3	2	23.01	23.32	23.36		2
	3	3	23.10	23.24	23.50		2
	6	0	22.03	22.39	22.22	0-3	3

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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) -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	21.93	21.95	22.03	0	0
	1	50	21.99	21.96	21.93		0
	1	99	21.95	21.91	21.84		0
	50	0	21.98	21.98	22.15	0-1	0
	50	25	22.14	21.99	22.03		0
	50	50	22.02	21.95	21.90		0
	100	0	21.95	21.94	22.00		0
16QAM	1	0	21.97	22.05	22.37	0-1	0
	1	50	21.93	22.30	22.12		0
	1	99	21.86	22.02	22.37		0
	50	0	22.04	21.95	22.00	0-2	0
	50	25	22.13	22.05	22.10		0
	50	50	21.93	21.93	21.97		0
	100	0	22.05	21.98	22.03		0
64QAM	1	0	22.04	22.05	22.22	0-2	0
	1	50	22.23	22.12	22.03		0
	1	99	21.98	21.83	22.14		0
	50	0	22.05	22.01	22.06	0-3	0
	50	25	22.13	22.11	22.12		0
	50	50	21.95	22.04	22.03		0
	100	0	22.00	21.99	22.03		0

Table 9-29
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	22.18	21.90	21.93	0	0
	1	36	22.12	22.08	22.12		0
	1	74	22.11	22.08	22.09		0
	36	0	22.19	22.20	22.18	0-1	0
	36	18	22.19	22.21	22.18		0
	36	37	22.22	22.19	22.17		0
	75	0	22.21	22.21	22.22		0
16QAM	1	0	22.11	22.11	22.38	0-1	0
	1	36	22.17	22.19	22.07		0
	1	74	22.18	22.18	22.07		0
	36	0	22.24	22.24	22.24	0-2	0
	36	18	22.23	22.21	22.25		0
	36	37	22.24	22.24	22.10		0
	75	0	22.24	22.25	22.10		0
64QAM	1	0	22.21	22.03	22.12	0-2	0
	1	36	22.20	22.19	22.08		0
	1	74	22.20	22.12	22.07		0
	36	0	22.26	22.29	22.33	0-3	0
	36	18	22.25	22.25	22.33		0
	36	37	22.25	22.29	22.31		0
	75	0	22.31	22.24	22.34		0

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Table 9-30
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	21.85	21.91	21.94	0	0
	1	25	22.05	22.10	22.14		0
	1	49	21.83	21.91	21.91		0
	25	0	22.18	22.17	22.19	0-1	0
	25	12	22.21	22.20	22.26		0
	25	25	22.12	22.18	22.21		0
	50	0	22.17	22.13	22.15		0
16QAM	1	0	22.28	22.10	22.11	0-1	0
	1	25	22.46	22.19	22.24		0
	1	49	22.23	22.10	22.07		0
	25	0	22.19	22.17	22.19	0-2	0
	25	12	22.23	22.21	22.27		0
	25	25	22.13	22.20	22.22		0
	50	0	22.19	22.18	22.22		0
64QAM	1	0	22.39	22.08	22.00	0-2	0
	1	25	22.21	22.06	22.30		0
	1	49	22.34	22.01	22.07		0
	25	0	22.34	22.20	22.24	0-3	0
	25	12	22.36	22.26	22.32		0
	25	25	22.31	22.23	22.27		0
	50	0	22.27	22.20	22.14		0

Table 9-31
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	22.11	22.03	22.13	0	0
	1	12	22.01	22.10	22.12		0
	1	24	22.00	22.00	22.05		0
	12	0	22.27	22.27	22.34	0-1	0
	12	6	22.26	22.23	22.35		0
	12	13	22.22	22.24	22.25		0
16QAM	25	0	22.25	22.24	22.27		0
	1	0	22.35	22.36	22.21	0-1	0
	1	12	22.38	22.41	22.26		0
	1	24	22.37	22.33	22.45		0
	12	0	22.30	22.29	22.31	0-2	0
	12	6	22.25	22.31	22.32		0
12	13	22.20	22.23	22.24	0		
64QAM	25	0	22.31	22.24	22.41		0
	1	0	22.37	22.18	22.18	0-2	0
	1	12	22.33	22.17	22.28		0
	1	24	22.26	22.24	22.17		0
	12	0	22.28	22.33	22.38	0-3	0
	12	6	22.38	22.31	22.38		0
12	13	22.27	22.30	22.29	0		
	25	0	22.27	22.16	22.31		0

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Table 9-32
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	22.17	22.16	22.23	0	0
	1	7	22.13	22.07	22.10		0
	1	14	22.07	22.08	22.06		0
	8	0	22.31	22.23	22.31	0-1	0
	8	4	22.26	22.31	22.26		0
	8	7	22.23	22.20	22.22		0
	15	0	22.31	22.26	22.26		0
16QAM	1	0	22.38	22.17	22.13	0-1	0
	1	7	22.46	22.14	22.14		0
	1	14	22.42	22.11	22.21		0
	8	0	22.23	22.38	22.30	0-2	0
	8	4	22.21	22.41	22.31		0
	8	7	22.13	22.33	22.22		0
	15	0	22.35	22.26	22.48		0
64QAM	1	0	22.25	22.28	22.25	0-2	0
	1	7	22.16	22.31	22.22		0
	1	14	22.15	22.24	22.23		0
	8	0	22.39	22.37	22.31	0-3	0
	8	4	22.40	22.36	22.49		0
	8	7	22.30	22.30	22.41		0
	15	0	22.41	22.26	22.35		0

Table 9-33
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	22.10	22.22	22.10	0	0
	1	2	22.12	22.25	22.10		0
	1	5	22.05	22.10	22.02		0
	3	0	22.13	22.13	22.08		0
	3	2	22.15	22.13	22.10		0
	3	3	22.15	22.08	22.07		0
	6	0	22.21	22.21	22.17	0-1	0
16QAM	1	0	22.44	22.40	22.21	0-1	0
	1	2	22.46	22.45	22.12		0
	1	5	22.40	22.36	22.18		0
	3	0	22.11	22.42	22.41		0
	3	2	22.13	22.40	22.38		0
	3	3	22.05	22.37	22.34	0	
64QAM	6	0	22.06	22.33	22.40	0-2	0
	1	0	22.36	22.39	22.23	0-2	0
	1	2	22.39	22.31	22.30		0
	1	5	22.21	22.29	22.21		0
	3	0	22.37	22.33	22.37		0
	3	2	22.37	22.35	22.39		0
	3	3	22.33	22.29	22.36	0	
	6	0	22.24	22.44	22.40	0-3	0

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Table 9-34
LTE Band 66 Ant 3 (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	17.14	16.96	17.18	0	0
	1	50	17.25	17.15	17.21		0
	1	99	17.07	16.95	17.18		0
	50	0	17.30	17.11	17.22	0-1	0
	50	25	17.32	17.17	17.21		0
	50	50	17.18	17.18	17.23		0
	100	0	17.23	17.13	17.16		0
16QAM	1	0	17.19	17.10	17.35	0-1	0
	1	50	17.31	17.22	17.36		0
	1	99	17.21	17.13	17.31		0
	50	0	17.29	17.15	17.19	0-2	0
	50	25	17.39	17.18	17.27		0
	50	50	17.22	17.19	17.23		0
	100	0	17.28	17.16	17.21		0
64QAM	1	0	17.47	17.22	17.49	0-2	0
	1	50	17.40	17.39	17.42		0
	1	99	17.36	17.23	17.62		0
	50	0	17.25	17.14	17.18	0-3	0
	50	25	17.38	17.21	17.23		0
	50	50	17.25	17.23	17.28		0
	100	0	17.26	17.13	17.15		0

Table 9-35
LTE Band 66 Ant 3 (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	17.06	17.12	17.38	0	0
	1	36	17.18	17.31	17.36		0
	1	74	17.20	17.06	17.25		0
	36	0	17.29	17.12	17.25	0-1	0
	36	18	17.32	17.12	17.39		0
	36	37	17.21	17.19	17.29		0
	75	0	17.25	17.11	17.37		0
16QAM	1	0	17.08	17.23	17.54	0-1	0
	1	36	17.54	17.47	17.42		0
	1	74	17.23	17.23	17.34		0
	36	0	17.26	17.15	17.22	0-2	0
	36	18	17.35	17.22	17.44		0
	36	37	17.23	17.18	17.37		0
	75	0	17.26	17.13	17.38		0
64QAM	1	0	17.63	17.52	17.64	0-2	0
	1	36	17.67	17.66	17.68		0
	1	74	17.64	17.62	17.69		0
	36	0	17.20	17.16	17.35	0-3	0
	36	18	17.33	17.16	17.39		0
	36	37	17.22	17.27	17.29		0
	75	0	17.25	17.13	17.32		0

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Table 9-36
LTE Band 66 Ant 3 (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	17.06	17.15	17.35	0	0
	1	25	17.21	17.29	17.38		0
	1	49	17.22	17.03	17.28		0
	25	0	17.26	17.10	17.24	0-1	0
	25	12	17.34	17.11	17.37		0
	25	25	17.19	17.19	17.31		0
	50	0	17.26	17.09	17.35		0
16QAM	1	0	17.08	17.20	17.54	0-1	0
	1	25	17.52	17.48	17.41		0
	1	49	17.24	17.24	17.34		0
	25	0	17.25	17.17	17.19	0-2	0
	25	12	17.38	17.20	17.46		0
	25	25	17.23	17.20	17.35		0
	50	0	17.23	17.14	17.38		0
64QAM	1	0	17.61	17.50	17.62	0-2	0
	1	25	17.69	17.65	17.68		0
	1	49	17.61	17.61	17.69		0
	25	0	17.17	17.19	17.34	0-3	0
	25	12	17.36	17.14	17.41		0
	25	25	17.22	17.29	17.29		0
	50	0	17.27	17.12	17.32		0

Table 9-37
LTE Band 66 Ant 3 (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	17.03	17.15	17.33	0	0	
	1	12	17.19	17.30	17.41		0	
	1	24	17.22	17.00	17.27		0	
	12	0	17.23	17.07	17.23	0-1	0	
	12	6	17.35	17.11	17.40		0	
	12	13	17.19	17.17	17.32		0	
16QAM	25	0	17.27	17.08	17.33	0-1	0	
	1	0	17.09	17.21	17.55		0	
	1	12	17.51	17.49	17.40		0	
	1	24	17.23	17.23	17.32	0-2	0	
	12	0	17.28	17.18	17.20		0	
	12	6	17.38	17.23	17.43		0	
	12	13	17.20	17.19	17.35		0	
64QAM	25	0	17.21	17.11	17.40	0-2	0	
	1	0	17.62	17.52	17.62		0-3	0
	1	12	17.68	17.67	17.69			0
	1	24	17.61	17.58	17.68	0		
	12	0	17.17	17.18	17.31	0-3	0	
	12	6	17.36	17.16	17.44		0	
	12	13	17.20	17.28	17.28		0	
	25	0	17.25	17.12	17.34		0	

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Table 9-38
LTE Band 66 Ant 3 (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	17.05	17.15	17.34	0	0
	1	7	17.20	17.28	17.44		0
	1	14	17.22	17.03	17.29		0
	8	0	17.22	17.08	17.26	0-1	0
	8	4	17.36	17.11	17.39		0
	8	7	17.16	17.18	17.30		0
	15	0	17.29	17.11	17.36		0
16QAM	1	0	17.08	17.22	17.52	0-1	0
	1	7	17.54	17.51	17.42		0
	1	14	17.26	17.26	17.32		0
	8	0	17.27	17.19	17.20	0-2	0
	8	4	17.38	17.25	17.45		0
	8	7	17.18	17.17	17.37		0
	15	0	17.23	17.12	17.39		0
64QAM	1	0	17.64	17.54	17.59	0-2	0
	1	7	17.68	17.65	17.66		0
	1	14	17.60	17.57	17.67		0
	8	0	17.20	17.15	17.31	0-3	0
	8	4	17.34	17.17	17.41		0
	8	7	17.17	17.28	17.31		0
	15	0	17.28	17.09	17.33		0

Table 9-39
LTE Band 66 Ant 3 (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	17.04	17.17	17.33	0	0
	1	2	17.19	17.25	17.46		0
	1	5	17.20	17.01	17.30		0
	3	0	17.22	17.05	17.27		0
	3	2	17.36	17.08	17.37		0
	3	3	17.14	17.16	17.29		0
	6	0	17.27	17.09	17.36	0-1	0
16QAM	1	0	17.08	17.25	17.49	0-1	0
	1	2	17.55	17.49	17.40		0
	1	5	17.23	17.24	17.35		0
	3	0	17.27	17.20	17.20		0
	3	2	17.37	17.22	17.42		0
	3	3	17.17	17.15	17.34		0
	6	0	17.26	17.13	17.38	0-2	0
64QAM	1	0	17.66	17.57	17.58	0-2	0
	1	2	17.69	17.62	17.69		0
	1	5	17.58	17.54	17.69		0
	3	0	17.22	17.15	17.29		0
	3	2	17.37	17.15	17.39		0
	3	3	17.15	17.31	17.28		0
	6	0	17.29	17.11	17.30	0-3	0

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LTE Band 2 (PCS)

Table 9-40
LTE Band 2 (PCS) 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	25.21	25.38	25.36	0	0
	1	50	25.19	25.37	25.37		0
	1	99	25.21	25.43	25.35		0
	50	0	24.33	24.29	24.28	0-1	1
	50	25	24.47	24.42	24.39		1
	50	50	24.45	24.48	24.42		1
	100	0	24.40	24.32	24.36		1
16QAM	1	0	24.48	24.50	24.49	0-1	1
	1	50	24.50	24.48	24.47		1
	1	99	24.47	24.49	24.50		1
	50	0	23.33	23.28	23.17	0-2	2
	50	25	23.48	23.41	23.35		2
	50	50	23.45	23.44	23.42		2
	100	0	23.46	23.37	23.33		2
64QAM	1	0	23.50	23.50	23.50	0-2	2
	1	50	23.49	23.49	23.50		2
	1	99	23.48	23.40	23.43		2
	50	0	22.37	22.41	22.33	0-3	3
	50	25	22.50	22.50	22.44		3
	50	50	22.43	22.50	22.45		3
	100	0	22.48	22.39	22.40		3

Table 9-41
LTE Band 2 (PCS) 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	25.25	25.33	25.39	0	0
	1	36	25.35	25.42	25.40		0
	1	74	25.34	25.37	25.36		0
	36	0	24.37	24.42	24.36	0-1	1
	36	18	24.40	24.43	24.38		1
	36	37	24.36	24.41	24.35		1
	75	0	24.47	24.44	24.41		1
16QAM	1	0	24.25	24.39	24.36	0-1	1
	1	36	24.46	24.43	24.36		1
	1	74	24.40	24.39	24.37		1
	36	0	23.37	23.44	23.38	0-2	2
	36	18	23.47	23.38	23.37		2
	36	37	23.35	23.47	23.43		2
	75	0	23.46	23.44	23.42		2
64QAM	1	0	23.37	23.42	23.39	0-2	2
	1	36	23.36	23.28	23.46		2
	1	74	23.40	23.29	23.44		2
	36	0	22.46	22.41	22.42	0-3	3
	36	18	22.35	22.26	22.37		3
	36	37	22.40	22.44	22.46		3
	75	0	22.50	22.41	22.38		3

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Table 9-42
LTE Band 2 (PCS) 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	25.15	25.18	25.18	0	0
	1	25	25.09	25.16	25.20		0
	1	49	25.16	25.13	25.15		0
	25	0	24.24	24.17	24.13	0-1	1
	25	12	24.35	24.25	24.19		1
	25	25	24.25	24.26	24.24		1
16QAM	50	0	24.24	24.22	24.18	0-1	1
	1	0	24.43	24.02	24.00		1
	1	25	24.45	24.20	23.93		1
	1	49	24.43	24.08	23.98	0-2	1
	25	0	23.35	23.27	23.27		2
	25	12	23.42	23.33	23.30		2
64QAM	25	25	23.34	23.41	23.33	0-2	2
	50	0	23.32	23.23	23.14		2
	1	0	23.20	23.26	23.35	0-2	2
	1	25	23.11	23.38	23.46		2
	1	49	23.09	23.31	23.39		2
	25	0	22.35	22.24	22.25	0-3	3
	25	12	22.48	22.33	22.33		3
	25	25	22.37	22.32	22.35		3
	50	0	22.34	22.30	22.26		3

Table 9-43
LTE Band 2 (PCS) 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	25.17	25.10	25.25	0	0
	1	12	25.22	25.23	25.23		0
	1	24	25.25	25.22	25.25		0
	12	0	24.28	24.18	24.26	0-1	1
	12	6	24.35	24.26	24.32		1
	12	13	24.34	24.33	24.30		1
16QAM	25	0	24.27	24.21	24.27	0-1	1
	1	0	24.41	24.19	24.39		1
	1	12	24.45	24.27	24.45		1
	1	24	24.43	24.35	24.49	0-2	1
	12	0	23.39	23.33	23.32		2
	12	6	23.46	23.34	23.38		2
64QAM	12	13	23.44	23.41	23.38	0-2	2
	25	0	23.42	23.21	23.34		2
	1	0	23.36	23.36	23.48	0-2	2
	1	12	23.48	23.41	23.44		2
	1	24	23.49	23.40	23.47		2
	12	0	22.29	22.28	22.21	0-3	3
	12	6	22.36	22.32	22.32		3
	12	13	22.34	22.41	22.27		3
	25	0	22.34	22.31	22.28		3

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Table 9-44
LTE Band 2 (PCS) 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	25.11	25.11	25.10	0	0
	1	7	25.09	25.12	25.05		0
	1	14	25.18	25.19	25.20		0
	8	0	24.25	24.22	24.17	0-1	1
	8	4	24.34	24.29	24.23		1
	8	7	24.31	24.28	24.25		1
	15	0	24.31	24.21	24.19		1
16QAM	1	0	24.09	24.17	24.37	0-1	1
	1	7	24.03	24.20	24.35		1
	1	14	24.12	24.26	24.36		1
	8	0	23.30	23.22	23.33	0-2	2
	8	4	23.36	23.39	23.38		2
	8	7	23.33	23.33	23.32		2
	15	0	23.31	23.31	23.32		2
64QAM	1	0	23.48	23.43	23.03	0-2	2
	1	7	23.46	23.48	23.07		2
	1	14	23.41	23.25	23.10		2
	8	0	22.31	22.27	22.32	0-3	3
	8	4	22.36	22.35	22.34		3
	8	7	22.33	22.37	22.35		3
	15	0	22.34	22.25	22.32		3

Table 9-45
LTE Band 2 (PCS) 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	25.07	25.25	25.16	0	0
	1	2	25.17	25.30	25.14		0
	1	5	25.15	25.21	25.11		0
	3	0	25.13	25.15	25.07		0
	3	2	25.17	25.16	25.11		0
	3	3	25.17	25.16	25.04		0
	6	0	24.25	24.22	24.17	0-1	1
16QAM	1	0	24.47	23.98	23.90	0-1	1
	1	2	24.36	24.08	23.99		1
	1	5	24.41	24.07	23.96		1
	3	0	24.35	24.35	24.24		1
	3	2	24.38	24.43	24.34		1
	3	3	24.41	24.40	24.28		1
	6	0	23.12	23.41	23.31	0-2	2
64QAM	1	0	23.04	23.42	23.24	0-2	2
	1	2	23.12	23.44	23.29		2
	1	5	23.04	23.42	23.30		2
	3	0	23.30	23.50	23.17		2
	3	2	23.38	23.25	23.28		2
	3	3	23.35	23.47	23.20		2
	6	0	22.41	22.24	22.32	0-3	3

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Table 9-46
LTE Band 2 (PCS) 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	22.12	22.03	22.08	0	0
	1	50	22.04	21.99	22.00		0
	1	99	22.07	22.02	21.99		0
	50	0	22.01	22.01	21.99	0-1	0
	50	25	22.23	22.08	22.17		0
	50	50	22.18	22.13	22.14		0
	100	0	22.11	22.02	22.02		0
16QAM	1	0	22.44	22.33	22.34	0-1	0
	1	50	22.40	22.35	22.31		0
	1	99	22.44	22.28	22.35		0
	50	0	22.04	22.03	22.02	0-2	0
	50	25	22.22	22.12	22.17		0
	50	50	22.21	22.14	22.16		0
	100	0	22.17	22.02	22.01		0
64QAM	1	0	22.32	22.21	22.26	0-2	0
	1	50	22.28	22.28	22.20		0
	1	99	22.33	22.27	22.25		0
	50	0	22.18	22.04	22.02	0-3	0
	50	25	22.26	22.16	22.18		0
	50	50	22.20	22.21	22.17		0
	100	0	22.20	22.09	22.06		0

Table 9-47
LTE Band 2 (PCS) 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	22.08	21.97	22.03	0	0
	1	36	22.05	22.04	21.92		0
	1	74	22.11	22.06	21.98		0
	36	0	22.03	22.04	21.99	0-1	0
	36	18	22.19	22.10	22.07		0
	36	37	22.20	22.19	22.15		0
	75	0	22.14	22.06	22.04		0
16QAM	1	0	22.20	22.33	22.26	0-1	0
	1	36	22.38	22.38	22.38		0
	1	74	22.33	22.42	22.37		0
	36	0	22.03	22.04	22.03	0-2	0
	36	18	22.19	22.10	22.14		0
	36	37	22.19	22.16	22.17		0
	75	0	22.18	22.09	22.13		0
64QAM	1	0	22.27	22.27	22.17	0-2	0
	1	36	22.25	22.33	22.29		0
	1	74	22.20	22.29	22.24		0
	36	0	22.26	22.09	22.07	0-3	0
	36	18	22.27	22.16	22.21		0
	36	37	22.22	22.22	22.22		0
	75	0	22.18	22.10	22.14		0

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Table 9-48
LTE Band 2 (PCS) 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	22.07	22.03	22.13	0	0
	1	25	22.18	22.13	22.11		0
	1	49	21.98	21.98	22.12		0
	25	0	22.25	22.15	22.11	0-1	0
	25	12	22.33	22.24	22.22		0
	25	25	22.22	22.18	22.16		0
50	0	22.26	22.17	22.08		0	
16QAM	1	0	22.32	22.10	22.06	0-1	0
	1	25	22.32	22.20	22.08		0
	1	49	22.38	22.30	22.03		0
	25	0	22.23	22.13	22.09	0-2	0
	25	12	22.35	22.23	22.18		0
	25	25	22.24	22.21	22.18		0
50	0	22.27	22.16	22.11		0	
64QAM	1	0	22.41	22.22	22.10	0-2	0
	1	25	22.40	22.28	22.02		0
	1	49	22.47	22.32	22.02		0
	25	0	22.41	22.23	22.24	0-3	0
	25	12	22.48	22.26	22.32		0
	25	25	22.37	22.25	22.27		0
	50	0	22.35	22.22	22.20		0

Table 9-49
LTE Band 2 (PCS) 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	22.14	22.03	22.03	0	0
	1	12	22.14	22.11	22.09		0
	1	24	22.06	22.02	21.92		0
	12	0	22.35	22.28	22.22	0-1	0
	12	6	22.36	22.27	22.25		0
	12	13	22.27	22.26	22.17		0
	25	0	22.28	22.21	22.22		0
16QAM	1	0	22.33	22.36	22.20	0-1	0
	1	12	22.24	22.45	22.10		0
	1	24	22.25	22.33	22.19		0
	12	0	22.30	22.29	22.15	0-2	0
	12	6	22.36	22.29	22.15		0
	12	13	22.22	22.31	22.07		0
	25	0	22.41	22.28	22.18		0
64QAM	1	0	22.37	22.33	22.25	0-2	0
	1	12	22.44	22.24	22.32		0
	1	24	22.33	22.18	22.19		0
	12	0	22.46	22.30	22.35	0-3	0
	12	6	22.43	22.32	22.35		0
	12	13	22.39	22.32	22.23		0
	25	0	22.37	22.16	22.27		0

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Table 9-50
LTE Band 2 (PCS) 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	22.30	22.17	22.14	0	0
	1	7	22.20	22.13	22.09		0
	1	14	22.19	22.15	22.01		0
	8	0	22.34	22.31	22.24	0-1	0
	8	4	22.36	22.34	22.25		0
	8	7	22.29	22.28	22.19		0
	15	0	22.36	22.26	22.22		0
16QAM	1	0	22.22	22.23	22.23	0-1	0
	1	7	22.13	22.16	22.25		0
	1	14	22.25	22.21	22.31		0
	8	0	22.31	22.39	22.22	0-2	0
	8	4	22.28	22.44	22.19		0
	8	7	22.25	22.42	22.13		0
	15	0	22.38	22.32	22.34		0
64QAM	1	0	22.33	22.32	22.37	0-2	0
	1	7	22.23	22.36	22.28		0
	1	14	22.23	22.28	22.28		0
	8	0	22.31	22.39	22.43	0-3	0
	8	4	22.47	22.45	22.43		0
	8	7	22.46	22.38	22.38		0
	15	0	22.46	22.26	22.24		0

Table 9-51
LTE Band 2 (PCS) 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	22.04	22.16	22.02	0	0
	1	2	22.08	22.22	22.07		0
	1	5	21.99	22.13	21.91		0
	3	0	22.08	22.13	22.01		0
	3	2	22.15	22.10	22.04		0
	3	3	22.08	22.07	21.97		0
	6	0	22.20	22.14	22.06	0-1	0
16QAM	1	0	22.31	22.27	22.18	0-1	0
	1	2	22.35	22.28	22.13		0
	1	5	22.28	22.24	22.17		0
	3	0	22.22	22.15	22.18		0
	3	2	22.26	22.21	22.19		0
	3	3	22.19	22.18	22.16		0
	6	0	22.22	22.11	22.03	0-2	0
64QAM	1	0	22.29	22.26	22.25	0-2	0
	1	2	22.34	22.31	22.19		0
	1	5	22.28	22.23	22.17		0
	3	0	22.22	22.19	22.26		0
	3	2	22.28	22.25	22.21		0
	3	3	22.23	22.17	22.15		0
	6	0	22.23	22.20	22.14	0-3	0

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Table 9-52
LTE Band 2 (PCS) Ant 3 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	17.45	17.42	17.19	0	0
	1	50	17.49	17.44	17.20		0
	1	99	17.33	17.28	17.36		0
	50	0	17.33	17.37	17.21	0-1	0
	50	25	17.59	17.41	17.31		0
	50	50	17.52	17.36	17.28		0
16QAM	100	0	17.48	17.38	17.31	0-1	0
	1	0	17.69	17.67	17.37		0
	1	50	17.65	17.56	17.38		0
	1	99	17.58	17.52	17.50	0-2	0
	50	0	17.35	17.36	17.17		0
	50	25	17.53	17.41	17.31		0
64QAM	50	50	17.55	17.30	17.27	0-2	0
	100	0	17.50	17.36	17.24		0
	1	0	17.64	17.50	17.59		0-2
	1	50	17.66	17.55	17.68	0	
	1	99	17.61	17.26	17.62	0	
	50	0	17.41	17.38	17.20	0-3	0
50	25	17.55	17.45	17.35	0		
50	50	17.55	17.42	17.31	0		
	100	0	17.52	17.36	17.29		0

Table 9-53
LTE Band 2 (PCS) Ant 3 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	17.27	17.43	17.13	0	0
	1	36	17.32	17.46	17.20		0
	1	74	17.33	17.26	17.42		0
	36	0	17.41	17.28	17.16	0-1	0
	36	18	17.53	17.35	17.25		0
	36	37	17.52	17.31	17.41		0
	75	0	17.49	17.28	17.24		0
16QAM	1	0	17.69	17.62	17.05	0-1	0
	1	36	17.38	17.60	17.08		0
	1	74	17.66	17.34	17.05		0
	36	0	17.34	17.23	17.15	0-2	0
	36	18	17.54	17.32	17.22		0
	36	37	17.53	17.21	17.39		0
	75	0	17.50	17.28	17.18		0
64QAM	1	0	17.52	17.69	17.46	0-2	0
	1	36	17.68	17.67	17.10		0
	1	74	17.67	17.46	17.62		0
	36	0	17.47	17.34	17.17	0-3	0
	36	18	17.58	17.42	17.26		0
	36	37	17.60	17.30	17.42		0
	75	0	17.56	17.32	17.24		0

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Table 9-54
LTE Band 2 (PCS) Ant 3 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	16.91	16.99	17.14	0	0
	1	25	17.20	17.20	17.22		0
	1	49	17.07	17.32	17.28		0
	25	0	17.35	17.12	17.14	0-1	0
	25	12	17.52	17.31	17.25		0
	25	25	17.39	17.05	17.14		0
16QAM	50	0	17.35	17.15	17.11	0	
	1	0	17.31	17.32	17.34	0-1	0
	1	25	17.62	17.63	17.39		0
	1	49	17.32	17.31	17.42		0
	25	0	17.42	17.16	17.04	0-2	0
	25	12	17.51	17.24	17.31		0
25	25	17.42	17.11	17.24	0		
64QAM	50	0	17.35	17.18	17.15	0	
	1	0	17.44	17.32	17.52	0-2	0
	1	25	17.67	17.55	17.55		0
	1	49	17.52	17.21	17.62		0
	25	0	17.46	17.14	17.13	0-3	0
	25	12	17.49	17.30	17.25		0
	25	25	17.36	17.16	17.21		0
	50	0	17.33	17.09	17.16		0

Table 9-55
LTE Band 2 (PCS) Ant 3 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	17.41	17.34	17.22	0	0	
	1	12	17.20	17.31	17.27		0	
	1	24	17.11	17.35	17.34		0	
	12	0	17.36	17.24	17.20	0-1	0	
	12	6	17.43	17.26	17.23		0	
	12	13	17.19	17.13	17.19		0	
16QAM	25	0	17.32	17.20	17.21	0-1	0	
	1	0	17.49	17.60	17.61		0	
	1	12	17.64	17.50	17.52		0	
	1	24	17.49	17.36	17.54	0-2	0	
	12	0	17.45	17.23	17.20		0	
	12	6	17.44	17.21	17.31		0	
64QAM	12	13	17.36	17.13	17.18	0-2	0	
	25	0	17.29	17.18	17.20		0	
	1	0	17.62	17.53	17.41		0-2	0
	1	12	17.68	17.65	17.31	0		
	1	24	17.69	17.46	17.08	0		
	12	0	17.46	17.25	17.24	0-3		0
	12	6	17.55	17.25	17.29			0
	12	13	17.44	17.15	17.22			0
	25	0	17.37	17.29	17.26		0	

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Table 9-56
LTE Band 2 (PCS) Ant 3 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	17.33	17.17	17.04	0	0
	1	7	17.32	17.12	17.02		0
	1	14	17.29	17.03	17.28		0
	8	0	17.45	17.17	17.24	0-1	0
	8	4	17.30	17.22	17.27		0
	8	7	17.35	17.07	17.28		0
	15	0	17.43	17.19	17.29		0
16QAM	1	0	17.56	17.44	17.69	0-1	0
	1	7	17.48	17.35	17.60		0
	1	14	17.48	17.25	17.42		0
	8	0	17.49	17.35	17.39	0-2	0
	8	4	17.56	17.36	17.48		0
	8	7	17.50	17.26	17.37		0
	15	0	17.42	17.17	17.31		0
64QAM	1	0	17.70	17.69	17.69	0-2	0
	1	7	17.68	17.66	17.61		0
	1	14	17.67	17.62	17.63		0
	8	0	17.48	17.25	17.32	0-3	0
	8	4	17.49	17.32	17.39		0
	8	7	17.44	17.09	17.25		0
	15	0	17.32	17.22	17.32		0

Table 9-57
LTE Band 2 (PCS) Ant 3 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	17.28	17.10	17.13	0	0
	1	2	17.30	17.16	17.19		0
	1	5	17.22	17.12	17.08		0
	3	0	17.36	17.27	17.05		0
	3	2	17.25	17.20	17.12		0
	3	3	17.20	17.15	17.01		0
	6	0	17.29	17.24	17.17	0-1	0
16QAM	1	0	17.49	17.27	17.38	0-1	0
	1	2	17.50	17.42	17.40		0
	1	5	17.32	17.25	17.35		0
	3	0	17.51	17.42	17.47		0
	3	2	17.60	17.55	17.40		0
	3	3	17.55	17.48	17.44		0
	6	0	17.26	17.12	17.09	0-2	0
64QAM	1	0	17.68	17.68	17.66	0-2	0
	1	2	17.68	17.69	17.67		0
	1	5	17.64	17.65	17.64		0
	3	0	17.35	17.27	17.47		0
	3	2	17.45	17.32	17.42		0
	3	3	17.35	17.19	17.20		0
	6	0	17.23	17.15	17.17	0-3	0

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LTE Band 25 (PCS)

Table 9-58
LTE Band 25 (PCS) Measured P_{max} - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	25.30	25.29	25.25	0	0	
	1	50	25.19	25.22	25.21		0	
	1	99	25.22	25.24	25.20		0	
	50	0	24.33	24.33	24.25	0-1	1	
	50	25	24.43	24.32	24.35		1	
	50	50	24.37	24.36	24.31		1	
16QAM	100	0	24.30	24.22	24.18	0-1	1	
	1	0	24.43	24.50	24.46		0-1	1
	1	50	24.40	24.46	24.50			1
	1	99	24.41	24.50	24.49	0-2		1
	50	0	23.34	23.31	23.25		2	
	50	25	23.41	23.32	23.37		2	
64QAM	50	50	23.41	23.37	23.30	0-2	2	
	100	0	23.32	23.20	23.16		2	
	1	0	23.43	23.46	23.43		0-2	2
	1	50	23.50	23.45	23.40	0-3		2
	1	99	23.50	23.48	23.39			2
	50	0	22.39	22.29	22.24		0-3	3
50	25	22.46	22.34	22.33	3			
50	50	22.41	22.34	22.33	3			
	100	0	22.36	22.21	22.20		3	

Table 9-59
LTE Band 25 (PCS) Measured P_{max} - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.25	25.33	25.29	0	0
	1	36	25.35	25.42	25.30		0
	1	74	25.34	25.37	25.26		0
	36	0	24.37	24.42	24.36	0-1	1
	36	18	24.46	24.47	24.46		1
	36	37	24.40	24.46	24.35		1
	75	0	24.45	24.44	24.41		1
16QAM	1	0	24.25	24.39	24.35	0-1	1
	1	36	24.40	24.45	24.35		1
	1	74	24.40	24.25	24.47		1
	36	0	23.37	23.44	23.38	0-2	2
	36	18	23.45	23.39	23.36		2
	36	37	23.45	23.45	23.43		2
	75	0	23.46	23.44	23.42		2
64QAM	1	0	23.38	23.46	23.50	0-2	2
	1	36	23.50	23.28	23.39		2
	1	74	23.39	23.26	23.44		2
	36	0	22.26	22.40	22.42	0-3	3
	36	18	22.40	22.26	22.38		3
	36	37	22.30	22.44	22.41		3
	75	0	22.39	22.41	22.47		3

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Table 9-60
LTE Band 25 (PCS) Measured P_{max} - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.20	25.19	25.18	0	0
	1	25	25.29	25.36	25.20		0
	1	49	25.19	25.23	25.25		0
	25	0	24.24	24.17	24.13	0-1	1
	25	12	24.35	24.25	24.19		1
	25	25	24.25	24.26	24.24		1
	50	0	24.24	24.22	24.18		1
16QAM	1	0	24.43	24.22	24.20	0-1	1
	1	25	24.40	24.20	24.15		1
	1	49	24.43	24.28	24.24		1
	25	0	23.35	23.27	23.27	0-2	2
	25	12	23.42	23.33	23.30		2
	25	25	23.34	23.41	23.33		2
	50	0	23.32	23.23	23.14		2
64QAM	1	0	23.19	23.26	23.35	0-2	2
	1	25	23.11	23.36	23.46		2
	1	49	23.14	23.31	23.39		2
	25	0	22.35	22.24	22.25	0-3	3
	25	12	22.48	22.33	22.33		3
	25	25	22.37	22.32	22.35		3
	50	0	22.34	22.30	22.36		3

Table 9-61
LTE Band 25 (PCS) Measured P_{max} - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.17	25.10	25.25	0	0
	1	12	25.22	25.23	25.23		0
	1	24	25.25	25.22	25.25		0
	12	0	24.28	24.18	24.26	0-1	1
	12	6	24.35	24.26	24.32		1
	12	13	24.34	24.33	24.30		1
	25	0	24.27	24.21	24.27		1
16QAM	1	0	24.46	24.19	24.36	0-1	1
	1	12	24.44	24.27	24.48		1
	1	24	24.39	24.35	24.37		1
	12	0	23.39	23.33	23.32	0-2	2
	12	6	23.46	23.34	23.38		2
	12	13	23.44	23.41	23.40		2
	25	0	23.42	23.21	23.34		2
64QAM	1	0	23.36	23.36	23.48	0-2	2
	1	12	23.48	23.29	23.44		2
	1	24	23.49	23.39	23.47		2
	12	0	22.29	22.28	22.21	0-3	3
	12	6	22.36	22.32	22.32		3
	12	13	22.34	22.41	22.27		3
	25	0	22.34	22.31	22.28		3

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Table 9-62
LTE Band 25 (PCS) Measured P_{max} - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	25.11	25.11	25.10	0	0	
	1	7	25.09	25.12	25.05		0	
	1	14	25.18	25.19	25.20		0	
	8	0	24.25	24.22	24.17	0-1	1	
	8	4	24.34	24.29	24.23		1	
	8	7	24.31	24.28	24.25		1	
16QAM	15	0	24.31	24.21	24.19	0-1	1	
	1	0	24.29	24.27	24.45		1	
	1	7	24.23	24.20	24.47		1	
	1	14	24.22	24.26	24.36	0-2	1	
	8	0	23.30	23.22	23.33		2	
	8	4	23.36	23.39	23.38		2	
64QAM	8	7	23.33	23.33	23.32	0-2	2	
	15	0	23.31	23.31	23.32		2	
	1	0	23.48	23.43	23.03		0-2	2
	1	7	23.46	23.48	23.07	2		
	1	14	23.44	23.45	23.10	2		
	8	0	22.31	22.27	22.32	0-3		3
	8	4	22.36	22.35	22.34			3
	8	7	22.33	22.37	22.35			3
	15	0	22.34	22.25	22.32			

Table 9-63
LTE Band 25 (PCS) Measured P_{max} - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.07	25.25	25.16	0	0
	1	2	25.17	25.30	25.24		0
	1	5	25.15	25.21	25.21		0
	3	0	25.13	25.15	25.17		0
	3	2	25.17	25.16	25.11		0
	3	3	25.17	25.16	25.04		0
	6	0	24.25	24.22	24.17	0-1	1
16QAM	1	0	24.42	23.98	23.90	0-1	1
	1	2	24.48	24.08	23.99		1
	1	5	24.50	24.07	23.96		1
	3	0	24.42	24.35	24.24		1
	3	2	24.39	24.43	24.34		1
	3	3	24.41	24.40	24.28	1	
6	0	23.12	23.41	23.31	0-2	2	
64QAM	1	0	23.04	23.42	23.24	0-2	2
	1	2	23.12	23.44	23.29		2
	1	5	23.04	23.42	23.30		2
	3	0	23.30	23.50	23.17		2
	3	2	23.38	23.41	23.28		2
	3	3	23.35	23.47	23.20		2
	6	0	22.39	22.24	22.33	0-3	3

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Table 9-64
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.08	22.04	21.97	0	0
	1	50	21.93	22.00	21.88		0
	1	99	22.06	22.02	21.86		0
	50	0	22.04	22.04	22.00	0-1	0
	50	25	22.08	22.05	22.07		0
	50	50	22.18	22.17	21.95		0
	100	0	22.02	21.95	22.06		0
16QAM	1	0	22.36	22.14	22.16	0-1	0
	1	50	22.37	22.25	22.16		0
	1	99	22.38	22.30	22.21		0
	50	0	22.18	22.09	22.04	0-2	0
	50	25	22.17	22.03	22.11		0
	50	50	22.15	22.11	22.06		0
	100	0	22.14	21.94	21.99		0
64QAM	1	0	22.20	22.17	22.25	0-2	0
	1	50	22.34	22.33	22.28		0
	1	99	22.24	22.17	21.99		0
	50	0	22.16	22.11	22.09	0-3	0
	50	25	22.16	22.11	22.08		0
	50	50	22.16	22.13	22.04		0
	100	0	22.14	22.09	22.08		0

Table 9-65
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.08	22.11	22.11	0	0
	1	36	22.14	22.18	22.16		0
	1	74	22.09	22.11	22.07		0
	36	0	22.16	22.16	22.15	0-1	0
	36	18	22.13	22.22	22.18		0
	36	37	22.19	22.24	22.20		0
	75	0	22.16	22.21	22.15		0
16QAM	1	0	22.33	22.12	22.00	0-1	0
	1	36	22.20	22.19	22.14		0
	1	74	22.16	22.16	22.06		0
	36	0	22.36	22.25	22.11	0-2	0
	36	18	22.28	22.26	22.03		0
	36	37	22.25	22.13	22.06		0
	75	0	22.21	22.17	22.05		0
64QAM	1	0	22.28	22.15	22.06	0-2	0
	1	36	22.21	22.14	22.15		0
	1	74	22.18	22.18	22.03		0
	36	0	22.17	22.07	22.46	0-3	0
	36	18	22.24	22.07	22.10		0
	36	37	22.23	22.10	22.12		0
	75	0	22.12	22.15	22.25		0

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Table 9-66
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.93	21.90	22.06	0	0
	1	25	22.11	22.10	22.05		0
	1	49	21.90	21.91	22.06		0
	25	0	22.19	22.15	22.09	0-1	0
	25	12	22.32	22.21	22.15		0
	25	25	22.25	22.26	22.17		0
16QAM	50	0	22.23	22.12	22.12	0-1	0
	1	0	22.35	22.23	22.15		0
	1	25	22.26	22.33	22.20		0
	1	49	22.33	22.21	22.15	0-2	0
	25	0	22.27	22.16	22.08		0
	25	12	22.32	22.20	22.14		0
64QAM	25	25	22.24	22.28	22.19	0-2	0
	50	0	22.26	22.21	22.10		0
	1	0	22.36	22.11	22.11		0-2
	1	25	22.30	22.27	22.15	0	
	1	49	22.23	22.13	22.14	0-3	
	25	0	22.16	22.10	22.24		0
25	12	22.24	22.15	22.29	0		
	25	25	22.17	22.17	22.32		0
	50	0	22.24	22.13	22.17		

Table 9-67
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.12	22.01	21.98	0	0
	1	12	22.12	22.03	22.03		0
	1	24	22.15	22.11	22.04		0
	12	0	22.26	22.17	22.15	0-1	0
	12	6	22.32	22.19	22.22		0
	12	13	22.29	22.27	22.19		0
16QAM	25	0	22.27	22.25	22.18	0-1	0
	1	0	22.28	22.35	22.45		0
	1	12	22.26	22.39	22.43		0
	1	24	22.29	22.48	22.47	0-2	0
	12	0	22.34	22.24	22.18		0
	12	6	22.28	22.26	22.19		0
64QAM	12	13	22.36	22.33	22.21	0-2	0
	25	0	22.33	22.23	22.32		0
	1	0	22.25	22.21	22.39		0-2
	1	12	22.25	22.24	22.23	0	
	1	24	22.33	22.23	22.28	0	
	64QAM	12	0	22.35	22.20	22.26	0-3
12		6	22.33	22.29	22.28	0	
12		13	22.34	22.36	22.27	0	
25		0	22.27	22.15	22.25		0

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Table 9-68
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.14	22.09	22.00	0	0
	1	7	22.09	22.10	22.06		0
	1	14	22.17	22.18	22.05		0
	8	0	22.26	22.20	22.16	0-1	0
	8	4	22.30	22.25	22.22		0
	8	7	22.28	22.27	22.17		0
16QAM	15	0	22.31	22.17	22.21	0-1	0
	1	0	22.20	21.96	22.11		0
	1	7	22.19	21.99	22.18		0
	1	14	22.24	21.96	22.14	0-2	0
	8	0	22.34	22.13	22.28		0
	8	4	22.35	22.27	22.37		0
64QAM	8	7	22.32	22.27	22.33	0-2	0
	15	0	22.28	22.34	22.25		0
	1	0	22.31	22.11	22.17	0-2	0
	1	7	22.34	22.14	22.21		0
	1	14	22.35	22.14	22.23		0
	8	0	22.29	22.19	22.28	0-3	0
	8	4	22.27	22.16	22.30		0
	8	7	22.30	22.13	22.29		0
	15	0	22.23	22.14	22.19		0

Table 9-69
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.11	22.03	21.95	0	0
	1	2	22.15	22.09	22.03		0
	1	5	22.09	22.05	22.01		0
	3	0	22.16	22.06	22.00		0
	3	2	22.18	22.11	22.03		0
	3	3	22.19	22.07	21.99		0
	6	0	22.22	22.21	22.14	0-1	0
16QAM	1	0	22.39	22.35	22.12	0-1	0
	1	2	22.32	22.30	22.14		0
	1	5	22.29	22.22	22.15		0
	3	0	22.14	22.39	22.29		0
	3	2	22.19	22.40	22.32		0
	3	3	22.14	22.37	22.29	0	
6	0	22.10	22.41	22.35	0-2	0	
64QAM	1	0	22.25	22.22	22.16	0-2	0
	1	2	22.23	22.30	22.22		0
	1	5	22.25	22.26	22.16		0
	3	0	22.26	22.24	22.30		0
	3	2	22.31	22.29	22.33		0
	3	3	22.28	22.20	22.30		0
	6	0	22.23	22.24	22.32	0-3	0

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LTE Band 30

Table 9-70
LTE Band 30 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	22.42	0	0
	1	25	22.22		0
	1	49	22.33		0
	25	0	21.17	0-1	1
	25	12	21.20		1
	25	25	21.22		1
	50	0	21.20		1
16QAM	1	0	21.73	0-1	1
	1	25	21.66		1
	1	49	21.64		1
	25	0	20.23	0-2	2
	25	12	20.17		2
	25	25	20.23		2
	50	0	20.20		2
64QAM	1	0	20.62	0-2	2
	1	25	20.54		2
	1	49	20.67		2
	25	0	19.36	0-3	3
	25	12	19.44		3
	25	25	19.38		3
	50	0	19.36		3

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Table 9-71
LTE Band 30 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	22.35	0	0
	1	12	22.47		0
	1	24	22.48		0
	12	0	21.56	0-1	1
	12	6	21.58		1
	12	13	21.58		1
	25	0	21.58		1
16QAM	1	0	21.73	0-1	1
	1	12	21.85		1
	1	24	21.82		1
	12	0	20.60	0-2	2
	12	6	20.63		2
	12	13	20.62		2
	25	0	20.50		2
64QAM	1	0	20.44	0-2	2
	1	12	20.57		2
	1	24	20.54		2
	12	0	19.53	0-3	3
	12	6	19.58		3
	12	13	19.57		3
	25	0	19.56		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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LTE Band 7

Table 9-72
LTE Band 7 Measured P_{max} - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.07	25.09	25.25	0	0
	1	50	24.99	25.12	25.13		0
	1	99	24.95	25.19	25.15		0
	50	0	24.04	24.26	24.27	0-1	1
	50	25	24.19	24.17	24.17		1
	50	50	24.05	24.18	24.18		1
	100	0	24.07	24.24	24.15		1
16QAM	1	0	24.30	24.30	24.30	0-1	1
	1	50	24.20	24.33	24.32		1
	1	99	24.32	24.33	24.33		1
	50	0	23.03	23.15	23.10	0-2	2
	50	25	23.12	23.15	23.23		2
	50	50	23.11	23.18	23.22		2
	100	0	23.05	23.11	23.13		2
64QAM	1	0	23.22	23.38	23.25	0-2	2
	1	50	23.29	23.32	23.22		2
	1	99	23.02	23.25	23.34		2
	50	0	22.06	22.22	22.19	0-3	3
	50	25	21.93	22.20	22.15		3
	50	50	21.97	22.28	22.23		3
	100	0	22.01	22.16	22.12		3

Table 9-73
LTE Band 7 Measured P_{max} - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.14	25.15	25.23	0	0
	1	36	25.07	25.16	25.33		0
	1	74	25.12	25.08	25.22		0
	36	0	24.17	24.34	24.33	0-1	1
	36	18	24.22	24.36	24.38		1
	36	37	24.12	24.40	24.39		1
	75	0	24.18	24.27	24.29		1
16QAM	1	0	24.43	24.39	24.38	0-1	1
	1	36	24.40	24.38	24.44		1
	1	74	24.01	24.47	24.38		1
	36	0	23.37	23.44	23.41	0-2	2
	36	18	23.25	23.50	23.49		2
	36	37	23.22	23.41	23.45		2
	75	0	23.40	23.39	23.40		2
64QAM	1	0	23.40	23.21	23.37	0-2	2
	1	36	23.32	23.29	23.44		2
	1	74	23.11	23.04	23.24		2
	36	0	22.10	22.38	22.46	0-3	3
	36	18	22.02	22.47	22.43		3
	36	37	22.11	22.12	22.47		3
	75	0	21.99	22.45	22.35		3

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Table 9-74
LTE Band 7 Measured P_{max} - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.00	25.08	25.09	0	0
	1	25	24.96	25.10	25.13		0
	1	49	24.97	25.13	25.16		0
	25	0	24.24	24.19	24.18	0-1	1
	25	12	24.28	24.21	24.18		1
	25	25	24.24	24.30	24.26		1
	50	0	24.19	24.10	24.17		1
16QAM	1	0	24.28	24.40	24.18	0-1	1
	1	25	24.24	24.42	24.19		1
	1	49	24.19	24.35	24.24		1
	25	0	23.33	23.27	23.28	0-2	2
	25	12	23.38	23.25	23.31		2
	25	25	23.37	23.35	23.38		2
	50	0	23.26	23.20	23.13		2
64QAM	1	0	23.15	23.22	23.41	0-2	2
	1	25	23.14	23.21	23.49		2
	1	49	23.18	23.24	23.01		2
	25	0	22.20	22.32	22.26	0-3	3
	25	12	22.05	22.33	22.29		3
	25	25	22.11	22.26	22.24		3
	50	0	22.09	22.22	22.12		3

Table 9-75
LTE Band 7 Measured P_{max} - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.18	24.99	25.21	0	0
	1	12	25.12	25.10	25.15		0
	1	24	25.20	25.06	25.20		0
	12	0	24.24	24.25	24.25	0-1	1
	12	6	24.28	24.22	24.29		1
	12	13	24.23	24.27	24.24		1
	25	0	24.23	24.24	24.23		1
16QAM	1	0	24.27	24.22	24.38	0-1	1
	1	12	24.25	24.27	24.35		1
	1	24	24.26	24.33	24.41		1
	12	0	23.34	23.26	23.35	0-2	2
	12	6	23.40	23.34	23.39		2
	12	13	23.31	23.35	23.32		2
	25	0	23.21	23.24	23.33		2
64QAM	1	0	23.27	23.35	23.36	0-2	2
	1	12	23.32	23.40	23.00		2
	1	24	23.27	23.11	22.99		2
	12	0	22.16	22.23	22.26	0-3	3
	12	6	22.29	22.33	22.20		3
	12	13	22.21	22.32	22.15		3
	25	0	22.09	22.20	22.13		3

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Table 9-76
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.86	22.94	23.07	0	0
	1	50	22.88	23.02	23.10		0
	1	99	22.93	22.94	22.99		0
	50	0	22.92	23.01	23.02	0-1	0
	50	25	23.02	22.99	23.04		0
	50	50	22.88	23.14	23.15		0
	100	0	22.87	23.01	23.08		0
16QAM	1	0	23.13	23.18	23.26	0-1	0
	1	50	22.99	23.22	23.23		0
	1	99	23.23	23.36	23.21		0
	50	0	23.15	23.14	23.18	0-2	0
	50	25	23.19	23.19	23.20		0
	50	50	23.19	23.17	23.19		0
	100	0	23.11	23.08	23.10		0
64QAM	1	0	23.09	23.15	23.00	0-2	0
	1	50	22.90	23.21	23.23		0
	1	99	23.06	23.07	23.31		0
	50	0	22.21	22.12	22.19	0-3	1
	50	25	22.25	22.15	22.17		1
	50	50	22.20	22.25	22.22		1
	100	0	22.14	22.09	22.07		1

Table 9-77
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.00	23.03	23.18	0	0
	1	36	23.13	23.12	23.25		0
	1	74	23.05	23.03	23.19		0
	36	0	23.11	23.16	23.15	0-1	0
	36	18	23.23	23.21	23.15		0
	36	37	23.19	23.19	23.22		0
	75	0	23.14	23.09	23.18		0
16QAM	1	0	23.23	23.36	23.15	0-1	0
	1	36	23.22	23.32	23.18		0
	1	74	23.27	23.23	23.09		0
	36	0	23.29	23.28	23.19	0-2	0
	36	18	23.36	23.32	23.11		0
	36	37	23.32	23.34	23.13		0
	75	0	23.27	23.28	23.10		0
64QAM	1	0	23.29	23.26	23.11	0-2	0
	1	36	23.31	23.37	23.21		0
	1	74	23.15	23.11	23.18		0
	36	0	22.26	22.26	22.27	0-3	1
	36	18	22.22	22.27	22.16		1
	36	37	22.12	22.11	22.10		1
	75	0	22.29	22.20	22.06		1

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Table 9-78
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.02	23.08	23.07	0	0
	1	25	22.98	23.07	23.03		0
	1	49	23.05	23.11	23.07		0
	25	0	23.17	23.13	23.11	0-1	0
	25	12	23.19	23.14	23.15		0
	25	25	23.17	23.20	23.20		0
16QAM	50	0	23.10	23.08	23.05		0
	1	0	23.13	23.07	23.02	0-1	0
	1	25	23.15	23.03	23.02		0
	1	49	23.15	23.06	23.11		0
	25	0	23.16	23.18	23.14	0-2	0
	25	12	23.18	23.21	23.15		0
25	25	23.13	23.23	23.17	0		
64QAM	50	0	23.09	23.11	23.10		0
	1	0	23.16	23.15	23.09	0-2	0
	1	25	23.15	23.08	23.19		0
	1	49	22.92	23.12	23.21		0
	25	0	22.31	22.37	22.32	0-3	1
	25	12	22.36	22.35	22.34		1
25	25	22.29	22.43	22.38	1		
	50	0	22.20	22.29	22.14		1

Table 9-79
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.01	23.04	22.99	0	0
	1	12	23.04	23.07	22.96		0
	1	24	23.01	23.05	23.02		0
	12	0	23.13	23.12	23.16	0-1	0
	12	6	23.20	23.17	23.22		0
	12	13	23.13	23.19	23.14		0
	25	0	23.15	23.13	23.18		0
16QAM	1	0	23.14	23.19	23.19	0-1	0
	1	12	23.20	23.15	23.17		0
	1	24	23.12	23.19	23.19		0
	12	0	23.11	23.17	23.23	0-2	0
	12	6	23.18	23.16	23.26		0
	12	13	23.13	23.17	23.24		0
	25	0	23.24	23.09	23.23		0
64QAM	1	0	23.28	23.17	23.17	0-2	0
	1	12	23.12	23.20	23.21		0
	1	24	23.17	23.26	23.21		0
	12	0	22.28	22.31	22.32	0-3	1
	12	6	22.36	22.39	22.38		1
	12	13	22.27	22.40	22.32		1
	25	0	22.31	22.23	22.21		1

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LTE Band 41

Table 9-80
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	24.83	24.95	24.80	24.86	24.88	0	0
	1	50	24.82	24.99	25.09	25.10	25.20		0
	1	99	24.93	24.98	24.81	24.74	25.06		0
	50	0	23.92	24.11	24.12	24.18	24.04	0-1	1
	50	25	23.98	24.10	24.22	24.27	24.28		1
	50	50	24.04	24.09	24.19	24.13	24.32		1
	100	0	24.00	24.03	24.01	24.20	24.24		1
16QAM	1	0	23.88	24.09	23.75	23.91	23.84	0-1	1
	1	50	23.83	24.08	24.16	24.20	24.19		1
	1	99	23.96	24.02	23.87	23.76	24.14		1
	50	0	22.95	23.12	23.12	23.18	23.10	0-2	2
	50	25	22.98	23.15	23.16	23.29	23.39		2
	50	50	22.95	23.13	23.15	23.05	23.31		2
	100	0	23.02	23.08	23.11	23.17	23.32		2
64QAM	1	0	22.59	22.79	22.80	22.84	22.53	0-2	2
	1	50	22.64	22.87	22.86	22.86	22.98		2
	1	99	22.64	22.75	22.66	22.77	22.81		2
	50	0	22.03	22.09	22.08	22.26	22.16	0-3	3
	50	25	22.06	22.22	22.21	22.31	22.44		3
	50	50	22.01	22.21	22.20	22.12	22.30		3
	100	0	21.90	22.10	22.02	22.19	22.31		3

Table 9-81
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	24.90	24.83	24.84	25.06	24.92	0	0
	1	36	25.01	25.08	25.14	25.28	25.22		0
	1	74	24.97	24.80	24.94	24.96	25.13		0
	36	0	24.04	23.95	23.96	24.15	24.05	0-1	1
	36	18	24.15	24.08	24.09	24.32	24.27		1
	36	37	24.11	24.06	24.17	24.22	24.27		1
	75	0	24.05	24.01	23.97	24.19	24.20		1
16QAM	1	0	23.63	23.73	23.91	23.92	23.80	0-1	1
	1	36	23.68	23.93	24.13	24.09	24.12		1
	1	74	23.62	23.69	24.01	23.89	24.00		1
	36	0	23.11	22.96	22.94	23.17	23.05	0-2	2
	36	18	23.22	23.10	23.03	23.29	23.26		2
	36	37	23.18	23.04	23.11	23.22	23.23		2
	75	0	23.02	23.02	23.02	23.23	23.21		2
64QAM	1	0	22.68	22.65	22.99	22.76	22.65	0-2	2
	1	36	22.77	22.73	23.07	22.84	22.78		2
	1	74	22.75	22.69	22.84	22.85	22.70		2
	36	0	22.03	21.97	21.92	22.16	22.08	0-3	3
	36	18	22.18	22.12	22.13	22.29	22.28		3
	36	37	22.13	22.02	22.17	22.20	22.23		3
	75	0	22.07	22.02	22.05	22.25	22.19		3

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Table 9-82
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	25.08	24.86	25.19	25.02	24.98	0	0
	1	25	25.11	25.14	25.34	25.27	25.24		0
	1	49	25.11	24.91	25.07	25.04	24.96		0
	25	0	24.19	24.10	24.20	24.25	24.18	0-1	1
	25	12	24.23	24.22	24.27	24.40	24.34		1
	25	25	24.19	24.12	24.23	24.28	24.24		1
	50	0	24.14	24.15	24.17	24.30	24.28		1
16QAM	1	0	24.16	23.93	24.30	24.08	24.05	0-1	1
	1	25	24.20	24.20	24.48	24.35	24.30		1
	1	49	24.19	23.95	24.33	24.08	24.00		1
	25	0	23.17	23.02	23.21	23.16	23.12	0-2	2
	25	12	23.19	23.19	23.29	23.31	23.27		2
	25	25	23.19	23.08	23.29	23.20	23.19		2
	50	0	23.10	23.14	23.20	23.27	23.22		2
64QAM	1	0	22.81	22.84	22.76	22.99	22.73	0-2	2
	1	25	22.87	23.12	22.82	23.10	22.89		2
	1	49	22.86	22.89	22.76	23.04	22.79		2
	25	0	22.13	22.06	22.25	22.16	22.07	0-3	3
	25	12	22.15	22.15	22.30	22.30	22.27		3
	25	25	22.13	22.10	22.33	22.23	22.16		3
	50	0	22.10	22.14	22.16	22.30	22.21		3

Table 9-83
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	24.98	24.98	24.95	25.12	25.13	0	0
	1	12	24.95	24.96	25.02	25.18	25.09		0
	1	24	25.02	25.01	24.96	25.17	25.11		0
	12	0	23.96	24.06	24.08	24.11	24.09	0-1	1
	12	6	23.99	24.04	24.06	24.22	24.11		1
	12	13	23.98	24.06	24.13	24.20	24.13		1
	25	0	23.99	24.05	24.04	24.19	24.13		1
16QAM	1	0	24.15	24.15	23.65	24.31	24.04	0-1	1
	1	12	24.19	24.21	23.71	24.36	24.04		1
	1	24	24.22	24.20	23.67	24.39	24.03		1
	12	0	22.96	23.05	23.02	23.12	23.13	0-2	2
	12	6	23.02	23.04	22.99	23.21	23.16		2
	12	13	23.01	23.08	23.05	23.20	23.15		2
	25	0	22.98	23.05	23.05	23.18	23.18		2
64QAM	1	0	22.90	22.83	22.93	22.99	22.71	0-2	2
	1	12	22.85	22.85	23.07	23.06	22.68		2
	1	24	22.87	22.90	22.99	23.03	22.65		2
	12	0	22.03	22.08	21.87	22.13	22.26	0-3	3
	12	6	22.05	22.10	21.88	22.20	22.24		3
	12	13	22.05	22.11	21.94	22.19	22.28		3
	25	0	21.89	21.94	21.95	22.10	22.16		3

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Table 9-84

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	24.37	24.53	24.52	24.67	24.69	0	0
	1	50	24.31	24.52	24.61	24.70	24.71		0
	1	99	24.30	24.48	24.58	24.63	24.58		0
	50	0	23.85	23.99	24.07	24.19	24.17	0-1	0.5
	50	25	23.93	24.05	24.18	24.31	24.33		0.5
	50	50	24.01	24.12	24.19	24.22	24.35		0.5
	100	0	23.89	24.02	24.10	24.20	24.28		0.5
16QAM	1	0	24.03	24.11	24.18	24.04	24.24	0-1	0.5
	1	50	23.92	24.07	24.19	24.23	24.27		0.5
	1	99	23.92	24.14	23.89	24.16	24.19		0.5
	50	0	22.90	23.07	23.08	23.24	23.16	0-2	1.5
	50	25	23.00	23.15	23.16	23.38	23.33		1.5
	50	50	22.89	23.10	23.19	23.20	23.36		1.5
	100	0	22.92	23.06	23.12	23.21	23.33		1.5
64QAM	1	0	22.88	22.92	22.95	23.12	23.20	0-2	1.5
	1	50	22.93	23.03	23.15	23.17	23.25		1.5
	1	99	22.89	23.04	22.97	23.20	23.26		1.5
	50	0	21.96	22.08	22.12	22.26	22.25	0-3	2.5
	50	25	22.02	22.19	22.26	22.41	22.41		2.5
	50	50	21.99	22.15	22.24	22.26	22.37		2.5
	100	0	21.93	22.07	22.13	22.30	22.32		2.5

Table 9-85

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	24.55	24.59	24.65	24.71	24.84	0	0
	1	36	24.58	24.70	24.71	24.71	24.81		0
	1	74	24.53	24.55	24.70	24.63	24.83		0
	36	0	24.04	24.22	24.17	24.47	24.49	0-1	0.5
	36	18	24.17	24.38	24.07	24.38	24.33		0.5
	36	37	24.13	24.26	24.09	24.33	24.32		0.5
	75	0	24.07	24.25	24.17	24.29	24.37		0.5
16QAM	1	0	24.15	24.26	24.48	24.24	24.42	0-1	0.5
	1	36	24.20	24.35	24.36	24.44	24.34		0.5
	1	74	24.20	24.24	24.30	24.14	24.46		0.5
	36	0	23.11	23.16	23.43	23.21	23.47	0-2	1.5
	36	18	23.22	23.32	23.33	23.29	23.39		1.5
	36	37	23.17	23.21	23.35	23.27	23.34		1.5
	75	0	23.06	23.21	23.45	23.21	23.18		1.5
64QAM	1	0	22.97	23.06	22.98	23.07	23.21	0-2	1.5
	1	36	23.10	23.37	23.32	23.32	23.35		1.5
	1	74	23.07	23.06	23.15	23.04	23.29		1.5
	36	0	22.10	22.11	22.44	22.40	22.48	0-3	2.5
	36	18	22.20	22.27	22.21	22.35	22.35		2.5
	36	37	22.18	22.17	22.28	22.36	22.32		2.5
	75	0	22.08	22.29	22.20	22.34	22.28		2.5

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Table 9-86

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	24.54	24.40	24.64	24.56	24.58	0	0
	1	25	24.58	24.67	24.86	24.83	24.85		0
	1	49	24.60	24.41	24.64	24.59	24.58		0
	25	0	24.15	24.14	24.28	24.28	24.26	0-1	0.5
	25	12	24.18	24.27	24.35	24.40	24.46		0.5
	25	25	24.16	24.16	24.33	24.32	24.37		0.5
	50	0	24.12	24.18	24.26	24.33	24.36		0.5
16QAM	1	0	24.29	24.25	24.43	24.33	24.41	0-1	0.5
	1	25	24.38	24.40	24.26	24.24	24.30		0.5
	1	49	24.38	24.26	24.42	24.37	24.44		0.5
	25	0	23.09	23.15	23.24	23.20	23.20	0-2	1.5
	25	12	23.10	23.18	23.31	23.34	23.38		1.5
	25	25	23.07	23.05	23.32	23.21	23.27		1.5
	50	0	23.08	23.14	23.26	23.29	23.34		1.5
64QAM	1	0	23.02	22.83	23.00	22.97	23.19	0-2	1.5
	1	25	23.00	23.13	23.16	23.26	23.31		1.5
	1	49	23.09	22.86	22.91	23.06	23.03		1.5
	25	0	22.12	22.09	22.27	22.23	22.24	0-3	2.5
	25	12	22.10	22.17	22.37	22.37	22.36		2.5
	25	25	22.10	22.09	22.39	22.27	22.28		2.5
	50	0	22.08	22.17	22.29	22.35	22.33		2.5

Table 9-87

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	24.64	24.70	24.85	24.70	24.84	0	0
	1	12	24.59	24.73	24.87	24.81	24.84		0
	1	24	24.50	24.71	24.91	24.79	24.80		0
	12	0	24.17	24.23	24.34	24.35	24.42	0-1	0.5
	12	6	24.19	24.30	24.32	24.45	24.44		0.5
	12	13	24.15	24.21	24.36	24.41	24.39		0.5
	25	0	24.21	24.25	24.37	24.40	24.43		0.5
16QAM	1	0	24.21	23.93	24.46	23.99	24.08	0-1	0.5
	1	12	24.22	24.01	24.41	24.02	24.02		0.5
	1	24	24.26	23.97	24.45	24.04	24.03		0.5
	12	0	23.25	23.25	23.44	23.39	23.30	0-2	1.5
	12	6	23.27	23.33	23.41	23.50	23.32		1.5
	12	13	23.26	23.26	23.45	23.47	23.29		1.5
	25	0	23.12	23.21	23.28	23.43	23.43		1.5
64QAM	1	0	23.19	23.12	23.20	23.38	23.46	0-2	1.5
	1	12	23.13	23.24	23.24	23.44	23.48		1.5
	1	24	23.19	23.17	23.24	23.41	23.45		1.5
	12	0	22.20	22.31	22.33	22.36	22.41	0-3	2.5
	12	6	22.26	22.34	22.35	22.45	22.44		2.5
	12	13	22.18	22.31	22.40	22.40	22.44		2.5
	25	0	22.11	22.27	22.20	22.35	22.35		2.5

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9.4.12 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-88
LTE B5 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	0	LTE B5	5	20453	829.3	2453	874.3	QPSK	1	24	25.50	25.00

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 n71

Table 9-89
NR Band n71 Measured P_{max} - 20 MHz Bandwidth

NR Band n71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.11	0	0
	1	53	24.14		0
	1	104	24.09		0
	50	0	23.67	0-0.5	0
	50	28	24.12	0	0
	50	56	23.27	0-0.5	0
	100	0	23.71		0
DFT-s-OFDM QPSK	1	1	24.12	0	0
	1	53	24.20		0
	1	104	24.09		0
	50	0	23.17	0-1	1
	50	28	23.87	0	0
	50	56	23.11	0-1	1
	100	0	23.27		1
DFT-s-OFDM 16QAM	1	1	23.27	0-1	1
CP-OFDM QPSK	1	1	22.63	0-1.5	1.5

Note: NR Band n71 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 9-90
NR Band n71 Measured P_{max} - 15 MHz Bandwidth

NR Band n71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz)		
			Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.27	0	0
	1	40	24.24		0
	1	77	24.16		0
	36	0	23.95	0-0.5	0
	36	22	24.19	0	0
	36	43	23.19	0-0.5	0
	75	0	23.84		0
DFT-s-OFDM QPSK	1	1	24.04	0	0
	1	40	24.21		0
	1	77	24.10		0
	36	0	23.47	0-1	1
	36	22	24.07	0	0
	36	43	23.37	0-1	1
	75	0	23.44		1
DFT-s-OFDM 16QAM	1	1	23.35	0-1	1
CP-OFDM QPSK	1	1	22.70	0-1.5	1.5

Note: NR Band n71 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 9-91
NR Band n71 Measured P_{max} - 10 MHz Bandwidth

NR Band n71 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133600 (668 MHz)	136100 (680.5 MHz)	138600 (693 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.12	24.11	24.56	0	0
	1	26	24.20	24.20	24.51		0
	1	50	24.07	23.91	24.39		0
	25	0	23.82	23.85	24.13	0-0.5	0
	25	14	24.01	24.25	24.23	0	0
	25	27	23.57	23.11	24.28	0-0.5	0
	50	0	23.67	23.82	24.02		0
DFT-s-OFDM QPSK	1	1	24.20	24.21	24.52	0	0
	1	26	23.35	24.15	24.41		0
	1	50	23.42	24.01	24.32		0
	25	0	23.30	23.41	23.63	0-1	1
	25	14	24.05	23.98	24.22	0	0
	25	27	23.42	23.21	23.41	0-1	1
	50	0	23.41	23.24	23.71		1
DFT-s-OFDM 16QAM	1	1	23.02	23.23	23.64	0-1	1
CP-OFDM QPSK	1	1	22.52	22.65	23.11	0-1.5	1.5

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Table 9-92
NR Band n71 Measured P_{max} - 5 MHz Bandwidth
NR Band n71
5 MHz Bandwidth

			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133100 (665.5 MHz)	136100 (680.5 MHz)	139100 (695.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.72	24.12	24.56	0	0
	1	13	23.60	24.00	24.45		0
	1	23	23.69	23.96	24.41		0
	12	0	23.77	23.88	24.19	0-0.5	0
	12	7	24.10	23.95	24.24	0	0
	12	13	23.10	23.43	24.18	0-0.5	0
	25	0	23.56	23.58	24.21		0
DFT-s-OFDM QPSK	1	1	24.04	23.71	24.21	0	0
	1	13	23.74	23.88	24.42		0
	1	23	23.00	24.04	24.43		0
	12	0	23.36	23.36	23.66	0-1	1
	12	7	23.86	23.92	24.35	0	0
	12	13	23.25	23.24	23.52	0-1	1
	25	0	23.30	23.09	23.51		1
DFT-s-OFDM 16QAM	1	1	22.98	23.01	23.65	0-1	1
CP-OFDM QPSK	1	1	22.40	22.32	22.98	0-1.5	1.5

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9.5.2

NR Band n5

Table 9-93
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	24.58	0	0
	1	53	24.43		0
	1	104	24.31		0
	50	0	23.86	0-0.5	0
	50	28	24.37	0	0
	50	56	23.71	0-0.5	0
	100	0	23.83		0
DFT-s-OFDM QPSK	1	1	24.51	0	0
	1	53	24.35		0
	1	104	24.24		0
	50	0	23.48	0-1	1
	50	28	24.33	0	0
	50	56	23.28	0-1	1
	100	0	23.42		1
DFT-s-OFDM 16QAM	1	1	23.49	0-1	1
CP-OFDM QPSK	1	1	22.81	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 9-94
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	24.50	0	0
	1	40	24.46		0
	1	77	24.25		0
	36	0	24.00	0-0.5	0
	36	22	24.37	0	0
	36	43	23.66	0-0.5	0
	75	0	23.75		0
DFT-s-OFDM QPSK	1	1	24.41	0	0
	1	40	24.25		0
	1	77	24.21		0
	36	0	23.38	0-1	1
	36	22	24.25	0	0
	36	43	23.25	0-1	1
	75	0	23.38		1
DFT-s-OFDM 16QAM	1	1	23.56	0-1	1
CP-OFDM QPSK	1	1	22.91	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 9-95
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	24.32	0	0
	1	26	24.29		0
	1	50	24.20		0
	25	0	23.85	0-0.5	0
	25	14	24.31	0	0
	25	27	23.72	0-0.5	0
	50	0	23.74		0
DFT-s-OFDM QPSK	1	1	24.23	0	0
	1	26	24.14		0
	1	50	24.18		0
	25	0	23.29	0-1	1
	25	14	24.17	0	0
	25	27	23.32	0-1	1
	50	0	23.31		1
DFT-s-OFDM 16QAM	1	1	23.15	0-1	1
CP-OFDM QPSK	1	1	22.54	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 9-96
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	24.25	24.10	23.70	0	0
	1	13	24.14	24.41	23.57		0
	1	23	23.99	24.26	23.53		0
	12	0	23.52	23.73	23.07	0-0.5	0
	12	7	24.08	24.29	23.61	0	0
	12	13	23.39	23.53	22.73	0-0.5	0
	25	0	23.53	23.69	22.96		0
DFT-s-OFDM QPSK	1	1	23.98	24.31	23.67	0	0
	1	13	23.97	24.18	23.53		0
	1	23	23.89	24.12	23.37		0
	12	0	23.06	23.28	22.66	0-1	1
	12	7	23.92	24.15	23.49	0	0
	12	13	22.98	23.31	21.81	0-1	1
	25	0	23.03	23.32	22.62		1
DFT-s-OFDM 16QAM	1	1	23.21	23.23	22.47	0-1	1
CP-OFDM QPSK	1	1	22.31	22.56	21.94	0-1.5	1.5

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9.5.3

NR Band n66 (AWS)

Table 9-97
NR Band n66 (AWS) Measured P_{limit} - 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	23.56	23.74	23.92	0	0
	1	53	23.42	23.66	23.79		0
	1	104	23.51	23.67	23.80		0
	50	0	23.51	23.83	23.96	0-0.5	0
	50	28	23.46	23.69	23.91	0	0
	50	56	23.52	23.70	23.87	0-0.5	0
	100	0	23.49	23.77	23.53		0
DFT-s-OFDM QPSK	1	1	23.59	23.84	23.90	0	0
	1	53	23.46	23.61	23.78		0
	1	104	23.44	23.64	23.92		0
	50	0	23.47	23.71	23.84	0-1	0
	50	28	23.39	23.54	23.80	0	0
	50	56	23.39	23.65	23.83	0-1	0
	100	0	23.45	23.71	23.82		0
DFT-s-OFDM 16QAM	1	1	23.72	23.78	23.99	0-1	0
CP-OFDM QPSK	1	1	23.28	23.49	23.71	0-1.5	0

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Table 9-98
NR Band n66 (AWS) Measured P_{limit} - 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	23.58	23.76	23.96	0	0
	1	40	23.45	23.61	23.80		0
	1	77	23.45	23.76	23.97		0
	36	0	23.48	23.64	23.96	0-0.5	0
	36	22	23.43	23.63	23.85	0	0
	36	43	23.53	23.65	23.96	0-0.5	0
	75	0	23.51	23.71	23.94		0
DFT-s-OFDM QPSK	1	1	23.54	23.67	23.99	0	0
	1	40	23.45	23.52	23.82		0
	1	77	23.52	23.78	23.97		0
	36	0	23.46	23.61	23.93	0-1	0
	36	22	23.35	23.46	23.80	0	0
	36	43	23.38	23.55	23.90	0-1	0
	75	0	23.42	23.67	23.86		0
DFT-s-OFDM 16QAM	1	1	23.75	23.80	23.92	0-1	0
CP-OFDM QPSK	1	1	23.25	23.36	23.54	0-1.5	0

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Table 9-99
NR Band n66 (AWS) Measured P_{limit} - 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	23.54	23.68	23.97	0	0
	1	26	23.44	23.66	23.91		0
	1	50	23.52	23.64	23.93		0
	25	0	23.53	23.76	23.95	0-0.5	0
	25	14	23.47	23.73	23.97	0	0
	25	27	23.48	23.67	23.89	0-0.5	0
	50	0	23.49	23.66	23.96		0
DFT-s-OFDM QPSK	1	1	23.58	23.63	23.89	0	0
	1	26	23.47	23.78	23.99		0
	1	50	23.42	23.68	23.81		0
	25	0	23.49	23.57	23.86	0-1	0
	25	14	23.35	23.55	23.81	0	0
	25	27	23.47	23.56	23.86	0-1	0
	50	0	23.51	23.66	23.91		0
DFT-s-OFDM 16QAM	1	1	23.64	23.89	24.00	0-1	0
CP-OFDM QPSK	1	1	23.46	23.29	23.67	0-1.5	0

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Table 9-100
NR Band n66 (AWS) Measured P_{limit} - 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	23.51	23.62	23.99	0	0
	1	13	23.42	23.75	23.85		0
	1	23	23.43	23.52	23.95		0
	12	0	23.56	23.68	23.93	0-0.5	0
	12	7	23.55	23.67	23.85	0	0
	12	13	23.50	23.68	23.93	0-0.5	0
	25	0	23.53	23.63	23.91		0
DFT-s-OFDM QPSK	1	1	23.38	23.52	23.88	0	0
	1	13	23.33	23.56	23.83		0
	1	23	23.46	23.70	23.81		0
	12	0	23.47	23.58	23.84	0-1	0
	12	7	23.43	23.53	23.77	0	0
	12	13	23.51	23.63	23.85	0-1	0
	25	0	23.47	23.55	23.86		0
DFT-s-OFDM 16QAM	1	1	23.65	23.72	24.00	0-1	0
CP-OFDM QPSK	1	1	23.12	23.44	23.60	0-1.5	0

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NR Band n25 (PCS)

Table 9-101

NR Band n25 (PCS) Measured P_{limit} - 20 MHz Bandwidth

NR Band n25 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376500 (1882.5 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.48	24.28	24.15	0	0
	1	53	24.44	24.24	24.22		0
	1	104	24.32	24.11	24.01		0
	50	0	24.50	24.21	24.12	0-0.5	0
	50	28	24.43	24.12	24.16	0	0
	50	56	24.38	24.12	24.08	0-0.5	0
	100	0	24.47	24.11	24.04		0
DFT-s-OFDM QPSK	1	1	24.45	24.27	24.02	0	0
	1	53	24.38	24.29	24.18		0
	1	104	24.35	24.07	24.04		0
	50	0	24.50	24.17	24.07	0-1	0
	50	28	24.37	24.07	24.09	0	0
	50	56	24.40	24.06	24.25	0-1	0
	100	0	24.44	24.15	24.14		0
DFT-s-OFDM 16QAM	1	1	24.48	24.34	24.05	0-1	0
CP-OFDM QPSK	1	1	23.57	23.35	23.27	0-1.5	0.5

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Table 9-102
NR Band n25 (PCS) Measured P_{limit} - 15 MHz Bandwidth

NR Band n25 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376500 (1882.5 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.47	24.29	23.93	0	0
	1	40	24.49	24.22	24.15		0
	1	77	24.32	24.12	23.56		0
	36	0	24.38	24.07	23.92	0-0.5	0
	36	22	24.32	24.08	23.95	0	0
	36	43	24.23	23.99	23.72	0-0.5	0
	75	0	24.32	24.06	23.96		0
DFT-s-OFDM QPSK	1	1	24.39	24.28	23.88	0	0
	1	40	24.29	24.05	23.87		0
	1	77	24.33	24.04	24.12		0
	36	0	24.27	24.09	23.79	0-1	0
	36	22	24.17	23.93	23.78	0	0
	36	43	24.18	23.91	23.71	0-1	0
	75	0	24.32	24.11	24.01		0
DFT-s-OFDM 16QAM	1	1	24.48	24.50	23.99	0-1	0
CP-OFDM QPSK	1	1	23.41	23.30	23.05	0-1.5	0.5

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Table 9-103
NR Band n25 (PCS) Measured P_{limit} - 10 MHz Bandwidth

NR Band n25 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376500 (1882.5 MHz)	382000 (1910 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.46	24.35	23.91	0	0
	1	26	24.44	24.22	23.69		0
	1	50	24.38	24.25	23.47		0
	25	0	24.30	24.18	23.95	0-0.5	0
	25	14	24.28	24.08	23.95	0	0
	25	27	24.32	24.06	23.82	0-0.5	0
	50	0	24.37	24.21	23.32		0
DFT-s-OFDM QPSK	1	1	24.50	24.25	23.78	0	0
	1	26	24.21	24.08	23.90		0
	1	50	24.25	24.04	23.99		0
	25	0	24.25	24.05	23.88	0-1	0
	25	14	24.18	24.04	23.89	0	0
	25	27	24.21	24.00	23.67	0-1	0
	50	0	24.26	24.08	23.63		0
DFT-s-OFDM 16QAM	1	1	24.35	24.33	23.86	0-1	0
CP-OFDM QPSK	1	1	23.25	23.32	23.09	0-1.5	0.5

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Table 9-104
NR Band n25 (PCS) Measured P_{limit} - 5 MHz Bandwidth

NR Band n25 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376500 (1882.5 MHz)	382500 (1912.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.28	24.18	24.05	0	0
	1	13	24.36	24.17	24.25		0
	1	23	24.41	24.26	24.18		0
	12	0	24.33	24.16	23.91	0-0.5	0
	12	7	24.22	24.15	24.04	0	0
	12	13	24.35	24.24	23.76	0-0.5	0
	25	0	24.36	24.06	23.73		0
DFT-s-OFDM QPSK	1	1	24.19	24.05	24.03	0	0
	1	13	24.25	24.03	23.99		0
	1	23	24.37	24.18	24.06		0
	12	0	24.22	24.06	23.67	0-1	0
	12	7	24.17	24.00	23.99	0	0
	12	13	24.35	24.18	23.64	0-1	0
	25	0	24.25	24.07	23.73		0
DFT-s-OFDM 16QAM	1	1	24.50	24.48	24.27	0-1	0
CP-OFDM QPSK	1	1	23.32	23.27	23.09	0-1.5	0.5

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NR Band n41

Table 9-105
NR Band n41 Measured P_{limit} - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			518598 (2592.99 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.54	0	0
	1	137	23.44		0
	1	271	23.73		0
	135	0	23.30	0-0.5	0
	135	69	23.26	0	0
	135	138	23.40	0-0.5	0
	270	0	23.27		0
DFT-s-OFDM QPSK	1	1	23.29	0	0
	1	137	23.37		0
	1	271	23.28		0
	135	0	23.24	0-1	0
	135	69	23.29	0	0
	135	138	23.35	0-1	0
	270	0	23.33		0
DFT-s-OFDM 16QAM	1	1	23.26	0-1	0
CP-OFDM QPSK	1	1	23.17	0-1.5	0.5

Note: NR Band n41 at 100 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 9-106
NR Band n41 Measured P_{limit} - 90 MHz Bandwidth
NR Band n41
90 MHz Bandwidth

			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	508200 (2541 MHz)	528996 (2644.98 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.43	23.53	0	0
	1	123	23.48	23.51		0
	1	243	23.58	23.71		0
	120	0	23.38	23.27	0-0.5	0
	120	63	23.36	23.27	0	0
	120	125	23.46	23.35	0-0.5	0
	243	0	23.31	23.26		0
DFT-s-OFDM QPSK	1	1	23.38	23.34	0	0
	1	123	23.43	23.54		0
	1	243	23.33	23.63		0
	120	0	23.24	23.35	0-1	0
	120	63	23.27	23.38	0	0
	120	125	23.25	23.41	0-1	0
	243	0	23.38	23.37		0
DFT-s-OFDM 16QAM	1	1	23.31	23.23	0-1	0
CP-OFDM QPSK	1	1	23.21	23.36	0-1.5	0.5

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Table 9-107
NR Band n41 Measured P_{limit} - 80 MHz Bandwidth
NR Band n41
80 MHz Bandwidth

NR Band n41 80 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	507204 (2536.02 MHz)	529998 (2649.99 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.51	23.40	0	0
	1	109	23.40	23.49		0
	1	215	23.39	23.72		0
	108	0	23.41	23.32	0-0.5	0
	108	55	23.40	23.33	0	0
	108	109	23.32	23.45	0-0.5	0
	216	0	23.31	23.37		0
DFT-s-OFDM QPSK	1	1	23.47	23.45	0	0
	1	109	23.35	23.51		0
	1	215	23.65	23.43		0
	108	0	23.27	23.28	0-1	0
	108	55	23.23	23.40	0	0
	108	109	23.33	23.36	0-1	0
	216	0	23.22	23.32		0
DFT-s-OFDM 16QAM	1	1	23.29	23.35	0-1	0
CP-OFDM QPSK	1	1	23.25	23.16	0-1.5	0.5

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Table 9-108
NR Band n41 Measured P_{limit} - 60 MHz Bandwidth

NR Band n41 60 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	505200 (2526 MHz)	518598 (2592.99 MHz)	531996 (2659.98 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.52	23.44	23.50	0	0
	1	81	23.42	23.47	23.47		0
	1	160	23.81	23.84	23.76		0
	81	0	23.35	23.35	23.45	0-0.5	0
	81	41	23.26	23.38	23.46	0	0
	81	81	23.30	23.34	23.38	0-0.5	0
	162	0	23.36	23.31	23.39		0
DFT-s-OFDM QPSK	1	1	23.52	23.48	23.45	0	0
	1	81	23.41	23.49	23.42		0
	1	160	23.54	23.50	23.47		0
	81	0	23.26	23.33	23.29	0-1	0
	81	41	23.35	23.30	23.26	0	0
	81	81	23.37	23.39	23.43	0-1	0
	162	0	23.23	23.32	23.24		0
DFT-s-OFDM 16QAM	1	1	23.43	23.61	23.50	0-1	0
CP-OFDM QPSK	1	1	23.32	23.29	23.07	0-1.5	0.5

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Table 9-109
NR Band n41 Measured P_{limit} - 50 MHz Bandwidth

NR Band n41 50 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	504204 (2521.02 MHz)	518598 (2592.99 MHz)	532998 (2664.99 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.49	23.47	23.53	0	0
	1	67	23.57	23.71	23.41		0
	1	131	23.41	23.68	23.76		0
	64	0	23.30	23.30	23.27	0-0.5	0
	64	35	23.41	23.28	23.32	0	0
	64	69	23.31	23.33	23.31	0-0.5	0
	128	0	23.36	23.26	23.38		0
DFT-s-OFDM QPSK	1	1	23.52	23.47	23.52	0	0
	1	67	23.63	23.56	23.58		0
	1	131	23.59	23.47	23.44		0
	64	0	23.34	23.31	23.30	0-1	0
	64	35	23.47	23.51	23.30	0	0
	64	69	23.46	23.49	23.23	0-1	0
	128	0	23.29	23.30	23.26		0
DFT-s-OFDM 16QAM	1	1	23.52	23.44	23.34	0-1	0
CP-OFDM QPSK	1	1	23.31	23.29	23.35	0-1.5	0.5

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Table 9-110
NR Band n41 Measured P_{limit} - 40 MHz Bandwidth

NR Band n41 40 MHz Bandwidth								
			Channel				MPR Allowed per 3GPP [dB]	MPR Allowed per 3GPP [dB]
Modulation	RB Size	RB Offset	503202 (2516.01 MHz)	513468 (2567.34 MHz)	523734 (2618.67 MHz)	534000 (2670 MHz)		
			Conducted Power [dBm]					
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.79	23.69	23.72	23.74	0	0
	1	53	23.84	23.71	23.66	23.61		0
	1	104	23.79	23.76	23.83	23.67		0
	50	0	23.41	23.55	23.47	23.47	0-0.5	0
	50	28	23.62	23.74	23.56	23.46	0	0
	50	56	23.67	23.55	23.61	23.50	0-0.5	0
	100	0	23.30	23.66	23.60	23.55		0
DFT-s-OFDM QPSK	1	1	23.47	23.54	23.70	23.76	0	0
	1	53	23.71	23.76	23.75	23.61		0
	1	104	23.61	23.71	23.78	23.71		0
	50	0	23.31	23.48	23.39	23.39	0-1	0
	50	28	23.36	23.48	23.49	23.45	0	0
	50	56	23.34	23.35	23.52	23.47	0-1	0
	100	0	23.37	23.47	23.61	23.56		0
DFT-s-OFDM 16QAM	1	1	23.24	23.25	23.46	23.44	0-1	0
CP-OFDM QPSK	1	1	23.20	23.23	23.39	23.32	0-1.5	0.5

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Table 9-111
NR Band n41 Measured P_{limit} - 20 MHz Bandwidth

NR Band n41 20 MHz Bandwidth									
			Channel					MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	501204 (2506.02 MHz)	509898 (2549.49 MHz)	518598 (2592.99 MHz)	527298 (2636.49 MHz)	535998 (2679.99 MHz)		
			Conducted Power [dBm]						
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.80	23.79	23.80	23.82	23.79	0	0
	1	26	23.69	23.74	23.74	23.81	23.76		0
	1	49	23.60	23.66	23.67	23.70	23.65		0
	25	0	23.30	23.36	23.37	23.33	23.27	0-0.5	0
	25	13	23.34	23.41	23.44	23.33	23.27	0	0
	25	26	23.27	23.35	23.36	23.31	23.21	0-0.5	0
	50	0	23.23	23.29	23.35	23.26	23.22		0
DFT-s-OFDM QPSK	1	1	23.60	23.65	23.63	23.60	23.56	0	0
	1	26	23.37	23.41	23.62	23.38	23.35		0
	1	49	23.63	23.81	23.84	23.61	23.78		0
	25	0	23.16	23.12	23.46	23.16	23.32	0-1	0
	25	13	23.23	23.17	23.19	23.13	23.09	0	0
	25	26	23.23	23.17	23.28	23.20	23.11	0-1	0
	50	0	23.30	23.36	23.46	23.40	23.32		0
DFT-s-OFDM 16QAM	1	1	23.38	23.51	23.57	23.48	23.48	0-1	0
CP-OFDM QPSK	1	1	23.07	23.12	23.35	23.15	23.21	0-1.5	0.5

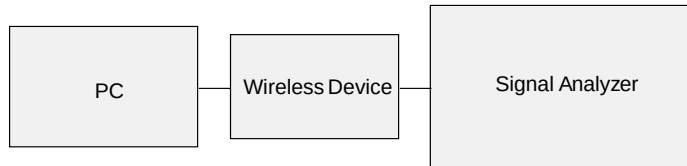


Figure 9-5
Power Measurement Setup

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9.6 WLAN Conducted Powers

Table 9-112
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	20.14	16.32	15.10	15.03
2422	3		19.00	17.62	17.65
2437	6	19.99	19.08	17.51	17.52
2452	9		19.07	17.79	17.79
2462	11	19.99	16.35	15.26	15.15

Table 9-113
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	19.82	16.50	15.16	15.15
2422	3		19.04	17.96	17.94
2437	6	20.09	19.10	18.07	17.99
2452	9		19.12	18.04	17.94
2462	11	20.10	16.42	15.15	15.06

Table 9-114
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	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	15.75	15.77	15.10	15.03
2422	3			15.77	15.83
2437	6	15.72	15.86	15.98	15.71
2452	9			16.17	15.91
2462	11	15.78	15.83	15.26	15.15

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Table 9-115
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	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	15.63	16.01	15.16	15.15
2422	3			16.00	15.95
2437	6	16.12	16.24	16.04	16.04
2452	9			16.13	15.89
2462	11	15.61	15.88	15.15	15.06

Table 9-116
2.4 GHz WLAN Reduced Average RF Power – MIMO
2.4GHz 802.11n Conducted Power [dBm]

Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	15.10	15.16	18.14
2422	3	15.77	16.00	18.90
2437	6	15.98	16.04	19.02
2452	9	16.17	16.13	19.16
2462	11	15.26	15.15	18.22

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Table 9-117
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	16.88	16.93	16.46
5200	40	18.92	18.88	18.59
5220	44	16.90	16.91	16.58
5240	48	16.82	16.89	16.51
5260	52	16.87	16.89	16.51
5280	56	18.87	18.76	18.46
5300	60	16.85	16.83	16.47
5320	64	16.85	16.87	16.59
5500	100	16.86	16.88	16.70
5600	120	16.92	16.93	16.68
5620	124	16.91	16.89	16.61
5720	144	16.96	16.98	16.70
5745	149	16.89	16.87	16.58
5785	157	18.86	18.89	18.58
5825	165	18.82	18.88	18.50

Table 9-118
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	16.89	16.79	16.81
5200	40	18.98	18.91	18.91
5220	44	16.86	16.64	16.66
5240	48	16.87	16.74	16.70
5260	52	16.73	16.63	16.61
5280	56	18.85	18.61	18.70
5300	60	16.71	16.64	16.58
5320	64	16.82	16.73	16.70
5500	100	16.77	16.59	16.64
5600	120	16.78	16.66	16.61
5620	124	16.77	16.53	16.56
5720	144	16.71	16.56	16.52
5745	149	16.89	16.68	16.67
5785	157	18.93	18.93	18.96
5825	165	18.92	18.78	18.72

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Table 9-119
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	16.93	16.79	19.87
5200	40	18.88	18.91	21.91
5220	44	16.91	16.64	19.79
5240	48	16.89	16.74	19.83
5260	52	16.89	16.63	19.77
5280	56	18.76	18.61	21.70
5300	60	16.83	16.64	19.75
5320	64	16.87	16.73	19.81
5500	100	16.88	16.59	19.75
5600	120	16.93	16.66	19.81
5620	124	16.89	16.53	19.72
5720	144	16.98	16.56	19.79
5745	149	16.87	16.68	19.79
5785	157	18.89	18.93	21.92
5825	165	18.88	18.78	21.84

Table 9-120
5 GHz WLAN Reduced Average RF Power– Ant 1

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	15.93	15.99
5230	46	15.78	15.85
5270	54	15.87	15.91
5310	62	14.30	14.33
5510	102	13.82	13.81
5550	110	15.69	15.67
5590	118	15.73	15.68
5630	126	15.85	15.82
5710	142	15.90	15.83
5755	151	15.78	15.69
5795	159	15.89	15.83

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Table 9-121
5 GHz WLAN Reduced Average RF Power– Ant 2

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	15.74	15.79
5230	46	15.85	15.86
5270	54	15.79	15.80
5310	62	14.51	14.50
5510	102	14.02	14.01
5550	110	15.68	15.67
5590	118	15.69	15.71
5630	126	15.78	15.81
5710	142	15.89	15.99
5755	151	15.94	15.93
5795	159	15.96	15.96

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.

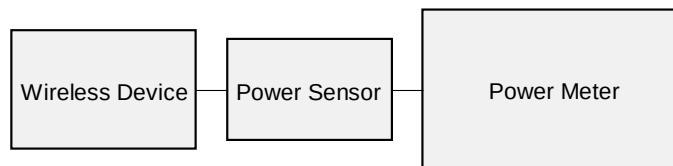


Figure 9-6
Power Measurement Setup

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9.7 Bluetooth Conducted Powers

Table 9-122
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	10.20	10.461
2441	1.0	39	10.16	10.386
2480	1.0	78	9.94	9.851
2402	2.0	0	9.55	9.008
2441	2.0	39	9.55	9.017
2480	2.0	78	9.35	8.613
2402	3.0	0	9.61	9.150
2441	3.0	39	9.60	9.118
2480	3.0	78	9.35	8.618

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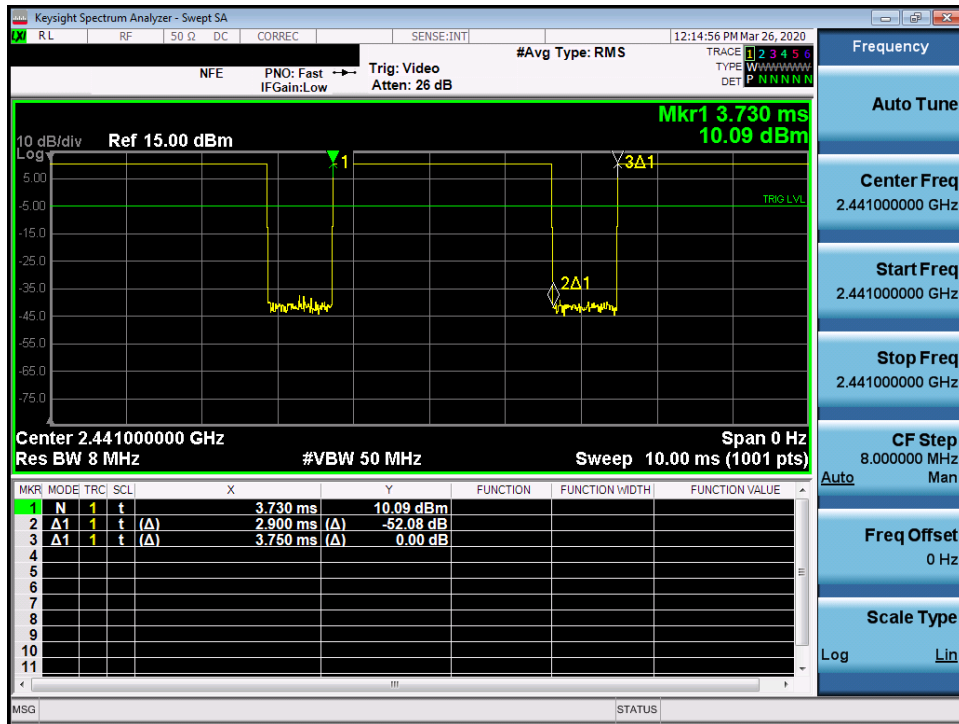


Figure 9-7
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.90 \text{ ms}}{3.75 \text{ ms}} * 100\% = 77.3\%$$

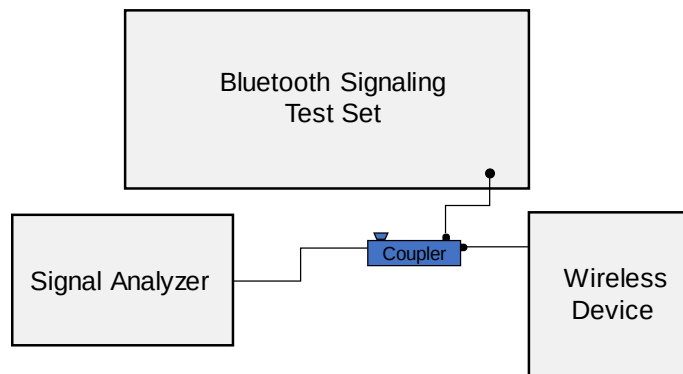


Figure 9-8
Power Measurement Setup

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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
04/05/2020	750 Head	20.2	680	0.851	41.947	0.888	42.305	-4.17%	-0.85%
			695	0.856	41.899	0.889	42.227	-3.71%	-0.78%
			700	0.857	41.890	0.889	42.201	-3.60%	-0.74%
			710	0.861	41.861	0.890	42.149	-3.26%	-0.68%
			750	0.875	41.720	0.894	41.942	-2.13%	-0.53%
04/07/2020	750 Head	21.3	680	0.851	40.830	0.888	42.305	-4.17%	-3.49%
			695	0.856	40.789	0.889	42.227	-3.71%	-3.41%
			740	0.872	40.649	0.893	41.994	-2.35%	-3.20%
			755	0.878	40.593	0.894	41.916	-1.79%	-3.16%
			770	0.883	40.546	0.895	41.838	-1.34%	-3.09%
			785	0.887	40.504	0.896	41.760	-1.00%	-3.01%
			800	0.892	40.464	0.897	41.682	-0.56%	-2.92%
04/05/2020	835 Head	20.2	820	0.901	41.513	0.899	41.578	0.22%	-0.16%
			835	0.906	41.473	0.900	41.500	0.67%	-0.07%
			850	0.913	41.428	0.916	41.500	-0.33%	-0.17%
04/13/2020	835 Head	20.4	820	0.928	42.994	0.899	41.578	3.23%	3.41%
			835	0.934	42.943	0.900	41.500	3.78%	3.48%
			850	0.940	42.895	0.916	41.500	2.62%	3.36%
04/22/2020	835 Head	20.3	820	0.909	43.393	0.899	41.578	1.11%	4.37%
			835	0.914	43.357	0.900	41.500	1.56%	4.47%
			850	0.920	43.322	0.916	41.500	0.44%	4.39%
05/06/2020	835 Head	20.8	820	0.867	41.992	0.899	41.578	-3.56%	1.00%
			835	0.873	41.945	0.900	41.500	-3.00%	1.07%
			850	0.879	41.902	0.916	41.500	-4.04%	0.97%
03/26/2020	1750 Head	19.7	1710	1.347	39.759	1.348	40.142	-0.07%	-0.95%
			1720	1.353	39.743	1.354	40.126	-0.07%	-0.95%
			1745	1.368	39.701	1.368	40.087	0.00%	-0.96%
			1750	1.371	39.692	1.371	40.079	0.00%	-0.97%
			1770	1.383	39.658	1.383	40.047	0.00%	-0.97%
			1790	1.396	39.632	1.394	40.016	0.14%	-0.96%
03/30/2020	1750 Head	20.5	1710	1.347	39.212	1.348	40.142	-0.07%	-2.32%
			1720	1.353	39.202	1.354	40.126	-0.07%	-2.30%
			1745	1.370	39.173	1.368	40.087	0.15%	-2.28%
			1750	1.373	39.166	1.371	40.079	0.15%	-2.28%
			1770	1.387	39.127	1.383	40.047	0.29%	-2.30%
			1790	1.400	39.084	1.394	40.016	0.43%	-2.33%
04/23/2020	1750 Head	21.5	1710	1.360	41.192	1.348	40.142	0.89%	2.62%
			1720	1.371	41.145	1.354	40.126	1.26%	2.54%
			1745	1.398	41.029	1.368	40.087	2.19%	2.35%
			1750	1.403	41.005	1.371	40.079	2.33%	2.31%
			1770	1.424	40.910	1.383	40.047	2.96%	2.15%
			1790	1.444	40.811	1.394	40.016	3.59%	1.99%

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Table 10-2
Measured Tissue Properties – Head 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
03/30/2020	1900 Head	22.1	1850	1.399	39.209	1.400	40.000	-0.07%	-1.98%
			1860	1.409	39.169	1.400	40.000	0.64%	-2.08%
			1880	1.431	39.084	1.400	40.000	2.21%	-2.29%
			1900	1.452	38.988	1.400	40.000	3.71%	-2.53%
			1905	1.458	38.965	1.400	40.000	4.14%	-2.59%
			1910	1.463	38.942	1.400	40.000	4.50%	-2.65%
04/10/2020	1900 Head	21.3	1850	1.427	39.691	1.400	40.000	1.93%	-0.77%
			1860	1.433	39.673	1.400	40.000	2.36%	-0.82%
			1880	1.446	39.636	1.400	40.000	3.29%	-0.91%
			1900	1.458	39.602	1.400	40.000	4.14%	-1.00%
			1905	1.461	39.594	1.400	40.000	4.36%	-1.02%
			1910	1.464	39.587	1.400	40.000	4.57%	-1.03%
04/20/2020	1900 Head	22.5	1850	1.392	39.005	1.400	40.000	-0.57%	-2.49%
			1860	1.403	38.962	1.400	40.000	0.21%	-2.59%
			1880	1.423	38.880	1.400	40.000	1.64%	-2.80%
			1900	1.444	38.800	1.400	40.000	3.14%	-3.00%
			1905	1.450	38.779	1.400	40.000	3.57%	-3.05%
			1910	1.456	38.759	1.400	40.000	4.00%	-3.10%
04/27/2020	1900 Head	21.5	1850	1.392	38.812	1.400	40.000	-0.57%	-2.97%
			1860	1.403	38.768	1.400	40.000	0.21%	-3.08%
			1880	1.423	38.688	1.400	40.000	1.64%	-3.28%
			1900	1.444	38.615	1.400	40.000	3.14%	-3.46%
			1905	1.449	38.596	1.400	40.000	3.50%	-3.51%
			1910	1.455	38.577	1.400	40.000	3.93%	-3.56%
04/12/2020	2450 Head	24.4	2400	1.762	37.641	1.756	39.289	0.34%	-4.19%
			2450	1.798	37.577	1.800	39.200	-0.11%	-4.14%
			2480	1.817	37.533	1.833	39.162	-0.87%	-4.16%
			2550	1.869	37.423	1.909	39.073	-2.10%	-4.22%
			2560	1.876	37.413	1.920	39.060	-2.29%	-4.22%
			2600	1.903	37.360	1.964	39.009	-3.11%	-4.23%
			2650	1.939	37.264	2.018	38.945	-3.91%	-4.32%
			2680	1.963	37.230	2.051	38.907	-4.29%	-4.31%
04/19/2020	2450 Head	23.0	2700	1.977	37.204	2.073	38.882	-4.63%	-4.32%
			2300	1.675	38.517	1.670	39.500	0.30%	-2.49%
			2310	1.682	38.507	1.679	39.480	0.18%	-2.46%
			2320	1.690	38.496	1.687	39.460	0.18%	-2.44%
04/26/2020	2450 Head	23.7	2400	1.767	39.151	1.756	39.289	0.63%	-0.35%
			2450	1.804	39.074	1.800	39.200	0.22%	-0.32%
			2480	1.825	39.030	1.833	39.162	-0.44%	-0.34%
05/03/2020	2450 Head	23.2	2510	1.843	38.311	1.866	39.123	-1.23%	-2.08%
			2535	1.864	38.272	1.893	39.092	-1.53%	-2.10%
			2550	1.877	38.253	1.909	39.073	-1.68%	-2.10%
			2560	1.885	38.243	1.920	39.060	-1.82%	-2.09%
			2600	1.914	38.190	1.964	39.009	-2.55%	-2.10%
04/13/2020	5200-5800 Head	21.0	5250	4.594	34.644	4.706	35.929	-2.38%	-3.58%
			5270	4.617	34.609	4.727	35.906	-2.33%	-3.61%
			5710	5.120	33.809	5.178	35.403	-1.12%	-4.50%
			5750	5.169	33.756	5.219	35.357	-0.96%	-4.53%
			5795	5.214	33.674	5.265	35.305	-0.97%	-4.62%

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Table 10-3
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
04/20/2020	750 Body	20.3	680	0.923	53.892	0.958	55.804	-3.65%	-3.43%
			695	0.928	53.871	0.959	55.745	-3.23%	-3.36%
			700	0.930	53.863	0.959	55.726	-3.02%	-3.34%
			710	0.933	53.848	0.960	55.687	-2.81%	-3.30%
			725	0.939	53.817	0.961	55.629	-2.29%	-3.26%
			750	0.949	53.751	0.964	55.531	-1.56%	-3.21%
			770	0.957	53.708	0.965	55.453	-0.83%	-3.15%
			785	0.963	53.678	0.966	55.395	-0.31%	-3.10%
04/27/2020	835 Body	21.7	800	0.969	53.647	0.967	55.336	0.21%	-3.05%
			820	0.957	54.763	0.969	55.258	-1.24%	-0.90%
			835	0.973	54.611	0.970	55.200	0.31%	-1.07%
			850	0.988	54.463	0.988	55.154	0.00%	-1.25%
04/29/2020	835 Body	21.8	820	0.944	54.554	0.969	55.258	-2.58%	-1.27%
			835	0.959	54.407	0.970	55.200	-1.13%	-1.44%
			850	0.974	54.264	0.988	55.154	-1.42%	-1.61%
05/04/2020	835 Body	21.7	820	0.949	54.304	0.969	55.258	-2.06%	-1.73%
			835	0.965	54.155	0.970	55.200	-0.52%	-1.89%
			850	0.980	54.006	0.988	55.154	-0.81%	-2.08%
03/30/2020	1750 Body	21.1	1710	1.445	55.490	1.463	53.537	-1.23%	3.65%
			1720	1.457	55.454	1.469	53.511	-0.82%	3.63%
			1745	1.486	55.367	1.485	53.445	0.07%	3.60%
			1750	1.491	55.348	1.488	53.432	0.20%	3.59%
			1770	1.512	55.275	1.501	53.379	0.73%	3.55%
			1790	1.533	55.196	1.514	53.326	1.25%	3.51%
04/11/2020	1750 Body	21.4	1710	1.466	53.841	1.463	53.537	0.21%	0.57%
			1720	1.478	53.801	1.469	53.511	0.61%	0.54%
			1745	1.506	53.704	1.485	53.445	1.41%	0.48%
			1750	1.512	53.686	1.488	53.432	1.61%	0.48%
			1770	1.534	53.611	1.501	53.379	2.20%	0.43%
			1790	1.555	53.532	1.514	53.326	2.71%	0.39%
04/13/2020	1750 Body	21.5	1710	1.448	55.137	1.463	53.537	-1.03%	2.99%
			1720	1.461	55.101	1.469	53.511	-0.54%	2.97%
			1745	1.491	55.008	1.485	53.445	0.40%	2.92%
			1750	1.496	54.991	1.488	53.432	0.54%	2.92%
			1770	1.518	54.914	1.501	53.379	1.13%	2.88%
			1790	1.539	54.831	1.514	53.326	1.65%	2.82%
04/15/2020	1750 Body	21.7	1710	1.433	54.078	1.463	53.537	-2.05%	1.01%
			1720	1.445	54.043	1.469	53.511	-1.63%	0.99%
			1745	1.475	53.947	1.485	53.445	-0.67%	0.94%
			1750	1.481	53.929	1.488	53.432	-0.47%	0.93%
			1770	1.503	53.858	1.501	53.379	0.13%	0.90%
			1790	1.524	53.774	1.514	53.326	0.66%	0.84%
05/03/2020	1750 Body	21.2	1710	1.478	52.241	1.463	53.537	1.03%	-2.42%
			1720	1.489	52.200	1.469	53.511	1.36%	-2.45%
			1745	1.518	52.107	1.485	53.445	2.22%	-2.50%
			1750	1.523	52.088	1.488	53.432	2.35%	-2.52%
			1770	1.544	52.014	1.501	53.379	2.86%	-2.56%
			1790	1.566	51.939	1.514	53.326	3.43%	-2.60%
05/06/2020	1750 Body	21.9	1710	1.452	52.786	1.463	53.537	-0.75%	-1.40%
			1720	1.464	52.746	1.469	53.511	-0.34%	-1.43%
			1745	1.492	52.646	1.485	53.445	0.47%	-1.49%
			1750	1.498	52.627	1.488	53.432	0.67%	-1.51%
			1770	1.519	52.547	1.501	53.379	1.20%	-1.56%
			1790	1.539	52.468	1.514	53.326	1.65%	-1.61%

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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
03/25/2020	1900 Body	23.1	1850	1.515	55.003	1.520	53.300	-0.33%	3.20%
			1860	1.526	54.972	1.520	53.300	0.39%	3.14%
			1880	1.550	54.907	1.520	53.300	1.97%	3.02%
			1900	1.573	54.839	1.520	53.300	3.49%	2.89%
			1905	1.579	54.822	1.520	53.300	3.88%	2.86%
			1910	1.585	54.805	1.520	53.300	4.28%	2.82%
03/31/2020	1900 Body	23.6	1850	1.504	53.881	1.520	53.300	-1.05%	1.09%
			1860	1.515	53.852	1.520	53.300	-0.33%	1.04%
			1880	1.537	53.794	1.520	53.300	1.12%	0.93%
			1900	1.559	53.729	1.520	53.300	2.57%	0.80%
			1905	1.564	53.711	1.520	53.300	2.89%	0.77%
			1910	1.570	53.692	1.520	53.300	3.29%	0.74%
04/14/2020	1900 Body	22.7	1850	1.525	54.341	1.520	53.300	0.33%	1.95%
			1860	1.536	54.311	1.520	53.300	1.05%	1.90%
			1880	1.559	54.244	1.520	53.300	2.57%	1.77%
			1900	1.581	54.172	1.520	53.300	4.01%	1.64%
			1905	1.587	54.154	1.520	53.300	4.41%	1.60%
			1910	1.593	54.136	1.520	53.300	4.80%	1.57%
04/16/2020	1900 Body	24.0	1850	1.506	54.490	1.520	53.300	-0.92%	2.23%
			1860	1.518	54.463	1.520	53.300	-0.13%	2.18%
			1880	1.540	54.408	1.520	53.300	1.32%	2.08%
			1900	1.564	54.343	1.520	53.300	2.89%	1.96%
			1905	1.570	54.326	1.520	53.300	3.29%	1.92%
			1910	1.576	54.308	1.520	53.300	3.68%	1.89%
04/21/2020	1900 Body	23.1	1850	1.524	51.851	1.520	53.300	0.26%	-2.72%
			1860	1.536	51.812	1.520	53.300	1.05%	-2.79%
			1880	1.559	51.743	1.520	53.300	2.57%	-2.92%
			1900	1.581	51.679	1.520	53.300	4.01%	-3.04%
			1905	1.587	51.662	1.520	53.300	4.41%	-3.07%
			1910	1.593	51.644	1.520	53.300	4.80%	-3.11%
04/25/2020	1900 Body	23.7	1850	1.478	53.236	1.520	53.300	-2.76%	-0.12%
			1860	1.489	53.209	1.520	53.300	-2.04%	-0.17%
			1880	1.511	53.155	1.520	53.300	-0.59%	-0.27%
			1900	1.532	53.097	1.520	53.300	0.79%	-0.38%
			1905	1.538	53.080	1.520	53.300	1.18%	-0.41%
			1910	1.544	53.064	1.520	53.300	1.58%	-0.44%
04/28/2020	1900 Body	22.0	1850	1.519	52.839	1.520	53.300	-0.07%	-0.86%
			1860	1.530	52.800	1.520	53.300	0.66%	-0.94%
			1880	1.552	52.734	1.520	53.300	2.11%	-1.06%
			1900	1.574	52.664	1.520	53.300	3.55%	-1.19%
			1905	1.580	52.648	1.520	53.300	3.95%	-1.22%
			1910	1.585	52.632	1.520	53.300	4.28%	-1.25%
05/05/2020	1900 Body	22.8	1850	1.526	55.844	1.520	53.300	0.39%	4.77%
			1860	1.538	55.809	1.520	53.300	1.18%	4.71%
			1880	1.561	55.741	1.520	53.300	2.70%	4.58%
			1900	1.583	55.672	1.520	53.300	4.14%	4.45%
			1905	1.589	55.654	1.520	53.300	4.54%	4.42%
			1910	1.595	55.636	1.520	53.300	4.93%	4.38%

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Table 10-5
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
04/08/2020	2450 Body	23.6	2300	1.829	51.032	1.809	52.900	1.11%	-3.53%
			2310	1.840	51.004	1.816	52.887	1.32%	-3.56%
			2320	1.852	50.978	1.826	52.873	1.42%	-3.58%
			2400	1.942	50.741	1.902	52.767	2.10%	-3.84%
			2450	1.998	50.595	1.950	52.700	2.46%	-3.99%
			2480	2.031	50.504	1.993	52.662	1.91%	-4.10%
			2500	2.053	50.439	2.021	52.636	1.58%	-4.17%
			2510	2.065	50.407	2.035	52.623	1.47%	-4.21%
			2535	2.095	50.334	2.071	52.592	1.16%	-4.29%
			2550	2.113	50.297	2.092	52.573	1.00%	-4.33%
04/13/2020	2450 Body	21.9	2560	2.124	50.273	2.106	52.560	0.85%	-4.35%
			2600	2.168	50.163	2.163	52.509	0.23%	-4.47%
			2400	1.978	51.035	1.902	52.767	4.00%	-3.28%
04/23/2020	2450 Body	23.0	2450	2.037	50.891	1.950	52.700	4.46%	-3.43%
			2480	2.071	50.798	1.993	52.662	3.91%	-3.54%
			2450	2.029	51.509	1.950	52.700	4.05%	-2.26%
			2480	2.062	51.422	1.993	52.662	3.46%	-2.35%
			2500	2.086	51.361	2.021	52.636	3.22%	-2.42%
			2510	2.098	51.333	2.035	52.623	3.10%	-2.45%
			2535	2.128	51.265	2.071	52.592	2.75%	-2.52%
			2550	2.146	51.229	2.092	52.573	2.58%	-2.56%
			2560	2.159	51.206	2.106	52.560	2.52%	-2.58%
			2600	2.205	51.095	2.163	52.509	1.94%	-2.69%
04/27/2020	2450 Body	23.3	2650	2.268	50.932	2.234	52.445	1.52%	-2.88%
			2680	2.305	50.847	2.277	52.407	1.23%	-2.98%
			2700	2.328	50.787	2.305	52.382	1.00%	-3.04%
04/30/2020	2450 Body	23.1	2600	2.189	50.865	2.163	52.509	1.20%	-3.13%
			2650	2.249	50.713	2.234	52.445	0.67%	-3.30%
			2680	2.285	50.628	2.277	52.407	0.35%	-3.39%
			2700	2.308	50.566	2.305	52.382	0.13%	-3.47%
			2510	2.062	52.212	2.035	52.623	1.33%	-0.78%
04/13/2020	5200-5800 Body	22.1	2535	2.095	52.146	2.071	52.592	1.16%	-0.85%
			2550	2.112	52.113	2.092	52.573	0.96%	-0.87%
			2560	2.123	52.091	2.106	52.560	0.81%	-0.89%
			2600	2.167	51.982	2.163	52.509	0.18%	-1.00%
			5200	5.460	47.595	5.299	49.014	3.04%	-2.90%
			5210	5.472	47.576	5.311	49.001	3.03%	-2.91%
			5220	5.487	47.558	5.323	48.987	3.08%	-2.92%
			5240	5.516	47.504	5.346	48.960	3.18%	-2.97%
			5250	5.529	47.480	5.358	48.947	3.19%	-3.00%
			5260	5.543	47.457	5.369	48.933	3.24%	-3.02%
			5270	5.559	47.450	5.381	48.919	3.31%	-3.00%
			5280	5.569	47.432	5.393	48.906	3.26%	-3.01%
			5600	6.004	46.880	5.766	48.471	4.13%	-3.28%
			5720	6.169	46.680	5.907	48.309	4.44%	-3.37%
			5745	6.196	46.634	5.936	48.275	4.38%	-3.40%
			5750	6.202	46.625	5.942	48.268	4.38%	-3.40%
			5755	6.209	46.621	5.947	48.261	4.41%	-3.40%
05/04/2020	5200-5800 Body	22.9	5765	6.226	46.614	5.959	48.248	4.48%	-3.39%
			5775	6.242	46.596	5.971	48.234	4.54%	-3.40%
			5785	6.257	46.574	5.982	48.220	4.60%	-3.41%
			5250	5.428	46.735	5.358	48.947	1.31%	-4.52%
			5260	5.440	46.718	5.369	48.933	1.32%	-4.53%
			5270	5.456	46.707	5.381	48.919	1.39%	-4.52%
			5280	5.476	46.686	5.393	48.906	1.54%	-4.54%
			5290	5.492	46.649	5.404	48.892	1.63%	-4.59%
			5300	5.505	46.612	5.416	48.879	1.64%	-4.64%
			5310	5.511	46.594	5.428	48.865	1.53%	-4.65%
			5320	5.517	46.590	5.439	48.851	1.43%	-4.63%
			5600	5.890	46.147	5.766	48.471	2.15%	-4.79%
			5720	6.058	45.981	5.907	48.309	2.56%	-4.82%
			5745	6.086	45.899	5.936	48.275	2.53%	-4.92%
			5750	6.089	45.895	5.942	48.268	2.47%	-4.92%

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 10-6
System Verification Results – Head 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} (%)
P	750	HEAD	04/05/2020	21.0	20.2	0.200	1161	7551	1.590	8.030	7.950	-1.00%
P	750	HEAD	04/07/2020	21.5	21.3	0.200	1161	7551	1.630	8.030	8.150	1.49%
P	835	HEAD	04/05/2020	21.0	20.2	0.200	4d132	7551	1.880	9.650	9.400	-2.59%
P	835	HEAD	04/13/2020	21.7	20.4	0.200	4d132	7551	1.960	9.650	9.800	1.55%
P	835	HEAD	04/22/2020	21.0	20.3	0.200	4d133	7551	1.930	9.430	9.650	2.33%
P	835	HEAD	05/06/2020	21.3	20.8	0.200	4d133	7551	1.890	9.430	9.450	0.21%
P	1750	HEAD	03/26/2020	20.2	19.7	0.100	1148	7551	3.440	37.000	34.400	-7.03%
P	1750	HEAD	03/30/2020	20.7	20.5	0.100	1148	7551	3.780	37.000	37.800	2.16%
D	1750	HEAD	04/23/2020	22.0	21.5	0.100	1150	7488	3.870	36.500	38.700	6.03%
H	1900	HEAD	03/30/2020	21.2	21.2	0.100	5d148	7406	4.210	39.100	42.100	7.67%
P	1900	HEAD	04/10/2020	20.2	20.9	0.100	5d149	7551	4.170	39.300	41.700	6.11%
P	1900	HEAD	04/20/2020	20.3	21.5	0.100	5d149	7551	4.250	39.300	42.500	8.14%
H	1900	HEAD	04/27/2020	22.3	20.3	0.100	5d149	7406	4.060	39.300	40.600	3.31%
E	2300	HEAD	04/19/2020	22.5	22.1	0.100	1073	3589	5.310	49.200	53.100	7.93%
E	2450	HEAD	04/12/2020	23.7	22.9	0.100	719	3589	5.180	53.100	51.800	-2.45%
E	2450	HEAD	04/26/2020	22.1	22.3	0.100	797	3589	5.360	52.700	53.600	1.71%
E	2600	HEAD	04/12/2020	23.7	22.9	0.100	1064	3589	5.740	58.100	57.400	-1.20%
E	2600	HEAD	05/03/2020	22.9	22.4	0.100	1064	3589	5.890	58.100	58.900	1.38%
H	5250	HEAD	04/13/2020	23.0	21.0	0.050	1191	7406	3.840	80.800	76.800	-4.95%
H	5750	HEAD	04/13/2020	23.0	21.0	0.050	1191	7406	3.710	80.200	74.200	-7.48%

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Table 10-7
System Verification Results – Body 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} (%)
L	750	BODY	04/20/2020	21.0	20.3	0.200	1161	7410	1.720	8.430	8.600	2.02%
D	835	BODY	04/27/2020	22.1	21.7	0.200	4d133	7488	1.880	9.750	9.400	-3.59%
D	835	BODY	04/29/2020	22.3	21.8	0.200	4d133	7488	1.860	9.750	9.300	-4.62%
D	835	BODY	05/04/2020	22.1	21.7	0.200	4d132	7488	1.910	9.960	9.550	-4.12%
I	1750	BODY	03/30/2020	21.3	21.1	0.100	1150	7357	3.860	36.600	38.600	5.46%
I	1750	BODY	04/11/2020	21.8	21.4	0.100	1148	7527	3.730	37.700	37.300	-1.06%
I	1750	BODY	04/13/2020	22.0	21.4	0.100	1150	7527	3.570	36.600	35.700	-2.46%
I	1750	BODY	05/03/2020	21.6	21.2	0.100	1150	7527	3.880	36.600	38.800	6.01%
J	1900	BODY	03/25/2020	21.1	22.1	0.100	5d080	7571	4.200	39.200	42.000	7.14%
J	1900	BODY	03/31/2020	22.3	22.8	0.100	5d080	7571	3.890	39.200	38.900	-0.77%
J	1900	BODY	04/14/2020	22.5	20.7	0.100	5d080	7571	4.160	39.200	41.600	6.12%
J	1900	BODY	04/16/2020	21.7	24.0	0.100	5d080	7571	4.160	39.200	41.600	6.12%
O	1900	BODY	04/21/2020	22.0	21.1	0.100	5d080	7552	4.090	39.200	40.900	4.34%
J	1900	BODY	04/25/2020	22.7	23.3	0.100	5d080	7571	3.900	39.200	39.000	-0.51%
O	1900	BODY	04/28/2020	21.1	21.0	0.100	5d149	7552	4.210	39.400	42.100	6.85%
J	1900	BODY	05/05/2020	20.9	20.8	0.100	5d148	7571	4.150	39.100	41.500	6.14%
K	2300	BODY	04/08/2020	22.9	23.6	0.100	1073	7547	4.900	47.700	49.000	2.73%
K	2450	BODY	04/13/2020	22.9	21.9	0.100	719	7547	5.200	50.800	52.000	2.36%
K	2600	BODY	04/08/2020	22.9	23.6	0.100	1064	7547	5.480	55.600	54.800	-1.44%
K	2600	BODY	04/27/2020	23.2	22.3	0.100	1064	7547	5.500	55.600	55.000	-1.08%
K	2600	BODY	04/30/2020	22.4	22.1	0.100	1064	7547	5.550	55.600	55.500	-0.18%
G	5250	BODY	04/13/2020	23.4	23.6	0.050	1057	7409	3.750	75.900	75.000	-1.19%
G	5600	BODY	04/13/2020	23.4	23.6	0.050	1057	7409	4.210	79.900	84.200	5.38%
G	5750	BODY	04/13/2020	23.4	23.6	0.050	1057	7409	3.910	76.700	78.200	1.96%

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Table 10-8
System Verification Results – 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} (%)
I	1750	BODY	04/13/2020	22.0	21.4	0.100	1150	7527	1.900	19.400	19.000	-2.06%
I	1750	BODY	04/15/2020	23.0	21.7	0.100	1150	7527	1.910	19.400	19.100	-1.55%
I	1750	BODY	05/06/2020	21.1	21.9	0.100	1150	7527	1.850	19.400	18.500	-4.64%
J	1900	BODY	04/14/2020	22.5	20.7	0.100	5d080	7571	2.120	20.600	21.200	2.91%
J	1900	BODY	04/16/2020	21.7	24.0	0.100	5d080	7571	2.160	20.600	21.600	4.85%
O	1900	BODY	04/21/2020	22.0	21.1	0.100	5d080	7552	2.110	20.600	21.100	2.43%
O	1900	BODY	04/28/2020	21.1	21.0	0.100	5d149	7552	2.180	20.700	21.800	5.31%
J	1900	BODY	05/05/2020	20.9	20.8	0.100	5d148	7571	2.130	20.500	21.300	3.90%
K	2450	BODY	04/08/2020	22.9	23.6	0.100	719	7547	2.340	24.000	23.400	-2.50%
K	2450	BODY	04/23/2020	23.2	21.6	0.100	719	7547	2.430	24.000	24.300	1.25%
K	2600	BODY	04/08/2020	22.9	23.6	0.100	1064	7547	2.420	25.000	24.200	-3.20%
K	2600	BODY	04/23/2020	23.2	21.6	0.100	1064	7547	2.430	25.000	24.300	-2.80%
G	5250	BODY	05/04/2020	21.3	22.9	0.050	1057	7409	1.120	21.100	22.400	6.16%
G	5600	BODY	05/04/2020	21.3	22.9	0.050	1057	7409	1.140	22.300	22.800	2.24%
G	5750	BODY	05/04/2020	21.3	22.9	0.050	1057	7409	1.020	21.200	20.400	-3.77%

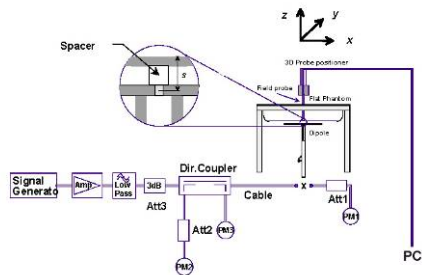


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

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11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	33.5	33.10	0.00	Right	Cheek	03600	1	1:8.3	0.097	1.096	0.106	
836.60	190	GSM 850	GSM	33.5	33.10	0.09	Right	Tilt	03600	1	1:8.3	0.061	1.096	0.067	
836.60	190	GSM 850	GSM	33.5	33.10	-0.14	Left	Cheek	03600	1	1:8.3	0.099	1.096	0.109	
836.60	190	GSM 850	GSM	33.5	33.10	0.12	Left	Tilt	03600	1	1:8.3	0.048	1.096	0.053	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.16	Right	Cheek	03600	4	1:2.076	0.100	1.107	0.111	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.19	Right	Tilt	03600	4	1:2.076	0.096	1.107	0.106	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.11	Left	Cheek	03600	4	1:2.076	0.116	1.107	0.128	A1
836.60	190	GSM 850	GPRS	29.0	28.56	-0.03	Left	Tilt	03600	4	1:2.076	0.065	1.107	0.072	
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 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	30.5	29.69	0.16	Right	Cheek	03600	1	1:8.3	0.015	1.205	0.018	
1880.00	661	GSM 1900	GSM	30.5	29.69	0.12	Right	Tilt	03600	1	1:8.3	0.018	1.205	0.022	
1880.00	661	GSM 1900	GSM	30.5	29.69	-0.18	Left	Cheek	03600	1	1:8.3	0.026	1.205	0.031	
1880.00	661	GSM 1900	GSM	30.5	29.69	-0.07	Left	Tilt	03600	1	1:8.3	0.023	1.205	0.028	
1880.00	661	GSM 1900	GPRS	28.0	27.68	0.16	Right	Cheek	03600	3	1:2.76	0.032	1.076	0.034	
1880.00	661	GSM 1900	GPRS	28.0	27.68	0.12	Right	Tilt	03600	3	1:2.76	0.026	1.076	0.028	
1880.00	661	GSM 1900	GPRS	28.0	27.68	0.21	Left	Cheek	03600	3	1:2.76	0.042	1.076	0.045	A2
1880.00	661	GSM 1900	GPRS	28.0	27.68	0.08	Left	Tilt	03600	3	1:2.76	0.034	1.076	0.037	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	25.29	0.10	Right	Cheek	8	03618	1:1	0.133	1.050	0.140	
836.60	4183	UMTS 850	RMC	25.5	25.29	0.04	Right	Tilt	8	03618	1:1	0.071	1.050	0.075	
836.60	4183	UMTS 850	RMC	25.5	25.29	0.03	Left	Cheek	8	03618	1:1	0.158	1.050	0.166	A3
836.60	4183	UMTS 850	RMC	25.5	25.29	-0.02	Left	Tilt	8	03618	1:1	0.072	1.050	0.076	
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 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.36	-0.12	Right	Cheek	03618	1:1	0.086	1.033	0.089	
1732.40	1412	UMTS 1750	RMC	25.5	25.36	-0.11	Right	Tilt	03618	1:1	0.058	1.033	0.060	
1732.40	1412	UMTS 1750	RMC	25.5	25.36	0.21	Left	Cheek	03618	1:1	0.093	1.033	0.096	A4
1732.40	1412	UMTS 1750	RMC	25.5	25.36	0.15	Left	Tilt	03618	1:1	0.077	1.033	0.080	
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 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.35	0.11	Right	Cheek	03592	1:1	0.085	1.035	0.088	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.14	Right	Tilt	03592	1:1	0.052	1.035	0.054	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.09	Left	Cheek	03592	1:1	0.097	1.035	0.100	A5
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.09	Left	Tilt	03592	1:1	0.065	1.035	0.067	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-6
Cell. CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	25.41	0.01	Right	Cheek	8	03618	1:1	0.136	1.021	0.139	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.41	0.04	Right	Tilt	8	03618	1:1	0.074	1.021	0.076	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.41	0.01	Left	Cheek	8	03618	1:1	0.142	1.021	0.145	A6
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.41	0.03	Left	Tilt	8	03618	1:1	0.072	1.021	0.074	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.49	-0.08	Right	Cheek	8	03618	1:1	0.120	1.002	0.120	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.49	-0.12	Right	Tilt	8	03618	1:1	0.063	1.002	0.063	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.49	0.18	Left	Cheek	8	03618	1:1	0.131	1.002	0.131	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.49	0.01	Left	Tilt	8	03618	1:1	0.056	1.002	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							

Table 11-7
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.23	0.04	Right	Cheek	03618	1:1	0.074	1.064	0.079	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	25.23	0.08	Right	Tilt	03618	1:1	0.064	1.064	0.068	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	25.23	-0.10	Left	Cheek	03618	1:1	0.083	1.064	0.088	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	25.23	0.11	Left	Tilt	03618	1:1	0.069	1.064	0.073	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.31	0.02	Right	Cheek	03618	1:1	0.077	1.045	0.080	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.31	-0.13	Right	Tilt	03618	1:1	0.071	1.045	0.074	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.31	0.13	Left	Cheek	03618	1:1	0.100	1.045	0.105	A7
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.31	0.07	Left	Tilt	03618	1:1	0.073	1.045	0.076	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-8
LTE Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.01	0	Right	Cheek	30	QPSK	1	99	03618	1:1	0.137	1.059	0.145	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	0.09	1	Right	Cheek	30	QPSK	50	0	03618	1:1	0.093	1.026	0.095	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.03	0	Right	Tilt	30	QPSK	1	99	03618	1:1	0.072	1.059	0.076	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.18	1	Right	Tilt	30	QPSK	50	0	03618	1:1	0.040	1.026	0.041	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.10	0	Left	Cheek	30	QPSK	1	99	03618	1:1	0.150	1.059	0.159	A8
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.01	1	Left	Cheek	30	QPSK	50	0	03618	1:1	0.094	1.026	0.096	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.15	0	Left	Tilt	30	QPSK	1	99	03618	1:1	0.064	1.059	0.068	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	0.08	1	Left	Tilt	30	QPSK	50	0	03618	1:1	0.036	1.026	0.037	
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 11-9
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	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	25.14	0.04	0	Right	Cheek	19	QPSK	1	0	03600	1:1	0.119	1.086	0.129	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	-0.12	1	Right	Cheek	19	QPSK	25	12	03600	1:1	0.095	1.074	0.102	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	0.17	0	Right	Tilt	19	QPSK	1	0	03600	1:1	0.067	1.086	0.073	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	-0.15	1	Right	Tilt	19	QPSK	25	12	03600	1:1	0.049	1.074	0.053	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	-0.07	0	Left	Cheek	19	QPSK	1	0	03600	1:1	0.127	1.086	0.138	A9
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	0.01	1	Left	Cheek	19	QPSK	25	12	03600	1:1	0.111	1.074	0.119	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	0.07	0	Left	Tilt	19	QPSK	1	0	03600	1:1	0.054	1.086	0.059	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	0.09	1	Left	Tilt	19	QPSK	25	12	03600	1:1	0.045	1.074	0.048	
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 11-10
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	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	25.5	25.18	-0.02	0	Right	Cheek	12	QPSK	1	0	03600	1:1	0.107	1.076	0.115	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.02	1	Right	Cheek	12	QPSK	25	25	03600	1:1	0.100	1.040	0.104	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.11	0	Right	Tilt	12	QPSK	1	0	03600	1:1	0.071	1.076	0.076	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.13	1	Right	Tilt	12	QPSK	25	25	03600	1:1	0.060	1.040	0.062	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	-0.01	0	Left	Cheek	12	QPSK	1	0	03600	1:1	0.141	1.076	0.152	A10
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.07	1	Left	Cheek	12	QPSK	25	25	03600	1:1	0.131	1.040	0.136	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.03	0	Left	Tilt	12	QPSK	1	0	03600	1:1	0.069	1.076	0.074	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.06	1	Left	Tilt	12	QPSK	25	25	03600	1:1	0.060	1.040	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-11
LTE Band 14 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	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	25.5	25.30	0.05	0	Right	Cheek	11	QPSK	1	0	03600	1:1	0.128	1.047	0.134	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	-0.06	1	Right	Cheek	11	QPSK	25	12	03600	1:1	0.087	1.059	0.092	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	0.01	0	Right	Tilt	11	QPSK	1	0	03600	1:1	0.074	1.047	0.077	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	0.13	1	Right	Tilt	11	QPSK	25	12	03600	1:1	0.053	1.059	0.056	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	0.08	0	Left	Cheek	11	QPSK	1	0	03600	1:1	0.165	1.047	0.173	A11
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	0.13	1	Left	Cheek	11	QPSK	25	12	03600	1:1	0.119	1.059	0.126	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	0.12	0	Left	Tilt	11	QPSK	1	0	03600	1:1	0.069	1.047	0.072	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	0.08	1	Left	Tilt	11	QPSK	25	12	03600	1:1	0.048	1.059	0.051	
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 11-12
LTE Band 5 (Cell) Head 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]	Side	Test Position	Ant State	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	25.5	25.00	-0.17	0	Right	Cheek	8	QPSK	1	0	03600	1:1	0.108	1.122	0.121	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	-0.01	1	Right	Cheek	8	QPSK	25	12	03600	1:1	0.084	1.117	0.094	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	0.05	0	Right	Tilt	8	QPSK	1	0	03600	1:1	0.072	1.122	0.081	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	-0.02	1	Tilt	8	QPSK	25	12	03600	1:1	0.064	1.117	0.071		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	0.16	0	Left	Cheek	8	QPSK	1	0	03600	1:1	0.118	1.122	0.132	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	0.07	1	Left	Cheek	8	QPSK	25	12	03600	1:1	0.103	1.117	0.115	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	0.05	0	Left	Cheek	8	QPSK	1	0	03600	1:1	0.128	1.000	0.128	A12
	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5									1	24						
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	-0.07	0	Left	Tilt	8	QPSK	1	0	03600	1:1	0.075	1.122	0.084	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	0.16	1	Left	Tilt	8	QPSK	25	12	03600	1:1	0.057	1.117	0.064	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Head											
Spatial Peak											1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population											averaged over 1 gram											

Table 11-13
LTE Band 66 (AWS) Head SAR – Ant 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	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 #
																	(W/kg)		(W/kg)	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	-0.03	0	Right	Cheek	Ant 2	QPSK	1	0	03618	1:1	0.056	1.069	0.060	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.12	1	Right	Cheek	Ant 2	QPSK	50	25	03618	1:1	0.053	1.047	0.055	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.20	0	Right	Tilt	Ant 2	QPSK	1	0	03618	1:1	0.039	1.069	0.042	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.19	1	Right	Tilt	Ant 2	QPSK	50	25	03618	1:1	0.026	1.047	0.027	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.19	0	Left	Cheek	Ant 2	QPSK	1	0	03618	1:1	0.080	1.069	0.086	A13
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	-0.16	1	Left	Cheek	Ant 2	QPSK	50	25	03618	1:1	0.051	1.047	0.053	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.21	0	Left	Tilt	Ant 2	QPSK	1	0	03618	1:1	0.033	1.069	0.035	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.14	1	Left	Tilt	Ant 2	QPSK	50	25	03618	1:1	0.031	1.047	0.032	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-14
LTE Band 66 (AWS) Head SAR – Ant 3

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	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 #
																	(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	-0.02	0	Right	Cheek	Ant 3	QPSK	1	50	03600	1:1	0.044	1.109	0.049	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.01	0	Right	Cheek	Ant 3	QPSK	50	25	03600	1:1	0.047	1.091	0.051	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	0.13	0	Right	Tilt	Ant 3	QPSK	1	50	03600	1:1	0.010	1.109	0.011	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.18	0	Right	Tilt	Ant 3	QPSK	50	25	03600	1:1	0.010	1.091	0.011	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	0.13	0	Left	Cheek	Ant 3	QPSK	1	50	03600	1:1	0.023	1.109	0.026	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.19	0	Left	Cheek	Ant 3	QPSK	50	25	03600	1:1	0.024	1.091	0.026	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	0.13	0	Left	Tilt	Ant 3	QPSK	1	50	03600	1:1	0.010	1.109	0.011	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.12	0	Left	Tilt	Ant 3	QPSK	50	25	03600	1:1	0.011	1.091	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head										
Spatial Peak										1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 1 gram										

Table 11-15
LTE Band 2 (PCS) Head SAR – Ant 2

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	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)		
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	-0.13	0	Right	Cheek	Ant 2	QPSK	1	99	03584	1:1	0.115	1.016	0.117	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	0.15	1	Right	Cheek	Ant 2	QPSK	50	50	03584	1:1	0.101	1.005	0.102	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	0.13	0	Right	Tilt	Ant 2	QPSK	1	99	03584	1:1	0.083	1.016	0.084	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	0.20	1	Right	Tilt	Ant 2	QPSK	50	50	03584	1:1	0.061	1.005	0.061	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	-0.12	0	Left	Cheek	Ant 2	QPSK	1	99	03584	1:1	0.118	1.016	0.120	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	-0.14	1	Left	Cheek	Ant 2	QPSK	50	50	03584	1:1	0.087	1.005	0.087	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	0.07	0	Left	Tilt	Ant 2	QPSK	1	99	03584	1:1	0.124	1.016	0.126	A14
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	0.09	1	Left	Tilt	Ant 2	QPSK	50	50	03584	1:1	0.087	1.005	0.087	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head										
Spatial Peak										1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 1 gram										

Table 11-16
LTE Band 2 (PCS) Head SAR – Ant 3

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	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 #
																	(W/kg)		(W/kg)	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	0.17	0	Right	Cheek	Ant 3	QPSK	1	50	03600	1:1	0.013	1.050	0.014	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	0.19	0	Right	Cheek	Ant 3	QPSK	50	25	03600	1:1	0.013	1.026	0.013	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	0.17	0	Right	Tilt	Ant 3	QPSK	1	50	03600	1:1	0.012	1.050	0.013	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	0.14	0	Right	Tilt	Ant 3	QPSK	50	25	03600	1:1	0.014	1.026	0.014	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	0.07	0	Left	Cheek	Ant 3	QPSK	1	50	03600	1:1	0.031	1.050	0.033	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	0.19	0	Left	Cheek	Ant 3	QPSK	50	25	03600	1:1	0.030	1.026	0.031	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	0.18	0	Left	Tilt	Ant 3	QPSK	1	50	03600	1:1	0.017	1.050	0.018	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	0.15	0	Left	Tilt	Ant 3	QPSK	50	25	03600	1:1	0.017	1.026	0.017	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head										
Spatial Peak										1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 1 gram										

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Table 11-17
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	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)		
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	-0.15	0	Right	Cheek	QPSK	1	0	03618	1:1	0.095	1.047	0.099	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.17	1	Right	Cheek	QPSK	50	25	03618	1:1	0.084	1.016	0.085	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	0.20	0	Right	Tilt	QPSK	1	0	03618	1:1	0.056	1.047	0.059	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.07	1	Right	Tilt	QPSK	50	25	03618	1:1	0.048	1.016	0.049	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	0.06	0	Left	Cheek	QPSK	1	0	03618	1:1	0.099	1.047	0.104	A15
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.04	1	Left	Cheek	QPSK	50	25	03618	1:1	0.080	1.016	0.081	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	0.11	0	Left	Tilt	QPSK	1	0	03618	1:1	0.096	1.047	0.101	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.09	1	Left	Tilt	QPSK	50	25	03618	1:1	0.068	1.016	0.069	
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 11-18
LTE Band 30 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	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)		
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.11	0	Right	Cheek	QPSK	1	0	03584	1:1	0.031	1.143	0.035	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	0.17	1	Right	Cheek	QPSK	25	25	03584	1:1	0.019	1.197	0.023	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.16	0	Right	Tilt	QPSK	1	0	03584	1:1	0.025	1.143	0.029	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	0.14	1	Right	Tilt	QPSK	25	25	03584	1:1	0.016	1.197	0.019	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.12	0	Left	Cheek	QPSK	1	0	03584	1:1	0.042	1.143	0.048	A16
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	0.11	1	Left	Cheek	QPSK	25	25	03584	1:1	0.036	1.197	0.043	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.13	0	Left	Tilt	QPSK	1	0	03584	1:1	0.023	1.143	0.026	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	0.15	1	Left	Tilt	QPSK	25	25	03584	1:1	0.019	1.197	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									

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Table 11-19
LTE Band 7 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.18	0	Right	Cheek	QPSK	1	0	03592	1:1	0.051	1.059	0.054	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.15	1	Right	Cheek	QPSK	50	0	03592	1:1	0.044	1.054	0.046	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.12	0	Right	Tilt	QPSK	1	0	03592	1:1	0.051	1.059	0.054	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.12	1	Right	Tilt	QPSK	50	0	03592	1:1	0.046	1.054	0.048	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.05	0	Left	Cheek	QPSK	1	0	03592	1:1	0.086	1.059	0.091	A17
2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.13	1	Left	Cheek	QPSK	50	0	03592	1:1	0.064	1.054	0.067	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.15	0	Left	Tilt	QPSK	1	0	03592	1:1	0.040	1.059	0.042	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.17	1	Left	Tilt	QPSK	50	0	03592	1:1	0.035	1.054	0.037	
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 11-20
LTE Band 41 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)			
2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.15	0	Right	Cheek	QPSK	1	50	03600	1:1.58	0.024	1.072	0.026	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.12	1	Right	Cheek	QPSK	50	50	03600	1:1.58	0.016	1.042	0.017	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.10	0	Right	Tilt	QPSK	1	50	03600	1:1.58	0.013	1.072	0.014	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.15	1	Right	Tilt	QPSK	50	50	03600	1:1.58	0.005	1.042	0.005	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.19	0	Left	Cheek	QPSK	1	50	03600	1:1.58	0.038	1.072	0.041	A18
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.17	1	Left	Cheek	QPSK	50	50	03600	1:1.58	0.026	1.042	0.027	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.06	0	Left	Tilt	QPSK	1	50	03600	1:1.58	0.015	1.072	0.016	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.15	1	Left	Tilt	QPSK	50	50	03600	1:1.58	0.012	1.042	0.013	
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 11-21
NR Band n71 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.01	0	Right	Cheek	DFT-S-OFDM QPSK	1	53	03642	1:1	0.024	1.148	0.028	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.13	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	03642	1:1	0.018	1.239	0.022	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.12	0	Right	Tilt	DFT-S-OFDM QPSK	1	53	03642	1:1	0.011	1.148	0.013	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.19	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	03642	1:1	0.008	1.239	0.010	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.13	0	Left	Cheek	DFT-S-OFDM QPSK	1	53	03642	1:1	0.030	1.148	0.034	A19
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.20	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	03642	1:1	0.023	1.239	0.028	
680.50	136100	Mid	NR Band n71	20	23.3	22.63	0.18	1.5	Left	Cheek	CP-OFDM QPSK	1	1	03642	1:1	0.010	1.167	0.012	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.06	0	Left	Tilt	DFT-S-OFDM QPSK	1	53	03642	1:1	0.011	1.148	0.013	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.18	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	03642	1:1	0.008	1.239	0.010	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-22
NR Band n5 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device 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	24.8	24.51	0.01	0	Right	Cheek	8	DFT-S-OFDM QPSK	1	1	03634	1:1	0.119	1.069	0.127	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.08	0	Right	Cheek	8	DFT-S-OFDM QPSK	50	28	03634	1:1	0.114	1.114	0.127	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.14	0	Right	Tilt	8	DFT-S-OFDM QPSK	1	1	03634	1:1	0.070	1.069	0.075	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.05	0	Right	Tilt	8	DFT-S-OFDM QPSK	50	28	03634	1:1	0.065	1.114	0.072	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	0.02	0	Left	Cheek	8	DFT-S-OFDM QPSK	1	1	03634	1:1	0.150	1.069	0.160	A20
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.11	0	Left	Cheek	8	DFT-S-OFDM QPSK	50	28	03634	1:1	0.131	1.114	0.146	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.3	22.81	0.02	1.5	Left	Cheek	8	CP-OFDM QPSK	1	1	03634	1:1	0.107	1.119	0.120	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.11	0	Left	Tilt	8	DFT-S-OFDM QPSK	1	1	03634	1:1	0.073	1.069	0.078	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.15	0	Left	Tilt	8	DFT-S-OFDM QPSK	50	28	03634	1:1	0.062	1.114	0.069	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head										
Spatial Peak										1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 1 gram										

Table 11-23
NR Band n66 (AWS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
MHz	Ch.																		
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	0.13	0	Right	Cheek	DFT-S-OFDM QPSK	1	104	03634	1:1	0.201	1.019	0.205	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.05	0	Right	Cheek	DFT-S-OFDM QPSK	50	0	03634	1:1	0.218	1.038	0.226	A21
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.71	0.12	0	Right	Cheek	CP-OFDM QPSK	1	1	03634	1:1	0.135	1.069	0.144	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.04	0	Right	Tilt	DFT-S-OFDM QPSK	1	104	03634	1:1	0.058	1.019	0.059	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.19	0	Right	Tilt	DFT-S-OFDM QPSK	50	0	03634	1:1	0.054	1.038	0.056	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.09	0	Left	Cheek	DFT-S-OFDM QPSK	1	104	03634	1:1	0.139	1.019	0.142	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.04	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	03634	1:1	0.133	1.038	0.138	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.15	0	Left	Tilt	DFT-S-OFDM QPSK	1	104	03634	1:1	0.066	1.019	0.067	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.21	0	Left	Tilt	DFT-S-OFDM QPSK	50	0	03634	1:1	0.063	1.038	0.065	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head									
Spatial Peak										1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population										averaged over 1 gram									

Table 11-24
NR Band n25 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
MHz	Ch.																		
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.03	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	03642	1:1	0.217	1.012	0.220	A22
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.16	0	Right	Cheek	DFT-S-OFDM QPSK	50	0	03642	1:1	0.214	1.000	0.214	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.0	23.57	-0.08	0.5	Right	Cheek	CP-OFDM QPSK	1	1	03642	1:1	0.174	1.104	0.192	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.02	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	03642	1:1	0.075	1.012	0.076	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.00	0	Right	Tilt	DFT-S-OFDM QPSK	50	0	03642	1:1	0.078	1.000	0.078	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.05	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	03642	1:1	0.143	1.012	0.145	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.19	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	03642	1:1	0.134	1.000	0.134	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	-0.02	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	03642	1:1	0.102	1.012	0.103	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	-0.05	0	Left	Tilt	DFT-S-OFDM QPSK	50	0	03642	1:1	0.101	1.000	0.101	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head									
Spatial Peak										1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population										averaged over 1 gram									

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Table 11-25
NR Band n41 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	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)		
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.19	0	Right	Cheek	DFT-S-OFDM QPSK	1	137	03642	1:4	0.024	1.156	0.028	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	0.12	0	Right	Cheek	DFT-S-OFDM QPSK	135	138	03642	1:4	0.027	1.161	0.031	A23
2592.99	518598	Mid	NR Band n41	100	23.5	23.17	0.13	0.5	Right	Cheek	CP-OFDM QPSK	1	1	03642	1:4	0.013	1.079	0.014	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.04	0	Right	Tilt	DFT-S-OFDM QPSK	1	137	03642	1:4	0.003	1.156	0.003	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	0.18	0	Right	Tilt	DFT-S-OFDM QPSK	135	138	03642	1:4	0.002	1.161	0.002	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.16	0	Left	Cheek	DFT-S-OFDM QPSK	1	137	03642	1:4	0.015	1.156	0.017	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	-0.13	0	Left	Cheek	DFT-S-OFDM QPSK	135	138	03642	1:4	0.009	1.161	0.010	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.17	0	Left	Tilt	DFT-S-OFDM QPSK	1	137	03642	1:4	0.005	1.156	0.006	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	0.01	0	Left	Tilt	DFT-S-OFDM QPSK	135	138	03642	1:4	0.004	1.161	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									

Table 11-26
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.	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	16.5	15.78	0.16	Right	Cheek	1	03519	1	99.3	0.498	0.334	1.180	1.007	0.397	
2462	11	802.11b	DSSS	22	16.5	15.78	0.18	Right	Tilt	1	03519	1	99.3	0.464	0.296	1.180	1.007	0.352	
2462	11	802.11b	DSSS	22	16.5	15.78	-0.18	Left	Cheek	1	03519	1	99.3	0.151	-	1.180	1.007	-	
2462	11	802.11b	DSSS	22	16.5	15.78	0.11	Left	Tilt	1	03519	1	99.3	0.192	-	1.180	1.007	-	
2412	1	802.11b	DSSS	22	16.5	15.63	0.19	Right	Cheek	2	03519	1	99.3	0.744	0.612	1.222	1.007	0.753	
2437	6	802.11b	DSSS	22	16.5	16.12	0.19	Right	Cheek	2	03519	1	99.3	1.089	0.865	1.091	1.007	0.950	
2462	11	802.11b	DSSS	22	16.5	15.61	0.06	Right	Cheek	2	03519	1	99.3	0.917	0.694	1.227	1.007	0.857	
2412	1	802.11b	DSSS	22	16.5	15.63	0.17	Right	Tilt	2	03519	1	99.3	0.825	0.582	1.222	1.007	0.716	
2437	6	802.11b	DSSS	22	16.5	16.12	0.14	Right	Tilt	2	03519	1	99.3	1.161	0.792	1.091	1.007	0.870	
2437	6	802.11b	DSSS	22	16.5	16.12	-0.13	Left	Cheek	2	03519	1	99.3	0.727	-	1.091	1.007	-	
2437	6	802.11b	DSSS	22	16.5	16.12	-0.15	Left	Tilt	2	03519	1	99.3	0.745	0.515	1.091	1.007	0.566	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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**Table 11-27
DTS MIMO Head SAR**

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.	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)		
2422	3	802.11n	OFDM	20	16.5	15.77	16.5	16.00	0.06	Right	Cheek	MIMO	03519	13	98.2	1.068	0.789	1.183	1.018	0.950	
2437	6	802.11n	OFDM	20	16.5	15.98	16.5	16.04	-0.04	Right	Cheek	MIMO	03519	13	98.2	1.271	0.851	1.127	1.018	0.976	
2452	9	802.11n	OFDM	20	16.5	16.17	16.5	16.13	0.15	Right	Cheek	MIMO	03519	13	98.2	1.446	0.845	1.089	1.018	0.937	
2422	3	802.11n	OFDM	20	16.5	15.77	16.5	16.00	0.02	Right	Tilt	MIMO	03519	13	98.2	1.073	0.749	1.183	1.018	0.902	
2437	6	802.11n	OFDM	20	16.5	15.98	16.5	16.04	-0.17	Right	Tilt	MIMO	03519	13	98.2	1.322	0.898	1.127	1.018	1.030	
2452	9	802.11n	OFDM	20	16.5	16.17	16.5	16.13	0.19	Right	Tilt	MIMO	03519	13	98.2	1.534	0.930	1.089	1.018	1.031	A24
2452	9	802.11n	OFDM	20	16.5	16.17	16.5	16.13	-0.12	Left	Cheek	MIMO	03519	13	98.2	0.822	0.458	1.089	1.018	0.508	
2452	9	802.11n	OFDM	20	16.5	16.17	16.5	16.13	-0.12	Left	Tilt	MIMO	03519	13	98.2	0.819	-	1.089	1.018	-	
2452	9	802.11n	OFDM	20	16.5	16.17	16.5	16.13	-0.17	Right	Tilt	MIMO	03519	13	98.2	1.453	0.922	1.089	1.018	1.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Notes:

- 1) Blue entry represents variability measurement.
- 2) To achieve the 19.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 16.5 dBm.

**Table 11-28
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.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan		Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.													W/kg	(W/kg)				
5270	54	802.11n	OFDM	40	16.0	15.87	0.15	Right	Cheek	1	03519	13.5	97.4	0.444	0.210	1.030	1.027	0.222	
5270	54	802.11n	OFDM	40	16.0	15.87	0.18	Right	Tilt	1	03519	13.5	97.4	0.344	-	1.030	1.027	-	
5270	54	802.11n	OFDM	40	16.0	15.87	-0.16	Left	Cheek	1	03519	13.5	97.4	0.174	-	1.030	1.027	-	
5270	54	802.11n	OFDM	40	16.0	15.87	0.17	Left	Tilt	1	03519	13.5	97.4	0.194	-	1.030	1.027	-	
5270	54	802.11n	OFDM	40	16.0	15.79	0.10	Right	Cheek	2	03519	13.5	97.3	0.484	0.218	1.050	1.028	0.235	A25
5270	54	802.11n	OFDM	40	16.0	15.79	0.11	Right	Tilt	2	03519	13.5	97.3	0.290	-	1.050	1.028	-	
5270	54	802.11n	OFDM	40	16.0	15.79	0.12	Left	Cheek	2	03519	13.5	97.3	0.117	-	1.050	1.028	-	
5270	54	802.11n	OFDM	40	16.0	15.79	0.13	Left	Tilt	2	03519	13.5	97.3	0.105	-	1.050	1.028	-	
5710	142	802.11n	OFDM	40	16.0	15.90	0.15	Right	Cheek	1	03519	13.5	97.4	0.135	0.060	1.023	1.027	0.063	
5710	142	802.11n	OFDM	40	16.0	15.90	0.17	Right	Tilt	1	03519	13.5	97.4	0.134	-	1.023	1.027	-	
5710	142	802.11n	OFDM	40	16.0	15.90	0.15	Left	Cheek	1	03519	13.5	97.4	0.073	-	1.023	1.027	-	
5710	142	802.11n	OFDM	40	16.0	15.90	0.10	Left	Tilt	1	03519	13.5	97.4	0.081	-	1.023	1.027	-	
5710	142	802.11n	OFDM	40	16.0	15.89	0.13	Right	Cheek	2	03519	13.5	97.3	0.401	0.169	1.026	1.028	0.178	
5710	142	802.11n	OFDM	40	16.0	15.89	0.16	Right	Tilt	2	03519	13.5	97.3	0.308	-	1.026	1.028	-	
5710	142	802.11n	OFDM	40	16.0	15.89	0.11	Left	Cheek	2	03519	13.5	97.3	0.248	-	1.026	1.028	-	
5710	142	802.11n	OFDM	40	16.0	15.89	0.14	Left	Tilt	2	03519	13.5	97.3	0.185	-	1.026	1.028	-	
5795	159	802.11n	OFDM	40	16.0	15.89	0.13	Right	Cheek	1	03519	13.5	97.4	0.094	0.036	1.026	1.027	0.038	
5795	159	802.11n	OFDM	40	16.0	15.89	0.15	Right	Tilt	1	03519	13.5	97.4	0.090	-	1.026	1.027	-	
5795	159	802.11n	OFDM	40	16.0	15.89	0.10	Left	Cheek	1	03519	13.5	97.4	0.048	-	1.026	1.027	-	
5795	159	802.11n	OFDM	40	16.0	15.89	0.19	Left	Tilt	1	03519	13.5	97.4	0.054	-	1.026	1.027	-	
5795	159	802.11n	OFDM	40	16.0	15.96	0.12	Right	Cheek	2	03519	13.5	97.3	0.396	0.139	1.009	1.028	0.144	
5795	159	802.11n	OFDM	40	16.0	15.96	0.18	Right	Tilt	2	03519	13.5	97.3	0.263	-	1.009	1.028	-	
5795	159	802.11n	OFDM	40	16.0	15.96	-0.02	Left	Cheek	2	03519	13.5	97.3	0.243	-	1.009	1.028	-	
5795	159	802.11n	OFDM	40	16.0	15.96	0.14	Left	Tilt	2	03519	13.5	97.3	0.238	-	1.009	1.028	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-29
DSS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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)	
2402.00	0	Bluetooth	FHSS	11.0	10.20	0.06	Right	Cheek	03519	1	77.3	0.046	1.202	1.294	0.072	A26
2402.00	0	Bluetooth	FHSS	11.0	10.20	0.11	Right	Tilt	03519	1	77.3	0.035	1.202	1.294	0.054	
2402.00	0	Bluetooth	FHSS	11.0	10.20	0.11	Left	Cheek	03519	1	77.3	0.012	1.202	1.294	0.019	
2402.00	0	Bluetooth	FHSS	11.0	10.20	0.03	Left	Tilt	03519	1	77.3	0.018	1.202	1.294	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								

11.2 Standalone Body-Worn SAR Data

Table 11-30
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	33.10	-0.08	10 mm	N/A	03592	1	1:8.3	back	0.413	1.096	0.453	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.12	10 mm	N/A	03592	4	1:2.076	back	0.499	1.107	0.552	A27
1880.00	661	GSM 1900	GSM	30.5	29.69	0.00	10 mm	N/A	03600	1	1:8.3	back	0.244	1.205	0.294	
1880.00	661	GSM 1900	GPRS	28.0	27.68	-0.07	10 mm	N/A	03584	3	1:2.76	back	0.334	1.076	0.359	A28
826.40	4132	UMTS 850	RMC	25.5	25.25	-0.01	10 mm	8	03600	N/A	1:1	back	0.622	1.059	0.659	
836.60	4183	UMTS 850	RMC	25.5	25.29	0.02	10 mm	8	03600	N/A	1:1	back	0.638	1.050	0.670	A30
846.60	4233	UMTS 850	RMC	25.5	25.27	-0.02	10 mm	8	03600	N/A	1:1	back	0.635	1.054	0.669	
1712.40	1312	UMTS 1750	RMC	25.5	25.36	-0.04	10 mm	N/A	03584	N/A	1:1	back	0.778	1.033	0.804	
1732.40	1412	UMTS 1750	RMC	25.5	25.36	-0.02	10 mm	N/A	03584	N/A	1:1	back	0.960	1.033	0.992	
1752.60	1513	UMTS 1750	RMC	25.5	25.35	-0.06	10 mm	N/A	03584	N/A	1:1	back	0.981	1.035	1.015	A31
1852.40	9262	UMTS 1900	RMC	25.5	25.29	0.13	10 mm	N/A	03600	N/A	1:1	back	0.929	1.050	0.975	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.11	10 mm	N/A	03600	N/A	1:1	back	0.930	1.035	0.963	
1907.60	9538	UMTS 1900	RMC	25.5	25.27	0.19	10 mm	N/A	03600	N/A	1:1	back	0.942	1.054	0.993	A33
824.70	1013	Cell. CDMA	TDSO / SO32	25.5	25.36	-0.04	10 mm	8	03618	N/A	1:1	back	0.575	1.033	0.594	
836.52	384	Cell. CDMA	TDSO / SO32	25.5	25.40	-0.02	10 mm	8	03618	N/A	1:1	back	0.600	1.023	0.614	A35
848.31	777	Cell. CDMA	TDSO / SO32	25.5	24.80	-0.02	10 mm	8	03618	N/A	1:1	back	0.500	1.175	0.588	
1851.25	25	PCS CDMA	TDSO / SO32	25.5	25.18	0.08	10 mm	N/A	03618	N/A	1:1	back	0.813	1.076	0.875	A37
1880.00	600	PCS CDMA	TDSO / SO32	25.5	25.24	0.12	10 mm	N/A	03618	N/A	1:1	back	0.812	1.062	0.862	
1908.75	1175	PCS CDMA	TDSO / SO32	25.5	25.22	0.16	10 mm	N/A	03618	N/A	1:1	back	0.754	1.067	0.805	
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 11-31
LTE 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]	Ant State	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)		
1 CC Uplink	N/A	680.50	133297	Mid	LTE Band 71	20	25.5	25.25	-0.02	0	27	Ant 1	03618	QPSK	1	99	10 mm	back	1:1	0.364	1.059	0.385	A39
1 CC Uplink	N/A	680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.01	1	27	Ant 1	03618	QPSK	50	0	10 mm	back	1:1	0.256	1.026	0.263	
1 CC Uplink	N/A	707.50	23095	Mid	LTE Band 12	10	25.5	25.14	-0.01	0	19	Ant 1	03600	QPSK	1	0	10 mm	back	1:1	0.325	1.086	0.353	A40
1 CC Uplink	N/A	707.50	23095	Mid	LTE Band 12	10	24.5	24.19	0.01	1	19	Ant 1	03600	QPSK	25	12	10 mm	back	1:1	0.277	1.074	0.297	
1 CC Uplink	N/A	782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.04	0	15	Ant 1	03600	QPSK	1	0	10 mm	back	1:1	0.386	1.076	0.415	A41
1 CC Uplink	N/A	782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.04	1	15	Ant 1	03600	QPSK	25	25	10 mm	back	1:1	0.336	1.040	0.349	
1 CC Uplink	N/A	793.00	23330	Mid	LTE Band 14	10	25.5	25.30	-0.04	0	11	Ant 1	03618	QPSK	1	0	10 mm	back	1:1	0.470	1.047	0.492	A42
1 CC Uplink	N/A	793.00	23330	Mid	LTE Band 14	10	24.5	24.25	-0.02	1	11	Ant 1	03618	QPSK	25	12	10 mm	back	1:1	0.375	1.059	0.397	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	-0.04	0	8	Ant 1	03600	QPSK	1	0	10 mm	back	1:1	0.620	1.122	0.696	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	-0.01	1	8	Ant 1	03600	QPSK	25	12	10 mm	back	1:1	0.501	1.117	0.560	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	-0.09	0	8	Ant 1	03600	QPSK	1	0	10 mm	back	1:1	0.689	1.000	0.689	A43
	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5										24	10 mm						
1 CC Uplink	N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	25.07	-0.04	0	N/A	Ant 2	03618	QPSK	1	50	10 mm	back	1:1	0.625	1.104	0.690	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.5	24.99	0.17	0	N/A	Ant 2	03618	QPSK	1	50	10 mm	back	1:1	0.676	1.125	0.761	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.03	0	N/A	Ant 2	03618	QPSK	1	0	10 mm	back	1:1	0.806	1.069	0.862	A44
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.00	1	N/A	Ant 2	03618	QPSK	50	25	10 mm	back	1:1	0.644	1.047	0.674	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.5	24.26	0.00	1	N/A	Ant 2	03618	QPSK	100	0	10 mm	back	1:1	0.630	1.057	0.666	
1 CC Uplink	N/A	1860.00	18700	Low	LTE Band 2 (PCS)	20	25.5	25.21	-0.05	0	N/A	Ant 2	03618	QPSK	1	99	10 mm	back	1:1	0.788	1.069	0.842	
1 CC Uplink	N/A	1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	-0.01	0	N/A	Ant 2	03618	QPSK	1	99	10 mm	back	1:1	0.791	1.016	0.804	
1 CC Uplink	N/A	1900.00	19100	High	LTE Band 2 (PCS)	20	25.5	25.37	0.00	0	N/A	Ant 2	03618	QPSK	1	50	10 mm	back	1:1	0.816	1.030	0.840	A46
1 CC Uplink	N/A	1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	-0.03	1	N/A	Ant 2	03618	QPSK	50	50	10 mm	back	1:1	0.655	1.005	0.658	
1 CC Uplink	N/A	1860.00	18700	Low	LTE Band 2 (PCS)	20	24.5	24.40	0.00	1	N/A	Ant 2	03618	QPSK	100	0	10 mm	back	1:1	0.648	1.023	0.663	
1 CC Uplink	N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	-0.05	0	N/A	Ant 2	03600	QPSK	1	0	10 mm	back	1:1	0.961	1.047	1.006	
1 CC Uplink	N/A	1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.5	25.29	0.15	0	N/A	Ant 2	03600	QPSK	1	0	10 mm	back	1:1	0.969	1.050	1.017	A48
1 CC Uplink	N/A	1905.00	26590	High	LTE Band 25 (PCS)	20	25.5	25.25	0.00	0	N/A	Ant 2	03600	QPSK	1	0	10 mm	back	1:1	0.904	1.059	0.957	
1 CC Uplink	N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.01	1	N/A	Ant 2	03600	QPSK	50	25	10 mm	back	1:1	0.767	1.016	0.779	
1 CC Uplink	N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.03	1	N/A	Ant 2	03600	QPSK	100	0	10 mm	back	1:1	0.691	1.047	0.723	
1 CC Uplink	N/A	2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	-0.05	0	N/A	Ant 2	03584	QPSK	1	0	10 mm	back	1:1	0.278	1.143	0.318	A50
1 CC Uplink	N/A	2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	-0.04	1	N/A	Ant 2	03584	QPSK	25	25	10 mm	back	1:1	0.208	1.197	0.249	
1 CC Uplink	N/A	2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.03	0	N/A	Ant 2	03584	QPSK	1	0	10 mm	back	1:1	0.397	1.059	0.420	A52
1 CC Uplink	N/A	2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.04	1	N/A	Ant 2	03584	QPSK	50	0	10 mm	back	1:1	0.322	1.054	0.339	
1 CC Uplink	N/A	2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.15	0	N/A	Ant 2	03618	QPSK	1	50	10 mm	back	1:1.58	0.252	1.072	0.270	A54
1 CC Uplink	N/A	2680.00	41490	High	LTE Band 41	20	24.5	24.32	-0.04	1	N/A	Ant 2	03618	QPSK	50	50	10 mm	back	1:1.58	0.198	1.042	0.206	
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 11-32
LTE Body-Worn SAR – Ant 3

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	17.7	17.25	-0.10	0	Ant 3	03618	QPSK	1	50	10 mm	back	1:1	0.087	1.109	0.096	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.04	0	Ant 3	03618	QPSK	50	25	10 mm	back	1:1	0.089	1.091	0.097	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	-0.13	0	Ant 3	03600	QPSK	1	50	10 mm	back	1:1	0.115	1.050	0.121	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	-0.17	0	Ant 3	03600	QPSK	50	25	10 mm	back	1:1	0.118	1.026	0.121	
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 11-33
NR Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
680.50	136100	Mid	NR Band n71	20	24.8	24.20	-0.16	0	N/A	03634	DFT-S-OFDM QPSK	1	53	10 mm	back	1.1	0.196	1.148	0.225	A56
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.13	0	N/A	03634	DFT-S-OFDM QPSK	50	28	10 mm	back	1.1	0.188	1.239	0.233	
680.50	136100	Mid	NR Band n71	20	23.3	22.63	0.02	1.5	N/A	03634	CP-OFDM QPSK	1	1	10 mm	back	1.1	0.122	1.167	0.142	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.04	0	8	03634	DFT-S-OFDM QPSK	1	1	10 mm	back	1.1	0.557	1.069	0.595	A57
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.01	0	8	03634	DFT-S-OFDM QPSK	50	28	10 mm	back	1.1	0.521	1.114	0.580	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.3	22.81	0.03	1.5	8	03634	CP-OFDM QPSK	1	1	10 mm	back	1.1	0.372	1.119	0.416	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.04	0	N/A	03642	DFT-S-OFDM QPSK	1	104	10 mm	back	1.1	0.504	1.019	0.514	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	-0.10	0	N/A	03642	DFT-S-OFDM QPSK	50	0	10 mm	back	1.1	0.553	1.038	0.574	A58
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.71	0.06	0	N/A	03642	CP-OFDM QPSK	1	1	10 mm	back	1.1	0.326	1.069	0.348	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	-0.16	0	N/A	03634	DFT-S-OFDM QPSK	1	1	10 mm	back	1.1	0.613	1.012	0.620	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	-0.14	0	N/A	03634	DFT-S-OFDM QPSK	50	0	10 mm	back	1.1	0.621	1.000	0.621	A60
1860.00	372000	Low	NR Band n25 (PCS)	20	24.0	23.57	0.04	0.5	N/A	03634	CP-OFDM QPSK	1	1	10 mm	back	1.1	0.509	1.104	0.562	
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.17	-0.14	0	N/A	03634	DFT-S-OFDM QPSK	50	0	10 mm	back	1.1	0.583	1.079	0.629	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.25	-0.16	0	N/A	03634	DFT-S-OFDM QPSK	50	56	10 mm	back	1.1	0.490	1.059	0.519	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	-0.13	0	N/A	03642	DFT-S-OFDM QPSK	1	137	10 mm	back	1.4	0.157	1.156	0.181	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	-0.13	0	N/A	03642	DFT-S-OFDM QPSK	135	138	10 mm	back	1.4	0.206	1.161	0.239	A62
2592.99	518598	Mid	NR Band n41	100	23.5	23.17	-0.16	0.5	N/A	03642	CP-OFDM QPSK	1	1	10 mm	back	1.4	0.037	1.079	0.040	
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 11-34
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)	
2412	1	802.11b	DSSS	22	20.5	20.14	0.17	10 mm	1	03527	1	back	99.3	0.237	0.147	1.086	1.007	0.161	
2462	11	802.11b	DSSS	22	20.5	20.10	-0.17	10 mm	2	03527	1	back	99.3	0.277	0.184	1.096	1.007	0.203	A63
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 11-35
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)	
5280	56	802.11a	OFDM	20	19.0	18.87	-0.04	10 mm	1	03527	6	back	98.3	0.710	0.375	1.030	1.017	0.393	A65
5280	56	802.11a	OFDM	20	19.0	18.85	0.18	10 mm	2	03527	6	back	96.4	0.236	0.114	1.035	1.037	0.122	
5720	144	802.11a	OFDM	20	17.0	16.96	0.14	10 mm	1	03527	6	back	98.3	0.258	0.097	1.009	1.017	0.100	
5600	120	802.11a	OFDM	20	17.0	16.78	0.12	10 mm	2	03527	6	back	96.4	0.139	0.063	1.052	1.037	0.069	
5785	157	802.11a	OFDM	20	19.0	18.86	0.16	10 mm	1	03527	6	back	98.3	0.364	0.164	1.033	1.017	0.172	
5785	157	802.11a	OFDM	20	19.0	18.93	-0.16	10 mm	2	03527	6	back	96.4	0.122	0.053	1.016	1.037	0.056	
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 11-36
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) [W/kg]	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) [W/kg]	Plot #
MHz	Ch.															
2402	0	Bluetooth	FHSS	11.0	10.20	0.19	10 mm	03527	1	back	77.3	0.010	1.202	1.294	0.016	A67
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 11-37
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.12	10 mm	N/A	03592	4	1:2.076	back	0.499	1.107	0.552	A27
836.60	190	GSM 850	GPRS	29.0	28.56	-0.09	10 mm	N/A	03592	4	1:2.076	front	0.359	1.107	0.397	
836.60	190	GSM 850	GPRS	29.0	28.56	0.00	10 mm	N/A	03592	4	1:2.076	bottom	0.233	1.107	0.258	
836.60	190	GSM 850	GPRS	29.0	28.56	-0.06	10 mm	N/A	03592	4	1:2.076	right	0.199	1.107	0.220	
1880.00	661	GSM 1900	GPRS	28.0	27.68	-0.07	10 mm	N/A	03584	3	1:2.76	back	0.334	1.076	0.359	
1880.00	661	GSM 1900	GPRS	28.0	27.68	-0.03	10 mm	N/A	03584	3	1:2.76	front	0.239	1.076	0.257	
1850.20	512	GSM 1900	GPRS	28.0	27.55	0.07	10 mm	N/A	03584	3	1:2.76	bottom	0.521	1.109	0.578	
1880.00	661	GSM 1900	GPRS	28.0	27.68	0.01	10 mm	N/A	03584	3	1:2.76	bottom	0.582	1.076	0.626	
1909.80	810	GSM 1900	GPRS	28.0	27.42	-0.12	10 mm	N/A	03584	3	1:2.76	bottom	0.655	1.143	0.749	A29
1880.00	661	GSM 1900	GPRS	28.0	27.68	-0.05	10 mm	N/A	03584	3	1:2.76	left	0.081	1.076	0.087	
826.40	4132	UMTS 850	RMC	25.5	25.25	-0.01	10 mm	8	03600	N/A	1:1	back	0.622	1.059	0.659	
836.60	4183	UMTS 850	RMC	25.5	25.29	0.02	10 mm	8	03600	N/A	1:1	back	0.638	1.050	0.670	A30
846.60	4233	UMTS 850	RMC	25.5	25.27	-0.02	10 mm	8	03600	N/A	1:1	back	0.635	1.054	0.669	
836.60	4183	UMTS 850	RMC	25.5	25.29	0.06	10 mm	8	03600	N/A	1:1	front	0.473	1.050	0.497	
836.60	4183	UMTS 850	RMC	25.5	25.29	-0.07	10 mm	8	03600	N/A	1:1	bottom	0.276	1.050	0.290	
836.60	4183	UMTS 850	RMC	25.5	25.29	-0.02	10 mm	8	03600	N/A	1:1	right	0.212	1.050	0.223	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	-0.09	10 mm	N/A	03618	N/A	1:1	back	0.339	1.000	0.339	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	0.05	10 mm	N/A	03618	N/A	1:1	front	0.264	1.000	0.264	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	-0.03	10 mm	N/A	03618	N/A	1:1	bottom	0.597	1.000	0.597	A32
1732.40	1412	UMTS 1750	RMC	22.5	22.50	0.01	10 mm	N/A	03618	N/A	1:1	left	0.118	1.000	0.118	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	0.12	10 mm	N/A	03600	N/A	1:1	back	0.400	1.000	0.400	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	-0.11	10 mm	N/A	03600	N/A	1:1	front	0.320	1.000	0.320	
1852.40	9262	UMTS 1900	RMC	22.5	22.47	-0.05	10 mm	N/A	03600	N/A	1:1	bottom	0.670	1.007	0.675	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	-0.10	10 mm	N/A	03600	N/A	1:1	bottom	0.714	1.000	0.714	
1907.60	9538	UMTS 1900	RMC	22.5	22.46	0.00	10 mm	N/A	03600	N/A	1:1	bottom	0.753	1.009	0.760	A34
1880.00	9400	UMTS 1900	RMC	22.5	22.50	-0.03	10 mm	N/A	03600	N/A	1:1	left	0.089	1.000	0.089	
824.70	1013	Cell. CDMA	EVDO Rev. 0	25.5	25.43	-0.07	10 mm	8	03618	N/A	1:1	back	0.695	1.016	0.706	A36
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.46	-0.05	10 mm	8	03618	N/A	1:1	back	0.684	1.009	0.690	
848.31	777	Cell. CDMA	EVDO Rev. 0	25.5	24.84	0.01	10 mm	8	03618	N/A	1:1	back	0.514	1.164	0.598	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.46	-0.02	10 mm	8	03618	N/A	1:1	front	0.451	1.009	0.455	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.46	-0.02	10 mm	8	03618	N/A	1:1	bottom	0.255	1.009	0.257	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.46	-0.02	10 mm	8	03618	N/A	1:1	right	0.236	1.009	0.238	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	-0.04	10 mm	N/A	03618	N/A	1:1	back	0.445	1.000	0.445	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	0.04	10 mm	N/A	03618	N/A	1:1	front	0.301	1.000	0.301	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.5	22.44	0.05	10 mm	N/A	03618	N/A	1:1	bottom	0.776	1.014	0.787	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	0.06	10 mm	N/A	03618	N/A	1:1	bottom	0.816	1.000	0.816	A38
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.5	22.49	0.01	10 mm	N/A	03618	N/A	1:1	bottom	0.669	1.002	0.670	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	-0.03	10 mm	N/A	03618	N/A	1:1	left	0.120	1.000	0.120	
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 11-38
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.02	0	27	03618	QPSK	1	99	10 mm	back	1:1	0.364	1.059	0.385	A39
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.01	1	27	03618	QPSK	50	0	10 mm	back	1:1	0.256	1.026	0.263	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	-0.04	0	27	03618	QPSK	1	99	10 mm	front	1:1	0.312	1.059	0.330	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.01	1	27	03618	QPSK	50	0	10 mm	front	1:1	0.227	1.026	0.233	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	0.02	0	27	03618	QPSK	1	99	10 mm	bottom	1:1	0.140	1.059	0.148	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	0.00	1	27	03618	QPSK	50	0	10 mm	bottom	1:1	0.104	1.026	0.107	
680.50	133297	Mid	LTE Band 71	20	25.5	25.25	-0.01	0	27	03618	QPSK	1	99	10 mm	right	1:1	0.239	1.059	0.253	
680.50	133297	Mid	LTE Band 71	20	24.5	24.39	-0.01	1	27	03618	QPSK	50	0	10 mm	right	1:1	0.183	1.026	0.188	
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 11-39
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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	25.14	-0.01	0	19	03600	QPSK	1	0	10 mm	back	1:1	0.325	1.086	0.353	A40
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	0.01	1	19	03600	QPSK	25	12	10 mm	back	1:1	0.277	1.074	0.297	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	0.00	0	19	03600	QPSK	1	0	10 mm	front	1:1	0.269	1.086	0.292	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	-0.04	1	19	03600	QPSK	25	12	10 mm	front	1:1	0.229	1.074	0.246	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	-0.03	0	19	03600	QPSK	1	0	10 mm	bottom	1:1	0.145	1.086	0.157	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	-0.04	1	19	03600	QPSK	25	12	10 mm	bottom	1:1	0.123	1.074	0.132	
707.50	23095	Mid	LTE Band 12	10	25.5	25.14	-0.12	0	19	03600	QPSK	1	0	10 mm	right	1:1	0.105	1.086	0.114	
707.50	23095	Mid	LTE Band 12	10	24.5	24.19	-0.11	1	19	03600	QPSK	25	12	10 mm	right	1:1	0.091	1.074	0.098	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body 1.6 W/kg (mW/g) averaged over 1 gram												
Spatial Peak Uncontrolled Exposure/General Population																				

Table 11-40
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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	25.18	0.04	0	15	03600	QPSK	1	0	10 mm	back	1:1	0.386	1.076	0.415	A41
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.04	1	15	03600	QPSK	25	25	10 mm	back	1:1	0.336	1.040	0.349	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.03	0	15	03600	QPSK	1	0	10 mm	front	1:1	0.339	1.076	0.365	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.08	1	15	03600	QPSK	25	25	10 mm	front	1:1	0.303	1.040	0.315	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.02	0	15	03600	QPSK	1	0	10 mm	bottom	1:1	0.199	1.076	0.214	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.02	1	15	03600	QPSK	25	25	10 mm	bottom	1:1	0.166	1.040	0.173	
782.00	23230	Mid	LTE Band 13	10	25.5	25.18	0.05	0	15	03600	QPSK	1	0	10 mm	right	1:1	0.137	1.076	0.147	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.02	1	15	03600	QPSK	25	25	10 mm	right	1:1	0.128	1.040	0.133	
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 11-41
LTE Band 14 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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	25.30	-0.04	0	11	03618	QPSK	1	0	10 mm	back	1:1	0.470	1.047	0.492	A42
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	-0.02	1	11	03618	QPSK	25	12	10 mm	back	1:1	0.375	1.059	0.397	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	0.03	0	11	03618	QPSK	1	0	10 mm	front	1:1	0.386	1.047	0.404	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	0.02	1	11	03618	QPSK	25	12	10 mm	front	1:1	0.319	1.059	0.338	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	-0.04	0	11	03618	QPSK	1	0	10 mm	bottom	1:1	0.218	1.047	0.228	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	-0.05	1	11	03618	QPSK	25	12	10 mm	bottom	1:1	0.187	1.059	0.198	
793.00	23330	Mid	LTE Band 14	10	25.5	25.30	0.00	0	11	03618	QPSK	1	0	10 mm	right	1:1	0.148	1.047	0.155	
793.00	23330	Mid	LTE Band 14	10	24.5	24.25	-0.05	1	11	03618	QPSK	25	12	10 mm	right	1:1	0.127	1.059	0.134	
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 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]	Ant State	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	25.00	-0.04	0	8	03600	QPSK	1	0	10 mm	back	1:1	0.620	1.122	0.696	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	-0.01	1	8	03600	QPSK	25	12	10 mm	back	1:1	0.501	1.117	0.560	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	-0.09	0	8	03600	QPSK	1	0	10 mm	back	1:1	0.689	1.000	0.689	A43
	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5								1	24							
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	-0.14	0	8	03600	QPSK	1	0	10 mm	front	1:1	0.438	1.122	0.491	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	0.02	1	8	03600	QPSK	25	12	10 mm	front	1:1	0.355	1.117	0.397	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	-0.04	0	8	03600	QPSK	1	0	10 mm	bottom	1:1	0.236	1.122	0.265	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	0.10	1	8	03600	QPSK	25	12	10 mm	bottom	1:1	0.193	1.117	0.216	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.00	-0.06	0	8	03600	QPSK	1	0	10 mm	right	1:1	0.209	1.122	0.234	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.02	-0.02	1	8	03600	QPSK	25	12	10 mm	right	1:1	0.175	1.117	0.195	
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 11-43
LTE Band 66 (AWS) Hotspot SAR – Ant 2

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	22.5	22.03	0.02	0	Ant 2	03600	QPSK	1	0	10 mm	back	1:1	0.411	1.114	0.458	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	-0.11	0	Ant 2	03600	QPSK	50	0	10 mm	back	1:1	0.391	1.084	0.424	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	-0.01	0	Ant 2	03600	QPSK	1	0	10 mm	front	1:1	0.264	1.114	0.294	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	-0.05	0	Ant 2	03600	QPSK	50	0	10 mm	front	1:1	0.261	1.084	0.283	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.5	21.99	0.02	0	Ant 2	03600	QPSK	1	50	10 mm	bottom	1:1	0.538	1.125	0.605	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.5	21.96	0.03	0	Ant 2	03600	QPSK	1	50	10 mm	bottom	1:1	0.575	1.132	0.651	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	0.04	0	Ant 2	03600	QPSK	1	0	10 mm	bottom	1:1	0.620	1.114	0.691	A45
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	0.03	0	Ant 2	03600	QPSK	50	0	10 mm	bottom	1:1	0.613	1.084	0.664	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	0.02	0	Ant 2	03600	QPSK	1	0	10 mm	left	1:1	0.095	1.114	0.106	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	0.00	0	Ant 2	03600	QPSK	50	0	10 mm	left	1:1	0.096	1.084	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												

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Table 11-44
LTE Band 66 (AWS) Hotspot SAR – Ant 3

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	17.7	17.25	-0.10	0	Ant 3	03618	QPSK	1	50	10 mm	back	1:1	0.087	1.109	0.096	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.04	0	Ant 3	03618	QPSK	50	25	10 mm	back	1:1	0.089	1.091	0.097	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	0.04	0	Ant 3	03618	QPSK	1	50	10 mm	front	1:1	0.083	1.109	0.092	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.05	0	Ant 3	03618	QPSK	50	25	10 mm	front	1:1	0.086	1.091	0.094	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.25	0.01	0	Ant 3	03618	QPSK	1	50	10 mm	right	1:1	0.171	1.109	0.190	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.32	0.05	0	Ant 3	03618	QPSK	50	25	10 mm	right	1:1	0.179	1.091	0.195	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body 1.6 W/kg (mW/g) averaged over 1 gram												
Spatial Peak Uncontrolled Exposure/General Population																				

Table 11-45
LTE Band 2 (PCS) Hotspot SAR – Ant 2

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	22.5	22.12	-0.03	0	Ant 2	03584	QPSK	1	0	10 mm	back	1:1	0.437	1.091	0.477	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	-0.05	0	Ant 2	03584	QPSK	50	25	10 mm	back	1:1	0.440	1.064	0.468	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	-0.01	0	Ant 2	03584	QPSK	1	0	10 mm	front	1:1	0.303	1.091	0.331	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	0.04	0	Ant 2	03584	QPSK	50	25	10 mm	front	1:1	0.307	1.064	0.327	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	0.04	0	Ant 2	03584	QPSK	1	0	10 mm	bottom	1:1	0.758	1.091	0.827	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.03	0.01	0	Ant 2	03584	QPSK	1	0	10 mm	bottom	1:1	0.802	1.114	0.893	A47
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.08	-0.03	0	Ant 2	03584	QPSK	1	0	10 mm	bottom	1:1	0.776	1.102	0.855	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	-0.06	0	Ant 2	03584	QPSK	50	25	10 mm	bottom	1:1	0.799	1.064	0.850	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.13	-0.11	0	Ant 2	03584	QPSK	50	50	10 mm	bottom	1:1	0.779	1.089	0.848	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.17	0.19	0	Ant 2	03584	QPSK	50	25	10 mm	bottom	1:1	0.735	1.079	0.793	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.11	-0.03	0	Ant 2	03584	QPSK	100	0	10 mm	bottom	1:1	0.785	1.094	0.859	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	0.02	0	Ant 2	03584	QPSK	1	0	10 mm	left	1:1	0.105	1.091	0.115	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	0.02	0	Ant 2	03584	QPSK	50	25	10 mm	left	1:1	0.115	1.064	0.122	
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 11-46
LTE Band 2 (PCS) Hotspot SAR – Ant 3

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)				
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	-0.13	0	Ant 3	03600	QPSK	1	50	10 mm	back	1:1	0.115	1.050	0.121	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	-0.17	0	Ant 3	03600	QPSK	50	25	10 mm	back	1:1	0.118	1.026	0.121	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	-0.06	0	Ant 3	03600	QPSK	1	50	10 mm	front	1:1	0.079	1.050	0.083	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	0.07	0	Ant 3	03600	QPSK	50	25	10 mm	front	1:1	0.084	1.026	0.086	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.49	-0.06	0	Ant 3	03600	QPSK	1	50	10 mm	right	1:1	0.171	1.050	0.180	
1860.00	18700	Low	LTE Band 2 (PCS)	20	17.7	17.59	-0.04	0	Ant 3	03600	QPSK	50	25	10 mm	right	1:1	0.183	1.026	0.188	
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 11-47
LTE Band 25 (PCS) 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)			
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	0.11	0	03600	QPSK	1	0	10 mm	back	1:1	0.427	1.102	0.471	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	0.09	0	03600	QPSK	50	50	10 mm	back	1:1	0.428	1.076	0.461	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	0.04	0	03600	QPSK	1	0	10 mm	front	1:1	0.267	1.102	0.294	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	0.08	0	03600	QPSK	50	50	10 mm	front	1:1	0.270	1.076	0.291	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	0.03	0	03600	QPSK	1	0	10 mm	bottom	1:1	0.634	1.102	0.699	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	-0.07	0	03600	QPSK	50	50	10 mm	bottom	1:1	0.657	1.076	0.707	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.5	22.17	-0.08	0	03600	QPSK	50	50	10 mm	bottom	1:1	0.694	1.079	0.749	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.07	-0.01	0	03600	QPSK	50	25	10 mm	bottom	1:1	0.733	1.104	0.809	A49
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.06	-0.05	0	03600	QPSK	100	0	10 mm	bottom	1:1	0.709	1.107	0.785	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	0.06	0	03600	QPSK	1	0	10 mm	left	1:1	0.096	1.102	0.106	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	0.09	0	03600	QPSK	50	50	10 mm	left	1:1	0.100	1.076	0.108	
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 11-48
LTE Band 30 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)		
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	-0.05	0	03584	QPSK	1	0	10 mm	back	1:1	0.278	1.143	0.318	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	-0.04	1	03584	QPSK	25	25	10 mm	back	1:1	0.208	1.197	0.249	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.02	0	03584	QPSK	1	0	10 mm	front	1:1	0.207	1.143	0.237	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	-0.03	1	03584	QPSK	25	25	10 mm	front	1:1	0.169	1.197	0.202	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.01	0	03584	QPSK	1	0	10 mm	bottom	1:1	0.625	1.143	0.714	A51
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	-0.03	1	03584	QPSK	25	25	10 mm	bottom	1:1	0.485	1.197	0.581	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.42	0.11	0	03584	QPSK	1	0	10 mm	left	1:1	0.078	1.143	0.089	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.22	0.01	1	03584	QPSK	25	25	10 mm	left	1:1	0.062	1.197	0.074	
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 11-49
LTE Band 7 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 #
																(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	0.02	0	03584	QPSK	1	50	10 mm	back	1:1	0.251	1.096	0.275	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	0.05	0	03584	QPSK	50	50	10 mm	back	1:1	0.263	1.084	0.285	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	-0.04	0	03584	QPSK	1	50	10 mm	front	1:1	0.235	1.096	0.258	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	-0.02	0	03584	QPSK	50	50	10 mm	front	1:1	0.243	1.084	0.263	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	-0.05	0	03584	QPSK	1	50	10 mm	bottom	1:1	0.464	1.096	0.509	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	-0.03	0	03584	QPSK	50	50	10 mm	bottom	1:1	0.490	1.084	0.531	A53
2560.00	21350	High	LTE Band 7	20	23.5	23.10	-0.02	0	03584	QPSK	1	50	10 mm	left	1:1	0.069	1.096	0.076	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	0.12	0	03584	QPSK	50	50	10 mm	left	1:1	0.068	1.084	0.074	
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 11-50
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)		
2680.00	41490	High	LTE Band 41	20	25.0	24.71	0.03	0	03618	QPSK	1	50	10 mm	back	1:1.58	0.230	1.069	0.246	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	0.02	0.5	03618	QPSK	50	50	10 mm	back	1:1.58	0.199	1.035	0.206	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	-0.03	0	03618	QPSK	1	50	10 mm	front	1:1.58	0.166	1.069	0.177	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	0.02	0.5	03618	QPSK	50	50	10 mm	front	1:1.58	0.141	1.035	0.146	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	-0.15	0	03618	QPSK	1	50	10 mm	bottom	1:1.58	0.342	1.069	0.366	A55
2680.00	41490	High	LTE Band 41	20	24.5	24.35	-0.13	0.5	03618	QPSK	50	50	10 mm	bottom	1:1.58	0.294	1.035	0.304	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	0.07	0	03618	QPSK	1	50	10 mm	left	1:1.58	0.050	1.069	0.053	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	0.16	0.5	03618	QPSK	50	50	10 mm	left	1:1.58	0.045	1.035	0.047	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body 1.6 W/kg (mW/g) averaged over 1 gram											
Spatial Peak Uncontrolled Exposure/General Population																			

Table 11-51
NR Band n71 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)		
680.50	136100	Mid	NR Band n71	20	24.8	24.20	-0.16	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.196	1.148	0.225	A56
680.50	136100	Mid	NR Band n71	20	24.8	23.87	0.13	0	03634	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.188	1.239	0.233	
680.50	136100	Mid	NR Band n71	20	23.3	22.63	0.02	1.5	03634	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.122	1.167	0.142	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	-0.04	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	front	1:1	0.159	1.148	0.183	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	-0.02	0	03634	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.141	1.239	0.175	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.05	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	bottom	1:1	0.057	1.148	0.065	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	-0.06	0	03634	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.051	1.239	0.063	
680.50	136100	Mid	NR Band n71	20	24.8	24.20	0.08	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.145	1.148	0.166	
680.50	136100	Mid	NR Band n71	20	24.8	23.87	-0.11	0	03634	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.135	1.239	0.167	
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 11-52
NR Band n5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.04	0	8	03634	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.557	1.069	0.595	A57
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.01	0	8	03634	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.521	1.114	0.580	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.3	22.81	0.03	1.5	8	03634	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.372	1.119	0.416	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.04	0	8	03634	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.435	1.069	0.465	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	0.05	0	8	03634	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.420	1.114	0.468	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	0.01	0	8	03634	DFT-S-OFDM QPSK	1	1	10 mm	bottom	1:1	0.229	1.069	0.245	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	-0.07	0	8	03634	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.208	1.114	0.232	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.51	-0.06	0	8	03634	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.192	1.069	0.205	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.8	24.33	-0.01	0	8	03634	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.182	1.114	0.203	
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 11-53
NR Band n66 (AWS) 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)		
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.04	0	03642	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.504	1.019	0.514	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	-0.10	0	03642	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.553	1.038	0.574	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.19	0	03642	DFT-S-OFDM QPSK	1	104	10 mm	front	1:1	0.361	1.019	0.368	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.04	0	03642	DFT-S-OFDM QPSK	50	0	10 mm	front	1:1	0.364	1.038	0.378	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.59	0.02	0	03642	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.775	1.099	0.852	
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.84	-0.09	0	03642	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.894	1.038	0.928	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	0.00	0	03642	DFT-S-OFDM QPSK	1	104	10 mm	right	1:1	1.030	1.019	1.050	A59
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.47	-0.12	0	03642	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.773	1.130	0.873	
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.71	0.00	0	03642	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.894	1.069	0.956	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	-0.03	0	03642	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	1.000	1.038	1.038	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.71	-0.06	0	03642	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.839	1.069	0.897	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.82	-0.09	0	03642	DFT-S-OFDM QPSK	100	0	10 mm	right	1:1	1.020	1.042	1.063	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	0.01	0	03642	DFT-S-OFDM QPSK	1	104	10 mm	right	1:1	1.030	1.019	1.050	
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: Blue entry represents variability measurement.

Table 11-54
NR Band n25 (PCS) 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)		
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	-0.16	0	03634	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.613	1.012	0.620	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	-0.14	0	03634	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.621	1.000	0.621	
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.17	-0.14	0	03634	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.583	1.079	0.629	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.25	-0.16	0	03634	DFT-S-OFDM QPSK	50	56	10 mm	back	1:1	0.490	1.059	0.519	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.03	0	03634	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.429	1.012	0.434	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.02	0	03634	DFT-S-OFDM QPSK	50	0	10 mm	front	1:1	0.433	1.000	0.433	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.05	0	03634	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	1.110	1.012	1.123	A61
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.29	-0.03	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.929	1.050	0.975	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.18	0.02	0	03634	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.814	1.076	0.876	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.08	0	03634	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	1.100	1.000	1.100	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.0	23.57	0.00	0.5	03634	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.917	1.104	1.012	
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.17	0.01	0	03634	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	1.020	1.079	1.101	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.25	0.09	0	03634	DFT-S-OFDM QPSK	50	56	10 mm	right	1:1	0.820	1.059	0.868	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.44	-0.03	0	03634	DFT-S-OFDM QPSK	100	0	10 mm	right	1:1	1.070	1.014	1.085	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.04	0	03634	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	1.080	1.012	1.093	
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: Blue entry represents variability measurement.

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Table 11-55
NR Band n41 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)		
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	-0.13	0	03642	DFT-S-OFDM QPSK	1	137	10 mm	back	1:4	0.157	1.156	0.181	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	-0.13	0	03642	DFT-S-OFDM QPSK	135	138	10 mm	back	1:4	0.206	1.161	0.239	A62
2592.99	518598	Mid	NR Band n41	100	23.5	23.17	-0.16	0.5	03642	CP-OFDM QPSK	1	1	10 mm	back	1:4	0.037	1.079	0.040	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.14	0	03642	DFT-S-OFDM QPSK	1	137	10 mm	front	1:4	0.006	1.156	0.007	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	0.15	0	03642	DFT-S-OFDM QPSK	135	138	10 mm	front	1:4	0.007	1.161	0.008	
2592.99	518598	Mid	NR Band n41	100	24.0	23.37	0.17	0	03642	DFT-S-OFDM QPSK	1	137	10 mm	right	1:4	0.047	1.156	0.054	
2592.99	518598	Mid	NR Band n41	100	24.0	23.35	0.10	0	03642	DFT-S-OFDM QPSK	135	138	10 mm	right	1:4	0.062	1.161	0.072	
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 11-56
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)	
2412	1	802.11b	DSSS	22	20.5	20.14	0.17	10 mm	1	03527	1	back	99.3	0.237	0.147	1.086	1.007	0.161	
2412	1	802.11b	DSSS	22	20.5	20.14	0.13	10 mm	1	03527	1	front	99.3	0.205	-	1.086	1.007	-	
2412	1	802.11b	DSSS	22	20.5	20.14	0.19	10 mm	1	03527	1	top	99.3	0.337	-	1.086	1.007	-	
2412	1	802.11b	DSSS	22	20.5	20.14	0.15	10 mm	1	03527	1	left	99.3	0.488	0.313	1.086	1.007	0.342	
2462	11	802.11b	DSSS	22	20.5	20.10	-0.17	10 mm	2	03527	1	back	99.3	0.277	0.184	1.096	1.007	0.203	
2462	11	802.11b	DSSS	22	20.5	20.10	0.03	10 mm	2	03527	1	front	99.3	0.324	0.248	1.096	1.007	0.274	
2462	11	802.11b	DSSS	22	20.5	20.10	0.17	10 mm	2	03527	1	top	99.3	0.656	0.398	1.096	1.007	0.439	A64
2462	11	802.11b	DSSS	22	20.5	20.10	0.11	10 mm	2	03527	1	left	99.3	0.076	-	1.096	1.007	-	
5200	40	802.11a	OFDM	20	19.0	18.92	-0.01	10 mm	1	03527	6	back	98.3	0.385	0.190	1.019	1.017	0.197	A66
5200	40	802.11a	OFDM	20	19.0	18.92	0.19	10 mm	1	03527	6	front	98.3	0.119	-	1.019	1.017	-	
5200	40	802.11a	OFDM	20	19.0	18.92	0.17	10 mm	1	03527	6	top	98.3	0.178	-	1.019	1.017	-	
5200	40	802.11a	OFDM	20	19.0	18.92	-0.19	10 mm	1	03527	6	left	98.3	0.162	-	1.019	1.017	-	
5200	40	802.11a	OFDM	20	19.0	18.98	0.10	10 mm	2	03527	6	back	96.4	0.140	0.071	1.005	1.037	0.074	
5200	40	802.11a	OFDM	20	19.0	18.98	-0.16	10 mm	2	03527	6	front	96.4	0.100	-	1.005	1.037	-	
5200	40	802.11a	OFDM	20	19.0	18.98	0.15	10 mm	2	03527	6	top	96.4	0.069	-	1.005	1.037	-	
5200	40	802.11a	OFDM	20	19.0	18.98	-0.13	10 mm	2	03527	6	left	96.4	0.079	-	1.005	1.037	-	
5785	157	802.11a	OFDM	20	19.0	18.86	0.16	10 mm	1	03527	6	back	98.3	0.364	0.164	1.033	1.017	0.172	
5785	157	802.11a	OFDM	20	19.0	18.86	0.13	10 mm	1	03527	6	front	98.3	0.032	-	1.033	1.017	-	
5785	157	802.11a	OFDM	20	19.0	18.86	0.14	10 mm	1	03527	6	top	98.3	0.259	-	1.033	1.017	-	
5785	157	802.11a	OFDM	20	19.0	18.86	-0.17	10 mm	1	03527	6	left	98.3	0.205	-	1.033	1.017	-	
5785	157	802.11a	OFDM	20	19.0	18.93	-0.16	10 mm	2	03527	6	back	96.4	0.122	0.053	1.016	1.037	0.056	
5785	157	802.11a	OFDM	20	19.0	18.93	0.12	10 mm	2	03527	6	front	96.4	0.094	-	1.016	1.037	-	
5785	157	802.11a	OFDM	20	19.0	18.93	-0.21	10 mm	2	03527	6	top	96.4	0.171	0.062	1.016	1.037	0.065	
5785	157	802.11a	OFDM	20	19.0	18.93	-0.12	10 mm	2	03527	6	left	96.4	0.078	-	1.016	1.037	-	
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 11-57
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)	
2402	0	Bluetooth	FHSS	11.0	10.20	0.19	10 mm	03527	1	back	77.3	0.010	1.202	1.294	0.016	
2402	0	Bluetooth	FHSS	11.0	10.20	0.13	10 mm	03527	1	front	77.3	0.013	1.202	1.294	0.020	
2402	0	Bluetooth	FHSS	11.0	10.20	0.12	10 mm	03527	1	top	77.3	0.016	1.202	1.294	0.025	
2402	0	Bluetooth	FHSS	11.0	10.20	0.08	10 mm	03527	1	left	77.3	0.029	1.202	1.294	0.045	A68
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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11.4 Standalone Phablet SAR Data

Table 11-58
UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	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	25.36	-0.03	2 mm	03584	1:1	back	1.860	1.033	1.921	
1732.40	1412	UMTS 1750	RMC	25.5	25.36	-0.03	1 mm	03584	1:1	front	1.790	1.033	1.849	
1712.40	1312	UMTS 1750	RMC	25.5	25.36	-0.04	4 mm	03584	1:1	bottom	1.960	1.033	2.025	
1732.40	1412	UMTS 1750	RMC	25.5	25.36	-0.02	4 mm	03584	1:1	bottom	2.180	1.033	2.252	
1752.60	1513	UMTS 1750	RMC	25.5	25.35	-0.02	4 mm	03584	1:1	bottom	2.220	1.035	2.298	A69
1732.40	1412	UMTS 1750	RMC	25.5	25.36	-0.02	0 mm	03584	1:1	left	0.604	1.033	0.624	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	-0.04	0 mm	03618	1:1	back	1.660	1.000	1.660	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	-0.02	0 mm	03618	1:1	front	1.080	1.000	1.080	
1732.40	1412	UMTS 1750	RMC	22.5	22.50	0.09	0 mm	03618	1:1	bottom	1.850	1.000	1.850	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.13	2 mm	03600	1:1	back	1.780	1.035	1.842	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	0.10	1 mm	03600	1:1	front	1.870	1.035	1.935	
1852.40	9262	UMTS 1900	RMC	25.5	25.29	-0.02	4 mm	03600	1:1	bottom	2.350	1.050	2.468	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	-0.02	4 mm	03600	1:1	bottom	2.650	1.035	2.743	
1907.60	9538	UMTS 1900	RMC	25.5	25.27	-0.06	4 mm	03600	1:1	bottom	2.620	1.054	2.761	
1880.00	9400	UMTS 1900	RMC	25.5	25.35	-0.07	0 mm	03600	1:1	left	0.646	1.035	0.669	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	0.13	0 mm	03600	1:1	back	1.830	1.000	1.830	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	0.05	0 mm	03600	1:1	front	1.150	1.000	1.150	
1852.40	9262	UMTS 1900	RMC	22.5	22.47	0.02	0 mm	03600	1:1	bottom	2.440	1.007	2.457	
1880.00	9400	UMTS 1900	RMC	22.5	22.50	0.03	0 mm	03600	1:1	bottom	2.570	1.000	2.570	
1907.60	9538	UMTS 1900	RMC	22.5	22.46	0.00	0 mm	03600	1:1	bottom	2.690	1.009	2.714	A70
1851.25	25	PCS CDMA	EVDO Rev. 0	25.5	25.20	0.16	2 mm	03618	1:1	back	2.180	1.072	2.337	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	25.26	0.12	2 mm	03618	1:1	back	2.240	1.057	2.368	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.5	25.25	0.18	2 mm	03618	1:1	back	2.080	1.059	2.203	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.5	25.20	0.10	1 mm	03618	1:1	front	2.060	1.072	2.208	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	25.26	0.08	1 mm	03618	1:1	front	2.010	1.057	2.125	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.5	25.25	0.16	1 mm	03618	1:1	front	1.890	1.059	2.002	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.5	25.20	-0.05	4 mm	03618	1:1	bottom	2.470	1.072	2.648	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	25.26	-0.11	4 mm	03618	1:1	bottom	2.690	1.057	2.843	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.5	25.25	-0.04	4 mm	03618	1:1	bottom	2.540	1.059	2.690	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	25.26	-0.09	0 mm	03618	1:1	left	0.708	1.057	0.748	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.5	22.44	0.06	0 mm	03618	1:1	back	2.020	1.014	2.048	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	0.02	0 mm	03618	1:1	back	2.030	1.000	2.030	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.5	22.49	-0.01	0 mm	03618	1:1	back	1.990	1.002	1.994	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	-0.05	0 mm	03618	1:1	front	1.700	1.000	1.700	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.5	22.44	0.07	0 mm	03618	1:1	bottom	2.600	1.014	2.636	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.50	0.03	0 mm	03618	1:1	bottom	2.820	1.000	2.820	A71
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.5	22.49	0.02	0 mm	03618	1:1	bottom	2.700	1.002	2.705	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

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Table 11-59
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	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)		
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	-0.05	0	03618	QPSK	1	0	2 mm	back	1:1	1.830	1.069	1.956	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	-0.07	1	03618	QPSK	50	25	2 mm	back	1:1	1.500	1.047	1.571	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.04	0	03618	QPSK	1	0	1 mm	front	1:1	1.590	1.069	1.700	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.02	1	03618	QPSK	50	25	1 mm	front	1:1	1.330	1.047	1.393	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	0.00	0	03618	QPSK	1	0	4 mm	bottom	1:1	1.740	1.069	1.860	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	0.03	1	03618	QPSK	50	25	4 mm	bottom	1:1	1.380	1.047	1.445	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.21	-0.06	0	03618	QPSK	1	0	0 mm	left	1:1	0.608	1.069	0.650	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.30	-0.02	1	03618	QPSK	50	25	0 mm	left	1:1	0.499	1.047	0.522	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	0.01	0	03600	QPSK	1	0	0 mm	back	1:1	1.750	1.114	1.950	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	0.00	0	03600	QPSK	50	0	0 mm	back	1:1	1.780	1.084	1.930	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	-0.03	0	03600	QPSK	1	0	0 mm	front	1:1	1.040	1.114	1.159	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	-0.03	0	03600	QPSK	50	0	0 mm	front	1:1	1.060	1.084	1.149	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.5	21.99	0.00	0	03600	QPSK	1	50	0 mm	bottom	1:1	1.760	1.125	1.980	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.5	21.96	-0.02	0	03600	QPSK	1	50	0 mm	bottom	1:1	1.800	1.132	2.038	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.03	-0.02	0	03600	QPSK	1	0	0 mm	bottom	1:1	1.930	1.114	2.150	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.5	22.14	0.00	0	03600	QPSK	50	25	0 mm	bottom	1:1	1.870	1.086	2.031	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.5	21.99	0.02	0	03600	QPSK	50	25	0 mm	bottom	1:1	1.890	1.125	2.126	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.15	0.03	0	03600	QPSK	50	0	0 mm	bottom	1:1	1.940	1.084	2.103	A72
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.00	0.02	0	03600	QPSK	100	0	0 mm	bottom	1:1	1.880	1.122	2.109	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

FCC ID: ZNFG900UM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
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Table 11-60
LTE Band 2 (PCS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	0.06	0	03618	QPSK	1	99	2 mm	back	1:1	1.790	1.016	1.819	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	0.02	1	03618	QPSK	50	50	2 mm	back	1:1	1.530	1.005	1.538	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	-0.03	0	03618	QPSK	1	99	1 mm	front	1:1	1.360	1.016	1.382	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	0.00	1	03618	QPSK	50	50	1 mm	front	1:1	1.150	1.005	1.156	
1860.00	18700	Low	LTE Band 2 (PCS)	20	25.5	25.21	-0.03	0	03618	QPSK	1	99	4 mm	bottom	1:1	2.330	1.069	2.491	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	0.02	0	03618	QPSK	1	99	4 mm	bottom	1:1	2.280	1.016	2.316	
1900.00	19100	High	LTE Band 2 (PCS)	20	25.5	25.37	0.01	0	03618	QPSK	1	50	4 mm	bottom	1:1	2.190	1.030	2.256	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	-0.02	1	03618	QPSK	50	50	4 mm	bottom	1:1	1.950	1.005	1.960	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.5	24.40	-0.02	1	03618	QPSK	100	0	4 mm	bottom	1:1	1.930	1.023	1.974	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.5	25.43	-0.02	0	03618	QPSK	1	99	0 mm	left	1:1	0.639	1.016	0.649	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.5	24.48	-0.01	1	03618	QPSK	50	50	0 mm	left	1:1	0.553	1.005	0.556	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	-0.03	0	03584	QPSK	1	0	0 mm	back	1:1	1.990	1.091	2.171	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.03	-0.01	0	03584	QPSK	1	0	0 mm	back	1:1	2.000	1.114	2.228	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.08	0.00	0	03584	QPSK	1	0	0 mm	back	1:1	2.030	1.102	2.237	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	0.01	0	03584	QPSK	50	25	0 mm	back	1:1	2.100	1.064	2.234	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.13	-0.02	0	03584	QPSK	50	50	0 mm	back	1:1	2.110	1.089	2.298	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.17	0.00	0	03584	QPSK	50	25	0 mm	back	1:1	2.050	1.079	2.212	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.11	0.03	0	03584	QPSK	100	0	0 mm	back	1:1	2.080	1.094	2.276	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	-0.04	0	03584	QPSK	1	0	0 mm	front	1:1	1.700	1.091	1.855	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	-0.08	0	03584	QPSK	50	25	0 mm	front	1:1	1.790	1.064	1.905	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.12	0.07	0	03584	QPSK	1	0	0 mm	bottom	1:1	2.600	1.091	2.837	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.03	0.05	0	03584	QPSK	1	0	0 mm	bottom	1:1	2.690	1.114	2.997	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.08	-0.03	0	03584	QPSK	1	0	0 mm	bottom	1:1	2.720	1.102	2.997	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.23	-0.05	0	03584	QPSK	50	25	0 mm	bottom	1:1	2.790	1.064	2.969	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.5	22.13	0.11	0	03584	QPSK	50	50	0 mm	bottom	1:1	2.880	1.089	3.136	A73
1900.00	19100	High	LTE Band 2 (PCS)	20	22.5	22.17	0.05	0	03584	QPSK	50	25	0 mm	bottom	1:1	2.710	1.079	2.924	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.11	0.04	0	03584	QPSK	100	0	0 mm	bottom	1:1	2.660	1.094	2.910	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

FCC ID: ZNFG900UM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2003200048-01-R2-ZNF	Test Dates: 03/25/20 – 05/06/20	DUT Type: Portable Handset		Page 150 of 196

Table 11-61
LTE Band 25 (PCS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	0.01	0	03584	QPSK	1	0	2 mm	back	1:1	2.200	1.047	2.303	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.5	25.29	0.03	0	03584	QPSK	1	0	2 mm	back	1:1	2.210	1.050	2.321	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.5	25.25	0.01	0	03584	QPSK	1	0	2 mm	back	1:1	2.220	1.059	2.351	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	-0.05	1	03584	QPSK	50	25	2 mm	back	1:1	1.800	1.016	1.829	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.00	1	03584	QPSK	100	0	2 mm	back	1:1	1.760	1.047	1.843	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	-0.12	0	03584	QPSK	1	0	1 mm	front	1:1	2.060	1.047	2.157	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.5	25.29	0.10	0	03584	QPSK	1	0	1 mm	front	1:1	2.040	1.050	2.142	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.5	25.25	0.11	0	03584	QPSK	1	0	1 mm	front	1:1	2.040	1.059	2.160	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	0.14	1	03584	QPSK	50	25	1 mm	front	1:1	1.640	1.016	1.666	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.18	1	03584	QPSK	100	0	1 mm	front	1:1	1.620	1.047	1.696	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	-0.04	0	03584	QPSK	1	0	4 mm	bottom	1:1	2.470	1.047	2.586	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.5	25.29	-0.04	0	03584	QPSK	1	0	4 mm	bottom	1:1	2.530	1.050	2.657	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.5	25.25	0.01	0	03584	QPSK	1	0	4 mm	bottom	1:1	2.520	1.059	2.669	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	-0.04	1	03584	QPSK	50	25	4 mm	bottom	1:1	2.080	1.016	2.113	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.5	24.36	-0.03	1	03584	QPSK	50	50	4 mm	bottom	1:1	2.100	1.033	2.169	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.5	24.35	-0.03	1	03584	QPSK	50	25	4 mm	bottom	1:1	1.940	1.035	2.008	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.04	1	03584	QPSK	100	0	4 mm	bottom	1:1	2.050	1.047	2.146	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.30	-0.04	0	03584	QPSK	1	0	0 mm	left	1:1	0.685	1.047	0.717	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.43	-0.04	1	03584	QPSK	50	25	0 mm	left	1:1	0.581	1.016	0.590	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	0.14	0	03600	QPSK	1	0	0 mm	back	1:1	1.890	1.102	2.083	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.5	22.04	0.19	0	03600	QPSK	1	0	0 mm	back	1:1	1.890	1.112	2.102	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	21.97	0.13	0	03600	QPSK	1	0	0 mm	back	1:1	1.880	1.130	2.124	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	0.11	0	03600	QPSK	50	50	0 mm	back	1:1	1.960	1.076	2.109	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.5	22.17	0.10	0	03600	QPSK	50	50	0 mm	back	1:1	1.930	1.079	2.082	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.07	0.18	0	03600	QPSK	50	25	0 mm	back	1:1	1.910	1.104	2.109	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.06	0.19	0	03600	QPSK	100	0	0 mm	back	1:1	1.850	1.107	2.048	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	-0.03	0	03600	QPSK	1	0	0 mm	front	1:1	1.170	1.102	1.289	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	0.03	0	03600	QPSK	50	50	0 mm	front	1:1	1.200	1.076	1.291	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.08	-0.14	0	03600	QPSK	1	0	0 mm	bottom	1:1	2.340	1.102	2.579	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.5	22.04	-0.13	0	03600	QPSK	1	0	0 mm	bottom	1:1	2.480	1.112	2.758	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	21.97	-0.18	0	03600	QPSK	1	0	0 mm	bottom	1:1	2.490	1.130	2.814	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.5	22.18	-0.14	0	03600	QPSK	50	50	0 mm	bottom	1:1	2.460	1.076	2.647	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.5	22.17	-0.16	0	03600	QPSK	50	50	0 mm	bottom	1:1	2.580	1.079	2.784	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.07	-0.15	0	03600	QPSK	50	25	0 mm	bottom	1:1	2.700	1.104	2.981	A74
1905.00	26590	High	LTE Band 25 (PCS)	20	22.5	22.06	-0.16	0	03600	QPSK	100	0	0 mm	bottom	1:1	2.560	1.107	2.834	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

FCC ID: ZNFG900UM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
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Table 11-62
LTE Band 7 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	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)		
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.12	0	03592	QPSK	1	0	2 mm	back	1:1	0.994	1.059	1.053	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	0.15	1	03592	QPSK	50	0	2 mm	back	1:1	0.807	1.054	0.851	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	-0.16	0	03592	QPSK	1	0	1 mm	front	1:1	1.340	1.059	1.419	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	-0.17	1	03592	QPSK	50	0	1 mm	front	1:1	1.080	1.054	1.138	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	-0.04	0	03592	QPSK	1	0	4 mm	bottom	1:1	0.991	1.059	1.049	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	-0.10	1	03592	QPSK	50	0	4 mm	bottom	1:1	0.741	1.054	0.781	
2560.00	21350	High	LTE Band 7	20	25.5	25.25	0.03	0	03592	QPSK	1	0	0 mm	left	1:1	0.382	1.059	0.405	
2560.00	21350	High	LTE Band 7	20	24.5	24.27	-0.11	1	03592	QPSK	50	0	0 mm	left	1:1	0.318	1.054	0.335	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	0.19	0	03584	QPSK	1	50	0 mm	back	1:1	1.530	1.096	1.677	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	0.11	0	03584	QPSK	50	50	0 mm	back	1:1	1.600	1.084	1.734	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	-0.09	0	03584	QPSK	1	50	0 mm	front	1:1	1.430	1.096	1.567	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	-0.15	0	03584	QPSK	50	50	0 mm	front	1:1	1.500	1.084	1.626	
2510.00	20850	Low	LTE Band 7	20	23.5	22.93	-0.16	0	03584	QPSK	1	99	0 mm	bottom	1:1	2.590	1.140	2.953	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.02	-0.13	0	03584	QPSK	1	50	0 mm	bottom	1:1	2.490	1.117	2.781	
2560.00	21350	High	LTE Band 7	20	23.5	23.10	-0.19	0	03584	QPSK	1	50	0 mm	bottom	1:1	2.580	1.096	2.828	
2510.00	20850	Low	LTE Band 7	20	23.5	23.02	-0.17	0	03584	QPSK	50	25	0 mm	bottom	1:1	2.750	1.117	3.072	A75
2535.00	21100	Mid	LTE Band 7	20	23.5	23.14	-0.18	0	03584	QPSK	50	50	0 mm	bottom	1:1	2.680	1.086	2.910	
2560.00	21350	High	LTE Band 7	20	23.5	23.15	-0.19	0	03584	QPSK	50	50	0 mm	bottom	1:1	2.650	1.084	2.873	
2560.00	21350	High	LTE Band 7	20	23.5	23.08	-0.17	0	03584	QPSK	100	0	0 mm	bottom	1:1	2.590	1.102	2.854	
2510.00	20850	Low	LTE Band 7	20	23.5	23.02	-0.15	0	03584	QPSK	50	25	0 mm	bottom	1:1	2.750	1.117	3.072	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.14	-0.15	0	03584	QPSK	50	50	0 mm	bottom	1:1	2.510	1.086	2.726	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet 4.0 W/kg (mW/g) averaged over 10 grams											
Spatial Peak																			
Uncontrolled Exposure/General Population																			

Note: Blue entries represent variability measurements.

FCC ID: ZNFG900UM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
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Table 11-63
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)			
2680.00	41490	High	LTE Band 41	20	25.5	25.20	0.16	0	05654	QPSK	1	50	2 mm	back	1:1.58	0.568	1.072	0.609	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.12	1	05654	QPSK	50	50	2 mm	back	1:1.58	0.453	1.042	0.472	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	-0.04	0	05654	QPSK	1	50	1 mm	front	1:1.58	0.732	1.072	0.785	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	0.02	1	05654	QPSK	50	50	1 mm	front	1:1.58	0.581	1.042	0.605	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	-0.12	0	05654	QPSK	1	50	4 mm	bottom	1:1.58	0.585	1.072	0.627	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	-0.14	1	05654	QPSK	50	50	4 mm	bottom	1:1.58	0.466	1.042	0.486	
2680.00	41490	High	LTE Band 41	20	25.5	25.20	-0.03	0	05654	QPSK	1	50	0 mm	left	1:1.58	0.219	1.072	0.235	
2680.00	41490	High	LTE Band 41	20	24.5	24.32	-0.15	1	05654	QPSK	50	50	0 mm	left	1:1.58	0.173	1.042	0.180	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	0.19	0	05654	QPSK	1	50	0 mm	back	1:1.58	1.330	1.069	1.422	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	-0.20	0.5	05654	QPSK	50	50	0 mm	back	1:1.58	1.060	1.035	1.097	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	-0.10	0	05654	QPSK	1	50	0 mm	front	1:1.58	1.200	1.069	1.283	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	-0.05	0.5	05654	QPSK	50	50	0 mm	front	1:1.58	0.957	1.035	0.990	
2506.00	39750	Low	LTE Band 41	20	25.0	24.37	0.16	0	05654	QPSK	1	0	0 mm	bottom	1:1.58	2.390	1.156	2.763	A76
2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.53	-0.14	0	05654	QPSK	1	0	0 mm	bottom	1:1.58	2.290	1.114	2.551	
2593.00	40620	Mid	LTE Band 41	20	25.0	24.61	0.15	0	05654	QPSK	1	50	0 mm	bottom	1:1.58	2.260	1.094	2.472	
2636.50	41055	Mid-High	LTE Band 41	20	25.0	24.70	0.16	0	05654	QPSK	1	50	0 mm	bottom	1:1.58	2.150	1.072	2.305	
2680.00	41490	High	LTE Band 41	20	25.0	24.71	-0.14	0	05654	QPSK	1	50	0 mm	bottom	1:1.58	1.900	1.069	2.031	
2506.00	39750	Low	LTE Band 41	20	24.5	24.01	0.10	0.5	05654	QPSK	50	50	0 mm	bottom	1:1.58	1.980	1.119	2.216	
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.12	0.11	0.5	05654	QPSK	50	50	0 mm	bottom	1:1.58	1.850	1.091	2.018	
2593.00	40620	Mid	LTE Band 41	20	24.5	24.19	0.19	0.5	05654	QPSK	50	50	0 mm	bottom	1:1.58	1.850	1.074	1.987	
2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.31	0.12	0.5	05654	QPSK	50	25	0 mm	bottom	1:1.58	1.820	1.045	1.902	
2680.00	41490	High	LTE Band 41	20	24.5	24.35	-0.02	0.5	05654	QPSK	50	50	0 mm	bottom	1:1.58	1.530	1.035	1.584	
2680.00	41490	High	LTE Band 41	20	24.5	24.28	-0.19	0.5	05654	QPSK	100	0	0 mm	bottom	1:1.58	1.570	1.052	1.652	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

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Table 11-64
NR n66 (AWS)/n25 (PCS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	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)	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.59	0.02	0	03642	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	2.540	1.099	2.791	A77
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.84	0.04	0	03642	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	2.610	1.038	2.709	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.92	-0.02	0	03642	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.380	1.019	2.425	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.47	0.04	0	03642	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.490	1.130	2.814	
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.71	-0.01	0	03642	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.560	1.069	2.737	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.84	0.08	0	03642	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.460	1.038	2.553	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.71	-0.17	0	03642	CP-OFDM QPSK	1	1	0 mm	right	1:1	1.870	1.069	1.999	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.82	0.03	0	03642	DFT-S-OFDM QPSK	100	0	0 mm	right	1:1	2.460	1.042	2.563	
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.84	0.02	0	03642	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	2.580	1.038	2.678	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.45	0.05	0	03634	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	2.710	1.012	2.743	
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.29	-0.03	0	03634	DFT-S-OFDM QPSK	1	53	0 mm	right	1:1	2.670	1.050	2.804	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.18	0.11	0	03634	DFT-S-OFDM QPSK	1	53	0 mm	right	1:1	2.550	1.076	2.744	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.13	0	03634	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.990	1.000	2.990	A78
1860.00	372000	Low	NR Band n25 (PCS)	20	24.0	23.57	0.05	0.5	03634	CP-OFDM QPSK	1	1	0 mm	right	1:1	2.230	1.104	2.462	
1882.50	376500	Mid	NR Band n25 (PCS)	20	24.5	24.17	0.01	0	03634	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.840	1.079	3.064	
1905.00	381000	High	NR Band n25 (PCS)	20	24.5	24.25	0.14	0	03634	DFT-S-OFDM QPSK	50	56	0 mm	right	1:1	2.770	1.059	2.933	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.44	-0.01	0	03634	DFT-S-OFDM QPSK	100	0	0 mm	right	1:1	2.910	1.014	2.951	
1860.00	372000	Low	NR Band n25 (PCS)	20	24.5	24.50	0.15	0	03634	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.860	1.000	2.860	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																			
Spatial Peak								Phablet											
Uncontrolled Exposure/General Population								4.0 W/kg (mW/g)											
								averaged over 10 grams											

Note: Blue entries represent variability measurements.

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**Table 11-65
WLAN Phablet 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 (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)		(W/kg)		
5280	56	802.11a	OFDM	20	19.0	18.87	0.07	0 mm	1	03527	6	back	98.3	8.561	1.410	1.030	1.017	1.477	
5280	56	802.11a	OFDM	20	19.0	18.87	-0.13	0 mm	1	03527	6	front	98.3	1.651	-	1.030	1.017	-	
5280	56	802.11a	OFDM	20	19.0	18.87	0.19	0 mm	1	03527	6	top	98.3	2.688	-	1.030	1.017	-	
5280	56	802.11a	OFDM	20	19.0	18.87	0.00	0 mm	1	03527	6	left	98.3	5.304	0.479	1.030	1.017	0.502	
5280	56	802.11a	OFDM	20	19.0	18.85	0.15	0 mm	2	03527	6	back	96.4	2.862	-	1.035	1.037	-	
5280	56	802.11a	OFDM	20	19.0	18.85	0.12	0 mm	2	03527	6	front	96.4	1.764	-	1.035	1.037	-	
5280	56	802.11a	OFDM	20	19.0	18.85	0.02	0 mm	2	03527	6	top	96.4	1.149	-	1.035	1.037	-	
5280	56	802.11a	OFDM	20	19.0	18.85	-0.13	0 mm	2	03527	6	left	96.4	3.017	0.254	1.035	1.037	0.273	
5720	144	802.11a	OFDM	20	17.0	16.96	0.15	0 mm	1	03527	6	back	98.3	3.170	0.451	1.009	1.017	0.463	
5720	144	802.11a	OFDM	20	17.0	16.96	0.10	0 mm	1	03527	6	front	98.3	0.264	-	1.009	1.017	-	
5720	144	802.11a	OFDM	20	17.0	16.96	0.18	0 mm	1	03527	6	top	98.3	0.758	-	1.009	1.017	-	
5720	144	802.11a	OFDM	20	17.0	16.96	0.11	0 mm	1	03527	6	left	98.3	1.459	-	1.009	1.017	-	
5600	120	802.11a	OFDM	20	17.0	16.78	0.14	0 mm	2	03527	6	back	96.4	1.967	-	1.052	1.037	-	
5600	120	802.11a	OFDM	20	17.0	16.78	0.17	0 mm	2	03527	6	front	96.4	1.750	-	1.052	1.037	-	
5600	120	802.11a	OFDM	20	17.0	16.78	0.04	0 mm	2	03527	6	top	96.4	0.934	-	1.052	1.037	-	
5600	120	802.11a	OFDM	20	17.0	16.78	0.18	0 mm	2	03527	6	left	96.4	2.483	0.141	1.052	1.037	0.154	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) averaged over 10 grams											

**Table 11-66
WLAN MIMO Phablet SAR**

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 (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5260	52	802.11n	OFDM	20	17.0	16.89	17.0	16.63	-0.19	0 mm	MIMO	03527	13	back	98.2	10.148	1.340	1.089	1.018	1.486	A79
5280	56	802.11n	OFDM	20	19.0	18.76	19.0	18.61	0.16	0 mm	MIMO	03527	13	back	98.2	9.959	2.320	1.094	1.018	2.584	
5320	64	802.11n	OFDM	20	17.0	16.87	17.0	16.73	0.07	0 mm	MIMO	03527	13	back	98.2	10.645	1.400	1.064	1.018	1.516	
5280	56	802.11n	OFDM	20	19.0	18.76	19.0	18.61	0.03	0 mm	MIMO	03527	13	front	98.2	3.527	0.540	1.094	1.018	0.601	
5280	56	802.11n	OFDM	20	19.0	18.76	19.0	18.61	0.20	0 mm	MIMO	03527	13	top	98.2	3.541	-	1.094	1.018	-	
5280	56	802.11n	OFDM	20	19.0	18.76	19.0	18.61	0.13	0 mm	MIMO	03527	13	left	98.2	6.872	0.593	1.094	1.018	0.660	
5600	120	802.11n	OFDM	20	17.0	16.93	17.0	16.66	0.12	0 mm	MIMO	03527	13	back	98.2	7.701	1.250	1.081	1.018	1.376	
5600	120	802.11n	OFDM	20	17.0	16.93	17.0	16.66	0.10	0 mm	MIMO	03527	13	front	98.2	2.265	0.267	1.081	1.018	0.294	
5600	120	802.11n	OFDM	20	17.0	16.93	17.0	16.66	0.14	0 mm	MIMO	03527	13	top	98.2	2.826	-	1.081	1.018	-	
5600	120	802.11n	OFDM	20	17.0	16.93	17.0	16.66	0.16	0 mm	MIMO	03527	13	left	98.2	4.493	0.343	1.081	1.018	0.377	
5280	56	802.11n	OFDM	20	19.0	18.76	19.0	18.61	0.11	0 mm	MIMO	03527	13	back	98.2	15.651	2.110	1.094	1.018	2.350	
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:

- For channels 52, 64, 120 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. For channel 56 to achieve the 22.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 19.0 dBm.
- Blue entry represents variability measurement.

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11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The orange highlights throughout the report represents the highest SAR per FCC Equipment Class reflected on the FCC Grant.
5. 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.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
7. 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.
8. 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.
9. 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.
10. 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).
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).

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.

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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.
6. CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

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.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg 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:

1. 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.
2. 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.
3. 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).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. 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.
6. 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.
7. 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.

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NR Notes:

1. NR implementation is limited to EN-DC operations only. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
3. Simultaneous transmission analysis for EN-DC operations is addressed in the Part 2 Test Report (Serial Number can be found in the bibliography).
4. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
5. 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.
6. For final implementation, NR slot configuration is synchronized using maximum duty cycle of 23.33%. SAR testing was performed using FTM mode with a 23.33% duty cycle applied to match final duty cycle.
7. Per FCC Guidance, the device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency as the NR test results. Additional tuner states were evaluated per April 2019 TCBC Workshop Guidance. Please see Section 14 for supplemental data.

WLAN Notes:

1. 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.
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)

Exposure Condition	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
Head SAR	GSM/GPRS 850	0.128	0.397	0.950	0.525	1.078
	GSM/GPRS 1900	0.045	0.397	0.950	0.442	0.995
	UMTS 850	0.166	0.397	0.950	0.563	1.116
	UMTS 1750	0.096	0.397	0.950	0.493	1.046
	UMTS 1900	0.100	0.397	0.950	0.497	1.050
	Cell. CDMA/EVDO	0.145	0.397	0.950	0.542	1.095
	PCS CDMA/EVDO	0.105	0.397	0.950	0.502	1.055
	LTE Band 71	0.159	0.397	0.950	0.556	1.109
	LTE Band 12	0.138	0.397	0.950	0.535	1.088
	LTE Band 13	0.152	0.397	0.950	0.549	1.102
	LTE Band 14	0.173	0.397	0.950	0.570	1.123
	LTE Band 5 (Cell)	0.132	0.397	0.950	0.529	1.082
	LTE Band 66 (AWS)	0.086	0.397	0.950	0.483	1.036
	LTE Band 66 (AWS) Ant 3	0.051	0.397	0.950	0.448	1.001
	LTE Band 2 (PCS)	0.126	0.397	0.950	0.523	1.076
	LTE Band 2 (PCS) Ant 3	0.033	0.397	0.950	0.430	0.983
	LTE Band 25 (PCS)	0.104	0.397	0.950	0.501	1.054
	LTE Band 30	0.048	0.397	0.950	0.445	0.998
	LTE Band 7	0.091	0.397	0.950	0.488	1.041
	LTE Band 41	0.041	0.397	0.950	0.438	0.991
	NR Band n71	0.034	0.397	0.950	0.431	0.984
	NR Band n5 (Cell)	0.160	0.397	0.950	0.557	1.110
	NR Band n66 (AWS)	0.226	0.397	0.950	0.623	1.176
	NR Band n25 (PCS)	0.220	0.397	0.950	0.617	1.170
	NR Band n41	0.031	0.397	0.950	0.428	0.981

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Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.128	1.031	1.159
	GSM/GPRS 1900	0.045	1.031	1.076
	UMTS 850	0.166	1.031	1.197
	UMTS 1750	0.096	1.031	1.127
	UMTS 1900	0.100	1.031	1.131
	Cell. CDMA/EVDO	0.145	1.031	1.176
	PCS CDMA/EVDO	0.105	1.031	1.136
	LTE Band 71	0.159	1.031	1.190
	LTE Band 12	0.138	1.031	1.169
	LTE Band 13	0.152	1.031	1.183
	LTE Band 14	0.173	1.031	1.204
	LTE Band 5 (Cell)	0.132	1.031	1.163
	LTE Band 66 (AWS)	0.086	1.031	1.117
	LTE Band 66 (AWS) Ant 3	0.051	1.031	1.082
	LTE Band 2 (PCS)	0.126	1.031	1.157
	LTE Band 2 (PCS) Ant 3	0.033	1.031	1.064
	LTE Band 25 (PCS)	0.104	1.031	1.135
	LTE Band 30	0.048	1.031	1.079
	LTE Band 7	0.091	1.031	1.122
	LTE Band 41	0.041	1.031	1.072
	NR Band n71	0.034	1.031	1.065
	NR Band n5 (Cell)	0.160	1.031	1.191
	NR Band n66 (AWS)	0.226	1.031	1.257
	NR Band n25 (PCS)	0.220	1.031	1.251
	NR Band n41	0.031	1.031	1.062

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

Exposure Condition	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	GSM/GPRS 850	0.128	0.222	0.235	0.350	0.363	0.585
	GSM/GPRS 1900	0.045	0.222	0.235	0.267	0.280	0.502
	UMTS 850	0.166	0.222	0.235	0.388	0.401	0.623
	UMTS 1750	0.096	0.222	0.235	0.318	0.331	0.553
	UMTS 1900	0.100	0.222	0.235	0.322	0.335	0.557
	Cell. CDMA/EVDO	0.145	0.222	0.235	0.367	0.380	0.602
	PCS CDMA/EVDO	0.105	0.222	0.235	0.327	0.340	0.562
	LTE Band 71	0.159	0.222	0.235	0.381	0.394	0.616
	LTE Band 12	0.138	0.222	0.235	0.360	0.373	0.595
	LTE Band 13	0.152	0.222	0.235	0.374	0.387	0.609
	LTE Band 14	0.173	0.222	0.235	0.395	0.408	0.630
	LTE Band 5 (Cell)	0.132	0.222	0.235	0.354	0.367	0.589
	LTE Band 66 (AWS)	0.086	0.222	0.235	0.308	0.321	0.543
	LTE Band 66 (AWS) Ant 3	0.051	0.222	0.235	0.273	0.286	0.508
	LTE Band 2 (PCS)	0.126	0.222	0.235	0.348	0.361	0.583
	LTE Band 2 (PCS) Ant 3	0.033	0.222	0.235	0.255	0.268	0.490
	LTE Band 25 (PCS)	0.104	0.222	0.235	0.326	0.339	0.561
	LTE Band 30	0.048	0.222	0.235	0.270	0.283	0.505
	LTE Band 7	0.091	0.222	0.235	0.313	0.326	0.548
	LTE Band 41	0.041	0.222	0.235	0.263	0.276	0.498
	NR Band n71	0.034	0.222	0.235	0.256	0.269	0.491
	NR Band n5 (Cell)	0.160	0.222	0.235	0.382	0.395	0.617
	NR Band n66 (AWS)	0.226	0.222	0.235	0.448	0.461	0.683
	NR Band n25 (PCS)	0.220	0.222	0.235	0.442	0.455	0.677
	NR Band n41	0.031	0.222	0.235	0.253	0.266	0.488

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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)

Exposure Condition	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
Head SAR	GSM/GPRS 850	0.128	0.397	0.235	0.760
	GSM/GPRS 1900	0.045	0.397	0.235	0.677
	UMTS 850	0.166	0.397	0.235	0.798
	UMTS 1750	0.096	0.397	0.235	0.728
	UMTS 1900	0.100	0.397	0.235	0.732
	Cell. CDMA/EVDO	0.145	0.397	0.235	0.777
	PCS CDMA/EVDO	0.105	0.397	0.235	0.737
	LTE Band 71	0.159	0.397	0.235	0.791
	LTE Band 12	0.138	0.397	0.235	0.770
	LTE Band 13	0.152	0.397	0.235	0.784
	LTE Band 14	0.173	0.397	0.235	0.805
	LTE Band 5 (Cell)	0.132	0.397	0.235	0.764
	LTE Band 66 (AWS)	0.086	0.397	0.235	0.718
	LTE Band 66 (AWS) Ant 3	0.051	0.397	0.235	0.683
	LTE Band 2 (PCS)	0.126	0.397	0.235	0.758
	LTE Band 2 (PCS) Ant 3	0.033	0.397	0.235	0.665
	LTE Band 25 (PCS)	0.104	0.397	0.235	0.736
	LTE Band 30	0.048	0.397	0.235	0.680
	LTE Band 7	0.091	0.397	0.235	0.723
	LTE Band 41	0.041	0.397	0.235	0.673
	NR Band n71	0.034	0.397	0.235	0.666
	NR Band n5 (Cell)	0.160	0.397	0.235	0.792
	NR Band n66 (AWS)	0.226	0.397	0.235	0.858
	NR Band n25 (PCS)	0.220	0.397	0.235	0.852
	NR Band n41	0.031	0.397	0.235	0.663

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.128	0.072	0.200
	GSM/GPRS 1900	0.045	0.072	0.117
	UMTS 850	0.166	0.072	0.238
	UMTS 1750	0.096	0.072	0.168
	UMTS 1900	0.100	0.072	0.172
	Cell. CDMA/EVDO	0.145	0.072	0.217
	PCS CDMA/EVDO	0.105	0.072	0.177
	LTE Band 71	0.159	0.072	0.231
	LTE Band 12	0.138	0.072	0.210
	LTE Band 13	0.152	0.072	0.224
	LTE Band 14	0.173	0.072	0.245
	LTE Band 5 (Cell)	0.132	0.072	0.204
	LTE Band 66 (AWS)	0.086	0.072	0.158
	LTE Band 66 (AWS) Ant 3	0.051	0.072	0.123
	LTE Band 2 (PCS)	0.126	0.072	0.198
	LTE Band 2 (PCS) Ant 3	0.033	0.072	0.105
	LTE Band 25 (PCS)	0.104	0.072	0.176
	LTE Band 30	0.048	0.072	0.120
	LTE Band 7	0.091	0.072	0.163
	LTE Band 41	0.041	0.072	0.113
	NR Band n71	0.034	0.072	0.106
	NR Band n5 (Cell)	0.160	0.072	0.232
	NR Band n66 (AWS)	0.226	0.072	0.298
	NR Band n25 (PCS)	0.220	0.072	0.292
	NR Band n41	0.031	0.072	0.103

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

Exposure Condition	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	GSM/GPRS 850	0.128	0.072	0.950	1.150
	GSM/GPRS 1900	0.045	0.072	0.950	1.067
	UMTS 850	0.166	0.072	0.950	1.188
	UMTS 1750	0.096	0.072	0.950	1.118
	UMTS 1900	0.100	0.072	0.950	1.122
	Cell. CDMA/EVDO	0.145	0.072	0.950	1.167
	PCS CDMA/EVDO	0.105	0.072	0.950	1.127
	LTE Band 71	0.159	0.072	0.950	1.181
	LTE Band 12	0.138	0.072	0.950	1.160
	LTE Band 13	0.152	0.072	0.950	1.174
	LTE Band 14	0.173	0.072	0.950	1.195
	LTE Band 5 (Cell)	0.132	0.072	0.950	1.154
	LTE Band 66 (AWS)	0.086	0.072	0.950	1.108
	LTE Band 66 (AWS) Ant 3	0.051	0.072	0.950	1.073
	LTE Band 2 (PCS)	0.126	0.072	0.950	1.148
	LTE Band 2 (PCS) Ant 3	0.033	0.072	0.950	1.055
	LTE Band 25 (PCS)	0.104	0.072	0.950	1.126
	LTE Band 30	0.048	0.072	0.950	1.070
	LTE Band 7	0.091	0.072	0.950	1.113
	LTE Band 41	0.041	0.072	0.950	1.063
	NR Band n71	0.034	0.072	0.950	1.056
	NR Band n5 (Cell)	0.160	0.072	0.950	1.182
	NR Band n66 (AWS)	0.226	0.072	0.950	1.248
	NR Band n25 (PCS)	0.220	0.072	0.950	1.242
	NR Band n41	0.031	0.072	0.950	1.053

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

Exposure Condition	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	1+2+4	1+2+3+4
Head SAR	GSM/GPRS 850	0.128	0.072	0.222	0.235	0.422	0.435	0.657
	GSM/GPRS 1900	0.045	0.072	0.222	0.235	0.339	0.352	0.574
	UMTS 850	0.166	0.072	0.222	0.235	0.460	0.473	0.695
	UMTS 1750	0.096	0.072	0.222	0.235	0.390	0.403	0.625
	UMTS 1900	0.100	0.072	0.222	0.235	0.394	0.407	0.629
	Cell. CDMA/EVDO	0.145	0.072	0.222	0.235	0.439	0.452	0.674
	PCS CDMA/EVDO	0.105	0.072	0.222	0.235	0.399	0.412	0.634
	LTE Band 71	0.159	0.072	0.222	0.235	0.453	0.466	0.688
	LTE Band 12	0.138	0.072	0.222	0.235	0.432	0.445	0.667
	LTE Band 13	0.152	0.072	0.222	0.235	0.446	0.459	0.681
	LTE Band 14	0.173	0.072	0.222	0.235	0.467	0.480	0.702
	LTE Band 5 (Cell)	0.132	0.072	0.222	0.235	0.426	0.439	0.661
	LTE Band 66 (AWS)	0.086	0.072	0.222	0.235	0.380	0.393	0.615
	LTE Band 66 (AWS) Ant 3	0.051	0.072	0.222	0.235	0.345	0.358	0.580
	LTE Band 2 (PCS)	0.126	0.072	0.222	0.235	0.420	0.433	0.655
	LTE Band 2 (PCS) Ant 3	0.033	0.072	0.222	0.235	0.327	0.340	0.562
	LTE Band 25 (PCS)	0.104	0.072	0.222	0.235	0.398	0.411	0.633
	LTE Band 30	0.048	0.072	0.222	0.235	0.342	0.355	0.577
	LTE Band 7	0.091	0.072	0.222	0.235	0.385	0.398	0.620
	LTE Band 41	0.041	0.072	0.222	0.235	0.335	0.348	0.570
	NR Band n71	0.034	0.072	0.222	0.235	0.328	0.341	0.563
	NR Band n5 (Cell)	0.160	0.072	0.222	0.235	0.454	0.467	0.689
	NR Band n66 (AWS)	0.226	0.072	0.222	0.235	0.520	0.533	0.755
	NR Band n25 (PCS)	0.220	0.072	0.222	0.235	0.514	0.527	0.749
	NR Band n41	0.031	0.072	0.222	0.235	0.325	0.338	0.560

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12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-7
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	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	GSM/GPRS 850	0.552	0.161	0.203	0.713	0.755	0.916
	GSM/GPRS 1900	0.359	0.161	0.203	0.520	0.562	0.723
	UMTS 850	0.670	0.161	0.203	0.831	0.873	1.034
	UMTS 1750	1.015	0.161	0.203	1.176	1.218	1.379
	UMTS 1900	0.993	0.161	0.203	1.154	1.196	1.357
	Cell. CDMA	0.614	0.161	0.203	0.775	0.817	0.978
	PCS CDMA	0.875	0.161	0.203	1.036	1.078	1.239
	LTE Band 71	0.385	0.161	0.203	0.546	0.588	0.749
	LTE Band 12	0.353	0.161	0.203	0.514	0.556	0.717
	LTE Band 13	0.415	0.161	0.203	0.576	0.618	0.779
	LTE Band 14	0.492	0.161	0.203	0.653	0.695	0.856
	LTE Band 5 (Cell)	0.696	0.161	0.203	0.857	0.899	1.060
	LTE Band 66 (AWS)	0.862	0.161	0.203	1.023	1.065	1.226
	LTE Band 66 (AWS) Ant 3	0.097	0.161	0.203	0.258	0.300	0.461
	LTE Band 2 (PCS)	0.842	0.161	0.203	1.003	1.045	1.206
	LTE Band 2 (PCS) Ant 3	0.121	0.161	0.203	0.282	0.324	0.485
	LTE Band 25 (PCS)	1.017	0.161	0.203	1.178	1.220	1.381
	LTE Band 30	0.318	0.161	0.203	0.479	0.521	0.682
	LTE Band 7	0.420	0.161	0.203	0.581	0.623	0.784
	LTE Band 41	0.270	0.161	0.203	0.431	0.473	0.634
	NR Band n71	0.233	0.161	0.203	0.394	0.436	0.597
	NR Band n5 (Cell)	0.595	0.161	0.203	0.756	0.798	0.959
	NR Band n66 (AWS)	0.574	0.161	0.203	0.735	0.777	0.938
	NR Band n25 (PCS)	0.629	0.161	0.203	0.790	0.832	0.993
	NR Band n41	0.239	0.161	0.203	0.400	0.442	0.603

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Table 12-8
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	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	GSM/GPRS 850	0.552	0.393	0.122	0.945	0.674	1.067
	GSM/GPRS 1900	0.359	0.393	0.122	0.752	0.481	0.874
	UMTS 850	0.670	0.393	0.122	1.063	0.792	1.185
	UMTS 1750	1.015	0.393	0.122	1.408	1.137	1.530
	UMTS 1900	0.993	0.393	0.122	1.386	1.115	1.508
	Cell. CDMA	0.614	0.393	0.122	1.007	0.736	1.129
	PCS CDMA	0.875	0.393	0.122	1.268	0.997	1.390
	LTE Band 71	0.385	0.393	0.122	0.778	0.507	0.900
	LTE Band 12	0.353	0.393	0.122	0.746	0.475	0.868
	LTE Band 13	0.415	0.393	0.122	0.808	0.537	0.930
	LTE Band 14	0.492	0.393	0.122	0.885	0.614	1.007
	LTE Band 5 (Cell)	0.696	0.393	0.122	1.089	0.818	1.211
	LTE Band 66 (AWS)	0.862	0.393	0.122	1.255	0.984	1.377
	LTE Band 66 (AWS) Ant 3	0.097	0.393	0.122	0.490	0.219	0.612
	LTE Band 2 (PCS)	0.842	0.393	0.122	1.235	0.964	1.357
	LTE Band 2 (PCS) Ant 3	0.121	0.393	0.122	0.514	0.243	0.636
	LTE Band 25 (PCS)	1.017	0.393	0.122	1.410	1.139	1.532
	LTE Band 30	0.318	0.393	0.122	0.711	0.440	0.833
	LTE Band 7	0.420	0.393	0.122	0.813	0.542	0.935
	LTE Band 41	0.270	0.393	0.122	0.663	0.392	0.785
	NR Band n71	0.233	0.393	0.122	0.626	0.355	0.748
	NR Band n5 (Cell)	0.595	0.393	0.122	0.988	0.717	1.110
	NR Band n66 (AWS)	0.574	0.393	0.122	0.967	0.696	1.089
	NR Band n25 (PCS)	0.629	0.393	0.122	1.022	0.751	1.144
	NR Band n41	0.239	0.393	0.122	0.632	0.361	0.754

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Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Body-Worn at 1.0 cm)

Exposure Condition	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	GSM/GPRS 850	0.552	0.161	0.122	0.835
	GSM/GPRS 1900	0.359	0.161	0.122	0.642
	UMTS 850	0.670	0.161	0.122	0.953
	UMTS 1750	1.015	0.161	0.122	1.298
	UMTS 1900	0.993	0.161	0.122	1.276
	Cell. CDMA	0.614	0.161	0.122	0.897
	PCS CDMA	0.875	0.161	0.122	1.158
	LTE Band 71	0.385	0.161	0.122	0.668
	LTE Band 12	0.353	0.161	0.122	0.636
	LTE Band 13	0.415	0.161	0.122	0.698
	LTE Band 14	0.492	0.161	0.122	0.775
	LTE Band 5 (Cell)	0.696	0.161	0.122	0.979
	LTE Band 66 (AWS)	0.862	0.161	0.122	1.145
	LTE Band 66 (AWS) Ant 3	0.097	0.161	0.122	0.380
	LTE Band 2 (PCS)	0.842	0.161	0.122	1.125
	LTE Band 2 (PCS) Ant 3	0.121	0.161	0.122	0.404
	LTE Band 25 (PCS)	1.017	0.161	0.122	1.300
	LTE Band 30	0.318	0.161	0.122	0.601
	LTE Band 7	0.420	0.161	0.122	0.703
	LTE Band 41	0.270	0.161	0.122	0.553
	NR Band n71	0.233	0.161	0.122	0.516
	NR Band n5 (Cell)	0.595	0.161	0.122	0.878
	NR Band n66 (AWS)	0.574	0.161	0.122	0.857
	NR Band n25 (PCS)	0.629	0.161	0.122	0.912
	NR Band n41	0.239	0.161	0.122	0.522

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Table 12-10
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.552	0.016	0.568
	GSM/GPRS 1900	0.359	0.016	0.375
	UMTS 850	0.670	0.016	0.686
	UMTS 1750	1.015	0.016	1.031
	UMTS 1900	0.993	0.016	1.009
	Cell. CDMA	0.614	0.016	0.630
	PCS CDMA	0.875	0.016	0.891
	LTE Band 71	0.385	0.016	0.401
	LTE Band 12	0.353	0.016	0.369
	LTE Band 13	0.415	0.016	0.431
	LTE Band 14	0.492	0.016	0.508
	LTE Band 5 (Cell)	0.696	0.016	0.712
	LTE Band 66 (AWS)	0.862	0.016	0.878
	LTE Band 66 (AWS) Ant 3	0.097	0.016	0.113
	LTE Band 2 (PCS)	0.842	0.016	0.858
	LTE Band 2 (PCS) Ant 3	0.121	0.016	0.137
	LTE Band 25 (PCS)	1.017	0.016	1.033
	LTE Band 30	0.318	0.016	0.334
	LTE Band 7	0.420	0.016	0.436
	LTE Band 41	0.270	0.016	0.286
	NR Band n71	0.233	0.016	0.249
	NR Band n5 (Cell)	0.595	0.016	0.611
	NR Band n66 (AWS)	0.574	0.016	0.590
	NR Band n25 (PCS)	0.629	0.016	0.645
	NR Band n41	0.239	0.016	0.255

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

Exposure Condition	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	GSM/GPRS 850	0.552	0.016	0.203	0.771
	GSM/GPRS 1900	0.359	0.016	0.203	0.578
	UMTS 850	0.670	0.016	0.203	0.889
	UMTS 1750	1.015	0.016	0.203	1.234
	UMTS 1900	0.993	0.016	0.203	1.212
	Cell. CDMA	0.614	0.016	0.203	0.833
	PCS CDMA	0.875	0.016	0.203	1.094
	LTE Band 71	0.385	0.016	0.203	0.604
	LTE Band 12	0.353	0.016	0.203	0.572
	LTE Band 13	0.415	0.016	0.203	0.634
	LTE Band 14	0.492	0.016	0.203	0.711
	LTE Band 5 (Cell)	0.696	0.016	0.203	0.915
	LTE Band 66 (AWS)	0.862	0.016	0.203	1.081
	LTE Band 66 (AWS) Ant 3	0.097	0.016	0.203	0.316
	LTE Band 2 (PCS)	0.842	0.016	0.203	1.061
	LTE Band 2 (PCS) Ant 3	0.121	0.016	0.203	0.340
	LTE Band 25 (PCS)	1.017	0.016	0.203	1.236
	LTE Band 30	0.318	0.016	0.203	0.537
	LTE Band 7	0.420	0.016	0.203	0.639
	LTE Band 41	0.270	0.016	0.203	0.489
	NR Band n71	0.233	0.016	0.203	0.452
	NR Band n5 (Cell)	0.595	0.016	0.203	0.814
	NR Band n66 (AWS)	0.574	0.016	0.203	0.793
	NR Band n25 (PCS)	0.629	0.016	0.203	0.848
	NR Band n41	0.239	0.016	0.203	0.458

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

Exposure Condition	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	1+2+4	1+2+3+4
Body-Worn	GSM/GPRS 850	0.552	0.016	0.393	0.122	0.961	0.690	1.083
	GSM/GPRS 1900	0.359	0.016	0.393	0.122	0.768	0.497	0.890
	UMTS 850	0.670	0.016	0.393	0.122	1.079	0.808	1.201
	UMTS 1750	1.015	0.016	0.393	0.122	1.424	1.153	1.546
	UMTS 1900	0.993	0.016	0.393	0.122	1.402	1.131	1.524
	Cell. CDMA	0.614	0.016	0.393	0.122	1.023	0.752	1.145
	PCS CDMA	0.875	0.016	0.393	0.122	1.284	1.013	1.406
	LTE Band 71	0.385	0.016	0.393	0.122	0.794	0.523	0.916
	LTE Band 12	0.353	0.016	0.393	0.122	0.762	0.491	0.884
	LTE Band 13	0.415	0.016	0.393	0.122	0.824	0.553	0.946
	LTE Band 14	0.492	0.016	0.393	0.122	0.901	0.630	1.023
	LTE Band 5 (Cell)	0.696	0.016	0.393	0.122	1.105	0.834	1.227
	LTE Band 66 (AWS)	0.862	0.016	0.393	0.122	1.271	1.000	1.393
	LTE Band 66 (AWS) Ant 3	0.097	0.016	0.393	0.122	0.506	0.235	0.628
	LTE Band 2 (PCS)	0.842	0.016	0.393	0.122	1.251	0.980	1.373
	LTE Band 2 (PCS) Ant 3	0.121	0.016	0.393	0.122	0.530	0.259	0.652
	LTE Band 25 (PCS)	1.017	0.016	0.393	0.122	1.426	1.155	1.548
	LTE Band 30	0.318	0.016	0.393	0.122	0.727	0.456	0.849
	LTE Band 7	0.420	0.016	0.393	0.122	0.829	0.558	0.951
	LTE Band 41	0.270	0.016	0.393	0.122	0.679	0.408	0.801
	NR Band n71	0.233	0.016	0.393	0.122	0.642	0.371	0.764
	NR Band n5 (Cell)	0.595	0.016	0.393	0.122	1.004	0.733	1.126
	NR Band n66 (AWS)	0.574	0.016	0.393	0.122	0.983	0.712	1.105
	NR Band n25 (PCS)	0.629	0.016	0.393	0.122	1.038	0.767	1.160
	NR Band n41	0.239	0.016	0.393	0.122	0.648	0.377	0.770

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12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	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 SAR	GPRS 850	0.552	0.342	0.439	0.894	0.991	1.333
	GPRS 1900	0.749	0.342	0.439	1.091	1.188	1.530
	UMTS 850	0.670	0.342	0.439	1.012	1.109	1.451
	UMTS 1750	0.597	0.342	0.439	0.939	1.036	1.378
	UMTS 1900	0.760	0.342	0.439	1.102	1.199	1.541
	Cell. EVDO	0.706	0.342	0.439	1.048	1.145	1.487
	PCS EVDO	0.816	0.342	0.439	1.158	1.255	See Table Below
	LTE Band 71	0.385	0.342	0.439	0.727	0.824	1.166
	LTE Band 12	0.353	0.342	0.439	0.695	0.792	1.134
	LTE Band 13	0.415	0.342	0.439	0.757	0.854	1.196
	LTE Band 14	0.492	0.342	0.439	0.834	0.931	1.273
	LTE Band 5 (Cell)	0.696	0.342	0.439	1.038	1.135	1.477
	LTE Band 66 (AWS)	0.691	0.342	0.439	1.033	1.130	1.472
	LTE Band 66 (AWS) Ant 3	0.195	0.342	0.439	0.537	0.634	0.976
	LTE Band 2 (PCS)	0.893	0.342	0.439	1.235	1.332	See Table Below
	LTE Band 2 (PCS) Ant 3	0.188	0.342	0.439	0.530	0.627	0.969
	LTE Band 25 (PCS)	0.809	0.342	0.439	1.151	1.248	1.590
	LTE Band 30	0.714	0.342	0.439	1.056	1.153	1.495
	LTE Band 7	0.531	0.342	0.439	0.873	0.970	1.312
	LTE Band 41	0.366	0.342	0.439	0.708	0.805	1.147
	NR Band n71	0.233	0.342	0.439	0.575	0.672	1.014
	NR Band n5 (Cell)	0.595	0.342	0.439	0.937	1.034	1.376
	NR Band n66 (AWS)	1.063	0.342	0.439	1.405	1.502	See Table Below
	NR Band n25 (PCS)	1.123	0.342	0.439	1.465	1.562	See Table Below
	NR Band n41	0.239	0.342	0.439	0.581	0.678	1.020

Simult Tx	Configuration	PCS EVDO 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 2 (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
Hotspot SAR	Back	0.445	0.161	0.203	0.809	Hotspot SAR	Back	0.477	0.161	0.203	0.841
	Front	0.301	0.342*	0.274	0.917		Front	0.331	0.342*	0.274	0.947
	Top	-	0.342*	0.439	0.781		Top	-	0.342*	0.439	0.781
	Bottom	0.816	-	-	0.816		Bottom	0.893	-	-	0.893
	Left	0.120	0.342	0.439*	0.901		Left	0.122	0.342	0.439*	0.903
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 n25 (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
Hotspot SAR	Back	0.574	0.161	0.203	0.938	Hotspot SAR	Back	0.629	0.161	0.203	0.993
	Front	0.378	0.342*	0.274	0.994		Front	0.434	0.342*	0.274	1.050
	Top	-	0.342*	0.439	0.781		Top	-	0.342*	0.439	0.781
	Right	1.063	-	-	1.063		Right	1.123	-	-	1.123
	Left	-	0.342	0.439*	0.781		Left	-	0.342	0.439*	0.781

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Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	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 SAR	GPRS 850	0.552	0.197	0.074	0.749	0.626	0.823
	GPRS 1900	0.749	0.197	0.074	0.946	0.823	1.020
	UMTS 850	0.670	0.197	0.074	0.867	0.744	0.941
	UMTS 1750	0.597	0.197	0.074	0.794	0.671	0.868
	UMTS 1900	0.760	0.197	0.074	0.957	0.834	1.031
	Cell. EVDO	0.706	0.197	0.074	0.903	0.780	0.977
	PCS EVDO	0.816	0.197	0.074	1.013	0.890	1.087
	LTE Band 71	0.385	0.197	0.074	0.582	0.459	0.656
	LTE Band 12	0.353	0.197	0.074	0.550	0.427	0.624
	LTE Band 13	0.415	0.197	0.074	0.612	0.489	0.686
	LTE Band 14	0.492	0.197	0.074	0.689	0.566	0.763
	LTE Band 5 (Cell)	0.696	0.197	0.074	0.893	0.770	0.967
	LTE Band 66 (AWS)	0.691	0.197	0.074	0.888	0.765	0.962
	LTE Band 66 (AWS) Ant 3	0.195	0.197	0.074	0.392	0.269	0.466
	LTE Band 2 (PCS)	0.893	0.197	0.074	1.090	0.967	1.164
	LTE Band 2 (PCS) Ant 3	0.188	0.197	0.074	0.385	0.262	0.459
	LTE Band 25 (PCS)	0.809	0.197	0.074	1.006	0.883	1.080
	LTE Band 30	0.714	0.197	0.074	0.911	0.788	0.985
	LTE Band 7	0.531	0.197	0.074	0.728	0.605	0.802
	LTE Band 41	0.366	0.197	0.074	0.563	0.440	0.637
	NR Band n71	0.233	0.197	0.074	0.430	0.307	0.504
	NR Band n5 (Cell)	0.595	0.197	0.074	0.792	0.669	0.866
	NR Band n66 (AWS)	1.063	0.197	0.074	1.260	1.137	1.334
	NR Band n25 (PCS)	1.123	0.197	0.074	1.320	1.197	1.394
	NR Band n41	0.239	0.197	0.074	0.436	0.313	0.510

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Table 12-15
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Hotspot at 1.0 cm)

Exposure Condition	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 SAR	GPRS 850	0.552	0.342	0.074	0.968
	GPRS 1900	0.749	0.342	0.074	1.165
	UMTS 850	0.670	0.342	0.074	1.086
	UMTS 1750	0.597	0.342	0.074	1.013
	UMTS 1900	0.760	0.342	0.074	1.176
	Cell. EVDO	0.706	0.342	0.074	1.122
	PCS EVDO	0.816	0.342	0.074	1.232
	LTE Band 71	0.385	0.342	0.074	0.801
	LTE Band 12	0.353	0.342	0.074	0.769
	LTE Band 13	0.415	0.342	0.074	0.831
	LTE Band 14	0.492	0.342	0.074	0.908
	LTE Band 5 (Cell)	0.696	0.342	0.074	1.112
	LTE Band 66 (AWS)	0.691	0.342	0.074	1.107
	LTE Band 66 (AWS) Ant 3	0.195	0.342	0.074	0.611
	LTE Band 2 (PCS)	0.893	0.342	0.074	1.309
	LTE Band 2 (PCS) Ant 3	0.188	0.342	0.074	0.604
	LTE Band 25 (PCS)	0.809	0.342	0.074	1.225
	LTE Band 30	0.714	0.342	0.074	1.130
	LTE Band 7	0.531	0.342	0.074	0.947
	LTE Band 41	0.366	0.342	0.074	0.782
	NR Band n71	0.233	0.342	0.074	0.649
	NR Band n5 (Cell)	0.595	0.342	0.074	1.011
	NR Band n66 (AWS)	1.063	0.342	0.074	1.479
	NR Band n25 (PCS)	1.123	0.342	0.074	1.539
	NR Band n41	0.239	0.342	0.074	0.655

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Table 12-16
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.552	0.045	0.597
	GPRS 1900	0.749	0.045	0.794
	UMTS 850	0.670	0.045	0.715
	UMTS 1750	0.597	0.045	0.642
	UMTS 1900	0.760	0.045	0.805
	Cell. EVDO	0.706	0.045	0.751
	PCS EVDO	0.816	0.045	0.861
	LTE Band 71	0.385	0.045	0.430
	LTE Band 12	0.353	0.045	0.398
	LTE Band 13	0.415	0.045	0.460
	LTE Band 14	0.492	0.045	0.537
	LTE Band 5 (Cell)	0.696	0.045	0.741
	LTE Band 66 (AWS)	0.691	0.045	0.736
	LTE Band 66 (AWS) Ant 3	0.195	0.045	0.240
	LTE Band 2 (PCS)	0.893	0.045	0.938
	LTE Band 2 (PCS) Ant 3	0.188	0.045	0.233
	LTE Band 25 (PCS)	0.809	0.045	0.854
	LTE Band 30	0.714	0.045	0.759
	LTE Band 7	0.531	0.045	0.576
	LTE Band 41	0.366	0.045	0.411
	NR Band n71	0.233	0.045	0.278
	NR Band n5 (Cell)	0.595	0.045	0.640
	NR Band n66 (AWS)	1.063	0.045	1.108
	NR Band n25 (PCS)	1.123	0.045	1.168
	NR Band n41	0.239	0.045	0.284

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Table 12-17

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

Exposure Condition	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 SAR	GPRS 850	0.552	0.045	0.439	1.036
	GPRS 1900	0.749	0.045	0.439	1.233
	UMTS 850	0.670	0.045	0.439	1.154
	UMTS 1750	0.597	0.045	0.439	1.081
	UMTS 1900	0.760	0.045	0.439	1.244
	Cell. EVDO	0.706	0.045	0.439	1.190
	PCS EVDO	0.816	0.045	0.439	1.300
	LTE Band 71	0.385	0.045	0.439	0.869
	LTE Band 12	0.353	0.045	0.439	0.837
	LTE Band 13	0.415	0.045	0.439	0.899
	LTE Band 14	0.492	0.045	0.439	0.976
	LTE Band 5 (Cell)	0.696	0.045	0.439	1.180
	LTE Band 66 (AWS)	0.691	0.045	0.439	1.175
	LTE Band 66 (AWS) Ant 3	0.195	0.045	0.439	0.679
	LTE Band 2 (PCS)	0.893	0.045	0.439	1.377
	LTE Band 2 (PCS) Ant 3	0.188	0.045	0.439	0.672
	LTE Band 25 (PCS)	0.809	0.045	0.439	1.293
	LTE Band 30	0.714	0.045	0.439	1.198
	LTE Band 7	0.531	0.045	0.439	1.015
	LTE Band 41	0.366	0.045	0.439	0.850
	NR Band n71	0.233	0.045	0.439	0.717
	NR Band n5 (Cell)	0.595	0.045	0.439	1.079
	NR Band n66 (AWS)	1.063	0.045	0.439	1.547
	NR Band n25 (PCS)	1.123	0.045	0.439	See Table Below
	NR Band n41	0.239	0.045	0.439	0.723

Simult Tx	Configuration	NR Band n25 (PCS) 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 SAR	Back	0.629	0.016	0.203	0.848
	Front	0.434	0.020	0.274	0.728
	Top	-	0.025	0.439	0.464
	Right	1.123	-	-	1.123
	Left	-	0.045	0.439*	0.484

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

Exposure Condition	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	1+2+4	1+2+3+4
Hotspot SAR	GPRS 850	0.552	0.045	0.197	0.074	0.794	0.671	0.868
	GPRS 1900	0.749	0.045	0.197	0.074	0.991	0.868	1.065
	UMTS 850	0.670	0.045	0.197	0.074	0.912	0.789	0.986
	UMTS 1750	0.597	0.045	0.197	0.074	0.839	0.716	0.913
	UMTS 1900	0.760	0.045	0.197	0.074	1.002	0.879	1.076
	Cell. EVDO	0.706	0.045	0.197	0.074	0.948	0.825	1.022
	PCS EVDO	0.816	0.045	0.197	0.074	1.058	0.935	1.132
	LTE Band 71	0.385	0.045	0.197	0.074	0.627	0.504	0.701
	LTE Band 12	0.353	0.045	0.197	0.074	0.595	0.472	0.669
	LTE Band 13	0.415	0.045	0.197	0.074	0.657	0.534	0.731
	LTE Band 14	0.492	0.045	0.197	0.074	0.734	0.611	0.808
	LTE Band 5 (Cell)	0.696	0.045	0.197	0.074	0.938	0.815	1.012
	LTE Band 66 (AWS)	0.691	0.045	0.197	0.074	0.933	0.810	1.007
	LTE Band 66 (AWS) Ant 3	0.195	0.045	0.197	0.074	0.437	0.314	0.511
	LTE Band 2 (PCS)	0.893	0.045	0.197	0.074	1.135	1.012	1.209
	LTE Band 2 (PCS) Ant 3	0.188	0.045	0.197	0.074	0.430	0.307	0.504
	LTE Band 25 (PCS)	0.809	0.045	0.197	0.074	1.051	0.928	1.125
	LTE Band 30	0.714	0.045	0.197	0.074	0.956	0.833	1.030
	LTE Band 7	0.531	0.045	0.197	0.074	0.773	0.650	0.847
	LTE Band 41	0.366	0.045	0.197	0.074	0.608	0.485	0.682
	NR Band n71	0.233	0.045	0.197	0.074	0.475	0.352	0.549
	NR Band n5 (Cell)	0.595	0.045	0.197	0.074	0.837	0.714	0.911
	NR Band n66 (AWS)	1.063	0.045	0.197	0.074	1.305	1.182	1.379
	NR Band n25 (PCS)	1.123	0.045	0.197	0.074	1.365	1.242	1.439
	NR Band n41	0.239	0.045	0.197	0.074	0.481	0.358	0.555

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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 12-19
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

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
Phablet SAR	Back	1.921	1.477	0.273*	3.398	2.194
	Front	1.849	1.477*	0.273*	3.326	2.122
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.298	-	-	2.298	2.298
	Left	0.624	0.502	0.273	1.126	0.897
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
Phablet SAR	Back	1.842	1.477	0.273*	3.319	2.115
	Front	1.935	1.477*	0.273*	3.412	2.208
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.761	-	-	2.761	2.761
	Left	0.669	0.502	0.273	1.171	0.942
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
Phablet SAR	Back	2.368	1.477	0.273*	3.845	2.641
	Front	2.208	1.477*	0.273*	3.685	2.481
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.843	-	-	2.843	2.843
	Left	0.748	0.502	0.273	1.250	1.021

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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
Phablet SAR	Back	1.956	1.477	0.273*	3.433	2.229
	Front	1.700	1.477*	0.273*	3.177	1.973
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.150	-	-	2.150	2.150
	Left	0.650	0.502	0.273	1.152	0.923
Simult Tx	Configuration	LTE Band 2 (PCS) 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
Phablet SAR	Back	2.298	1.477	0.273*	3.775	2.571
	Front	1.905	1.477*	0.273*	3.382	2.178
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	3.136	-	-	3.136	3.136
	Left	0.649	0.502	0.273	1.151	0.922
Simult Tx	Configuration	LTE Band 25 (PCS) 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
Phablet SAR	Back	2.351	1.477	0.273*	3.828	2.624
	Front	2.160	1.477*	0.273*	3.637	2.433
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.981	-	-	2.981	2.981
	Left	0.717	0.502	0.273	1.219	0.990
Simult Tx	Configuration	LTE Band 7 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
Phablet SAR	Back	1.734	1.477	0.273*	3.211	2.007
	Front	1.626	1.477*	0.273*	3.103	1.899
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	3.072	-	-	3.072	3.072
	Left	0.405	0.502	0.273	0.907	0.678

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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
Phablet SAR	Back	1.422	1.477	0.273*	2.899	1.695
	Front	1.283	1.477*	0.273*	2.760	1.556
	Top	-	1.477*	0.273*	1.477	0.273
	Bottom	2.763	-	-	2.763	2.763
	Left	0.235	0.502	0.273	0.737	0.508
Simult Tx	Configuration	NR Band n66 (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
Phablet SAR	Back	-	1.477	0.273*	1.477	0.273
	Front	-	1.477*	0.273*	1.477	0.273
	Top	-	1.477*	0.273*	1.477	0.273
	Right	2.814	-	-	2.814	2.814
	Left	-	0.502	0.273	0.502	0.273
Simult Tx	Configuration	NR Band n25 (PCS) 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
Phablet SAR	Back	-	1.477	0.273*	1.477	0.273
	Front	-	1.477*	0.273*	1.477	0.273
	Top	-	1.477*	0.273*	1.477	0.273
	Right	3.064	-	-	3.064	3.064
	Left	-	0.502	0.273	0.502	0.273

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Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.921	2.584	See Note 1	0.06
	Front	1.849	0.601	2.450	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.298	-	2.298	N/A
	Left	0.624	0.660	1.284	N/A
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.842	2.584	See Note 1	0.06
	Front	1.935	0.601	2.536	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.761	-	2.761	N/A
	Left	0.669	0.660	1.329	N/A
Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.368	2.584	See Note 1	0.07
	Front	2.208	0.601	2.809	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.843	-	2.843	N/A
	Left	0.748	0.660	1.408	N/A
Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.956	2.584	See Note 1	0.06
	Front	1.700	0.601	2.301	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.150	-	2.150	N/A
	Left	0.650	0.660	1.310	N/A

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Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.298	2.584	See Note 1	0.07
	Front	1.905	0.601	2.506	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	3.136	-	3.136	N/A
	Left	0.649	0.660	1.309	N/A
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.351	2.584	See Note 1	0.07
	Front	2.160	0.601	2.761	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.981	-	2.981	N/A
	Left	0.717	0.660	1.377	N/A
Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.734	2.584	See Note 1	0.06
	Front	1.626	0.601	2.227	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	3.072	-	3.072	N/A
	Left	0.405	0.660	1.065	N/A
Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.422	2.584	See Note 1	0.05
	Front	1.283	0.601	1.884	N/A
	Top	-	2.584*	2.584	N/A
	Bottom	2.763	-	2.763	N/A
	Left	0.235	0.660	0.895	N/A

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Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	-	2.584	2.584
	Front	-	0.601	0.601
	Top	-	2.584*	2.584
	Right	2.814	-	2.814
	Left	-	0.660	0.660
Simult Tx	Configuration	NR Band n25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	-	2.584	2.584
	Front	-	0.601	0.601
	Top	-	2.584*	2.584
	Right	3.064	-	3.064
	Left	-	0.660	0.660

Notes:

1. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

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12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 4 W/kg for 10g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤ 0.10 for 10g, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

$$\text{Distance}_{\text{Tx1-Tx2}} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \text{ (Phablet)}$$

$$\text{SPLS Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{R_i}$$

12.7.1 Phablet Back Side SPLSR Evaluation and Analysis

Table 12-20
Peak SAR Locations for Phablet Back Side

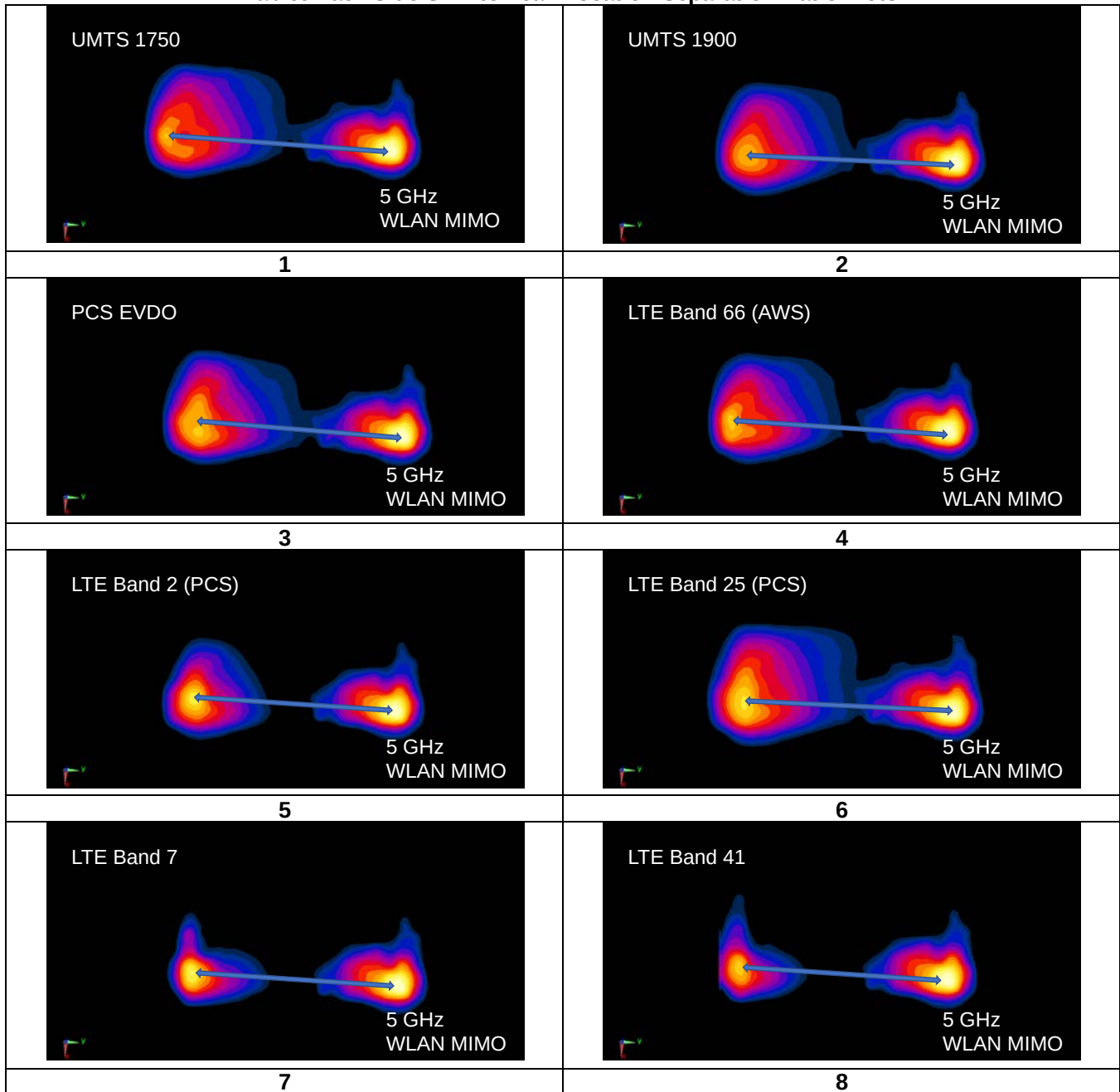
Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	0.00	67.20
UMTS 1750	-10.00	-87.00
UMTS 1900	-2.50	-78.00
PCS EVDO	-10.50	-81.50
LTE Band 66 (AWS)	-8.50	-87.00
LTE Band 2 (PCS)	-8.50	-81.50
LTE Band 25 (PCS)	-2.50	-81.50
LTE Band 7	-8.20	-82.40
LTE Band 41	-8.20	-83.00

Table 12-21
Phablet Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D _{a-b}	(a+b) ^{1.5} /D _{a-b}	
UMTS 1750	5 GHz WLAN MIMO	1.921	2.584	4.505	154.52	0.06	1
UMTS 1900	5 GHz WLAN MIMO	1.842	2.584	4.426	145.22	0.06	2
PCS EVDO	5 GHz WLAN MIMO	2.368	2.584	4.952	149.07	0.07	3
LTE Band 66 (AWS)	5 GHz WLAN MIMO	1.956	2.584	4.54	154.43	0.06	4
LTE Band 2 (PCS)	5 GHz WLAN MIMO	2.298	2.584	4.882	148.94	0.07	5
LTE Band 25 (PCS)	5 GHz WLAN MIMO	2.351	2.584	4.935	148.72	0.07	6
LTE Band 7	5 GHz WLAN MIMO	1.734	2.584	4.318	149.82	0.06	7
LTE Band 41	5 GHz WLAN MIMO	1.422	2.584	4.006	150.42	0.05	8

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Table 12-22
Phablet Back Side SAR to Peak Location Separation Ratio Plots



12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis 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	Data Rate (Mbps)	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)			
2450	2452.00	9	802.11n, 20 MHz Bandwidth	OFDM, MIMO	Right	Tilt	13	0.930	0.922	1.01	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)	
1750	1770.00	354000	NR Band n66 (AWS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 1 RB, 104 RB Offset	right	10 mm	1.030	1.030	1.00	N/A	N/A	N/A	N/A
1900	1860.00	372000	NR Band n25 (PCS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 1 RB, 1 RB Offset	right	10 mm	1.110	1.080	1.03	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	Data Rate (Mbps)	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)			
1750	1745.00	349000	NR Band n66 (AWS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 1 RB, 1 RB Offset	N/A	right	0 mm	2.610	2.580	1.01	N/A	N/A	N/A	N/A
1900	1860.00	372000	NR Band n25 (PCS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 50 RB, 0 RB Offset	N/A	right	0 mm	2.990	2.860	1.05	N/A	N/A	N/A	N/A
2450	2510.00	20850	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	N/A	bottom	0 mm	2.750	2.750	1.00	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 50 RB Offset	N/A	bottom	0 mm	2.680	2.510	1.07	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.320	2.110	1.10	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) 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 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 Tuner Testing

Per April 2019 TCB Workshop Notes, the following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Per FCC Guidance, during NR testing the device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other than impedance matching.

To evaluate all the tuner states, the 32 tuner states were divided among the aggregate band, mode and exposure combinations. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band/mode/exposure condition, point SAR measurements were made for all 32 states.

The operational description contains more information about the design and implementation of the dynamic antenna tuning.

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Table 14-1
UMTS/CDMA Supplemental Head SAR Data

Supplemental Head SAR Data			
UMTS B5		CDMA BC0	
RMC		RC3/SO55	
Test Position	Left Cheek	Test Position	Left Cheek
Frequency (MHz)	836.60	Frequency (MHz)	836.52
Channel	4183	Channel	384
Measured 1g SAR (W/kg)	0.158	Measured 1g SAR (W/kg)	0.142
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 8)	0.208	Auto-tune (State 8)	0.186
Default (State 8)	0.201	Default (State 8)	0.186
State 1	0.184	State 4	0.176
State 6	0.201	State 7	0.174
State 8	0.201	State 8	0.186
State 26	0.108	State 10	0.121
State 31	0.030	State 17	0.145

Table 14-2
LTE Supplemental Head SAR Data

Supplemental Head SAR Data									
LTE B71		LTE B12		LTE B13		LTE B14		LTE B5	
QPSK, 20 MHz Bandwidth, 1 RB, 99 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset	
Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Left Cheek
Frequency (MHz)	680.50	Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	793.00	Frequency (MHz)	836.50
Channel	133297	Channel	23095	Channel	23230	Channel	23330	Channel	20525
Measured 1g SAR (W/kg)	0.150	Measured 1g SAR (W/kg)	0.127	Measured 1g SAR (W/kg)	0.141	Measured 1g SAR (W/kg)	0.165	Measured 1g SAR (W/kg)	0.118
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 30)	0.195	Auto-tune (State 19)	0.160	Auto-tune (State 12)	0.173	Auto-tune (State 11)	0.214	Auto-tune (State 8)	0.226
Default (State 30)	0.197	Default (State 22)	0.162	Default (State 13)	0.178	Default (State 13)	0.210	Default (State 8)	0.221
State 23	0.133	State 19	0.168	State 9	0.147	State 3	0.112	State 3	0.203
State 25	0.125	State 21	0.166	State 12	0.181	State 11	0.212	State 8	0.221
State 28	0.192	State 22	0.162	State 13	0.178	State 12	0.210	State 9	0.196
State 30	0.197	State 24	0.142	State 16	0.174	State 13	0.210	State 18	0.144
State 32	0.179	State 31	0.168	State 26	0.103	State 14	0.211	State 32	0.027

Table 14-3
NR Supplemental Head SAR Data

Supplemental Head SAR Data	
NR Band n5	
DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1 RB, 1 RB Offset	
Test Position	Left Cheek
Frequency (MHz)	836.50
Channel	167300
Measured 1g SAR (W/kg)	0.150
Average Value of Time Sweep (W/kg)	
Auto-tune (State 8)	0.196
Default (State 8)	0.196
State 1	0.166
State 4	0.168
State 8	0.196
State 23	0.051
State 28	0.047

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Table 14-4
UMTS/CDMA Supplemental Body SAR Data

Supplemental Body SAR Data			
UMTS B5		CDMA BC0	
RMC		EVDO Rev. 0	
Test Position	Back Side	Test Position	Back side
Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	836.60	Frequency (MHz)	824.70
Channel	4183	Channel	1013
Measured 1g SAR (W/kg)	0.638	Measured 1g SAR (W/kg)	0.695
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 8)	0.975	Auto-tune (State 8)	1.081
Default (State 8)	0.979	Default (State 8)	1.081
State 8	0.979	State 3	1.079
State 10	0.663	State 6	1.064
State 14	0.544	State 8	1.081
State 22	0.284	State 9	0.947
State 26	0.546	State 15	0.560
State 31	0.161	State 27	0.314

Table 14-5
LTE Supplemental Body SAR Data

Supplemental Body SAR Data									
LTE B71		LTE B12		LTE B13		LTE B14		LTE B5	
QPSK, 20 MHz Bandwidth, 1 RB, 99 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset	
Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	680.50	Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	793.00	Frequency (MHz)	836.50
Channel	133297	Channel	23095	Channel	23230	Channel	23330	Channel	20525
Measured 1g SAR (W/kg)	0.364	Measured 1g SAR (W/kg)	0.325	Measured 1g SAR (W/kg)	0.386	Measured 1g SAR (W/kg)	0.470	Measured 1g SAR (W/kg)	0.620
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 27)	0.541	Auto-tune (State 19)	0.481	Auto-tune (State 15)	0.587	Auto-tune (State 11)	0.715	Auto-tune (State 8)	0.952
Default (State 30)	0.536	Default (State 22)	0.478	Default (State 13)	0.602	Default (State 13)	0.708	Default (State 8)	0.924
State 1	0.065	State 9	0.164	State 5	0.322	State 5	0.500	State 1	0.868
State 7	0.059	State 18	0.382	State 7	0.325	State 10	0.727	State 2	0.889
State 22	0.428	State 19	0.482	State 13	0.602	State 11	0.725	State 8	0.924
State 27	0.532	State 22	0.478	State 15	0.577	State 13	0.708	State 18	0.631
State 30	0.536	State 26	0.377	State 18	0.472	State 17	0.684	State 20	0.329
State 32	0.049	State 29	0.437	State 25	0.476	State 21	0.368	State 24	0.209

Table 14-6
NR Supplemental Body SAR Data

Supplemental Body SAR Data	
NR Band n5	
DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1 RB, 1 RB Offset	
Test Position	Back side
Spacing	10 mm
Frequency (MHz)	836.50
Channel	167300
Measured 1g SAR (W/kg)	0.557
Average Value of Time Sweep (W/kg)	
Auto-tune (State 8)	0.842
Default (State 8)	0.842
State 8	0.842
State 12	0.503
State 15	0.429
State 28	0.187
State 31	0.126

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15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	[BHz-2.9GHz] Spectrum Analyzer	N/A	N/A	N/A	3051400187
Agilent	E4432B	ESG-D Series Signal Generator	7/14/2019	Annual	7/14/2020	US40053896
Agilent	E5515C	Wireless Communications Test Set	1/14/2020	Triennial	1/14/2023	GB4304447
Agilent	8753ES	S-Parameter Network Analyzer	12/31/2019	Annual	12/31/2020	US39170122
Agilent	N5182A	MIX Vector Signal Generator	7/10/2019	Annual	7/10/2020	MY47420800
Agilent	N5182A	MIX Vector Signal Generator	2/19/2020	Annual	2/19/2021	MY47420651
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/11/2019	Biennial	3/11/2021	MY45090700
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433976
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433978
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Anritsu	ML2495A	Power Meter	11/15/2019	Annual	11/15/2020	1039008
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	6200901190
Anritsu	MT8820C	Radio Communication Analyzer	7/25/2019	Annual	7/25/2020	6201240328
Anritsu	MA2411B	Pulse Power Sensor	1/21/2020	Annual	1/21/2021	1207470
Anritsu	MA2411B	Pulse Power Sensor	1/21/2020	Annual	1/21/2021	1339007
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	MA24106A	USB Power Sensor	12/9/2019	Annual	12/9/2020	1349503
Anritsu	MA24106A	USB Power Sensor	2/27/2020	Annual	2/27/2021	1349509
Anritsu	MA24106A	USB Power Sensor	7/16/2019	Annual	7/16/2020	1349511
Anritsu	MT8821C	Radio Communication Analyzer	10/2/2019	Annual	10/2/2020	6201664756
Anritsu	MT8862A	Wireless Connectivity Test Set	8/8/2019	Annual	8/8/2020	6261781395
COMTECH	AR85729-S/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1003
COMTECH	AR85729-S	Solid State Amplifier	CBT	N/A	CBT	M1SSA00-009
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181292054
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181292061
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334698
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647812
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53004059
Keysight Technologies	N9020A	MXA Signal Analyzer	12/19/2019	Annual	12/19/2020	MY48010233
MCL	BW-N60W5+	50B Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R897950903
Mini-Circuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-53W2	Attenuator (3dB)	CBT	N/A	CBT	120
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2/4/2020	Annual	2/4/2021	162125
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	11/14/2019	Annual	11/14/2020	164948
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	6/6/2019	Annual	6/6/2020	161662
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2019	Annual	6/3/2020	109892
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	7/18/2019	Annual	7/18/2020	N/A
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	4d132
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	4d133
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	2/2/2019	Biennial	2/2/2021	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	8/13/2018	Biennial	8/13/2020	1073
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Annual	6/14/2020	1064
SPEAG	D5GHV2	5 GHz SAR Dipole	9/17/2019	Annual	9/17/2020	1191
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d080
SPEAG	D5GHV2	5 GHz SAR Dipole	1/16/2018	Triennial	1/16/2021	1057
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	7488
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	3589
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	3/17/2020	Annual	3/17/2021	7527
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7571
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7552
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/5/2019	Annual	12/5/2020	1533
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/12/2019	Annual	9/12/2020	1449
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091

Note: Equipment was solely used during its calibration period

Note: 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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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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17 CONCLUSION

17.1 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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