PCTEST
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. +1.410.290.6652 / Fax +1.410.290.6654
http://www.pctest.com

SAR EVALUATION REPORT

Applicant Name:
LG Electronics U.S.A., Inc.
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632
United States

Date of Testing:
12/02/19 - 02/17/20
Test Site/Location:
PCTEST, Columbia, MD, USA
Document Serial No.:
1M1911250199-01-R2.ZNF

FCC ID: **ZNFV600VM**

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-V600VM
Additional Model(s): LMV600VM, V600VM, LM-V600QM5, LMV600QM5, V600QM5, LM-V600QM6, LMV600QM6, V600QM6

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	0.13	0.55	0.31	N/A
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	< 0.1	0.32	0.32	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.13	0.53	0.55	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	< 0.1	0.53	0.79	3.00
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	< 0.1	0.67	0.64	2.48
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.46	0.86	N/A
PCE	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.75	0.87	3.17
PCE	LTE Band 12	699.7 - 715.3 MHz	0.11	0.28	0.28	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.11	0.36	0.36	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	0.10	0.36	0.36	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.12	0.47	0.47	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.10	0.60	0.72	3.13
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	< 0.1	0.90	0.96	3.17
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.24	0.47	N/A
CBE	LTE Band 48	3552.5 - 3697.5 MHz	< 0.1	0.53	0.53	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.10	0.47	1.04	N/A
PCE	NR Band n5	826.5 - 846.5 MHz	< 0.1	0.30	0.32	N/A
PCE	NR Band n66	1712.5 - 1777.5 MHz	0.20	0.30	0.98	3.17
PCE	NR Band n2	1852.5 - 1907.5 MHz	0.41	0.38	1.01	3.17
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.50	0.12	0.36	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.20	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.37	0.28	N/A	0.87
NII	U-NII-2C	5500 - 5720 MHz	0.26	0.22	N/A	0.98
NII	U-NII-3	5745 - 5825 MHz	0.29	0.23	0.23	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.16	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.23	1.41	1.53	3.98

Note: This revised Test Report (S/N: 1M1911250199-01-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

The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sartick@mwfai.info.

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1 DEVICE UNDER TEST

1.1 Device Overview

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

1.2 Time-Averaging Algorithm for RF Exposure Compliance

The equipment under test (EUT) contains:

a. Qualcomm® SM8250 modem supporting 2G/3G/4G WWAN technologies

b. Qualcomm® SDX55M modem supporting 5G NR

Both of Qualcomm® SM8250 and SDX55M modems are 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 +0.5/-1.5 dB for this EUT.

Exposure Scenario:		Head	Body-Worn	Phablet	Hotspot	Phablet	Maximum
Averaging Volume:		1g	1g	10g	1g	10g	Tune-Up
Spacing:		0 mm	10 mm	2, 1, 3 mm	10 mm	0 mm	Output
DSI:		1			5	8	Power*
Technology/Band	Antenna	**Plimit**					**Pmax**
GSM/GPRS/EDGE 850 MHz	1	30.1					24.5
GSM/GPRS/EDGE 1900 MHz	2	24.0					22.5
UMTS B5	1	28.5					25.0
UMTS B4	2	26.8			22.0		24.7
UMTS B2	2	26.4			22.2		24.7
CDMA/EVDO BC0	1	28.1					25.0
CDMA/EVDO BC1	2	26.2			22.2		24.7
LTE FDD B12	1	30.3					25.0
LTE FDD B13	1	29.5					25.0
LTE FDD B14	1	30.0					25.0
LTE FDD B5	1	28.6					25.0
LTE FDD B66	2	25.4			22.2		24.7
LTE FDD B4	2	25.4			22.2		24.7
LTE FDD B2	2	24.9			22.2		24.7
LTE FDD B30	2	24.7					22.2
LTE TDD B48	11	21.5					21.2
LTE TDD B41	2	22.9					22.7
NR FDD n5	1	29.4					24.2
NR FDD n66	3	23.2					25.0
NR FDD n2	3	23.4					25.0

*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 + 0.5dB device design uncertainty.

The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G sub6 WWAN technology, band, and DSI = minimum of "P_{limit} EFS" and "Maximum tune up output power P_{max}" +0.5/-1.5 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 for 2.4 GHz WLAN and in some simultaneous transmission conditions with 5G NR FR2 and 2.4 GHz + 5 GHz WIFI Active. 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 for the cases mentioned above. 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	1 TX Slots	2 TX Slots
All DSI	Max allowed power	33.4	33.4	31.2	27.2	26.7
	Nominal	32.9	32.9	30.7	26.7	26.2

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	1 TX Slots	1 TX Slots
All DSI	Max allowed power	30.2	30.2	29.2	26.2	25.7
	Nominal	29.7	29.7	28.7	25.7	25.2

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
All DSI	Max allowed power	25.5	25.5	25.5
	Nominal	25.0	25.0	25.0

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
DSI = 1 (Head, Body-worn, or Phablet Max)	Max allowed power	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.5	22.5	22.5
	Nominal	22.0	22.0	22.0

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
DSI = 1 (Head, Body-worn, or Phablet Max)	Max allowed power	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.7	22.7	22.7
	Nominal	22.2	22.2	22.2

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	25.0	25.0	25.0

CDMA BC1 (1900 MHz)				
Device State Index		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
DSI = 1 (Head, Body-worn, or Phablet Max)	Max allowed power	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.7	22.7	22.7
	Nominal	22.2	22.2	22.2

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	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 13	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 14	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 5	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 4	Max allowed power	25.2	22.7
	Nominal	24.7	22.2
LTE FDD Band 66	Max allowed power	25.2	22.7
	Nominal	24.7	22.2
LTE FDD Band 2	Max allowed power	25.2	22.7
	Nominal	24.7	22.2
LTE FDD Band 30	Max allowed power	22.7	22.7
	Nominal	22.2	22.2
LTE TDD Band 48	Max allowed power	23.7	23.7
	Nominal	23.2	23.2
LTE TDD Band 41	Max allowed power	25.2	25.2
	Nominal	24.7	24.7

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 n5	Max allowed power	24.7	24.7
	Nominal	24.2	24.2
NR FDD Band n66	Max allowed power	23.9	23.9
	Nominal	23.4	23.4
NR FDD Band n2	Max allowed power	23.7	23.7
	Nominal	23.2	23.2

1.4.2 Maximum Bluetooth and SISO/MIMO WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in Appendix H

Mode	Band	IEEE 802.11 (in dBm)																							
		SISO												MIMO											
		Antenna 1/ Antenna 2																							
		b		g		n		ac		ax (SU)		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)					
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.						
2.4 GHz WIFI	2.45 GHz	20.5	19.5	19.5	18.5	18.5	17.5	18.5	17.5	16.5	15.5	22.5	21.5	21.5	20.5	21.5	20.5	19.5	18.5						
				ch. 1: 18.0	ch. 1: 17.0	ch. 1: 17.0	ch. 1: 16.0	ch. 1: 17.0	ch. 1: 16.0	ch. 1: 15.0	ch. 1: 14.0	ch. 1: 21.0	ch. 1: 20.0	ch. 1: 20.0	ch. 1: 19.0	ch. 1: 20.0	ch. 1: 19.0	ch. 1: 18.0	ch. 1: 17.0						
				ch. 2: 18.0	ch. 2: 17.0	ch. 2: 17.0	ch. 2: 16.0	ch. 2: 17.0	ch. 2: 16.0	ch. 2: 15.0	ch. 2: 14.0	ch. 2: 21.0	ch. 2: 20.0	ch. 2: 20.0	ch. 2: 19.0	ch. 2: 20.0	ch. 2: 19.0	ch. 2: 18.0	ch. 2: 17.0						
				ch. 10: 17.5	ch. 10: 16.5	ch. 10: 16.5	ch. 10: 15.5	ch. 10: 16.5	ch. 10: 15.5	ch. 10: 14.5	ch. 10: 13.5	ch. 10: 20.5	ch. 10: 19.5	ch. 10: 19.5	ch. 10: 18.5	ch. 10: 19.5	ch. 10: 18.5	ch. 10: 17.5	ch. 10: 16.5						
				ch. 11: 17.5	ch. 11: 16.5	ch. 11: 16.5	ch. 11: 15.5	ch. 11: 16.5	ch. 11: 15.5	ch. 11: 14.5	ch. 11: 13.5	ch. 11: 20.5	ch. 11: 19.5	ch. 11: 19.5	ch. 11: 18.5	ch. 11: 19.5	ch. 11: 18.5	ch. 11: 17.5	ch. 11: 16.5						

Mode	Band	IEEE 802.11 (in dBm)																							
		SISO												MIMO											
		Antenna 1/ Antenna 2																							
		a		n		ac		ax (SU)		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)									
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.						
5 GHz WIFI (20MHz BW)	5200 MHz	18.0	17.0	18.0	17.0	18.0	17.0	15.0	14.0	21.0	20.0	21.0	20.0	21.0	20.0	18.0	17.0								
		ch. 36: 17.0	ch. 36: 16.0	ch. 36: 17.0	ch. 36: 16.0	ch. 36: 17.0	ch. 36: 16.0			ch. 36: 20.0	ch. 36: 19.0	ch. 36: 20.0	ch. 36: 19.0	ch. 36: 20.0	ch. 36: 19.0										
		ch. 44: 17.0	ch. 44: 16.0	ch. 44: 17.0	ch. 44: 16.0	ch. 44: 17.0	ch. 44: 16.0			ch. 44: 20.0	ch. 44: 19.0	ch. 44: 20.0	ch. 44: 19.0	ch. 44: 20.0	ch. 44: 19.0										
		ch. 48: 17.0	ch. 48: 16.0	ch. 48: 17.0	ch. 48: 16.0	ch. 48: 17.0	ch. 48: 16.0			ch. 48: 20.0	ch. 48: 19.0	ch. 48: 20.0	ch. 48: 19.0	ch. 48: 20.0	ch. 48: 19.0										
	5300 MHz	18.0	17.0	18.0	17.0	18.0	17.0	15.0	14.0	21.0	20.0	21.0	20.0	21.0	20.0	18.0	17.0								
		ch. 52: 17.0	ch. 52: 16.0	ch. 52: 17.0	ch. 52: 16.0	ch. 52: 17.0	ch. 52: 16.0			ch. 52: 20.0	ch. 52: 19.0	ch. 52: 20.0	ch. 52: 19.0	ch. 52: 20.0	ch. 52: 19.0										
		ch. 60: 17.0	ch. 60: 16.0	ch. 60: 17.0	ch. 60: 16.0	ch. 60: 17.0	ch. 60: 16.0			ch. 60: 20.0	ch. 60: 19.0	ch. 60: 20.0	ch. 60: 19.0	ch. 60: 20.0	ch. 60: 19.0										
		ch. 64: 17.0	ch. 64: 16.0	ch. 64: 17.0	ch. 64: 16.0	ch. 64: 17.0	ch. 64: 16.0			ch. 64: 20.0	ch. 64: 19.0	ch. 64: 20.0	ch. 64: 19.0	ch. 64: 20.0	ch. 64: 19.0										
	5500 MHz	17.0	16.0	17.0	16.0	17.0	16.0	15.0	14.0	20.0	19.0	20.0	19.0	20.0	19.0	18.0	17.0								
	5800 MHz	18.0	17.0	18.0	17.0	18.0	17.0	15.0	14.0	21.0	20.0	21.0	20.0	21.0	20.0	18.0	17.0								
		ch. 149: 17.0	ch. 149: 16.0	ch. 149: 17.0	ch. 149: 16.0	ch. 149: 17.0	ch. 149: 16.0			ch. 149: 20.0	ch. 149: 19.0	ch. 149: 20.0	ch. 149: 19.0	ch. 149: 20.0	ch. 149: 19.0										
		ch. 153: 17.0	ch. 153: 16.0	ch. 153: 17.0	ch. 153: 16.0	ch. 153: 17.0	ch. 153: 16.0			ch. 153: 20.0	ch. 153: 19.0	ch. 153: 20.0	ch. 153: 19.0	ch. 153: 20.0	ch. 153: 19.0										
		ch. 161: 17.0	ch. 161: 16.0	ch. 161: 17.0	ch. 161: 16.0	ch. 161: 17.0	ch. 161: 16.0			ch. 161: 20.0	ch. 161: 19.0	ch. 161: 20.0	ch. 161: 19.0	ch. 161: 20.0	ch. 161 19.0										
5 GHz WIFI (40MHz BW)	5200 MHz			16.0	15.0	16.0	15.0	13.0	12.0			19.0	18.0	19.0	18.0	16.0	15.0								
				ch. 38: 11.5	ch. 38: 10.5	ch. 38: 11.5	ch. 38: 10.5	ch. 38: 9.5	ch. 38: 8.5			ch. 38: 14.5	ch. 38: 13.5	ch. 38: 14.5	ch. 38: 13.5	ch. 38: 12.5	ch. 38: 11.5								
	5300 MHz			16.0	15.0	16.0	15.0	13.0	12.0			19.0	18.0	19.0	18.0	16.0	15.0								
				ch. 62: 11.5	ch. 62: 10.5	ch. 62: 11.5	ch. 62: 10.5	ch. 62: 9.5	ch. 62: 8.5			ch. 62: 14.5	ch. 62: 13.5	ch. 62: 14.5	ch. 62: 13.5	ch. 62: 12.5	ch. 62: 11.5								
	5500 MHz			16.0	15.0	16.0	15.0	13.0	12.0			19.0	18.0	19.0	18.0	16.0	15.0								
				ch. 102: 11.5	ch. 102: 10.5	ch. 102: 11.5	ch. 102: 10.5	ch. 102: 9.5	ch. 102: 8.5			ch. 102: 14.5	ch. 102: 13.5	ch. 102: 14.5	ch. 102: 13.5	ch. 102: 12.5	ch. 102: 11.5								
	5800 MHz			16.0	15.0	16.0	15.0	13.0	12.0			19.0	18.0	19.0	18.0	16.0	15.0								
5 GHz WIFI (80MHz BW)	5200 MHz					11.0	10.0	9.0	8.0					14.0	13.0	12.0	11.0								
	5300 MHz					11.0	10.0	9.0	8.0					14.0	13.0	12.0	11.0								
	5500 MHz					13.0	12.0	11.0	10.0					16.0	15.0	14.0	13.0								
	5800 MHz					13.0	12.0	11.0	10.0					16.0	15.0	14.0	13.0								

Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth	Maximum	**12.5**
	Nominal	**11.5**
Bluetooth LE	Maximum	**7.0**
	Nominal	**6.0**

1.4.3 2.4 GHz Reduced WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in Appendix H

The below table is applicable in the following conditions:

- Head Conditions
- Head Conditions during simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN
- 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		ax (SU)		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	15.5	14.5	15.5	14.5	15.5	14.5	15.5	14.5	15.5 ch. 1: 15.0 ch. 2: 15.0 ch. 10: 14.5 ch. 11: 14.5	14.5 ch. 1: 14.0 ch. 2: 14.0 ch. 10: 13.5 ch. 11: 13.5	18.5	17.5	18.5	17.5	18.5	17.5	18.5 ch. 1: 18.0 ch. 2: 18.0 ch. 10: 17.5 ch. 11: 17.5	17.5 17.0 17.0 16.5 16.5

1.4.4 5 GHz Reduced WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in Appendix H

The below table is applicable in the following conditions:

- Simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN
- Simultaneous conditions with 5G NR FR2
- Simultaneous conditions with 5G NR FR2 and 2.4 GHz WLAN and 5 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)																	
		SISO								MIMO									
		Antenna 1 /Antenna 2																	
		a		n		ac		ax (SU)		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WIFI (20MHz BW)	5200 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5300 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5500 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5800 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
5 GHz WIFI (40MHz BW)	5200 MHz			15.0 ch. 38: 11.5	14.0 ch. 38: 10.5	15.0 ch. 38: 11.5	14.0 ch. 38: 10.5	13.0 ch. 38: 9.5	12.0 ch. 38: 8.5			18.0 ch. 38: 14.5	17.0 ch. 38: 13.5	18.0 ch. 38: 14.5	17.0 ch. 38: 13.5	18.0 ch. 38: 14.5	17.0 ch. 38: 13.5	16.0 ch. 38: 12.5	15.0 ch. 38: 11.5
	5300 MHz			15.0 ch. 62: 11.5	14.0 ch. 62: 10.5	15.0 ch. 62: 11.5	14.0 ch. 62: 10.5	13.0 ch. 62: 9.5	12.0 ch. 62: 8.5			18.0 ch. 62: 14.5	17.0 ch. 62: 13.5	18.0 ch. 62: 14.5	17.0 ch. 62: 13.5	18.0 ch. 62: 14.5	17.0 ch. 62: 13.5	16.0 ch. 62: 12.5	15.0 ch. 62: 11.5
	5500 MHz			15.0 ch. 102: 11.5	14.0 ch. 102: 10.5	15.0 ch. 102: 11.5	14.0 ch. 102: 10.5	13.0 ch. 102: 9.5	12.0 ch. 102: 8.5			18.0 ch. 102: 14.5	17.0 ch. 102: 13.5	18.0 ch. 102: 14.5	17.0 ch. 102: 13.5	18.0 ch. 102: 14.5	17.0 ch. 102: 13.5	16.0 ch. 102: 12.5	15.0 ch. 102: 11.5
	5800 MHz			15.0	14.0	15.0	14.0	13.0	12.0			18.0	17.0	18.0	17.0	18.0	17.0	16.0	15.0
5 GHz WIFI (80MHz BW)	5200 MHz					11.0	10.0	9.0	8.0					14.0	13.0	12.0	11.0		
	5300 MHz					11.0	10.0	9.0	8.0					14.0	13.0	12.0	11.0		
	5500 MHz					13.0	12.0	11.0	10.0					16.0	15.0	14.0	13.0		
	5800 MHz					13.0	12.0	11.0	10.0					16.0	15.0	14.0	13.0		

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
Cell. EVDO	Yes	Yes	No	Yes	Yes	No
GPRS 850	Yes	Yes	No	Yes	Yes	No
UMTS 850	Yes	Yes	No	Yes	Yes	No
UMTS 1750	Yes	Yes	No	Yes	No	Yes
PCS EVDO	Yes	Yes	No	Yes	No	Yes
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	No
LTE Band 13	Yes	Yes	No	Yes	Yes	No
LTE Band 14	Yes	Yes	No	Yes	Yes	No
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS)	Yes	Yes	No	Yes	No	Yes
LTE Band 2 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 48	Yes	Yes	No	No	Yes	No
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n5	Yes	Yes	No	Yes	Yes	No
NR Band n66	Yes	Yes	No	Yes	Yes	No
NR Band n2	Yes	Yes	No	Yes	Yes	No
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN MIMO	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 MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
7	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	1x CDMA voice + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
9	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
10	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
11	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
12	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
13	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
14	GSM voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
15	GSM voice + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
16	GSM voice + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
17	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
18	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
19	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
20	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
21	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
22	UMTS + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
23	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
24	UMTS + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
25	LTE + 5G NR	Yes	Yes	N/A	Yes	
26	LTE + 2.4 GHz WI-FI + 5G NR	Yes	Yes	Yes	Yes	
27	LTE + 5 GHz WI-FI + 5G NR	Yes	Yes	Yes	Yes	
28	LTE + 2.4 GHz Bluetooth + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
29	LTE + 2.4 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
30	LTE + 5 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
31	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
32	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
33	LTE + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2 + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
34	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
35	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
36	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
37	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
38	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
39	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
40	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
41	LTE + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
42	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
43	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
44	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
45	CDMA/EVDO data + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
46	CDMA/EVDO data + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
47	CDMA/EVDO data + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
48	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
49	CDMA/EVDO data + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
50	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
51	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
52	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
53	GPRS/EDGE + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
54	GPRS/EDGE + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
55	GPRS/EDGE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
56	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
57	GPRS/EDGE + 2.4 GHz Bluetooth + 2.4 GHz WI-FI Ant 2	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered

1. 2.4 GHz WLAN Antenna 1 and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. 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.
4. 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.
5. 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.
6. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports VOLTE.
8. This device supports VOWIFI.
9. This device supports Bluetooth Tethering.
10. LTE + 5G NR FR1 Scenarios are limited to LTE Anchor Bands, LTE Band 2/5/12/13/30/66 under EN-DC mode.
11. 5G NR FR2 n260 and n261 cannot transmit simultaneously.
12. LTE + 5G NR FR2 n260 and n261 operations are possible only with LTE Band 2/5/12/13/14/30/48/66 under EN-DC mode.

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, SAR is not required for U-NII-1 band according to FCC KDB Publication 248227 D01v02r02.

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A & U-NII-2C, 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 Publication 941225 D06v02r01.

This device supports IEEE 802.11ax with the following features:

a) Up to 80 MHz Bandwidth only for 5 GHz
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 for 5 GHz
g) MU-MIMO UL Operations are not supported

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, U-NII-1 WLAN, U-NII-3 WLAN, and Bluetooth operations since wireless router 1g SAR was < 1.2 W/kg.

Per April 2019 TCB Workshop Notes, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227, with 802.11ax considered a higher order 802.11 mode.

(B) Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

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

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

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive. The downlink carrier aggregation exclusion analysis can be found in Appendix F.

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

This device supports 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.

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

This device supports 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 64QAM and 256QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM and 256QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225D05v02r05. SAR was not required for 64QAM or 256QAM since the highest maximum output power for 64QAM and 256QAM is ≤ ½dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

NR implementation of n5, n66, and n2 is limited to EN-DC operations only, with LTE Band 2/5/12/13/30/66 acting as the anchor band. Per FCC Guidance, SAR tests were performed separately for NR Bands and LTE Anchor Bands. Please see Section 11 for more details.

This device supports 5G NR for Bands n260, and n261. RF Exposure assessment and simultaneous transmission analysis for these bands can be found in test report 1M1911250199-17-R2.ZNF.

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 (IEEE 802.11ax)

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. F
RF Exposure Part 2 Test Report	FA011602 v5
Near-Field Power Density Evaluation Report	1M1911250199-17-R3.ZNF
RF Exposure Compliance Summary Report	1M1911250199-18-R1.ZNF

2 LTE AND NR FR1 INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 14 (790.5 - 795.5 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 14: 5 MHz, 10 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 48: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 14: 5 MHz	790.5 (23305)		793 (23330)	795.5 (23355)	
LTE Band 14: 10 MHz	N/A		793 (23330)	N/A	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)	N/A	
LTE Band 48: 5 MHz	3552.5 (55265)	3600.8 (55748)	N/A	3649.2 (56232)	3697.5 (56715)
LTE Band 48: 10 MHz	3555 (55290)	3601.7 (55757)	N/A	3648.3 (56223)	3695 (56690)
LTE Band 48: 15 MHz	3557.5 (55315)	3602.5 (55765)	N/A	3647.5 (56215)	3692.5 (56665)
LTE Band 48: 20 MHz	3560 (55340)	3603.3 (55773)	N/A	3646.7 (56207)	3690 (56640)
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 20, UL UE Cat 18				
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256QAM				
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 uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

NR FR1 Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	NR Band n5 (Cell) (826.5 - 846.5 MHz)				
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)				
	NR Band n2 (PCS) (1852.5 - 1907.5 MHz)				
Channel Bandwidths	NR Band n5 (Cell): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n2 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
NR Band n5 (Cell): 5 MHz	826.5 (165300)		836.5 (167300)	846.5 (169300)	
NR Band n5 (Cell): 10 MHz	829 (165800)		836.5 (167300)	844 (168800)	
NR Band n5 (Cell): 15 MHz	831.5 (166300)		836.5 (167300)	841.5 (168300)	
NR Band n5 (Cell): 20 MHz	834 (166800)		836.5 (167300)	839 (167800)	
NR Band n66 (AWS): 5 MHz	1712.5 (342500)		1745 (349000)	1777.5 (355500)	
NR Band n66 (AWS): 10 MHz	1715 (343000)		1745 (349000)	1775 (355000)	
NR Band n66 (AWS): 15 MHz	1717.5 (343500)		1745 (349000)	1772.5 (354500)	
NR Band n66 (AWS): 20 MHz	1720 (344000)		1745 (349000)	1770 (354000)	
NR Band n2 (PCS): 5 MHz	1852.5 (370500)		1880 (376000)	1907.5 (381500)	
NR Band n2 (PCS): 10 MHz	1855 (371000)		1880 (376000)	1905 (381000)	
NR Band n2 (PCS): 15 MHz	1857.5 (371500)		1880 (376000)	1902.5 (380500)	
NR Band n2 (PCS): 20 MHz	1860 (372000)		1880 (376000)	1900 (380000)	
NR Band n5/n66/n2 SCS	15				
Modulations Supported in UL	DFT-s-OFDM: pi/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Anchor Bands for NR Band n5	LTE Band 2/66/30				
LTE Anchor Bands for NR Band n66	LTE Band 2/30/5/12/13				
LTE Anchor Bands for NR Band n2	LTE Band 66/5/12/30/13				

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/m^3)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in 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]

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

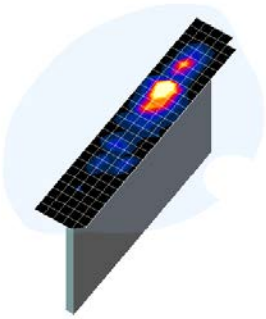

Figure 4-1
Sample SAR Area Scan

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.

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

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

*Also compliant to IEEE 1528-2013 Table 6

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].

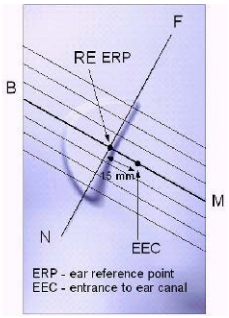

Figure 5-1
Close-Up Side view of ERP

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 than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline" was bisecting the front surface of the handset at 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.

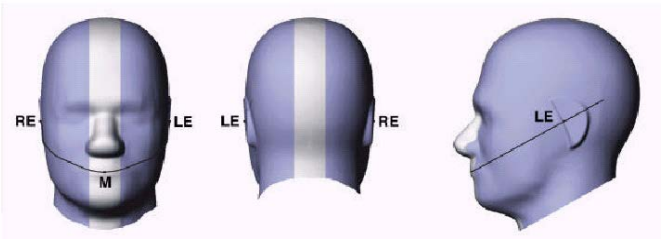

Figure 5-2
Front, back and side view of SAM Twin Phantom

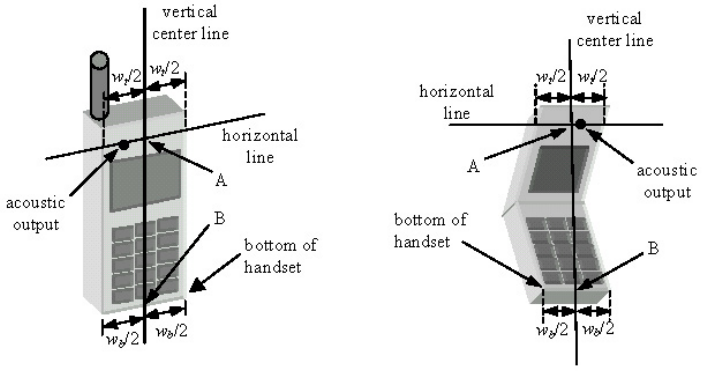

Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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 ε = 3 and loss tangent δ = 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 was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the 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 / 15º 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 15degrees.
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).

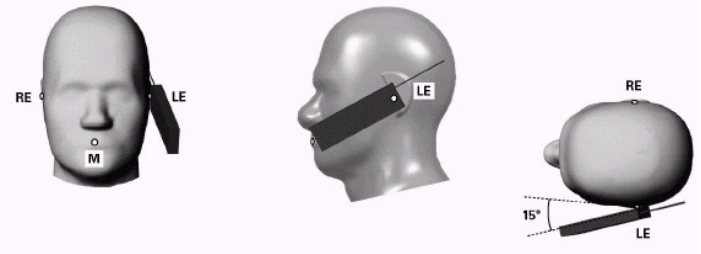

Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

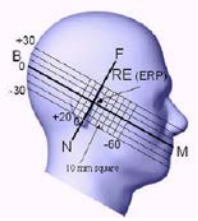

Figure 6-3
Side view w/ relevant markings

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.

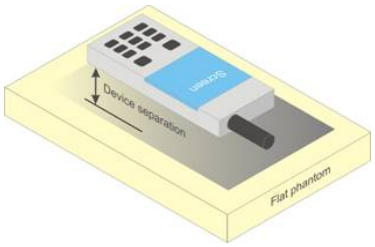

Figure 6-4
Sample Body-Worn Diagram

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 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 x W ≥ 9 cm x 5 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 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna <=25 mm from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 mm is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

6.9 Proximity Sensor Configurations

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

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a 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.

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 *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (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.

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.

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 SCH_0 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
$\hat{I}_{or}$	dBm/1.23 MHz	-104
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	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 fullrate 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+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCHn), 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.

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, 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 "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

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.

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

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

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

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

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1

unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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

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

8.7.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.5 2.4 GHz SAR Test Requirements

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

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11 g/n/ax 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. Per April 2019 TCB Workshop guidance, 802.11ax was considered the highest order 802.11 mode. 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.

8.7.9 MIMO SAR considerations

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Measured P_{max}

Band	Channel	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC	MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	1013	824.7	25.35	25.35	25.32	25.31	25.35	25.32
	384	836.52	25.40	25.38	25.35	25.35	25.40	25.30
	777	848.31	25.31	25.28	25.26	25.27	25.31	25.28
PCS	25	1851.25	24.98	25.00	25.03	25.02	24.94	24.81
	600	1880	24.91	24.93	24.94	24.94	24.86	24.82
	1175	1908.75	24.94	24.94	24.93	24.95	24.89	24.86

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

Table 9-2
Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode)

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.31	22.34	22.35	22.36	22.32	22.38
	600	24E	1880	22.25	22.29	22.25	22.28	22.30	22.18
	1175	24E	1908.75	22.31	22.33	22.33	22.32	22.41	22.38

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

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

Table 9-3
Measured P_{max} for all DSI

Maximum Burst-Averaged Output Power						
		Voice	*GPRS/EDGE Data (GMSK)*		*EDGE Data (8-PSK)*	
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	32.96	32.91	**30.99**	26.62	25.71
	190	32.99	32.90	**31.11**	26.66	25.67
	251	32.95	32.90	**30.95**	26.55	25.52
GSM 1900	512	29.65	29.64	**28.42**	25.06	24.69
	661	29.84	29.76	**28.95**	25.28	24.85
	810	29.69	29.72	**28.84**	25.05	24.55

Calculated Maximum Frame-Averaged Output Power						
		Voice	*GPRS/EDGE Data (GMSK)*		*EDGE Data (8-PSK)*	
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	23.93	23.88	**24.97**	17.59	19.69
	190	23.96	23.87	**25.09**	17.63	19.65
	251	23.92	23.87	**24.93**	17.52	19.50
GSM 1900	512	20.62	20.61	**22.40**	16.03	18.67
	661	20.81	20.73	**22.93**	16.25	18.83
	810	20.66	20.69	**22.82**	16.02	18.53

GSM 850	**Frame Avg.Targets:**	23.70	23.70	**24.51**	17.50	20.01
GSM 1900		20.50	20.50	**22.51**	16.50	19.01

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.

GSM Class: B
GPRS Multislot class: 10 (Max 2 Tx uplink slots)
EDGE Multislot class: 10 (Max 2 Tx uplink slots)
DTM Multislot Class: N/A

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	25.35	25.33	25.27	25.10	25.16	25.13	24.89	24.99	24.90	-
99		12.2 kbps AMR	25.33	25.34	25.27	25.12	25.16	25.15	24.91	24.90	24.91	-
6	HSDPA	Subtest 1	25.36	25.41	25.15	24.98	25.01	24.95	24.83	24.97	24.92	0
6		Subtest 2	25.38	25.41	24.88	24.94	24.89	24.87	24.74	24.74	24.91	0
6		Subtest 3	24.88	24.90	24.60	24.33	24.47	24.43	24.18	24.37	24.41	0.5
6		Subtest 4	24.88	24.89	24.61	24.35	24.49	24.39	24.17	24.35	24.42	0.5
6	HSUPA	Subtest 1	24.99	25.01	24.93	24.51	24.57	24.44	24.49	24.50	24.53	0
6		Subtest 2	23.38	23.41	23.30	22.93	23.05	22.91	22.81	22.99	22.94	2
6		Subtest 3	24.38	24.43	24.22	23.95	23.99	23.91	23.74	23.98	23.94	1
6		Subtest 4	23.42	23.41	23.22	22.94	23.01	22.89	22.66	22.88	22.83	2
6		Subtest 5	25.38	25.41	25.33	24.88	24.86	24.79	24.63	24.74	24.82	0

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

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	22.27	22.24	22.26	22.55	22.61	22.52	-
99		12.2 kbps AMR	22.28	22.25	22.25	22.51	22.50	22.48	-
6	HSDPA	Subtest 1	21.24	21.24	21.27	21.50	21.57	21.46	0
6		Subtest 2	21.26	21.27	21.28	21.49	21.50	21.44	0
6		Subtest 3	20.75	20.72	20.76	21.00	21.01	20.90	0.5
6		Subtest 4	20.76	20.71	20.80	20.97	21.01	20.93	0.5
6	HSUPA	Subtest 1	21.21	21.25	21.26	21.49	21.50	21.44	0
6		Subtest 2	19.25	19.26	19.31	19.50	19.53	19.45	2
6		Subtest 3	20.24	20.26	20.29	20.47	20.49	20.45	1
6		Subtest 4	19.29	19.30	19.27	19.48	19.52	19.46	2
6		Subtest 5	21.26	21.28	21.27	21.50	21.52	21.45	0

This device does not support DC-HSDPA.

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.12	0	0
	1	25	25.17		0
	1	49	**25.20**		0
	25	0	24.16	0-1	1
	25	12	**24.24**		1
	25	25	24.23		1
	50	0	24.17		1
16QAM	1	0	24.15	0-1	1
	1	25	24.22		1
	1	49	24.18		1
	25	0	23.11	0-2	2
	25	12	23.19		2
	25	25	23.21		2
	50	0	23.11		2
64QAM	1	0	23.11	0-2	2
	1	25	23.08		2
	1	49	23.10		2
	25	0	22.12	0-3	3
	25	12	22.13		3
	25	25	22.30		3
	50	0	22.21		3
256QAM	1	0	20.50	0-5	5
	1	25	20.49		5
	1	49	20.48		5
	25	0	20.23		5
	25	12	20.39		5
	25	25	20.34		5
	50	0	20.24		5

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.

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

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.99	25.03	25.00	0	0
	1	12	25.05	25.08	25.01		0
	1	24	24.99	25.01	24.96		0
	12	0	24.11	24.12	24.08	0-1	1
	12	6	24.11	24.17	24.06		1
	12	13	24.08	24.15	24.11		1
	25	0	24.10	24.09	24.04		1
16QAM	1	0	23.96	23.98	23.97	0-1	1
	1	12	23.93	24.11	23.96		1
	1	24	23.96	24.01	23.88		1
	12	0	23.06	23.07	23.06	0-2	2
	12	6	23.06	23.12	23.04		2
	12	13	23.03	23.11	23.04		2
	25	0	23.01	23.04	22.96		2
64QAM	1	0	23.05	23.05	23.06	0-2	2
	1	12	23.09	23.10	23.09		2
	1	24	22.81	23.07	23.06		2
	12	0	22.16	22.15	22.12	0-3	3
	12	6	22.15	22.16	22.13		3
	12	13	22.08	22.18	22.14		3
	25	0	22.04	22.10	22.08		3
256QAM	1	0	20.14	20.16	20.22	0-5	5
	1	12	20.22	20.27	20.19		5
	1	24	20.17	20.21	20.14		5
	12	0	20.15	20.11	20.09		5
	12	6	20.13	20.13	20.10		5
	12	13	20.08	20.13	20.11		5
	25	0	20.14	20.09	20.09		5

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.05	25.04	25.03	0	0
	1	7	24.92	25.02	25.02		0
	1	14	24.98	25.01	24.97		0
	8	0	24.09	24.08	24.07	0-1	1
	8	4	24.09	24.11	24.11		1
	8	7	24.05	24.13	24.09		1
	15	0	24.07	24.10	24.04		1
16QAM	1	0	24.11	24.12	24.10	0-1	1
	1	7	24.00	24.12	24.01		1
	1	14	24.07	24.14	24.04		1
	8	0	23.08	23.09	23.04	0-2	2
	8	4	23.12	23.07	23.11		2
	8	7	23.06	23.14	23.08		2
	15	0	23.01	23.01	22.97		2
64QAM	1	0	23.08	23.05	23.04	0-2	2
	1	7	23.04	23.12	23.03		2
	1	14	23.02	23.10	22.77		2
	8	0	22.15	22.14	22.02	0-3	3
	8	4	22.18	22.13	21.93		3
	8	7	22.13	22.18	21.84		3
	15	0	22.15	22.15	21.85		3
256QAM	1	0	20.26	20.22	20.21	0-5	5
	1	7	20.17	20.25	20.16		5
	1	14	20.13	20.24	20.15		5
	8	0	20.15	20.17	20.10		5
	8	4	20.18	20.16	20.18		5
	8	7	20.10	20.19	20.13		5
	15	0	20.16	20.13	20.07		5

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.92	24.93	24.91	0	0
	1	2	24.98	25.04	24.97		0
	1	5	24.91	24.92	24.76		0
	3	0	24.92	24.91	24.91		0
	3	2	24.96	25.01	24.91		0
	3	3	24.91	24.98	24.79		0
	6	0	24.00	24.00	23.98	0-1	1
16QAM	1	0	23.96	23.98	24.02	0-1	1
	1	2	24.05	24.07	24.00		1
	1	5	24.02	24.00	23.96		1
	3	0	23.81	23.83	23.81		1
	3	2	23.81	23.90	23.86		1
	3	3	23.79	23.89	23.80		1
	6	0	22.95	22.95	22.95	0-2	2
64QAM	1	0	22.99	23.01	22.99	0-2	2
	1	2	23.07	23.09	22.76		2
	1	5	22.92	23.03	22.56		2
	3	0	22.91	22.92	22.67		2
	3	2	22.97	23.00	22.64		2
	3	3	22.92	22.97	22.61		2
	6	0	22.03	22.03	21.64	0-3	3
256QAM	1	0	20.13	20.11	20.10	0-5	5
	1	2	20.20	20.23	20.20		5
	1	5	20.11	20.13	20.11		5
	3	0	20.11	20.11	20.13		5
	3	2	20.17	20.22	20.17		5
	3	3	20.13	20.18	20.13		5
	6	0	20.03	20.01	20.00		5

9.4.2 LTE Band 13

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

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.78	0	0
	1	25	**25.01**		0
	1	49	24.85		0
	25	0	24.11	0-1	1
	25	12	**24.25**		1
	25	25	24.22		1
	50	0	24.16		1
16QAM	1	0	23.70	0-1	1
	1	25	23.92		1
	1	49	23.83		1
	25	0	22.98	0-2	2
	25	12	23.05		2
	25	25	23.04		2
	50	0	23.01		2
64QAM	1	0	23.11	0-2	2
	1	25	23.27		2
	1	49	23.35		2
	25	0	22.25	0-3	3
	25	12	22.35		3
	25	25	22.30		3
	50	0	22.16		3
256QAM	1	0	19.83	0-5	5
	1	25	19.95		5
	1	49	19.80		5
	25	0	20.07		5
	25	12	20.26		5
	25	25	20.17		5
	50	0	20.14		5

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

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.84	0	0
	1	12	25.03		0
	1	24	24.90		0
	12	0	24.00	0-1	1
	12	6	24.09		1
	12	13	24.05		1
	25	0	24.03		1
16QAM	1	0	23.85	0-1	1
	1	12	23.98		1
	1	24	23.86		1
	12	0	22.93	0-2	2
	12	6	22.97		2
	12	13	22.98		2
	25	0	22.89		2
64QAM	1	0	22.90	0-2	2
	1	12	22.84		2
	1	24	22.99		2
	12	0	21.92	0-3	3
	12	6	22.02		3
	12	13	22.07		3
	25	0	21.88		3
256QAM	1	0	19.98	0-5	5
	1	12	20.21		5
	1	24	20.17		5
	12	0	19.98		5
	12	6	20.05		5
	12	13	20.05		5
	25	0	20.02		5

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.

9.4.3 LTE Band 14

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

LTE Band 14 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23330 (793.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**25.28**	0	0
	1	25	25.21		0
	1	49	25.17		0
	25	0	24.20	0-1	1
	25	12	**24.28**		1
	25	25	24.25		1
	50	0	24.21		1
16QAM	1	0	23.96	0-1	1
	1	25	23.95		1
	1	49	24.03		1
	25	0	23.16	0-2	2
	25	12	23.16		2
	25	25	23.20		2
	50	0	23.17		2
64QAM	1	0	23.17	0-2	2
	1	25	23.18		2
	1	49	23.17		2
	25	0	22.39	0-3	3
	25	12	22.40		3
	25	25	22.40		3
	50	0	22.25		3
256QAM	1	0	20.08	0-5	5
	1	25	20.37		5
	1	49	20.12		5
	25	0	20.34		5
	25	12	20.40		5
	25	25	20.39		5
	50	0	20.31		5

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

LTE Band 14 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23330 (793.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.93	0	0
	1	12	25.11		0
	1	24	24.96		0
	12	0	24.11	0-1	1
	12	6	24.12		1
	12	13	24.14		1
	25	0	24.11		1
16QAM	1	0	23.98	0-1	1
	1	12	24.10		1
	1	24	23.99		1
	12	0	23.13	0-2	2
	12	6	23.11		2
	12	13	23.10		2
	25	0	23.01		2
64QAM	1	0	23.03	0-2	2
	1	12	23.09		2
	1	24	23.06		2
	12	0	22.00	0-3	3
	12	6	22.10		3
	12	13	22.11		3
	25	0	21.97		3
256QAM	1	0	20.22	0-5	5
	1	12	20.34		5
	1	24	20.22		5
	12	0	20.18		5
	12	6	20.22		5
	12	13	20.15		5
	25	0	20.14		5

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.

9.4.4 LTE Band 5 (Cell)

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

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.00	0	0
	1	25	25.03		0
	1	49	**25.12**		0
	25	0	24.10	0-1	1
	25	12	**24.20**		1
	25	25	24.12		1
	50	0	24.13		1
16QAM	1	0	24.11	0-1	1
	1	25	24.12		1
	1	49	24.11		1
	25	0	23.06	0-2	2
	25	12	23.13		2
	25	25	23.08		2
	50	0	23.04		2
64QAM	1	0	22.96	0-2	2
	1	25	23.04		2
	1	49	23.06		2
	25	0	22.23	0-3	3
	25	12	22.30		3
	25	25	22.28		3
	50	0	22.16		3
256QAM	1	0	20.03	0-5	5
	1	25	20.33		5
	1	49	20.14		5
	25	0	20.17		5
	25	12	20.35		5
	25	25	20.24		5
	50	0	20.21		5

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.

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

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.88	24.88	24.85	0	0
	1	12	25.00	24.99	24.99		0
	1	24	24.85	24.94	24.86		0
	12	0	23.97	23.98	23.94	0-1	1
	12	6	24.00	24.09	23.97		1
	12	13	23.98	24.07	23.98		1
	25	0	23.98	24.02	23.96		1
16QAM	1	0	23.79	23.87	23.85	0-1	1
	1	12	23.72	23.91	23.88		1
	1	24	23.79	23.92	23.83		1
	12	0	22.95	22.94	22.90	0-2	2
	12	6	22.97	23.03	22.93		2
	12	13	22.92	23.01	22.92		2
	25	0	22.90	22.92	22.86		2
64QAM	1	0	22.92	22.96	22.91	0-2	2
	1	12	22.99	23.03	23.05		2
	1	24	22.93	22.97	22.91		2
	12	0	22.06	22.04	22.03	0-3	3
	12	6	22.07	22.14	21.97		3
	12	13	22.02	22.10	21.99		3
	25	0	22.03	22.04	21.97		3
256QAM	1	0	20.11	20.10	20.00	0-5	5
	1	12	20.14	20.18	20.13		5
	1	24	20.06	20.07	20.09		5
	12	0	20.00	19.99	19.99		5
	12	6	20.04	20.08	20.05		5
	12	13	20.01	20.08	20.06		5
	25	0	20.04	20.05	19.99		5

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

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.92	24.91	24.86	0	0
	1	7	24.97	24.98	24.95		0
	1	14	24.88	24.95	24.89		0
	8	0	23.99	23.94	23.91	0-1	1
	8	4	24.02	24.04	24.05		1
	8	7	23.94	24.02	23.98		1
	15	0	23.95	24.04	23.94		1
16QAM	1	0	23.91	23.94	23.94	0-1	1
	1	7	23.88	23.98	23.94		1
	1	14	23.93	23.99	23.92		1
	8	0	22.97	22.97	22.95	0-2	2
	8	4	23.02	23.03	23.02		2
	8	7	23.00	23.02	22.99		2
	15	0	22.93	22.93	22.87		2
64QAM	1	0	22.96	22.94	22.93	0-2	2
	1	7	22.99	23.02	22.98		2
	1	14	22.94	23.00	22.97		2
	8	0	22.04	22.04	21.96	0-3	3
	8	4	22.11	22.10	22.04		3
	8	7	22.02	22.07	22.03		3
	15	0	22.05	22.06	22.00		3
256QAM	1	0	20.06	20.11	20.03	0-5	5
	1	7	20.15	20.13	20.13		5
	1	14	20.05	20.15	20.06		5
	8	0	20.09	20.01	19.96		5
	8	4	20.12	20.12	20.05		5
	8	7	20.05	20.10	20.05		5
	15	0	20.06	20.09	19.99		5

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

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.81	24.94	24.79	0	0
	1	2	24.93	24.94	24.88		0
	1	5	24.84	24.85	24.82		0
	3	0	24.83	24.79	24.82		0
	3	2	24.84	24.89	24.86		0
	3	3	24.81	24.87	24.81		0
	6	0	23.93	23.98	23.87	0-1	1
16QAM	1	0	23.86	23.81	23.86	0-1	1
	1	2	23.86	23.91	23.94		1
	1	5	23.80	23.88	23.88		1
	3	0	23.75	23.74	23.74		1
	3	2	23.79	23.84	23.76		1
	3	3	23.69	23.76	23.76		1
	6	0	22.87	22.90	22.83	0-2	2
64QAM	1	0	22.90	22.88	22.87	0-2	2
	1	2	23.00	22.99	22.94		2
	1	5	22.97	22.94	22.90		2
	3	0	22.84	22.76	22.76		2
	3	2	22.89	22.91	22.86		2
	3	3	22.83	22.87	22.84		2
	6	0	21.98	22.00	21.97	0-3	3
256QAM	1	0	20.03	19.99	19.99	0-5	5
	1	2	20.13	20.17	20.09		5
	1	5	20.02	20.08	20.02		5
	3	0	20.08	20.01	20.02		5
	3	2	20.13	20.12	20.11		5
	3	3	20.07	20.09	20.02		5
	6	0	19.95	20.00	19.94		5

9.4.5 LTE Band 66 (AWS)

Table 9-18
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.46	24.72	**25.06**	0	0
	1	50	24.62	24.89	25.03		0
	1	99	24.57	24.81	24.97		0
	50	0	23.92	24.00	24.02	0-1	1
	50	25	23.93	24.01	**24.03**		1
	50	50	23.96	24.02	24.01		1
	100	0	23.93	23.96	23.98		1
16QAM	1	0	23.52	23.70	23.89	0-1	1
	1	50	23.52	23.86	23.95		1
	1	99	23.54	23.81	23.89		1
	50	0	22.85	22.95	22.91	0-2	2
	50	25	22.86	22.98	22.90		2
	50	50	22.83	22.90	22.92		2
	100	0	22.85	22.88	22.89		2
64QAM	1	0	22.40	22.65	22.86	0-2	2
	1	50	22.59	22.76	22.91		2
	1	99	22.72	22.82	22.79		2
	50	0	21.97	22.10	22.14	0-3	3
	50	25	22.01	22.09	22.09		3
	50	50	21.98	22.08	22.03		3
	100	0	21.99	22.03	22.03		3
256QAM	1	0	19.88	20.00	19.95	0-5	5
	1	50	19.93	20.06	20.19		5
	1	99	20.01	19.94	20.11		5
	50	0	19.97	19.99	20.02		5
	50	25	20.03	20.04	20.04		5
	50	50	19.97	20.05	20.01		5
	100	0	19.96	20.03	19.96		5

Table 9-19
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.61	24.66	24.85	0	0
	1	36	24.74	24.74	24.79		0
	1	74	24.83	24.62	24.70		0
	36	0	23.83	23.90	23.87	0-1	1
	36	18	23.87	23.84	23.92		1
	36	37	23.77	23.85	23.88		1
	75	0	23.87	23.81	23.81		1
16QAM	1	0	23.67	23.74	23.82	0-1	1
	1	36	23.99	23.85	23.84		1
	1	74	23.47	23.52	23.61		1
	36	0	22.71	22.75	22.81	0-2	2
	36	18	22.76	22.76	22.80		2
	36	37	22.69	22.80	22.85		2
	75	0	22.81	22.72	22.79		2
64QAM	1	0	22.49	22.68	22.91	0-2	2
	1	36	22.85	22.82	22.89		2
	1	74	22.65	22.70	22.91		2
	36	0	21.81	21.94	22.00	0-3	3
	36	18	21.94	21.89	21.93		3
	36	37	21.88	21.93	21.95		3
	75	0	21.84	21.82	21.88		3
256QAM	1	0	19.79	19.84	19.84	0-5	5
	1	36	20.00	20.01	20.05		5
	1	74	19.76	19.80	19.89		5
	36	0	19.81	19.92	19.91		5
	36	18	19.92	19.85	19.90		5
	36	37	19.86	19.85	19.94		5
	75	0	19.86	19.82	19.82		5

Table 9-20
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.49	24.42	24.56	0	0
	1	25	24.54	24.58	24.74		0
	1	49	24.51	24.45	24.61		0
	25	0	23.68	23.58	23.63	0-1	1
	25	12	23.71	23.66	23.67		1
	25	25	23.59	23.64	23.65		1
	50	0	23.61	23.61	23.63		1
16QAM	1	0	23.38	23.49	23.62	0-1	1
	1	25	23.59	23.65	23.74		1
	1	49	23.41	23.47	23.68		1
	25	0	22.52	22.51	22.51	0-2	2
	25	12	22.64	22.52	22.57		2
	25	25	22.55	22.49	22.57		2
	50	0	22.55	22.47	22.54		2
64QAM	1	0	22.30	22.53	22.59	0-2	2
	1	25	22.57	22.63	22.63		2
	1	49	22.38	22.56	22.57		2
	25	0	21.55	21.64	21.68	0-3	3
	25	12	21.78	21.70	21.76		3
	25	25	21.69	21.66	21.63		3
	50	0	21.70	21.65	21.62		3
256QAM	1	0	19.63	19.50	19.55	0-5	5
	1	25	19.66	19.85	19.80		5
	1	49	19.55	19.57	19.62		5
	25	0	19.67	19.59	19.61		5
	25	12	19.74	19.71	19.75		5
	25	25	19.63	19.68	19.71		5
	50	0	19.68	19.70	19.64		5

Table 9-21
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.59	24.57	24.70	0	0
	1	12	24.61	24.62	24.66		0
	1	24	24.52	24.57	24.57		0
	12	0	23.79	23.71	23.78	0-1	1
	12	6	23.78	23.68	23.74		1
	12	13	23.70	23.66	23.69		1
	25	0	23.69	23.67	23.74		1
16QAM	1	0	23.59	23.48	23.52	0-1	1
	1	12	23.46	23.49	23.48		1
	1	24	23.51	23.45	23.57		1
	12	0	22.78	22.64	22.76	0-2	2
	12	6	22.76	22.67	22.72		2
	12	13	22.68	22.61	22.67		2
	25	0	22.64	22.58	22.61		2
64QAM	1	0	22.46	22.62	22.73	0-2	2
	1	12	22.51	22.67	22.74		2
	1	24	22.65	22.61	22.54		2
	12	0	21.45	21.75	21.82	0-3	3
	12	6	21.61	21.77	21.78		3
	12	13	21.71	21.73	21.73		3
	25	0	21.46	21.66	21.65		3
256QAM	1	0	19.79	19.80	19.82	0-5	5
	1	12	19.87	19.88	19.88		5
	1	24	19.74	19.75	19.78		5
	12	0	19.77	19.74	19.81		5
	12	6	19.78	19.73	19.77		5
	12	13	19.68	19.68	19.72		5
	25	0	19.75	19.64	19.74		5

Table 9-22
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.66	24.64	24.69	0	0
	1	7	24.65	24.68	24.68		0
	1	14	24.58	24.58	24.51		0
	8	0	23.77	23.67	23.75	0-1	1
	8	4	23.76	23.72	23.76		1
	8	7	23.67	23.69	23.70		1
	15	0	23.70	23.69	23.71		1
16QAM	1	0	23.72	23.59	23.78	0-1	1
	1	7	23.63	23.61	23.63		1
	1	14	23.61	23.62	23.65		1
	8	0	22.78	22.69	22.76	0-2	2
	8	4	22.76	22.70	22.81		2
	8	7	22.68	22.66	22.67		2
	15	0	22.66	22.62	22.64		2
64QAM	1	0	22.61	22.64	22.76	0-2	2
	1	7	22.56	22.68	22.73		2
	1	14	22.64	22.63	22.64		2
	8	0	21.53	21.73	21.84	0-3	3
	8	4	21.58	21.82	21.88		3
	8	7	21.60	21.72	21.79		3
	15	0	21.58	21.76	21.80		3
256QAM	1	0	19.91	19.83	19.89	0-5	5
	1	7	19.86	19.86	19.83		5
	1	14	19.74	19.78	19.76		5
	8	0	19.85	19.73	19.81		5
	8	4	19.82	19.80	19.78		5
	8	7	19.75	19.73	19.76		5
	15	0	19.72	19.72	19.80		5

Table 9-23
LTE Band 66 (AWS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.62	24.55	24.67	0	0
	1	2	24.65	24.61	24.69		0
	1	5	24.53	24.51	24.58		0
	3	0	24.62	24.55	24.68		0
	3	2	24.68	24.63	24.64		0
	3	3	24.57	24.49	24.59		0
	6	0	23.70	23.66	23.72	0-1	1
16QAM	1	0	23.67	23.62	23.72	0-1	1
	1	2	23.78	23.64	23.69		1
	1	5	23.64	23.52	23.61		1
	3	0	23.55	23.60	23.52		1
	3	2	23.54	23.51	23.58		1
	3	3	23.53	23.44	23.46		1
	6	0	22.68	22.64	22.68	0-2	2
64QAM	1	0	22.73	22.66	22.67	0-2	2
	1	2	22.77	22.65	22.76		2
	1	5	22.61	22.56	22.73		2
	3	0	22.59	22.52	22.64		2
	3	2	22.60	22.58	22.65		2
	3	3	22.57	22.49	22.59		2
	6	0	21.57	21.72	21.67	0-3	3
256QAM	1	0	19.79	19.77	19.78	0-5	5
	1	2	19.87	19.81	19.91		5
	1	5	19.76	19.72	19.76		5
	3	0	19.87	19.77	19.85		5
	3	2	19.91	19.82	19.88		5
	3	3	19.82	19.73	19.84		5
	6	0	19.76	19.71	19.78		5

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

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.20	22.37	22.43	0	0
	1	50	22.31	**22.48**	22.40		0
	1	99	22.16	22.36	22.32		0
	50	0	22.46	22.44	22.43	0-1	0
	50	25	22.52	**22.53**	22.42		0
	50	50	22.44	22.45	22.38		0
	100	0	22.32	22.47	22.37		0
16QAM	1	0	22.51	22.70	22.67	0-1	0
	1	50	22.63	22.68	22.68		0
	1	99	22.39	22.69	22.63		0
	50	0	22.42	22.49	22.37	0-2	0
	50	25	22.55	22.51	22.45		0
	50	50	22.41	22.41	22.46		0
	100	0	22.46	22.46	22.44		0
64QAM	1	0	22.08	22.65	22.70	0-2	0
	1	50	22.70	22.68	22.69		0
	1	99	22.58	22.69	22.67		0
	50	0	21.28	21.55	21.62	0-3	0.5
	50	25	21.71	21.75	21.66		0.5
	50	50	21.49	21.48	21.71		0.5
	100	0	21.60	21.64	21.55		0.5
256QAM	1	0	19.22	19.32	19.37	0-5	2.5
	1	50	19.65	19.55	19.59		2.5
	1	99	19.44	19.44	19.64		2.5
	50	0	19.44	19.58	19.52		2.5
	50	25	19.65	19.65	19.56		2.5
	50	50	19.55	19.55	19.54		2.5
	100	0	19.50	19.55	19.51		2.5

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

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.19	22.23	22.41	0	0
	1	36	22.36	22.40	22.35		0
	1	74	22.29	22.32	22.33		0
	36	0	22.45	22.47	22.48	0-1	0
	36	18	22.51	22.49	22.58		0
	36	37	22.47	22.51	22.52		0
	75	0	22.50	22.46	22.59		0
16QAM	1	0	22.58	22.56	22.68	0-1	0
	1	36	22.70	22.65	22.67		0
	1	74	22.62	22.64	22.65		0
	36	0	22.45	22.46	22.46	0-2	0
	36	18	22.52	22.48	22.59		0
	36	37	22.53	22.64	22.55		0
	75	0	22.47	22.48	22.56		0
64QAM	1	0	21.82	22.50	22.61	0-2	0
	1	36	22.52	22.49	22.70		0
	1	74	22.62	22.49	22.64		0
	36	0	21.30	21.50	21.64	0-3	0.5
	36	18	21.51	21.38	21.75		0.5
	36	37	21.61	21.47	21.66		0.5
	75	0	21.43	21.49	21.70		0.5
256QAM	1	0	19.51	19.56	19.67	0-5	2.5
	1	36	19.62	19.67	19.74		2.5
	1	74	19.58	19.69	19.65		2.5
	36	0	19.57	19.52	19.59		2.5
	36	18	19.68	19.62	19.73		2.5
	36	37	19.61	19.69	19.66		2.5
	75	0	19.60	19.55	19.69		2.5

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

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.93	21.94	21.92	0	0
	1	25	22.08	22.22	22.10		0
	1	49	22.03	22.10	22.06		0
	25	0	22.21	22.19	22.21	0-1	0
	25	12	22.34	22.24	22.28		0
	25	25	22.35	22.29	22.30		0
	50	0	22.29	22.23	22.20		0
16QAM	1	0	22.36	22.24	22.38	0-1	0
	1	25	22.62	22.65	22.68		0
	1	49	22.40	22.51	22.45		0
	25	0	22.27	22.21	22.25	0-2	0
	25	12	22.34	22.32	22.22		0
	25	25	22.26	22.30	22.29		0
	50	0	22.26	22.24	22.21		0
64QAM	1	0	21.76	22.16	22.12	0-2	0
	1	25	22.14	22.43	22.42		0
	1	49	22.29	22.39	22.29		0
	25	0	21.22	21.36	21.38	0-3	0.5
	25	12	21.29	21.38	21.41		0.5
	25	25	21.37	21.43	21.43		0.5
	50	0	21.27	21.28	21.30		0.5
256QAM	1	0	19.16	19.17	19.33	0-5	2.5
	1	25	19.58	19.63	19.62		2.5
	1	49	19.29	19.45	19.40		2.5
	25	0	19.29	19.31	19.37		2.5
	25	12	19.45	19.40	19.37		2.5
	25	25	19.34	19.36	19.41		2.5
	50	0	19.32	19.28	19.35		2.5

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

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.19	22.21	22.15	0	0
	1	12	22.28	22.37	22.21		0
	1	24	22.11	22.16	22.10		0
	12	0	22.37	22.29	22.32	0-1	0
	12	6	22.34	22.30	22.34		0
	12	13	22.25	22.32	22.25		0
	25	0	22.28	22.28	22.29		0
16QAM	1	0	22.57	22.54	22.59	0-1	0
	1	12	22.63	22.65	22.62		0
	1	24	22.48	22.52	22.53		0
	12	0	22.40	22.43	22.38	0-2	0
	12	6	22.39	22.42	22.42		0
	12	13	22.30	22.39	22.32		0
	25	0	22.30	22.31	22.30		0
64QAM	1	0	21.84	22.26	22.27	0-2	0
	1	12	21.96	22.49	22.35		0
	1	24	22.15	22.32	22.29		0
	12	0	21.18	21.33	21.49	0-3	0.5
	12	6	21.27	21.33	21.36		0.5
	12	13	21.28	21.33	21.34		0.5
	25	0	21.16	21.19	21.25		0.5
256QAM	1	0	19.54	19.48	19.54	0-5	2.5
	1	12	19.51	19.55	19.52		2.5
	1	24	19.48	19.45	19.37		2.5
	12	0	19.42	19.44	19.50		2.5
	12	6	19.44	19.47	19.44		2.5
	12	13	19.39	19.40	19.41		2.5
	25	0	19.42	19.38	19.41		2.5

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

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.30	22.29	22.23	0	0
	1	7	22.19	22.33	22.26		0
	1	14	22.16	22.23	22.14		0
	8	0	22.36	22.31	22.32	0-1	0
	8	4	22.34	22.37	22.35		0
	8	7	22.30	22.30	22.26		0
	15	0	22.32	22.30	22.33		0
16QAM	1	0	22.66	22.64	22.64	0-1	0
	1	7	22.54	22.60	22.43		0
	1	14	22.53	22.56	22.46		0
	8	0	22.44	22.47	22.45	0-2	0
	8	4	22.44	22.50	22.45		0
	8	7	22.38	22.44	22.39		0
	15	0	22.36	22.35	22.37		0
64QAM	1	0	22.02	22.14	22.56	0-2	0
	1	7	22.02	22.25	22.37		0
	1	14	22.08	22.24	22.37		0
	8	0	21.24	21.16	21.37	0-3	0.5
	8	4	21.26	21.25	21.38		0.5
	8	7	21.23	21.18	21.33		0.5
	15	0	21.24	21.19	21.37		0.5
256QAM	1	0	19.57	19.58	19.60	0-5	2.5
	1	7	19.53	19.58	19.56		2.5
	1	14	19.47	19.51	19.46		2.5
	8	0	19.50	19.50	19.51		2.5
	8	4	19.45	19.53	19.51		2.5
	8	7	19.48	19.49	19.41		2.5
	15	0	19.46	19.44	19.49		2.5

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.18	22.22	22.12	0	0
	1	2	22.22	22.36	22.17		0
	1	5	22.15	22.20	22.11		0
	3	0	22.21	22.24	22.17		0
	3	2	22.23	22.27	22.21		0
	3	3	22.20	22.24	22.15		0
	6	0	22.26	22.34	22.25	0-1	0
16QAM	1	0	22.63	22.61	22.59	0-1	0
	1	2	22.53	22.68	22.55		0
	1	5	22.46	22.59	22.53		0
	3	0	22.38	22.46	22.38		0
	3	2	22.45	22.40	22.42		0
	3	3	22.34	22.35	22.35		0
	6	0	22.29	22.37	22.26	0-2	0
64QAM	1	0	22.05	22.51	22.46	0-2	0
	1	2	22.14	22.60	22.48		0
	1	5	22.04	22.32	22.33		0
	3	0	21.90	22.20	22.33		0
	3	2	22.04	22.24	22.37		0
	3	3	21.85	22.19	22.29		0
	6	0	21.16	21.22	21.38	0-3	0.5
256QAM	1	0	19.49	19.55	19.47	0-5	2.5
	1	2	19.60	19.63	19.53		2.5
	1	5	19.42	19.49	19.39		2.5
	3	0	19.54	19.54	19.45		2.5
	3	2	19.56	19.59	19.52		2.5
	3	3	19.46	19.50	19.44		2.5
	6	0	19.36	19.45	19.36		2.5

9.4.6 LTE Band 2 (PCS)

Table 9-30
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.89	24.99	24.90	0	0
	1	50	24.88	**25.00**	24.91		0
	1	99	24.77	24.97	24.90		0
	50	0	24.04	23.93	23.97	0-1	1
	50	25	**24.10**	23.99	23.98		1
	50	50	24.08	24.04	24.08		1
	100	0	24.07	24.01	24.06		1
16QAM	1	0	23.59	23.54	23.63	0-1	1
	1	50	23.61	23.54	23.65		1
	1	99	23.60	23.56	23.63		1
	50	0	22.82	22.89	23.13	0-2	2
	50	25	22.84	22.89	22.96		2
	50	50	22.94	22.96	22.97		2
	100	0	22.96	22.94	22.96		2
64QAM	1	0	23.20	23.14	23.20	0-2	2
	1	50	23.19	23.11	23.19		2
	1	99	23.10	23.09	23.17		2
	50	0	22.07	22.04	22.13	0-3	3
	50	25	22.05	22.01	22.08		3
	50	50	22.12	22.07	22.13		3
	100	0	22.09	22.11	22.08		3
256QAM	1	0	20.10	20.11	20.12	0-5	5
	1	50	20.08	20.15	20.19		5
	1	99	20.08	20.20	20.17		5
	50	0	20.20	20.17	20.11		5
	50	25	20.06	20.16	20.07		5
	50	50	20.12	20.13	20.14		5
	100	0	20.11	20.11	20.02		5

Table 9-31
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18675 (1857.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19125 (1902.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.64	24.82	24.85	0	0
	1	36	24.81	24.88	24.75		0
	1	74	24.85	24.75	24.78		0
	36	0	23.91	23.84	23.81	0-1	1
	36	18	24.01	23.95	24.01		1
	36	37	23.97	24.05	23.98		1
	75	0	23.92	23.91	23.81		1
16QAM	1	0	23.56	23.80	23.75	0-1	1
	1	36	23.83	23.80	23.81		1
	1	74	23.81	23.78	23.89		1
	36	0	22.76	22.77	22.76	0-2	2
	36	18	22.90	22.88	22.89		2
	36	37	22.95	22.94	22.87		2
	75	0	22.89	22.82	22.75		2
64QAM	1	0	22.77	22.87	22.78	0-2	2
	1	36	22.93	22.95	22.88		2
	1	74	22.88	22.92	22.86		2
	36	0	21.92	21.95	21.87	0-3	3
	36	18	22.04	22.02	21.98		3
	36	37	22.07	22.06	22.04		3
	75	0	21.97	21.91	21.83		3
256QAM	1	0	19.82	19.83	19.83	0-5	5
	1	36	20.03	20.13	19.87		5
	1	74	20.00	20.07	19.98		5
	36	0	19.87	19.85	19.74		5
	36	18	20.02	19.99	20.00		5
	36	37	20.04	20.12	20.01		5
	75	0	19.92	19.85	19.81		5

Table 9-32
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18650 (1855.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19150 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.47	24.40	24.72	0	0
	1	25	24.74	24.69	24.72		0
	1	49	24.51	24.56	24.69		0
	25	0	23.80	23.77	23.68	0-1	1
	25	12	23.86	23.82	23.70		1
	25	25	23.80	23.84	23.72		1
	50	0	23.82	23.74	23.66		1
16QAM	1	0	23.46	23.62	23.83	0-1	1
	1	25	23.88	23.85	23.83		1
	1	49	23.61	23.64	23.76		1
	25	0	22.68	22.60	22.55	0-2	2
	25	12	22.76	22.73	22.61		2
	25	25	22.71	22.72	22.68		2
	50	0	22.68	22.67	22.59		2
64QAM	1	0	22.46	22.39	22.80	0-2	2
	1	25	22.70	22.88	22.64		2
	1	49	22.57	22.63	22.74		2
	25	0	21.78	21.80	21.71	0-3	3
	25	12	21.84	21.92	21.84		3
	25	25	21.79	21.87	21.76		3
	50	0	21.82	21.78	21.73		3
256QAM	1	0	19.64	19.74	19.64	0-5	5
	1	25	19.89	20.13	19.91		5
	1	49	19.83	19.82	19.65		5
	25	0	19.82	19.83	19.72		5
	25	12	19.92	19.88	19.84		5
	25	25	19.78	19.84	19.76		5
	50	0	19.84	19.87	19.73		5

Table 9-33
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18625 (1852.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19175 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.71	24.67	24.85	0	0
	1	12	24.75	24.87	24.83		0
	1	24	24.71	24.73	24.74		0
	12	0	23.91	23.89	23.94	0-1	1
	12	6	23.98	23.91	23.94		1
	12	13	23.83	23.91	23.87		1
	25	0	23.88	23.84	23.91		1
16QAM	1	0	23.68	23.60	23.55	0-1	1
	1	12	23.64	23.78	23.59		1
	1	24	23.61	23.68	23.46		1
	12	0	22.85	22.85	22.86	0-2	2
	12	6	22.90	22.80	22.84		2
	12	13	22.80	22.87	22.77		2
	25	0	22.79	22.83	22.83		2
64QAM	1	0	22.87	22.79	22.96	0-2	2
	1	12	22.90	22.93	22.96		2
	1	24	22.77	22.77	22.88		2
	12	0	21.96	21.88	22.00	0-3	3
	12	6	21.95	21.91	22.03		3
	12	13	21.88	21.93	21.95		3
	25	0	21.88	21.88	21.97		3
256QAM	1	0	19.95	19.91	19.78	0-5	5
	1	12	19.99	20.09	19.82		5
	1	24	19.85	19.96	19.75		5
	12	0	19.94	19.90	20.10		5
	12	6	19.95	19.91	20.12		5
	12	13	19.87	19.89	20.02		5
	25	0	19.90	19.94	19.99		5

Table 9-34
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18615 (1851.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19185 (1908.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.94	24.83	24.86	0	0
	1	7	24.92	24.88	24.78		0
	1	14	24.81	24.84	24.71		0
	8	0	24.02	23.93	23.89	0-1	1
	8	4	24.03	24.00	23.91		1
	8	7	23.96	23.92	23.84		1
	15	0	23.99	23.92	23.92		1
16QAM	1	0	23.93	24.11	23.79	0-1	1
	1	7	23.80	24.07	23.75		1
	1	14	23.79	24.06	23.67		1
	8	0	22.85	22.96	22.87	0-2	2
	8	4	22.97	23.03	22.88		2
	8	7	22.92	22.97	22.86		2
	15	0	22.87	22.90	22.74		2
64QAM	1	0	22.71	22.71	22.63	0-2	2
	1	7	22.63	22.69	22.56		2
	1	14	22.60	22.68	22.53		2
	8	0	22.12	22.00	22.00	0-3	3
	8	4	22.16	22.07	22.04		3
	8	7	22.06	22.00	21.95		3
	15	0	22.15	21.91	22.05		3
256QAM	1	0	19.95	20.11	19.83	0-5	5
	1	7	19.89	20.12	19.75		5
	1	14	19.91	20.10	19.73		5
	8	0	20.01	20.06	20.02		5
	8	4	19.99	20.15	19.98		5
	8	7	19.93	20.06	19.92		5
	15	0	20.07	19.99	20.06		5

Table 9-35
LTE Band 2 (PCS) Measured P_{max} for DSI = 1 (Head, Body-worn, or Phablet with grip sensor not triggered) -1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18607 (1850.7 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19193 (1909.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.00	24.80	24.68	0	0
	1	2	25.00	24.87	24.78		0
	1	5	24.93	24.73	24.66		0
	3	0	24.91	24.87	24.74		0
	3	2	24.88	24.89	24.79		0
	3	3	24.84	24.84	24.73		0
	6	0	23.95	23.92	23.84	0-1	1
16QAM	1	0	23.95	23.92	23.88	0-1	1
	1	2	24.03	23.92	23.92		1
	1	5	23.94	23.92	23.84		1
	3	0	23.84	23.64	23.57		1
	3	2	23.89	23.65	23.55		1
	3	3	23.79	23.60	23.50		1
	6	0	23.01	22.84	22.75	0-2	2
64QAM	1	0	22.95	22.88	22.80	0-2	2
	1	2	22.96	22.92	22.83		2
	1	5	22.91	22.87	22.74		2
	3	0	22.92	22.80	22.72		2
	3	2	22.94	22.83	22.75		2
	3	3	22.89	22.78	22.69		2
	6	0	21.89	21.97	21.90	0-3	3
256QAM	1	0	19.85	19.94	19.85	0-5	5
	1	2	19.90	19.97	19.90		5
	1	5	19.79	19.87	19.81		5
	3	0	20.03	20.04	19.98		5
	3	2	20.05	20.09	20.00		5
	3	3	20.03	20.01	19.95		5
	6	0	20.01	20.04	19.99		5

Table 9-36
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.45	22.42	22.43	0	0
	1	50	**22.55**	22.41	22.36		0
	1	99	22.37	22.44	22.39		0
	50	0	22.45	22.39	22.49	0-1	0
	50	25	22.62	22.51	22.43		0
	50	50	**22.63**	22.62	22.41		0
	100	0	22.54	22.38	22.45		0
16QAM	1	0	22.69	22.63	22.64	0-1	0
	1	50	22.67	22.66	22.70		0
	1	99	22.70	22.55	22.67		0
	50	0	22.39	22.40	22.35	0-2	0
	50	25	22.61	22.52	22.58		0
	50	50	22.54	22.51	22.57		0
	100	0	22.52	22.46	22.47		0
64QAM	1	0	22.70	22.64	22.66	0-2	0
	1	50	22.65	22.62	22.68		0
	1	99	22.68	22.66	22.63		0
	50	0	21.43	21.41	21.57	0-3	0.5
	50	25	21.59	21.58	21.58		0.5
	50	50	21.63	21.53	21.46		0.5
	100	0	21.52	21.55	21.44		0.5
256QAM	1	0	19.25	19.21	19.33	0-5	2.5
	1	50	19.60	19.72	19.69		2.5
	1	99	19.46	19.51	19.27		2.5
	50	0	19.37	19.41	19.42		2.5
	50	25	19.59	19.56	19.60		2.5
	50	50	19.50	19.58	19.55		2.5
	100	0	19.64	19.44	19.48		2.5

Table 9-37
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18675 (1857.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19125 (1902.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.38	22.49	22.47	0	0
	1	36	22.54	22.49	22.40		0
	1	74	22.45	22.48	22.43		0
	36	0	22.63	22.51	22.50	0-1	0
	36	18	22.67	22.60	22.56		0
	36	37	22.66	22.68	22.63		0
	75	0	22.66	22.55	22.47		0
16QAM	1	0	22.67	22.69	22.68	0-1	0
	1	36	22.68	22.68	22.66		0
	1	74	22.69	22.64	22.62		0
	36	0	22.58	22.47	22.49	0-2	0
	36	18	22.65	22.60	22.53		0
	36	37	22.69	22.70	22.57		0
	75	0	22.61	22.51	22.47		0
64QAM	1	0	22.56	22.66	22.68	0-2	0
	1	36	22.69	22.63	22.64		0
	1	74	22.64	22.65	22.63		0
	36	0	21.63	21.53	21.52	0-3	0.5
	36	18	21.66	21.55	21.56		0.5
	36	37	21.70	21.62	21.62		0.5
	75	0	21.64	21.54	21.55		0.5
256QAM	1	0	19.57	19.50	19.42	0-5	2.5
	1	36	19.73	19.69	19.68		2.5
	1	74	19.72	19.68	19.63		2.5
	36	0	19.63	19.49	19.44		2.5
	36	18	19.66	19.59	19.62		2.5
	36	37	19.71	19.66	19.60		2.5
	75	0	19.62	19.57	19.49		2.5

Table 9-38
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18650 (1855.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19150 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.10	22.03	22.40	0	0
	1	25	22.47	22.35	22.37		0
	1	49	22.20	22.16	22.31		0
	25	0	22.44	22.34	22.29	0-1	0
	25	12	22.55	22.38	22.42		0
	25	25	22.49	22.43	22.36		0
	50	0	22.45	22.33	22.28		0
16QAM	1	0	22.53	22.51	22.68	0-1	0
	1	25	22.68	22.70	22.67		0
	1	49	22.55	22.47	22.65		0
	25	0	22.47	22.32	22.31	0-2	0
	25	12	22.52	22.42	22.34		0
	25	25	22.39	22.42	22.38		0
	50	0	22.44	22.33	22.27		0
64QAM	1	0	22.37	22.20	22.57	0-2	0
	1	25	22.70	22.55	22.60		0
	1	49	22.38	22.33	22.63		0
	25	0	21.45	21.34	21.30	0-3	0.5
	25	12	21.56	21.46	21.44		0.5
	25	25	21.44	21.43	21.39		0.5
	50	0	21.48	21.33	21.29		0.5
256QAM	1	0	19.28	19.29	19.18	0-5	2.5
	1	25	19.62	19.63	19.53		2.5
	1	49	19.38	19.27	19.24		2.5
	25	0	19.47	19.37	19.38		2.5
	25	12	19.56	19.46	19.38		2.5
	25	25	19.45	19.46	19.39		2.5
	50	0	19.45	19.33	19.34		2.5

Table 9-39
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18625 (1852.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19175 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.45	22.36	22.26	0	0
	1	12	22.50	22.47	22.33		0
	1	24	22.30	22.36	22.23		0
	12	0	22.58	22.44	22.50	0-1	0
	12	6	22.61	22.45	22.44		0
	12	13	22.50	22.48	22.42		0
	25	0	22.51	22.44	22.39		0
16QAM	1	0	22.68	22.66	22.64	0-1	0
	1	12	22.67	22.69	22.64		0
	1	24	22.62	22.69	22.56		0
	12	0	22.62	22.57	22.49	0-2	0
	12	6	22.60	22.54	22.53		0
	12	13	22.55	22.49	22.43		0
	25	0	22.52	22.43	22.42		0
64QAM	1	0	22.63	22.51	22.55	0-2	0
	1	12	22.68	22.65	22.61		0
	1	24	22.56	22.57	22.51		0
	12	0	21.59	21.50	21.49	0-3	0.5
	12	6	21.59	21.54	21.49		0.5
	12	13	21.54	21.45	21.44		0.5
	25	0	21.50	21.43	21.43		0.5
256QAM	1	0	19.64	19.57	19.52	0-5	2.5
	1	12	19.59	19.58	19.52		2.5
	1	24	19.51	19.50	19.47		2.5
	12	0	19.59	19.46	19.51		2.5
	12	6	19.61	19.54	19.50		2.5
	12	13	19.51	19.48	19.40		2.5
	25	0	19.51	19.43	19.42		2.5

Table 9-40
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18615 (1851.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19185 (1908.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.47	22.36	22.39	0	0
	1	7	22.35	22.44	22.28		0
	1	14	22.35	22.37	22.27		0
	8	0	22.54	22.46	22.43	0-1	0
	8	4	22.51	22.51	22.43		0
	8	7	22.45	22.42	22.41		0
	15	0	22.55	22.44	22.43		0
16QAM	1	0	22.67	22.67	22.68	0-1	0
	1	7	22.66	22.68	22.59		0
	1	14	22.68	22.66	22.66		0
	8	0	22.64	22.54	22.49	0-2	0
	8	4	22.66	22.61	22.51		0
	8	7	22.57	22.55	22.47		0
	15	0	22.58	22.46	22.43		0
64QAM	1	0	22.69	22.64	22.65	0-2	0
	1	7	22.69	22.62	22.59		0
	1	14	22.67	22.64	22.55		0
	8	0	21.57	21.48	21.51	0-3	0.5
	8	4	21.57	21.53	21.47		0.5
	8	7	21.55	21.51	21.41		0.5
	15	0	21.56	21.47	21.44		0.5
256QAM	1	0	19.69	19.57	19.53	0-5	2.5
	1	7	19.61	19.51	19.48		2.5
	1	14	19.53	19.54	19.41		2.5
	8	0	19.61	19.52	19.48		2.5
	8	4	19.58	19.59	19.51		2.5
	8	7	19.57	19.54	19.45		2.5
	15	0	19.57	19.48	19.46		2.5

Table 9-41
LTE Band 2 (PCS) Measured P_{limit} for DSI = 8 (Phablet with grip sensor active) and/or DSI = 5 (Hotspot Mode) -1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18607 (1850.7 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19193 (1909.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.40	22.35	22.27	0	0
	1	2	22.45	22.40	22.34		0
	1	5	22.31	22.30	22.17		0
	3	0	22.39	22.35	22.25		0
	3	2	22.41	22.35	22.28		0
	3	3	22.36	22.33	22.21		0
	6	0	22.50	22.43	22.33	0-1	0
16QAM	1	0	22.68	22.67	22.60	0-1	0
	1	2	22.70	22.69	22.66		0
	1	5	22.68	22.61	22.53		0
	3	0	22.61	22.51	22.47		0
	3	2	22.58	22.56	22.50		0
	3	3	22.53	22.49	22.40		0
	6	0	22.47	22.44	22.33	0-2	0
64QAM	1	0	22.60	22.60	22.51	0-2	0
	1	2	22.68	22.69	22.57		0
	1	5	22.64	22.59	22.48		0
	3	0	22.54	22.48	22.46		0
	3	2	22.58	22.58	22.46		0
	3	3	22.52	22.47	22.45		0
	6	0	21.46	21.44	21.41	0-3	0.5
256QAM	1	0	19.55	19.57	19.43	0-5	2.5
	1	2	19.70	19.59	19.55		2.5
	1	5	19.54	19.49	19.39		2.5
	3	0	19.58	19.57	19.46		2.5
	3	2	19.59	19.57	19.47		2.5
	3	3	19.58	19.53	19.44		2.5
	6	0	19.51	19.43	19.36		2.5

9.4.7 LTE Band 30

Table 9-42
LTE Band 30 Measured P_{max} for all DSI - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **27710** **(2310.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	**22.39**	0	0
	1	25	22.34		0
	1	49	22.27		0
	25	0	21.27	0-1	1
	25	12	**21.36**		1
	25	25	21.33		1
	50	0	21.24		1
16QAM	1	0	21.52	0-1	1
	1	25	21.36		1
	1	49	21.34		1
	25	0	20.22	0-2	2
	25	12	20.29		2
	25	25	20.27		2
	50	0	20.17		2
64QAM	1	0	20.28	0-2	2
	1	25	20.36		2
	1	49	20.31		2
	25	0	19.45	0-3	3
	25	12	19.56		3
	25	25	19.53		3
	50	0	19.50		3
256QAM	1	0	17.62	0-5	5
	1	25	17.54		5
	1	49	17.70		5
	25	0	17.54		5
	25	12	17.55		5
	25	25	17.58		5
	50	0	17.53		5

Table 9-43
LTE Band 30 Measured P_{max} for all DSI - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	22.24	0	0
	1	12	22.32		0
	1	24	22.30		0
	12	0	21.40	0-1	1
	12	6	21.53		1
	12	13	21.45		1
	25	0	21.42		1
16QAM	1	0	21.30	0-1	1
	1	12	21.35		1
	1	24	21.24		1
	12	0	20.34	0-2	2
	12	6	20.45		2
	12	13	20.41		2
	25	0	20.34		2
64QAM	1	0	20.25	0-2	2
	1	12	20.35		2
	1	24	20.30		2
	12	0	19.45	0-3	3
	12	6	19.58		3
	12	13	19.53		3
	25	0	19.43		3
256QAM	1	0	16.94	0-5	5
	1	12	17.08		5
	1	24	17.05		5
	12	0	17.41		5
	12	6	17.50		5
	12	13	17.45		5
	25	0	17.42		5

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

9.4.8 LTE Band 48

Table 9-44
LTE Band 48 Measured P_{max} for all DSI - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 55340 (3560.0 MHz)	Low-Mid Channel 55773 (3603.3 MHz)	Mid-High Channel 56207 (3646.7 MHz)	High Channel 56640 (3690.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	23.23	23.24	23.51	23.35	0	0
	1	50	23.28	23.25	23.49	23.32		0
	1	99	23.34	23.37	**23.53**	23.28		0
	50	0	22.34	22.39	22.37	22.39	0-1	1
	50	25	22.45	22.46	**22.50**	22.40		1
	50	50	22.41	22.36	22.48	22.35		1
	100	0	22.41	22.37	22.41	22.35		1
16QAM	1	0	22.16	22.00	22.11	22.21	0-1	1
	1	50	22.11	22.04	22.12	22.12		1
	1	99	22.16	22.15	22.17	22.11		1
	50	0	21.32	21.39	21.34	21.32	0-2	2
	50	25	21.37	21.40	21.45	21.35		2
	50	50	21.32	21.29	21.43	21.28		2
	100	0	21.24	21.29	21.30	21.20		2
64QAM	1	0	21.22	21.26	20.92	21.29	0-2	2
	1	50	21.25	21.39	20.94	21.30		2
	1	99	21.32	21.31	20.92	21.38		2
	50	0	20.45	20.48	20.46	20.42	0-3	3
	50	25	20.51	20.55	20.52	20.43		3
	50	50	20.42	20.42	20.52	20.42		3
	100	0	20.40	20.44	20.44	20.42		3
256QAM	1	0	18.36	18.26	18.15	18.19	0-5	5
	1	50	18.38	18.38	18.40	18.38		5
	1	99	18.33	18.29	18.17	18.39		5
	50	0	18.36	18.44	18.41	18.39		5
	50	25	18.50	18.48	18.53	18.44		5
	50	50	18.40	18.37	18.50	18.36		5
	100	0	18.42	18.43	18.38	18.29		5

Table 9-45
LTE Band 48 Measured P_{max} for all DSI - 15 MHz Bandwidth

LTE Band 48 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55315 (3557.5 MHz)	55765 (3602.5 MHz)	56215 (3647.5 MHz)	56665 (3692.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.50	23.36	23.37	23.42	0	0
	1	36	23.41	23.38	23.36	23.43		0
	1	74	23.46	23.36	23.42	23.45		0
	36	0	22.50	22.49	22.29	22.39	0-1	1
	36	18	22.48	22.50	22.38	22.45		1
	36	37	22.50	22.38	22.41	22.50		1
	75	0	22.49	22.45	22.29	22.38		1
16QAM	1	0	22.08	21.99	22.02	22.09	0-1	1
	1	36	22.05	22.00	22.01	22.11		1
	1	74	22.10	22.05	22.05	22.15		1
	36	0	21.35	21.34	21.12	21.27	0-2	2
	36	18	21.39	21.38	21.22	21.40		2
	36	37	21.36	21.29	21.31	21.33		2
	75	0	21.42	21.35	21.24	21.31		2
64QAM	1	0	20.99	20.87	20.84	20.90	0-2	2
	1	36	20.98	20.91	20.90	21.00		2
	1	74	20.97	20.86	20.96	21.03		2
	36	0	20.45	20.46	20.34	20.45	0-3	3
	36	18	20.48	20.45	20.39	20.43		3
	36	37	20.44	20.45	20.43	20.50		3
	75	0	20.42	20.44	20.38	20.45		3
256QAM	1	0	18.22	18.22	18.06	18.15	0-5	5
	1	36	18.41	18.32	18.28	18.38		5
	1	74	18.21	18.13	18.10	18.28		5
	36	0	18.50	18.44	18.25	18.46		5
	36	18	18.41	18.48	18.43	18.50		5
	36	37	18.42	18.48	18.47	18.48		5
	75	0	18.46	18.42	18.40	18.43		5

Table 9-46
LTE Band 48 Measured P_{max} for all DSI - 10 MHz Bandwidth

LTE Band 48 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55290 (3555.0 MHz)	55757 (3601.7 MHz)	56223 (3648.3 MHz)	56690 (3695.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.22	23.02	23.07	23.22	0	0
	1	25	23.22	23.21	23.08	23.26		0
	1	49	23.27	23.25	23.16	23.32		0
	25	0	22.14	22.19	21.95	22.08	0-1	1
	25	12	22.29	22.29	22.11	22.28		1
	25	25	22.30	22.25	22.13	22.28		1
	50	0	22.20	22.22	22.11	22.16		1
16QAM	1	0	21.93	21.97	21.81	21.96	0-1	1
	1	25	21.93	21.94	21.81	21.96		1
	1	49	21.92	21.96	21.88	22.03		1
	25	0	21.11	21.07	20.88	20.98	0-2	2
	25	12	21.18	21.21	21.06	21.16		2
	25	25	21.12	21.18	21.07	21.24		2
	50	0	21.16	21.15	21.07	21.09		2
64QAM	1	0	20.72	20.72	20.57	20.68	0-2	2
	1	25	20.67	20.69	20.63	20.76		2
	1	49	20.74	20.71	20.69	20.81		2
	25	0	20.12	20.11	19.94	20.05	0-3	3
	25	12	20.26	20.23	20.08	20.22		3
	25	25	20.20	20.18	20.08	20.25		3
	50	0	20.28	20.23	20.18	20.25		3
256QAM	1	0	17.95	17.99	17.81	17.70	0-5	5
	1	25	18.06	18.07	18.11	18.13		5
	1	49	17.91	17.91	18.01	18.00		5
	25	0	18.27	18.28	18.22	18.23		5
	25	12	18.38	18.37	18.20	18.42		5
	25	25	18.32	18.36	18.28	18.48		5
	50	0	18.29	18.31	18.20	18.30		5

Table 9-47
LTE Band 48 Measured P_{max} for all DSI - 5 MHz Bandwidth

LTE Band 48 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55265 (3552.5 MHz)	55748 (3600.8 MHz)	56232 (3649.2 MHz)	56715 (3697.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.11	23.05	23.01	23.16	0	0
	1	12	23.20	23.20	23.13	23.26		0
	1	24	23.16	23.19	23.12	23.25		0
	12	0	22.21	22.25	22.10	22.27	0-1	1
	12	6	22.32	22.33	22.18	22.36		1
	12	13	22.30	22.32	22.18	22.31		1
	25	0	22.29	22.29	22.15	22.30		1
16QAM	1	0	21.80	21.78	21.68	21.84	0-1	1
	1	12	21.85	21.95	21.82	21.98		1
	1	24	21.89	21.88	21.79	21.92		1
	12	0	21.04	21.11	20.94	21.11	0-2	2
	12	6	21.12	21.17	21.03	21.17		2
	12	13	21.15	21.16	21.00	21.16		2
	25	0	21.22	21.21	21.10	21.25		2
64QAM	1	0	20.67	20.61	20.52	20.68	0-2	2
	1	12	20.86	20.85	20.69	20.84		2
	1	24	20.77	20.79	20.65	20.78		2
	12	0	20.20	20.24	20.09	20.23	0-3	3
	12	6	20.27	20.31	20.14	20.31		3
	12	13	20.29	20.28	20.17	20.30		3
	25	0	20.29	20.29	20.15	20.31		3
256QAM	1	0	18.07	18.01	17.92	18.07	0-5	5
	1	12	18.20	18.15	18.02	18.19		5
	1	24	18.12	18.13	18.02	18.15		5
	12	0	18.37	18.41	18.22	18.39		5
	12	6	18.45	18.47	18.35	18.50		5
	12	13	18.44	18.46	18.30	18.47		5
	25	0	18.37	18.35	18.21	18.37		5

9.4.9 LTE Band 41

Table 9-48
LTE Band 41 Measured P_{max} for all DSI - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	25.00	25.14	24.68	24.70	24.57	0	0
	1	50	24.99	25.13	24.97	24.90	**25.15**		0
	1	99	24.98	25.11	24.70	24.64	24.93		0
	50	0	24.08	24.03	23.99	23.90	23.92	0-1	1
	50	25	24.09	24.04	24.01	23.94	24.14		1
	50	50	24.13	24.07	24.08	24.00	**24.15**		1
	100	0	24.11	24.06	24.06	23.91	24.07		1
16QAM	1	0	23.26	23.52	23.25	23.00	23.20	0-1	1
	1	50	23.29	23.51	23.26	23.06	23.30		1
	1	99	23.26	23.45	23.34	23.00	23.28		1
	50	0	23.13	23.19	22.95	22.72	23.09	0-2	2
	50	25	23.00	23.01	22.91	22.80	22.92		2
	50	50	23.00	22.99	22.95	22.87	22.96		2
	100	0	22.98	22.91	22.92	22.82	22.92		2
64QAM	1	0	23.03	22.40	22.68	22.49	22.73	0-2	2
	1	50	23.10	22.67	22.85	22.90	22.78		2
	1	99	23.11	22.78	22.86	22.49	22.70		2
	50	0	22.13	22.05	22.19	21.80	21.95	0-3	3
	50	25	22.10	22.04	22.20	21.90	21.98		3
	50	50	22.14	22.08	22.17	21.89	22.11		3
	100	0	22.13	22.07	22.11	21.90	22.03		3
256QAM	1	0	19.56	19.55	19.66	19.59	19.50	0-5	5
	1	50	19.90	19.95	19.94	19.82	19.93		5
	1	99	19.61	19.57	19.62	19.35	19.81		5
	50	0	20.00	20.06	20.08	19.92	20.01		5
	50	25	20.18	20.18	20.20	19.92	20.20		5
	50	50	20.09	20.10	20.07	19.90	20.19		5
	100	0	20.03	20.09	20.11	19.90	19.99		5

Table 9-49
LTE Band 41 Measured P_{max} for all DSI - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	25.11	25.03	24.99	24.99	24.92	0	0
	1	36	25.13	25.17	25.18	25.05	25.18		0
	1	74	25.16	24.97	24.96	24.77	25.19		0
	36	0	24.14	24.08	24.08	24.00	24.12	0-1	1
	36	18	24.14	24.14	24.19	24.12	24.14		1
	36	37	24.12	24.15	24.18	24.04	24.19		1
	75	0	24.19	24.15	24.12	24.03	24.17		1
16QAM	1	0	23.64	23.50	23.47	23.55	23.37	0-1	1
	1	36	23.65	23.63	23.65	23.51	23.64		1
	1	74	23.70	23.44	23.47	23.48	23.64		1
	36	0	23.02	22.95	22.93	22.88	23.08	0-2	2
	36	18	23.14	23.08	23.08	22.98	23.19		2
	36	37	23.10	23.01	23.03	22.92	23.07		2
	75	0	23.10	23.05	23.06	22.95	23.11		2
64QAM	1	0	23.04	22.68	22.65	22.82	22.90	0-2	2
	1	36	23.12	22.86	22.90	22.96	23.00		2
	1	74	23.16	22.71	22.75	22.82	23.01		2
	36	0	22.20	22.13	22.12	22.06	22.14	0-3	3
	36	18	22.19	22.16	22.13	22.17	22.12		3
	36	37	22.17	22.17	22.19	22.08	22.11		3
	75	0	22.20	22.15	22.14	22.06	22.20		3
256QAM	1	0	19.62	19.88	19.90	19.54	20.14	0-5	5
	1	36	19.84	19.88	20.10	19.78	20.18		5
	1	74	19.82	19.99	19.94	19.58	20.19		5
	36	0	20.13	19.88	20.12	20.08	20.13		5
	36	18	20.18	20.18	20.18	20.19	20.14		5
	36	37	20.15	20.18	20.11	20.06	20.20		5
	75	0	20.18	20.17	20.17	20.07	20.13		5

Table 9-50
LTE Band 41 Measured P_{max} for all DSI - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	24.74	24.65	24.74	24.54	24.60	0	0
	1	25	24.71	24.88	24.78	24.75	24.83		0
	1	49	24.71	24.63	24.56	24.59	24.50		0
	25	0	23.85	23.79	23.75	23.70	23.80	0-1	1
	25	12	23.86	23.96	23.88	23.86	23.93		1
	25	25	23.79	23.84	23.78	23.73	23.87		1
	50	0	23.76	23.90	23.81	23.76	23.85		1
16QAM	1	0	23.54	23.34	23.37	23.30	23.38	0-1	1
	1	25	23.46	23.41	23.53	23.47	23.59		1
	1	49	23.46	23.33	23.25	23.17	23.32		1
	25	0	22.77	22.71	22.68	22.61	22.69	0-2	2
	25	12	22.83	22.88	22.83	22.80	22.85		2
	25	25	22.70	22.70	22.66	22.66	22.75		2
	50	0	22.74	22.80	22.74	22.73	22.77		2
64QAM	1	0	22.33	22.29	22.23	22.27	22.04	0-2	2
	1	25	22.28	22.30	22.25	22.29	22.28		2
	1	49	22.21	22.22	22.10	22.15	22.06		2
	25	0	21.77	21.93	21.70	21.69	21.76	0-3	3
	25	12	21.76	21.79	21.86	21.87	21.94		3
	25	25	21.74	21.96	21.72	21.66	21.76		3
	50	0	21.79	21.87	21.86	21.84	21.92		3
256QAM	1	0	19.28	19.40	19.40	19.46	19.41	0-5	5
	1	25	19.60	19.73	19.65	19.74	19.70		5
	1	49	19.31	19.50	19.36	19.48	19.45		5
	25	0	19.89	19.92	19.87	19.80	19.90		5
	25	12	19.94	20.03	19.99	19.96	20.02		5
	25	25	19.81	20.02	19.87	19.82	19.94		5
	50	0	19.88	19.95	19.91	19.90	19.95		5

Table 9-51
LTE Band 41 Measured P_{max} for all DSI - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	24.74	24.85	24.85	24.75	24.80	0	0
	1	12	24.72	24.86	24.83	24.74	24.85		0
	1	24	24.75	24.85	24.82	24.75	24.81		0
	12	0	23.84	24.01	23.93	23.82	23.86	0-1	1
	12	6	23.87	24.00	23.97	23.87	23.97		1
	12	13	23.85	23.99	23.91	23.82	23.91		1
	25	0	23.84	24.00	23.95	23.86	23.92		1
16QAM	1	0	23.41	23.58	23.49	23.36	23.53	0-1	1
	1	12	23.40	23.63	23.55	23.42	23.46		1
	1	24	23.48	23.57	23.49	23.40	23.48		1
	12	0	22.72	22.84	22.77	22.59	22.72	0-2	2
	12	6	22.70	22.83	22.79	22.73	22.85		2
	12	13	22.67	22.80	22.77	22.67	22.74		2
	25	0	22.78	22.94	22.92	22.81	22.89		2
64QAM	1	0	22.29	22.37	22.39	22.24	22.35	0-2	2
	1	12	22.31	22.45	22.44	22.33	22.41		2
	1	24	22.33	22.41	22.41	22.28	22.35		2
	12	0	21.79	21.94	21.89	21.72	21.84	0-3	3
	12	6	21.82	21.97	21.93	21.82	21.93		3
	12	13	21.78	21.98	21.95	21.80	21.88		3
	25	0	21.88	22.00	21.94	21.84	21.91		3
256QAM	1	0	19.65	19.76	19.76	19.63	19.72	0-5	5
	1	12	19.69	19.85	19.82	19.68	19.73		5
	1	24	19.63	19.80	19.74	19.61	19.71		5
	12	0	19.94	20.14	20.07	19.90	19.97		5
	12	6	19.99	20.12	20.12	19.95	20.10		5
	12	13	19.92	20.08	20.04	19.92	20.04		5
	25	0	19.89	20.07	20.01	19.86	20.00		5

9.4.10 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-52
LTE Band 5 Uplink Carrier Aggregation Measured P_{max} for all DSI

	PCC									SCC									Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC UL Channel	PCC UL Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC UL Channel	SCC UL Frequency [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_5B	LTE B5	10	20525	836.5	2525	881.5	QPSK	1	49	LTE B5	5	20597	843.7	2597	888.7	QPSK	1	0	25.50	25.12

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

9.5 NR Conducted Powers

9.5.1 NR Band n5

Table 9-53
NR Band n5 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
			Channel		
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
DFT-s-OFDM π/2 BPSK	1	1	23.96	0	0
	1	53	24.37		0
	1	104	24.25		0
	50	0	23.71	0-0.5	0
	50	28	24.37	0	0
	50	56	24.63	0-0.5	0
	100	0	24.23		0
DFT-s-OFDM QPSK	1	1	24.21	0	0
	1	53	**24.28**		0
	1	104	24.01		0
	50	0	23.97	0-1	0
	50	28	**24.44**	0	0
	50	56	23.93	0-1	0
	100	0	23.82		0
DFT-s-OFDM 16QAM	1	1	23.25	0-1	0.5
CP-OFDM QPSK	1	1	22.71	0-1.5	1

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.

Table 9-54
NR Band n5 Measured P_{max} for all DSI - 15 MHz Bandwidth

NR Band n5 15 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	23.74	0	0
	1	40	24.33		0
	1	77	24.34		0
	36	0	23.97	0-0.5	0
	36	22	24.22	0	0
	36	43	24.24	0-0.5	0
	75	0	24.28		0
DFT-s-OFDM QPSK	1	1	23.65	0	0
	1	40	24.30		0
	1	77	24.19		0
	36	0	23.86	0-1	0
	36	22	24.36	0	0
	36	43	24.31	0-1	0
	75	0	24.01		0
DFT-s-OFDM 16QAM	1	1	22.95	0-1	0.5
CP-OFDM QPSK	1	1	22.37	0-1.5	1

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.

Table 9-55
NR Band n5 Measured P_{max} for all DSI - 10 MHz Bandwidth

NR Band n5 10 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	24.03	0	0
	1	26	24.31		0
	1	50	24.57		0
	25	0	24.27	0-0.5	0
	25	14	24.28	0	0
	25	27	24.05	0-0.5	0
	50	0	24.19		0
DFT-s-OFDM QPSK	1	1	23.98	0	0
	1	26	24.38		0
	1	50	24.39		0
	25	0	24.25	0-1	0
	25	14	24.44	0	0
	25	27	24.39	0-1	0
	50	0	24.31		0
DFT-s-OFDM 16QAM	1	1	23.11	0-1	0.5
CP-OFDM QPSK	1	1	22.62	0-1.5	1

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.

Table 9-56
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 π/2 BPSK	1	1	24.16	24.30	24.11	0	0
	1	13	23.78	24.29	24.17		0
	1	23	23.76	24.18	24.04		0
	12	0	23.73	24.22	24.07	0-0.5	0
	12	7	23.86	24.15	24.02	0	0
	12	13	23.21	24.23	23.99	0-0.5	0
	25	0	23.41	24.14	24.01		0
DFT-s-OFDM QPSK	1	1	24.13	24.54	24.32	0	0
	1	13	23.63	24.51	24.16		0
	1	23	23.48	24.48	24.29		0
	12	0	23.19	24.27	23.77	0-1	0
	12	7	23.69	24.51	24.26	0	0
	12	13	23.22	24.46	23.93	0-1	0
	25	0	23.28	24.49	23.78		0
DFT-s-OFDM 16QAM	1	1	23.62	23.48	23.16	0-1	0.5
CP-OFDM QPSK	1	1	22.55	22.56	22.36	0-1.5	1

9.5.2 NR Band n66

Table 9-57
NR Band n66 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 π/2 BPSK	1	1	23.49	23.29	23.31	0	0
	1	53	23.32	23.07	23.17		0
	1	104	23.53	23.27	23.34		0
	50	0	23.43	23.26	23.33	0-0.5	0
	50	28	23.49	23.19	23.31	0	0
	50	56	23.42	23.30	23.32	0-0.5	0
	100	0	23.44	23.31	23.30		0
DFT-s-OFDM QPSK	1	1	23.64	23.46	23.56	0	0
	1	53	23.59	23.41	23.46		0
	1	104	**23.76**	23.61	23.56		0
	50	0	23.43	23.39	23.32	0-1	0
	50	28	23.43	23.30	23.36	0	0
	50	56	**23.54**	23.26	23.36	0-1	0
	100	0	23.47	23.25	23.32		0
DFT-s-OFDM 16QAM	1	1	23.63	23.46	23.65	0-1	0
DFT-s-OFDM 64QAM	1	1	23.68	23.47	23.52	0-2.5	0
CP-OFDM QPSK	1	1	23.40	23.36	23.37	0-1.5	0
CP-OFDM 16QAM	1	1	23.61	23.88	23.46	0-3	0

Table 9-58
NR Band n66 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 π/2 BPSK	1	1	23.69	23.33	23.56	0	0
	1	40	23.49	23.13	23.61		0
	1	77	23.44	23.15	23.55		0
	36	0	23.54	23.28	23.58	0-0.5	0
	36	22	23.50	23.24	23.52	0	0
	36	43	23.51	23.20	23.63	0-0.5	0
	75	0	23.52	23.25	23.58		0
DFT-s-OFDM QPSK	1	1	23.87	23.31	23.53	0	0
	1	40	23.72	23.37	23.52		0
	1	77	23.82	23.45	23.68		0
	36	0	23.57	23.20	23.53	0-1	0
	36	22	23.51	23.15	23.54	0	0
	36	43	23.52	23.25	23.58	0-1	0
	75	0	23.61	23.31	23.57		0
DFT-s-OFDM 16QAM	1	1	23.64	23.24	23.66	0-1	0
DFT-s-OFDM 64QAM	1	1	23.55	23.77	23.66	0-2.5	0
CP-OFDM QPSK	1	1	23.37	23.23	23.55	0-1.5	0
CP-OFDM 16QAM	1	1	23.52	23.42	23.25	0-3	0

Table 9-59
NR Band n66 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 π/2 BPSK	1	1	23.30	23.40	23.30	0	0
	1	26	23.31	23.43	23.45		0
	1	50	23.17	23.54	23.48		0
	25	0	23.27	23.51	23.38	0-0.5	0
	25	14	23.17	23.48	23.47	0	0
	25	27	23.20	23.49	23.36	0-0.5	0
	50	0	23.22	23.47	23.32		0
DFT-s-OFDM QPSK	1	1	23.51	23.52	23.32	0	0
	1	26	23.46	23.48	23.25		0
	1	50	23.47	23.45	23.44		0
	25	0	23.26	23.41	23.34	0-1	0
	25	14	23.20	23.46	23.36	0	0
	25	27	23.21	23.42	23.39	0-1	0
	50	0	23.25	23.44	23.44		0
DFT-s-OFDM 16QAM	1	1	23.50	23.85	23.23	0-1	0
DFT-s-OFDM 64QAM	1	1	23.45	23.66	23.45	0-2.5	0
CP-OFDM QPSK	1	1	23.12	23.23	23.35	0-1.5	0
CP-OFDM 16QAM	1	1	23.12	23.58	23.23	0-2	0

Table 9-60
NR Band n66 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 π/2 BPSK	1	1	23.23	23.48	23.42	0	0
	1	13	23.15	23.57	23.48		0
	1	23	23.05	23.44	23.58		0
	12	0	23.32	23.53	23.49	0-0.5	0
	12	7	23.30	23.49	23.51	0	0
	12	13	23.30	23.50	23.52	0-0.5	0
	25	0	23.24	23.54	23.54		0
DFT-s-OFDM QPSK	1	1	23.38	23.49	23.62	0	0
	1	13	23.52	23.53	23.85		0
	1	23	23.42	23.61	23.77		0
	12	0	23.37	23.49	23.51	0-1	0
	12	7	23.32	23.50	23.51	0	0
	12	13	23.23	23.52	23.55	0-1	0
	25	0	23.25	23.48	23.58		0
DFT-s-OFDM 16QAM	1	1	23.42	23.32	23.72	0-1	0
DFT-s-OFDM 64QAM	1	1	23.55	23.46	23.40	0-2.5	0
CP-OFDM QPSK	1	1	23.34	23.43	23.51	0-1.5	0
CP-OFDM 16QAM	1	1	23.28	23.62	23.32	0-2	0

9.5.3 NR Band n2

Table 9-61
NR Band n2 Measured P_{limit} - 20 MHz Bandwidth

NR Band n2 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376000 (1880 MHz)	380000 (1900 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.32	23.25	23.31	0	0
	1	53	23.27	23.15	23.28		0
	1	104	23.30	23.35	23.36		0
	50	0	23.34	23.26	23.23	0-0.5	0
	50	28	23.30	23.30	23.27	0	0
	50	56	23.32	23.31	23.26	0-0.5	0
	100	0	23.30	23.29	23.30		0
DFT-s-OFDM QPSK	1	1	23.27	23.30	23.32	0	0
	1	53	23.20	23.20	23.12		0
	1	104	23.25	**23.36**	23.25		0
	50	0	23.34	23.33	23.25	0-1	0
	50	28	23.46	**23.47**	23.28	0	0
	50	56	23.31	23.32	23.26	0-1	0
	100	0	23.31	23.27	23.25		0
DFT-s-OFDM 16QAM	1	1	23.20	23.16	23.25	0-1	0
DFT-s-OFDM 64QAM	1	1	23.41	23.52	23.50	0-2.5	0
CP-OFDM QPSK	1	1	23.19	23.16	23.18	0-1.5	0
CP-OFDM 16QAM	1	1	23.40	23.22	23.42	0-2	0

Table 9-62
NR Band n2 Measured P_{limit} - 15 MHz Bandwidth

NR Band n2 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376000 (1880 MHz)	380500 (1902.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.48	23.58	23.28	0	0
	1	40	23.51	23.56	23.26		0
	1	77	23.56	23.70	23.49		0
	36	0	23.52	23.55	23.32	0-0.5	0
	36	22	23.46	23.52	23.36	0	0
	36	43	23.56	23.57	23.44	0-0.5	0
	75	0	23.49	23.58	23.34		0
DFT-s-OFDM QPSK	1	1	23.60	23.68	23.40	0	0
	1	40	23.46	23.69	23.31		0
	1	77	23.68	23.66	23.37		0
	36	0	23.55	23.56	23.35	0-1	0
	36	22	23.48	23.54	23.32	0	0
	36	43	23.57	23.61	23.32	0-1	0
	75	0	23.45	23.56	23.33		0
DFT-s-OFDM 16QAM	1	1	23.25	23.40	23.47	0-1	0
DFT-s-OFDM 64QAM	1	1	23.43	23.61	23.63	0-2.5	0
CP-OFDM QPSK	1	1	23.18	23.20	23.33	0-3	0
CP-OFDM 16QAM	1	1	23.47	23.62	23.63	0-2	0

Table 9-63
NR Band n2 Measured P_{limit} - 10 MHz Bandwidth

NR Band n2 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376000 (1880 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.23	23.24	23.26	0	0
	1	26	23.35	23.25	23.34		0
	1	50	23.23	23.42	23.32		0
	25	0	23.26	23.26	23.23	0-0.5	0
	25	14	23.25	23.23	23.28	0	0
	25	27	23.28	23.23	23.28	0-0.5	0
	50	0	23.33	23.22	23.28		0
DFT-s-OFDM QPSK	1	1	23.57	23.56	23.24	0	0
	1	26	23.57	23.20	23.41		0
	1	50	23.61	23.34	23.56		0
	25	0	23.29	23.23	23.22	0-1	0
	25	14	23.32	23.20	23.24	0	0
	25	27	23.29	23.25	23.28	0-1	0
	50	0	23.40	23.25	23.29		0
DFT-s-OFDM 16QAM	1	1	23.26	23.39	23.37	0-1	0
DFT-s-OFDM 64QAM	1	1	23.43	23.20	23.57	0-2.5	0
CP-OFDM QPSK	1	1	23.20	23.11	23.28	0-1.5	0
CP-OFDM 16QAM	1	1	23.49	23.44	23.34	0-2	0

Table 9-64
NR Band n2 Measured P_{limit} - 5 MHz Bandwidth

NR Band n2 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376000 (1880 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.37	23.08	23.37	0	0
	1	13	23.24	23.26	23.32		0
	1	23	23.29	23.07	23.33		0
	12	0	23.29	23.12	23.37	0-0.5	0
	12	7	23.24	23.27	23.41	0	0
	12	13	23.27	23.23	23.37	0-0.5	0
	25	0	23.27	23.17	23.32		0
DFT-s-OFDM QPSK	1	1	23.25	23.28	23.39	0	0
	1	13	23.26	23.22	23.27		0
	1	23	23.37	23.39	23.31		0
	12	0	23.35	23.19	23.39	0-1	0
	12	7	23.46	23.29	23.40	0	0
	12	13	23.37	23.25	23.40	0-1	0
	25	0	22.56	23.22	23.41		0
DFT-s-OFDM 16QAM	1	1	23.21	23.29	23.32	0-1	0
DFT-s-OFDM 64QAM	1	1	23.39	23.34	23.42	0-2.5	0
CP-OFDM QPSK	1	1	23.11	23.16	23.20	0-1.5	0
CP-OFDM 16QAM	1	1	23.32	23.50	23.49	0-2	0

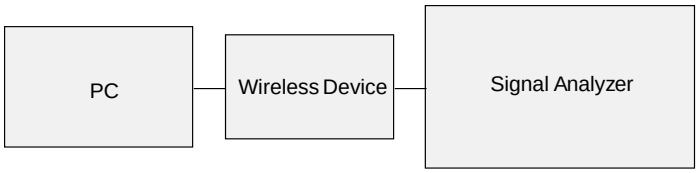

Figure 9-5
Power Measurement Setup

9.6 WLAN Conducted Powers

Table 9-65
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	802.11ax
		Average	Average	Average	Average	Average
2412	1	20.08	17.52	16.32	16.29	14.40
2437	6	20.17	19.05	17.69	17.73	15.88
2462	11	20.05	16.93	15.73	15.75	13.80

Table 9-66
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	802.11ax
		Average	Average	Average	Average	Average
2412	1	20.07	17.48	16.38	16.34	14.61
2437	6	20.49	19.39	18.27	18.22	16.32
2462	11	20.01	16.95	15.74	15.70	13.99

Table 9-67
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	802.11ax
		Average	Average	Average	Average
5180	36	16.53	16.75	16.72	14.41
5200	40	17.63	17.83	17.80	14.32
5220	44	16.65	16.90	16.89	14.41
5240	48	16.61	16.87	16.95	14.38
5260	52	16.63	16.89	16.90	14.44
5280	56	17.56	17.90	17.87	14.27
5300	60	16.63	16.88	16.81	14.36
5320	64	16.59	16.84	16.75	14.35
5500	100	16.64	16.97	16.85	14.45
5600	120	16.62	16.78	16.85	14.58
5620	124	16.70	16.94	16.90	14.62
5720	144	16.81	16.98	16.99	14.53
5745	149	16.75	16.93	16.95	14.58
5785	157	17.54	17.78	17.75	14.53
5825	165	17.47	17.72	17.66	14.54

Table 9-68
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	802.11ax
		Average	Average	Average	Average
5180	36	16.89	16.91	16.81	14.92
5200	40	17.90	17.82	17.76	14.98
5220	44	16.92	16.72	16.73	14.92
5240	48	16.86	16.93	16.54	14.77
5260	52	16.71	16.82	16.91	14.69
5280	56	17.47	17.72	17.67	14.48
5300	60	16.60	16.73	16.73	14.50
5320	64	16.53	16.67	16.77	14.42
5500	100	16.76	16.95	16.85	14.63
5600	120	16.97	16.83	16.67	14.94
5620	124	16.88	16.53	16.85	14.75
5720	144	16.62	16.77	16.72	14.35
5745	149	16.60	16.89	16.81	14.53
5785	157	17.42	17.70	17.72	14.55
5825	165	17.71	17.91	17.87	14.68

Table 9-69
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	802.11ax
		Average	Average	Average	Average	Average
2412	1	15.27	15.14	14.93	14.85	14.40
2437	6	15.36	15.03	15.00	14.75	14.57
2462	11	15.11	15.17	14.77	14.85	13.80

Table 9-70
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	802.11ax
		Average	Average	Average	Average	Average
2412	1	15.46	15.23	14.91	14.88	14.61
2437	6	15.41	15.39	15.25	15.03	14.70
2462	11	15.19	15.50	14.76	15.15	13.99

Table 9-71
Reduced Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
2412	1	14.93	14.91
2437	6	15.00	15.25
2462	11	14.77	14.76

5GHz (40MHz) 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
5190	38	10.51	10.69
5230	46	14.99	14.12
5270	54	14.50	14.34
5310	62	10.40	10.66
5510	102	10.17	10.81
5550	110	13.85	14.52
5590	118	14.20	14.71
5630	126	14.03	14.98
5710	142	14.18	14.68
5755	151	14.30	14.96
5795	159	14.28	14.98

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

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

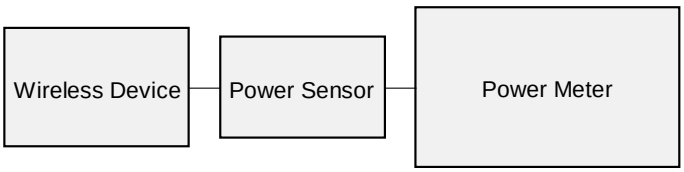

Figure 9-6
Power Measurement Setup

9.7 Bluetooth Conducted Powers

Table 9-72
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	10.96	12.461
2441	1.0	39	**11.66**	14.669
2480	1.0	78	11.23	13.286
2402	2.0	0	8.89	7.736
2441	2.0	39	9.76	9.455
2480	2.0	78	9.30	8.518
2402	3.0	0	9.05	8.029
2441	3.0	39	9.76	9.472
2480	3.0	78	9.33	8.579

Note: The bolded data rates and channel above were tested for SAR.

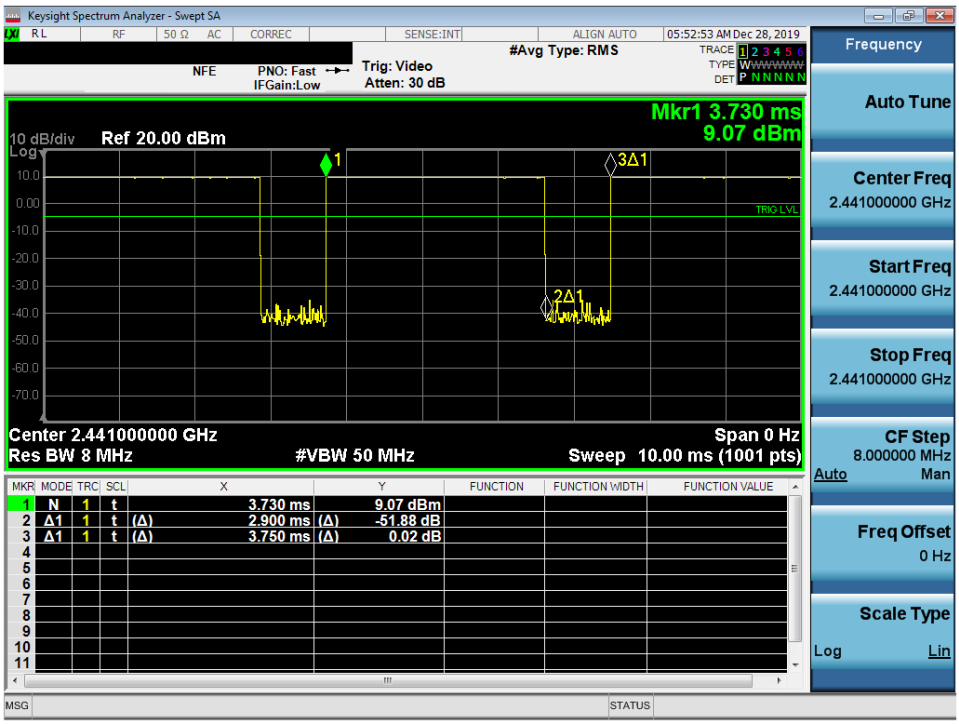

Figure 9-7
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.9ms}{3.75ms} * 100\% = 77.3\%$$

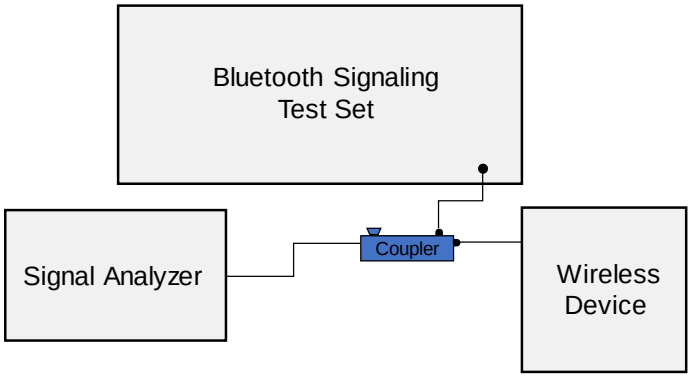

Figure 9-8
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties

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
12/29/2019	750 Head	21.0	700	0.879	41.914	0.889	42.201	-1.12%	-0.68%
			710	0.883	41.886	0.890	42.149	-0.79%	-0.62%
			750	0.897	41.772	0.894	41.942	0.34%	-0.41%
			755	0.898	41.757	0.894	41.916	0.45%	-0.38%
			770	0.903	41.715	0.895	41.838	0.89%	-0.29%
			785	0.909	41.678	0.896	41.760	1.45%	-0.20%
			800	0.914	41.638	0.897	41.682	1.90%	-0.11%
01/13/2020	835 Head	20.9	820	0.908	40.192	0.899	41.578	1.00%	-3.33%
			835	0.913	40.142	0.900	41.500	1.44%	-3.27%
			850	0.919	40.091	0.916	41.500	0.33%	-3.40%
12/02/2019	1750 Head	21.2	1710	1.352	39.196	1.348	40.142	0.30%	-2.36%
			1720	1.359	39.181	1.354	40.126	0.37%	-2.36%
			1745	1.376	39.158	1.368	40.087	0.58%	-2.32%
			1750	1.379	39.153	1.371	40.079	0.58%	-2.31%
			1770	1.391	39.116	1.383	40.047	0.58%	-2.32%
			1790	1.401	39.065	1.394	40.016	0.50%	-2.38%
12/26/2019	1750 Head	20.7	1710	1.364	38.582	1.348	40.142	1.19%	-3.89%
			1720	1.375	38.541	1.354	40.126	1.55%	-3.95%
			1745	1.401	38.417	1.368	40.087	2.41%	-4.17%
			1750	1.405	38.409	1.371	40.079	2.48%	-4.17%
			1770	1.426	38.315	1.383	40.047	3.11%	-4.32%
			1790	1.447	38.203	1.394	40.016	3.80%	-4.53%
01/10/2020	1750 Head	21.9	1710	1.350	38.881	1.348	40.142	0.15%	-3.14%
			1720	1.356	38.857	1.354	40.126	0.15%	-3.16%
			1745	1.370	38.811	1.368	40.087	0.15%	-3.18%
			1750	1.373	38.803	1.371	40.079	0.15%	-3.18%
			1770	1.383	38.773	1.383	40.047	0.00%	-3.18%
			1790	1.394	38.741	1.394	40.016	0.00%	-3.19%
12/31/2019	1900 Head	21.1	1850	1.403	39.340	1.400	40.000	0.21%	-1.65%
			1860	1.409	39.330	1.400	40.000	0.64%	-1.68%
			1880	1.421	39.306	1.400	40.000	1.50%	-1.74%
			1900	1.433	39.280	1.400	40.000	2.36%	-1.80%
			1905	1.435	39.274	1.400	40.000	2.50%	-1.82%
			1910	1.438	39.266	1.400	40.000	2.71%	-1.84%
01/04/2020	1900 Head	21.6	1850	1.406	39.411	1.400	40.000	0.43%	-1.47%
			1860	1.412	39.397	1.400	40.000	0.86%	-1.51%
			1880	1.423	39.364	1.400	40.000	1.64%	-1.59%
			1900	1.433	39.339	1.400	40.000	2.36%	-1.65%
			1905	1.436	39.332	1.400	40.000	2.57%	-1.67%
			1910	1.438	39.326	1.400	40.000	2.71%	-1.69%
12/09/2019	2450 Head	19.8	2600	1.968	38.574	1.964	39.009	0.20%	-1.12%
			2650	2.009	38.482	2.018	38.945	-0.45%	-1.19%
			2680	2.034	38.431	2.051	38.907	-0.83%	-1.22%
12/19/2019	2450 Head	21.0	2400	1.821	40.425	1.756	39.289	3.70%	2.89%
			2450	1.861	40.327	1.800	39.200	3.39%	2.87%
			2500	1.904	40.248	1.855	39.136	2.64%	2.84%
01/08/2020	2450 Head	20.7	2400	1.814	38.303	1.756	39.289	3.30%	-2.51%
			2450	1.855	38.213	1.800	39.200	3.06%	-2.52%
			2500	1.895	38.134	1.855	39.136	2.16%	-2.56%
01/16/2020	2450 Head	21.6	2300	1.689	37.912	1.670	39.500	1.14%	-4.02%
			2310	1.696	37.896	1.679	39.480	1.01%	-4.01%
			2320	1.703	37.882	1.687	39.460	0.95%	-4.00%
12/16/2019	3500 Head	20.3	3600	3.026	36.756	3.014	37.800	0.40%	-2.76%
			3650	3.068	36.686	3.066	37.757	0.07%	-2.84%
			3690	3.099	36.636	3.107	37.711	-0.26%	-2.85%
			3700	3.107	36.624	3.117	37.700	-0.32%	-2.85%
12/17/2019	5200-5800 Head	20.9	5250	4.591	35.155	4.706	35.929	-2.44%	-2.15%
			5260	4.602	35.136	4.717	35.917	-2.44%	-2.17%
			5280	4.623	35.100	4.737	35.894	-2.41%	-2.21%
			5300	4.644	35.091	4.758	35.871	-2.40%	-2.17%
			5320	4.665	35.056	4.778	35.849	-2.37%	-2.21%
			5500	4.855	34.787	4.963	35.643	-2.18%	-2.40%
			5510	4.866	34.777	4.973	35.632	-2.15%	-2.40%
			5520	4.876	34.764	4.983	35.620	-2.15%	-2.40%
			5530	4.884	34.760	4.994	35.609	-2.20%	-2.38%
			5540	4.892	34.751	5.004	35.597	-2.24%	-2.38%
			5550	4.900	34.734	5.014	35.586	-2.27%	-2.39%
			5560	4.906	34.704	5.024	35.574	-2.35%	-2.45%
			5580	4.932	34.664	5.045	35.551	-2.24%	-2.50%
			5600	4.963	34.631	5.065	35.529	-2.01%	-2.53%
			5610	4.973	34.614	5.076	35.518	-2.03%	-2.55%
			5620	4.986	34.608	5.086	35.506	-1.97%	-2.53%
			5640	5.007	34.603	5.106	35.483	-1.94%	-2.48%
			5660	5.020	34.566	5.127	35.460	-2.09%	-2.52%
			5670	5.028	34.545	5.137	35.449	-2.12%	-2.55%
			5680	5.038	34.528	5.147	35.437	-2.12%	-2.57%
			5690	5.051	34.501	5.158	35.426	-2.07%	-2.61%
			5700	5.066	34.472	5.168	35.414	-1.97%	-2.66%
			5710	5.082	34.459	5.178	35.403	-1.85%	-2.67%
			5720	5.097	34.455	5.188	35.391	-1.75%	-2.64%
			5745	5.123	34.432	5.214	35.363	-1.75%	-2.63%
			5750	5.128	34.427	5.219	35.357	-1.74%	-2.63%
			5755	5.131	34.425	5.224	35.351	-1.78%	-2.62%
			5765	5.138	34.419	5.234	35.340	-1.83%	-2.61%
			5775	5.146	34.404	5.245	35.329	-1.89%	-2.62%
			5785	5.156	34.380	5.255	35.317	-1.88%	-2.65%
			5795	5.166	34.358	5.265	35.305	-1.88%	-2.68%
			5800	5.173	34.351	5.270	35.300	-1.84%	-2.69%
			5805	5.180	34.345	5.275	35.294	-1.80%	-2.69%
			5825	5.204	34.314	5.296	35.271	-1.74%	-2.71%

Table 10-2
Measured Tissue Properties – Cont'd

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
12/26/2019	750 Body	19.8	700	0.921	53.684	0.959	55.726	-3.96%	-3.66%
			710	0.925	53.666	0.960	55.687	-3.65%	-3.63%
			750	0.939	53.514	0.964	55.531	-2.59%	-3.63%
			770	0.948	53.468	0.965	55.453	-1.76%	-3.58%
			785	0.954	53.453	0.966	55.395	-1.24%	-3.51%
			800	0.959	53.444	0.967	55.336	-0.83%	-3.42%
12/05/2019	835 Body	21.2	820	0.977	53.700	0.969	55.258	0.83%	-2.82%
			835	0.984	53.684	0.970	55.200	1.44%	-2.75%
			850	0.991	53.665	0.988	55.154	0.30%	-2.70%
12/20/2019	835 Body	19.7	820	0.959	54.036	0.969	55.258	-1.03%	-2.21%
			835	0.965	54.007	0.970	55.200	-0.52%	-2.16%
			850	0.971	53.986	0.988	55.154	-1.72%	-2.12%
12/28/2019	1750 Body	21.5	1710	1.465	52.352	1.463	53.537	0.14%	-2.21%
			1720	1.478	52.322	1.469	53.511	0.61%	-2.22%
			1745	1.506	52.220	1.485	53.445	1.41%	-2.29%
			1750	1.511	52.198	1.488	53.432	1.55%	-2.31%
			1770	1.532	52.129	1.501	53.379	2.07%	-2.34%
			1790	1.553	52.035	1.514	53.326	2.58%	-2.42%
12/30/2019	1750 Body	20.7	1710	1.474	52.831	1.463	53.537	0.75%	-1.32%
			1720	1.487	52.790	1.469	53.511	1.23%	-1.35%
			1745	1.516	52.684	1.485	53.445	2.09%	-1.42%
			1750	1.521	52.663	1.488	53.432	2.22%	-1.44%
			1770	1.543	52.586	1.501	53.379	2.80%	-1.49%
			1790	1.565	52.512	1.514	53.326	3.37%	-1.53%
01/09/2020	1750 Body	21.1	1710	1.464	53.246	1.463	53.537	0.07%	-0.54%
			1720	1.476	53.201	1.469	53.511	0.48%	-0.58%
			1745	1.505	53.091	1.485	53.445	1.35%	-0.66%
			1750	1.510	53.069	1.488	53.432	1.48%	-0.68%
			1770	1.530	52.978	1.501	53.379	1.93%	-0.75%
			1790	1.550	52.894	1.514	53.326	2.38%	-0.81%
01/11/2020	1750 Body	20.6	1710	1.462	54.362	1.463	53.537	-0.07%	1.54%
			1720	1.474	54.327	1.469	53.511	0.34%	1.52%
			1745	1.504	54.242	1.485	53.445	1.28%	1.49%
			1750	1.510	54.222	1.488	53.432	1.48%	1.48%
			1770	1.533	54.139	1.501	53.379	2.13%	1.42%
			1790	1.555	54.058	1.514	53.326	2.71%	1.37%
02/17/2020	1750 Body	21.5	1710	1.454	56.197	1.463	53.537	-0.62%	4.97%
			1720	1.466	56.161	1.469	53.511	-0.20%	4.95%
			1745	1.495	56.078	1.485	53.445	0.67%	4.93%
			1750	1.500	56.062	1.488	53.432	0.81%	4.92%
			1770	1.521	55.995	1.501	53.379	1.33%	4.90%
			1790	1.542	55.929	1.514	53.326	1.85%	4.88%
12/09/2019	1900 Body	23.0	1850	1.518	51.591	1.520	53.300	-0.13%	-3.21%
			1860	1.529	51.565	1.520	53.300	0.59%	-3.26%
			1880	1.551	51.504	1.520	53.300	2.04%	-3.37%
			1900	1.572	51.438	1.520	53.300	3.42%	-3.49%
			1905	1.577	51.422	1.520	53.300	3.75%	-3.52%
			1910	1.582	51.407	1.520	53.300	4.08%	-3.55%
12/09/2019	1900 Body	23.3	1850	1.527	51.939	1.520	53.300	0.46%	-2.55%
			1860	1.538	51.903	1.520	53.300	1.18%	-2.62%
			1880	1.560	51.836	1.520	53.300	2.63%	-2.75%
			1900	1.582	51.779	1.520	53.300	4.08%	-2.85%
			1905	1.587	51.770	1.520	53.300	4.41%	-2.87%
			1910	1.593	51.763	1.520	53.300	4.80%	-2.88%
12/27/2019	1900 Body	22.8	1850	1.522	52.002	1.520	53.300	0.13%	-2.44%
			1860	1.533	51.962	1.520	53.300	0.86%	-2.51%
			1880	1.555	51.892	1.520	53.300	2.30%	-2.64%
			1900	1.577	51.821	1.520	53.300	3.75%	-2.77%
			1905	1.582	51.803	1.520	53.300	4.08%	-2.81%
			1910	1.587	51.784	1.520	53.300	4.41%	-2.84%
12/30/2019	1900 Body	23.5	1850	1.502	51.977	1.520	53.300	-1.18%	-2.48%
			1860	1.513	51.943	1.520	53.300	-0.46%	-2.55%
			1880	1.536	51.864	1.520	53.300	1.05%	-2.69%
			1900	1.559	51.780	1.520	53.300	2.57%	-2.85%
			1905	1.565	51.760	1.520	53.300	2.96%	-2.89%
			1910	1.570	51.741	1.520	53.300	3.29%	-2.92%
01/03/2020	1900 Body	23.0	1850	1.526	52.638	1.520	53.300	0.39%	-1.24%
			1860	1.537	52.608	1.520	53.300	1.12%	-1.30%
			1880	1.560	52.538	1.520	53.300	2.63%	-1.43%
			1900	1.583	52.463	1.520	53.300	4.14%	-1.57%
			1905	1.588	52.444	1.520	53.300	4.47%	-1.61%
			1910	1.594	52.425	1.520	53.300	4.87%	-1.64%
01/11/2020	1900 Body	21.8	1850	1.523	51.417	1.520	53.300	0.20%	-3.53%
			1860	1.534	51.386	1.520	53.300	0.92%	-3.59%
			1880	1.556	51.313	1.520	53.300	2.37%	-3.73%
			1900	1.579	51.230	1.520	53.300	3.88%	-3.88%
			1905	1.584	51.208	1.520	53.300	4.21%	-3.92%
			1910	1.590	51.187	1.520	53.300	4.61%	-3.96%
01/12/2020	1900 Body	23.8	1850	1.507	52.158	1.520	53.300	-0.86%	-2.14%
			1860	1.517	52.129	1.520	53.300	-0.20%	-2.20%
			1880	1.538	52.070	1.520	53.300	1.18%	-2.31%
			1900	1.560	52.007	1.520	53.300	2.63%	-2.43%
			1905	1.566	51.991	1.520	53.300	3.03%	-2.46%
			1910	1.571	51.974	1.520	53.300	3.36%	-2.49%
01/13/2020	1900 Body	22.5	1850	1.523	51.243	1.520	53.300	0.20%	-3.86%
			1860	1.535	51.250	1.520	53.300	0.99%	-3.85%
			1880	1.558	51.254	1.520	53.300	2.50%	-3.84%
			1900	1.579	51.161	1.520	53.300	3.88%	-4.01%
			1905	1.584	51.120	1.520	53.300	4.21%	-4.09%
			1910	1.589	51.076	1.520	53.300	4.54%	-4.17%

Table 10-3
Measured Tissue Properties – Cont'd

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
12/10/2019	2450 Body	22.8	2400	1.942	50.948	1.902	52.767	2.10%	-3.45%
			2450	2.010	50.763	1.950	52.700	3.08%	-3.68%
			2500	2.077	50.576	2.021	52.636	2.77%	-3.91%
12/27/2019	2450 Body	22.3	2300	1.862	51.785	1.809	52.900	2.93%	-2.11%
			2310	1.873	51.750	1.816	52.887	3.14%	-2.15%
			2320	1.887	51.716	1.826	52.873	3.34%	-2.19%
01/08/2020	2450 Body	24.2	2450	2.036	51.644	1.950	52.700	4.41%	-2.00%
			2500	2.097	51.492	2.021	52.636	3.76%	-2.17%
			2510	2.109	51.466	2.035	52.623	3.64%	-2.20%
			2535	2.140	51.390	2.071	52.592	3.33%	-2.29%
			2550	2.158	51.344	2.092	52.573	3.15%	-2.34%
			2560	2.170	51.315	2.106	52.560	3.04%	-2.37%
			2600	2.217	51.187	2.163	52.509	2.50%	-2.52%
			2650	2.280	51.032	2.234	52.445	2.06%	-2.69%
			2680	2.316	50.940	2.277	52.407	1.71%	-2.80%
01/13/2020	2450 Body	21.9	2400	1.973	50.578	1.902	52.767	3.73%	-4.15%
			2450	2.012	50.309	1.950	52.700	3.18%	-4.54%
			2500	2.065	50.418	2.021	52.636	2.18%	-4.21%
12/18/2019	3500 Body	21.1	3600	3.462	49.311	3.430	51.190	0.93%	-3.67%
			3650	3.515	49.244	3.489	51.118	0.75%	-3.67%
			3690	3.557	49.186	3.536	51.063	0.59%	-3.68%
			3700	3.566	49.166	3.548	51.050	0.51%	-3.69%
12/23/2019	5200-5800 Body	23.2	5180	5.455	47.102	5.276	49.041	3.39%	-3.95%
			5190	5.466	47.095	5.288	49.028	3.37%	-3.94%
			5200	5.477	47.072	5.299	49.014	3.36%	-3.96%
			5210	5.489	47.054	5.311	49.001	3.35%	-3.97%
			5220	5.502	47.032	5.323	48.987	3.36%	-3.99%
			5240	5.532	46.982	5.346	48.960	3.48%	-4.04%
			5250	5.545	46.967	5.358	48.947	3.49%	-4.05%
			5260	5.556	46.957	5.369	48.933	3.48%	-4.04%
			5270	5.570	46.937	5.381	48.919	3.51%	-4.05%
			5280	5.585	46.908	5.393	48.906	3.56%	-4.09%
			5290	5.600	46.886	5.404	48.892	3.63%	-4.10%
			5300	5.612	46.888	5.416	48.879	3.62%	-4.07%
			5310	5.621	46.875	5.428	48.865	3.56%	-4.07%
			5320	5.631	46.853	5.439	48.851	3.53%	-4.09%
			5500	5.873	46.530	5.650	48.607	3.95%	-4.27%
			5510	5.888	46.517	5.661	48.594	4.01%	-4.27%
			5520	5.902	46.495	5.673	48.580	4.04%	-4.29%
			5530	5.915	46.486	5.685	48.566	4.05%	-4.28%
			5540	5.926	46.478	5.696	48.553	4.04%	-4.27%
			5550	5.936	46.461	5.708	48.539	3.99%	-4.28%
			5560	5.947	46.438	5.720	48.526	3.97%	-4.30%
			5580	5.979	46.386	5.743	48.499	4.11%	-4.36%
			5600	6.015	46.347	5.766	48.471	4.32%	-4.38%
			5610	6.031	46.331	5.778	48.458	4.38%	-4.39%
			5620	6.046	46.322	5.790	48.444	4.42%	-4.38%
			5640	6.071	46.303	5.813	48.417	4.44%	-4.37%
			5660	6.092	46.273	5.837	48.390	4.37%	-4.37%
			5670	6.104	46.253	5.848	48.376	4.38%	-4.39%
			5680	6.117	46.227	5.860	48.363	4.39%	-4.42%
			5690	6.131	46.199	5.872	48.349	4.41%	-4.45%
			5700	6.146	46.171	5.883	48.336	4.47%	-4.48%
			5710	6.163	46.166	5.895	48.322	4.55%	-4.46%
			5720	6.180	46.160	5.907	48.309	4.62%	-4.45%
			5745	6.216	46.128	5.936	48.275	4.72%	-4.45%
			5750	6.221	46.117	5.942	48.268	4.70%	-4.46%
			5755	6.225	46.111	5.947	48.261	4.67%	-4.45%
			5765	6.236	46.103	5.959	48.248	4.65%	-4.45%
			5775	6.249	46.083	5.971	48.234	4.66%	-4.46%
			5785	6.262	46.062	5.982	48.220	4.68%	-4.48%
			5795	6.277	46.037	5.994	48.207	4.72%	-4.50%
			5800	6.284	46.023	6.000	48.200	4.73%	-4.52%
			5805	6.293	46.013	6.006	48.193	4.78%	-4.52%
			5825	6.324	45.988	6.029	48.166	4.89%	-4.52%
01/13/2020	5200-5800 Body	22.1	5750	6.187	46.260	5.942	48.268	4.12%	-4.16%
			5805	6.257	46.157	6.006	48.193	4.18%	-4.22%
			5825	6.289	46.125	6.029	48.166	4.31%	-4.24%

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.

10.2 Test System Verification

Prior to SAR assessment, the system is verified to ±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 E.

Table 10-4
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
L	750	HEAD	12/29/2019	22.3	21.0	0.200	1161	7410	1.710	8.030	8.550	6.48%
M	835	HEAD	01/13/2020	21.9	20.9	0.200	4d047	7308	2.030	9.420	10.150	7.75%
P	1750	HEAD	12/02/2019	23.7	21.2	0.100	1150	7551	3.780	36.500	37.800	3.56%
H	1750	HEAD	12/26/2019	21.4	20.7	0.100	1148	7406	3.440	37.000	34.400	-7.03%
H	1750	HEAD	01/10/2020	22.1	21.9	0.100	1008	7406	3.770	36.200	37.700	4.14%
L	1900	HEAD	12/31/2019	22.6	21.1	0.100	5d148	7410	4.080	39.100	40.800	4.35%
L	1900	HEAD	01/04/2020	23.2	21.6	0.100	5d148	7410	4.150	39.100	41.500	6.14%
E	2300	HEAD	01/16/2020	22.3	21.1	0.100	1073	7417	4.770	49.200	47.700	-3.05%
E	2450	HEAD	12/19/2019	22.7	21.0	0.100	981	7417	5.440	52.300	54.400	4.02%
E	2450	HEAD	01/08/2020	22.9	20.7	0.100	719	7417	5.550	53.100	55.500	4.52%
E	2600	HEAD	12/09/2019	20.8	19.8	0.100	1064	7417	6.020	58.100	60.200	3.61%
H	3700	HEAD	12/16/2019	20.4	20.3	0.100	1018	3589	7.010	65.800	70.100	6.53%
H	5250	HEAD	12/17/2019	22.1	20.9	0.050	1191	7406	3.720	80.800	74.400	-7.92%
H	5600	HEAD	12/17/2019	22.1	20.9	0.050	1191	7406	3.940	82.700	78.800	-4.72%
H	5750	HEAD	12/17/2019	22.1	20.9	0.050	1191	7406	3.760	80.200	75.200	-6.23%
L	750	BODY	12/26/2019	20.3	19.8	0.200	1161	7410	1.680	8.430	8.400	-0.36%
L	835	BODY	12/05/2019	23.9	21.2	0.200	4d047	7410	1.970	9.470	9.850	4.01%
L	835	BODY	12/20/2019	20.3	19.7	0.200	4d047	7410	2.020	9.470	10.100	6.65%
I	1750	BODY	12/28/2019	22.3	21.5	0.100	1150	7357	3.870	36.600	38.700	5.74%
I	1750	BODY	12/30/2019	20.4	20.7	0.100	1148	7357	3.480	37.700	34.800	-7.69%
I	1750	BODY	01/09/2020	21.5	21.1	0.100	1148	7357	3.920	37.700	39.200	3.98%
I	1750	BODY	01/11/2020	20.8	20.6	0.100	1008	7357	3.970	37.400	39.700	6.15%
P	1900	BODY	12/09/2019	23.7	22.1	0.100	5d080	7551	4.140	39.200	41.400	5.61%
J	1900	BODY	12/09/2019	20.2	22.0	0.100	5d149	7488	4.190	39.400	41.900	6.35%
P	1900	BODY	12/27/2019	21.5	21.8	0.100	5d148	7551	4.180	39.100	41.800	6.91%
P	1900	BODY	12/30/2019	23.3	22.5	0.100	5d148	7551	4.100	39.100	41.000	4.86%
J	1900	BODY	01/03/2020	21.9	21.4	0.100	5d080	7571	4.260	39.200	42.600	8.67%
P	1900	BODY	01/11/2020	21.9	21.8	0.100	5d149	7551	4.160	39.400	41.600	5.58%
K	2300	BODY	12/27/2019	23.5	22.0	0.100	1073	7547	4.570	47.700	45.700	-4.19%
M	2450	BODY	12/10/2019	23.1	22.8	0.100	719	7308	5.240	50.800	52.400	3.15%
K	2450	BODY	01/08/2020	24.2	22.8	0.100	981	7547	5.200	50.900	52.000	2.16%
L	2450	BODY	01/13/2020	21.9	22.7	0.100	719	7410	5.450	50.800	54.500	7.28%
K	2600	BODY	01/08/2020	24.2	22.8	0.100	1064	7547	5.590	55.600	55.900	0.54%
D	3700	BODY	12/18/2019	22.1	21.1	0.100	1018	3914	6.440	64.300	64.400	0.16%
G	5250	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	3.800	77.000	76.000	-1.30%
G	5600	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	4.080	78.600	81.600	3.82%
G	5750	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	3.880	76.900	77.600	0.91%
G	5750	BODY	01/13/2020	23.2	22.4	0.050	1191	7409	3.810	76.900	76.200	-0.91%

Table 10-5
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	01/11/2020	20.8	20.6	0.100	1008	7357	2.080	19.900	20.800	4.52%
I	1750	BODY	02/17/2020	21.9	21.5	0.100	1148	7357	2.120	19.800	21.200	7.07%
P	1900	BODY	12/30/2020	23.3	22.5	0.100	5d148	7551	2.090	20.500	20.900	1.95%
J	1900	BODY	01/03/2020	21.9	21.4	0.100	5d080	7571	2.180	20.600	21.800	5.83%
J	1900	BODY	01/12/2020	24.1	23.5	0.100	5d080	7571	2.130	20.600	21.300	3.40%
P	1900	BODY	01/13/2020	22.7	22.5	0.100	5d149	7551	2.140	20.700	21.400	3.38%
G	5250	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	1.060	21.400	21.200	-0.93%
G	5600	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	1.120	21.900	22.400	2.28%
G	5750	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	1.060	21.300	21.200	-0.47%

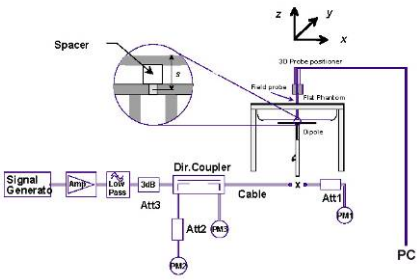

Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
Cell. CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.38	-0.05	Right	Cheek	00338	1:1	0.119	1.028	0.122	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.38	-0.04	Right	Tilt	00338	1:1	0.075	1.028	0.077	
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.38	-0.03	Left	Cheek	00338	1:1	0.127	1.028	0.131	A1
836.52	384	Cell. CDMA	RC3 / SO55	25.5	25.38	0.20	Left	Tilt	00338	1:1	0.054	1.028	0.056	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.30	-0.09	Right	Cheek	00338	1:1	0.070	1.047	0.073	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.30	0.19	Right	Tilt	00338	1:1	0.041	1.047	0.043	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.30	0.17	Left	Cheek	00338	1:1	0.076	1.047	0.080	
836.52	384	Cell. CDMA	EVDO Rev. A	25.5	25.30	0.13	Left	Tilt	00338	1:1	0.032	1.047	0.034	
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 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	33.4	32.99	0.10	Right	Cheek	00338	1	1:8.3	0.054	1.099	0.059	
836.60	190	GSM 850	GSM	33.4	32.99	0.15	Right	Tilt	00338	1	1:8.3	0.032	1.099	0.035	
836.60	190	GSM 850	GSM	33.4	32.99	0.04	Left	Cheek	00338	1	1:8.3	0.065	1.099	0.071	
836.60	190	GSM 850	GSM	33.4	32.99	0.18	Left	Tilt	00338	1	1:8.3	0.027	1.099	0.030	
836.60	190	GSM 850	GPRS	31.2	31.11	0.05	Right	Cheek	00338	2	1:4.15	0.062	1.021	0.063	
836.60	190	GSM 850	GPRS	31.2	31.11	0.13	Right	Tilt	00338	2	1:4.15	0.037	1.021	0.038	
836.60	190	GSM 850	GPRS	31.2	31.11	-0.20	Left	Cheek	00338	2	1:4.15	0.079	1.021	0.081	A2
836.60	190	GSM 850	GPRS	31.2	31.11	-0.13	Left	Tilt	00338	2	1:4.15	0.029	1.021	0.030	
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 11-3
UMTS 850 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)	
836.60	4183	UMTS 850	RMC	25.5	25.33	0.16	Right	Cheek	00338	1:1	0.124	1.040	0.129	
836.60	4183	UMTS 850	RMC	25.5	25.33	0.15	Right	Tilt	00338	1:1	0.070	1.040	0.073	
836.60	4183	UMTS 850	RMC	25.5	25.33	-0.03	Left	Cheek	00338	1:1	0.128	1.040	0.133	A3
836.60	4183	UMTS 850	RMC	25.5	25.33	0.17	Left	Tilt	00338	1:1	0.054	1.040	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 11-4
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	25.2	25.16	0.00	Right	Cheek	00338	1:1	0.076	1.009	0.077	
1732.40	1412	UMTS 1750	RMC	25.2	25.16	0.18	Right	Tilt	00338	1:1	0.036	1.009	0.036	
1732.40	1412	UMTS 1750	RMC	25.2	25.16	0.07	Left	Cheek	00338	1:1	0.088	1.009	0.089	A4
1732.40	1412	UMTS 1750	RMC	25.2	25.16	0.17	Left	Tilt	00338	1:1	0.043	1.009	0.043	
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
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	25.2	24.93	0.21	Right	Cheek	00338	1:1	0.069	1.064	0.073	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	24.93	0.06	Right	Tilt	00338	1:1	0.078	1.064	0.083	A5
1880.00	600	PCS CDMA	RC3 / SO55	25.2	24.93	-0.16	Left	Cheek	00338	1:1	0.070	1.064	0.074	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	24.93	-0.13	Left	Tilt	00338	1:1	0.066	1.064	0.070	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.82	0.07	Right	Cheek	00338	1:1	0.067	1.091	0.073	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.82	0.17	Right	Tilt	00338	1:1	0.075	1.091	0.082	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.82	0.15	Left	Cheek	00338	1:1	0.068	1.091	0.074	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.82	0.19	Left	Tilt	00338	1:1	0.066	1.091	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 11-6
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	30.2	29.84	0.12	Right	Cheek	00338	1	1:8.3	0.034	1.086	0.037	
1880.00	661	GSM 1900	GSM	30.2	29.84	0.13	Right	Tilt	00338	1	1:8.3	0.029	1.086	0.031	
1880.00	661	GSM 1900	GSM	30.2	29.84	0.16	Left	Cheek	00338	1	1:8.3	0.032	1.086	0.035	
1880.00	661	GSM 1900	GSM	30.2	29.84	0.12	Left	Tilt	00338	1	1:8.3	0.028	1.086	0.030	
1880.00	661	GSM 1900	GPRS	29.2	28.95	0.13	Right	Cheek	00338	2	1:4.15	0.048	1.059	0.051	A6
1880.00	661	GSM 1900	GPRS	29.2	28.95	0.21	Right	Tilt	00338	2	1:4.15	0.042	1.059	0.044	
1880.00	661	GSM 1900	GPRS	29.2	28.95	0.17	Left	Cheek	00338	2	1:4.15	0.044	1.059	0.047	
1880.00	661	GSM 1900	GPRS	29.2	28.95	0.16	Left	Tilt	00338	2	1:4.15	0.039	1.059	0.041	
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
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	25.2	24.99	-0.10	Right	Cheek	00338	1:1	0.081	1.050	0.085	A7
1880.00	9400	UMTS 1900	RMC	25.2	24.99	0.14	Right	Tilt	00338	1:1	0.077	1.050	0.081	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	0.10	Left	Cheek	00338	1:1	0.076	1.050	0.080	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	-0.02	Left	Tilt	00338	1:1	0.069	1.050	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 11-8
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	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	25.20	0.04	0	Right	Cheek	QPSK	1	49	00353	1:1	0.093	1.072	0.100	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.09	1	Right	Cheek	QPSK	25	12	00353	1:1	0.074	1.062	0.079	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	0.00	0	Right	Tilt	QPSK	1	49	00353	1:1	0.064	1.072	0.069	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.12	1	Right	Tilt	QPSK	25	12	00353	1:1	0.043	1.062	0.046	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	0.08	0	Left	Cheek	QPSK	1	49	00353	1:1	0.098	1.072	0.105	A8
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.05	1	Left	Cheek	QPSK	25	12	00353	1:1	0.078	1.062	0.083	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	-0.03	0	Left	Tilt	QPSK	1	49	00353	1:1	0.051	1.072	0.055	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	-0.04	1	Left	Tilt	QPSK	25	12	00353	1:1	0.042	1.062	0.045	
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 13 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)	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	0.14	0	Right	Cheek	QPSK	1	25	00353	1:1	0.087	1.119	0.097	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.09	1	Right	Cheek	QPSK	25	12	00353	1:1	0.073	1.059	0.077	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	0.14	0	Right	Tilt	QPSK	1	25	00353	1:1	0.061	1.119	0.068	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.21	1	Right	Tilt	QPSK	25	12	00353	1:1	0.051	1.059	0.054	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	0.04	0	Left	Cheek	QPSK	1	25	00353	1:1	0.095	1.119	0.106	A9
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.09	1	Left	Cheek	QPSK	25	12	00353	1:1	0.075	1.059	0.079	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	0.08	0	Left	Tilt	QPSK	1	25	00353	1:1	0.049	1.119	0.055	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.07	1	Left	Tilt	QPSK	25	12	00353	1:1	0.038	1.059	0.040	
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 14 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)	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	0.12	0	Right	Cheek	QPSK	1	0	00353	1:1	0.092	1.052	0.097	A10
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	0.16	1	Right	Cheek	QPSK	25	12	00353	1:1	0.065	1.052	0.068	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	-0.04	0	Right	Tilt	QPSK	1	0	00353	1:1	0.068	1.052	0.072	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	0.12	1	Right	Tilt	QPSK	25	12	00353	1:1	0.047	1.052	0.049	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	0.10	0	Left	Cheek	QPSK	1	0	00353	1:1	0.091	1.052	0.096	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	0.11	1	Left	Cheek	QPSK	25	12	00353	1:1	0.064	1.052	0.067	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	-0.19	0	Left	Tilt	QPSK	1	0	00353	1:1	0.050	1.052	0.053	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	0.21	1	Left	Tilt	QPSK	25	12	00353	1:1	0.035	1.052	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 11-11
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	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	0.05	0	Right	Cheek	QPSK	1	49	00379	1:1	0.086	1.091	0.094	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.17	1	Right	Cheek	QPSK	25	12	00379	1:1	0.080	1.072	0.086	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	-0.05	0	Right	Tilt	QPSK	1	49	00379	1:1	0.051	1.091	0.056	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.07	1	Right	Tilt	QPSK	25	12	00379	1:1	0.045	1.072	0.048	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	-0.06	0	Left	Cheek	QPSK	1	49	00379	1:1	0.107	1.091	0.117	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.05	1	Left	Cheek	QPSK	25	12	00379	1:1	0.091	1.072	0.098	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	0.02	0	Left	Cheek	QPSK	1	49	00379	1:1	0.116	1.000	0.116	A11
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5								1	0						
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	0.15	0	Left	Tilt	QPSK	1	49	00379	1:1	0.042	1.091	0.046	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.16	1	Left	Tilt	QPSK	25	12	00379	1:1	0.035	1.072	0.038	

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 11-12
LTE Band 66 (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) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.13	0	Right	Cheek	QPSK	1	0	00353	1:1	0.068	1.033	0.070	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.06	1	Right	Cheek	QPSK	50	25	00353	1:1	0.065	1.040	0.068	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.18	0	Right	Tilt	QPSK	1	0	00353	1:1	0.046	1.033	0.048	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.17	1	Right	Tilt	QPSK	50	25	00353	1:1	0.039	1.040	0.041	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.05	0	Left	Cheek	QPSK	1	0	00353	1:1	0.101	1.033	0.104	A12
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.11	1	Left	Cheek	QPSK	50	25	00353	1:1	0.089	1.040	0.093	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.01	0	Left	Tilt	QPSK	1	0	00353	1:1	0.066	1.033	0.068	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.11	1	Left	Tilt	QPSK	50	25	00353	1:1	0.051	1.040	0.053	

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 2 (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) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.13	0	Right	Cheek	QPSK	1	50	00361	1:1	0.084	1.047	0.088	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	0.08	1	Right	Cheek	QPSK	50	25	00361	1:1	0.073	1.023	0.075	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.19	0	Right	Tilt	QPSK	1	50	00361	1:1	0.080	1.047	0.084	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	0.09	1	Right	Tilt	QPSK	50	25	00361	1:1	0.073	1.023	0.075	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.19	0	Left	Cheek	QPSK	1	50	00361	1:1	0.085	1.047	0.089	A13
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	0.17	1	Left	Cheek	QPSK	50	25	00361	1:1	0.081	1.023	0.083	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.14	0	Left	Tilt	QPSK	1	50	00361	1:1	0.079	1.047	0.083	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	-0.12	1	Left	Tilt	QPSK	50	25	00361	1:1	0.062	1.023	0.063	

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 11-14
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	22.7	22.39	0.19	0	Right	Cheek	QPSK	1	0	00361	1:1	0.033	1.074	0.035	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.14	1	Right	Cheek	QPSK	25	12	00361	1:1	0.023	1.081	0.025	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.19	0	Right	Tilt	QPSK	1	0	00361	1:1	0.024	1.074	0.026	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.11	1	Right	Tilt	QPSK	25	12	00361	1:1	0.021	1.081	0.023	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.21	0	Left	Cheek	QPSK	1	0	00361	1:1	0.059	1.074	0.063	A14
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.17	1	Left	Cheek	QPSK	25	12	00361	1:1	0.052	1.081	0.056	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.18	0	Left	Tilt	QPSK	1	0	00361	1:1	0.022	1.074	0.024	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.12	1	Left	Tilt	QPSK	25	12	00361	1:1	0.016	1.081	0.017	
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 11-15
LTE Band 48 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)	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	-0.03	0	Right	Cheek	QPSK	1	99	00379	1:1.58	0.042	1.040	0.044	
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.13	1	Right	Cheek	QPSK	50	25	00379	1:1.58	0.034	1.047	0.036	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	0.11	0	Right	Tilt	QPSK	1	99	00379	1:1.58	0.022	1.040	0.023	
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.18	1	Right	Tilt	QPSK	50	25	00379	1:1.58	0.016	1.047	0.017	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	0.04	0	Left	Cheek	QPSK	1	99	00379	1:1.58	0.069	1.040	0.072	A15
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.03	1	Left	Cheek	QPSK	50	25	00379	1:1.58	0.058	1.047	0.061	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	0.17	0	Left	Tilt	QPSK	1	99	00379	1:1.58	0.044	1.040	0.046	
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.15	1	Left	Tilt	QPSK	50	25	00379	1:1.58	0.036	1.047	0.038	
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 11-16
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	25.2	25.15	0.14	0	Right	Cheek	QPSK	1	50	00361	1:1.58	0.050	1.012	0.051	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.15	1	Right	Cheek	QPSK	50	50	00361	1:1.58	0.037	1.012	0.037	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.16	0	Right	Tilt	QPSK	1	50	00361	1:1.58	0.058	1.012	0.059	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.16	1	Right	Tilt	QPSK	50	50	00361	1:1.58	0.049	1.012	0.050	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.15	0	Left	Cheek	QPSK	1	50	00361	1:1.58	0.094	1.012	0.095	A16
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.16	1	Left	Cheek	QPSK	50	50	00361	1:1.58	0.082	1.012	0.083	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.18	0	Left	Tilt	QPSK	1	50	00361	1:1.58	0.026	1.012	0.026	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	-0.04	1	Left	Tilt	QPSK	50	50	00361	1:1.58	0.022	1.012	0.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-17
NR Band n5 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)	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	0.21	0	Right	Cheek	DFT-S-OFDM QPSK	1	53	00395	1:1	0.067	1.102	0.074	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	0.10	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	00395	1:1	0.064	1.062	0.068	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	0.16	0	Right	Tilt	DFT-S-OFDM QPSK	1	53	00395	1:1	0.037	1.102	0.041	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	0.13	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	00395	1:1	0.035	1.062	0.037	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	0.10	0	Left	Cheek	DFT-S-OFDM QPSK	1	53	00395	1:1	0.073	1.102	0.080	A17
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	0.02	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	00395	1:1	0.068	1.062	0.072	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.7	22.71	0.14	1	Left	Cheek	CP-OFDM QPSK	1	1	00395	1:1	0.037	1.256	0.046	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	0.14	0	Left	Tilt	DFT-S-OFDM QPSK	1	53	00395	1:1	0.031	1.102	0.034	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	0.19	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	00395	1:1	0.028	1.062	0.030	
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
NR Band n66 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)	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.02	0	Right	Cheek	DFT-S-OFDM QPSK	1	104	00395	1:1	0.192	1.033	0.198	A18
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.06	0	Right	Cheek	DFT-S-OFDM QPSK	50	56	00395	1:1	0.187	1.086	0.203	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.40	0.08	0	Right	Cheek	CP-OFDM QPSK	1	1	00395	1:1	0.161	1.122	0.181	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.21	0	Right	Tilt	DFT-S-OFDM QPSK	1	104	00395	1:1	0.048	1.033	0.050	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.19	0	Right	Tilt	DFT-S-OFDM QPSK	50	56	00395	1:1	0.048	1.086	0.052	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.03	0	Left	Cheek	DFT-S-OFDM QPSK	1	104	00395	1:1	0.098	1.033	0.101	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.01	0	Left	Cheek	DFT-S-OFDM QPSK	50	56	00395	1:1	0.102	1.086	0.111	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.10	0	Left	Tilt	DFT-S-OFDM QPSK	1	104	00395	1:1	0.053	1.033	0.055	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.14	0	Left	Tilt	DFT-S-OFDM QPSK	50	56	00395	1:1	0.054	1.086	0.059	
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 11-19
NR Band n2 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)	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.04	0	Right	Cheek	DFT-S-OFDM QPSK	1	104	00387	1:1	0.370	1.081	0.400	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.15	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	00387	1:1	0.390	1.054	**0.411**	A19
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.19	0.16	0	Right	Cheek	CP-OFDM QPSK	1	1	00387	1:1	0.335	1.125	0.377	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.17	0	Right	Tilt	DFT-S-OFDM QPSK	1	104	00387	1:1	0.096	1.081	0.104	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.08	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	00387	1:1	0.116	1.054	0.122	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.10	0	Left	Cheek	DFT-S-OFDM QPSK	1	104	00387	1:1	0.179	1.081	0.193	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.13	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	00387	1:1	0.189	1.054	0.199	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.02	0	Left	Tilt	DFT-S-OFDM QPSK	1	104	00387	1:1	0.218	1.081	0.236	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.10	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	00387	1:1	0.211	1.054	0.222	
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
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)	
2437	6	802.11b	DSSS	22	15.5	15.36	0.06	Right	Cheek	1	00296	1	99.5	0.615	0.480	1.033	1.005	**0.498**	A20
2437	6	802.11b	DSSS	22	15.5	15.36	0.12	Right	Tilt	1	00296	1	99.5	0.182	0.124	1.033	1.005	0.129	
2437	6	802.11b	DSSS	22	15.5	15.36	0.12	Left	Cheek	1	00296	1	99.5	0.136	-	1.033	1.005	-	
2437	6	802.11b	DSSS	22	15.5	15.36	0.17	Left	Tilt	1	00296	1	99.5	0.143	-	1.033	1.005	-	
2412	1	802.11b	DSSS	22	15.5	15.46	0.12	Right	Cheek	2	00296	1	99.5	0.365	-	1.009	1.005	-	
2412	1	802.11b	DSSS	22	15.5	15.46	0.05	Right	Tilt	2	00296	1	99.5	0.590	0.304	1.009	1.005	0.308	
2412	1	802.11b	DSSS	22	15.5	15.46	0.07	Left	Cheek	2	00296	1	99.5	0.342	-	1.009	1.005	-	
2412	1	802.11b	DSSS	22	15.5	15.46	0.18	Left	Tilt	2	00296	1	99.5	0.470	-	1.009	1.005	-	
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 11-21
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)	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	-0.09	Right	Cheek	MIMO	00296	13	99.7	0.898	0.455	1.122	1.003	0.512	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	0.17	Right	Tilt	MIMO	00296	13	99.7	0.359	0.272	1.122	1.003	0.306	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	-0.17	Left	Cheek	MIMO	00296	13	99.7	0.241	-	1.122	1.003	-	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	0.18	Left	Tilt	MIMO	00296	13	99.7	0.307	-	1.122	1.003	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**										**Head** **1.6 W/kg (mW/g)** averaged over 1 gram										

Note: For channel 6 to achieve the 18.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.5 dBm.

Table 11-22
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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)	
5280	56	802.11a	OFDM	20	18.0	17.56	0.18	Right	Cheek	1	00296	6	99.1	0.649	0.327	1.107	1.009	**0.365**	A21
5280	56	802.11a	OFDM	20	18.0	17.56	0.16	Right	Tilt	1	00296	6	99.1	0.522	-	1.107	1.009	-	
5280	56	802.11a	OFDM	20	18.0	17.56	0.19	Left	Cheek	1	00296	6	99.1	0.204	-	1.107	1.009	-	
5280	56	802.11a	OFDM	20	18.0	17.56	0.19	Left	Tilt	1	00296	6	99.1	0.228	-	1.107	1.009	-	
5280	56	802.11a	OFDM	20	18.0	17.47	0.12	Right	Cheek	2	00296	6	99.2	0.468	0.192	1.130	1.008	0.219	
5280	56	802.11a	OFDM	20	18.0	17.47	0.10	Right	Tilt	2	00296	6	99.2	0.283	-	1.130	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.47	0.14	Left	Cheek	2	00296	6	99.2	0.159	-	1.130	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.47	0.19	Left	Tilt	2	00296	6	99.2	0.270	-	1.130	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.81	0.14	Right	Cheek	1	00296	6	99.1	0.622	0.249	1.045	1.009	0.263	
5720	144	802.11a	OFDM	20	17.0	16.81	0.16	Right	Tilt	1	00296	6	99.1	0.602	-	1.045	1.009	-	
5720	144	802.11a	OFDM	20	17.0	16.81	0.01	Left	Cheek	1	00296	6	99.1	0.232	-	1.045	1.009	-	
5720	144	802.11a	OFDM	20	17.0	16.81	0.17	Left	Tilt	1	00296	6	99.1	0.231	-	1.045	1.009	-	
5600	120	802.11a	OFDM	20	17.0	16.97	0.14	Right	Cheek	2	00296	6	99.2	0.174	-	1.007	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.97	0.15	Right	Tilt	2	00296	6	99.2	0.258	0.126	1.007	1.008	0.128	
5600	120	802.11a	OFDM	20	17.0	16.97	0.17	Left	Cheek	2	00296	6	99.2	0.144	-	1.007	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.97	0.10	Left	Tilt	2	00296	6	99.2	0.230	-	1.007	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.54	0.13	Right	Cheek	1	00296	6	99.1	0.681	0.259	1.112	1.009	0.291	
5785	157	802.11a	OFDM	20	18.0	17.54	0.11	Right	Tilt	1	00296	6	99.1	0.650	-	1.112	1.009	-	
5785	157	802.11a	OFDM	20	18.0	17.54	0.13	Left	Cheek	1	00296	6	99.1	0.222	-	1.112	1.009	-	
5785	157	802.11a	OFDM	20	18.0	17.54	0.17	Left	Tilt	1	00296	6	99.1	0.181	-	1.112	1.009	-	
5825	165	802.11a	OFDM	20	18.0	17.71	0.19	Right	Cheek	2	00296	6	99.2	0.118	-	1.069	1.008	-	
5825	165	802.11a	OFDM	20	18.0	17.71	0.17	Right	Tilt	2	00296	6	99.2	0.173	0.062	1.069	1.008	0.067	
5825	165	802.11a	OFDM	20	18.0	17.71	0.14	Left	Cheek	2	00296	6	99.2	0.124	-	1.069	1.008	-	
5825	165	802.11a	OFDM	20	18.0	17.71	0.19	Left	Tilt	2	00296	6	99.2	0.169	-	1.069	1.008	-	

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
NII MIMO Head SAR for Conditions with 2.4 GHz and 5 GHz WLAN 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)	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.16	Right	Cheek	MIMO	00296	27	99.7	0.385	0.214	1.164	1.003	0.250	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.18	Right	Tilt	MIMO	00296	27	99.7	0.377	-	1.164	1.003	-	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.01	Left	Cheek	MIMO	00296	27	99.7	0.186	-	1.164	1.003	-	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.02	Left	Tilt	MIMO	00296	27	99.7	0.173	-	1.164	1.003	-	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.17	Right	Cheek	MIMO	00296	27	99.7	0.539	0.243	1.250	1.003	0.305	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.14	Right	Tilt	MIMO	00296	27	99.7	0.539	-	1.250	1.003	-	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.12	Left	Cheek	MIMO	00296	27	99.7	0.292	-	1.250	1.003	-	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.14	Left	Tilt	MIMO	00296	27	99.7	0.256	-	1.250	1.003	-	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.19	Right	Cheek	MIMO	00296	27	99.7	0.224	0.073	1.180	1.003	0.086	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.11	Right	Tilt	MIMO	00296	27	99.7	0.192	-	1.180	1.003	-	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.15	Left	Cheek	MIMO	00296	27	99.7	0.144	-	1.180	1.003	-	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.18	Left	Tilt	MIMO	00296	27	99.7	0.116	-	1.180	1.003	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Head
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

Note: NII MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WIFI was not transmitting during the above evaluations.

Table 11-24
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)	
2441.00	39	Bluetooth	FHSS	12.5	11.66	0.08	Right	Cheek	00296	1	77.3	0.101	1.213	1.294	**0.159**	A22
2441.00	39	Bluetooth	FHSS	12.5	11.66	0.10	Right	Tilt	00296	1	77.3	0.029	1.213	1.294	0.046	
2441.00	39	Bluetooth	FHSS	12.5	11.66	0.18	Left	Cheek	00296	1	77.3	0.027	1.213	1.294	0.042	
2441.00	39	Bluetooth	FHSS	12.5	11.66	0.19	Left	Tilt	00296	1	77.3	0.024	1.213	1.294	0.038	
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 11-25
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	TDSO / SO32	25.5	25.35	0.04	10 mm	00338	N/A	1:1	back	0.527	1.035	0.545	A23
836.60	190	GSM 850	GSM	33.4	32.99	-0.06	10 mm	00346	1	1:8.3	back	0.261	1.099	0.287	
836.60	190	GSM 850	GPRS	31.2	31.11	-0.04	10 mm	00346	2	1:4.15	back	0.313	1.021	0.320	A25
836.60	4183	UMTS 850	RMC	25.5	25.33	-0.02	10 mm	00346	N/A	1:1	back	0.511	1.040	0.531	A26
1732.40	1412	UMTS 1750	RMC	25.2	25.16	0.00	10 mm	00346	N/A	1:1	back	0.526	1.009	0.531	A28
1851.25	25	PCS CDMA	TDSO / SO32	25.2	25.02	-0.01	10 mm	00338	N/A	1:1	back	0.644	1.042	0.671	A30
1880.00	600	PCS CDMA	TDSO / SO32	25.2	24.94	-0.07	10 mm	00338	N/A	1:1	back	0.602	1.062	0.639	
1908.75	1175	PCS CDMA	TDSO / SO32	25.2	24.95	0.00	10 mm	00338	N/A	1:1	back	0.581	1.059	0.615	
1880.00	661	GSM 1900	GSM	30.2	29.84	-0.09	10 mm	00338	1	1:8.3	back	0.316	1.086	0.343	
1880.00	661	GSM 1900	GPRS	29.2	28.95	-0.16	10 mm	00338	2	1:4.15	back	0.432	1.059	0.457	A32
1852.40	9262	UMTS 1900	RMC	25.2	24.89	-0.04	10 mm	00338	N/A	1:1	back	0.702	1.074	0.754	A34
1880.00	9400	UMTS 1900	RMC	25.2	24.99	-0.03	10 mm	00338	N/A	1:1	back	0.678	1.050	0.712	
1907.60	9538	UMTS 1900	RMC	25.2	24.90	0.02	10 mm	00338	N/A	1:1	back	0.618	1.072	0.662	
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 11-26
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]	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	707.50	23095	Mid	LTE Band 12	10	25.5	25.20	-0.05	0	00353	QPSK	1	49	10 mm	back	1:1	0.259	1.072	0.278	A36
1 CC Uplink	N/A	707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.01	1	00353	QPSK	25	12	10 mm	back	1:1	0.210	1.062	0.223	
1 CC Uplink	N/A	782.00	23230	Mid	LTE Band 13	10	25.5	25.01	-0.11	0	00353	QPSK	1	25	10 mm	back	1:1	0.319	1.119	0.357	A37
1 CC Uplink	N/A	782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.00	1	00353	QPSK	25	12	10 mm	back	1:1	0.270	1.059	0.286	
1 CC Uplink	N/A	793.00	23330	Mid	LTE Band 14	10	25.5	25.28	-0.01	0	00353	QPSK	1	0	10 mm	back	1:1	0.342	1.052	0.360	A38
1 CC Uplink	N/A	793.00	23330	Mid	LTE Band 14	10	24.5	24.28	-0.01	1	00353	QPSK	25	12	10 mm	back	1:1	0.272	1.052	0.286	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	0.01	0	00353	QPSK	1	49	10 mm	back	1:1	0.429	1.091	0.468	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.15	1	00353	QPSK	25	12	10 mm	back	1:1	0.347	1.072	0.372	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	0.00	0	00353	QPSK	1	49	10 mm	back	1:1	0.446	1.000	0.446	A40
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5								0	10 mm						
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.01	0	00361	QPSK	1	0	10 mm	back	1:1	0.580	1.033	0.599	A41
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	-0.02	1	00361	QPSK	50	25	10 mm	back	1:1	0.477	1.040	0.496	
1 CC Uplink	N/A	1860.00	18700	Low	LTE Band 2 (PCS)	20	25.2	24.89	-0.08	0	00353	QPSK	1	0	10 mm	back	1:1	0.840	1.074	**0.902**	A43
1 CC Uplink	N/A	1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	-0.08	0	00353	QPSK	1	50	10 mm	back	1:1	0.782	1.047	0.819	
1 CC Uplink	N/A	1900.00	19100	High	LTE Band 2 (PCS)	20	25.2	24.91	0.00	0	00353	QPSK	1	50	10 mm	back	1:1	0.786	1.069	0.840	
1 CC Uplink	N/A	1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	-0.02	1	00353	QPSK	50	25	10 mm	back	1:1	0.688	1.023	0.704	
1 CC Uplink	N/A	1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.07	-0.04	1	00353	QPSK	100	0	10 mm	back	1:1	0.678	1.030	0.698	
1 CC Uplink	N/A	2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.07	0	00379	QPSK	1	0	10 mm	back	1:1	0.219	1.074	0.235	A45
1 CC Uplink	N/A	2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.02	1	00379	QPSK	25	12	10 mm	back	1:1	0.177	1.081	0.191	
1 CC Uplink	N/A	3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	-0.01	0	00353	QPSK	1	99	10 mm	back	1:1.58	0.513	1.040	**0.534**	A47
1 CC Uplink	N/A	3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	-0.11	1	00353	QPSK	50	25	10 mm	back	1:1.58	0.460	1.047	0.482	
1 CC Uplink	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.02	0	00353	QPSK	1	50	10 mm	back	1:1.58	0.468	1.012	0.474	A48
1 CC Uplink	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.01	1	00353	QPSK	50	50	10 mm	back	1:1.58	0.382	1.012	0.387	
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 11-27
NR Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	-0.08	0	00395	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.274	1.102	0.302	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	-0.05	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.275	1.062	0.292	A50
836.50	167300	Mid	NR Band n5 (Cell)	20	23.7	22.71	-0.03	1	00395	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.147	1.256	0.185	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	-0.02	0	00387	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.246	1.033	0.254	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	-0.01	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	back	1:1	0.278	1.086	0.302	A52
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.40	-0.02	0	00387	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.223	1.122	0.250	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.01	0	00395	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.347	1.081	0.375	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	-0.15	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.364	1.054	0.384	A54
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.19	0.05	0	00395	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.341	1.125	0.384	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**															**Body** **1.6 W/kg (mW/g)** averaged over 1 gram				

Table 11-28
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)	
2437	6	802.11b	DSSS	22	20.5	20.17	0.03	10 mm	1	00296	1	back	99.5	0.160	0.107	1.079	1.005	**0.116**	A56
2437	6	802.11b	DSSS	22	20.5	20.49	-0.16	10 mm	2	00296	1	back	99.5	0.074	0.053	1.002	1.005	0.053	
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 11-29
DTS MIMO Body-Worn SAR for Conditions with 2.4 GHz and 5 GHz WLAN 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 (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	-0.18	10 mm	MIMO	00296	13	back	99.7	0.056	0.035	1.122	1.003	0.039	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**										**Body** **1.6 W/kg (mW/g)** averaged over 1 gram											

Note: DTS MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WIFI was not transmitting during the above evaluations.

Table 11-30
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	18.0	17.56	-0.04	10 mm	1	00296	6	back	99.1	0.454	0.196	1.107	1.009	0.219	
5280	56	802.11a	OFDM	20	18.0	17.47	0.19	10 mm	2	00296	6	back	99.2	0.483	0.243	1.130	1.008	**0.277**	A58
5720	144	802.11a	OFDM	20	17.0	16.81	-0.01	10 mm	1	00296	6	back	99.1	0.279	0.115	1.045	1.009	0.121	
5600	120	802.11a	OFDM	20	17.0	16.97	0.17	10 mm	2	00296	6	back	99.2	0.493	0.216	1.007	1.008	0.219	
5785	157	802.11a	OFDM	20	18.0	17.54	0.14	10 mm	1	00296	6	back	99.1	0.311	0.131	1.112	1.009	0.147	
5825	165	802.11a	OFDM	20	18.0	17.71	0.13	10 mm	2	00296	6	back	99.2	0.511	0.214	1.069	1.008	0.231	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram											

Table 11-31
NII MIMO Body-Worn SAR for Conditions with 2.4 GHz and 5 GHz WLAN 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 (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.14	10 mm	MIMO	00296	27	back	99.7	0.262	0.127	1.164	1.003	0.148	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.15	10 mm	MIMO	00296	27	back	99.7	0.442	0.212	1.250	1.003	0.266	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.11	10 mm	MIMO	00296	27	back	99.7	0.325	0.155	1.180	1.003	0.183	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram											

Note: NII MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WIFI was not transmitting during the above evaluations.

Table 11-32
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.5	11.66	-0.20	10 mm	00296	1	back	77.3	0.009	1.213	1.294	**0.014**	A60
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

11.3 Standalone Hotspot SAR Data

Table 11-33
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.40	0.00	10 mm	00338	N/A	1:1	back	0.305	1.023	0.312	A24
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.40	-0.03	10 mm	00338	N/A	1:1	front	0.287	1.023	0.294	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.40	0.06	10 mm	00338	N/A	1:1	bottom	0.132	1.023	0.135	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.5	25.40	-0.06	10 mm	00338	N/A	1:1	right	0.061	1.023	0.062	
836.60	190	GSM 850	GPRS	31.2	31.11	-0.04	10 mm	00346	2	1:4.15	back	0.313	1.021	0.320	A25
836.60	190	GSM 850	GPRS	31.2	31.11	-0.19	10 mm	00346	2	1:4.15	front	0.295	1.021	0.301	
836.60	190	GSM 850	GPRS	31.2	31.11	-0.19	10 mm	00346	2	1:4.15	bottom	0.117	1.021	0.119	
836.60	190	GSM 850	GPRS	31.2	31.11	-0.01	10 mm	00346	2	1:4.15	right	0.061	1.021	0.062	
836.60	4183	UMTS 850	RMC	25.5	25.33	-0.02	10 mm	00346	N/A	1:1	back	0.511	1.040	0.531	
836.60	4183	UMTS 850	RMC	25.5	25.33	0.01	10 mm	00346	N/A	1:1	front	0.531	1.040	0.552	A27
836.60	4183	UMTS 850	RMC	25.5	25.33	-0.08	10 mm	00346	N/A	1:1	bottom	0.229	1.040	0.238	
836.60	4183	UMTS 850	RMC	25.5	25.33	-0.15	10 mm	00346	N/A	1:1	right	0.104	1.040	0.108	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.02	10 mm	00361	N/A	1:1	back	0.336	1.062	0.357	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.01	10 mm	00361	N/A	1:1	front	0.326	1.062	0.346	
1712.40	1312	UMTS 1750	RMC	22.5	22.27	0.00	10 mm	00361	N/A	1:1	bottom	0.584	1.054	0.616	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.02	10 mm	00361	N/A	1:1	bottom	0.673	1.062	0.715	
1752.60	1513	UMTS 1750	RMC	22.5	22.26	0.02	10 mm	00361	N/A	1:1	bottom	0.746	1.057	0.789	A29
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.05	10 mm	00361	N/A	1:1	left	0.098	1.062	0.104	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	0.08	10 mm	00353	N/A	1:1	back	0.297	1.096	0.326	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	0.05	10 mm	00353	N/A	1:1	front	0.297	1.096	0.326	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.7	22.32	0.01	10 mm	00353	N/A	1:1	bottom	0.566	1.091	0.618	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	0.03	10 mm	00353	N/A	1:1	bottom	0.569	1.096	0.624	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.7	22.41	-0.04	10 mm	00353	N/A	1:1	bottom	0.599	1.069	0.640	A31
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	-0.21	10 mm	00353	N/A	1:1	left	0.072	1.096	0.079	
1880.00	661	GSM 1900	GPRS	29.2	28.95	-0.16	10 mm	00338	2	1:4.15	back	0.432	1.059	0.457	
1880.00	661	GSM 1900	GPRS	29.2	28.95	-0.06	10 mm	00338	2	1:4.15	front	0.386	1.059	0.409	
1850.20	512	GSM 1900	GPRS	29.2	28.82	0.05	10 mm	00338	2	1:4.15	bottom	0.763	1.091	0.832	
1880.00	661	GSM 1900	GPRS	29.2	28.95	0.02	10 mm	00338	2	1:4.15	bottom	0.777	1.059	0.823	
1909.80	810	GSM 1900	GPRS	29.2	28.84	-0.01	10 mm	00338	2	1:4.15	bottom	0.791	1.086	0.859	A33
1880.00	661	GSM 1900	GPRS	29.2	28.95	-0.12	10 mm	00338	2	1:4.15	left	0.107	1.059	0.113	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.05	10 mm	00353	N/A	1:1	back	0.379	1.021	0.387	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	0.08	10 mm	00353	N/A	1:1	front	0.371	1.021	0.379	
1852.40	9262	UMTS 1900	RMC	22.7	22.55	-0.16	10 mm	00353	N/A	1:1	bottom	0.795	1.035	0.823	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.18	10 mm	00353	N/A	1:1	bottom	0.820	1.021	0.837	
1907.60	9538	UMTS 1900	RMC	22.7	22.52	-0.20	10 mm	00353	N/A	1:1	bottom	0.835	1.042	0.870	A35
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.01	10 mm	00353	N/A	1:1	left	0.180	1.021	0.184	
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
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	-0.05	0	00353	QPSK	1	49	10 mm	back	1:1	0.259	1.072	0.278	A36
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.01	1	00353	QPSK	25	12	10 mm	back	1:1	0.210	1.062	0.223	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	0.00	0	00353	QPSK	1	49	10 mm	front	1:1	0.244	1.072	0.262	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	-0.03	1	00353	QPSK	25	12	10 mm	front	1:1	0.196	1.062	0.208	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	-0.02	0	00353	QPSK	1	49	10 mm	bottom	1:1	0.094	1.072	0.101	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.04	1	00353	QPSK	25	12	10 mm	bottom	1:1	0.072	1.062	0.076	
707.50	23095	Mid	LTE Band 12	10	25.5	25.20	0.01	0	00353	QPSK	1	49	10 mm	right	1:1	0.218	1.072	0.234	
707.50	23095	Mid	LTE Band 12	10	24.5	24.24	0.07	1	00353	QPSK	25	12	10 mm	right	1:1	0.192	1.062	0.204	
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 11-35
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	-0.11	0	00353	QPSK	1	25	10 mm	back	1:1	0.319	1.119	0.357	A37
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.00	1	00353	QPSK	25	12	10 mm	back	1:1	0.270	1.059	0.286	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	-0.01	0	00353	QPSK	1	25	10 mm	front	1:1	0.317	1.119	0.355	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.01	1	00353	QPSK	25	12	10 mm	front	1:1	0.260	1.059	0.275	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	-0.01	0	00353	QPSK	1	25	10 mm	bottom	1:1	0.113	1.119	0.126	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	-0.19	1	00353	QPSK	25	12	10 mm	bottom	1:1	0.095	1.059	0.101	
782.00	23230	Mid	LTE Band 13	10	25.5	25.01	0.10	0	00353	QPSK	1	25	10 mm	right	1:1	0.152	1.119	0.170	
782.00	23230	Mid	LTE Band 13	10	24.5	24.25	0.05	1	00353	QPSK	25	12	10 mm	right	1:1	0.124	1.059	0.131	
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 11-36
LTE Band 14 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	-0.01	0	00353	QPSK	1	0	10 mm	back	1:1	0.342	1.052	0.360	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	-0.01	1	00353	QPSK	25	12	10 mm	back	1:1	0.272	1.052	0.286	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	0.03	0	00353	QPSK	1	0	10 mm	front	1:1	0.344	1.052	0.362	A39
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	0.00	1	00353	QPSK	25	12	10 mm	front	1:1	0.269	1.052	0.283	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	0.00	0	00353	QPSK	1	0	10 mm	bottom	1:1	0.127	1.052	0.134	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	-0.04	1	00353	QPSK	25	12	10 mm	bottom	1:1	0.102	1.052	0.107	
793.00	23330	Mid	LTE Band 14	10	25.5	25.28	-0.04	0	00353	QPSK	1	0	10 mm	right	1:1	0.153	1.052	0.161	
793.00	23330	Mid	LTE Band 14	10	24.5	24.28	-0.01	1	00353	QPSK	25	12	10 mm	right	1:1	0.110	1.052	0.116	
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 11-37
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	0.01	0	00353	QPSK	1	49	10 mm	back	1:1	0.429	1.091	0.468	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	0.15	1	00353	QPSK	25	12	10 mm	back	1:1	0.347	1.072	0.372	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.50	0.00	0	00353	QPSK	1	49	10 mm	back	1:1	0.446	1.000	0.446	A40
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5							1	0							
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	0.01	0	00353	QPSK	1	49	10 mm	front	1:1	0.411	1.091	0.448	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	-0.09	1	00353	QPSK	25	12	10 mm	front	1:1	0.344	1.072	0.369	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	-0.12	0	00353	QPSK	1	49	10 mm	bottom	1:1	0.190	1.091	0.207	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	-0.09	1	00353	QPSK	25	12	10 mm	bottom	1:1	0.145	1.072	0.155	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.12	-0.17	0	00353	QPSK	1	49	10 mm	right	1:1	0.090	1.091	0.098	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.20	-0.05	1	00353	QPSK	25	12	10 mm	right	1:1	0.069	1.072	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 11-38
LTE Band 66 (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)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.00	0	00346	QPSK	1	50	10 mm	back	1:1	0.366	1.052	0.385	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	-0.01	0	00346	QPSK	50	25	10 mm	back	1:1	0.375	1.040	0.390	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.05	0	00346	QPSK	1	50	10 mm	front	1:1	0.350	1.052	0.368	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	0.04	0	00346	QPSK	50	25	10 mm	front	1:1	0.357	1.040	0.371	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.03	0	00346	QPSK	1	50	10 mm	bottom	1:1	0.624	1.052	0.656	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	22.52	0.00	0	00346	QPSK	50	25	10 mm	bottom	1:1	0.595	1.042	0.620	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	0.02	0	00346	QPSK	50	25	10 mm	bottom	1:1	0.646	1.040	0.672	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	22.43	0.05	0	00346	QPSK	50	0	10 mm	bottom	1:1	0.677	1.064	0.720	A42
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.05	0	00346	QPSK	1	50	10 mm	left	1:1	0.092	1.052	0.097	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	0.07	0	00346	QPSK	50	25	10 mm	left	1:1	0.096	1.040	0.100	
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 2 (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	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	-0.20	0	00338	QPSK	1	50	10 mm	back	1:1	0.391	1.035	0.405	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	-0.14	0	00338	QPSK	50	50	10 mm	back	1:1	0.397	1.016	0.403	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	0.06	0	00338	QPSK	1	50	10 mm	front	1:1	0.336	1.035	0.348	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	0.06	0	00338	QPSK	50	50	10 mm	front	1:1	0.341	1.016	0.346	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	-0.02	0	00353	QPSK	1	50	10 mm	bottom	1:1	0.802	1.035	0.830	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.7	22.44	0.01	0	00353	QPSK	1	99	10 mm	bottom	1:1	0.857	1.062	0.910	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.7	22.43	-0.05	0	00353	QPSK	1	0	10 mm	bottom	1:1	0.906	1.064	0.964	A44
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	0.02	0	00353	QPSK	50	50	10 mm	bottom	1:1	0.832	1.016	0.845	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.7	22.62	0.01	0	00353	QPSK	50	50	10 mm	bottom	1:1	0.899	1.019	0.916	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.7	22.49	-0.01	0	00353	QPSK	50	0	10 mm	bottom	1:1	0.881	1.050	0.925	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.54	-0.01	0	00353	QPSK	100	0	10 mm	bottom	1:1	0.823	1.038	0.854	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	-0.10	0	00353	QPSK	1	50	10 mm	left	1:1	0.091	1.035	0.094	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	-0.01	0	00353	QPSK	50	50	10 mm	left	1:1	0.097	1.016	0.099	
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 11-40
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	22.7	22.39	0.07	0	00379	QPSK	1	0	10 mm	back	1:1	0.219	1.074	0.235	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.02	1	00379	QPSK	25	12	10 mm	back	1:1	0.177	1.081	0.191	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.06	0	00379	QPSK	1	0	10 mm	front	1:1	0.219	1.074	0.235	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.03	1	00379	QPSK	25	12	10 mm	front	1:1	0.205	1.081	0.222	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	-0.01	0	00379	QPSK	1	0	10 mm	bottom	1:1	0.433	1.074	0.465	A46
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.03	1	00379	QPSK	25	12	10 mm	bottom	1:1	0.351	1.081	0.379	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.39	0.16	0	00379	QPSK	1	0	10 mm	left	1:1	0.074	1.074	0.079	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.36	0.09	1	00379	QPSK	25	12	10 mm	left	1:1	0.060	1.081	0.065	
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 11-41
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	-0.01	0	00353	QPSK	1	99	10 mm	back	1:1.58	0.513	1.040	**0.534**	A47
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	-0.11	1	00353	QPSK	50	25	10 mm	back	1:1.58	0.460	1.047	0.482	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	0.14	0	00353	QPSK	1	99	10 mm	front	1:1.58	0.064	1.040	0.067	
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.19	1	00353	QPSK	50	25	10 mm	front	1:1.58	0.052	1.047	0.054	
3646.70	56207	Mid-High	LTE Band 48	20	23.7	23.53	0.05	0	00353	QPSK	1	99	10 mm	right	1:1.58	0.244	1.040	0.254	
3646.70	56207	Mid-High	LTE Band 48	20	22.7	22.50	0.01	1	00353	QPSK	50	25	10 mm	right	1:1.58	0.213	1.047	0.223	
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 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	25.2	25.15	0.02	0	00353	QPSK	1	50	10 mm	back	1:1.58	0.468	1.012	0.474	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.01	1	00353	QPSK	50	50	10 mm	back	1:1.58	0.382	1.012	0.387	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.08	0	00353	QPSK	1	50	10 mm	front	1:1.58	0.483	1.012	0.489	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.05	1	00353	QPSK	50	50	10 mm	front	1:1.58	0.395	1.012	0.400	
2506.00	39750	Low	LTE Band 41	20	25.2	25.00	0.00	0	00353	QPSK	1	0	10 mm	bottom	1:1.58	0.785	1.047	0.822	
2549.50	40185	Low-Mid	LTE Band 41	20	25.2	25.14	0.03	0	00353	QPSK	1	0	10 mm	bottom	1:1.58	0.815	1.014	0.826	
2593.00	40620	Mid	LTE Band 41	20	25.2	24.97	0.01	0	00353	QPSK	1	50	10 mm	bottom	1:1.58	0.888	1.054	0.936	
2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.90	0.05	0	00353	QPSK	1	50	10 mm	bottom	1:1.58	0.899	1.072	0.964	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.02	0	00353	QPSK	1	50	10 mm	bottom	1:1.58	1.030	1.012	**1.042**	A49
2506.00	39750	Low	LTE Band 41	20	24.2	24.13	0.00	1	00353	QPSK	50	50	10 mm	bottom	1:1.58	0.635	1.016	0.645	
2549.50	40185	Low-Mid	LTE Band 41	20	24.2	24.07	-0.01	1	00353	QPSK	50	50	10 mm	bottom	1:1.58	0.638	1.030	0.657	
2593.00	40620	Mid	LTE Band 41	20	24.2	24.08	-0.02	1	00353	QPSK	50	50	10 mm	bottom	1:1.58	0.690	1.028	0.709	
2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.00	0.03	1	00353	QPSK	50	50	10 mm	bottom	1:1.58	0.720	1.047	0.754	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.02	1	00353	QPSK	50	50	10 mm	bottom	1:1.58	0.844	1.012	0.854	
2506.00	39750	Low	LTE Band 41	20	24.2	24.11	0.00	1	00353	QPSK	100	0	10 mm	bottom	1:1.58	0.646	1.021	0.660	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.19	0	00353	QPSK	1	50	10 mm	left	1:1.58	0.093	1.012	0.094	
2680.00	41490	High	LTE Band 41	20	24.2	24.15	0.15	1	00353	QPSK	50	50	10 mm	left	1:1.58	0.076	1.012	0.077	
2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.00	0	00353	QPSK	1	50	10 mm	bottom	1:1.58	1.010	1.012	1.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**													**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

Note: Blue entry represents variability measurement.

Table 11-43
NR Band n5 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)	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	-0.08	0	00395	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.274	1.102	0.302	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	-0.05	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.275	1.062	0.292	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	-0.03	0	00395	DFT-S-OFDM QPSK	1	53	10 mm	front	1:1	0.288	1.102	0.317	A51
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	-0.03	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.281	1.062	0.298	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.7	22.71	0.14	1	00395	CP-OFDM QPSK	1	1	10 mm	front	1:1	0.146	1.256	0.183	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	-0.09	0	00395	DFT-S-OFDM QPSK	1	53	10 mm	bottom	1:1	0.115	1.102	0.127	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	-0.05	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.110	1.062	0.117	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.28	-0.04	0	00395	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.061	1.102	0.067	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.7	24.44	0.02	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.060	1.062	0.064	
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 11-44
NR Band n66 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)	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	-0.02	0	00387	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.246	1.033	0.254	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	-0.01	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	back	1:1	0.278	1.086	0.302	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.05	0	00387	DFT-S-OFDM QPSK	1	104	10 mm	front	1:1	0.348	1.033	0.359	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.07	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	front	1:1	0.385	1.086	0.418	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	0.12	0	00387	DFT-S-OFDM QPSK	1	104	10 mm	bottom	1:1	0.039	1.033	0.040	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.06	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	bottom	1:1	0.051	1.086	0.055	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.76	-0.02	0	00387	DFT-S-OFDM QPSK	1	104	10 mm	right	1:1	0.577	1.033	0.596	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	-0.02	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	right	1:1	0.650	1.086	0.706	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.40	-0.05	0	00387	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.546	1.122	0.613	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.9	23.39	-0.03	0	00387	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.700	1.125	0.788	
1770.00	354000	High	NR Band n66 (AWS)	20	23.9	23.36	0.07	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	right	1:1	0.864	1.132	0.978	A53
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.47	-0.02	0	00387	DFT-S-OFDM QPSK	100	0	10 mm	right	1:1	0.643	1.104	0.710	
1770.00	354000	High	NR Band n66 (AWS)	20	23.9	23.36	0.00	0	00387	DFT-S-OFDM QPSK	50	56	10 mm	right	1:1	0.859	1.132	0.972	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entry represents variability measurement.

Table 11-45
NR Band n2 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)	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.01	0	00395	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.347	1.081	0.375	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	-0.15	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.364	1.054	0.384	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	-0.03	0	00395	DFT-S-OFDM QPSK	1	104	10 mm	front	1:1	0.364	1.081	0.393	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.06	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.416	1.054	0.438	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	-0.06	0	00395	DFT-S-OFDM QPSK	1	104	10 mm	bottom	1:1	0.252	1.081	0.272	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	-0.14	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.271	1.054	0.286	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.27	0.00	0	00395	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.833	1.104	0.920	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	-0.09	0	00395	DFT-S-OFDM QPSK	1	104	10 mm	right	1:1	0.642	1.081	0.694	
1900.00	380000	High	NR Band n2 (PCS)	20	23.7	23.32	0.18	0	00395	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.496	1.091	0.541	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.46	0.01	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.956	1.057	1.010	A55
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.19	-0.07	0	00395	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.798	1.125	0.898	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.11	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.750	1.054	0.791	
1900.00	380000	High	NR Band n2 (PCS)	20	23.7	23.28	0.15	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.510	1.102	0.562	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.31	-0.04	0	00395	DFT-S-OFDM QPSK	100	0	10 mm	right	1:1	0.755	1.094	0.826	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.46	0.01	0	00395	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.931	1.057	0.984	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue entry represents variability measurement.

Table 11-46
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)	
2437	6	802.11b	DSSS	22	20.5	20.17	0.03	10 mm	1	00296	1	back	99.5	0.160	0.107	1.079	1.005	0.116	
2437	6	802.11b	DSSS	22	20.5	20.17	0.01	10 mm	1	00296	1	front	99.5	0.303	-	1.079	1.005	-	
2437	6	802.11b	DSSS	22	20.5	20.17	-0.03	10 mm	1	00296	1	top	99.5	0.157	-	1.079	1.005	-	
2437	6	802.11b	DSSS	22	20.5	20.17	-0.07	10 mm	1	00296	1	left	99.5	0.501	0.330	1.079	1.005	**0.358**	A57
2437	6	802.11b	DSSS	22	20.5	20.49	-0.16	10 mm	2	00296	1	back	99.5	0.074	0.053	1.002	1.005	0.053	
2437	6	802.11b	DSSS	22	20.5	20.49	0.19	10 mm	2	00296	1	front	99.5	0.090	-	1.002	1.005	-	
2437	6	802.11b	DSSS	22	20.5	20.49	-0.21	10 mm	2	00296	1	top	99.5	0.204	0.129	1.002	1.005	0.130	
2437	6	802.11b	DSSS	22	20.5	20.49	0.15	10 mm	2	00296	1	left	99.5	0.024	0.015	1.002	1.005	0.015	
5200	40	802.11a	OFDM	20	18.0	17.63	-0.06	10 mm	1	00296	6	back	99.1	0.356	0.141	1.089	1.009	0.155	
5200	40	802.11a	OFDM	20	18.0	17.63	0.19	10 mm	1	00296	6	front	99.1	0.080	0.034	1.089	1.009	0.037	
5200	40	802.11a	OFDM	20	18.0	17.63	0.10	10 mm	1	00296	6	top	99.1	0.124	-	1.089	1.009	-	
5200	40	802.11a	OFDM	20	18.0	17.63	0.17	10 mm	1	00296	6	left	99.1	0.171	-	1.089	1.009	-	
5200	40	802.11a	OFDM	20	18.0	17.90	0.01	10 mm	2	00296	6	back	99.2	0.419	0.195	1.023	1.008	0.201	
5200	40	802.11a	OFDM	20	18.0	17.90	0.17	10 mm	2	00296	6	front	99.2	0.037	0.015	1.023	1.008	0.015	
5200	40	802.11a	OFDM	20	18.0	17.90	0.15	10 mm	2	00296	6	top	99.2	0.395	-	1.023	1.008	-	
5200	40	802.11a	OFDM	20	18.0	17.90	-0.17	10 mm	2	00296	6	left	99.2	0.149	-	1.023	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.54	0.14	10 mm	1	00296	6	back	99.1	0.311	0.131	1.112	1.009	0.147	
5785	157	802.11a	OFDM	20	18.0	17.54	-0.19	10 mm	1	00296	6	front	99.1	0.087	0.026	1.112	1.009	0.029	
5785	157	802.11a	OFDM	20	18.0	17.54	0.11	10 mm	1	00296	6	top	99.1	0.158	-	1.112	1.009	-	
5785	157	802.11a	OFDM	20	18.0	17.54	-0.04	10 mm	1	00296	6	left	99.1	0.353	0.154	1.112	1.009	0.173	
5825	165	802.11a	OFDM	20	18.0	17.71	0.13	10 mm	2	00296	6	back	99.2	0.511	0.214	1.069	1.008	**0.231**	A59
5825	165	802.11a	OFDM	20	18.0	17.71	-0.15	10 mm	2	00296	6	front	99.2	0.035	0.012	1.069	1.008	0.013	
5825	165	802.11a	OFDM	20	18.0	17.71	0.10	10 mm	2	00296	6	top	99.2	0.167	-	1.069	1.008	-	
5825	165	802.11a	OFDM	20	18.0	17.71	0.11	10 mm	2	00296	6	left	99.2	0.086	-	1.069	1.008	-	
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 11-47
DTS MIMO Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN 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 (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	-0.18	10 mm	MIMO	00296	13	back	99.7	0.056	0.035	1.122	1.003	0.039	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	0.06	10 mm	MIMO	00296	13	front	99.7	0.093	0.059	1.122	1.003	0.066	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	0.10	10 mm	MIMO	00296	13	top	99.7	0.102	-	1.122	1.003	-	
2437	6	802.11n	OFDM	20	15.5	15.00	15.5	15.25	-0.01	10 mm	MIMO	00296	13	left	99.7	0.149	0.090	1.122	1.003	0.101	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: DTS MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WIFI was not transmitting during the above evaluations.

Table 11-48
NII MIMO Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN 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 (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5230	46	802.11n	OFDM	40	15.0	14.99	15.0	14.12	0.17	10 mm	MIMO	00296	27	back	99.7	0.306	0.135	1.225	1.003	0.166	
5230	46	802.11n	OFDM	40	15.0	14.99	15.0	14.12	0.19	10 mm	MIMO	00296	27	front	99.7	0.049	0.023	1.225	1.003	0.028	
5230	46	802.11n	OFDM	40	15.0	14.99	15.0	14.12	0.14	10 mm	MIMO	00296	27	top	99.7	0.093	-	1.225	1.003	-	
5230	46	802.11n	OFDM	40	15.0	14.99	15.0	14.12	0.10	10 mm	MIMO	00296	27	left	99.7	0.145	-	1.225	1.003	-	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.11	10 mm	MIMO	00296	27	back	99.7	0.325	0.155	1.180	1.003	0.183	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.16	10 mm	MIMO	00296	27	front	99.7	0.042	0.017	1.180	1.003	0.020	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	0.17	10 mm	MIMO	00296	27	top	99.7	0.089	-	1.180	1.003	-	
5795	159	802.11n	OFDM	40	15.0	14.28	15.0	14.98	-0.13	10 mm	MIMO	00296	27	left	99.7	0.321	-	1.180	1.003	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: NII MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WIFI was not transmitting during the above evaluations.

Table 11-49
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.5	11.66	-0.20	10 mm	00296	1	back	77.3	0.009	1.213	1.294	0.014	
2441	39	Bluetooth	FHSS	12.5	11.66	0.11	10 mm	00296	1	front	77.3	0.013	1.213	1.294	0.020	
2441	39	Bluetooth	FHSS	12.5	11.66	0.17	10 mm	00296	1	top	77.3	0.010	1.213	1.294	0.016	
2441	39	Bluetooth	FHSS	12.5	11.66	-0.01	10 mm	00296	1	left	77.3	0.030	1.213	1.294	**0.047**	A61

ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**	**Body** **1.6 W/kg (mW/g)** averaged over 1 gram

11.4 Standalone Phablet SAR Data

Table 11-50
GPRS/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	25.2	25.16	-0.03	2 mm	00346	1:1	back	1.250	1.009	1.261	
1732.40	1412	UMTS 1750	RMC	25.2	25.16	-0.02	1 mm	00346	1:1	front	1.680	1.009	1.695	
1732.40	1412	UMTS 1750	RMC	25.2	25.16	-0.03	3 mm	00346	1:1	bottom	1.960	1.009	1.978	
1732.40	1412	UMTS 1750	RMC	25.2	25.16	0.03	0 mm	00346	1:1	left	0.360	1.009	0.363	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	-0.01	0 mm	00361	1:1	back	1.150	1.062	1.221	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.06	0 mm	00361	1:1	front	1.470	1.062	1.561	
1712.40	1312	UMTS 1750	RMC	22.5	22.27	0.06	0 mm	00361	1:1	bottom	2.710	1.054	2.856	
1732.40	1412	UMTS 1750	RMC	22.5	22.24	0.02	0 mm	00361	1:1	bottom	2.760	1.062	2.931	
1752.60	1513	UMTS 1750	RMC	22.5	22.26	0.02	0 mm	00361	1:1	bottom	2.840	1.057	3.002	A62
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	24.86	-0.10	2 mm	00338	1:1	back	1.430	1.081	1.546	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.2	24.94	-0.19	1 mm	00338	1:1	front	1.980	1.062	2.103	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	24.86	-0.04	1 mm	00338	1:1	front	1.990	1.081	2.151	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.2	24.89	0.15	1 mm	00338	1:1	front	1.840	1.074	1.976	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.2	24.94	-0.03	3 mm	00338	1:1	bottom	2.100	1.062	2.230	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	24.86	-0.04	3 mm	00338	1:1	bottom	2.060	1.081	2.227	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.2	24.89	0.07	3 mm	00338	1:1	bottom	2.080	1.074	2.234	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	24.86	-0.13	0 mm	00338	1:1	left	0.449	1.081	0.485	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	-0.01	0 mm	00353	1:1	back	1.240	1.096	1.359	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	0.00	0 mm	00353	1:1	front	1.500	1.096	1.644	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.7	22.32	-0.13	0 mm	00353	1:1	bottom	2.240	1.091	2.444	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.30	0.00	0 mm	00353	1:1	bottom	2.260	1.096	2.477	A63
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.7	22.41	0.01	0 mm	00353	1:1	bottom	2.230	1.069	2.384	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	-0.09	2 mm	00338	1:1	back	1.620	1.050	1.701	
1852.40	9262	UMTS 1900	RMC	25.2	24.89	-0.04	1 mm	00338	1:1	front	2.330	1.074	2.502	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	0.00	1 mm	00338	1:1	front	2.060	1.050	2.163	
1907.60	9538	UMTS 1900	RMC	25.2	24.90	-0.04	1 mm	00338	1:1	front	2.070	1.072	2.219	
1852.40	9262	UMTS 1900	RMC	25.2	24.89	-0.01	3 mm	00338	1:1	bottom	2.090	1.074	2.245	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	-0.02	3 mm	00338	1:1	bottom	2.060	1.050	2.163	
1907.60	9538	UMTS 1900	RMC	25.2	24.90	-0.03	3 mm	00338	1:1	bottom	2.100	1.072	2.251	
1880.00	9400	UMTS 1900	RMC	25.2	24.99	0.00	0 mm	00338	1:1	left	0.489	1.050	0.513	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	0.16	0 mm	00353	1:1	back	1.640	1.021	1.674	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.01	0 mm	00353	1:1	front	1.920	1.021	1.960	
1852.40	9262	UMTS 1900	RMC	22.7	22.55	-0.06	0 mm	00353	1:1	bottom	3.050	1.035	3.157	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.04	0 mm	00353	1:1	bottom	3.100	1.021	**3.165**	A64
1907.60	9538	UMTS 1900	RMC	22.7	22.52	-0.09	0 mm	00353	1:1	bottom	2.960	1.042	3.084	
1880.00	9400	UMTS 1900	RMC	22.7	22.61	-0.05	0 mm	00353	1:1	bottom	3.050	1.021	3.114	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams							

Note: Blue entry represents variability measurement.

Table 11-51
LTE Band 66 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	25.2	25.06	0.02	0	00361	QPSK	1	0	2 mm	back	1:1	1.550	1.033	1.601	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.01	1	00361	QPSK	50	25	2 mm	back	1:1	1.300	1.040	1.352	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	24.62	0.02	0	00361	QPSK	1	50	1 mm	front	1:1	1.970	1.143	2.252	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	24.89	-0.03	0	00361	QPSK	1	50	1 mm	front	1:1	2.080	1.074	2.234	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.02	0	00361	QPSK	1	0	1 mm	front	1:1	2.190	1.033	2.262	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.03	1	00361	QPSK	50	25	1 mm	front	1:1	1.840	1.040	1.914	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.98	0.00	1	00361	QPSK	100	0	1 mm	front	1:1	1.820	1.052	1.915	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	24.62	-0.03	0	00361	QPSK	1	50	3 mm	bottom	1:1	2.530	1.143	2.892	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	24.89	-0.01	0	00361	QPSK	1	50	3 mm	bottom	1:1	2.630	1.074	2.825	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.02	0	00361	QPSK	1	0	3 mm	bottom	1:1	2.650	1.033	2.737	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	23.96	-0.02	1	00361	QPSK	50	50	3 mm	bottom	1:1	2.080	1.057	2.199	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.02	-0.11	1	00361	QPSK	50	50	3 mm	bottom	1:1	2.210	1.042	2.303	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	-0.07	1	00361	QPSK	50	25	3 mm	bottom	1:1	2.300	1.040	2.392	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.98	-0.03	1	00361	QPSK	100	0	3 mm	bottom	1:1	2.260	1.052	2.378	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.12	0	00361	QPSK	1	0	0 mm	left	1:1	0.533	1.033	0.551	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.03	0.00	1	00361	QPSK	50	25	0 mm	left	1:1	0.445	1.040	0.463	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	-0.10	0	00346	QPSK	1	50	0 mm	back	1:1	1.140	1.052	1.199	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	-0.06	0	00346	QPSK	50	25	0 mm	back	1:1	1.180	1.040	1.227	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.00	0	00346	QPSK	1	50	0 mm	front	1:1	1.460	1.052	1.536	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	0.00	0	00346	QPSK	50	25	0 mm	front	1:1	1.530	1.040	1.591	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	22.31	0.16	0	00346	QPSK	1	50	0 mm	bottom	1:1	2.680	1.094	2.932	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.48	0.03	0	00346	QPSK	1	50	0 mm	bottom	1:1	2.760	1.052	2.904	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	22.43	0.17	0	00346	QPSK	1	0	0 mm	bottom	1:1	2.810	1.064	2.990	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	22.52	0.16	0	00346	QPSK	50	25	0 mm	bottom	1:1	2.870	1.042	2.991	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.53	0.05	0	00346	QPSK	50	25	0 mm	bottom	1:1	2.900	1.040	3.016	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	22.43	0.17	0	00346	QPSK	50	0	0 mm	bottom	1:1	2.940	1.064	3.128	A65
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.47	0.15	0	00346	QPSK	100	0	0 mm	bottom	1:1	2.860	1.054	3.014	
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 11-52
LTE Band 2 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)	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	-0.04	0	00353	QPSK	1	50	2 mm	back	1:1	1.810	1.047	1.895	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	-0.06	1	00353	QPSK	50	25	2 mm	back	1:1	1.500	1.023	1.535	
1860.00	18700	Low	LTE Band 2 (PCS)	20	25.2	24.89	-0.05	0	00353	QPSK	1	0	1 mm	front	1:1	2.680	1.074	2.878	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	-0.03	0	00353	QPSK	1	50	1 mm	front	1:1	2.710	1.047	2.837	
1900.00	19100	High	LTE Band 2 (PCS)	20	25.2	24.91	-0.01	0	00353	QPSK	1	50	1 mm	front	1:1	2.470	1.069	2.640	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	0.01	1	00353	QPSK	50	25	1 mm	front	1:1	2.330	1.023	2.384	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.2	24.04	-0.04	1	00353	QPSK	50	50	1 mm	front	1:1	2.150	1.038	2.232	
1900.00	19100	High	LTE Band 2 (PCS)	20	24.2	24.08	-0.15	1	00353	QPSK	50	50	1 mm	front	1:1	2.040	1.028	2.097	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.07	-0.04	1	00353	QPSK	100	0	1 mm	front	1:1	2.300	1.030	2.369	
1860.00	18700	Low	LTE Band 2 (PCS)	20	25.2	24.89	-0.02	0	00353	QPSK	1	0	3 mm	bottom	1:1	2.890	1.074	3.104	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.01	0	00353	QPSK	1	50	3 mm	bottom	1:1	2.870	1.047	3.005	
1900.00	19100	High	LTE Band 2 (PCS)	20	25.2	24.91	0.00	0	00353	QPSK	1	50	3 mm	bottom	1:1	2.830	1.069	3.025	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	0.01	1	00353	QPSK	50	25	3 mm	bottom	1:1	2.510	1.023	2.568	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.2	24.04	-0.02	1	00353	QPSK	50	50	3 mm	bottom	1:1	2.380	1.038	2.470	
1900.00	19100	High	LTE Band 2 (PCS)	20	24.2	24.08	-0.03	1	00353	QPSK	50	50	3 mm	bottom	1:1	2.340	1.028	2.406	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.07	0.03	1	00353	QPSK	100	0	3 mm	bottom	1:1	2.430	1.030	2.503	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.2	25.00	0.01	0	00353	QPSK	1	50	0 mm	left	1:1	0.492	1.047	0.515	
1860.00	18700	Low	LTE Band 2 (PCS)	20	24.2	24.10	-0.07	1	00353	QPSK	50	25	0 mm	left	1:1	0.420	1.023	0.430	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	0.10	0	00346	QPSK	1	50	0 mm	back	1:1	1.470	1.035	1.521	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	0.06	0	00346	QPSK	50	50	0 mm	back	1:1	1.540	1.016	1.565	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	0.21	0	00346	QPSK	1	50	0 mm	front	1:1	1.470	1.035	1.521	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	0.05	0	00346	QPSK	50	50	0 mm	front	1:1	1.540	1.016	1.565	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.55	-0.05	0	00346	QPSK	1	50	0 mm	bottom	1:1	2.870	1.035	2.970	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.7	22.44	0.12	0	00346	QPSK	1	99	0 mm	bottom	1:1	2.890	1.062	3.069	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.7	22.43	0.06	0	00346	QPSK	1	0	0 mm	bottom	1:1	2.950	1.064	3.139	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.63	-0.07	0	00346	QPSK	50	50	0 mm	bottom	1:1	3.010	1.016	3.058	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.7	22.62	-0.04	0	00346	QPSK	50	50	0 mm	bottom	1:1	3.000	1.019	3.057	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.7	22.49	0.10	0	00346	QPSK	50	0	0 mm	bottom	1:1	2.950	1.050	3.098	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.7	22.54	-0.12	0	00346	QPSK	100	0	0 mm	bottom	1:1	3.050	1.038	**3.166**	A66
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 11-53
NR Band n66/n2 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	23.9	23.76	0.07	0	00395	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.830	1.033	2.923	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.9	23.61	0.02	0	00395	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.960	1.069	3.164	A67
1770.00	354000	High	NR Band n66 (AWS)	20	23.9	23.56	0.01	0	00395	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.770	1.081	2.994	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.54	0.04	0	00395	DFT-S-OFDM QPSK	50	56	0 mm	right	1:1	2.850	1.086	3.095	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.40	-0.02	0	00395	CP-OFDM QPSK	1	1	0 mm	right	1:1	2.150	1.122	2.412	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.9	23.39	0.05	0	00395	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.820	1.125	**3.173**	
1770.00	354000	High	NR Band n66 (AWS)	20	23.9	23.36	0.04	0	00395	DFT-S-OFDM QPSK	50	56	0 mm	right	1:1	2.770	1.132	3.136	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.9	23.47	-0.02	0	00395	DFT-S-OFDM QPSK	100	0	0 mm	right	1:1	2.790	1.104	3.080	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.9	23.61	0.10	0	00395	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.880	1.069	3.079	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.27	0.04	0	00387	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	2.730	1.104	3.014	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.36	0.00	0	00387	DFT-S-OFDM QPSK	1	104	0 mm	right	1:1	2.510	1.081	2.713	
1900.00	380000	High	NR Band n2 (PCS)	20	23.7	23.32	-0.01	0	00387	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	1.890	1.091	2.062	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.46	-0.04	0	00387	DFT-S-OFDM QPSK	50	28	0 mm	right	1:1	3.000	1.057	**3.171**	A68
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.19	0.04	0	00387	CP-OFDM QPSK	1	1	0 mm	right	1:1	2.440	1.125	2.745	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.7	23.47	0.02	0	00387	DFT-S-OFDM QPSK	50	28	0 mm	right	1:1	2.600	1.054	2.740	
1900.00	380000	High	NR Band n2 (PCS)	20	23.7	23.28	-0.05	0	00387	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.210	1.102	2.435	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.7	23.31	0.01	0	00387	DFT-S-OFDM QPSK	100	0	0 mm	right	1:1	2.300	1.094	2.516	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**										**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams										

Note: Blue entry represents variability measurement.

Table 11-54
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	18.0	17.56	-0.13	0 mm	1	00296	6	back	99.1	5.450	0.621	1.107	1.009	0.694	
5280	56	802.11a	OFDM	20	18.0	17.56	-0.11	0 mm	1	00296	6	front	99.1	1.709	0.215	1.107	1.009	0.240	
5280	56	802.11a	OFDM	20	18.0	17.56	0.05	0 mm	1	00296	6	top	99.1	1.250	-	1.107	1.009	-	
5280	56	802.11a	OFDM	20	18.0	17.56	0.10	0 mm	1	00296	6	left	99.1	3.202	-	1.107	1.009	-	
5280	56	802.11a	OFDM	20	18.0	17.47	-0.16	0 mm	2	00296	6	back	99.2	4.344	0.763	1.130	1.008	0.869	
5280	56	802.11a	OFDM	20	18.0	17.47	0.13	0 mm	2	00296	6	front	99.2	0.641	0.101	1.130	1.008	0.115	
5280	56	802.11a	OFDM	20	18.0	17.47	0.03	0 mm	2	00296	6	top	99.2	5.588	0.477	1.130	1.008	0.543	
5280	56	802.11a	OFDM	20	18.0	17.47	0.17	0 mm	2	00296	6	left	99.2	1.148	-	1.130	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.81	-0.10	0 mm	1	00296	6	back	99.1	3.704	0.435	1.045	1.009	0.459	
5720	144	802.11a	OFDM	20	17.0	16.81	-0.08	0 mm	1	00296	6	front	99.1	1.656	0.158	1.045	1.009	0.167	
5720	144	802.11a	OFDM	20	17.0	16.81	0.11	0 mm	1	00296	6	top	99.1	1.786	-	1.045	1.009	-	
5720	144	802.11a	OFDM	20	17.0	16.81	0.10	0 mm	1	00296	6	left	99.1	2.935	-	1.045	1.009	-	
5600	120	802.11a	OFDM	20	17.0	16.97	-0.08	0 mm	2	00296	6	back	99.2	6.534	0.965	1.007	1.008	**0.980**	A69
5600	120	802.11a	OFDM	20	17.0	16.97	0.16	0 mm	2	00296	6	front	99.2	0.228	0.035	1.007	1.008	0.036	
5600	120	802.11a	OFDM	20	17.0	16.97	0.19	0 mm	2	00296	6	top	99.2	3.649	-	1.007	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.97	0.17	0 mm	2	00296	6	left	99.2	0.686	-	1.007	1.008	-	
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 11-55
WLAN MIMO Phablet SAR During Conditions with 5G NR FR2

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)	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.13	0 mm	MIMO	00296	27	back	99.7	3.433	0.569	1.164	1.003	0.664	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.12	0 mm	MIMO	00296	27	front	99.7	0.929	0.129	1.164	1.003	0.151	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.13	0 mm	MIMO	00296	27	top	99.7	2.165	0.229	1.164	1.003	0.267	
5270	54	802.11n	OFDM	40	15.0	14.50	15.0	14.34	0.10	0 mm	MIMO	00296	27	left	99.7	1.916	0.174	1.164	1.003	0.203	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.14	0 mm	MIMO	00296	27	back	99.7	4.519	0.767	1.250	1.003	0.962	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.18	0 mm	MIMO	00296	27	front	99.7	1.435	0.121	1.250	1.003	0.152	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.18	0 mm	MIMO	00296	27	top	99.7	2.168	0.252	1.250	1.003	0.316	
5630	126	802.11n	OFDM	40	15.0	14.03	15.0	14.98	0.10	0 mm	MIMO	00296	27	left	99.7	2.263	0.181	1.250	1.003	0.227	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Phablet 4.0 W/kg (mW/g) averaged over 10 grams									

Note: For channels 54 and 126 to achieve the 18.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.0 dBm.

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 manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. 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 for 1g SAR and 2.0 W/kg for 10g SAR. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. 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).
10. 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.
11. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.4. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
13. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

14. 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 for was assessed at the minimum of the time averaged power and the maximum output power for each band/mode/exposure condition (DSI).
15. The orange highlights throughout the report represents the highest SAR per FCC Equipment Class reflected on the FCC Grant.

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 > ½ dB, instead of the middle channel, the highest output power channel was used.
4. GPRS was additionally evaluated for head and body-worn exposure conditions to address possible VoIP scenarios.

CDMA Notes:

1. Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03r01.
2. Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO Rev0 and RevA and TDSO / SO32 FCH+SCH SAR tests were not required per the 3G SAR Test Reduction Procedure in FCC KDB Publication 941225 D01v03r01.
3. CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03r01 procedures for data devices. Wireless Router SAR tests for Subtype 2 of Rev.A and 1x RTT configurations were not required per the 3G SAR Test Reduction Policy in KDB Publication 941225 D01v03r01.
4. Head SAR was additionally evaluated using EVDO Rev. A to determine compliance for VoIP operations.
5. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

UMTS Notes:

1. UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
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 > ½ 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 or LTE Band 48 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
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.

NR Notes:

1. NR implementation of n5, n66, and n2 is limited to EN-DC operations only, with LTE Bands 2/5/12/13/30/66 acting as anchor bands. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
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.

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/ax) 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. 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.

5. 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.
6. 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.
7. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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.

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 a 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.

(*) 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.

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 ("-").

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

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	Cell. CDMA/EVDO	0.131	0.498	0.308	0.629	0.439
	GSM/GPRS 850	0.081	0.498	0.308	0.579	0.389
	UMTS 850	0.133	0.498	0.308	0.631	0.441
	UMTS 1750	0.089	0.498	0.308	0.587	0.397
	PCS CDMA/EVDO	0.083	0.498	0.308	0.581	0.391
	GSM/GPRS 1900	0.051	0.498	0.308	0.549	0.359
	UMTS 1900	0.085	0.498	0.308	0.583	0.393
	LTE Band 12	0.105	0.498	0.308	0.603	0.413
	LTE Band 13	0.106	0.498	0.308	0.604	0.414
	LTE Band 14	0.097	0.498	0.308	0.595	0.405
	LTE Band 5 (Cell)	0.117	0.498	0.308	0.615	0.425
	LTE Band 66 (AWS)	0.104	0.498	0.308	0.602	0.412
	LTE Band 2 (PCS)	0.089	0.498	0.308	0.587	0.397
	LTE Band 30	0.063	0.498	0.308	0.561	0.371
	LTE Band 48	0.072	0.498	0.308	0.570	0.380
	LTE Band 41	0.095	0.498	0.308	0.593	0.403
	NR Band n5 (Cell)	0.080	0.498	0.308	0.578	0.388
	NR Band n66 (AWS)	0.203	0.498	0.308	0.701	0.511
	NR Band n2 (PCS)	0.411	0.498	0.308	**0.909**	0.719

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.5 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	Cell. CDMA/EVDO	0.131	0.512	0.643
	GSM/GPRS 850	0.081	0.512	0.593
	UMTS 850	0.133	0.512	0.645
	UMTS 1750	0.089	0.512	0.601
	PCS CDMA/EVDO	0.083	0.512	0.595
	GSM/GPRS 1900	0.051	0.512	0.563
	UMTS 1900	0.085	0.512	0.597
	LTE Band 12	0.105	0.512	0.617
	LTE Band 13	0.106	0.512	0.618
	LTE Band 14	0.097	0.512	0.609
	LTE Band 5 (Cell)	0.117	0.512	0.629
	LTE Band 66 (AWS)	0.104	0.512	0.616
	LTE Band 2 (PCS)	0.089	0.512	0.601
	LTE Band 30	0.063	0.512	0.575
	LTE Band 48	0.072	0.512	0.584
	LTE Band 41	0.095	0.512	0.607
	NR Band n5 (Cell)	0.080	0.512	0.592
	NR Band n66 (AWS)	0.203	0.512	0.715
	NR Band n2 (PCS)	0.411	0.512	**0.923**

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	Cell. CDMA/EVDO	0.131	0.365	0.219	0.496	0.350	0.715
	GSM/GPRS 850	0.081	0.365	0.219	0.446	0.300	0.665
	UMTS 850	0.133	0.365	0.219	0.498	0.352	0.717
	UMTS 1750	0.089	0.365	0.219	0.454	0.308	0.673
	PCS CDMA/EVDO	0.083	0.365	0.219	0.448	0.302	0.667
	GSM/GPRS 1900	0.051	0.365	0.219	0.416	0.270	0.635
	UMTS 1900	0.085	0.365	0.219	0.450	0.304	0.669
	LTE Band 12	0.105	0.365	0.219	0.470	0.324	0.689
	LTE Band 13	0.106	0.365	0.219	0.471	0.325	0.690
	LTE Band 14	0.097	0.365	0.219	0.462	0.316	0.681
	LTE Band 5 (Cell)	0.117	0.365	0.219	0.482	0.336	0.701
	LTE Band 66 (AWS)	0.104	0.365	0.219	0.469	0.323	0.688
	LTE Band 2 (PCS)	0.089	0.365	0.219	0.454	0.308	0.673
	LTE Band 30	0.063	0.365	0.219	0.428	0.282	0.647
	LTE Band 48	0.072	0.365	0.219	0.437	0.291	0.656
	LTE Band 41	0.095	0.365	0.219	0.460	0.314	0.679
	NR Band n5 (Cell)	0.080	0.365	0.219	0.445	0.299	0.664
	NR Band n66 (AWS)	0.203	0.365	0.219	0.568	0.422	0.787
	NR Band n2 (PCS)	0.411	0.365	0.219	0.776	0.630	**0.995**

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Cell. CDMA/EVDO	0.131	0.512	0.305	0.948
	GSM/GPRS 850	0.081	0.512	0.305	0.898
	UMTS 850	0.133	0.512	0.305	0.950
	UMTS 1750	0.089	0.512	0.305	0.906
	PCS CDMA/EVDO	0.083	0.512	0.305	0.900
	GSM/GPRS 1900	0.051	0.512	0.305	0.868
	UMTS 1900	0.085	0.512	0.305	0.902
	LTE Band 12	0.105	0.512	0.305	0.922
	LTE Band 13	0.106	0.512	0.305	0.923
	LTE Band 14	0.097	0.512	0.305	0.914
	LTE Band 5 (Cell)	0.117	0.512	0.305	0.934
	LTE Band 66 (AWS)	0.104	0.512	0.305	0.921
	LTE Band 2 (PCS)	0.089	0.512	0.305	0.906
	LTE Band 30	0.063	0.512	0.305	0.880
	LTE Band 48	0.072	0.512	0.305	0.889
	LTE Band 41	0.095	0.512	0.305	0.912
	NR Band n5 (Cell)	0.080	0.512	0.305	0.897
	NR Band n66 (AWS)	0.203	0.512	0.305	1.020
	NR Band n2 (PCS)	0.411	0.512	0.305	**1.228**

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	Cell. CDMA/EVDO	0.131	0.159	0.290
	GSM/GPRS 850	0.081	0.159	0.240
	UMTS 850	0.133	0.159	0.292
	UMTS 1750	0.089	0.159	0.248
	PCS CDMA/EVDO	0.083	0.159	0.242
	GSM/GPRS 1900	0.051	0.159	0.210
	UMTS 1900	0.085	0.159	0.244
	LTE Band 12	0.105	0.159	0.264
	LTE Band 13	0.106	0.159	0.265
	LTE Band 14	0.097	0.159	0.256
	LTE Band 5 (Cell)	0.117	0.159	0.276
	LTE Band 66 (AWS)	0.104	0.159	0.263
	LTE Band 2 (PCS)	0.089	0.159	0.248
	LTE Band 30	0.063	0.159	0.222
	LTE Band 48	0.072	0.159	0.231
	LTE Band 41	0.095	0.159	0.254
	NR Band n5 (Cell)	0.080	0.159	0.239
	NR Band n66 (AWS)	0.203	0.159	0.362
	NR Band n2 (PCS)	0.411	0.159	**0.570**

Table 12-5
Simultaneous Transmission Scenario with Bluetooth and 2.4 GHz WLAN Antenna 2 (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	Cell. CDMA/EVDO	0.131	0.159	0.308	0.598
	GSM/GPRS 850	0.081	0.159	0.308	0.548
	UMTS 850	0.133	0.159	0.308	0.600
	UMTS 1750	0.089	0.159	0.308	0.556
	PCS CDMA/EVDO	0.083	0.159	0.308	0.550
	GSM/GPRS 1900	0.051	0.159	0.308	0.518
	UMTS 1900	0.085	0.159	0.308	0.552
	LTE Band 12	0.105	0.159	0.308	0.572
	LTE Band 13	0.106	0.159	0.308	0.573
	LTE Band 14	0.097	0.159	0.308	0.564
	LTE Band 5 (Cell)	0.117	0.159	0.308	0.584
	LTE Band 66 (AWS)	0.104	0.159	0.308	0.571
	LTE Band 2 (PCS)	0.089	0.159	0.308	0.556
	LTE Band 30	0.063	0.159	0.308	0.530
	LTE Band 48	0.072	0.159	0.308	0.539
	LTE Band 41	0.095	0.159	0.308	0.562
	NR Band n5 (Cell)	0.080	0.159	0.308	0.547
	NR Band n66 (AWS)	0.203	0.159	0.308	0.670
	NR Band n2 (PCS)	0.411	0.159	0.308	**0.878**

Table 12-6
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (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+4
Head SAR	Cell. CDMA/EVDO	0.131	0.159	0.365	0.219	0.874
	GSM/GPRS 850	0.081	0.159	0.365	0.219	0.824
	UMTS 850	0.133	0.159	0.365	0.219	0.876
	UMTS 1750	0.089	0.159	0.365	0.219	0.832
	PCS CDMA/EVDO	0.083	0.159	0.365	0.219	0.826
	GSM/GPRS 1900	0.051	0.159	0.365	0.219	0.794
	UMTS 1900	0.085	0.159	0.365	0.219	0.828
	LTE Band 12	0.105	0.159	0.365	0.219	0.848
	LTE Band 13	0.106	0.159	0.365	0.219	0.849
	LTE Band 14	0.097	0.159	0.365	0.219	0.840
	LTE Band 5 (Cell)	0.117	0.159	0.365	0.219	0.860
	LTE Band 66 (AWS)	0.104	0.159	0.365	0.219	0.847
	LTE Band 2 (PCS)	0.089	0.159	0.365	0.219	0.832
	LTE Band 30	0.063	0.159	0.365	0.219	0.806
	LTE Band 48	0.072	0.159	0.365	0.219	0.815
	LTE Band 41	0.095	0.159	0.365	0.219	0.838
	NR Band n5 (Cell)	0.080	0.159	0.365	0.219	0.823
	NR Band n66 (AWS)	0.203	0.159	0.365	0.219	0.946
	NR Band n2 (PCS)	0.411	0.159	0.365	0.219	**1.154**

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	Cell. CDMA	0.545	0.116	0.053	0.661	0.598	0.714
	GSM/GPRS 850	0.320	0.116	0.053	0.436	0.373	0.489
	UMTS 850	0.531	0.116	0.053	0.647	0.584	0.700
	UMTS 1750	0.531	0.116	0.053	0.647	0.584	0.700
	PCS CDMA	0.671	0.116	0.053	0.787	0.724	0.840
	GSM/GPRS 1900	0.457	0.116	0.053	0.573	0.510	0.626
	UMTS 1900	0.754	0.116	0.053	0.870	0.807	0.923
	LTE Band 12	0.278	0.116	0.053	0.394	0.331	0.447
	LTE Band 13	0.357	0.116	0.053	0.473	0.410	0.526
	LTE Band 14	0.360	0.116	0.053	0.476	0.413	0.529
	LTE Band 5 (Cell)	0.468	0.116	0.053	0.584	0.521	0.637
	LTE Band 66 (AWS)	0.599	0.116	0.053	0.715	0.652	0.768
	LTE Band 2 (PCS)	0.902	0.116	0.053	1.018	0.955	**1.071**
	LTE Band 30	0.235	0.116	0.053	0.351	0.288	0.404
	LTE Band 48	0.534	0.116	0.053	0.650	0.587	0.703
	LTE Band 41	0.474	0.116	0.053	0.590	0.527	0.643
	NR Band n5 (Cell)	0.302	0.116	0.053	0.418	0.355	0.471
	NR Band n66 (AWS)	0.302	0.116	0.053	0.418	0.355	0.471
	NR Band n2 (PCS)	0.384	0.116	0.053	0.500	0.437	0.553

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	Cell. CDMA	0.545	0.219	0.277	0.764	0.822	1.041
	GSM/GPRS 850	0.320	0.219	0.277	0.539	0.597	0.816
	UMTS 850	0.531	0.219	0.277	0.750	0.808	1.027
	UMTS 1750	0.531	0.219	0.277	0.750	0.808	1.027
	PCS CDMA	0.671	0.219	0.277	0.890	0.948	1.167
	GSM/GPRS 1900	0.457	0.219	0.277	0.676	0.734	0.953
	UMTS 1900	0.754	0.219	0.277	0.973	1.031	1.250
	LTE Band 12	0.278	0.219	0.277	0.497	0.555	0.774
	LTE Band 13	0.357	0.219	0.277	0.576	0.634	0.853
	LTE Band 14	0.360	0.219	0.277	0.579	0.637	0.856
	LTE Band 5 (Cell)	0.468	0.219	0.277	0.687	0.745	0.964
	LTE Band 66 (AWS)	0.599	0.219	0.277	0.818	0.876	1.095
	LTE Band 2 (PCS)	0.902	0.219	0.277	1.121	1.179	**1.398**
	LTE Band 30	0.235	0.219	0.277	0.454	0.512	0.731
	LTE Band 48	0.534	0.219	0.277	0.753	0.811	1.030
	LTE Band 41	0.474	0.219	0.277	0.693	0.751	0.970
	NR Band n5 (Cell)	0.302	0.219	0.277	0.521	0.579	0.798
	NR Band n66 (AWS)	0.302	0.219	0.277	0.521	0.579	0.798
	NR Band n2 (PCS)	0.384	0.219	0.277	0.603	0.661	0.880

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	Cell. CDMA	0.545	0.039	0.266	0.850
	GSM/GPRS 850	0.320	0.039	0.266	0.625
	UMTS 850	0.531	0.039	0.266	0.836
	UMTS 1750	0.531	0.039	0.266	0.836
	PCS CDMA	0.671	0.039	0.266	0.976
	GSM/GPRS 1900	0.457	0.039	0.266	0.762
	UMTS 1900	0.754	0.039	0.266	1.059
	LTE Band 12	0.278	0.039	0.266	0.583
	LTE Band 13	0.357	0.039	0.266	0.662
	LTE Band 14	0.360	0.039	0.266	0.665
	LTE Band 5 (Cell)	0.468	0.039	0.266	0.773
	LTE Band 66 (AWS)	0.599	0.039	0.266	0.904
	LTE Band 2 (PCS)	0.902	0.039	0.266	**1.207**
	LTE Band 30	0.235	0.039	0.266	0.540
	LTE Band 48	0.534	0.039	0.266	0.839
	LTE Band 41	0.474	0.039	0.266	0.779
	NR Band n5 (Cell)	0.302	0.039	0.266	0.607
	NR Band n66 (AWS)	0.302	0.039	0.266	0.607
	NR Band n2 (PCS)	0.384	0.039	0.266	0.689

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	Cell. CDMA	0.545	0.014	0.559
	GSM/GPRS 850	0.320	0.014	0.334
	UMTS 850	0.531	0.014	0.545
	UMTS 1750	0.531	0.014	0.545
	PCS CDMA	0.671	0.014	0.685
	GSM/GPRS 1900	0.457	0.014	0.471
	UMTS 1900	0.754	0.014	0.768
	LTE Band 12	0.278	0.014	0.292
	LTE Band 13	0.357	0.014	0.371
	LTE Band 14	0.360	0.014	0.374
	LTE Band 5 (Cell)	0.468	0.014	0.482
	LTE Band 66 (AWS)	0.599	0.014	0.613
	LTE Band 2 (PCS)	0.902	0.014	**0.916**
	LTE Band 30	0.235	0.014	0.249
	LTE Band 48	0.534	0.014	0.548
	LTE Band 41	0.474	0.014	0.488
	NR Band n5 (Cell)	0.302	0.014	0.316
	NR Band n66 (AWS)	0.302	0.014	0.316
	NR Band n2 (PCS)	0.384	0.014	0.398

Table 12-11
Simultaneous Transmission Scenario with Bluetooth and 2.4 GHz WLAN Antenna 2 (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	Cell. CDMA	0.545	0.014	0.053	0.612
	GSM/GPRS 850	0.320	0.014	0.053	0.387
	UMTS 850	0.531	0.014	0.053	0.598
	UMTS 1750	0.531	0.014	0.053	0.598
	PCS CDMA	0.671	0.014	0.053	0.738
	GSM/GPRS 1900	0.457	0.014	0.053	0.524
	UMTS 1900	0.754	0.014	0.053	0.821
	LTE Band 12	0.278	0.014	0.053	0.345
	LTE Band 13	0.357	0.014	0.053	0.424
	LTE Band 14	0.360	0.014	0.053	0.427
	LTE Band 5 (Cell)	0.468	0.014	0.053	0.535
	LTE Band 66 (AWS)	0.599	0.014	0.053	0.666
	LTE Band 2 (PCS)	0.902	0.014	0.053	**0.969**
	LTE Band 30	0.235	0.014	0.053	0.302
	LTE Band 48	0.534	0.014	0.053	0.601
	LTE Band 41	0.474	0.014	0.053	0.541
	NR Band n5 (Cell)	0.302	0.014	0.053	0.369
	NR Band n66 (AWS)	0.302	0.014	0.053	0.369
	NR Band n2 (PCS)	0.384	0.014	0.053	0.451

Table 12-12
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (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+4
Body-Worn	Cell. CDMA	0.545	0.014	0.219	0.277	1.055
	GSM/GPRS 850	0.320	0.014	0.219	0.277	0.830
	UMTS 850	0.531	0.014	0.219	0.277	1.041
	UMTS 1750	0.531	0.014	0.219	0.277	1.041
	PCS CDMA	0.671	0.014	0.219	0.277	1.181
	GSM/GPRS 1900	0.457	0.014	0.219	0.277	0.967
	UMTS 1900	0.754	0.014	0.219	0.277	1.264
	LTE Band 12	0.278	0.014	0.219	0.277	0.788
	LTE Band 13	0.357	0.014	0.219	0.277	0.867
	LTE Band 14	0.360	0.014	0.219	0.277	0.870
	LTE Band 5 (Cell)	0.468	0.014	0.219	0.277	0.978
	LTE Band 66 (AWS)	0.599	0.014	0.219	0.277	1.109
	LTE Band 2 (PCS)	0.902	0.014	0.219	0.277	**1.412**
	LTE Band 30	0.235	0.014	0.219	0.277	0.745
	LTE Band 48	0.534	0.014	0.219	0.277	1.044
	LTE Band 41	0.474	0.014	0.219	0.277	0.984
	NR Band n5 (Cell)	0.302	0.014	0.219	0.277	0.812
	NR Band n66 (AWS)	0.302	0.014	0.219	0.277	0.812
	NR Band n2 (PCS)	0.384	0.014	0.219	0.277	0.894

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	Cell. EVDO	0.312	0.358	0.130	0.670	0.442	0.800
	GPRS 850	0.320	0.358	0.130	0.678	0.450	0.808
	UMTS 850	0.552	0.358	0.130	0.910	0.682	1.040
	UMTS 1750	0.789	0.358	0.130	1.147	0.919	1.277
	PCS EVDO	0.640	0.358	0.130	0.998	0.770	1.128
	GPRS 1900	0.859	0.358	0.130	1.217	0.989	1.347
	UMTS 1900	0.870	0.358	0.130	1.228	1.000	1.358
	LTE Band 12	0.278	0.358	0.130	0.636	0.408	0.766
	LTE Band 13	0.357	0.358	0.130	0.715	0.487	0.845
	LTE Band 14	0.362	0.358	0.130	0.720	0.492	0.850
	LTE Band 5 (Cell)	0.468	0.358	0.130	0.826	0.598	0.956
	LTE Band 66 (AWS)	0.720	0.358	0.130	1.078	0.850	1.208
	LTE Band 2 (PCS)	0.964	0.358	0.130	1.322	1.094	1.452
	LTE Band 30	0.465	0.358	0.130	0.823	0.595	0.953
	LTE Band 48	0.534	0.358	0.130	0.892	0.664	1.022
	LTE Band 41	1.042	0.358	0.130	1.400	1.172	**1.530**
	NR Band n5 (Cell)	0.317	0.358	0.130	0.675	0.447	0.805
	NR Band n66 (AWS)	0.978	0.358	0.130	1.336	1.108	1.466
	NR Band n2 (PCS)	1.010	0.358	0.130	1.368	1.140	1.498

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	Cell. EVDO	0.312	0.173	0.231	0.485	0.543	0.716
	GPRS 850	0.320	0.173	0.231	0.493	0.551	0.724
	UMTS 850	0.552	0.173	0.231	0.725	0.783	0.956
	UMTS 1750	0.789	0.173	0.231	0.962	1.020	1.193
	PCS EVDO	0.640	0.173	0.231	0.813	0.871	1.044
	GPRS 1900	0.859	0.173	0.231	1.032	1.090	1.263
	UMTS 1900	0.870	0.173	0.231	1.043	1.101	1.274
	LTE Band 12	0.278	0.173	0.231	0.451	0.509	0.682
	LTE Band 13	0.357	0.173	0.231	0.530	0.588	0.761
	LTE Band 14	0.362	0.173	0.231	0.535	0.593	0.766
	LTE Band 5 (Cell)	0.468	0.173	0.231	0.641	0.699	0.872
	LTE Band 66 (AWS)	0.720	0.173	0.231	0.893	0.951	1.124
	LTE Band 2 (PCS)	0.964	0.173	0.231	1.137	1.195	1.368
	LTE Band 30	0.465	0.173	0.231	0.638	0.696	0.869
	LTE Band 48	0.534	0.173	0.231	0.707	0.765	0.938
	LTE Band 41	1.042	0.173	0.231	1.215	1.273	**1.446**
	NR Band n5 (Cell)	0.317	0.173	0.231	0.490	0.548	0.721
	NR Band n66 (AWS)	0.978	0.173	0.231	1.151	1.209	1.382
	NR Band n2 (PCS)	1.010	0.173	0.231	1.183	1.241	1.414

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Cell. EVDO	0.312	0.101	0.183	0.596
	GPRS 850	0.320	0.101	0.183	0.604
	UMTS 850	0.552	0.101	0.183	0.836
	UMTS 1750	0.789	0.101	0.183	1.073
	PCS EVDO	0.640	0.101	0.183	0.924
	GPRS 1900	0.859	0.101	0.183	1.143
	UMTS 1900	0.870	0.101	0.183	1.154
	LTE Band 12	0.278	0.101	0.183	0.562
	LTE Band 13	0.357	0.101	0.183	0.641
	LTE Band 14	0.362	0.101	0.183	0.646
	LTE Band 5 (Cell)	0.468	0.101	0.183	0.752
	LTE Band 66 (AWS)	0.720	0.101	0.183	1.004
	LTE Band 2 (PCS)	0.964	0.101	0.183	1.248
	LTE Band 30	0.465	0.101	0.183	0.749
	LTE Band 48	0.534	0.101	0.183	0.818
	LTE Band 41	1.042	0.101	0.183	**1.326**
	NR Band n5 (Cell)	0.317	0.101	0.183	0.601
	NR Band n66 (AWS)	0.978	0.101	0.183	1.262
	NR Band n2 (PCS)	1.010	0.101	0.183	1.294

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	Cell. EVDO	0.312	0.047	0.359
	GPRS 850	0.320	0.047	0.367
	UMTS 850	0.552	0.047	0.599
	UMTS 1750	0.789	0.047	0.836
	PCS EVDO	0.640	0.047	0.687
	GPRS 1900	0.859	0.047	0.906
	UMTS 1900	0.870	0.047	0.917
	LTE Band 12	0.278	0.047	0.325
	LTE Band 13	0.357	0.047	0.404
	LTE Band 14	0.362	0.047	0.409
	LTE Band 5 (Cell)	0.468	0.047	0.515
	LTE Band 66 (AWS)	0.720	0.047	0.767
	LTE Band 2 (PCS)	0.964	0.047	1.011
	LTE Band 30	0.465	0.047	0.512
	LTE Band 48	0.534	0.047	0.581
	LTE Band 41	1.042	0.047	**1.089**
	NR Band n5 (Cell)	0.317	0.047	0.364
	NR Band n66 (AWS)	0.978	0.047	1.025
	NR Band n2 (PCS)	1.010	0.047	1.057

Table 12-17
Simultaneous Transmission Scenario with Bluetooth and 2.4 GHz WLAN Antenna 2 (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	Cell. EVDO	0.312	0.047	0.130	0.489
	GPRS 850	0.320	0.047	0.130	0.497
	UMTS 850	0.552	0.047	0.130	0.729
	UMTS 1750	0.789	0.047	0.130	0.966
	PCS EVDO	0.640	0.047	0.130	0.817
	GPRS 1900	0.859	0.047	0.130	1.036
	UMTS 1900	0.870	0.047	0.130	1.047
	LTE Band 12	0.278	0.047	0.130	0.455
	LTE Band 13	0.357	0.047	0.130	0.534
	LTE Band 14	0.362	0.047	0.130	0.539
	LTE Band 5 (Cell)	0.468	0.047	0.130	0.645
	LTE Band 66 (AWS)	0.720	0.047	0.130	0.897
	LTE Band 2 (PCS)	0.964	0.047	0.130	1.141
	LTE Band 30	0.465	0.047	0.130	0.642
	LTE Band 48	0.534	0.047	0.130	0.711
	LTE Band 41	1.042	0.047	0.130	**1.219**
	NR Band n5 (Cell)	0.317	0.047	0.130	0.494
	NR Band n66 (AWS)	0.978	0.047	0.130	1.155
	NR Band n2 (PCS)	1.010	0.047	0.130	1.187

Table 12-18
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (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+4
Hotspot SAR	Cell. EVDO	0.312	0.047	0.173	0.231	0.763
	GPRS 850	0.320	0.047	0.173	0.231	0.771
	UMTS 850	0.552	0.047	0.173	0.231	1.003
	UMTS 1750	0.789	0.047	0.173	0.231	1.240
	PCS EVDO	0.640	0.047	0.173	0.231	1.091
	GPRS 1900	0.859	0.047	0.173	0.231	1.310
	UMTS 1900	0.870	0.047	0.173	0.231	1.321
	LTE Band 12	0.278	0.047	0.173	0.231	0.729
	LTE Band 13	0.357	0.047	0.173	0.231	0.808
	LTE Band 14	0.362	0.047	0.173	0.231	0.813
	LTE Band 5 (Cell)	0.468	0.047	0.173	0.231	0.919
	LTE Band 66 (AWS)	0.720	0.047	0.173	0.231	1.171
	LTE Band 2 (PCS)	0.964	0.047	0.173	0.231	1.415
	LTE Band 30	0.465	0.047	0.173	0.231	0.916
	LTE Band 48	0.534	0.047	0.173	0.231	0.985
	LTE Band 41	1.042	0.047	0.173	0.231	**1.493**
	NR Band n5 (Cell)	0.317	0.047	0.173	0.231	0.768
	NR Band n66 (AWS)	0.978	0.047	0.173	0.231	1.429
	NR Band n2 (PCS)	1.010	0.047	0.173	0.231	1.461

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)

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
Phablet SAR	UMTS 1750	3.002	0.694	0.980	3.696	**3.982**	See Table Below
	PCS EVDO	2.477	0.694	0.980	3.171	3.457	See Table Below
	UMTS 1900	3.165	0.694	0.980	3.859	See Table Below	See Table Below
	LTE Band 66 (AWS)	3.128	0.694	0.980	3.822	See Table Below	See Table Below
	LTE Band 2 (PCS)	3.166	0.694	0.980	3.860	See Table Below	See Table Below
	NR Band n66 (AWS)	3.173	0.694	0.980	3.867	See Table Below	See Table Below
	NR Band n2 (PCS)	3.171	0.694	0.980	3.865	See Table Below	See Table Below

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+3
Phablet SAR	Back	1.261	0.694	0.980	2.935
	Front	1.695	0.240	0.115	2.050
	Top	-	0.694*	0.543	1.237
	Bottom	3.002	-	-	**3.002**
	Left	0.363	0.694*	0.980*	2.037

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+3
Phablet SAR	Back	1.546	0.694	0.980	**3.220**
	Front	2.151	0.240	0.115	2.506
	Top	-	0.694*	0.543	1.237
	Bottom	2.477	-	-	2.477
	Left	0.485	0.694*	0.980*	2.159

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+3	1+2+3
Phablet SAR	Back	1.701	0.694	0.980	2.681	**3.375**
	Front	2.502	0.240	0.115	2.617	2.857
	Top	-	0.694*	0.543	0.543	1.237
	Bottom	3.165	-	-	3.165	3.165
	Left	0.513	0.694*	0.980*	1.493	2.187

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+3	1+2+3
Phablet SAR	Back	1.601	0.694	0.980	2.581	**3.275**
	Front	2.262	0.237	0.115	2.377	2.614
	Top	-	0.694*	0.543	0.543	1.237
	Bottom	3.128	-	-	3.128	3.128
	Left	0.551	0.694*	0.980*	1.531	2.225

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+3	1+2+3
Phablet SAR	Back	1.895	0.694	0.980	2.875	**3.569**
	Front	2.878	0.240	0.115	2.993	3.233
	Top	-	0.694*	0.543	0.543	1.237
	Bottom	3.166	-	-	3.166	3.166
	Left	0.515	0.694*	0.980*	1.495	2.189

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+3	1+2+3
Phablet SAR	Back	-	0.694	0.980	0.980	1.674
	Front	-	0.240	0.115	0.115	0.355
	Top	-	0.694*	0.543	0.543	1.237
	Right	3.173	-	-	**3.173**	**3.173**
	Left	-	0.694*	0.980*	0.980	1.674

Simult Tx	Configuration	NR Band n2 (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+3	1+2+3
Phablet SAR	Back	-	0.694	0.980	0.980	1.674
	Front	-	0.240	0.115	0.115	0.355
	Top	-	0.694*	0.543	0.543	1.237
	Right	3.171	-	-	**3.171**	**3.171**
	Left	-	0.694*	0.980*	0.980	1.674

12.7 Simultaneous Transmission Conclusion

The above 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 per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 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
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1770.00	354000	NR Band n66 (AWS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 50 RB, 56 RB Offset	right	10 mm	0.864	0.859	1.01	N/A	N/A	N/A	N/A
1900	1860.00	372000	NR Band n2 (PCS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 50 RB, 28 RB Offset	right	10 mm	0.956	0.931	1.03	N/A	N/A	N/A	N/A
2600	2680.00	41490	LTE Band 41, 20 MHz Bandwidth	QPSK, 1 RB, 50 RB Offset	bottom	10 mm	1.030	1.010	1.02	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						

Table 13-2
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1745.00	349000	NR Band n66 (AWS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 1 RB, 104 RB Offset	right	0 mm	2.960	2.880	1.03	N/A	N/A	N/A	N/A
1900	1880.00	9400	UMTS 1900	RMC	bottom	0 mm	3.100	3.050	1.02	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.

14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	E4432B	ESG-D Series Signal Generator	7/14/2019	Annual	7/14/2020	US40053896
Agilent	E5515C	Wireless Communications Test Set	2/28/2018	Biennial	2/28/2020	GB41450275
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2019	Annual	6/3/2020	109892
Agilent	E5515C	Wireless Communications Test Set	6/26/2019	Annual	6/26/2020	MY50267125
Agilent	N5182A	MXG Vector Signal Generator	6/27/2019	Annual	6/27/2020	US46240505
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Anritsu	MA24106A	USB Power Sensor	5/22/2019	Annual	5/22/2020	1231535
Anritsu	MA24106A	USB Power Sensor	1/31/2019	Annual	1/31/2020	1244524
Anritsu	MT8820C	Radio Communication Analyzer	7/25/2019	Annual	7/25/2020	6201240328
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	8/16/2019	Annual	8/16/2020	6201144418
Anritsu	ML2496A	Power Meter	12/17/2019	Annual	12/17/2020	1138001
Anritsu	MT8821C	Radio Communication Analyzer	3/18/2019	Annual	3/18/2020	6201144419
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	MA2411B	Pulse Power Sensor	3/6/2019	Annual	3/6/2020	1339018
Anritsu	MT8821C	Radio Communication Analyzer	10/2/2019	Annual	10/2/2020	6201664756
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Anritsu	MT8862A	Wireless Connectivity Test Set	8/8/2019	Annual	8/8/2020	6261782395
Anritsu	MT8821C	Radio Communication Analyzer	1/25/2019	Annual	1/25/2020	6261895213
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330160
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330158
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Keysight	772D	Dual Directional Coupler	CBT	CBT	CBT	MY52180215
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Rohde & Schwarz	CMW500	Radio Communication Tester	8/26/2019	Annual	8/26/2020	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	6/26/2019	Annual	6/26/2020	112347
Rohde & Schwarz	CMW500	Radio Communication Tester	6/24/2019	Annual	6/24/2020	101699
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	1/30/2019	Annual	1/30/2020	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
Seekonk	NC-100	Torque Wrench (8" lb)	5/10/2018	Biennial	5/10/2020	21053
Seekonk	NC-100	Torque Wrench (8" lb)	5/23/2018	Biennial	5/23/2020	N/A
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	8/16/2019	Annual	8/16/2020	7308
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	EX3DV4	SAR Probe	1/25/2019	Annual	1/25/2020	3589
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	1/24/2019	Annual	1/24/2020	7488
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7571
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/14/2019	Annual	8/14/2020	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/5/2019	Annual	12/5/2020	1533
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Annual	3/13/2020	4d047
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Biennial	5/23/2020	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Annual	2/21/2020	5d148
SPEAG	D2300V2	2300 MHz SAR Dipole	8/13/2018	Biennial	8/13/2020	1073
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Biennial	8/16/2020	981
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Annual	6/14/2020	1064
SPEAG	D3700V2	3700 MHz SAR Dipole	1/11/2018	Biennial	1/11/2020	1018
SPEAG	D5GHzV2	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	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d149
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/7/2019	Annual	5/7/2020	1070

Note:
1) 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.
2) Each equipment item was used solely within its respective calibration period.

15 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	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	60
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				23.0	22.6	

16 CONCLUSION

16.1 Measurement Conclusion

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

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

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