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SAR EVALUATION REPORT

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

Date of Testing:
01/27/20 – 02/24/20
Test Site/Location:
PCTEST, Columbia, MD, USA
Document Serial No.:
1M1912300226-01-R2.ZNF

FCC ID: **ZNFV600TM**

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

DUT Type: Portable Handset
Application Type: Class II Permissive Change
FCC Rule Part(s): CFR §2.1093
Model: LM-V600TM
Additional Model(s): LMV600TM, V600TM
Permissive Change(s): See FCC Change Document
Date of Original Certification: 02/27/2020

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	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.18	0.53	0.51	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.18	0.67	0.63	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.10	0.79	0.93	2.84
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.17	0.64	0.64	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.36	0.99	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.20	0.74	0.74	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	< 0.1	0.85	0.82	2.21
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.10	0.92	0.94	3.01
PCE	LTE Band 71	665.5 - 695.5 MHz	0.20	0.32	0.44	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.19	0.43	0.43	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.21	0.51	0.51	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.19	0.64	0.66	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.17	0.64	0.64	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.10	0.95	0.96	2.76
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.11	0.88	0.99	2.84
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.48	0.79	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	< 0.1	0.57	0.58	2.47
CBE	LTE Band 48	3552.5 - 3697.5 MHz	0.21	1.20	1.20	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.68	1.01	N/A
PCE	NR Band n71	665.5 - 695.5 MHz	0.12	0.32	0.42	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.27	0.25	0.36	N/A
PCE	NR Band n25 (PCS)	1852.5 - 1912.5 MHz	0.31	0.38	0.99	2.90
PCE	NR Band n2 (PCS)	1852.5 - 1907.5 MHz	N/A	N/A	N/A	N/A
PCE	NR Band n41	2506 - 2680 MHz	0.11	0.18	0.25	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.70	0.25	0.53	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.30	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.59	0.37	N/A	1.28
NII	U-NII-2C	5500 - 5720 MHz	0.37	0.25	N/A	0.94
NII	U-NII-3	5745 - 5825 MHz	0.57	0.47	0.47	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.35	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.54	1.57	1.58	3.78

Note: This revised Test Report (S/N: 1M1912300226-01-R2.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.
This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.10 of this report; for North American frequency bands only.
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

Randy Ortanez
President

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TABLE OF CONTENTS

1 DEVICE UNDER TEST 3

2 LTE AND NR INFORMATION 15

3 INTRODUCTION 17

4 DOSIMETRIC ASSESSMENT 18

5 DEFINITION OF REFERENCE POINTS 19

6 TEST CONFIGURATION POSITIONS 20

7 RF EXPOSURE LIMITS 24

8 FCC MEASUREMENT PROCEDURES 25

9 RF CONDUCTED POWERS 33

10 SYSTEM VERIFICATION 87

11 SAR DATA SUMMARY 95

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS 134

13 SAR MEASUREMENT VARIABILITY 157

14 ADDITIONAL TESTING PER FCC GUIDANCE 159

15 EQUIPMENT LIST 165

16 MEASUREMENT UNCERTAINTIES 166

17 CONCLUSION 167

18 REFERENCES 168

APPENDIX A: SAR TEST PLOTS

APPENDIX B: SAR DIPOLE VERIFICATION PLOTS

APPENDIX C: SAR TISSUE SPECIFICATIONS

APPENDIX D: SAR SYSTEM VALIDATION

APPENDIX E: DUT ANTENNA DIAGRAM & SAR TEST SETUP PHOTOGRAPHS

APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS

APPENDIX G: POWER REDUCTION VERIFICATION

APPENDIX H: IEEE 802.11ax RU SAR EXCLUSION

APPENDIX I: PROBE AND DIPOLE CALIBRATION CERTIFICATES

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 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 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n71	Data	665.5 - 695.5 MHz
NR Band n66	Data	1712.5 - 1777.5 MHz
NR Band n25	Data	1852.5-1912.5 MHz
NR Band n2	Data	1852.5-1907.5 MHz
NR Band n41	Data	2506.02 - 2679.99 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
WMC	Data	500 Hz - 4kHz

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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, 6, 7			5	8	Power*
Technology/Band	Antenna	**Plimit**					**Pmax**
GSM/GPRS/EDGE 850 MHz	1	28.4					25.5
GSM/GPRS/EDGE 1900 MHz	2	24.8					22.5
UMTS B5	1	27.4					25.0
UMTS B4	2	26.5			22.2		24.7
UMTS B2	2	25.7			22.2		24.7
CDMA/EVDO BC10	1	28.8					25.0
CDMA/EVDO BC0	1	27.8					25.0
CDMA/EVDO BC1	2	25.9			22.2		24.7
LTE FDD B71	1	29.6					25.0
LTE FDD B12	1	29.8					25.0
LTE FDD B17	1	29.8					25.0
LTE FDD B13	1	28.9					25.0
LTE FDD B26	1	27.6					25.0
LTE FDD B5	1	27.6					25.0
LTE FDD B66	2	25.6			22.2		24.7
LTE FDD B4	2	25.6			22.2		24.7
LTE FDD B25	2	25.2			22.2		24.7
LTE FDD B2	2	25.2			22.2		24.7
LTE FDD B30	2	24.3					22.2
LTE FDD B7	2	26.2			21.2		23.2
LTE TDD B48	11	20.3					20.0
LTE TDD B41 (PC3)	2	23.8					22.7
LTE TDD B41 (PC2)	2	23.8					23.6
NR FDD n71	1	29.9					25.0
NR FDD n66	3	21.5					25.0
NR FDD n25	3	23.0					25.0
NR FDD n2	3	23.0					25.0
NR TDD n41(PC3)	3	23.2					18.9
NR TDD n41(PC2)	3	23.2					20.9

*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.

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The maximum time-averaged output power (dBm) for any 2G/3G/4G WWAN technology, band, and DSI = minimum of "P_{limit} EFS" and "Maximum tune up output power P_{max}" +0.5/-1.5 dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB Publication 447498 D01v06.

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

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

1.3 Power Reduction for SAR

This device uses an independent fixed level power reduction mechanism for WLAN operations during voice or VoIP held to ear scenarios for 2.4 GHz WLAN and in some simultaneous transmission conditions with 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 Dual Display Cover

This device supports Dual Display (DD) Cover, which attaches to the device to provide a secondary display on the inside of the cover. The Dual Display Cover is free rotating from 0 to 360 degrees. Per FCC guidance, the use conditions of 0, 180 and 360 degrees were considered for SAR testing. SAR with the Dual Display Cover was measured for the overall worst case per each exposure condition (head, body-worn accessory, etc.). Head SAR tests were performed with the accessory cover folded to 0 and 360 degrees to represent typical use conditions. Body-worn, Hotspot, and Phablet SAR tests were performed with accessory cover folded to 0, 180 and 360 degrees.

1.5 Nominal and Maximum Output Power Specifications

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

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

CDMA BC10 (815 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
All DSI	Max allowed power	25.5	25.5	25.5
	Nominal	25.0	25.0	25.0
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, 6, 7 (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

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GSM/GPRS/EDGE 850										
Device State Index		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max allowed power	33.4	33.4	31.2	30.2	29.2	27.2	26.7	25.7	24.7
	Nominal	32.9	32.9	30.7	29.7	28.7	26.7	26.2	25.2	24.2
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	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max allowed power	30.2	30.2	29.2	27.2	25.7	26.2	25.7	24.7	23.7
	Nominal	29.7	29.7	28.7	26.7	25.2	25.7	25.2	24.2	23.2

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	3GPP DC-HSDPA Rel 8
All DSI	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	25.0	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	3GPP DC-HSDPA Rel 8
DSI = 1, 6, 7 (Head, Body-worn, or Phablet Max)	Max allowed power	25.2	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7	24.7
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.7	22.7	22.7	22.7
	Nominal	22.2	22.2	22.2	22.2
UMTS Band 2 (1900 MHz)					
Device State Index		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
DSI = 1, 6, 7 (Head, Body-worn, or Phablet Max)	Max allowed power	25.2	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7	24.7
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	22.7	22.7	22.7	22.7
	Nominal	22.2	22.2	22.2	22.2

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Mode / Band		Modulated Average Output Power (in dBm)	
		DSI = 1, 6, 7 (Head, Body-worn, or Phablet Max)	DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)
LTE FDD Band 71	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 12	Max allowed power	25.5	25.5
	Nominal	25.0	25.0
LTE FDD Band 17	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 26	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 66	Max allowed power	25.2	22.7
	Nominal	24.7	22.2
LTE FDD Band 4	Max allowed power	25.2	22.7
	Nominal	24.7	22.2
LTE FDD Band 25	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 FDD Band 7	Max allowed power	23.7	21.7
	Nominal	23.2	21.2
LTE TDD Band 48	Max allowed power	22.5	22.5
	Nominal	22.0	22.0
LTE TDD Band 41 (PC3)	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE TDD Band 41 (PC2)	Max allowed power	27.7	27.7
	Nominal	27.2	27.2

Mode / Band		Modulated Average Output Power (in dBm)
		DSI = 1, 6 7 (Head, Body-worn, or Phablet Max); DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)
NR FDD Band n71	Max allowed power	25.5
	Nominal	25.0
NR FDD Band n66	Max allowed power	22.0
	Nominal	21.5
NR FDD Band n25	Max allowed power	23.5
	Nominal	23.0
NR FDD Band n2	Max allowed power	23.5
	Nominal	23.0
NR TDD Band n41 (PC3)	Max allowed power	25.7
	Nominal	25.2
NR TDD Band n41 (PC2)	Max allowed power	27.7
	Nominal	27.2

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1.5.2 Maximum Bluetooth and SISO/MIMO WLAN Output Power

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

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch 10-11
IEEE 802.11b (2.4 GHz)	Maximum	20.5		
	Nominal	19.5		
IEEE 802.11g (2.4 GHz)	Maximum	18.0	19.5	17.5
	Nominal	17.0	18.5	16.5
IEEE 802.11n (2.4 GHz)	Maximum	17.0	18.5	16.5
	Nominal	16.0	17.5	15.5
IEEE 802.11ac (2.4 GHz)	Maximum	17.0	18.5	16.5
	Nominal	16.0	17.5	15.5
IEEE 802.11ax SU (2.4 GHz)	Maximum	15.0	16.5	14.5
	Nominal	14.0	15.5	13.5

Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch 10-11
IEEE 802.11g (2.4 GHz)	Maximum	21.0	22.5	20.5
	Nominal	20.0	21.5	19.5
IEEE 802.11n (2.4 GHz)	Maximum	20.0	21.5	19.5
	Nominal	19.0	20.5	18.5
IEEE 802.11ac (2.4 GHz)	Maximum	20.0	21.5	19.5
	Nominal	19.0	20.5	18.5
IEEE 802.11ax SU (2.4 GHz)	Maximum	18.0	19.5	17.5
	Nominal	17.0	18.5	16.5

Mode / Band		Modulated Average - Single Tx Chain (dBm)													
		20 MHz Bandwidth								40 MHz Bandwidth				80 MHz Bandwidth	
		36	40	44-52	56	60-153	157	161	165	38	46-54	62-102	110-159	42-58	106-155
IEEE 802.11a (5 GHz)	Maximum	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0						
	Nominal	16.0	17.0	16.0	17.0	16.0	17.0	16.0	17.0						
IEEE 802.11n (5 GHz)	Maximum	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	11.5	16.0	11.5	16.0		
	Nominal	16.0	17.0	16.0	17.0	16.0	17.0	16.0	17.0	10.5	15.0	10.5	15.0		
IEEE 802.11ac (5 GHz)	Maximum	17.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	11.5	16.0	11.5	16.0	11.0	13.0
	Nominal	16.0	17.0	16.0	17.0	16.0	17.0	16.0	17.0	10.5	15.0	10.5	15.0	10.0	12.0
IEEE 802.11ax SU (5 GHz)	Maximum	15.0								9.5	13.0	9.5	13.0	9.0	11.0
	Nominal	14.0								8.5	12.0	8.5	12.0	8.0	10.0

Mode / Band		Modulated Average - MIMO (dBm)													
		20 MHz Bandwidth								40 MHz Bandwidth				80 MHz Bandwidth	
		36	40	44-52	56	60-153	157	161	165	38	46-54	62-102	110-159	42-58	106-155
IEEE 802.11a (5 GHz)	Maximum	20.0	21.0	20.0	21.0	20.0	21.0	20.0	21.0						
	Nominal	19.0	20.0	19.0	20.0	19.0	20.0	19.0	20.0						
IEEE 802.11n (5 GHz)	Maximum	20.0	21.0	20.0	21.0	20.0	21.0	20.0	21.0	14.5	19.0	14.5	19.0		
	Nominal	19.0	20.0	19.0	20.0	19.0	20.0	19.0	20.0	13.5	18.0	13.5	18.0		
IEEE 802.11ac (5 GHz)	Maximum	20.0	21.0	20.0	21.0	20.0	21.0	20.0	21.0	14.5	19.0	14.5	19.0	14.0	16.0
	Nominal	19.0	20.0	19.0	20.0	19.0	20.0	19.0	20.0	13.5	18.0	13.5	18.0	13.0	15.0
IEEE 802.11ax SU (5 GHz)	Maximum	18.0								12.5	16.0	12.5	16.0	12.0	14.0
	Nominal	17.0								11.5	15.0	11.5	15.0	11.0	13.0

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	12.5
	Nominal	11.5
Bluetooth LE	Maximum	7.0
	Nominal	6.0

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1.5.3 Reduced SISO/MIMO 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 for 2.4 GHz WLAN
- 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		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch 10-11
IEEE 802.11b (2.4 GHz)	Maximum	15.5		
	Nominal	14.5		
IEEE 802.11g (2.4 GHz)	Maximum	15.5		
	Nominal	14.5		
IEEE 802.11n (2.4 GHz)	Maximum	15.5		
	Nominal	14.5		
IEEE 802.11ac (2.4 GHz)	Maximum	15.5		
	Nominal	14.5		
IEEE 802.11ax SU (2.4 GHz)	Maximum	15.0	15.5	14.5
	Nominal	14.0	14.5	13.5

Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch 10-11
IEEE 802.11g (2.4 GHz)	Maximum	18.5		
	Nominal	17.5		
IEEE 802.11n (2.4 GHz)	Maximum	18.5		
	Nominal	17.5		
IEEE 802.11ac (2.4 GHz)	Maximum	18.5		
	Nominal	17.5		
IEEE 802.11ax SU (2.4 GHz)	Maximum	18.0	18.5	17.5
	Nominal	17.0	17.5	16.5

The below table is applicable in simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN

Mode / Band		Modulated Average - Single Tx Chain (dBm)													
		20 MHz Bandwidth								40 MHz Bandwidth				80 MHz Bandwidth	
		36	40	44-52	56	60-153	157	161	165	38	46-54	62-102	110-159	42-58	106-155
IEEE 802.11a (5 GHz)	Maximum	15.0													
	Nominal	14.0													
IEEE 802.11n (5 GHz)	Maximum	15.0								11.5	15.0	11.5	15.0		
	Nominal	14.0								10.5	14.0	10.5	14.0		
IEEE 802.11ac (5 GHz)	Maximum	15.0								11.5	15.0	11.5	15.0	11.0	13.0
	Nominal	14.0								10.5	14.0	10.5	14.0	10.0	12.0
IEEE 802.11ax SU (5 GHz)	Maximum	15.0								9.5	13.0	9.5	13.0	9.0	11.0
	Nominal	14.0								8.5	12.0	8.5	12.0	8.0	10.0

Mode / Band		Modulated Average - MIMO (dBm)													
		20 MHz Bandwidth								40 MHz Bandwidth				80 MHz Bandwidth	
		36	40	44-52	56	60-153	157	161	165	38	46-54	62-102	110-159	42-58	106-155
IEEE 802.11a (5 GHz)	Maximum	18.0													
	Nominal	17.0													
IEEE 802.11n (5 GHz)	Maximum	18.0								14.5	18.0	14.5	18.0		
	Nominal	17.0								13.5	17.0	13.5	17.0		
IEEE 802.11ac (5 GHz)	Maximum	18.0								14.5	18.0	14.5	18.0	14.0	16.0
	Nominal	17.0								13.5	17.0	13.5	17.0	13.0	15.0
IEEE 802.11ax SU (5 GHz)	Maximum	18.0								12.5	16.0	12.5	16.0	12.0	14.0
	Nominal	17.0								11.5	15.0	11.5	15.0	11.0	13.0

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1.6 DUT Antenna Locations

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

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	No
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	No
PCS EVDO	Yes	Yes	No	Yes	No	Yes
GPRS 850	Yes	Yes	No	Yes	Yes	No
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	No
UMTS 1750	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	No
LTE Band 12	Yes	Yes	No	Yes	Yes	No
LTE Band 13	Yes	Yes	No	Yes	Yes	No
LTE Band 26 (Cell)	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 25 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 7	Yes	Yes	No	Yes	No	Yes
LTE Band 48	Yes	Yes	No	No	Yes	No
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n71	Yes	Yes	No	Yes	Yes	No
NR Band n66 (AWS)	Yes	Yes	No	Yes	Yes	No
NR Band n25 (PCS)	Yes	Yes	No	Yes	Yes	No
NR Band n41	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.

1.7 Near Field Communications (NFC) Antenna

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

1.8 Simultaneous Transmission Capabilities

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

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

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Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHZ WI-FI Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
7	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	1x CDMA voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
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 Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
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 WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
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 Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
23	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
24	UMTS + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
25	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
26	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
27	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
28	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
29	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
30	LTE + 2.4 GHZ WI-FI Antenna 2 + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
31	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
32	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
33	LTE + 5G NR	Yes	Yes	N/A	Yes	
34	LTE + 2.4 GHz WI-FI + 5G NR	Yes	Yes	Yes	Yes	
35	LTE + 5 GHz WI-FI + 5G NR	Yes	Yes	Yes	Yes	
36	LTE + 2.4 GHz Bluetooth + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
37	LTE + 2.4 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
38	LTE + 5 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
39	LTE + 2.4 GHZ WI-FI Antenna 2 + 2.4 GHz Bluetooth + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
40	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO + 5G NR	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
41	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO + 5G NR	Yes	Yes	Yes	Yes	
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 Antenna 2 + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is 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 WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are 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 Antenna 2 + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is 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 WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered

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1. 2.4 GHz WLAN antenna 1 and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. 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 VOLTE.
7. This device supports VOWIFI.
8. This device supports Bluetooth Tethering.
9. LTE + 5G NR FR1 Scenarios are limited to LTE Anchor Bands, B2/B5/B7/B12/B13/B30/B41/B66/B25/B71

1.9 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-2A & U-NII-2C WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz WLAN, Bluetooth, U-NII-1, and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

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.

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.

This device supports IEEE 802.11ax with the following features:

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

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(B) Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.
This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

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

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

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

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. Appendix F contains downlink carrier aggregation power measurements for bands impacted by this permissive change, per FCC guidance.

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

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

This device supports both Power Class 2 (PC2) and Power Class 3 (PC3) for LTE Band 41. Per May 2017 TCB Workshop Notes, SAR tests were performed with Power Class 3 (given the specific UL/DL limitations for Power Class 2). Additionally, SAR testing for the power class 2 condition was evaluated for the highest configuration in Power Class 3 for each test configuration to confirm the results were scalable linearly (See Section 14.1).

This device supports LTE Carrier Aggregation (CA) for LTE Band 41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

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

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output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

NR implementation of n71, n66, n2, n25 and n41 is limited to EN-DC operations only, with LTE B2/B5/B7/B12/B13/B30/B41/B66/B25/B71 acting as the anchor bands. Per FCC Guidance, SAR tests were performed separately for NR Bands and LTE Anchor Bands. Please see Section 11 for more details. Since NR Band n41 PC3 has same maximum output power and duty cycle as n41 PC2, SAR testing was not evaluated for n41 PC3 as the n41 PC2 measured powers and SAR results additionally represent n41 PC3.

1.10 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE Band 41 Power Class 2/3, LTE 4x4 Downlink MIMO)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)
- April 2019 TCB Workshop Notes (IEEE 802.11ax)

1.11 Device Serial Numbers

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

1.12 Bibliography

Report Type	Report Serial Number
RF Exposure Part 0 Test Report	Rev.F
RF Exposure Part 2 Test Report	80-W5674-4 Rev. B
RF Exposure Compliance Summary Report	1M1912300226-16-R1.ZNF

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2 LTE AND NR INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 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 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 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 25 (PCS): 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 7: 5 MHz, 10 MHz, 15 MHz, 20 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 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
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 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 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 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 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 other 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 eICIC, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA				

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NR Information					
Form Factor	Portable Handset				
Frequency Range of each NR transmission band	NR Band n71 (665.5 - 695.5 MHz)				
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)				
	NR Band n25 (PCS) (1852.5 - 1912.5 MHz)				
	NR Band n2 (PCS) (1852.5 - 1907.5 MHz)				
	NR Band n41 (2506.02 - 2679.99 MHz)				
Channel Bandwidths	NR Band n71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n25 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n2 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n41: 20 MHz, 40 MHz, 50MHz, 60 MHz, 80 MHz, 90 MHz, 100 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
NR Band n71: 5 MHz	665.5 (133100)		680.5 (136100)	695.5 (139100)	
NR Band n71: 10 MHz	668 (133600)		680.5 (136100)	693 (138600)	
NR Band n71: 15 MHz	670.5 (134100)		680.5 (136100)	690.5 (138100)	
NR Band n71: 20 MHz	673 (134600)		680.5 (136100)	688 (137600)	
NR Band 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 n25 (PCS): 5 MHz	1852.5 (370500)		1882.5 (376500)	1912.5 (382500)	
NR Band n25 (PCS): 10 MHz	1855 (371000)		1882.5 (376500)	1910 (382000)	
NR Band n25 (PCS): 15 MHz	1857.5 (371500)		1882.5 (376500)	1907.5 (381500)	
NR Band n25 (PCS): 20 MHz	1860 (372000)		1882.5 (376500)	1905 (381000)	
NR Band 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 n41: 20 MHz	2506.02 (501204)	2549.49 (509898)	2592.99 (518598)	2636.49 (527298)	2679.99 (535998)
NR Band n41: 40 MHz	2516.01 (503202)	2567.34 (513468)	N/A	2618.67 (523734)	2670 (534000)
NR Band n41: 50 MHz	2521.02 (504204)		2592.99 (518598)	2664.99 (532998)	
NR Band n41: 60 MHz	2526 (505200)		2592.99 (518598)	2659.98 (531996)	
NR Band n41: 80 MHz	2536.02 (507204)		N/A	2649.99 (529998)	
NR Band n41: 90 MHz	2541 (508200)		N/A	2644.98 (528996)	
NR Band n41: 100 MHz	N/A		2592.99 (518598)	N/A	
NR Band n71/n66/n25/n2 SCS	15 kHZ				
NR Band n41 SCS	30 kHZ				
Modulations supported in UL	DFT-s-OFDM: π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Anchor Bands for NR Band n71	LTE Band 66/2/7				
LTE Anchor Bands for NR Band n66	LTE Band 71/12/13/5/2/30/7				
LTE Anchor Bands for NR Band n25	LTE Band 66				
LTE Anchor Bands for NR Band n2	LTE Band 12				
LTE Anchor Bands for NR Band n41	LTE Band 66/2/25/41				

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3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

σ = conductivity of the tissue-simulating material (S/m)
ρ = mass density of the tissue-simulating material (kg/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]

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4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

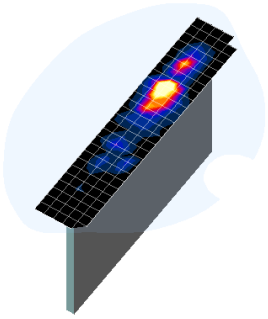

Figure 4-1
Sample SAR Area Scan

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*$\Delta z_{zoom}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

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5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

Figure 5-2 shows the front, back and side views of the SAM Twin Phantom. The point "M" is the reference point for the center of the mouth, "LE" is the left ear reference point (ERP), and "RE" is the right ERP. The ERP is 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5-1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (see Figure 5-1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

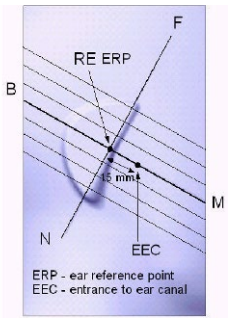

Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the "vertical centerline" on the front of the device aligned to the "ear reference point" (See Figure 5-3). The acoustic output was 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.

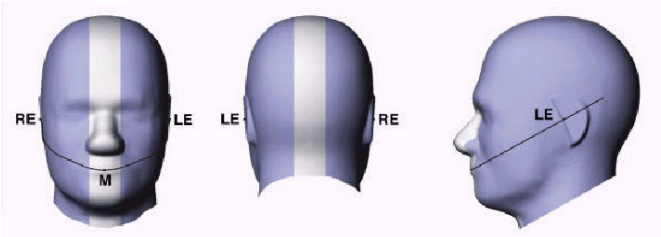

Figure 5-2
Front, back and side view of SAM Twin Phantom

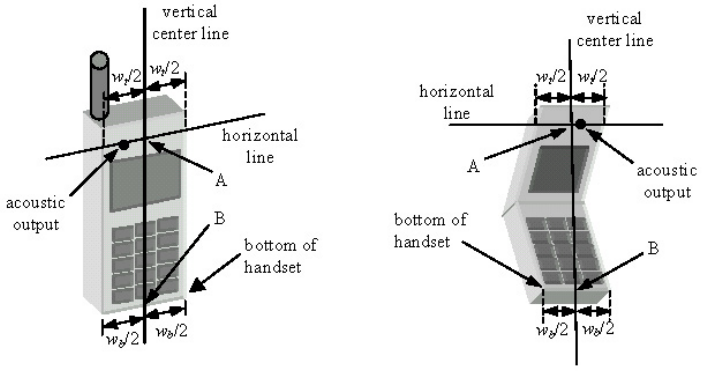

Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity 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.

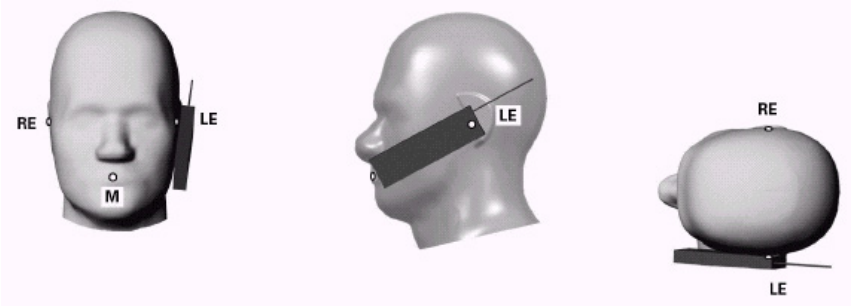

Figure 6-1 Front, Side and Top View of Cheek Position

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).

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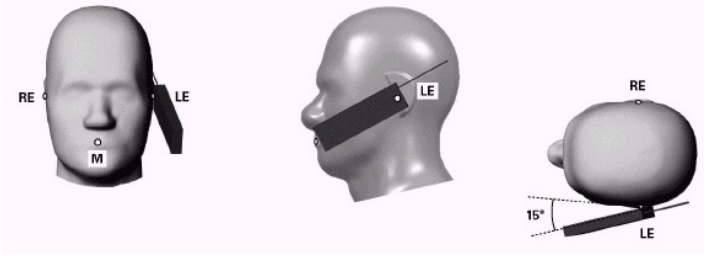

Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

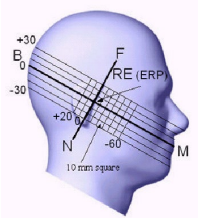

Figure 6-3
Side view w/ relevant markings

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.

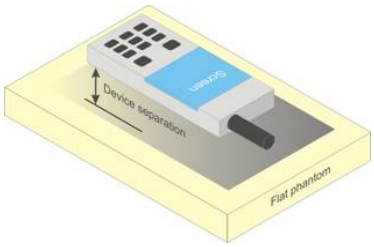

Figure 6-4
Sample Body-Worn Diagram

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

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dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

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

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L 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.

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6.9 Proximity Sensor Considerations

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

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

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

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7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *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.

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8 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.4.6 CDMA2000 1x Advanced

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

The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "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.

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8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

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8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

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

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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.

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8.7.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel. Per April 2019 TCB Workshop guidance, 802.11ax was considered the highest order 802.11 mode.

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

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subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.9 MIMO SAR Considerations

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

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9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Measured P_{max}

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.42	25.40	25.43	25.40	25.41	25.45	25.48
Cellular	1013	22H	824.7	25.37	25.38	25.37	25.41	25.36	25.43	25.45
	384	22H	836.52	25.42	25.39	25.42	25.40	25.37	25.45	25.46
	777	22H	848.31	25.20	25.41	25.39	25.37	25.39	25.46	25.44
PCS	25	24E	1851.25	25.08	25.11	25.11	25.10	25.11	25.16	25.15
	600	24E	1880	25.11	25.10	25.16	25.14	25.14	25.17	25.13
	1175	24E	1908.75	25.14	25.16	25.14	25.16	25.17	25.16	25.12

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

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.65	22.61	22.62	22.63	22.61	22.64	22.62
	600	24E	1880	22.64	22.60	22.64	22.64	22.60	22.69	22.68
	1175	24E	1908.75	22.60	22.57	22.63	22.58	22.58	22.65	22.58

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

Figure 9-1
Power Measurement Setup

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9.2 GSM Conducted Powers

Table 9-3
Measured P_{max}

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	32.82	32.84	30.65	30.09	**28.28**	26.23	25.85	24.77	24.30
	190	32.90	32.90	30.69	30.09	**28.41**	26.37	26.05	24.86	24.39
	251	32.75	32.63	30.56	29.88	**28.58**	26.24	25.87	24.55	24.14
GSM 1900	512	29.51	29.58	28.68	**26.45**	25.28	25.49	24.37	23.51	23.08
	661	29.55	29.65	28.78	**26.68**	25.45	25.61	24.45	23.65	23.20
	810	29.55	29.58	28.45	**26.37**	25.06	25.55	24.33	23.40	23.05

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	23.62	23.64	24.46	25.66	**25.10**	17.03	19.66	20.34	21.12
	190	23.70	23.70	24.50	25.66	**25.23**	17.17	19.86	20.43	21.21
	251	23.55	23.43	24.37	25.45	**25.40**	17.04	19.68	20.12	20.96
GSM 1900	512	20.31	20.38	22.49	**22.02**	22.10	16.29	18.18	19.08	19.90
	661	20.35	20.45	22.59	**22.25**	22.27	16.41	18.26	19.22	20.02
	810	20.35	20.38	22.26	**21.94**	21.88	16.35	18.14	18.97	19.87

GSM 850	**Frame Avg.Targets:**	23.70	23.70	24.51	25.27	**25.52**	17.50	20.01	20.77	21.02
GSM 1900		20.50	20.50	22.51	**22.27**	22.02	16.50	19.01	19.77	20.02

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: 12 (Max 4 Tx uplink slots)
EDGE Multislot class: 12 (Max 4 Tx uplink slots)
DTM Multislot Class: N/A

Figure 9-2
Power Measurement Setup

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9.3 UMTS Conducted Powers

Table 9-4
Measured P_{max}

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	
WCDMA	12.2 kbps RMC	25.31	25.32	25.28	24.92	24.95	24.93	24.82	24.91	24.87	-
	12.2 kbps AMR	25.30	25.28	25.23	24.72	24.53	24.56	24.80	24.90	24.85	-
HSDPA	Subtest 1	25.43	25.48	25.27	25.14	25.10	25.04	25.01	25.06	25.00	0
	Subtest 2	25.30	25.49	25.27	25.02	25.09	25.00	25.00	25.08	25.01	0
	Subtest 3	24.82	24.97	24.40	24.60	24.52	24.51	24.52	24.58	24.51	0.5
	Subtest 4	24.97	24.99	24.85	24.63	24.57	24.50	24.51	24.53	24.51	0.5
HSUPA	Subtest 1	24.99	25.00	24.92	24.73	24.88	24.80	24.91	24.97	24.92	0
	Subtest 2	23.45	23.49	23.41	23.14	23.06	23.02	23.02	23.08	23.04	2
	Subtest 3	24.47	24.48	24.42	24.08	24.09	24.00	23.94	24.07	24.00	1
	Subtest 4	23.48	23.47	23.41	23.15	23.08	23.01	23.03	23.08	23.05	2
	Subtest 5	25.47	25.50	25.21	24.94	25.10	24.99	25.01	25.07	25.05	0
DC-HSDPA	Subtest 1	25.41	25.44	25.18	24.95	25.12	25.07	25.09	25.18	25.08	0
	Subtest 2	25.42	25.46	25.10	24.94	25.16	24.99	25.10	25.20	25.07	0
	Subtest 3	24.93	24.92	24.69	24.40	24.62	24.51	24.58	24.69	24.56	0.5
	Subtest 4	24.92	24.92	24.66	24.42	24.63	24.40	24.62	24.68	24.58	0.5

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

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	22.59	22.53	22.42	22.44	22.54	22.46	-
99		12.2 kbps AMR	22.59	22.54	22.41	22.42	22.50	22.44	-
6	HSDPA	Subtest 1	22.69	22.63	22.49	22.51	22.55	22.50	0
6		Subtest 2	22.67	22.59	22.48	22.48	22.54	22.44	0
6		Subtest 3	22.16	22.10	22.02	21.98	21.99	21.96	0.5
6		Subtest 4	22.17	22.06	21.97	22.00	22.05	21.93	0.5
6	HSUPA	Subtest 1	22.05	21.99	21.91	21.98	22.05	21.96	0
6		Subtest 2	20.66	20.63	20.50	20.47	20.54	20.47	2
6		Subtest 3	21.68	21.64	21.52	21.46	21.54	21.45	1
6		Subtest 4	20.70	20.61	20.53	20.50	20.56	20.49	2
6		Subtest 5	22.68	22.62	22.50	22.48	22.53	22.45	0
8	DC-HSDPA	Subtest 1	22.69	22.67	22.56	22.52	22.54	22.47	0
8		Subtest 2	22.70	22.60	22.50	22.55	22.61	22.47	0
8		Subtest 3	22.12	22.07	22.04	22.06	22.11	22.02	0.5
8		Subtest 4	22.19	22.15	22.05	21.97	22.09	21.96	0.5

DC-HSDPA considerations

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

Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1 LTE Band 71

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

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**25.34**	0	0
	1	50	25.31		0
	1	99	25.29		0
	50	0	**23.77**	0-1	1
	50	25	23.74		1
	50	50	23.63		1
	100	0	23.70		1
16QAM	1	0	24.04	0-1	1
	1	50	23.97		1
	1	99	23.80		1
	50	0	22.82	0-2	2
	50	25	22.76		2
	50	50	22.76		2
	100	0	22.59		2
64QAM	1	0	22.65	0-2	2
	1	50	22.86		2
	1	99	22.79		2
	50	0	21.74	0-3	3
	50	25	21.80		3
	50	50	21.66		3
	100	0	21.63		3
256QAM	1	0	19.53	0-5	5
	1	50	19.87		5
	1	99	19.72		5
	50	0	19.73		5
	50	25	19.76		5
	50	50	19.69		5
	100	0	19.64		5

Note: LTE Band 71 at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-7
LTE Band 71 Measured P_{max} for all DSI - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.43	0	0
	1	36	25.50		0
	1	74	25.47		0
	36	0	23.79	0-1	1
	36	18	23.87		1
	36	37	23.88		1
	75	0	23.80		1
16QAM	1	0	23.77	0-1	1
	1	36	23.85		1
	1	74	23.75		1
	36	0	22.81	0-2	2
	36	18	22.87		2
	36	37	22.90		2
	75	0	22.80		2
64QAM	1	0	22.78	0-2	2
	1	36	22.82		2
	1	74	22.76		2
	36	0	21.81	0-3	3
	36	18	21.85		3
	36	37	21.88		3
	75	0	21.78		3
256QAM	1	0	19.69	0-5	5
	1	36	19.77		5
	1	74	19.64		5
	36	0	19.87		5
	36	18	19.79		5
	36	37	19.77		5
	75	0	19.85		5

Note: LTE Band 71 at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-8
LTE Band 71 Measured P_{max} for all DSI - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.19	25.20	25.25	0	0
	1	25	25.04	25.19	25.23		0
	1	49	25.05	25.11	25.14		0
	25	0	23.90	23.80	23.75	0-1	1
	25	12	23.83	23.84	23.85		1
	25	25	23.73	23.81	23.75		1
	50	0	23.78	23.69	23.82		1
16QAM	1	0	23.66	24.01	23.79	0-1	1
	1	25	23.72	23.87	23.86		1
	1	49	23.76	23.95	23.68		1
	25	0	22.83	22.78	22.71	0-2	2
	25	12	22.76	22.64	22.76		2
	25	25	22.70	22.70	22.70		2
	50	0	22.64	22.79	22.72		2
64QAM	1	0	22.75	22.99	22.76	0-2	2
	1	25	22.82	22.87	22.71		2
	1	49	22.77	22.75	22.66		2
	25	0	21.79	21.76	21.71	0-3	3
	25	12	21.70	21.80	21.75		3
	25	25	21.69	21.76	21.70		3
	50	0	21.72	21.74	21.79		3
256QAM	1	0	19.70	19.67	19.71	0-5	5
	1	25	19.87	19.75	19.65		5
	1	49	19.67	19.71	19.64		5
	25	0	19.89	19.68	19.64		5
	25	12	19.76	19.67	19.72		5
	25	25	19.80	19.69	19.68		5
	50	0	19.71	19.83	19.65		5

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.32	25.15	24.98	0	0
	1	12	25.27	25.31	25.14		0
	1	24	25.26	25.19	24.86		0
	12	0	23.89	23.85	23.76	0-1	1
	12	6	23.76	23.73	23.82		1
	12	13	23.80	23.80	23.84		1
	25	0	23.76	23.85	23.81		1
16QAM	1	0	23.73	24.00	23.73	0-1	1
	1	12	23.70	23.95	23.88		1
	1	24	23.75	23.91	23.69		1
	12	0	22.80	22.70	22.66	0-2	2
	12	6	22.80	22.78	22.65		2
	12	13	22.74	22.80	22.69		2
	25	0	22.68	22.72	22.75		2
64QAM	1	0	22.73	23.01	22.71	0-2	2
	1	12	22.71	23.02	22.82		2
	1	24	22.73	22.93	22.85		2
	12	0	21.80	21.65	21.76	0-3	3
	12	6	21.77	21.77	21.78		3
	12	13	21.74	21.81	21.82		3
	25	0	21.70	21.75	21.80		3
256QAM	1	0	19.73	20.06	19.62	0-5	5
	1	12	19.81	20.04	19.65		5
	1	24	19.83	20.06	19.58		5
	12	0	19.76	19.65	19.67		5
	12	6	19.80	19.78	19.70		5
	12	13	19.78	19.78	19.73		5
	25	0	19.64	19.70	19.56		5

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9.4.2 LTE Band 12

Table 9-10
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	25.08	0	0
	1	25	25.04		0
	1	49	**25.10**		0
	25	0	23.42	0-1	1
	25	12	23.45		1
	25	25	**23.47**		1
	50	0	23.40		1
16QAM	1	0	23.77	0-1	1
	1	25	23.83		1
	1	49	23.81		1
	25	0	22.38	0-2	2
	25	12	22.50		2
	25	25	22.46		2
	50	0	22.37		2
64QAM	1	0	22.59	0-2	2
	1	25	22.51		2
	1	49	22.52		2
	25	0	21.39	0-3	3
	25	12	21.49		3
	25	25	21.52		3
	50	0	21.45		3
256QAM	1	0	19.24	0-5	5
	1	25	19.39		5
	1	49	19.22		5
	25	0	19.42		5
	25	12	19.46		5
	25	25	19.32		5
	50	0	19.39		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 9-11
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	24.94	24.98	25.01	0	0
	1	12	24.96	24.86	24.98		0
	1	24	24.94	24.85	24.89		0
	12	0	23.55	23.60	23.65	0-1	1
	12	6	23.56	23.47	23.54		1
	12	13	23.53	23.50	23.53		1
	25	0	23.57	23.56	23.53		1
16QAM	1	0	23.55	23.52	23.55	0-1	1
	1	12	23.54	23.54	23.54		1
	1	24	23.59	23.58	23.60		1
	12	0	22.51	22.67	23.04	0-2	2
	12	6	22.53	22.64	23.02		2
	12	13	22.51	22.60	23.01		2
	25	0	22.57	22.56	22.63		2
64QAM	1	0	22.55	22.57	22.51	0-2	2
	1	12	22.56	22.66	22.67		2
	1	24	22.58	22.58	22.58		2
	12	0	21.45	21.54	21.53	0-3	3
	12	6	21.52	21.68	21.60		3
	12	13	21.46	21.55	21.59		3
	25	0	21.44	21.56	21.67		3
256QAM	1	0	19.46	19.50	19.60	0-5	5
	1	12	19.52	19.61	19.67		5
	1	24	19.48	19.61	19.58		5
	12	0	19.47	19.60	19.51		5
	12	6	19.53	19.66	19.54		5
	12	13	19.47	19.63	19.55		5
	25	0	19.51	19.53	19.57		5

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Table 9-12
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	25.06	24.88	24.93	0	0
	1	7	25.07	24.90	24.96		0
	1	14	24.99	24.91	24.97		0
	8	0	23.45	23.53	23.70	0-1	1
	8	4	23.44	23.55	23.58		1
	8	7	23.43	23.65	23.71		1
	15	0	23.48	23.60	23.70		1
16QAM	1	0	23.32	23.57	23.67	0-1	1
	1	7	23.19	23.62	23.65		1
	1	14	23.22	23.58	23.62		1
	8	0	22.48	22.63	22.68	0-2	2
	8	4	22.47	22.51	22.62		2
	8	7	22.43	22.54	22.61		2
	15	0	22.41	22.58	22.28		2
64QAM	1	0	22.67	22.78	22.62	0-2	2
	1	7	22.60	22.53	22.69		2
	1	14	22.59	22.61	22.71		2
	8	0	21.49	21.56	21.70	0-3	3
	8	4	21.54	21.59	21.60		3
	8	7	21.46	21.61	21.64		3
	15	0	21.50	21.54	21.59		3
256QAM	1	0	19.26	19.72	19.98	0-5	5
	1	7	19.24	19.67	20.03		5
	1	14	19.20	19.57	19.93		5
	8	0	19.59	19.58	19.61		5
	8	4	19.60	19.60	19.63		5
	8	7	19.55	19.66	19.60		5
	15	0	19.55	19.67	19.64		5

Table 9-13
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	24.96	24.99	24.98	0	0
	1	2	25.01	24.96	25.02		0
	1	5	24.94	24.95	24.96		0
	3	0	24.99	24.97	24.93		0
	3	2	25.04	25.00	24.97		0
	3	3	24.99	24.98	24.96		0
	6	0	24.33	23.88	23.70	0-1	1
16QAM	1	0	23.88	23.77	23.69	0-1	1
	1	2	23.80	23.68	23.78		1
	1	5	23.71	23.79	23.69		1
	3	0	23.64	23.76	23.74		1
	3	2	23.67	23.77	23.70		1
	3	3	23.65	23.78	23.77		1
	6	0	22.87	22.78	22.81	0-2	2
64QAM	1	0	22.81	22.63	22.72	0-2	2
	1	2	22.82	22.65	22.71		2
	1	5	22.74	22.59	22.75		2
	3	0	22.60	22.67	22.78		2
	3	2	22.63	22.64	22.69		2
	3	3	22.61	22.66	22.70		2
	6	0	21.79	21.85	21.79	0-3	3
256QAM	1	0	19.74	20.01	19.74	0-5	5
	1	2	19.64	19.62	19.65		5
	1	5	19.56	19.61	19.63		5
	3	0	19.64	19.63	19.67		5
	3	2	19.54	19.66	19.59		5
	3	3	19.64	19.60	19.60		5
	6	0	19.63	19.57	19.63		5

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9.4.3 LTE Band 13

Table 9-14
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	25.01	0	0
	1	25	**25.08**		0
	1	49	24.70		0
	25	0	23.40	0-1	1
	25	12	**23.46**		1
	25	25	23.35		1
	50	0	23.37		1
16QAM	1	0	23.78	0-1	1
	1	25	23.80		1
	1	49	24.03		1
	25	0	22.39	0-2	2
	25	12	22.48		2
	25	25	22.45		2
	50	0	22.31		2
64QAM	1	0	22.55	0-2	2
	1	25	22.64		2
	1	49	22.59		2
	25	0	21.42	0-3	3
	25	12	21.59		3
	25	25	21.66		3
	50	0	21.60		3
256QAM	1	0	19.70	0-5	5
	1	25	19.49		5
	1	49	19.44		5
	25	0	19.36		5
	25	12	19.45		5
	25	25	19.50		5
	50	0	19.47		5

Table 9-15
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	24.94	0	0
	1	12	25.03		0
	1	24	24.98		0
	12	0	23.44	0-1	1
	12	6	23.51		1
	12	13	23.48		1
	25	0	23.46		1
16QAM	1	0	23.60	0-1	1
	1	12	23.68		1
	1	24	23.68		1
	12	0	22.56	0-2	2
	12	6	22.57		2
	12	13	22.54		2
	25	0	22.48		2
64QAM	1	0	22.74	0-2	2
	1	12	22.83		2
	1	24	22.74		2
	12	0	21.57	0-3	3
	12	6	21.60		3
	12	13	21.63		3
	25	0	21.53		3
256QAM	1	0	19.28	0-5	5
	1	12	19.46		5
	1	24	19.42		5
	12	0	19.56		5
	12	6	19.64		5
	12	13	19.63		5
	25	0	19.57		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.

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9.4.4 LTE Band 26 (Cell)

Table 9-16
LTE Band 26 (Cell) Measured P_{max} for all DSI - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.24	0	0
	1	36	**25.30**		0
	1	74	25.22		0
	36	0	23.54	0-1	1
	36	18	23.58		1
	36	37	**23.59**		1
	75	0	23.50		1
16QAM	1	0	23.76	0-1	1
	1	36	23.75		1
	1	74	23.75		1
	36	0	22.60	0-2	2
	36	18	22.68		2
	36	37	22.57		2
	75	0	22.59		2
64QAM	1	0	22.75	0-2	2
	1	36	22.84		2
	1	74	22.84		2
	36	0	21.60	0-3	3
	36	18	21.70		3
	36	37	21.72		3
	75	0	21.58		3
256QAM	1	0	19.64	0-5	5
	1	36	19.82		5
	1	74	19.81		5
	36	0	19.53		5
	36	18	19.61		5
	36	37	19.49		5
	75	0	19.51		5

Note: LTE Band 26 (Cell) at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-17
LTE Band 26 (Cell) Measured P_{max} for all DSI - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.00	25.23	25.25	0	0
	1	25	25.13	25.19	25.12		0
	1	49	25.12	25.21	25.08		0
	25	0	23.50	23.40	23.36	0-1	1
	25	12	23.52	23.51	23.44		1
	25	25	23.44	23.50	23.40		1
	50	0	23.50	23.43	23.39		1
16QAM	1	0	23.57	23.48	23.50	0-1	1
	1	25	23.40	23.48	23.41		1
	1	49	23.45	23.48	23.38		1
	25	0	22.46	22.45	22.40	0-2	2
	25	12	22.55	22.51	22.45		2
	25	25	22.48	22.53	22.43		2
	50	0	22.50	22.40	22.39		2
64QAM	1	0	22.97	22.85	22.87	0-2	2
	1	25	22.87	22.90	22.89		2
	1	49	22.82	22.91	22.75		2
	25	0	21.52	21.48	21.49	0-3	3
	25	12	21.56	21.57	21.55		3
	25	25	21.53	21.58	21.47		3
	50	0	21.47	21.42	21.42		3
256QAM	1	0	19.89	19.75	19.83	0-5	5
	1	25	19.95	20.12	19.77		5
	1	49	19.87	19.96	19.75		5
	25	0	19.56	19.48	19.46		5
	25	12	19.62	19.55	19.50		5
	25	25	19.53	19.61	19.50		5
	50	0	19.54	19.52	19.49		5

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Table 9-18
LTE Band 26 (Cell) Measured P_{max} for all DSI - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.14	25.14	25.14	0	0
	1	12	25.10	25.18	24.98		0
	1	24	25.01	25.30	24.97		0
	12	0	23.49	23.51	23.43	0-1	1
	12	6	23.56	23.54	23.51		1
	12	13	23.57	23.55	23.49		1
	25	0	23.60	23.50	23.47		1
16QAM	1	0	23.78	23.98	23.72	0-1	1
	1	12	23.70	23.97	23.69		1
	1	24	23.75	24.01	23.58		1
	12	0	22.66	22.64	22.54	0-2	2
	12	6	22.69	22.67	22.61		2
	12	13	22.73	22.71	22.65		2
	25	0	22.61	22.59	22.54		2
64QAM	1	0	22.87	22.85	22.65	0-2	2
	1	12	22.92	22.90	22.56		2
	1	24	22.91	22.89	22.57		2
	12	0	21.53	21.51	21.49	0-3	3
	12	6	21.50	21.48	21.54		3
	12	13	21.58	21.56	21.59		3
	25	0	21.48	21.46	21.55		3
256QAM	1	0	19.68	19.66	19.50	0-5	5
	1	12	19.80	19.78	19.48		5
	1	24	19.82	19.80	19.45		5
	12	0	19.61	19.59	19.62		5
	12	6	19.67	19.65	19.47		5
	12	13	19.69	19.67	19.54		5
	25	0	19.59	19.57	19.52		5

Table 9-19
LTE Band 26 (Cell) Measured P_{max} for all DSI - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.14	25.15	25.18	0	0
	1	7	25.32	25.19	25.25		0
	1	14	25.06	25.09	25.30		0
	8	0	23.52	23.45	23.51	0-1	1
	8	4	23.61	23.48	23.54		1
	8	7	23.62	23.49	23.55		1
	15	0	23.57	23.68	23.50		1
16QAM	1	0	23.83	23.60	23.98	0-1	1
	1	7	23.75	23.56	23.97		1
	1	14	23.80	23.64	24.01		1
	8	0	22.71	22.58	22.64	0-2	2
	8	4	22.74	22.61	22.67		2
	8	7	22.78	22.65	22.71		2
	15	0	22.66	22.53	22.59		2
64QAM	1	0	22.92	22.79	22.85	0-2	2
	1	7	22.97	22.84	22.90		2
	1	14	22.96	22.83	22.89		2
	8	0	21.58	21.45	21.51	0-3	3
	8	4	21.55	21.42	21.48		3
	8	7	21.63	21.50	21.56		3
	15	0	21.53	21.40	21.46		3
256QAM	1	0	19.73	19.60	19.66	0-5	5
	1	7	19.85	19.72	19.78		5
	1	14	19.87	19.74	19.80		5
	8	0	19.66	19.53	19.59		5
	8	4	19.72	19.59	19.65		5
	8	7	19.74	19.61	19.67		5
	15	0	19.68	19.51	19.57		5

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Table 9-20
LTE Band 26 (Cell) Measured P_{max} for all DSI -1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.12	25.10	25.12	0	0
	1	2	25.14	25.22	25.16		0
	1	5	25.16	25.19	25.17		0
	3	0	25.01	25.12	25.14		0
	3	2	24.99	25.16	25.11		0
	3	3	25.07	25.13	25.15		0
	6	0	23.68	23.43	23.53	0-1	1
16QAM	1	0	23.62	23.56	23.67	0-1	1
	1	2	23.64	23.70	23.68		1
	1	5	23.71	23.66	23.59		1
	3	0	23.72	23.54	23.50		1
	3	2	23.65	23.61	23.64		1
	3	3	23.54	23.60	23.66		1
	6	0	22.70	22.67	22.59	0-2	2
64QAM	1	0	22.69	22.87	22.67	0-2	2
	1	2	22.71	22.92	22.74		2
	1	5	22.82	22.90	22.81		2
	3	0	22.68	22.83	22.77		2
	3	2	22.81	22.89	22.79		2
	3	3	22.87	22.85	22.74		2
	6	0	21.63	21.43	21.58	0-3	3
256QAM	1	0	19.66	19.61	19.68	0-5	5
	1	2	19.58	19.66	19.57		5
	1	5	19.65	19.56	19.55		5
	3	0	19.67	19.59	19.45		5
	3	2	19.64	19.60	19.52		5
	3	3	19.55	19.65	19.48		5
	6	0	19.68	19.54	19.59		5

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9.4.5 LTE Band 5 (Cell)

Table 9-21
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	25.45	0	0
	1	25	25.43		0
	1	49	**25.47**		0
	25	0	23.75	0-1	1
	25	12	**23.84**		1
	25	25	23.78		1
	50	0	23.77		1
16QAM	1	0	24.17	0-1	1
	1	25	24.24		1
	1	49	24.29		1
	25	0	22.85	0-2	2
	25	12	22.94		2
	25	25	22.90		2
	50	0	22.82		2
64QAM	1	0	23.07	0-2	2
	1	25	23.12		2
	1	49	23.10		2
	25	0	21.92	0-3	3
	25	12	22.00		3
	25	25	21.93		3
	50	0	21.92		3
256QAM	1	0	19.78	0-5	5
	1	25	19.93		5
	1	49	19.74		5
	25	0	19.87		5
	25	12	19.96		5
	25	25	19.98		5
	50	0	19.87		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 9-22
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	25.38	25.34	25.50	0	0
	1	12	25.34	25.35	25.40		0
	1	24	25.36	25.32	25.35		0
	12	0	24.01	24.19	24.19	0-1	1
	12	6	24.03	24.30	24.24		1
	12	13	23.96	24.24	24.28		1
	25	0	24.01	24.15	24.24		1
16QAM	1	0	23.82	24.07	24.19	0-1	1
	1	12	23.76	24.07	24.20		1
	1	24	23.77	24.06	24.32		1
	12	0	23.02	23.07	23.16	0-2	2
	12	6	23.00	23.10	23.21		2
	12	13	23.00	23.05	23.13		2
	25	0	22.98	23.06	23.11		2
64QAM	1	0	23.14	23.46	23.08	0-2	2
	1	12	23.18	23.47	23.10		2
	1	24	23.10	23.45	23.17		2
	12	0	22.01	22.00	22.20	0-3	3
	12	6	22.10	21.96	22.06		3
	12	13	22.05	21.97	22.23		3
	25	0	22.06	21.98	22.20		3
256QAM	1	0	19.74	20.04	20.08	0-5	5
	1	12	19.76	20.11	20.19		5
	1	24	19.77	20.12	20.14		5
	12	0	20.09	19.91	20.02		5
	12	6	20.12	20.02	20.07		5
	12	13	20.10	19.96	20.04		5
	25	0	20.08	20.05	20.01		5

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Table 9-23
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	25.47	25.47	25.20	0	0
	1	7	25.46	25.50	25.46		0
	1	14	25.44	25.49	25.48		0
	8	0	24.15	24.20	24.22	0-1	1
	8	4	24.20	24.17	24.15		1
	8	7	24.25	24.19	24.10		1
	15	0	24.29	24.15	24.14		1
16QAM	1	0	24.42	24.07	24.04	0-1	1
	1	7	24.36	24.05	24.17		1
	1	14	24.37	24.19	24.14		1
	8	0	23.17	23.10	23.17	0-2	2
	8	4	23.25	23.18	23.05		2
	8	7	23.05	23.09	23.09		2
	15	0	23.18	23.10	23.12		2
64QAM	1	0	23.10	23.08	23.07	0-2	2
	1	7	23.19	23.13	23.10		2
	1	14	23.13	23.07	23.19		2
	8	0	21.99	22.04	21.94	0-3	3
	8	4	22.04	21.96	22.02		3
	8	7	21.95	22.07	21.98		3
	15	0	21.98	22.07	22.11		3
256QAM	1	0	19.99	19.96	20.07	0-5	5
	1	7	20.01	20.02	20.03		5
	1	14	19.87	19.95	19.96		5
	8	0	19.88	19.97	19.90		5
	8	4	19.94	19.99	20.04		5
	8	7	20.05	20.01	19.91		5
	15	0	19.91	19.92	19.88		5

Table 9-24
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	25.44	25.30	25.27	0	0
	1	2	25.47	25.20	25.31		0
	1	5	25.40	25.40	25.15		0
	3	0	25.50	25.40	25.22		0
	3	2	25.49	25.30	25.24		0
	3	3	25.48	25.40	25.23		0
	6	0	23.88	23.81	23.81	0-1	1
16QAM	1	0	23.89	23.84	24.18	0-1	1
	1	2	23.92	23.91	24.21		1
	1	5	23.90	23.93	24.20		1
	3	0	24.01	23.96	23.98		1
	3	2	24.08	24.10	24.01		1
	3	3	24.03	24.01	23.95		1
	6	0	23.11	23.06	22.83	0-2	2
64QAM	1	0	23.06	23.03	22.71	0-2	2
	1	2	23.09	23.11	22.81		2
	1	5	23.14	23.13	22.60		2
	3	0	22.88	22.79	22.72		2
	3	2	22.87	22.86	22.77		2
	3	3	22.88	22.88	22.65		2
	6	0	21.98	21.97	21.89	0-3	3
256QAM	1	0	19.78	19.70	19.69	0-5	5
	1	2	19.85	19.77	19.75		5
	1	5	19.77	19.73	19.69		5
	3	0	19.98	19.93	19.85		5
	3	2	19.99	19.97	19.86		5
	3	3	19.95	19.98	19.85		5
	6	0	19.92	19.96	19.83		5

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9.4.6 LTE Band 66 (AWS)

Table 9-25
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	24.71	24.85	25.02	0	0
	1	50	24.91	**25.05**	24.96		0
	1	99	24.65	24.86	24.96		0
	50	0	23.88	23.94	23.88	0-1	1
	50	25	23.99	**24.01**	23.99		1
	50	50	23.86	23.99	23.72		1
	100	0	23.87	23.98	23.68		1
16QAM	1	0	23.55	23.56	23.77	0-1	1
	1	50	23.79	23.49	23.44		1
	1	99	23.47	23.18	23.60		1
	50	0	22.73	22.48	22.50	0-2	2
	50	25	22.82	22.59	22.65		2
	50	50	22.70	22.52	22.52		2
	100	0	22.71	22.50	22.49		2
64QAM	1	0	22.69	22.47	22.74	0-2	2
	1	50	22.95	22.72	22.99		2
	1	99	22.63	22.49	22.60		2
	50	0	21.71	21.58	21.49	0-3	3
	50	25	21.79	21.62	21.62		3
	50	50	21.68	21.56	21.54		3
	100	0	21.74	21.51	21.53		3
256QAM	1	0	19.58	19.33	19.45	0-5	5
	1	50	19.86	19.68	19.81		5
	1	99	19.55	19.42	19.45		5
	50	0	19.71	19.51	19.49		5
	50	25	19.78	19.50	19.70		5
	50	50	19.65	19.51	19.54		5
	100	0	19.71	19.66	19.52		5

Table 9-26
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	25.06	24.93	24.93	0	0
	1	36	24.97	24.91	24.97		0
	1	74	24.95	24.96	24.82		0
	36	0	24.13	23.85	23.96	0-1	1
	36	18	24.14	23.84	24.00		1
	36	37	24.03	23.81	23.97		1
	75	0	24.07	23.84	23.90		1
16QAM	1	0	23.76	23.84	23.87	0-1	1
	1	36	23.86	23.84	23.71		1
	1	74	23.63	23.83	23.75		1
	36	0	22.96	23.03	22.81	0-2	2
	36	18	22.96	23.03	22.84		2
	36	37	22.87	22.99	22.82		2
	75	0	22.89	22.98	22.72		2
64QAM	1	0	23.01	22.89	22.92	0-2	2
	1	36	22.93	23.05	22.93		2
	1	74	22.98	23.06	22.90		2
	36	0	22.00	21.84	21.86	0-3	3
	36	18	22.01	21.86	21.92		3
	36	37	21.92	21.83	21.90		3
	75	0	21.99	21.83	21.72		3
256QAM	1	0	19.94	19.66	20.01	0-5	5
	1	36	20.15	19.94	19.98		5
	1	74	19.90	19.69	20.05		5
	36	0	20.01	19.75	19.89		5
	36	18	20.00	19.86	19.88		5
	36	37	19.94	19.79	19.85		5
	75	0	19.95	19.84	20.00		5

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Table 9-27
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	25.03	25.10	24.89	0	0
	1	25	25.19	25.11	24.86		0
	1	49	25.02	25.09	24.92		0
	25	0	23.86	23.81	23.86	0-1	1
	25	12	23.89	23.82	23.72		1
	25	25	23.80	23.79	23.78		1
	50	0	23.83	23.82	23.76		1
16QAM	1	0	23.89	23.90	23.80	0-1	1
	1	25	23.87	23.93	23.91		1
	1	49	23.88	23.83	23.72		1
	25	0	22.79	22.95	22.81	0-2	2
	25	12	22.81	22.75	22.74		2
	25	25	22.73	22.80	22.82		2
	50	0	22.77	22.86	22.74		2
64QAM	1	0	22.82	22.94	22.84	0-2	2
	1	25	22.79	22.72	22.78		2
	1	49	22.90	22.80	22.88		2
	25	0	21.74	21.85	21.75	0-3	3
	25	12	21.79	21.80	21.85		3
	25	25	21.80	21.78	21.84		3
	50	0	21.87	21.79	21.74		3
256QAM	1	0	19.87	19.76	19.89	0-5	5
	1	25	19.88	20.01	20.09		5
	1	49	19.90	19.74	19.94		5
	25	0	19.86	19.75	19.96		5
	25	12	19.84	19.96	19.70		5
	25	25	19.74	19.89	19.74		5
	50	0	19.73	19.85	19.75		5

Table 9-28
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	24.94	25.11	24.75	0	0
	1	12	24.91	24.86	24.80		0
	1	24	24.89	25.01	24.88		0
	12	0	23.88	23.93	23.86	0-1	1
	12	6	23.87	23.97	23.86		1
	12	13	23.91	23.90	23.85		1
	25	0	23.86	23.93	23.90		1
16QAM	1	0	23.80	23.84	23.87	0-1	1
	1	12	23.85	23.93	23.84		1
	1	24	23.86	23.92	23.86		1
	12	0	22.82	23.01	22.85	0-2	2
	12	6	22.90	23.00	22.74		2
	12	13	22.84	22.99	22.79		2
	25	0	22.78	23.05	22.74		2
64QAM	1	0	22.76	22.95	22.76	0-2	2
	1	12	22.85	22.98	22.87		2
	1	24	22.80	22.89	22.74		2
	12	0	21.77	21.82	21.85	0-3	3
	12	6	21.84	21.71	21.80		3
	12	13	21.87	21.81	21.82		3
	25	0	21.85	21.87	21.76		3
256QAM	1	0	19.81	19.70	19.96	0-5	5
	1	12	19.77	19.80	19.76		5
	1	24	19.76	19.73	19.75		5
	12	0	19.87	19.70	19.71		5
	12	6	19.86	19.74	19.88		5
	12	13	19.79	19.81	19.95		5
	25	0	19.77	19.84	19.76		5

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Table 9-29
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	24.88	25.13	24.97	0	0
	1	7	24.77	25.11	24.95		0
	1	14	24.87	25.12	24.94		0
	8	0	23.92	23.96	23.93	0-1	1
	8	4	23.90	23.93	23.93		1
	8	7	23.83	23.94	23.92		1
	15	0	23.87	23.96	23.87		1
16QAM	1	0	23.85	23.92	23.91	0-1	1
	1	7	23.76	23.96	23.92		1
	1	14	23.74	23.81	23.88		1
	8	0	22.85	22.76	22.91	0-2	2
	8	4	22.81	22.88	22.88		2
	8	7	22.77	22.81	22.79		2
	15	0	22.75	22.71	22.71		2
64QAM	1	0	22.77	22.75	22.93	0-2	2
	1	7	22.74	22.76	22.91		2
	1	14	22.75	22.80	22.80		2
	8	0	21.86	21.87	21.87	0-3	3
	8	4	21.81	21.77	21.90		3
	8	7	21.78	21.82	21.89		3
	15	0	21.86	21.83	21.94		3
256QAM	1	0	19.87	19.73	19.95	0-5	5
	1	7	19.79	19.71	19.75		5
	1	14	19.74	19.77	19.88		5
	8	0	19.97	19.75	19.74		5
	8	4	19.91	19.80	19.73		5
	8	7	19.89	19.72	19.78		5
	15	0	19.91	19.70	19.70		5

Table 9-30
LTE Band 66 (AWS) Measured P_{max} for DSI = 1, 6, 7 (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	24.74	24.89	24.97	0	0
	1	2	24.79	24.91	24.95		0
	1	5	24.85	24.96	24.92		0
	3	0	24.86	24.88	24.93		0
	3	2	24.89	24.83	24.90		0
	3	3	24.84	24.78	24.92		0
	6	0	23.80	23.79	24.01	0-1	1
16QAM	1	0	23.90	23.82	23.92	0-1	1
	1	2	23.71	23.86	23.92		1
	1	5	23.85	23.87	23.92		1
	3	0	23.80	23.81	23.91		1
	3	2	23.76	23.84	23.91		1
	3	3	23.85	23.86	23.91		1
	6	0	22.89	22.76	22.91	0-2	2
64QAM	1	0	22.80	22.87	22.93	0-2	2
	1	2	22.74	22.76	22.91		2
	1	5	22.71	22.75	22.87		2
	3	0	22.73	22.73	22.90		2
	3	2	22.79	22.77	22.87		2
	3	3	22.86	22.85	22.91		2
	6	0	21.87	22.01	21.91	0-3	3
256QAM	1	0	19.88	19.73	19.78	0-5	5
	1	2	19.78	19.71	19.81		5
	1	5	19.81	19.84	19.82		5
	3	0	19.80	19.75	19.74		5
	3	2	19.82	19.80	19.73		5
	3	3	19.75	19.72	19.74		5
	6	0	19.85	19.79	19.70		5

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Table 9-31
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.74	21.73	21.80	0	0
	1	50	21.80	**21.88**	21.80		0
	1	99	21.66	21.69	21.73		0
	50	0	22.02	21.94	21.91	0-1	0
	50	25	22.09	**22.10**	22.00		0
	50	50	21.97	21.95	21.81		0
	100	0	21.86	21.87	21.81		0
16QAM	1	0	21.85	21.90	22.03	0-1	0
	1	50	22.08	21.94	21.92		0
	1	99	21.68	21.79	21.95		0
	50	0	22.00	21.97	21.89	0-2	0
	50	25	22.10	21.97	22.09		0
	50	50	21.96	21.95	21.93		0
	100	0	21.98	21.83	21.85		0
64QAM	1	0	21.97	21.85	22.09	0-2	0
	1	50	22.20	22.07	22.10		0
	1	99	22.02	22.00	22.10		0
	50	0	21.45	21.74	21.62	0-3	0.5
	50	25	21.81	21.72	21.65		0.5
	50	50	21.62	21.63	21.62		0.5
	100	0	21.70	21.52	21.53		0.5
256QAM	1	0	19.53	19.57	19.75	0-5	2.5
	1	50	19.74	19.77	19.74		2.5
	1	99	19.67	19.58	19.84		2.5
	50	0	19.68	19.68	19.60		2.5
	50	25	19.83	19.68	19.75		2.5
	50	50	19.65	19.65	19.61		2.5
	100	0	19.61	19.61	19.56		2.5

Table 9-32
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.85	21.65	21.77	0	0
	1	36	21.99	21.66	21.81		0
	1	74	21.78	21.67	21.65		0
	36	0	21.91	21.96	21.89	0-1	0
	36	18	22.01	21.97	21.91		0
	36	37	21.94	21.96	21.92		0
	75	0	21.96	21.95	21.82		0
16QAM	1	0	21.89	21.96	21.92	0-1	0
	1	36	22.02	21.96	22.04		0
	1	74	21.80	21.97	21.76		0
	36	0	21.95	21.95	21.92	0-2	0
	36	18	22.02	21.95	21.97		0
	36	37	21.95	21.97	21.95		0
	75	0	21.97	21.97	21.90		0
64QAM	1	0	22.09	21.96	22.07	0-2	0
	1	36	22.11	21.97	22.08		0
	1	74	21.98	21.95	22.01		0
	36	0	21.35	21.70	21.69	0-3	0.5
	36	18	21.71	21.73	21.68		0.5
	36	37	21.68	21.71	21.71		0.5
	75	0	21.70	21.71	21.52		0.5
256QAM	1	0	19.68	19.55	19.99	0-5	2.5
	1	36	19.86	19.80	20.14		2.5
	1	74	19.75	19.54	19.95		2.5
	36	0	19.73	19.67	19.68		2.5
	36	18	19.78	19.69	19.69		2.5
	36	37	19.73	19.63	19.65		2.5
	75	0	19.81	19.67	19.76		2.5

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Table 9-33
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.88	21.90	21.88	0	0
	1	25	22.07	21.93	22.14		0
	1	49	21.94	21.94	21.89		0
	25	0	22.31	21.78	22.11	0-1	0
	25	12	22.35	21.69	22.02		0
	25	25	22.24	21.70	22.06		0
	50	0	22.14	21.72	21.99		0
16QAM	1	0	21.88	21.72	21.96	0-1	0
	1	25	22.01	21.72	22.09		0
	1	49	21.87	21.72	21.99		0
	25	0	22.39	21.73	22.29	0-2	0
	25	12	22.07	21.72	22.38		0
	25	25	22.37	21.74	22.32		0
	50	0	22.33	21.72	22.17		0
64QAM	1	0	22.19	21.74	22.15	0-2	0
	1	25	22.11	21.74	22.11		0
	1	49	22.18	21.72	22.12		0
	25	0	21.23	21.67	21.96	0-3	0.5
	25	12	21.60	21.69	22.04		0.5
	25	25	21.53	21.70	21.98		0.5
	50	0	21.82	21.68	21.92		0.5
256QAM	1	0	19.80	19.45	20.04	0-5	2.5
	1	25	19.78	19.80	19.99		2.5
	1	49	19.61	19.61	19.96		2.5
	25	0	20.11	19.71	20.03		2.5
	25	12	19.98	19.55	20.01		2.5
	25	25	19.87	19.61	19.95		2.5
	50	0	19.85	19.72	19.93		2.5

Table 9-34
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.81	21.88	21.95	0	0
	1	12	21.78	22.01	22.02		0
	1	24	21.73	21.96	22.01		0
	12	0	21.89	21.80	22.00	0-1	0
	12	6	21.95	21.80	21.99		0
	12	13	21.81	21.79	22.01		0
	25	0	21.85	21.79	22.05		0
16QAM	1	0	21.90	21.93	22.09	0-1	0
	1	12	21.93	21.91	21.98		0
	1	24	21.83	22.04	22.07		0
	12	0	22.03	22.02	21.97	0-2	0
	12	6	21.99	21.96	22.08		0
	12	13	21.96	21.85	22.11		0
	25	0	21.89	21.88	22.16		0
64QAM	1	0	22.02	21.90	21.95	0-2	0
	1	12	22.11	21.86	21.97		0
	1	24	21.97	21.89	21.97		0
	12	0	21.33	21.63	21.97	0-3	0.5
	12	6	21.36	21.45	21.97		0.5
	12	13	21.31	21.50	21.97		0.5
	25	0	21.19	21.56	21.97		0.5
256QAM	1	0	19.93	19.60	19.85	0-5	2.5
	1	12	19.94	19.72	19.88		2.5
	1	24	19.90	19.60	19.75		2.5
	12	0	19.99	19.53	19.85		2.5
	12	6	20.01	19.55	19.88		2.5
	12	13	19.88	19.54	19.78		2.5
	25	0	19.87	19.58	19.85		2.5

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Table 9-35
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.77	21.74	21.93	0	0
	1	7	21.75	21.72	21.97		0
	1	14	21.78	21.71	21.91		0
	8	0	21.88	21.69	21.91	0-1	0
	8	4	21.81	21.70	21.92		0
	8	7	21.78	21.77	22.00		0
	15	0	21.88	21.72	21.96		0
16QAM	1	0	21.86	21.69	21.94	0-1	0
	1	7	21.85	21.69	21.98		0
	1	14	21.84	21.70	21.96		0
	8	0	21.85	21.73	21.93	0-2	0
	8	4	21.86	21.79	21.95		0
	8	7	21.82	21.69	22.01		0
	15	0	21.80	21.76	22.07		0
64QAM	1	0	22.00	21.70	21.96	0-2	0
	1	7	21.96	21.74	21.94		0
	1	14	21.91	21.72	21.99		0
	8	0	21.60	21.98	21.94	0-3	0.5
	8	4	21.59	22.00	21.93		0.5
	8	7	21.59	21.99	21.94		0.5
	15	0	21.54	21.98	21.94		0.5
256QAM	1	0	19.65	19.90	20.05	0-5	2.5
	1	7	19.64	19.82	20.03		2.5
	1	14	19.65	19.84	19.91		2.5
	8	0	19.97	19.68	19.61		2.5
	8	4	19.94	19.79	19.70		2.5
	8	7	19.96	19.70	19.73		2.5
	15	0	19.95	19.84	19.78		2.5

Table 9-36
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	21.98	21.82	21.96	0	0
	1	2	21.90	21.85	21.94		0
	1	5	21.78	21.81	21.92		0
	3	0	21.97	21.83	21.92		0
	3	2	21.97	21.87	21.91		0
	3	3	21.93	21.87	21.91		0
	6	0	21.97	21.84	21.92	0-1	0
16QAM	1	0	21.78	21.83	21.91	0-1	0
	1	2	21.81	21.84	21.92		0
	1	5	21.78	21.84	21.92		0
	3	0	22.13	21.81	21.90		0
	3	2	22.18	21.84	21.91		0
	3	3	22.11	21.81	21.90		0
	6	0	22.22	21.85	21.92	0-2	0
64QAM	1	0	22.12	21.85	21.94	0-2	0
	1	2	22.14	21.81	21.90		0
	1	5	22.12	21.81	21.92		0
	3	0	22.06	21.83	21.94		0
	3	2	22.11	21.86	21.92		0
	3	3	22.06	21.89	21.93		0
	6	0	21.86	21.89	21.92	0-3	0.5
256QAM	1	0	19.65	19.67	19.74	0-5	2.5
	1	2	19.55	19.65	19.85		2.5
	1	5	19.64	19.56	19.71		2.5
	3	0	19.78	19.80	19.86		2.5
	3	2	19.78	19.81	19.79		2.5
	3	3	19.74	19.72	19.72		2.5
	6	0	19.86	19.84	19.79		2.5

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9.4.7 LTE Band 25 (PCS)

Table 9-37
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.08	**25.20**	25.03	0	0
	1	50	25.06	25.18	25.06		0
	1	99	25.07	25.17	25.01		0
	50	0	24.01	24.13	24.05	0-1	1
	50	25	24.12	**24.19**	24.08		1
	50	50	24.09	24.17	24.07		1
	100	0	24.04	24.04	24.06		1
16QAM	1	0	23.84	24.19	23.85	0-1	1
	1	50	23.84	24.15	23.78		1
	1	99	23.82	24.13	23.82		1
	50	0	22.87	23.13	22.82	0-2	2
	50	25	22.95	22.87	22.93		2
	50	50	22.93	22.91	22.87		2
	100	0	22.82	22.85	22.76		2
64QAM	1	0	23.02	22.86	23.07	0-2	2
	1	50	23.07	23.00	23.01		2
	1	99	23.08	23.02	23.05		2
	50	0	21.83	21.95	21.85	0-3	3
	50	25	21.94	21.94	21.92		3
	50	50	21.93	21.97	21.93		3
	100	0	21.88	21.96	21.81		3
256QAM	1	0	19.69	19.67	19.61	0-5	5
	1	50	19.98	20.09	19.93		5
	1	99	19.75	19.84	19.72		5
	50	0	19.70	19.73	19.70		5
	50	25	19.93	19.88	19.95		5
	50	50	19.88	19.95	19.85		5
	100	0	19.83	19.81	19.85		5

Table 9-38
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.02	25.15	25.09	0	0
	1	36	25.13	25.14	25.19		0
	1	74	25.09	24.99	25.14		0
	36	0	24.07	24.02	24.05	0-1	1
	36	18	24.11	24.11	24.09		1
	36	37	24.20	24.15	24.20		1
	75	0	24.14	24.11	24.06		1
16QAM	1	0	23.84	23.70	23.81	0-1	1
	1	36	23.97	23.82	23.90		1
	1	74	23.78	23.74	23.83		1
	36	0	23.01	22.96	22.87	0-2	2
	36	18	23.14	23.00	23.09		2
	36	37	23.11	23.13	23.08		2
	75	0	23.03	22.98	22.91		2
64QAM	1	0	23.07	23.01	23.11	0-2	2
	1	36	23.14	23.08	23.04		2
	1	74	23.13	23.11	23.16		2
	36	0	21.91	22.13	21.99	0-3	3
	36	18	22.11	22.03	22.16		3
	36	37	22.07	22.06	22.14		3
	75	0	22.08	22.05	21.90		3
256QAM	1	0	19.91	19.82	19.79	0-5	5
	1	36	20.09	20.19	19.99		5
	1	74	19.87	20.04	20.06		5
	36	0	19.92	19.95	19.93		5
	36	18	20.10	20.08	20.11		5
	36	37	20.08	20.13	20.08		5
	75	0	20.05	20.03	19.99		5

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Table 9-39
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.05	24.98	25.07	0	0
	1	25	25.19	24.97	24.89		0
	1	49	25.00	25.04	24.94		0
	25	0	23.91	23.84	23.79	0-1	1
	25	12	24.00	23.74	23.85		1
	25	25	23.94	23.75	23.92		1
	50	0	23.90	23.76	23.86		1
16QAM	1	0	23.89	23.77	23.78	0-1	1
	1	25	23.74	23.76	23.85		1
	1	49	23.81	23.77	23.81		1
	25	0	22.81	22.75	22.72	0-2	2
	25	12	22.93	22.74	22.79		2
	25	25	22.85	22.77	22.82		2
	50	0	22.87	22.79	22.76		2
64QAM	1	0	22.76	22.81	22.95	0-2	2
	1	25	22.75	22.82	22.96		2
	1	49	22.78	22.84	22.95		2
	25	0	21.82	21.76	21.78	0-3	3
	25	12	21.87	21.80	21.76		3
	25	25	21.83	21.71	21.82		3
	50	0	21.73	21.78	21.80		3
256QAM	1	0	20.03	19.86	19.98	0-5	5
	1	25	19.89	19.88	20.01		5
	1	49	19.93	19.95	20.06		5
	25	0	19.97	19.72	19.80		5
	25	12	19.88	19.80	19.77		5
	25	25	19.82	19.85	19.83		5
	50	0	19.78	19.75	19.84		5

Table 9-40
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.06	25.12	24.97	0	0
	1	12	25.05	25.17	25.13		0
	1	24	25.07	25.12	24.94		0
	12	0	24.00	24.05	23.98	0-1	1
	12	6	24.06	23.99	23.92		1
	12	13	24.08	24.09	23.89		1
	25	0	24.01	24.12	24.05		1
16QAM	1	0	23.96	24.11	23.98	0-1	1
	1	12	23.87	23.96	23.89		1
	1	24	23.90	24.00	24.09		1
	12	0	23.07	23.04	22.93	0-2	2
	12	6	22.89	22.99	22.87		2
	12	13	22.93	22.90	22.96		2
	25	0	23.00	22.96	22.92		2
64QAM	1	0	22.94	22.93	22.88	0-2	2
	1	12	22.86	22.91	22.84		2
	1	24	22.95	23.01	22.85		2
	12	0	22.01	21.88	21.85	0-3	3
	12	6	21.88	21.97	21.89		3
	12	13	22.00	22.00	21.90		3
	25	0	21.97	22.07	21.85		3
256QAM	1	0	19.80	19.87	19.68	0-5	5
	1	12	19.85	20.01	19.78		5
	1	24	19.91	20.00	19.72		5
	12	0	19.85	19.81	19.72		5
	12	6	19.96	19.83	19.78		5
	12	13	19.91	19.91	19.78		5
	25	0	20.01	19.78	19.78		5

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Table 9-41
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.15	25.11	24.98	0	0
	1	7	25.13	25.02	24.97		0
	1	14	25.12	25.14	24.94		0
	8	0	23.95	23.85	23.93	0-1	1
	8	4	23.97	24.01	23.90		1
	8	7	24.00	23.86	23.91		1
	15	0	23.96	23.88	23.88		1
16QAM	1	0	24.00	23.87	23.93	0-1	1
	1	7	23.98	23.92	23.89		1
	1	14	23.99	23.88	23.93		1
	8	0	23.05	22.81	22.81	0-2	2
	8	4	23.03	22.77	22.90		2
	8	7	23.01	22.76	22.78		2
	15	0	23.05	22.75	22.85		2
64QAM	1	0	22.93	22.74	22.96	0-2	2
	1	7	23.05	22.86	22.85		2
	1	14	22.97	22.84	22.93		2
	8	0	22.06	21.85	21.90	0-3	3
	8	4	21.93	21.77	21.87		3
	8	7	21.89	21.76	21.92		3
	15	0	21.99	21.82	21.81		3
256QAM	1	0	19.96	19.92	20.02	0-5	5
	1	7	19.85	19.95	19.96		5
	1	14	19.87	20.01	20.05		5
	8	0	19.94	19.73	19.89		5
	8	4	20.00	19.90	19.99		5
	8	7	19.97	19.86	19.93		5
	15	0	19.94	19.93	19.79		5

Table 9-42
LTE Band 25 (PCS) Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.08	24.92	24.79	0	0
	1	2	25.09	24.90	24.85		0
	1	5	25.08	24.89	24.84		0
	3	0	25.11	24.89	24.83		0
	3	2	25.12	24.89	24.83		0
	3	3	25.11	24.88	24.82		0
	6	0	24.04	23.89	23.72	0-1	1
16QAM	1	0	24.05	23.96	23.86	0-1	1
	1	2	24.04	23.97	23.91		1
	1	5	23.98	24.01	23.84		1
	3	0	24.03	23.99	23.96		1
	3	2	24.00	23.88	23.93		1
	3	3	23.94	23.99	23.80		1
	6	0	22.74	22.87	22.78	0-2	2
64QAM	1	0	23.02	22.78	22.85	0-2	2
	1	2	22.88	22.87	22.80		2
	1	5	22.85	22.90	22.76		2
	3	0	22.81	22.88	22.81		2
	3	2	22.90	22.82	22.85		2
	3	3	22.97	22.76	22.70		2
	6	0	22.15	21.98	22.03	0-3	3
256QAM	1	0	19.96	19.99	19.79	0-5	5
	1	2	19.85	19.92	19.83		5
	1	5	19.83	19.95	19.84		5
	3	0	19.75	19.84	19.84		5
	3	2	19.82	19.91	19.87		5
	3	3	19.80	19.86	19.81		5
	6	0	19.88	19.93	19.70		5

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Table 9-43
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**22.50**	22.47	22.43	0	0
	1	50	22.17	22.19	22.03		0
	1	99	22.16	22.12	22.02		0
	50	0	**22.42**	22.29	22.14	0-1	0
	50	25	22.24	22.26	22.41		0
	50	50	22.31	22.22	22.21		0
	100	0	22.24	22.20	22.04		0
16QAM	1	0	22.51	22.59	22.38	0-1	0
	1	50	22.42	22.62	22.50		0
	1	99	22.55	22.55	22.42		0
	50	0	22.31	22.32	22.19	0-2	0
	50	25	22.28	22.25	22.23		0
	50	50	22.33	22.27	22.18		0
	100	0	22.16	22.26	22.11		0
64QAM	1	0	22.50	22.52	22.45	0-2	0
	1	50	22.51	22.45	22.39		0
	1	99	22.43	22.44	22.42		0
	50	0	21.83	21.81	21.72	0-3	0.5
	50	25	21.77	21.80	21.59		0.5
	50	50	21.68	21.82	21.75		0.5
	100	0	21.71	21.73	21.59		0.5
256QAM	1	0	19.57	19.56	19.52	0-5	2.5
	1	50	19.83	19.91	19.78		2.5
	1	99	19.61	19.62	19.61		2.5
	50	0	19.68	19.67	19.58		2.5
	50	25	19.80	19.81	19.82		2.5
	50	50	19.78	19.76	19.79		2.5
	100	0	19.68	19.68	19.56		2.5

Table 9-44
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.49	22.23	22.40	0	0
	1	36	22.27	22.24	22.41		0
	1	74	22.21	22.25	22.35		0
	36	0	22.31	22.25	22.46	0-1	0
	36	18	22.29	22.25	22.27		0
	36	37	22.30	22.23	22.38		0
	75	0	22.24	22.27	22.40		0
16QAM	1	0	22.53	22.42	22.29	0-1	0
	1	36	22.37	22.44	22.37		0
	1	74	22.25	22.26	22.19		0
	36	0	22.36	22.23	22.50	0-2	0
	36	18	22.47	22.26	22.20		0
	36	37	22.40	22.25	22.31		0
	75	0	22.37	22.26	22.25		0
64QAM	1	0	22.38	22.24	22.08	0-2	0
	1	36	22.37	22.25	22.33		0
	1	74	22.26	22.02	22.39		0
	36	0	22.09	22.11	22.01	0-3	0.5
	36	18	21.98	21.96	22.03		0.5
	36	37	22.01	21.99	22.10		0.5
	75	0	21.86	21.97	22.04		0.5
256QAM	1	0	20.08	20.00	19.98	0-5	2.5
	1	36	19.85	19.87	19.83		2.5
	1	74	19.93	20.04	19.77		2.5
	36	0	20.01	20.13	20.01		2.5
	36	18	19.99	19.79	19.84		2.5
	36	37	19.89	19.95	19.96		2.5
	75	0	20.04	19.97	20.05		2.5

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Table 9-45
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.10	22.18	22.35	0	0
	1	25	22.25	22.22	22.30		0
	1	49	22.15	22.15	22.37		0
	25	0	22.38	22.19	22.35	0-1	0
	25	12	22.52	22.17	22.42		0
	25	25	22.42	22.15	22.41		0
	50	0	22.44	22.18	22.38		0
16QAM	1	0	21.99	22.16	22.36	0-1	0
	1	25	22.21	22.18	22.40		0
	1	49	21.95	22.19	22.44		0
	25	0	22.52	22.14	22.46	0-2	0
	25	12	22.55	22.17	22.54		0
	25	25	22.56	22.18	22.57		0
	50	0	22.47	22.16	22.36		0
64QAM	1	0	22.33	22.29	22.40	0-2	0
	1	25	22.57	22.28	22.47		0
	1	49	22.33	22.20	22.39		0
	25	0	22.02	21.97	21.97	0-3	0.5
	25	12	22.11	22.08	22.05		0.5
	25	25	22.04	21.99	22.04		0.5
	50	0	21.94	22.05	21.91		0.5
256QAM	1	0	19.45	19.96	20.02	0-5	2.5
	1	25	19.66	19.98	19.96		2.5
	1	49	19.69	20.01	19.89		2.5
	25	0	19.98	20.15	19.96		2.5
	25	12	20.04	20.03	20.08		2.5
	25	25	20.07	20.02	20.04		2.5
	50	0	19.97	19.89	19.97		2.5

Table 9-46
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.44	22.37	22.37	0	0
	1	12	22.46	22.30	22.35		0
	1	24	22.45	22.41	22.34		0
	12	0	22.35	22.50	22.33	0-1	0
	12	6	22.44	22.42	22.33		0
	12	13	22.39	22.37	22.32		0
	25	0	22.45	22.41	22.32		0
16QAM	1	0	22.43	22.35	22.33	0-1	0
	1	12	22.50	22.30	22.31		0
	1	24	22.47	22.37	22.34		0
	12	0	22.36	22.41	22.33	0-2	0
	12	6	22.40	22.37	22.31		0
	12	13	22.41	22.32	22.35		0
	25	0	22.36	22.39	22.33		0
64QAM	1	0	22.35	22.41	22.32	0-2	0
	1	12	22.41	22.28	22.33		0
	1	24	22.45	22.26	22.30		0
	12	0	21.99	22.02	21.93	0-3	0.5
	12	6	22.01	21.96	21.78		0.5
	12	13	21.83	21.88	21.89		0.5
	25	0	21.81	21.78	21.94		0.5
256QAM	1	0	19.70	19.79	19.66	0-5	2.5
	1	12	19.72	19.91	19.69		2.5
	1	24	19.79	20.00	19.78		2.5
	12	0	19.74	19.69	19.80		2.5
	12	6	19.79	19.77	19.76		2.5
	12	13	19.77	19.83	19.73		2.5
	25	0	19.75	19.67	19.71		2.5

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Table 9-47
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.53	22.12	22.25	0	0
	1	7	22.50	22.23	22.23		0
	1	14	22.44	22.32	22.26		0
	8	0	22.46	22.35	22.29	0-1	0
	8	4	22.45	22.31	22.30		0
	8	7	22.39	22.28	22.25		0
	15	0	22.40	22.42	22.33		0
16QAM	1	0	22.43	22.36	22.31	0-1	0
	1	7	22.34	22.42	22.41		0
	1	14	22.50	22.30	22.30		0
	8	0	22.41	22.34	22.29	0-2	0
	8	4	22.44	22.27	22.27		0
	8	7	22.43	22.36	22.28		0
	15	0	22.39	22.30	22.36		0
64QAM	1	0	22.34	22.33	22.38	0-2	0
	1	7	22.23	22.25	22.34		0
	1	14	22.32	22.31	22.33		0
	8	0	21.96	21.71	21.86	0-3	0.5
	8	4	22.01	22.02	21.77		0.5
	8	7	21.89	21.88	21.69		0.5
	15	0	21.97	21.66	21.73		0.5
256QAM	1	0	19.80	19.85	19.69	0-5	2.5
	1	7	19.74	19.74	19.78		2.5
	1	14	19.70	19.83	19.65		2.5
	8	0	19.71	19.59	19.75		2.5
	8	4	19.79	19.66	19.83		2.5
	8	7	19.80	19.66	19.81		2.5
	15	0	19.73	19.73	19.69		2.5

Table 9-48
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.44	22.19	22.29	0	0
	1	2	22.43	22.28	22.31		0
	1	5	22.42	22.20	22.33		0
	3	0	22.41	22.22	22.32		0
	3	2	22.39	22.25	22.32		0
	3	3	22.50	22.26	22.31		0
	6	0	22.40	22.24	22.36	0-1	0
16QAM	1	0	22.41	22.28	22.34	0-1	0
	1	2	22.39	22.23	22.31		0
	1	5	22.39	22.24	22.34		0
	3	0	22.35	22.14	22.35		0
	3	2	22.44	22.18	22.33		0
	3	3	22.39	22.26	22.29		0
	6	0	22.42	22.25	22.38	0-2	0
64QAM	1	0	22.47	22.25	22.29	0-2	0
	1	2	22.35	22.29	22.33		0
	1	5	22.39	22.30	22.31		0
	3	0	22.40	22.36	22.00		0
	3	2	22.45	22.21	22.38		0
	3	3	22.41	22.25	22.29		0
	6	0	21.98	22.15	22.02	0-3	0.5
256QAM	1	0	19.89	20.00	19.92	0-5	2.5
	1	2	20.03	19.98	19.93		2.5
	1	5	19.93	20.03	19.96		2.5
	3	0	19.96	20.04	19.96		2.5
	3	2	20.06	20.09	20.04		2.5
	3	3	19.95	20.00	19.96		2.5
	6	0	19.94	19.86	19.86		2.5

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9.4.8 LTE Band 30

Table 9-49
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	**22.38**	0	0
	1	25	22.37		0
	1	49	22.30		0
	25	0	21.25	0-1	1
	25	12	**21.27**		1
	25	25	21.23		1
	50	0	21.25		1
16QAM	1	0	21.41	0-1	1
	1	25	21.22		1
	1	49	21.26		1
	25	0	20.08	0-2	2
	25	12	20.11		2
	25	25	20.04		2
	50	0	20.03		2
64QAM	1	0	20.20	0-2	2
	1	25	20.33		2
	1	49	20.37		2
	25	0	19.03	0-3	3
	25	12	19.15		3
	25	25	19.07		3
	50	0	19.08		3
256QAM	1	0	17.22	0-5	5
	1	25	17.26		5
	1	49	16.94		5
	25	0	16.95		5
	25	12	17.04		5
	25	25	17.08		5
	50	0	17.01		5

Table 9-50
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	22.09	0	0
	1	12	22.27		0
	1	24	22.10		0
	12	0	21.09	0-1	1
	12	6	21.00		1
	12	13	21.21		1
	25	0	21.08		1
16QAM	1	0	21.15	0-1	1
	1	12	21.28		1
	1	24	21.12		1
	12	0	20.06	0-2	2
	12	6	20.00		2
	12	13	20.05		2
	25	0	20.02		2
64QAM	1	0	20.04	0-2	2
	1	12	20.17		2
	1	24	20.20		2
	12	0	19.00	0-3	3
	12	6	18.93		3
	12	13	18.94		3
	25	0	19.02		3
256QAM	1	0	17.02	0-5	5
	1	12	17.21		5
	1	24	17.05		5
	12	0	17.02		5
	12	6	17.01		5
	12	13	17.00		5
	25	0	17.04		5

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

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9.4.9 LTE Band 7

Table 9-51
LTE Band 7 Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.30	23.44	**23.54**	0	0
	1	50	23.37	23.45	23.45		0
	1	99	23.35	23.48	23.39		0
	50	0	22.34	22.40	22.44	0-1	1
	50	25	22.42	22.43	22.44		1
	50	50	22.39	22.47	**22.49**		1
	100	0	22.32	22.31	22.39		1
16QAM	1	0	22.07	22.24	22.20	0-1	1
	1	50	22.07	22.35	22.20		1
	1	99	22.01	22.25	22.11		1
	50	0	21.13	21.27	21.27	0-2	2
	50	25	21.23	21.25	21.26		2
	50	50	21.22	21.30	21.25		2
	100	0	21.12	21.17	21.24		2
64QAM	1	0	21.28	21.36	21.42	0-2	2
	1	50	21.38	21.41	21.42		2
	1	99	21.31	21.38	21.36		2
	50	0	20.10	20.20	20.27	0-3	3
	50	25	20.40	20.27	20.27		3
	50	50	20.23	20.29	20.28		3
	100	0	20.15	20.18	20.18		3
256QAM	1	0	17.87	18.11	18.25	0-5	5
	1	50	18.29	18.34	18.36		5
	1	99	18.01	18.19	17.91		5
	50	0	18.02	18.15	18.28		5
	50	25	18.21	18.25	18.25		5
	50	50	18.11	18.15	18.16		5
	100	0	18.26	18.16	18.16		5

Table 9-52
LTE Band 7 Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.53	23.40	23.34	0	0
	1	36	23.59	23.33	23.40		0
	1	74	23.51	23.46	23.35		0
	36	0	22.42	22.27	22.38	0-1	1
	36	18	22.54	22.30	22.52		1
	36	37	22.46	22.29	22.45		1
	75	0	22.45	22.33	22.40		1
16QAM	1	0	22.12	22.30	22.35	0-1	1
	1	36	22.19	22.29	22.24		1
	1	74	22.07	22.35	21.96		1
	36	0	21.25	21.34	21.18	0-2	2
	36	18	21.35	21.31	21.33		2
	36	37	21.29	21.28	21.28		2
	75	0	21.26	21.37	21.23		2
64QAM	1	0	21.18	21.28	21.33	0-2	2
	1	36	21.29	21.32	21.43		2
	1	74	21.22	21.30	21.35		2
	36	0	20.27	20.29	20.29	0-3	3
	36	18	20.38	20.28	20.41		3
	36	37	20.34	20.33	20.37		3
	75	0	20.35	20.29	20.21		3
256QAM	1	0	18.24	18.28	18.54	0-5	5
	1	36	18.52	18.38	18.42		5
	1	74	18.34	18.16	18.40		5
	36	0	18.22	18.26	18.22		5
	36	18	18.44	18.29	18.32		5
	36	37	18.33	18.27	18.24		5
	75	0	18.29	18.22	18.29		5

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Table 9-53
LTE Band 7 Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.21	23.24	23.15	0	0
	1	25	23.13	23.21	23.17		0
	1	49	23.15	23.27	23.25		0
	25	0	22.22	22.33	22.22	0-1	1
	25	12	22.29	22.31	22.23		1
	25	25	22.24	22.35	22.31		1
	50	0	22.23	22.33	22.24		1
16QAM	1	0	22.28	22.32	22.36	0-1	1
	1	25	22.30	22.27	22.28		1
	1	49	22.29	22.29	22.35		1
	25	0	21.38	21.33	21.33	0-2	2
	25	12	21.37	21.34	21.27		2
	25	25	21.27	21.37	21.38		2
	50	0	21.22	21.32	21.26		2
64QAM	1	0	21.26	21.28	21.22	0-2	2
	1	25	21.32	21.32	21.26		2
	1	49	21.23	21.33	21.27		2
	25	0	20.28	20.32	20.36	0-3	3
	25	12	20.37	20.29	20.34		3
	25	25	20.35	20.34	20.39		3
	50	0	20.41	20.33	20.37		3
256QAM	1	0	18.57	18.50	18.42	0-5	5
	1	25	18.48	18.29	18.57		5
	1	49	18.45	18.41	18.28		5
	25	0	18.34	18.32	18.30		5
	25	12	18.28	18.38	18.29		5
	25	25	18.24	18.22	18.31		5
	50	0	18.30	18.21	18.34		5

Table 9-54
LTE Band 7 Measured P_{max} for DSI = 1, 6, 7 (Head, Body-worn, or Phablet with grip sensor not triggered) - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.29	23.37	23.24	0	0
	1	12	23.28	23.32	23.34		0
	1	24	23.32	23.31	23.33		0
	12	0	22.27	22.30	22.28	0-1	1
	12	6	22.28	22.26	22.34		1
	12	13	22.23	22.34	22.20		1
	25	0	22.24	22.28	22.40		1
16QAM	1	0	21.99	22.30	22.38	0-1	1
	1	12	21.94	22.41	22.37		1
	1	24	22.01	22.39	22.34		1
	12	0	21.15	21.29	21.35	0-2	2
	12	6	21.17	21.27	21.37		2
	12	13	21.10	21.26	21.25		2
	25	0	21.06	21.35	21.34		2
64QAM	1	0	21.50	21.27	21.38	0-2	2
	1	12	21.47	21.46	21.28		2
	1	24	21.46	21.49	21.39		2
	12	0	20.22	20.50	20.28	0-3	3
	12	6	20.37	20.40	20.39		3
	12	13	20.28	20.34	20.37		3
	25	0	20.30	20.41	20.34		3
256QAM	1	0	18.25	18.22	18.36	0-5	5
	1	12	18.33	18.30	18.35		5
	1	24	18.24	18.28	18.29		5
	12	0	18.36	18.38	18.34		5
	12	6	18.31	18.34	18.29		5
	12	13	18.22	18.35	18.34		5
	25	0	18.36	18.27	18.32		5

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Table 9-55
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.19	21.29	21.56	0	0
	1	50	21.15	21.30	**21.59**		0
	1	99	21.17	21.30	21.50		0
	50	0	21.21	21.38	21.56	0-1	0
	50	25	21.30	21.37	**21.70**		0
	50	50	21.30	21.46	21.69		0
	100	0	21.23	21.28	21.48		0
16QAM	1	0	21.44	21.66	21.42	0-1	0
	1	50	21.30	21.70	21.42		0
	1	99	21.29	21.68	21.32		0
	50	0	20.90	21.08	21.06	0-2	0
	50	25	20.98	21.16	21.14		0
	50	50	20.91	21.15	21.05		0
	100	0	20.90	20.99	20.91		0
64QAM	1	0	21.06	21.52	21.29	0-2	0
	1	50	21.04	21.35	21.26		0
	1	99	21.10	21.23	21.17		0
	50	0	19.88	20.15	20.08	0-3	1
	50	25	20.04	20.10	20.16		1
	50	50	20.01	20.13	20.06		1
	100	0	19.93	20.08	19.92		1
256QAM	1	0	17.96	18.13	18.09	0-5	3
	1	50	17.93	17.99	18.08		3
	1	99	17.93	18.11	17.87		3
	50	0	17.85	18.03	18.07		3
	50	25	18.04	18.09	18.09		3
	50	50	17.95	18.05	17.95		3
	100	0	17.94	17.99	18.01		3

Table 9-56
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.57	21.38	21.36	0	0
	1	36	21.64	21.35	21.39		0
	1	74	21.56	21.36	21.34		0
	36	0	21.44	21.35	21.50	0-1	0
	36	18	21.45	21.37	21.56		0
	36	37	21.30	21.37	21.57		0
	75	0	21.60	21.38	21.47		0
16QAM	1	0	21.42	21.34	21.44	0-1	0
	1	36	21.63	21.35	21.53		0
	1	74	21.54	21.37	21.43		0
	36	0	21.29	21.34	21.21	0-2	0
	36	18	21.39	21.35	21.32		0
	36	37	21.32	21.36	21.38		0
	75	0	21.29	21.35	21.18		0
64QAM	1	0	21.35	21.37	21.37	0-2	0
	1	36	21.21	21.34	21.42		0
	1	74	21.10	21.37	21.42		0
	36	0	20.38	20.37	20.32	0-3	1
	36	18	20.45	20.35	20.35		1
	36	37	20.44	20.46	20.44		1
	75	0	20.43	20.40	20.19		1
256QAM	1	0	18.29	18.27	18.29	0-5	3
	1	36	18.10	18.45	18.37		3
	1	74	18.15	18.23	18.20		3
	36	0	18.19	18.30	18.27		3
	36	18	18.37	18.42	18.28		3
	36	37	18.41	18.31	18.32		3
	75	0	18.33	18.35	18.25		3

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Table 9-57
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.40	21.36	21.47	0	0
	1	25	21.46	21.34	21.49		0
	1	49	21.30	21.36	21.58		0
	25	0	21.41	21.33	21.59	0-1	0
	25	12	21.39	21.38	21.65		0
	25	25	21.38	21.33	21.63		0
	50	0	21.46	21.34	21.54		0
16QAM	1	0	21.37	21.38	21.56	0-1	0
	1	25	21.35	21.36	21.51		0
	1	49	21.39	21.37	21.60		0
	25	0	21.47	21.35	21.34	0-2	0
	25	12	21.44	21.35	21.44		0
	25	25	21.42	21.33	21.42		0
	50	0	21.40	21.31	21.21		0
64QAM	1	0	21.47	21.30	21.49	0-2	0
	1	25	21.46	21.38	21.54		0
	1	49	21.51	21.38	21.52		0
	25	0	20.46	20.29	20.34	0-3	1
	25	12	20.48	20.30	20.42		1
	25	25	20.53	20.28	20.43		1
	50	0	20.36	20.31	20.26		1
256QAM	1	0	18.40	18.10	18.34	0-5	3
	1	25	18.41	18.23	18.17		3
	1	49	18.26	18.11	18.32		3
	25	0	18.19	18.15	18.03		3
	25	12	18.14	18.13	18.16		3
	25	25	18.12	18.12	18.07		3
	50	0	18.06	18.02	18.12		3

Table 9-58
LTE Band 7 Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.47	21.42	21.40	0	0
	1	12	21.48	21.52	21.37		0
	1	24	21.49	21.45	21.47		0
	12	0	21.46	21.44	21.42	0-1	0
	12	6	21.47	21.55	21.38		0
	12	13	21.49	21.51	21.40		0
	25	0	21.49	21.47	21.35		0
16QAM	1	0	21.49	21.54	21.41	0-1	0
	1	12	21.49	21.49	21.32		0
	1	24	21.48	21.57	21.30		0
	12	0	21.49	21.55	21.31	0-2	0
	12	6	21.49	21.50	21.24		0
	12	13	21.47	21.39	21.25		0
	25	0	21.46	21.37	21.33		0
64QAM	1	0	21.51	21.33	21.42	0-2	0
	1	12	21.47	21.25	21.44		0
	1	24	21.47	21.29	21.41		0
	12	0	20.45	20.41	20.21	0-3	1
	12	6	20.48	20.54	20.28		1
	12	13	20.20	20.39	20.24		1
	25	0	20.25	20.23	20.27		1
256QAM	1	0	18.13	18.28	18.03	0-5	3
	1	12	18.24	18.37	18.15		3
	1	24	18.21	18.24	18.02		3
	12	0	18.22	18.17	18.07		3
	12	6	18.26	18.22	18.14		3
	12	13	18.21	18.22	18.10		3
	25	0	18.12	18.13	18.09		3

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9.4.10 LTE Band 48

Table 9-59
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	21.71	21.68	21.70	21.68	0	0
	1	50	21.46	21.56	21.46	21.47		0
	1	99	21.56	**21.76**	21.67	21.51		0
	50	0	20.68	20.66	20.37	20.48	0-1	1
	50	25	20.73	**20.80**	20.66	20.59		1
	50	50	20.59	20.63	20.36	20.56		1
	100	0	20.42	20.63	20.41	20.44		1
16QAM	1	0	20.64	20.66	20.35	20.48	0-1	1
	1	50	20.74	20.62	20.59	20.58		1
	1	99	20.53	20.68	20.55	20.44		1
	50	0	19.93	19.82	19.65	19.69	0-2	2
	50	25	19.85	19.89	19.87	19.78		2
	50	50	19.85	19.81	19.81	19.77		2
	100	0	19.86	20.07	19.65	19.77		2
64QAM	1	0	19.52	19.50	19.42	19.29	0-2	2
	1	50	19.53	19.59	19.42	19.39		2
	1	99	19.44	19.69	19.21	19.37		2
	50	0	18.78	18.86	18.86	18.68	0-3	3
	50	25	18.85	18.77	18.91	18.71		3
	50	50	18.79	19.02	18.57	18.64		3
	100	0	18.71	19.05	18.61	18.74		3
256QAM	1	0	16.27	16.49	16.23	16.09	0-5	5
	1	50	16.76	16.68	16.45	16.69		5
	1	99	16.36	16.30	16.15	16.26		5
	50	0	16.75	16.91	16.64	16.72		5
	50	25	16.79	16.99	16.71	16.71		5
	50	50	16.74	17.06	16.70	16.75		5
	100	0	16.64	16.72	16.78	16.46		5

Table 9-60
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 55315 (3557.5 MHz)	Low-Mid Channel 55765 (3602.5 MHz)	Mid-High Channel 56215 (3647.5 MHz)	High Channel 56665 (3692.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	21.62	21.60	21.64	21.48	0	0
	1	36	21.71	21.56	21.55	21.46		0
	1	74	21.54	21.77	21.64	21.57		0
	36	0	20.91	20.94	20.84	20.68	0-1	1
	36	18	20.98	21.01	20.94	20.76		1
	36	37	20.88	20.98	20.83	20.72		1
	75	0	20.90	20.96	20.80	20.73		1
16QAM	1	0	20.72	20.76	20.64	20.53	0-1	1
	1	36	20.70	20.72	20.64	20.50		1
	1	74	20.84	20.72	20.65	20.50		1
	36	0	19.74	19.77	19.64	19.56	0-2	2
	36	18	19.75	19.86	19.76	19.58		2
	36	37	19.75	19.84	19.65	19.56		2
	75	0	19.65	19.78	19.65	19.53		2
64QAM	1	0	19.59	19.55	19.56	19.43	0-2	2
	1	36	19.64	19.72	19.66	19.53		2
	1	74	19.71	19.74	19.58	19.52		2
	36	0	18.78	18.74	18.61	18.57	0-3	3
	36	18	18.79	18.86	18.81	18.58		3
	36	37	18.75	18.80	18.76	18.56		3
	75	0	18.76	18.86	18.70	18.58		3
256QAM	1	0	16.43	16.66	16.47	16.46	0-5	5
	1	36	16.77	16.81	16.72	16.58		5
	1	74	16.78	16.65	16.57	16.50		5
	36	0	16.74	16.79	16.59	16.63		5
	36	18	16.85	16.90	16.79	16.63		5
	36	37	16.76	16.84	16.73	16.56		5
	75	0	16.72	16.78	16.65	16.58		5

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Table 9-61
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 55290 (3555.0 MHz)	Low-Mid Channel 55757 (3601.7 MHz)	Mid-High Channel 56223 (3648.3 MHz)	High Channel 56690 (3695.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	21.42	21.49	21.29	21.23	0	0
	1	25	21.48	21.56	21.28	21.23		0
	1	49	21.43	21.58	21.30	21.32		0
	25	0	20.51	20.66	20.52	20.45	0-1	1
	25	12	20.68	20.83	20.68	20.62		1
	25	25	20.55	20.78	20.65	20.44		1
	50	0	20.66	20.72	20.68	20.46		1
16QAM	1	0	20.52	20.88	20.54	20.37	0-1	1
	1	25	20.47	20.65	20.65	20.33		1
	1	49	20.76	20.68	20.49	20.35		1
	25	0	19.38	19.53	19.30	19.26	0-2	2
	25	12	19.57	19.73	19.47	19.38		2
	25	25	19.42	19.67	19.41	19.41		2
	50	0	19.48	19.62	19.39	19.37		2
64QAM	1	0	19.65	19.51	19.56	19.27	0-2	2
	1	25	19.60	19.57	19.57	19.23		2
	1	49	19.51	19.60	19.44	19.36		2
	25	0	18.53	18.59	18.49	18.32	0-3	3
	25	12	18.62	18.75	18.49	18.40		3
	25	25	18.57	18.71	18.44	18.34		3
	50	0	18.50	18.63	18.49	18.37		3
256QAM	1	0	16.21	16.27	16.23	16.05	0-5	5
	1	25	16.67	16.70	16.50	16.38		5
	1	49	16.40	16.53	16.32	16.20		5
	25	0	16.52	16.60	16.38	16.33		5
	25	12	16.60	16.68	16.55	16.42		5
	25	25	16.53	16.62	16.49	16.35		5
	50	0	16.55	16.68	16.51	16.33		5

Table 9-62
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 55265 (3552.5 MHz)	Low-Mid Channel 55748 (3600.8 MHz)	Mid-High Channel 56232 (3649.2 MHz)	High Channel 56715 (3697.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	21.30	21.41	21.21	21.05	0	0
	1	12	21.32	21.54	21.43	21.07		0
	1	24	21.30	21.63	21.36	21.16		0
	12	0	20.65	20.79	20.53	20.43	0-1	1
	12	6	20.74	20.85	20.67	20.48		1
	12	13	20.74	20.89	20.67	20.56		1
	25	0	20.73	20.83	20.60	20.52		1
16QAM	1	0	20.33	20.41	20.26	20.27	0-1	1
	1	12	20.56	20.63	20.36	20.38		1
	1	24	20.53	20.51	20.39	20.26		1
	12	0	19.46	19.53	19.34	19.32	0-2	2
	12	6	19.52	19.61	19.34	19.28		2
	12	13	19.61	19.61	19.48	19.30		2
	25	0	19.58	19.62	19.37	19.29		2
64QAM	1	0	19.38	19.40	19.29	19.17	0-2	2
	1	12	19.40	19.51	19.39	19.20		2
	1	24	19.48	19.61	19.32	19.27		2
	12	0	18.58	18.56	18.34	18.30	0-3	3
	12	6	18.64	18.62	18.49	18.35		3
	12	13	18.54	18.63	18.50	18.28		3
	25	0	18.67	18.65	18.52	18.39		3
256QAM	1	0	16.44	16.49	16.41	16.25	0-5	5
	1	12	16.60	16.65	16.45	16.31		5
	1	24	16.57	16.61	16.38	16.28		5
	12	0	16.45	16.62	16.42	16.28		5
	12	6	16.53	16.67	16.38	16.32		5
	12	13	16.53	16.67	16.48	16.32		5
	25	0	16.63	16.68	16.49	16.30		5

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9.4.11 LTE Band 41 Power Class 3

Table 9-63
LTE Band 41 PC3 Measured P_{max} for all DSI – 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.68	24.78	24.48	24.45	24.32	0	0
	1	50	24.73	24.81	24.77	**24.82**	24.69		0
	1	99	24.66	24.77	24.58	24.40	24.70		0
	50	0	23.90	23.85	23.84	23.92	23.75	0-1	1
	50	25	24.00	23.97	23.97	**24.02**	23.90		1
	50	50	23.96	23.92	23.96	23.89	23.93		1
	100	0	23.93	23.84	23.83	23.90	23.80		1
16QAM	1	0	23.52	23.64	23.59	23.64	23.19	0-1	1
	1	50	23.57	23.57	23.60	23.61	23.56		1
	1	99	23.53	23.54	23.58	23.53	23.39		1
	50	0	22.68	22.73	22.64	22.76	22.84	0-2	2
	50	25	22.80	22.74	22.79	22.89	22.66		2
	50	50	22.77	22.65	22.77	22.76	22.74		2
	100	0	22.72	22.64	22.73	22.74	22.61		2
64QAM	1	0	22.27	22.51	22.75	22.36	22.38	0-2	2
	1	50	22.32	22.78	22.51	22.34	22.77		2
	1	99	22.34	22.30	22.49	22.31	22.57		2
	50	0	21.78	21.85	21.61	21.72	21.59	0-3	3
	50	25	21.81	21.72	21.76	21.77	21.73		3
	50	50	21.80	21.50	21.72	21.82	21.82		3
	100	0	21.76	21.63	21.73	21.74	21.71		3
256QAM	1	0	19.42	19.62	19.46	19.64	19.35	0-5	5
	1	50	19.42	19.94	19.72	19.97	19.86		5
	1	99	19.36	19.43	19.43	19.55	19.70		5
	50	0	19.68	19.73	19.82	19.76	19.71		5
	50	25	19.87	19.95	19.93	19.80	19.59		5
	50	50	19.83	19.81	19.90	19.76	19.78		5
	100	0	19.74	19.80	19.81	19.78	19.72		5

Table 9-64
LTE Band 41 PC3 Measured P_{max} for all DSI – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.75	24.70	24.79	24.67	24.82	0	0
	1	36	24.61	24.76	24.71	24.69	24.75		0
	1	74	24.60	24.83	24.69	24.60	24.69		0
	36	0	23.70	23.63	23.65	23.76	23.57	0-1	1
	36	18	23.82	23.77	23.66	23.86	23.69		1
	36	37	23.78	23.68	23.61	23.77	23.74		1
	75	0	23.72	23.68	23.63	23.75	23.57		1
16QAM	1	0	23.60	23.69	23.59	23.60	23.68	0-1	1
	1	36	23.66	23.56	23.65	23.55	23.62		1
	1	74	23.59	23.60	23.66	23.52	23.56		1
	36	0	22.59	22.38	22.54	22.51	22.66	0-2	2
	36	18	22.68	22.53	22.55	22.66	22.54		2
	36	37	22.65	22.47	22.52	22.54	22.61		2
	75	0	22.53	22.47	22.54	22.58	22.50		2
64QAM	1	0	22.38	22.74	22.55	22.42	22.56	0-2	2
	1	36	22.40	22.54	22.53	22.57	22.45		2
	1	74	22.46	22.63	22.54	22.59	22.35		2
	36	0	21.53	21.43	21.52	21.57	21.40	0-3	3
	36	18	21.64	21.58	21.54	21.68	21.52		3
	36	37	21.61	21.48	21.53	21.59	21.55		3
	75	0	21.56	21.51	21.55	21.62	21.43		3
256QAM	1	0	19.73	19.45	19.77	19.53	19.62	0-5	5
	1	36	19.90	19.67	20.09	19.78	19.95		5
	1	74	19.85	19.77	19.90	19.47	19.88		5
	36	0	19.45	19.84	19.55	19.54	19.40		5
	36	18	19.64	19.65	19.67	19.67	19.52		5
	36	37	19.60	19.75	19.69	19.55	19.55		5
	75	0	19.54	19.67	19.54	19.61	19.42		5

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Table 9-65
LTE Band 41 PC3 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	24.88	24.77	24.77	24.70	24.65	0	0
	1	25	24.79	24.74	24.83	24.63	24.55		0
	1	49	24.77	24.64	24.80	24.76	24.67		0
	25	0	23.63	23.65	23.60	23.64	23.74	0-1	1
	25	12	23.61	23.61	23.61	23.71	23.68		1
	25	25	23.55	23.47	23.64	23.58	23.70		1
	50	0	23.70	23.51	23.63	23.60	23.70		1
16QAM	1	0	23.68	23.74	23.64	23.65	23.84	0-1	1
	1	25	23.69	23.65	23.62	23.63	23.73		1
	1	49	23.74	23.61	23.63	23.70	23.86		1
	25	0	22.60	22.58	22.61	22.62	22.56	0-2	2
	25	12	22.54	22.65	22.58	22.64	22.70		2
	25	25	22.40	22.45	22.44	22.45	22.73		2
	50	0	22.51	22.39	22.47	22.50	22.63		2
64QAM	1	0	22.41	22.50	22.43	22.50	22.71	0-2	2
	1	25	22.50	22.52	22.50	22.43	22.75		2
	1	49	22.75	22.64	22.61	22.56	22.60		2
	25	0	21.68	21.52	21.56	21.64	21.71	0-3	3
	25	12	21.57	21.41	21.63	21.52	21.74		3
	25	25	21.43	21.50	21.56	21.64	21.74		3
	50	0	21.50	21.60	21.46	21.66	21.65		3
256QAM	1	0	19.64	19.68	19.69	19.76	19.68	0-5	5
	1	25	19.79	19.96	19.70	19.68	19.80		5
	1	49	19.53	19.78	19.66	19.55	19.66		5
	25	0	19.77	19.88	19.63	19.63	19.78		5
	25	12	19.90	19.93	19.74	19.74	19.92		5
	25	25	19.81	20.05	19.76	19.63	19.90		5
	50	0	19.83	20.01	19.74	19.71	19.85		5

Table 9-66
LTE Band 41 PC3 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	24.41	24.51	24.57	24.55	24.56	0	0
	1	12	24.40	24.52	24.61	24.67	24.52		0
	1	24	24.49	24.52	24.52	24.60	24.67		0
	12	0	23.51	23.51	23.57	23.54	23.34	0-1	1
	12	6	23.55	23.50	23.56	23.59	23.39		1
	12	13	23.54	23.55	23.63	23.62	23.36		1
	25	0	23.56	23.51	23.60	23.55	23.40		1
16QAM	1	0	23.40	23.54	23.50	23.64	23.52	0-1	1
	1	12	23.47	23.51	23.56	23.52	23.33		1
	1	24	23.48	23.50	23.47	23.66	23.41		1
	12	0	22.31	22.47	22.40	22.51	22.35	0-2	2
	12	6	22.37	22.43	22.38	22.63	22.44		2
	12	13	22.33	22.41	22.36	22.66	22.31		2
	25	0	22.36	22.44	22.35	22.67	22.36		2
64QAM	1	0	22.62	22.43	22.50	22.64	22.32	0-2	2
	1	12	22.63	22.43	22.54	22.70	22.38		2
	1	24	22.65	22.42	22.53	22.64	22.37		2
	12	0	21.36	21.37	21.50	21.53	21.39	0-3	3
	12	6	21.50	21.38	21.53	21.69	21.42		3
	12	13	21.61	21.55	21.67	21.75	21.39		3
	25	0	21.31	21.37	21.61	21.60	21.35		3
256QAM	1	0	19.71	19.63	19.79	19.77	19.64	0-5	5
	1	12	19.81	19.69	19.80	19.71	19.61		5
	1	24	19.74	19.95	19.83	19.70	19.66		5
	12	0	19.17	19.55	19.77	19.76	19.71		5
	12	6	19.69	19.74	19.82	19.71	19.60		5
	12	13	19.76	19.70	19.67	19.73	19.77		5
	25	0	19.69	19.75	19.79	19.79	19.72		5

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9.4.12 LTE Band 41 Power Class 2

Table 9-67
LTE Band 41 PC2 Measured P_{max} for all DSI – 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.47	27.53	27.30	27.13	27.10	0	0
	1	50	27.47	27.57	27.65	27.56	27.38		0
	1	99	27.52	27.52	27.32	27.08	27.27		0
	50	0	26.36	26.48	26.46	26.51	26.30	0-1	1
	50	25	26.42	26.58	26.55	26.61	26.41		1
	50	50	26.46	26.51	26.55	26.47	26.44		1
	100	0	26.38	26.48	26.47	26.54	26.36		1
16QAM	1	0	26.26	26.40	26.15	26.00	26.01	0-1	1
	1	50	26.19	26.37	26.46	26.28	26.28		1
	1	99	26.31	26.37	26.13	25.92	26.09		1
	50	0	25.20	25.31	25.31	25.30	25.14	0-2	2
	50	25	25.21	25.38	25.39	25.49	25.27		2
	50	50	25.29	25.36	25.35	25.27	25.27		2
	100	0	25.26	25.30	25.32	25.37	25.18		2
64QAM	1	0	25.14	25.28	25.29	24.98	25.03	0-2	2
	1	50	25.18	25.29	24.98	25.09	25.16		2
	1	99	25.20	25.27	24.90	24.86	25.05		2
	50	0	24.22	24.32	24.12	24.22	24.17	0-3	3
	50	25	24.30	24.41	24.21	24.18	24.20		3
	50	50	24.33	24.38	24.20	24.15	24.17		3
	100	0	24.29	24.30	24.11	24.10	24.14		3
256QAM	1	0	21.82	21.96	22.06	22.16	21.87	0-5	5
	1	50	22.21	22.39	22.41	22.42	22.30		5
	1	99	21.98	21.91	22.10	21.88	22.14		5
	50	0	22.12	22.28	22.36	22.40	22.17		5
	50	25	22.34	22.47	22.40	22.52	22.29		5
	50	50	22.30	22.32	22.43	22.33	22.33		5
	100	0	22.20	22.29	22.27	22.39	22.17		5

Table 9-68
LTE Band 41 PC2 Measured P_{max} for all DSI – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.37	27.08	27.26	27.24	27.10	0	0
	1	36	27.44	27.35	27.25	27.40	27.17		0
	1	74	27.40	27.06	27.24	27.08	27.09		0
	36	0	26.40	26.35	26.26	26.49	26.21	0-1	1
	36	18	26.49	26.49	26.24	26.66	26.19		1
	36	37	26.47	26.40	26.30	26.53	26.22		1
	75	0	26.44	26.38	26.50	26.51	26.16		1
16QAM	1	0	26.47	26.18	26.52	26.58	26.19	0-1	1
	1	36	26.54	26.42	26.30	26.34	26.39		1
	1	74	26.48	26.14	26.25	26.45	26.30		1
	36	0	25.29	25.14	25.28	25.29	25.20	0-2	2
	36	18	25.39	25.28	25.29	25.38	25.23		2
	36	37	25.37	25.23	25.25	25.29	25.23		2
	75	0	25.23	25.20	25.34	25.34	25.06		2
64QAM	1	0	25.58	25.47	25.36	25.47	25.57	0-2	2
	1	36	25.59	25.57	25.30	25.46	25.28		2
	1	74	25.63	25.48	25.32	25.64	25.18		2
	36	0	24.25	24.15	24.37	24.21	24.57	0-3	3
	36	18	24.38	24.28	24.25	24.36	24.70		3
	36	37	24.31	24.19	24.28	24.26	24.63		3
	75	0	24.27	24.21	24.24	24.34	24.64		3
256QAM	1	0	22.40	22.18	21.96	22.40	22.53	0-5	5
	1	36	22.41	22.48	22.07	22.49	22.66		5
	1	74	22.35	22.22	21.91	22.39	22.48		5
	36	0	22.15	22.13	22.22	22.25	22.09		5
	36	18	22.14	22.32	22.37	22.43	22.23		5
	36	37	22.31	22.22	22.38	22.30	22.27		5
	75	0	22.23	22.28	22.25	22.33	22.13		5

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09/11/2019

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Table 9-69
LTE Band 41 PC2 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	27.37	27.18	27.26	27.24	27.21	0	0
	1	25	27.44	27.35	27.25	27.40	27.17		0
	1	49	27.40	27.06	27.24	27.25	27.19		0
	25	0	26.40	26.35	26.26	26.49	26.21	0-1	1
	25	12	26.49	26.49	26.24	26.66	26.19		1
	25	25	26.47	26.40	26.30	26.53	26.22		1
	50	0	26.44	26.38	26.50	26.51	26.16		1
16QAM	1	0	26.47	26.28	26.52	26.58	26.19	0-1	1
	1	25	26.54	26.42	26.30	26.36	26.39		1
	1	49	26.48	26.30	26.25	26.45	26.30		1
	25	0	25.29	25.29	25.28	25.29	25.20	0-2	2
	25	12	25.39	25.28	25.29	25.38	25.23		2
	25	25	25.37	25.30	25.25	25.29	25.23		2
	50	0	25.23	25.20	25.34	25.34	25.06		2
64QAM	1	0	25.41	25.47	25.36	25.27	25.57	0-2	2
	1	25	25.53	25.45	25.30	25.48	25.28		2
	1	49	25.59	25.48	25.32	25.49	25.18		2
	25	0	24.25	24.15	24.37	24.21	24.67	0-3	3
	25	12	24.38	24.28	24.25	24.36	24.60		3
	25	25	24.31	24.19	24.28	24.26	24.37		3
	50	0	24.27	24.21	24.24	24.34	24.49		3
256QAM	1	0	22.68	22.18	22.47	22.53	22.37	0-5	5
	1	25	22.49	22.48	22.39	22.28	22.44		5
	1	49	22.38	22.22	22.31	22.39	22.40		5
	25	0	22.15	22.13	22.22	22.25	22.09		5
	25	12	22.37	22.32	22.37	22.43	22.23		5
	25	25	22.31	22.31	22.38	22.30	22.27		5
	50	0	22.23	22.36	22.25	22.33	22.32		5

Table 9-70
LTE Band 41 PC2 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	27.33	27.09	27.15	26.97	27.10	0	0
	1	12	27.28	27.08	27.28	27.16	27.07		0
	1	24	27.18	27.25	27.33	27.26	27.13		0
	12	0	26.21	26.18	26.22	26.25	26.12	0-1	1
	12	6	26.33	26.34	26.39	26.44	26.21		1
	12	13	26.28	26.22	26.25	26.31	26.15		1
	25	0	26.24	26.22	26.27	26.36	26.11		1
16QAM	1	0	26.50	26.12	26.24	26.28	26.61	0-1	1
	1	12	26.41	26.23	26.12	26.51	26.51		1
	1	24	26.27	26.14	26.33	26.29	26.63		1
	12	0	25.20	24.93	25.19	25.13	25.20	0-2	2
	12	6	25.22	25.05	25.25	25.17	25.17		2
	12	13	25.16	24.94	25.10	25.09	25.15		2
	25	0	25.11	25.07	25.39	25.13	25.12		2
64QAM	1	0	25.35	25.37	25.23	25.42	25.08	0-2	2
	1	12	25.39	25.61	25.17	25.31	25.31		2
	1	24	25.43	25.43	25.19	25.49	25.10		2
	12	0	24.13	24.00	24.37	24.14	24.23	0-3	3
	12	6	24.19	24.13	24.26	24.17	24.36		3
	12	13	24.22	24.05	24.35	24.29	24.27		3
	25	0	24.05	24.02	24.36	24.20	24.33		3
256QAM	1	0	22.05	22.00	22.16	22.22	22.09	0-5	5
	1	12	22.38	22.26	22.46	22.50	22.33		5
	1	24	22.14	22.07	22.21	22.23	22.07		5
	12	0	21.97	21.99	21.98	21.96	22.12		5
	12	6	22.09	22.15	22.12	22.16	21.97		5
	12	13	22.00	22.01	22.07	22.04	21.96		5
	25	0	22.02	22.08	22.00	22.14	21.99		5

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9.4.13 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-71
LTE B41 PC3 Uplink Carrier Aggregation Measured P_{max} for all DSI

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/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_41C	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	25.20	24.45

Table 9-72
LTE B41 PC2 Uplink Carrier Aggregation Measured P_{max} for all DSI

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/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_41C	LTE B41 PC2	20	41055	2636.5	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	QPSK	1	99	27.70	27.13

Notes:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of two 20 MHz component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

Figure 9-4
Power Measurement Setup

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9.5 NR Conducted Powers

9.5.1 NR Band n71

Table 9-73
NR Band n71 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n71 20 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	24.86	0	0
	1	53	24.80		0
	1	104	24.93		0
	50	0	24.95	0-0.5	0
	50	28	24.91	0	0
	50	56	24.88	0-0.5	0
	100	0	24.89		0
DFT-s-OFDM QPSK	1	1	24.83	0	0
	1	53	24.57		0
	1	104	**24.87**		0
	50	0	25.19	0-1	0
	50	28	**25.23**	0	0
	50	56	25.22	0-1	0
	100	0	24.74		0
DFT-s-OFDM 16QAM	1	1	24.24	0-1	0
CP-OFDM QPSK	1	1	23.90	0-1.5	0

Note: NR Band n71 at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-74
NR Band n71 Measured P_{max} for all DSI - 15 MHz Bandwidth

NR Band n71 15 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	25.33	0	0
	1	40	24.64		0
	1	77	24.61		0
	36	0	24.57	0-0.5	0
	36	22	25.23	0	0
	36	43	25.11	0-0.5	0
	75	0	25.24		0
DFT-s-OFDM QPSK	1	1	24.98	0	0
	1	40	24.66		0
	1	77	24.84		0
	36	0	24.90	0-1	0
	36	22	24.86	0	0
	36	43	24.84	0-1	0
	75	0	24.53		0
DFT-s-OFDM 16QAM	1	1	24.56	0-1	0
CP-OFDM QPSK	1	1	24.07	0-1.5	0

Note: NR Band n71 at 15 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-75
NR Band n71 Measured P_{max} for all DSI - 10 MHz Bandwidth

NR Band n71 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133600 (668 MHz)	136100 (680.5 MHz)	138600 (693 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	25.21	24.94	25.04	0	0
	1	26	25.08	24.73	25.10		0
	1	50	25.20	24.46	24.56		0
	25	0	24.88	25.18	25.02	0-0.5	0
	25	14	25.09	25.34	24.87	0	0
	25	27	25.09	25.21	25.09	0-0.5	0
	50	0	25.17	25.34	24.69		0
DFT-s-OFDM QPSK	1	1	24.80	24.84	24.74	0	0
	1	26	24.63	24.80	24.63		0
	1	50	24.73	24.85	23.71		0
	25	0	24.78	24.84	24.79	0-1	0
	25	14	24.70	24.73	24.70	0	0
	25	27	24.54	24.70	24.60	0-1	0
	50	0	24.67	24.84	24.51		0
DFT-s-OFDM 16QAM	1	1	24.65	24.55	24.62	0-1	0
CP-OFDM QPSK	1	1	24.01	23.91	23.88	0-1.5	0

Table 9-76
NR Band n71 Measured P_{max} for all DSI - 5 MHz Bandwidth

NR Band n71 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133100 (665.5 MHz)	136100 (680.5 MHz)	139100 (695.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	25.13	25.13	24.94	0	0
	1	13	25.11	25.06	24.84		0
	1	23	25.07	25.12	24.79		0
	12	0	24.34	25.08	24.84	0-0.5	0
	12	7	25.07	25.03	25.13	0	0
	12	13	25.11	25.01	24.57	0-0.5	0
	25	0	24.89	25.17	24.92		0
DFT-s-OFDM QPSK	1	1	25.01	25.02	24.91	0	0
	1	13	24.91	24.70	24.74		0
	1	23	24.63	24.52	24.55		0
	12	0	24.60	24.82	24.73	0-1	0
	12	7	24.70	24.81	24.79	0	0
	12	13	24.77	24.72	24.22	0-1	0
	25	0	24.56	24.79	24.42		0
DFT-s-OFDM 16QAM	1	1	24.25	24.56	24.48	0-1	0
CP-OFDM QPSK	1	1	23.81	24.03	24.07	0-1.5	0

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9.5.2 NR Band n66 (AWS)

Table 9-77
NR Band n66 (AWS) Measured P_{limit} for all DSI - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	21.61	21.80	21.62	0	0
	1	53	21.70	21.66	21.47		0
	1	104	21.77	21.74	21.68		0
	50	0	21.68	21.77	21.58	0-0.5	0
	50	28	21.66	21.69	21.53	0	0
	50	56	21.71	21.74	21.59	0-0.5	0
	100	0	21.71	21.70	21.52		0
DFT-s-OFDM QPSK	1	1	**21.83**	21.53	21.50	0	0
	1	53	21.62	21.60	21.51		0
	1	104	21.78	21.64	21.78		0
	50	0	21.59	21.60	21.41	0-1	0
	50	28	21.55	21.59	21.44	0	0
	50	56	**21.61**	21.60	21.44	0-1	0
	100	0	21.59	21.63	21.45		0
DFT-s-OFDM 16QAM	1	1	21.69	21.75	21.35	0-1	0
DFT-s-OFDM 64QAM	1	1	21.40	21.45	21.32	0-2.5	0
DFT-s-OFDM 256QAM	1	1	21.24	21.12	21.40	0-4.5	0
CP-OFDM QPSK	1	1	21.21	21.08	21.20	0-1.5	0
CP-OFDM 16QAM	1	1	21.83	21.65	21.63	0-2	0
CP-OFDM 64QAM	1	1	21.60	21.54	21.42	0-3.5	0
CP-OFDM 256QAM	1	1	20.56	20.52	20.49	0-6.5	0.5

Table 9-78
NR Band n66 (AWS) Measured P_{limit} for all DSI - 15 MHz Bandwidth

NR Band n66 15 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	343500 (1717.5 MHz)	349000 (1745 MHz)	354500 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	21.39	21.28	21.25	0	0
	1	40	21.36	21.23	21.21		0
	1	77	21.44	21.34	21.31		0
	36	0	21.41	21.30	21.20	0-0.5	0
	36	22	21.35	21.24	21.21	0	0
	36	43	21.36	21.27	21.27	0-0.5	0
	75	0	21.35	21.30	21.26		0
DFT-s-OFDM QPSK	1	1	21.36	21.24	21.18	0	0
	1	40	21.29	21.17	21.15		0
	1	77	21.38	21.27	21.34		0
	36	0	21.25	21.14	21.11	0-1	0
	36	22	21.24	21.11	21.08	0	0
	36	43	21.27	21.18	21.19	0-1	0
	75	0	21.22	21.16	21.11		0
DFT-s-OFDM 16QAM	1	1	21.19	21.12	21.07	0-1	0
DFT-s-OFDM 64QAM	1	1	21.44	21.31	21.25	0-2.5	0
DFT-s-OFDM 256QAM	1	1	21.17	20.99	20.93	0-4.5	0
CP-OFDM QPSK	1	1	21.55	21.37	21.30	0-1.5	0
CP-OFDM 16QAM	1	1	21.66	21.49	21.42	0-2	0
CP-OFDM 64QAM	1	1	21.22	21.09	21.04	0-3.5	0
CP-OFDM 256QAM	1	1	20.69	20.55	20.48	0-6.5	0.5

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Table 9-79
NR Band n66 (AWS) Measured P_{limit} for all DSI - 10 MHz Bandwidth

NR Band n66 10 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	343000 (1715 MHz)	349000 (1745 MHz)	355000 (1775 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	21.81	21.75	21.66	0	0
	1	26	21.86	21.74	21.72		0
	1	50	21.88	21.77	21.79		0
	25	0	21.86	21.76	21.68	0-0.5	0
	25	14	21.85	21.74	21.70	0	0
	25	27	21.85	21.75	21.76	0-0.5	0
	50	0	21.84	21.73	21.67		0
DFT-s-OFDM QPSK	1	1	21.75	21.83	21.51	0	0
	1	26	21.68	21.82	21.59		0
	1	50	21.75	21.83	21.60		0
	25	0	21.85	21.67	21.74	0-1	0
	25	14	21.84	21.70	21.70	0	0
	25	27	21.85	21.74	21.70	0-1	0
	50	0	21.86	21.72	21.71		0
DFT-s-OFDM 16QAM	1	1	21.73	21.73	21.54	0-1	0
DFT-s-OFDM 64QAM	1	1	21.85	21.79	21.70	0-2.5	0
DFT-s-OFDM 256QAM	1	1	21.86	21.60	21.69	0-4.5	0
CP-OFDM QPSK	1	1	21.78	21.97	21.56	0-1.5	0
CP-OFDM 16QAM	1	1	21.80	21.89	21.64	0-2	0
CP-OFDM 64QAM	1	1	22.00	21.87	21.91	0-3.5	0
CP-OFDM 256QAM	1	1	21.18	21.50	21.43	0-6.5	0.5

Table 9-80
NR Band n66 (AWS) Measured P_{limit} for all DSI - 5 MHz Bandwidth

NR Band n66 5 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	342500 (1712.5 MHz)	349000 (1745 MHz)	355500 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	21.95	21.80	21.80	0	0
	1	13	21.94	21.78	21.74		0
	1	23	21.92	21.76	21.77		0
	12	0	21.91	21.73	21.71	0-0.5	0
	12	7	21.94	21.74	21.76	0	0
	12	13	21.94	21.78	21.75	0-0.5	0
	25	0	21.87	21.79	21.74		0
DFT-s-OFDM QPSK	1	1	21.76	21.68	21.55	0	0
	1	13	21.79	21.62	21.56		0
	1	23	21.74	21.72	21.59		0
	12	0	21.95	21.73	21.75	0-1	0
	12	7	21.90	21.62	21.77	0	0
	12	13	21.90	21.72	21.77	0-1	0
	25	0	21.84	21.75	21.72		0
DFT-s-OFDM 16QAM	1	1	21.71	21.67	21.60	0-1	0
DFT-s-OFDM 64QAM	1	1	21.93	21.83	21.74	0-2.5	0
DFT-s-OFDM 256QAM	1	1	21.51	21.76	21.66	0-4.5	0
CP-OFDM QPSK	1	1	21.78	21.70	21.62	0-1.5	0
CP-OFDM 16QAM	1	1	21.82	21.71	21.64	0-2	0
CP-OFDM 64QAM	1	1	21.92	21.98	21.88	0-3.5	0
CP-OFDM 256QAM	1	1	20.57	20.98	21.26	0-6.5	0.5

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9.5.3 NR Band n25 (PCS)

Table 9-81
NR Band n25 (PCS) Measured P_{limit} for all DSI - 20 MHz Bandwidth

NR Band n25 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376500 (1882.5 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.04	23.22	23.12	0	0
	1	53	22.91	23.16	23.11		0
	1	104	22.93	23.03	22.99		0
	50	0	22.92	22.58	23.12	0-0.5	0
	50	28	22.96	23.01	23.14	0	0
	50	56	22.96	22.51	23.14	0-0.5	0
	100	0	22.93	22.46	23.12		0
DFT-s-OFDM QPSK	1	1	22.91	23.06	23.08	0	0
	1	53	22.98	23.07	**23.10**		0
	1	104	22.89	23.02	22.94		0
	50	0	22.90	23.08	**23.13**	0-1	0
	50	28	22.85	23.00	22.95	0	0
	50	56	22.89	23.05	23.08	0-1	0
	100	0	23.02	23.09	23.09		0
DFT-s-OFDM 16QAM	1	1	22.94	23.31	23.26	0-1	0
DFT-s-OFDM 64QAM	1	1	23.19	23.20	23.11	0-2.5	0
DFT-s-OFDM 256QAM	1	1	22.45	22.57	22.51	0-4.5	0.5
CP-OFDM QPSK	1	1	22.52	22.49	22.75	0-1.5	0
CP-OFDM 16QAM	1	1	23.31	23.32	23.26	0-2	0
CP-OFDM 64QAM	1	1	23.26	23.40	23.40	0-3.5	0
CP-OFDM 256QAM	1	1	20.63	20.79	20.89	0-6.5	2

Table 9-82
NR Band n25 (PCS) Measured P_{limit} for all DSI - 15 MHz Bandwidth

NR Band n25 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376500 (1882.5 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.04	23.20	23.34	0	0
	1	40	23.10	23.30	23.31		0
	1	77	23.02	23.27	23.38		0
	36	0	23.03	23.28	23.22	0-0.5	0
	36	22	23.10	23.31	23.18	0	0
	36	43	23.02	23.21	23.10	0-0.5	0
	75	0	23.06	23.29	23.22		0
DFT-s-OFDM QPSK	1	1	23.15	23.37	23.32	0	0
	1	40	23.18	23.28	23.36		0
	1	77	23.27	23.39	23.37		0
	36	0	23.14	23.29	23.36	0-1	0
	36	22	23.12	23.36	23.31	0	0
	36	43	23.14	23.33	23.22	0-1	0
	75	0	23.15	23.39	23.33		0
DFT-s-OFDM 16QAM	1	1	22.97	23.15	22.91	0-1	0
DFT-s-OFDM 64QAM	1	1	22.62	22.75	22.84	0-2.5	0
DFT-s-OFDM 256QAM	1	1	22.36	22.31	22.22	0-4.5	0.5
CP-OFDM QPSK	1	1	22.81	23.00	22.71	0-1.5	0
CP-OFDM 16QAM	1	1	23.10	23.33	23.05	0-2	0
CP-OFDM 64QAM	1	1	22.87	22.86	22.68	0-3.5	0
CP-OFDM 256QAM	1	1	21.10	21.30	21.05	0-6.5	2

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Table 9-83
NR Band n25 (PCS) Measured P_{limit} for all DSI - 10 MHz Bandwidth

NR Band n25 10 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376500 (1882.5 MHz)	382000 (1910 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.08	23.01	23.10	0	0
	1	26	22.99	23.11	23.10		0
	1	50	23.16	23.15	23.13		0
	25	0	22.92	23.02	23.02	0-0.5	0
	25	14	22.86	23.04	23.02	0	0
	25	27	22.94	23.06	23.12	0-0.5	0
	50	0	23.03	23.12	23.04		0
DFT-s-OFDM QPSK	1	1	23.15	23.14	23.15	0	0
	1	26	23.19	23.18	23.11		0
	1	50	23.14	23.17	23.09		0
	25	0	22.78	22.91	22.94	0-1	0
	25	14	22.91	23.03	23.02	0	0
	25	27	22.88	22.94	22.99	0-1	0
	50	0	22.86	22.98	22.96		0
DFT-s-OFDM 16QAM	1	1	22.73	23.13	23.15	0-1	0
DFT-s-OFDM 64QAM	1	1	22.97	23.21	23.07	0-2.5	0
DFT-s-OFDM 256QAM	1	1	22.32	22.45	22.73	0-4.5	0.5
CP-OFDM QPSK	1	1	22.62	22.67	22.54	0-1.5	0
CP-OFDM 16QAM	1	1	22.45	22.95	22.94	0-2	0
CP-OFDM 64QAM	1	1	22.48	22.65	22.58	0-3.5	0
CP-OFDM 256QAM	1	1	20.21	20.55	20.48	0-6.5	2

Table 9-84
NR Band n25 (PCS) Measured P_{limit} for all DSI - 5 MHz Bandwidth

NR Band n25 5 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376500 (1882.5 MHz)	382500 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	22.72	23.00	22.83	0	0
	1	13	22.81	23.02	23.01		0
	1	23	22.71	23.05	22.96		0
	12	0	22.80	22.98	22.84	0-0.5	0
	12	7	22.86	22.97	22.90	0	0
	12	13	22.80	23.08	23.00	0-0.5	0
	25	0	22.80	23.00	22.90		0
DFT-s-OFDM QPSK	1	1	22.66	23.22	22.85	0	0
	1	13	22.82	23.23	22.89		0
	1	23	22.77	23.12	22.85		0
	12	0	22.84	23.11	23.01	0-1	0
	12	7	22.72	22.98	22.81	0	0
	12	13	22.85	23.11	23.07	0-1	0
	25	0	22.86	23.13	22.90		0
DFT-s-OFDM 16QAM	1	1	22.41	22.72	23.00	0-1	0
DFT-s-OFDM 64QAM	1	1	22.72	22.23	22.77	0-2.5	0
DFT-s-OFDM 256QAM	1	1	21.95	22.29	21.82	0-4.5	0.5
CP-OFDM QPSK	1	1	22.43	22.56	22.35	0-1.5	0
CP-OFDM 16QAM	1	1	21.86	22.41	22.25	0-2	0
CP-OFDM 64QAM	1	1	22.02	22.23	22.07	0-3.5	0
CP-OFDM 256QAM	1	1	20.85	21.03	21.00	0-6.5	2

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9.5.4 NR Band n41 Power Class 2

Table 9-85
NR Band n41 PC2 Measured P_{max} for all DSI - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
			Channel		
Modulation	RB Size	RB Offset	518598 (2592.99 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
DFT-s-OFDM π/2 BPSK	1	1	26.98	0	0
	1	137	26.07		0
	1	271	26.96		0
	135	0	26.03	0-0.5	0
	135	69	26.03	0	0
	135	138	26.12	0-0.5	0
	270	0	26.09		0
DFT-s-OFDM QPSK	1	1	**26.37**	0	0
	1	137	26.21		0
	1	271	26.32		0
	135	0	**26.10**	0-1	0
	135	69	26.01	0	0
	135	138	26.07	0-1	0
	270	0	26.06		0
DFT-s-OFDM 16QAM	1	1	25.73	0-1	1
CP-OFDM QPSK	1	1	25.89	0-1.5	1

Note: NR Band n41 at 100 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-86
NR Band n41 PC2 Measured P_{max} for all DSI - 90 MHz Bandwidth

NR Band n41 90 MHz Bandwidth						
			Channel			
Modulation	RB Size	RB Offset	508200 (2541 MHz)	528996 (2644.98 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]			
DFT-s-OFDM π/2 BPSK	1	1	26.44	25.97	0	0
	1	123	26.40	26.10		0
	1	243	26.27	26.45		0
	120	0	26.02	26.12	0-0.5	0
	120	63	26.03	26.02	0	0
	120	125	26.30	26.27	0-0.5	0
	243	0	26.09	26.12		0
DFT-s-OFDM QPSK	1	1	26.53	26.42	0	0
	1	123	26.28	26.70		0
	1	243	25.97	26.61		0
	120	0	25.96	26.04	0-1	0
	120	63	26.21	26.11	0	0
	120	125	26.10	26.33	0-1	0
	243	0	26.15	26.07		0
DFT-s-OFDM 16QAM	1	1	25.75	24.70	0-1	1
CP-OFDM QPSK	1	1	25.41	24.94	0-1.5	1

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Table 9-87
NR Band n41 PC2 Measured P_{max} for all DSI - 80 MHz Bandwidth

NR Band n41 80 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	507204 (2536.02 MHz)	529998 (2649.99 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM π/2 BPSK	1	1	26.22	26.30	0	0
	1	109	26.09	26.55		0
	1	215	25.73	25.75		0
	108	0	26.30	25.97	0-0.5	0
	108	55	26.16	26.13	0	0
	108	109	26.21	26.30	0-0.5	0
	216	0	26.14	26.12		0
DFT-s-OFDM QPSK	1	1	26.33	25.94	0	0
	1	109	26.51	26.12		0
	1	215	25.75	26.20		0
	108	0	26.25	25.92	0-1	0
	108	55	26.34	26.37	0	0
	108	109	26.15	26.11	0-1	0
	216	0	26.15	26.38		0
DFT-s-OFDM 16QAM	1	1	24.82	24.85	0-1	1
CP-OFDM QPSK	1	1	25.66	25.52	0-1.5	1

Table 9-88
NR Band n41 PC2 Measured P_{max} for all DSI - 60 MHz Bandwidth

NR Band n41 60 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	505200 (2526 MHz)	518598 (2592.99 MHz)	531996 (2659.98 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	26.57	26.02	26.31	0	0
	1	81	25.83	25.83	25.95		0
	1	160	26.29	26.38	26.31		0
	81	0	25.76	25.86	25.98	0-0.5	0
	81	41	25.84	25.79	25.70	0	0
	81	81	25.76	26.02	26.13	0-0.5	0
	162	0	25.78	25.74	25.80		0
DFT-s-OFDM QPSK	1	1	26.01	26.12	26.12	0	0
	1	81	25.86	26.23	26.21		0
	1	160	26.25	26.86	26.69		0
	81	0	25.82	25.81	25.90	0-1	0
	81	41	26.28	25.86	25.96	0	0
	81	81	25.93	25.93	25.80	0-1	0
	162	0	25.80	25.81	25.93		0
DFT-s-OFDM 16QAM	1	1	25.14	25.59	25.34	0-1	1
CP-OFDM QPSK	1	1	25.72	25.68	25.78	0-1.5	1

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Table 9-89
NR Band n41 PC2 Measured P_{max} for all DSI - 50 MHz Bandwidth

NR Band n41 50 MHz Bandwidth							
			Channel				
Modulation	RB Size	RB Offset	504204 (2521.02 MHz)	518598 (2592.99 MHz)	532998 (2664.99 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	26.16	26.05	26.18	0	0
	1	67	25.96	26.28	26.07		0
	1	131	26.01	25.82	26.36		0
	64	0	26.03	25.88	26.13	0-0.5	0
	64	35	25.96	25.75	26.17	0	0
	64	69	25.93	26.17	26.22	0-0.5	0
	128	0	25.99	25.88	26.15		0
DFT-s-OFDM QPSK	1	1	26.42	26.68	26.13	0	0
	1	67	26.15	26.54	26.32		0
	1	131	26.12	26.42	26.36		0
	64	0	26.02	25.95	26.12	0-1	0
	64	35	25.98	25.73	26.12	0	0
	64	69	25.94	25.92	26.19	0-1	0
	128	0	25.95	25.91	26.10		0
DFT-s-OFDM 16QAM	1	1	25.02	25.47	25.12	0-1	1
CP-OFDM QPSK	1	1	25.34	25.64	25.24	0-1.5	1

Table 9-90
NR Band n41 PC2 Measured P_{max} for all DSI - 40 MHz Bandwidth

NR Band n41 40 MHz Bandwidth								
			Channel					
Modulation	RB Size	RB Offset	503202 (2516.01 MHz)	513468 (2567.34 MHz)	523734 (2618.67 MHz)	534000 (2670 MHz)	MPR Allowed per 3GPP [dB]	MPR Allowed per 3GPP [dB]
			Conducted Power [dBm]					
DFT-s-OFDM π/2 BPSK	1	1	26.15	26.17	26.34	26.36	0	0
	1	53	25.97	25.94	26.03	26.17		0
	1	104	25.99	26.02	26.18	26.30		0
	50	0	26.14	26.10	26.09	26.26	0-0.5	0
	50	28	26.07	26.02	26.15	26.34	0	0
	50	56	26.07	25.95	26.15	26.24	0-0.5	0
	100	0	26.10	26.01	26.14	26.32		0
DFT-s-OFDM QPSK	1	1	26.33	26.26	26.23	26.43	0	0
	1	53	26.11	25.94	26.13	26.22		0
	1	104	26.13	25.96	26.22	25.94		0
	50	0	26.15	25.94	26.09	26.21	0-1	0
	50	28	26.10	25.91	26.12	26.22	0	0
	50	56	26.12	25.92	26.12	26.21	0-1	0
	100	0	26.16	25.99	26.14	26.24		0
DFT-s-OFDM 16QAM	1	1	25.12	25.28	25.29	25.32	0-1	1
CP-OFDM QPSK	1	1	26.18	26.01	25.74	25.78	0-1.5	1

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Table 9-91
NR Band n41 PC2 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n41 20 MHz Bandwidth									
			Channel					MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	501204 (2506.02 MHz)	509898 (2549.49 MHz)	518598 (2592.99 MHz)	527298 (2636.49 MHz)	535998 (2679.99 MHz)		
			Conducted Power [dBm]						
DFT-s-OFDM π/2 BPSK	1	1	26.29	26.19	26.07	26.41	26.41	0	0
	1	26	26.22	25.92	25.93	26.20	26.21		0
	1	49	26.11	25.96	25.93	26.26	26.28		0
	25	0	26.28	26.10	26.04	26.33	26.34	0-0.5	0
	25	13	26.25	26.05	26.04	26.26	26.32	0	0
	25	26	26.29	26.08	26.01	26.23	26.27	0-0.5	0
	50	0	26.23	26.05	26.02	26.21	26.34		0
DFT-s-OFDM QPSK	1	1	26.25	26.17	26.19	26.30	26.53	0	0
	1	26	26.25	26.02	26.09	26.19	26.20		0
	1	49	26.30	26.07	26.08	26.29	26.11		0
	25	0	26.21	26.07	26.05	26.25	26.31	0-1	0
	25	13	26.22	26.03	25.99	26.24	26.24	0	0
	25	26	26.16	25.97	26.01	26.16	26.01	0-1	0
	50	0	26.22	26.05	26.01	26.19	26.26		0
DFT-s-OFDM 16QAM	1	1	25.31	25.42	25.03	25.47	25.44	0-1	1
CP-OFDM QPSK	1	1	25.22	25.13	25.04	25.27	25.44	0-1.5	1

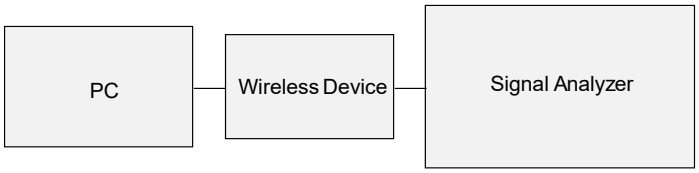

Figure 9-5
Power Measurement Setup

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9.6 WLAN Conducted Powers

Table 9-92
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	19.92	17.36	16.15	16.17	14.49
2422	3	N/A	19.01	17.66	17.67	15.83
2437	6	19.93	18.86	17.57	17.58	15.71
2452	9	N/A	18.96	17.63	17.61	15.79
2462	11	**19.97**	16.93	15.82	15.83	13.95

Table 9-93
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	**20.12**	17.42	16.16	16.16	14.68
2422	3	N/A	19.02	17.74	17.76	15.84
2437	6	20.05	19.02	17.77	17.81	15.93
2452	9	N/A	19.28	17.92	17.95	15.97
2457	10	N/A	17.20	16.05	16.03	14.37
2462	11	19.98	16.89	15.62	15.67	13.95

Table 9-94
2.4 GHz WLAN Maximum Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	16.15	16.16	19.17
2422	3	17.66	17.74	20.71
2437	6	17.57	17.77	20.68
2452	9	**17.63**	**17.92**	**20.79**
2462	11	15.82	15.62	18.73

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Table 9-95
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	15.23	14.81	14.78	14.69	14.18
2437	6	**15.39**	14.92	14.91	14.90	14.82
2462	11	15.26	14.88	14.83	14.86	13.90

Table 9-96
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	15.45	14.76	14.77	14.80	14.12
2437	6	**15.49**	14.99	15.04	15.01	14.69
2462	11	15.32	14.89	14.87	14.98	13.78

Table 9-97
2.4 GHz WLAN Reduced Average RF Power during conditions with MIMO head SAR and Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	14.78	14.77	17.79
2437	6	**14.91**	**15.04**	**17.99**
2462	11	14.83	14.87	17.86

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Table 9-98
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	16.28	16.44	16.48	14.25
5200	40	**17.46**	17.62	17.67	14.27
5220	44	16.55	16.79	16.77	14.27
5240	48	16.53	16.75	16.75	14.24
5260	52	16.52	16.71	16.73	14.21
5280	56	**17.26**	17.54	17.54	14.21
5300	60	16.47	16.67	16.69	14.34
5320	64	16.34	16.53	16.53	14.29
5500	100	**16.48**	16.74	16.77	14.37
5600	120	16.37	16.65	16.68	14.31
5620	124	16.42	16.67	16.71	14.41
5720	144	16.37	16.67	16.55	14.21
5745	149	16.26	16.45	16.51	14.12
5785	157	**17.36**	17.60	17.63	14.49
5825	165	17.32	17.57	17.62	14.55

Table 9-99
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	16.65	16.84	16.81	14.32
5200	40	**17.54**	17.68	17.78	14.56
5220	44	16.58	16.73	16.72	14.49
5240	48	16.47	16.58	16.59	14.39
5260	52	16.42	16.52	16.55	14.38
5280	56	**17.16**	17.43	17.44	14.18
5300	60	16.23	16.27	16.37	14.21
5320	64	16.23	16.38	16.37	14.20
5500	100	16.44	16.70	16.63	14.32
5600	120	**16.89**	16.77	16.75	14.80
5620	124	16.62	16.84	16.84	14.49
5720	144	16.41	16.63	16.57	14.25
5745	149	16.49	16.65	16.63	14.34
5785	157	17.26	17.49	17.54	14.32
5825	165	**17.41**	17.65	17.67	14.51

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Table 9-100
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	16.44	16.84	19.65
5200	40	**17.62**	**17.68**	**20.66**
5220	44	16.79	16.73	19.77
5240	48	16.75	16.58	19.68
5260	52	16.71	16.52	19.63
5280	56	**17.54**	**17.43**	**20.50**
5300	60	16.67	16.27	19.48
5320	64	16.53	16.38	19.47
5500	100	16.74	16.70	19.73
5600	120	16.65	16.77	19.72
5620	124	**16.67**	**16.84**	**19.77**
5720	144	16.67	16.63	19.66
5745	149	16.45	16.65	19.56
5785	157	17.60	17.49	20.56
5825	165	**17.57**	**17.65**	**20.62**

Table 9-101
5 GHz WLAN Reduced Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

5GHz (40MHz) 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
5190	38	10.52	11.02
5230	46	**14.98**	**14.67**
5270	54	**14.99**	**14.67**
5310	62	10.71	11.05
5510	102	10.63	10.53
5550	110	14.80	14.72
5590	118	14.99	14.61
5630	126	**14.98**	**14.89**
5710	142	14.81	14.99
5755	151	14.83	14.51
5795	159	**14.99**	**14.72**

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

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

The bolded data rate and channel above were tested for SAR.

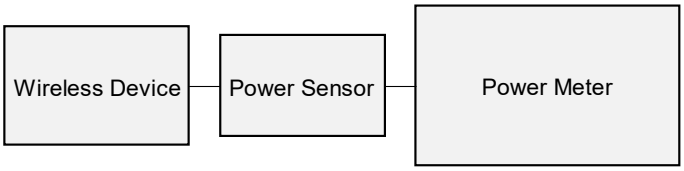

Figure 9-6
Power Measurement Setup

9.7 Bluetooth Conducted Powers

Table 9-102
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	12.28	16.890
2441	1.0	39	**12.49**	17.750
2480	1.0	78	11.98	15.772
2402	2.0	0	11.69	14.767
2441	2.0	39	11.72	14.871
2480	2.0	78	11.11	12.916
2402	3.0	0	11.55	14.289
2441	3.0	39	11.78	15.066
2480	3.0	78	11.24	13.305

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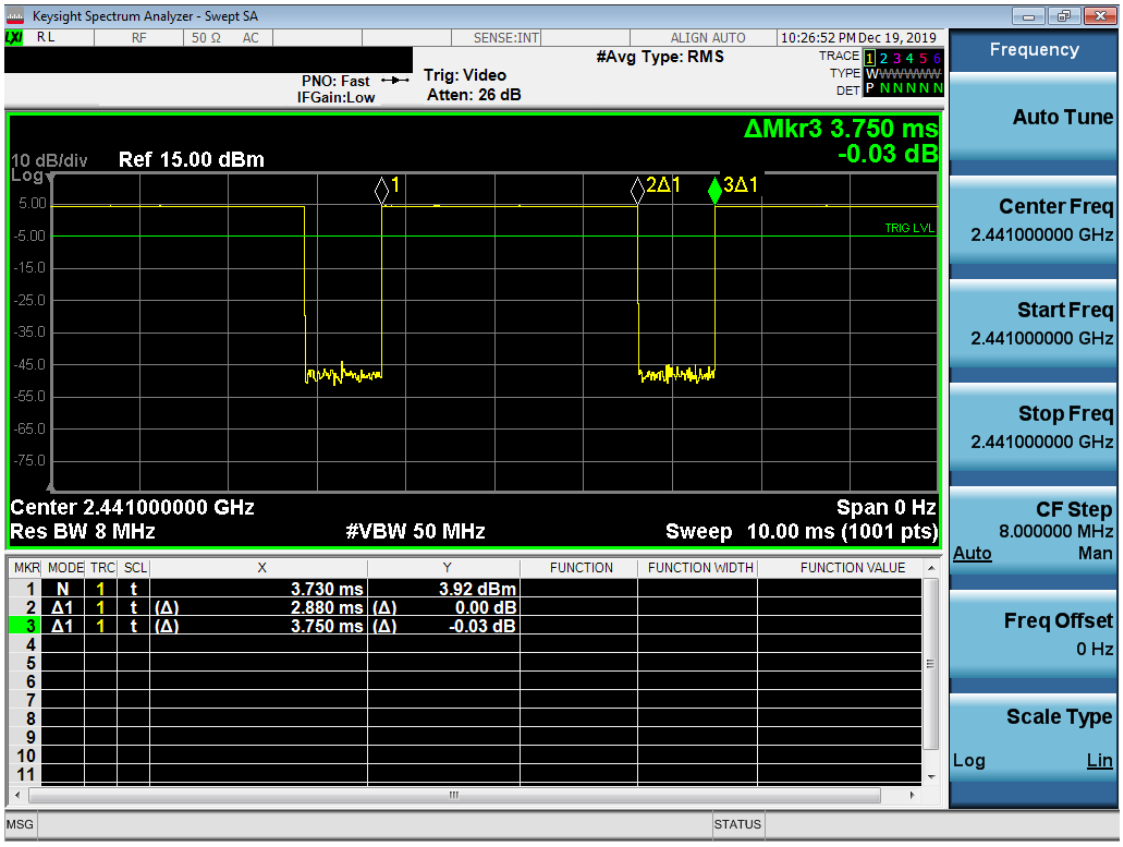
Figure 9-7
Bluetooth Transmission Plot



Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.88\ ms}{3.75\ ms} * 100\% = 76.8\%$$

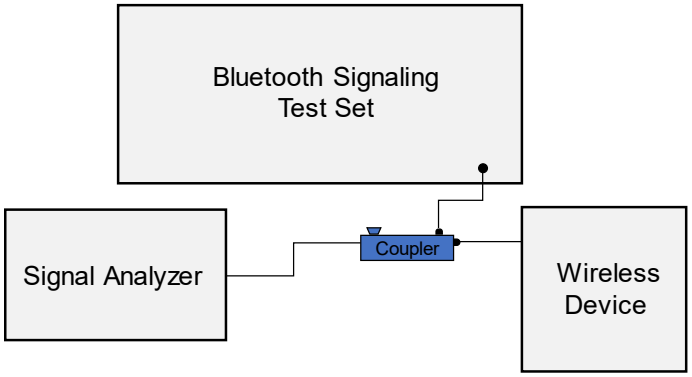


Figure 9-8
Power Measurement Setup

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10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties - Head

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
02/05/2020	750H	20.6	680	0.859	41.552	0.888	42.305	-3.27%	-1.78%
			695	0.864	41.516	0.889	42.227	-2.81%	-1.68%
			700	0.866	41.503	0.889	42.201	-2.59%	-1.65%
			710	0.869	41.476	0.890	42.149	-2.36%	-1.60%
			750	0.883	41.320	0.894	41.942	-1.23%	-1.48%
			770	0.889	41.260	0.895	41.838	-0.67%	-1.38%
			785	0.895	41.214	0.896	41.760	-0.11%	-1.31%
02/12/2020	750H	20.1	680	0.853	40.836	0.888	42.305	-3.94%	-3.47%
			695	0.858	40.782	0.889	42.227	-3.49%	-3.42%
			750	0.877	40.595	0.894	41.942	-1.90%	-3.21%
02/02/2020	835H	21.6	820	0.927	41.103	0.899	41.578	3.11%	-1.14%
			835	0.933	41.052	0.900	41.500	3.67%	-1.08%
			850	0.939	41.015	0.916	41.500	2.51%	-1.17%
02/07/2020	835H	20.2	820	0.896	40.647	0.899	41.578	-0.33%	-2.24%
			835	0.902	40.598	0.900	41.500	0.22%	-2.17%
			850	0.908	40.544	0.916	41.500	-0.87%	-2.30%
01/29/2020	1750H	20.8	1710	1.339	39.978	1.348	40.142	-0.67%	-0.41%
			1720	1.346	39.960	1.354	40.126	-0.59%	-0.41%
			1745	1.361	39.922	1.368	40.087	-0.51%	-0.41%
			1750	1.364	39.913	1.371	40.079	-0.51%	-0.41%
			1770	1.375	39.880	1.383	40.047	-0.58%	-0.42%
			1790	1.385	39.842	1.394	40.016	-0.65%	-0.43%
02/02/2020	1750H	20.3	1710	1.331	39.310	1.348	40.142	-1.26%	-2.07%
			1720	1.338	39.305	1.354	40.126	-1.18%	-2.05%
			1745	1.355	39.268	1.368	40.087	-0.95%	-2.04%
			1750	1.357	39.267	1.371	40.079	-1.02%	-2.03%
			1770	1.368	39.228	1.383	40.047	-1.08%	-2.05%
			1790	1.380	39.178	1.394	40.016	-1.00%	-2.09%
1/31/2020	1900H	21.2	1850	1.435	39.695	1.400	40.000	2.50%	-0.76%
			1880	1.452	39.667	1.400	40.000	3.71%	-0.83%
			1910	1.468	39.638	1.400	40.000	4.86%	-0.91%
02/03/2020	1900H	19.4	1850	1.405	39.288	1.400	40.000	0.36%	-1.78%
			1860	1.412	39.273	1.400	40.000	0.86%	-1.82%
			1880	1.424	39.245	1.400	40.000	1.71%	-1.89%
			1900	1.436	39.218	1.400	40.000	2.57%	-1.95%
			1905	1.439	39.212	1.400	40.000	2.79%	-1.97%
			1910	1.442	39.204	1.400	40.000	3.00%	-1.99%

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Table 10-2
Measured Tissue Properties – Head Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
01/30/2020	2300-2600H	21	2300	1.693	41.215	1.670	39.500	1.38%	4.34%
			2310	1.700	41.202	1.679	39.480	1.25%	4.36%
			2320	1.707	41.189	1.687	39.460	1.19%	4.38%
			2550	1.881	40.832	1.909	39.073	-1.47%	4.50%
			2560	1.889	40.813	1.920	39.060	-1.61%	4.49%
			2600	1.924	40.733	1.964	39.009	-2.04%	4.42%
02/24/2020	2450H	20	2400	1.817	38.826	1.756	39.289	3.47%	-1.18%
			2450	1.857	38.723	1.800	39.200	3.17%	-1.22%
			2500	1.900	38.618	1.855	39.136	2.43%	-1.32%
02/17/2020	2600H	20.9	2550	1.917	38.161	1.909	39.073	0.42%	-2.33%
			2560	1.925	38.148	1.920	39.060	0.26%	-2.33%
			2600	1.957	38.063	1.964	39.009	-0.36%	-2.43%
02/19/2020	2600H	20.9	2560	1.931	37.768	1.920	39.060	0.57%	-3.31%
			2600	1.963	37.699	1.964	39.009	-0.05%	-3.36%
			2650	2.003	37.617	2.018	38.945	-0.74%	-3.41%
			2680	2.027	37.554	2.051	38.907	-1.17%	-3.48%
02/11/2020	3600H	21.4	3600	2.986	36.867	3.015	37.814	-0.96%	-2.50%
			3650	3.025	36.814	3.066	37.757	-1.34%	-2.50%
			3690	3.055	36.737	3.107	37.711	-1.67%	-2.58%
			3700	3.066	36.720	3.117	37.700	-1.64%	-2.60%
02/14/2020	5200-5800H	21.6	5250	4.713	36.795	4.706	35.929	0.15%	2.41%
			5260	4.725	36.776	4.717	35.917	0.17%	2.39%
			5270	4.736	36.762	4.727	35.906	0.19%	2.38%
			5280	4.747	36.747	4.737	35.894	0.21%	2.38%
			5320	4.789	36.672	4.778	35.849	0.23%	2.30%
			5500	5.002	36.357	4.963	35.643	0.79%	2.00%
			5600	5.123	36.159	5.065	35.529	1.15%	1.77%
			5620	5.152	36.132	5.086	35.506	1.30%	1.76%
			5640	5.176	36.104	5.106	35.483	1.37%	1.75%
			5750	5.310	35.910	5.219	35.357	1.74%	1.56%
			5785	5.344	35.852	5.255	35.317	1.69%	1.51%
			5795	5.355	35.829	5.265	35.305	1.71%	1.48%
			5825	5.396	35.768	5.296	35.271	1.89%	1.41%

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Table 10-3
Measured Tissue Properties – Body

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
01/29/2020	750B	19.6	680	0.932	53.185	0.958	55.804	-2.71%	-4.69%
			695	0.937	53.148	0.959	55.745	-2.29%	-4.66%
			700	0.938	53.136	0.959	55.726	-2.19%	-4.65%
			710	0.942	53.111	0.960	55.687	-1.88%	-4.63%
			750	0.957	52.993	0.964	55.531	-0.73%	-4.57%
			770	0.964	52.935	0.965	55.453	-0.10%	-4.54%
			785	0.971	52.894	0.966	55.395	0.52%	-4.51%
02/11/2020	750B	20.7	680	0.932	54.303	0.958	55.804	-2.71%	-2.69%
			695	0.938	54.280	0.959	55.745	-2.19%	-2.63%
			750	0.959	54.188	0.964	55.531	-0.52%	-2.42%
01/27/2020	835B	19.8	820	0.962	53.196	0.969	55.258	-0.72%	-3.73%
			835	0.969	53.145	0.970	55.200	-0.10%	-3.72%
			850	0.976	53.102	0.988	55.154	-1.21%	-3.72%
02/05/2020	835B	20.6	820	0.975	52.939	0.969	55.258	0.62%	-4.20%
			835	0.981	52.901	0.970	55.200	1.13%	-4.16%
			850	0.988	52.866	0.988	55.154	0.00%	-4.15%
02/13/2020	835B	22.2	820	0.925	54.970	0.969	55.258	-4.54%	-0.52%
			835	0.941	54.852	0.970	55.200	-2.99%	-0.63%
			850	0.956	54.731	0.988	55.154	-3.24%	-0.77%
01/31/2020	1750B	20.3	1710	1.473	54.677	1.463	53.537	0.68%	2.13%
			1720	1.486	54.637	1.469	53.511	1.16%	2.10%
			1745	1.515	54.539	1.485	53.445	2.02%	2.05%
			1750	1.520	54.519	1.488	53.432	2.15%	2.03%
			1770	1.542	54.432	1.501	53.379	2.73%	1.97%
			1790	1.565	54.346	1.514	53.326	3.37%	1.91%
02/03/2020	1750B	20.3	1710	1.458	54.955	1.463	53.537	-0.34%	2.65%
			1720	1.470	54.910	1.469	53.511	0.07%	2.61%
			1745	1.498	54.806	1.485	53.445	0.88%	2.55%
			1750	1.504	54.787	1.488	53.432	1.08%	2.54%
			1770	1.525	54.712	1.501	53.379	1.60%	2.50%
			1790	1.546	54.641	1.514	53.326	2.11%	2.47%
02/05/2020	1750B	21.1	1710	1.475	54.463	1.463	53.537	0.82%	1.73%
			1720	1.487	54.419	1.469	53.511	1.23%	1.70%
			1745	1.511	54.364	1.485	53.445	1.75%	1.72%
			1750	1.520	54.334	1.488	53.432	2.15%	1.69%
			1770	1.539	54.287	1.501	53.379	2.53%	1.70%
			1790	1.561	54.188	1.514	53.326	3.10%	1.62%
02/10/2020	1750B	20.5	1710	1.445	55.236	1.463	53.537	-1.23%	3.17%
			1720	1.457	55.198	1.469	53.511	-0.82%	3.15%
			1745	1.486	55.118	1.485	53.445	0.07%	3.13%
			1750	1.492	55.102	1.488	53.432	0.27%	3.13%
			1770	1.514	55.031	1.501	53.379	0.87%	3.09%
			1790	1.536	54.961	1.514	53.326	1.45%	3.07%

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Table 10-4
Measured Tissue Properties – Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
02/17/2020	1750B	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%
01/27/2020	1900B	24.2	1850	1.496	51.681	1.520	53.300	-1.58%	-3.04%
			1860	1.507	51.650	1.520	53.300	-0.86%	-3.10%
			1880	1.529	51.580	1.520	53.300	0.59%	-3.23%
			1900	1.551	51.507	1.520	53.300	2.04%	-3.36%
			1905	1.556	51.488	1.520	53.300	2.37%	-3.40%
			1910	1.561	51.469	1.520	53.300	2.70%	-3.44%
01/30/2020	1900B	24.2	1850	1.513	51.955	1.520	53.300	-0.46%	-2.52%
			1860	1.523	51.923	1.520	53.300	0.20%	-2.58%
			1880	1.545	51.851	1.520	53.300	1.64%	-2.72%
			1900	1.566	51.778	1.520	53.300	3.03%	-2.86%
			1905	1.571	51.759	1.520	53.300	3.36%	-2.89%
			1910	1.577	51.741	1.520	53.300	3.75%	-2.92%
02/01/2020	1900B	22.4	1850	1.480	51.933	1.520	53.300	-2.63%	-2.56%
			1860	1.491	51.894	1.520	53.300	-1.91%	-2.64%
			1880	1.512	51.816	1.520	53.300	-0.53%	-2.78%
			1900	1.535	51.741	1.520	53.300	0.99%	-2.92%
			1905	1.540	51.721	1.520	53.300	1.32%	-2.96%
			1910	1.546	51.703	1.520	53.300	1.71%	-3.00%
02/09/2020	1900B	22.7	1850	1.481	52.957	1.520	53.300	-2.57%	-0.64%
			1860	1.492	52.927	1.520	53.300	-1.84%	-0.70%
			1880	1.514	52.868	1.520	53.300	-0.39%	-0.81%
			1900	1.536	52.801	1.520	53.300	1.05%	-0.94%
			1905	1.542	52.784	1.520	53.300	1.45%	-0.97%
			1910	1.547	52.769	1.520	53.300	1.78%	-1.00%
02/12/2020	1900B	23.9	1850	1.509	51.756	1.520	53.300	-0.72%	-2.90%
			1860	1.520	51.726	1.520	53.300	0.00%	-2.95%
			1880	1.542	51.669	1.520	53.300	1.45%	-3.06%
			1900	1.564	51.603	1.520	53.300	2.89%	-3.18%
			1905	1.570	51.585	1.520	53.300	3.29%	-3.22%
			1910	1.575	51.565	1.520	53.300	3.62%	-3.26%
02/20/2020	1900B	24.5	1850	1.515	51.468	1.520	53.300	-0.33%	-3.44%
			1860	1.526	51.431	1.520	53.300	0.39%	-3.51%
			1880	1.546	51.360	1.520	53.300	1.71%	-3.64%
			1900	1.567	51.287	1.520	53.300	3.09%	-3.78%
			1905	1.572	51.269	1.520	53.300	3.42%	-3.81%
			1910	1.577	51.251	1.520	53.300	3.75%	-3.84%
02/19/2020	2300-2600B	23.1	2300	1.862	51.861	1.809	52.900	2.93%	-1.96%
			2310	1.874	51.836	1.816	52.887	3.19%	-1.99%
			2320	1.885	51.809	1.826	52.873	3.23%	-2.01%
			2560	2.170	51.148	2.106	52.560	3.04%	-2.69%
			2600	2.218	51.021	2.163	52.509	2.54%	-2.83%
			2650	2.279	50.840	2.234	52.445	2.01%	-3.06%

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Table 10-5
Measured Tissue Properties – Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
01/29/2020	2450-2600B	22	2400	1.944	51.775	1.902	52.767	2.21%	-1.88%
			2450	2.013	51.575	1.950	52.700	3.23%	-2.13%
			2500	2.083	51.376	2.021	52.636	3.07%	-2.39%
			2550	2.154	51.160	2.092	52.573	2.96%	-2.69%
			2560	2.168	51.116	2.106	52.560	2.94%	-2.75%
			2600	2.225	50.951	2.163	52.509	2.87%	-2.97%
02/06/2020	2450-2600B	22.2	2450	2.035	51.728	1.950	52.700	4.36%	-1.84%
			2510	2.090	51.631	2.035	52.623	2.70%	-1.89%
			2535	2.116	51.598	2.071	52.592	2.17%	-1.89%
			2560	2.138	51.563	2.106	52.560	1.52%	-1.90%
			2600	2.177	51.490	2.163	52.509	0.65%	-1.94%
02/11/2020	2450-2600B	22.3	2450	2.040	51.030	1.950	52.700	4.62%	-3.17%
			2500	2.098	50.866	2.021	52.636	3.81%	-3.36%
			2510	2.110	50.832	2.035	52.623	3.69%	-3.40%
			2535	2.141	50.757	2.071	52.592	3.38%	-3.49%
			2550	2.159	50.718	2.092	52.573	3.20%	-3.53%
			2560	2.171	50.693	2.106	52.560	3.09%	-3.55%
			2600	2.218	50.570	2.163	52.509	2.54%	-3.69%
			2650	2.277	50.413	2.234	52.445	1.92%	-3.87%
			2680	2.315	50.326	2.277	52.407	1.67%	-3.97%
02/17/2020	2600B	24.5	2550	2.154	51.062	2.092	52.573	2.96%	-2.87%
			2560	2.166	51.037	2.106	52.560	2.85%	-2.90%
			2600	2.211	50.915	2.163	52.509	2.22%	-3.04%
02/18/2020	3600B	20.1	3500	3.464	49.905	3.314	51.321	4.53%	-2.76%
			3550	3.518	49.834	3.372	51.254	4.33%	-2.77%
			3560	3.530	49.813	3.384	51.240	4.31%	-2.78%
			3600	3.577	49.761	3.431	51.186	4.26%	-2.78%
			3650	3.632	49.675	3.489	51.118	4.10%	-2.82%
			3690	3.675	49.604	3.536	51.063	3.93%	-2.86%
			3700	3.687	49.594	3.548	51.050	3.92%	-2.85%
02/17/2020	5200-5800B	23.7	5200	5.360	49.686	5.299	49.014	1.15%	1.37%
			5220	5.385	49.627	5.323	48.987	1.16%	1.31%
			5240	5.414	49.595	5.346	48.960	1.27%	1.30%
			5250	5.428	49.590	5.358	48.947	1.31%	1.31%
			5270	5.455	49.560	5.381	48.919	1.38%	1.31%
			5280	5.471	49.543	5.393	48.906	1.45%	1.30%
			5500	5.762	49.185	5.650	48.607	1.98%	1.19%
			5600	5.899	49.019	5.766	48.471	2.31%	1.13%
			5620	5.928	48.987	5.790	48.444	2.38%	1.12%
			5640	5.961	48.963	5.813	48.417	2.55%	1.13%
			5720	6.068	48.832	5.907	48.309	2.73%	1.08%
			5750	6.111	48.804	5.942	48.268	2.84%	1.11%
			5785	6.160	48.751	5.982	48.220	2.98%	1.10%
			5795	6.176	48.735	5.994	48.207	3.04%	1.10%
			5825	6.213	48.672	6.029	48.166	3.05%	1.05%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

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10.2 Test System Verification

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

Table 10-6
System Verification Results – Head 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
L	750	HEAD	02/05/2020	22.3	20.6	0.200	1161	7410	1.740	8.030	8.700	8.34%
L	750	HEAD	02/12/2020	22.6	20.1	0.200	1003	7410	1.660	8.280	8.300	0.24%
E	835	HEAD	02/02/2020	24.3	21.6	0.200	4d047	7417	1.930	9.420	9.650	2.44%
L	835	HEAD	02/07/2020	22.3	20.2	0.200	4d132	7410	1.890	9.650	9.450	-2.07%
D	1750	HEAD	01/29/2020	21.7	20.8	0.100	1008	3914	3.830	36.200	38.300	5.80%
D	1750	HEAD	02/02/2020	21.1	20.3	0.100	1008	3914	3.800	36.200	38.000	4.97%
L	1900	HEAD	01/31/2020	22.2	20.7	0.100	5d148	7410	4.150	39.100	41.500	6.14%
L	1900	HEAD	02/03/2020	20.2	19.4	0.100	5d148	7410	4.000	39.100	40.000	2.30%
E	2300	HEAD	01/30/2020	22.5	21.6	0.100	1073	7417	5.020	49.200	50.200	2.03%
M	2450	HEAD	02/24/2020	21.0	20.0	0.100	797	7570	5.310	52.700	53.100	0.76%
E	2600	HEAD	01/30/2020	22.5	21.6	0.100	1064	7417	5.830	58.100	58.300	0.34%
M	2600	HEAD	02/17/2020	21.9	20.9	0.100	1004	7570	5.320	55.900	53.200	-4.83%
M	2600	HEAD	02/19/2020	22.4	21.3	0.100	1004	7570	5.940	55.900	59.400	6.26%
D	3700	HEAD	02/11/2020	21.8	21.4	0.100	1018	7488	6.300	65.800	63.000	-4.26%
H	5250	HEAD	02/14/2020	21.4	21.3	0.050	1057	7406	3.640	79.200	72.800	-8.08%
H	5600	HEAD	02/14/2020	21.4	21.3	0.050	1057	7406	4.140	84.100	82.800	-1.55%
H	5750	HEAD	02/14/2020	21.4	21.3	0.050	1057	7406	3.710	80.500	74.200	-7.83%

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Table 10-7
System Verification Results – Body 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
P	750	BODY	01/29/2020	21.5	19.6	0.200	1161	7551	1.770	8.430	8.850	4.98%
P	750	BODY	02/11/2020	22.0	20.7	0.200	1054	7551	1.770	8.550	8.850	3.51%
P	835	BODY	01/27/2020	20.5	19.8	0.200	4d047	7551	2.050	9.470	10.250	8.24%
P	835	BODY	02/05/2020	21.5	21.1	0.200	4d132	7551	2.020	9.960	10.100	1.41%
H	835	BODY	02/13/2020	22.3	22.2	0.200	4d047	7406	2.030	9.470	10.150	7.18%
I	1750	BODY	01/31/2020	21.3	20.3	0.100	1148	7357	3.970	37.700	39.700	5.31%
I	1750	BODY	02/05/2020	21.8	20.9	0.100	1148	7357	3.980	37.700	39.800	5.57%
I	1750	BODY	02/10/2020	21.5	20.5	0.100	1148	7357	3.810	37.700	38.100	1.06%
I	1750	BODY	02/17/2020	21.9	21.5	0.100	1148	7357	3.990	37.700	39.900	5.84%
J	1900	BODY	01/27/2020	23.3	23.0	0.100	5d148	7571	4.210	39.100	42.100	7.67%
J	1900	BODY	01/30/2020	22.7	22.4	0.100	5d148	7571	4.140	39.100	41.400	5.88%
J	1900	BODY	02/01/2020	23.1	22.8	0.100	5d149	7571	4.190	39.400	41.900	6.35%
J	1900	BODY	02/09/2020	22.7	24.7	0.100	5d149	7571	4.220	39.400	42.200	7.11%
J	1900	BODY	02/12/2020	23.5	23.5	0.100	5d149	7571	4.240	39.400	42.400	7.61%
K	2300	BODY	02/19/2020	23.1	23.0	0.100	1073	7547	5.180	47.700	51.800	8.60%
L	2450	BODY	01/29/2020	23.0	21.0	0.100	981	7410	4.860	50.900	48.600	-4.52%
K	2450	BODY	02/11/2020	22.3	23.0	0.100	797	7547	5.150	51.100	51.500	0.78%
L	2600	BODY	01/29/2020	23.0	21.0	0.100	1064	7410	5.390	55.600	53.900	-3.06%
K	2600	BODY	02/11/2020	22.3	23.0	0.100	1004	7547	5.610	54.800	56.100	2.37%
K	2600	BODY	02/17/2020	23.5	22.6	0.100	1064	7547	5.500	55.600	55.000	-1.08%
K	2600	BODY	02/19/2020	23.1	23.0	0.100	1004	7547	5.560	54.800	55.600	1.46%
D	3500	BODY	02/18/2020	21.2	20.1	0.100	1059	7488	6.670	65.100	66.700	2.46%
D	3700	BODY	02/18/2020	21.2	20.1	0.100	1018	7488	6.550	64.300	65.500	1.87%
G	5250	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	3.690	77.000	73.800	-4.16%
G	5600	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	3.990	78.600	79.800	1.53%
G	5750	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	3.770	76.900	75.400	-1.95%

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Table 10-8
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
I	1750	BODY	02/03/2020	21.5	20.3	0.100	1148	7357	2.080	19.800	20.800	5.05%
I	1750	BODY	02/05/2020	21.8	20.9	0.100	1148	7357	2.110	19.800	21.100	6.57%
J	1900	BODY	01/30/2020	22.7	22.4	0.100	5d148	7571	2.120	20.500	21.200	3.41%
J	1900	BODY	02/09/2020	22.7	24.7	0.100	5d149	7571	2.170	20.700	21.700	4.83%
J	1900	BODY	02/12/2020	23.5	23.5	0.100	5d149	7571	2.180	20.700	21.800	5.31%
J	1900	BODY	02/20/2020	22.9	23.0	0.100	5d149	7571	2.140	20.700	21.400	3.38%
K	2450	BODY	02/06/2020	23.1	22.2	0.100	797	7547	2.370	24.200	23.700	-2.07%
K	2600	BODY	02/06/2020	23.1	22.2	0.100	1004	7547	2.400	24.700	24.000	-2.83%
G	5250	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	1.030	21.400	20.600	-3.74%
G	5600	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	1.100	21.900	22.000	0.46%
G	5750	BODY	02/17/2020	22.3	22.7	0.050	1191	7409	1.030	21.300	20.600	-3.29%

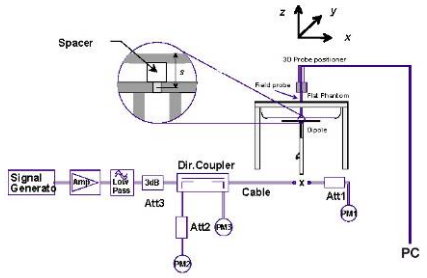

Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

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11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
CDMA BC10 (§90S) 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)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.40	0.09	Right	Cheek	04422	1:1	0.128	1.023	0.131	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.40	0.19	Right	Tilt	04422	1:1	0.068	1.023	0.070	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.40	0.02	Left	Cheek	04422	1:1	0.173	1.023	0.177	A1
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.40	0.13	Left	Tilt	04422	1:1	0.056	1.023	0.057	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.48	-0.07	Right	Cheek	04422	1:1	0.084	1.005	0.084	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.48	-0.13	Right	Tilt	04422	1:1	0.025	1.005	0.025	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.48	-0.03	Left	Cheek	04422	1:1	0.156	1.005	0.157	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.48	0.03	Left	Tilt	04422	1:1	0.019	1.005	0.019	
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
CDMA BC0 (§22H) 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	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.39	0.02	Right	Cheek	04422	1:1	0.176	1.026	0.181	A2
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.39	-0.10	Right	Tilt	04422	1:1	0.092	1.026	0.094	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.39	-0.12	Left	Cheek	04422	1:1	0.164	1.026	0.168	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.39	0.05	Left	Tilt	04422	1:1	0.091	1.026	0.093	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.46	0.02	Right	Cheek	04422	1:1	0.168	1.009	0.170	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.46	0.06	Right	Tilt	04422	1:1	0.089	1.009	0.090	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.46	0.13	Left	Cheek	04422	1:1	0.171	1.009	0.173	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.46	0.07	Left	Tilt	04422	1:1	0.090	1.009	0.091	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-3
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	25.10	0.15	Right	Cheek	04422	1:1	0.098	1.023	0.100	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.10	0.14	Right	Tilt	04422	1:1	0.086	1.023	0.088	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.10	0.17	Left	Cheek	04422	1:1	0.097	1.023	0.099	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.10	-0.02	Left	Tilt	04422	1:1	0.090	1.023	0.092	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	25.13	0.14	Right	Cheek	04422	1:1	0.097	1.016	0.099	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	25.13	0.04	Right	Tilt	04422	1:1	0.090	1.016	0.091	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	25.13	0.02	Left	Cheek	04422	1:1	0.100	1.016	0.102	A3
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	25.13	0.17	Left	Tilt	04422	1:1	0.092	1.016	0.093	
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
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	32.90	0.02	Right	Cheek	04422	1	1:8.3	0.094	1.122	0.105	
836.60	190	GSM 850	GSM	33.4	32.90	0.03	Right	Tilt	04422	1	1:8.3	0.048	1.122	0.054	
836.60	190	GSM 850	GSM	33.4	32.90	0.13	Left	Cheek	04422	1	1:8.3	0.098	1.122	0.110	
836.60	190	GSM 850	GSM	33.4	32.90	0.13	Left	Tilt	04422	1	1:8.3	0.047	1.122	0.053	
836.60	190	GSM 850	GPRS	29.2	28.41	0.12	Right	Cheek	04422	4	1:2.076	0.144	1.199	0.173	A4
836.60	190	GSM 850	GPRS	29.2	28.41	0.16	Right	Tilt	04422	4	1:2.076	0.074	1.199	0.089	
836.60	190	GSM 850	GPRS	29.2	28.41	-0.04	Left	Cheek	04422	4	1:2.076	0.127	1.199	0.152	
836.60	190	GSM 850	GPRS	29.2	28.41	0.16	Left	Tilt	04422	4	1:2.076	0.069	1.199	0.083	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-5
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	29.55	0.10	Right	Cheek	04430	1	1:8.3	0.031	1.161	0.036	
1880.00	661	GSM 1900	GSM	30.2	29.55	0.05	Right	Tilt	04430	1	1:8.3	0.026	1.161	0.030	
1880.00	661	GSM 1900	GSM	30.2	29.55	0.03	Left	Cheek	04430	1	1:8.3	0.030	1.161	0.035	
1880.00	661	GSM 1900	GSM	30.2	29.55	0.05	Left	Tilt	04430	1	1:8.3	0.025	1.161	0.029	
1880.00	661	GSM 1900	GPRS	27.2	26.68	0.08	Right	Cheek	04430	3	1:2.76	0.048	1.127	0.054	A5
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.17	Right	Tilt	04430	3	1:2.76	0.037	1.127	0.042	
1880.00	661	GSM 1900	GPRS	27.2	26.68	0.13	Left	Cheek	04430	3	1:2.76	0.044	1.127	0.050	
1880.00	661	GSM 1900	GPRS	27.2	26.68	0.04	Left	Tilt	04430	3	1:2.76	0.038	1.127	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 11-6
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	25.32	0.07	Right	Cheek	04422	1:1	0.152	1.042	0.158	
836.60	4183	UMTS 850	RMC	25.5	25.32	0.01	Right	Tilt	04422	1:1	0.112	1.042	0.117	
836.60	4183	UMTS 850	RMC	25.5	25.32	0.03	Left	Cheek	04422	1:1	0.196	1.042	0.204	A6
836.60	4183	UMTS 850	RMC	25.5	25.32	0.13	Left	Tilt	04422	1:1	0.059	1.042	0.061	
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 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	24.95	0.02	Right	Cheek	04422	1:1	0.062	1.059	0.066	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	0.13	Right	Tilt	04422	1:1	0.087	1.059	0.092	A7
1732.40	1412	UMTS 1750	RMC	25.2	24.95	0.02	Left	Cheek	04422	1:1	0.086	1.059	0.091	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	0.04	Left	Tilt	04422	1:1	0.051	1.059	0.054	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-8
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	24.91	0.03	Right	Cheek	04422	1:1	0.092	1.069	0.098	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	0.12	Right	Tilt	04422	1:1	0.097	1.069	0.104	A8
1880.00	9400	UMTS 1900	RMC	25.2	24.91	0.11	Left	Cheek	04422	1:1	0.094	1.069	0.100	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	0.06	Left	Tilt	04422	1:1	0.077	1.069	0.082	
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 71 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)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	0.09	0	Right	Cheek	QPSK	1	0	04463	1:1	0.194	1.038	0.201	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.12	1	Right	Cheek	QPSK	50	0	04463	1:1	0.130	1.183	0.154	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	0.18	0	Right	Tilt	QPSK	1	0	04463	1:1	0.097	1.038	0.101	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.02	1	Right	Tilt	QPSK	50	0	04463	1:1	0.064	1.183	0.076	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	0.04	0	Left	Cheek	QPSK	1	0	04463	1:1	0.195	1.038	0.202	A9
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.07	1	Left	Cheek	QPSK	50	0	04463	1:1	0.121	1.183	0.143	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	0.06	0	Left	Tilt	QPSK	1	0	04463	1:1	0.087	1.038	0.090	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.11	1	Left	Tilt	QPSK	50	0	04463	1:1	0.067	1.183	0.079	
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 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	25.10	0.09	0	Right	Cheek	QPSK	1	49	04463	1:1	0.161	1.096	0.176	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.09	1	Right	Cheek	QPSK	25	25	04463	1:1	0.109	1.268	0.138	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	0.03	0	Right	Tilt	QPSK	1	49	04463	1:1	0.093	1.096	0.102	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.18	1	Right	Tilt	QPSK	25	25	04463	1:1	0.065	1.268	0.082	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	0.02	0	Left	Cheek	QPSK	1	49	04463	1:1	0.176	1.096	0.193	A10
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.06	1	Left	Cheek	QPSK	25	25	04463	1:1	0.123	1.268	0.156	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	0.10	0	Left	Tilt	QPSK	1	49	04463	1:1	0.096	1.096	0.105	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.11	1	Left	Tilt	QPSK	25	25	04463	1:1	0.069	1.268	0.087	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-11
LTE Band 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	25.08	0.07	0	Right	Cheek	QPSK	1	25	04463	1:1	0.170	1.102	0.187	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.12	1	Right	Cheek	QPSK	25	12	04463	1:1	0.116	1.271	0.147	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	-0.11	0	Right	Tilt	QPSK	1	25	04463	1:1	0.101	1.102	0.111	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.19	1	Right	Tilt	QPSK	25	12	04463	1:1	0.070	1.271	0.089	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	0.11	0	Left	Cheek	QPSK	1	25	04463	1:1	0.192	1.102	0.212	A11
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.08	1	Left	Cheek	QPSK	25	12	04463	1:1	0.131	1.271	0.167	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	0.03	0	Left	Tilt	QPSK	1	25	04463	1:1	0.093	1.102	0.102	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.11	1	Left	Tilt	QPSK	25	12	04463	1:1	0.065	1.271	0.083	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-12
LTE Band 26 (Cell) 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)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	0.05	0	Right	Cheek	QPSK	1	36	04463	1:1	0.180	1.047	0.188	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.12	1	Right	Cheek	QPSK	36	37	04463	1:1	0.112	1.233	0.138	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	0.02	0	Right	Tilt	QPSK	1	36	04463	1:1	0.110	1.047	0.115	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.15	1	Right	Tilt	QPSK	36	37	04463	1:1	0.073	1.233	0.090	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	0.07	0	Left	Cheek	QPSK	1	36	04463	1:1	0.167	1.047	0.175	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.04	1	Left	Cheek	QPSK	36	37	04463	1:1	0.122	1.233	0.150	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	0.06	0	Left	Tilt	QPSK	1	36	04463	1:1	0.094	1.047	0.098	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.08	1	Left	Tilt	QPSK	36	37	04463	1:1	0.065	1.233	0.080	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-13
LTE Band 5 (Cell) 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	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	0.12	0	Right	Cheek	QPSK	1	49	04463	1:1	0.165	1.007	0.166	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.11	1	Right	Cheek	QPSK	25	12	04463	1:1	0.109	1.164	0.127	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	-0.12	0	Right	Tilt	QPSK	1	49	04463	1:1	0.090	1.007	0.091	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.03	1	Right	Tilt	QPSK	25	12	04463	1:1	0.060	1.164	0.070	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	0.09	0	Left	Cheek	QPSK	1	49	04463	1:1	0.170	1.007	0.171	A13
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.09	1	Left	Cheek	QPSK	25	12	04463	1:1	0.125	1.164	0.146	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	0.09	0	Left	Tilt	QPSK	1	49	04463	1:1	0.087	1.007	0.088	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.09	1	Left	Tilt	QPSK	25	12	04463	1:1	0.065	1.164	0.076	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-14
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)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.03	0	Right	Cheek	QPSK	1	50	04455	1:1	0.064	1.035	0.066	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	0.11	1	Right	Cheek	QPSK	50	25	04455	1:1	0.052	1.045	0.054	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.09	0	Right	Tilt	QPSK	1	50	04455	1:1	0.085	1.035	0.088	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	0.17	1	Right	Tilt	QPSK	50	25	04455	1:1	0.065	1.045	0.068	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.10	0	Left	Cheek	QPSK	1	50	04455	1:1	0.092	1.035	0.095	A14
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	0.08	1	Left	Cheek	QPSK	50	25	04455	1:1	0.068	1.045	0.071	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.02	0	Left	Tilt	QPSK	1	50	04455	1:1	0.062	1.035	0.064	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	0.02	1	Left	Tilt	QPSK	50	25	04455	1:1	0.040	1.045	0.042	
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 25 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	0.08	0	Right	Cheek	QPSK	1	0	04455	1:1	0.092	1.000	0.092	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.11	1	Right	Cheek	QPSK	50	25	04455	1:1	0.080	1.002	0.080	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	0.06	0	Right	Tilt	QPSK	1	0	04455	1:1	0.085	1.000	0.085	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.12	1	Right	Tilt	QPSK	50	25	04455	1:1	0.060	1.002	0.060	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	-0.03	0	Left	Cheek	QPSK	1	0	04455	1:1	0.110	1.000	0.110	A15
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	-0.02	1	Left	Cheek	QPSK	50	25	04455	1:1	0.079	1.002	0.079	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	0.03	0	Left	Tilt	QPSK	1	0	04455	1:1	0.090	1.000	0.090	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.08	1	Left	Tilt	QPSK	50	25	04455	1:1	0.062	1.002	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-16
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	22.38	0.04	0	Right	Cheek	QPSK	1	0	04463	1:1	0.041	1.076	0.044	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.02	1	Right	Cheek	QPSK	25	12	04463	1:1	0.033	1.104	0.036	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	0.02	0	Right	Tilt	QPSK	1	0	04463	1:1	0.016	1.076	0.017	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.08	1	Right	Tilt	QPSK	25	12	04463	1:1	0.013	1.104	0.014	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	0.04	0	Left	Cheek	QPSK	1	0	04463	1:1	0.049	1.076	0.053	A16
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.15	1	Left	Cheek	QPSK	25	12	04463	1:1	0.041	1.104	0.045	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	0.17	0	Left	Tilt	QPSK	1	0	04463	1:1	0.023	1.076	0.025	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.17	1	Left	Tilt	QPSK	25	12	04463	1:1	0.016	1.104	0.018	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-17
LTE Band 7 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.09	0	Right	Cheek	QPSK	1	0	04463	1:1	0.036	1.038	0.037	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.06	1	Right	Cheek	QPSK	50	50	04463	1:1	0.034	1.050	0.036	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.09	0	Right	Tilt	QPSK	1	0	04463	1:1	0.014	1.038	0.015	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.11	1	Right	Tilt	QPSK	50	50	04463	1:1	0.010	1.050	0.011	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.05	0	Left	Cheek	QPSK	1	0	04463	1:1	0.071	1.038	0.074	A17
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.06	1	Left	Cheek	QPSK	50	50	04463	1:1	0.054	1.050	0.057	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.08	0	Left	Tilt	QPSK	1	0	04463	1:1	0.025	1.038	0.026	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.05	1	Left	Tilt	QPSK	50	50	04463	1:1	0.016	1.050	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 11-18
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)	
3603.30	55773	Low-Mid	LTE Band 48	20	22.5	21.76	0.10	0	Right	Cheek	QPSK	1	99	04448	1:1.58	0.180	1.186	**0.213**	A18
3603.30	55773	Low-Mid	LTE Band 48	20	21.5	20.80	0.12	1	Right	Cheek	QPSK	50	25	04448	1:1.58	0.177	1.175	0.208	
3603.30	55773	Low-Mid	LTE Band 48	20	22.5	21.76	0.03	0	Right	Tilt	QPSK	1	99	04448	1:1.58	0.030	1.186	0.036	
3603.30	55773	Low-Mid	LTE Band 48	20	21.5	20.80	0.03	1	Right	Tilt	QPSK	50	25	04448	1:1.58	0.029	1.175	0.034	
3603.30	55773	Low-Mid	LTE Band 48	20	22.5	21.76	0.12	0	Left	Cheek	QPSK	1	99	04448	1:1.58	0.109	1.186	0.129	
3603.30	55773	Low-Mid	LTE Band 48	20	21.5	20.80	0.02	1	Left	Cheek	QPSK	50	25	04448	1:1.58	0.107	1.175	0.126	
3603.30	55773	Low-Mid	LTE Band 48	20	22.5	21.76	0.02	0	Left	Tilt	QPSK	1	99	04448	1:1.58	0.071	1.186	0.084	
3603.30	55773	Low-Mid	LTE Band 48	20	21.5	20.80	0.03	1	Left	Tilt	QPSK	50	25	04448	1:1.58	0.070	1.175	0.082	
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
LTE Band 41 Head SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	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)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	0.05	0	Right	Cheek	QPSK	1	50	04455	1:1.58	0.027	1.091	0.029	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	0.04	1	Right	Cheek	QPSK	50	25	04455	1:1.58	0.022	1.042	0.023	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	0.09	0	Right	Tilt	QPSK	1	50	04455	1:1.58	0.021	1.091	0.023	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	0.08	1	Right	Tilt	QPSK	50	25	04455	1:1.58	0.016	1.042	0.017	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.45	0.02	0	Left	Cheek	QPSK	1	0	04455	1:1.58	0.045	1.189	0.054	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	-0.07	0	Left	Cheek	QPSK	1	50	04455	1:1.58	0.058	1.091	0.063	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	0.03	1	Left	Cheek	QPSK	50	25	04455	1:1.58	0.046	1.042	0.048	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.13	-0.09	0	Left	Cheek	QPSK	1	0	04455	1:2.31	0.058	1.140	0.066	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.56	0.02	0	Left	Cheek	QPSK	1	50	04455	1:2.31	0.068	1.033	0.070	A19
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.2	25.20	-0.09	0	Left	Cheek	QPSK	1	0	04455	1:1.58	0.049	1.000	0.049	
	SCC	2616.70	40857											1	99						
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.70	-0.10	0	Left	Cheek	QPSK	1	0	04455	1:2.31	0.062	1.000	0.062	
	SCC	2616.70	40857											1	99						
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	0.03	0	Left	Tilt	QPSK	1	50	04455	1:1.58	0.025	1.091	0.027	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	0.06	1	Left	Tilt	QPSK	50	25	04455	1:1.58	0.021	1.042	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							

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Table 11-20
NR Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	0.03	0	Right	Cheek	DFT-S-OFDM QPSK	1	104	04471	1:1	0.099	1.156	0.114	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	-0.01	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	04471	1:1	0.108	1.064	0.115	A20
680.50	136100	Mid	NR Band n71	20	25.5	23.90	0.01	0	Right	Cheek	CP-OFDM QPSK	1	1	04471	1:1	0.071	1.445	0.103	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.05	0	Right	Tilt	DFT-S-OFDM QPSK	1	104	04471	1:1	0.056	1.156	0.065	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.01	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	04471	1:1	0.057	1.064	0.061	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.06	0	Left	Cheek	DFT-S-OFDM QPSK	1	104	04471	1:1	0.095	1.156	0.110	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.12	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	04471	1:1	0.100	1.064	0.106	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	0.02	0	Left	Tilt	DFT-S-OFDM QPSK	1	104	04471	1:1	0.053	1.156	0.061	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.09	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	04471	1:1	0.051	1.064	0.054	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-21
NR Band 66 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	22.0	21.83	0.18	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	04471	1:1	0.231	1.040	0.240	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.03	0	Right	Cheek	DFT-S-OFDM QPSK	50	56	04471	1:1	0.250	1.094	0.274	A21
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.21	0.00	0	Right	Cheek	CP-OFDM QPSK	1	1	04471	1:1	0.210	1.199	0.252	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	-0.09	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	04471	1:1	0.066	1.040	0.069	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.02	0	Right	Tilt	DFT-S-OFDM QPSK	50	56	04471	1:1	0.068	1.094	0.074	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	-0.03	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	04471	1:1	0.056	1.040	0.058	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.11	0	Left	Cheek	DFT-S-OFDM QPSK	50	56	04471	1:1	0.061	1.094	0.067	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	0.06	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	04471	1:1	0.039	1.040	0.041	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.05	0	Left	Tilt	DFT-S-OFDM QPSK	50	56	04471	1:1	0.045	1.094	0.049	
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 11-22
NR Band 25 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)	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.08	0	Right	Cheek	DFT-S-OFDM QPSK	1	53	04471	1:1	0.282	1.096	**0.309**	A22
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	-0.06	0	Right	Cheek	DFT-S-OFDM QPSK	50	0	04471	1:1	0.264	1.089	0.287	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.75	0.08	0	Right	Cheek	CP-OFDM QPSK	1	1	04471	1:1	0.260	1.189	**0.309**	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.06	0	Right	Tilt	DFT-S-OFDM QPSK	1	53	04471	1:1	0.096	1.096	0.105	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.17	0	Right	Tilt	DFT-S-OFDM QPSK	50	0	04471	1:1	0.094	1.089	0.102	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.13	0	Left	Cheek	DFT-S-OFDM QPSK	1	53	04471	1:1	0.122	1.096	0.134	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.14	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	04471	1:1	0.124	1.089	0.135	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	-0.08	0	Left	Tilt	DFT-S-OFDM QPSK	1	53	04471	1:1	0.112	1.096	0.123	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.13	0	Left	Tilt	DFT-S-OFDM QPSK	50	0	04471	1:1	0.107	1.089	0.117	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-23
NR Band 41 Head SAR

MEASUREMENT RESULTS																					
Power Class	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.																		
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.02	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	04489	1:4	0.078	1.358	0.106	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.03	0	Right	Cheek	DFT-S-OFDM QPSK	135	0	04489	1:4	0.041	1.445	0.059	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	26.7	25.89	0.11	1	Right	Cheek	CP-OFDM QPSK	1	1	04489	1:4	0.086	1.205	0.104	A23
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.03	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	04489	1:4	0.021	1.358	0.029	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.16	0	Right	Tilt	DFT-S-OFDM QPSK	135	0	04489	1:4	0.007	1.445	0.010	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.04	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	04489	1:4	0.050	1.358	0.068	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.11	0	Left	Cheek	DFT-S-OFDM QPSK	135	0	04489	1:4	0.016	1.445	0.023	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.03	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	04489	1:4	0.048	1.358	0.065	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.07	0	Left	Tilt	DFT-S-OFDM QPSK	135	0	04489	1:4	0.012	1.445	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 11-24
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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2412	1	802.11b	DSSS	22	15.5	15.23	0.12	Right	Cheek	1	04513	1	99.6	0.653	0.596	1.064	1.004	0.637	
2437	6	802.11b	DSSS	22	15.5	15.39	0.07	Right	Cheek	1	04513	1	99.6	0.724	0.677	1.026	1.004	**0.697**	
2462	11	802.11b	DSSS	22	15.5	15.26	0.03	Right	Cheek	1	04513	1	99.6	0.648	0.619	1.057	1.004	0.657	
2437	6	802.11b	DSSS	22	15.5	15.39	0.12	Right	Tilt	1	04513	1	99.6	0.474	0.308	1.026	1.004	0.317	
2437	6	802.11b	DSSS	22	15.5	15.39	0.02	Left	Cheek	1	04513	1	99.6	0.280	-	1.026	1.004	-	
2437	6	802.11b	DSSS	22	15.5	15.39	0.02	Left	Tilt	1	04513	1	99.6	0.302	-	1.026	1.004	-	
2437	6	802.11b	DSSS	22	15.5	15.49	0.03	Right	Cheek	2	04513	1	99.4	0.774	-	1.002	1.006	-	
2437	6	802.11b	DSSS	22	15.5	15.49	0.11	Right	Tilt	2	04513	1	99.4	0.995	0.546	1.002	1.006	0.550	
2437	6	802.11b	DSSS	22	15.5	15.49	0.09	Left	Cheek	2	04513	1	99.4	0.698	-	1.002	1.006	-	
2437	6	802.11b	DSSS	22	15.5	15.49	0.16	Left	Tilt	2	04513	1	99.4	1.057	0.451	1.002	1.006	0.455	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram					

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Table 11-25
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.	Dual Display Accessory Configuration	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)	
2412	1	802.11n	OFDM	20	15.5	14.78	15.5	14.77	0.08	Right	Cheek	MIMO	-	04513	13	99.1	1.226	0.714	1.183	1.009	0.852	
2412	1	802.11n	OFDM	20	15.5	14.78	15.5	14.77	0.03	Right	Cheek	MIMO	#1	04513	13	99.1	0.309	0.204	1.183	1.009	0.244	
2412	1	802.11n	OFDM	20	15.5	14.78	15.5	14.77	0.15	Right	Cheek	MIMO	#3	04513	13	99.1	0.963	0.525	1.183	1.009	0.627	
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.02	Right	Cheek	MIMO	-	04513	13	99.1	1.357	0.723	1.146	1.009	0.836	A24
2462	11	802.11n	OFDM	20	15.5	14.83	15.5	14.87	0.02	Right	Cheek	MIMO	-	04513	13	99.1	1.174	0.644	1.167	1.009	0.758	
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.15	Right	Tilt	MIMO	-	04513	13	99.1	1.193	0.670	1.146	1.009	0.775	
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.05	Left	Cheek	MIMO	-	04513	13	99.1	0.727	-	1.146	1.009	-	
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.03	Left	Tilt	MIMO	-	04513	13	99.1	1.087	-	1.146	1.009	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram												

Notes:
1. Green entry represents additional Head SAR Position (DD #1: 0 degrees).
2. Light orange entry represents additional Head SAR Position (DD #3: 360 degrees).
3. 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 11-26
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	17.26	0.19	Right	Cheek	1	04513	6	99.5	1.008	0.491	1.186	1.005	**0.585**	
5280	56	802.11a	OFDM	20	18.0	17.26	0.05	Right	Tilt	1	04513	6	99.5	0.417	0.179	1.186	1.005	0.213	
5280	56	802.11a	OFDM	20	18.0	17.26	0.02	Left	Cheek	1	04513	6	99.5	0.285	-	1.186	1.005	-	
5280	56	802.11a	OFDM	20	18.0	17.26	0.02	Left	Tilt	1	04513	6	99.5	0.262	-	1.186	1.005	-	
5280	56	802.11a	OFDM	20	18.0	17.16	0.03	Right	Cheek	2	04513	6	99.6	0.977	0.418	1.213	1.004	0.509	
5280	56	802.11a	OFDM	20	18.0	17.16	0.04	Right	Tilt	2	04513	6	99.6	0.800	0.333	1.213	1.004	0.406	
5280	56	802.11a	OFDM	20	18.0	17.16	0.10	Left	Cheek	2	04513	6	99.6	0.333	-	1.213	1.004	-	
5280	56	802.11a	OFDM	20	18.0	17.16	0.06	Left	Tilt	2	04513	6	99.6	0.244	-	1.213	1.004	-	
5500	100	802.11a	OFDM	20	17.0	16.48	0.05	Right	Cheek	1	04513	6	99.5	0.784	-	1.127	1.005	-	
5500	100	802.11a	OFDM	20	17.0	16.48	0.06	Right	Tilt	1	04513	6	99.5	0.817	0.324	1.127	1.005	0.367	
5500	100	802.11a	OFDM	20	17.0	16.48	0.04	Left	Cheek	1	04513	6	99.5	0.408	-	1.127	1.005	-	
5500	100	802.11a	OFDM	20	17.0	16.48	0.12	Left	Tilt	1	04513	6	99.5	0.443	-	1.127	1.005	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.02	Right	Cheek	2	04513	6	99.6	0.827	0.350	1.026	1.004	0.361	
5600	120	802.11a	OFDM	20	17.0	16.89	0.03	Right	Tilt	2	04513	6	99.6	0.630	-	1.026	1.004	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.04	Left	Cheek	2	04513	6	99.6	0.270	-	1.026	1.004	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.03	Left	Tilt	2	04513	6	99.6	0.349	-	1.026	1.004	-	
5785	157	802.11a	OFDM	20	18.0	17.36	0.07	Right	Cheek	1	04513	6	99.5	0.560	0.490	1.159	1.005	0.571	
5785	157	802.11a	OFDM	20	18.0	17.36	0.05	Right	Tilt	1	04513	6	99.5	0.542	0.177	1.159	1.005	0.206	
5785	157	802.11a	OFDM	20	18.0	17.36	0.06	Left	Cheek	1	04513	6	99.5	0.280	-	1.159	1.005	-	
5785	157	802.11a	OFDM	20	18.0	17.36	0.19	Left	Tilt	1	04513	6	99.5	0.293	-	1.159	1.005	-	
5825	165	802.11a	OFDM	20	18.0	17.41	0.14	Right	Cheek	2	04513	6	99.6	0.514	0.178	1.146	1.004	0.205	
5825	165	802.11a	OFDM	20	18.0	17.41	0.13	Right	Tilt	2	04513	6	99.6	0.362	-	1.146	1.004	-	
5825	165	802.11a	OFDM	20	18.0	17.41	0.03	Left	Cheek	2	04513	6	99.6	0.172	-	1.146	1.004	-	
5825	165	802.11a	OFDM	20	18.0	17.41	0.02	Left	Tilt	2	04513	6	99.6	0.338	-	1.146	1.004	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-27
NII 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)	
5260	52	802.11n	OFDM	20	17.0	16.71	17.0	16.52	-0.15	Right	Cheek	MIMO	04513	13	99.9	1.568	0.661	1.117	1.001	0.739	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.03	Right	Cheek	MIMO	04513	13	99.9	1.594	0.738	1.140	1.001	0.842	A25
5320	64	802.11n	OFDM	20	17.0	16.53	17.0	16.38	0.03	Right	Cheek	MIMO	04513	13	99.9	1.512	0.675	1.153	1.001	0.779	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.07	Right	Tilt	MIMO	04513	13	99.9	1.361	0.560	1.140	1.001	0.639	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.09	Left	Cheek	MIMO	04513	13	99.9	0.592	-	1.140	1.001	-	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.04	Left	Tilt	MIMO	04513	13	99.9	0.419	-	1.140	1.001	-	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.14	Right	Cheek	MIMO	04513	13	99.9	1.365	0.587	1.079	1.001	0.634	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.11	Right	Tilt	MIMO	04513	13	99.9	1.216	0.483	1.079	1.001	0.522	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.09	Left	Cheek	MIMO	04513	13	99.9	0.567	-	1.079	1.001	-	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.07	Left	Tilt	MIMO	04513	13	99.9	0.589	-	1.079	1.001	-	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.11	Right	Cheek	MIMO	04513	13	99.9	1.355	0.579	1.104	1.001	0.640	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.08	Right	Tilt	MIMO	04513	13	99.9	1.172	0.471	1.104	1.001	0.521	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.02	Left	Cheek	MIMO	04513	13	99.9	0.391	-	1.104	1.001	-	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.11	Left	Tilt	MIMO	04513	13	99.9	0.412	-	1.104	1.001	-	
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 56 and 165 to achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm. For channel 124 to achieve the 20.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm.

Table 11-28
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	14.99	15.0	14.67	0.08	Right	Cheek	MIMO	04513	27	99.9	0.769	0.346	1.079	1.001	0.374	
5270	54	802.11n	OFDM	40	15.0	14.99	15.0	14.67	0.02	Right	Tilt	MIMO	04513	27	99.9	0.651	-	1.079	1.001	-	
5270	54	802.11n	OFDM	40	15.0	14.99	15.0	14.67	0.14	Left	Cheek	MIMO	04513	27	99.9	0.252	-	1.079	1.001	-	
5270	54	802.11n	OFDM	40	15.0	14.99	15.0	14.67	0.15	Left	Tilt	MIMO	04513	27	99.9	0.188	-	1.079	1.001	-	
5630	126	802.11n	OFDM	40	15.0	14.98	15.0	14.89	0.15	Right	Cheek	MIMO	04513	27	99.9	0.822	0.338	1.026	1.001	0.347	
5630	126	802.11n	OFDM	40	15.0	14.98	15.0	14.89	0.03	Right	Tilt	MIMO	04513	27	99.9	0.656	-	1.026	1.001	-	
5630	126	802.11n	OFDM	40	15.0	14.98	15.0	14.89	0.04	Left	Cheek	MIMO	04513	27	99.9	0.315	-	1.026	1.001	-	
5630	126	802.11n	OFDM	40	15.0	14.98	15.0	14.89	0.13	Left	Tilt	MIMO	04513	27	99.9	0.292	-	1.026	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.02	Right	Cheek	MIMO	04513	27	99.9	0.434	0.207	1.067	1.001	0.221	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.13	Right	Tilt	MIMO	04513	27	99.9	0.329	-	1.067	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.17	Left	Cheek	MIMO	04513	27	99.9	0.190	-	1.067	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.03	Left	Tilt	MIMO	04513	27	99.9	0.186	-	1.067	1.001	-	
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: 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.

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Table 11-29
DSS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	12.5	12.49	-0.04	Right	Cheek	04513	1	76.8	0.269	1.002	1.302	**0.351**	A26
2441.00	39	Bluetooth	FHSS	12.5	12.49	0.02	Right	Tilt	04513	1	76.8	0.166	1.002	1.302	0.217	
2441.00	39	Bluetooth	FHSS	12.5	12.49	0.12	Left	Cheek	04513	1	76.8	0.083	1.002	1.302	0.108	
2441.00	39	Bluetooth	FHSS	12.5	12.49	0.04	Left	Tilt	04513	1	76.8	0.078	1.002	1.302	0.102	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram								

11.2 Standalone Body-Worn SAR Data

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

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.5	25.41	0.00	10 mm	04422	N/A	1:1	back	0.518	1.021	0.529	A27
824.70	1013	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.36	0.00	10 mm	04422	N/A	1:1	back	0.544	1.033	0.562	
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.37	-0.05	10 mm	04422	N/A	1:1	back	0.650	1.030	0.670	
848.31	777	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.39	-0.13	10 mm	04422	N/A	1:1	back	0.651	1.026	0.668	A29
1851.25	25	PCS CDMA	TDSO / SO32	25.2	25.11	-0.09	10 mm	04430	N/A	1:1	back	0.774	1.021	0.790	A31
1880.00	600	PCS CDMA	TDSO / SO32	25.2	25.14	-0.03	10 mm	04430	N/A	1:1	back	0.754	1.014	0.765	
1908.75	1175	PCS CDMA	TDSO / SO32	25.2	25.17	-0.01	10 mm	04430	N/A	1:1	back	0.722	1.007	0.727	
836.60	190	GSM 850	GSM	33.4	32.90	-0.05	10 mm	04422	1	1:8.3	back	0.388	1.122	0.435	
824.20	128	GSM 850	GPRS	29.2	28.28	0.10	10 mm	04422	4	1:2.076	back	0.369	1.236	0.456	
836.60	190	GSM 850	GPRS	29.2	28.41	0.02	10 mm	04422	4	1:2.076	back	0.525	1.199	0.629	
848.80	251	GSM 850	GPRS	29.2	28.58	-0.03	10 mm	04422	4	1:2.076	back	0.554	1.153	0.639	A33
1880.00	661	GSM 1900	GSM	30.2	29.55	0.09	10 mm	04422	1	1:8.3	back	0.267	1.161	0.310	
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.18	10 mm	04422	3	1:2.76	back	0.316	1.127	0.356	A34
826.40	4132	UMTS 850	RMC	25.5	25.31	-0.03	10 mm	04422	N/A	1:1	back	0.571	1.045	0.597	
836.60	4183	UMTS 850	RMC	25.5	25.32	-0.03	10 mm	04422	N/A	1:1	back	0.658	1.042	0.686	
846.60	4233	UMTS 850	RMC	25.5	25.28	-0.04	10 mm	04422	N/A	1:1	back	0.700	1.052	0.736	A36
1712.40	1312	UMTS 1750	RMC	25.2	24.92	0.05	10 mm	04430	N/A	1:1	back	0.722	1.067	0.770	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	0.04	10 mm	04430	N/A	1:1	back	0.774	1.059	0.820	
1752.60	1513	UMTS 1750	RMC	25.2	24.93	0.05	10 mm	04430	N/A	1:1	back	0.802	1.064	0.853	A37
1852.40	9262	UMTS 1900	RMC	25.2	24.82	-0.08	10 mm	04430	N/A	1:1	back	0.844	1.091	0.921	A39
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.14	10 mm	04430	N/A	1:1	back	0.827	1.069	0.884	
1907.60	9538	UMTS 1900	RMC	25.2	24.87	-0.11	10 mm	04430	N/A	1:1	back	0.775	1.079	0.836	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-31
LTE Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	-	25.5	25.34	-0.04	0	04448	QPSK	1	0	10 mm	back	1:1	0.308	1.038	0.320	A41
680.50	133297	Mid	LTE Band 71	20	-	24.5	23.77	-0.02	1	04448	QPSK	50	0	10 mm	back	1:1	0.210	1.183	0.248	
707.50	23095	Mid	LTE Band 12	10	-	25.5	25.10	-0.01	0	04463	QPSK	1	49	10 mm	back	1:1	0.388	1.096	0.425	A43
707.50	23095	Mid	LTE Band 12	10	-	24.5	23.47	0.02	1	04463	QPSK	25	25	10 mm	back	1:1	0.258	1.268	0.327	
782.00	23230	Mid	LTE Band 13	10	-	25.5	25.08	-0.02	0	04463	QPSK	1	25	10 mm	back	1:1	0.463	1.102	0.510	A44
782.00	23230	Mid	LTE Band 13	10	-	24.5	23.46	0.00	1	04463	QPSK	25	12	10 mm	back	1:1	0.326	1.271	0.414	
831.50	26865	Mid	LTE Band 26 (Cell)	15	-	25.5	25.30	-0.04	0	04448	QPSK	1	36	10 mm	back	1:1	0.609	1.047	0.638	A45
831.50	26865	Mid	LTE Band 26 (Cell)	15	-	24.5	23.59	-0.02	1	04448	QPSK	36	37	10 mm	back	1:1	0.434	1.233	0.535	
836.50	20525	Mid	LTE Band 5 (Cell)	10	-	25.5	25.47	-0.09	0	04455	QPSK	1	49	10 mm	back	1:1	0.639	1.007	0.643	A47
836.50	20525	Mid	LTE Band 5 (Cell)	10	-	24.5	23.84	0.00	1	04455	QPSK	25	12	10 mm	back	1:1	0.413	1.164	0.481	
1720.00	132072	Low	LTE Band 66 (AWS)	20	-	25.2	24.91	0.05	0	04448	QPSK	1	50	10 mm	back	1:1	0.699	1.069	0.747	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	-	25.2	25.05	0.02	0	04448	QPSK	1	50	10 mm	back	1:1	0.837	1.035	0.866	
1770.00	132572	High	LTE Band 66 (AWS)	20	-	25.2	25.02	-0.01	0	04448	QPSK	1	0	10 mm	back	1:1	0.914	1.042	**0.952**	A48
1745.00	132322	Mid	LTE Band 66 (AWS)	20	-	24.2	24.01	0.05	1	04448	QPSK	50	25	10 mm	back	1:1	0.685	1.045	0.716	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	-	24.2	23.98	0.02	1	04448	QPSK	100	0	10 mm	back	1:1	0.672	1.052	0.707	
1770.00	132572	High	LTE Band 66 (AWS)	20	-	25.2	25.02	-0.01	0	04448	QPSK	1	0	10 mm	back	1:1	0.913	1.042	0.951	
1860.00	26140	Low	LTE Band 25 (PCS)	20	-	25.2	25.08	0.03	0	04448	QPSK	1	0	10 mm	back	1:1	0.858	1.028	0.882	A50
1882.50	26365	Mid	LTE Band 25 (PCS)	20	-	25.2	25.20	0.07	0	04448	QPSK	1	0	10 mm	back	1:1	0.828	1.000	0.828	
1905.00	26590	High	LTE Band 25 (PCS)	20	-	25.2	25.06	0.08	0	04448	QPSK	1	50	10 mm	back	1:1	0.794	1.033	0.820	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	-	24.2	24.19	0.06	1	04448	QPSK	50	25	10 mm	back	1:1	0.635	1.002	0.636	
1905.00	26590	High	LTE Band 25 (PCS)	20	-	24.2	24.06	0.08	1	04448	QPSK	100	0	10 mm	back	1:1	0.613	1.033	0.633	
2310.00	27710	Mid	LTE Band 30	10	-	22.7	22.38	-0.03	0	04455	QPSK	1	0	10 mm	back	1:1	0.447	1.076	0.481	A52
2310.00	27710	Mid	LTE Band 30	10	-	21.7	21.27	-0.02	1	04455	QPSK	25	12	10 mm	back	1:1	0.342	1.104	0.378	
2560.00	21350	High	LTE Band 7	20	-	23.7	23.54	-0.18	0	04455	QPSK	1	0	10 mm	back	1:1	0.553	1.038	0.574	A54
2560.00	21350	High	LTE Band 7	20	-	22.7	22.49	-0.11	1	04455	QPSK	50	50	10 mm	back	1:1	0.429	1.050	0.450	
3560.00	55340	Low	LTE Band 48	20	-	22.5	21.71	-0.08	0	04448	QPSK	1	0	10 mm	back	1:1.58	1.000	1.199	**1.199**	A56
3560.00	55340	Low	LTE Band 48	20	#1	22.5	21.71	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.724	1.199	0.868	
3560.00	55340	Low	LTE Band 48	20	#2	22.5	21.71	-0.17	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.798	1.199	0.957	
3560.00	55340	Low	LTE Band 48	20	#3	22.5	21.71	0.15	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.036	1.199	0.043	
3603.30	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	-0.11	0	04448	QPSK	1	99	10 mm	back	1:1.58	0.929	1.186	1.102	
3646.70	56207	Mid-High	LTE Band 48	20	-	22.5	21.70	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.928	1.202	1.115	
3690.00	56640	High	LTE Band 48	20	-	22.5	21.68	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.832	1.208	1.005	
3560.00	55340	Low	LTE Band 48	20	-	21.5	20.73	-0.04	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.736	1.194	0.879	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.80	-0.13	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.753	1.175	0.885	
3646.70	56207	Mid-High	LTE Band 48	20	-	21.5	20.66	0.18	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.660	1.213	0.801	
3690.00	56640	High	LTE Band 48	20	-	21.5	20.59	0.16	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.586	1.233	0.723	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.63	-0.11	1	04448	QPSK	100	0	10 mm	back	1:1.58	0.745	1.222	0.910	
3560.00	55340	Low	LTE Band 48	20	-	22.5	21.71	0.06	0	04448	QPSK	1	0	10 mm	back	1:1.58	1.000	1.199	**1.199**	
3603.30	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	-0.03	0	04448	QPSK	1	99	10 mm	back	1:1.58	0.924	1.186	1.108	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram			

Notes:
1. Green entry represents additional Body Worn SAR Position (DD #1: 0 degrees).
2. Purple entry represents additional Body Worn SAR Position (DD #2: 180 degrees).
3. Light orange entry represents additional Body Worn SAR Position (DD #3: 360 degrees).
4. Blue entry represents variability measurement.

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Table 11-32
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																							
1 CC Uplink | 2 CC Uplink, Power Class	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 - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.45	-0.03	0	04455	QPSK	1	0	10 mm	back	1:1.58	0.489	1.189	0.581	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	-0.03	0	04455	QPSK	1	50	10 mm	back	1:1.58	0.519	1.091	0.566	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	-0.01	1	04455	QPSK	50	25	10 mm	back	1:1.58	0.432	1.042	0.450	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.13	0.02	0	04455	QPSK	1	0	10 mm	back	1:2.31	0.579	1.140	0.660	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.56	-0.12	0	04455	QPSK	1	50	10 mm	back	1:2.31	0.654	1.033	0.676	
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.2	25.20	-0.06	0	04455	QPSK	1	0	10 mm	back	1:1.58	0.593	1.000	0.593	
	SCC	2616.70	40857										1	99							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.70	-0.01	0	04455	QPSK	1	0	10 mm	back	1:2.31	0.683	1.000	0.683	A57
	SCC	2616.70	40857										1	99							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-33
NR Body-Worn SAR

MEASUREMENT RESULTS																					
Power Class	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)	
N/A	680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.04	0	04489	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.277	1.156	0.320	A59
N/A	680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.02	0	04489	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.274	1.064	0.292	
N/A	680.50	136100	Mid	NR Band n71	20	25.5	23.90	0.02	0	04489	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.159	1.445	0.230	
N/A	1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	-0.04	0	04471	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.211	1.040	0.219	
N/A	1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	-0.03	0	04471	DFT-S-OFDM QPSK	50	56	10 mm	back	1:1	0.229	1.094	0.251	A61
N/A	1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.21	0.00	0	04471	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.209	1.199	0.251	
N/A	1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.05	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.330	1.096	0.362	
N/A	1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	-0.04	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.342	1.089	0.372	A63
N/A	1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.75	-0.02	0	04489	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.323	1.189	0.384	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.00	0	04489	DFT-S-OFDM QPSK	1	1	10 mm	back	1:4	0.133	1.358	0.181	A65
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.04	0	04489	DFT-S-OFDM QPSK	135	0	10 mm	back	1:4	0.097	1.445	0.140	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	26.7	25.89	0.03	1	04489	CP-OFDM QPSK	1	1	10 mm	back	1:4	0.119	1.205	0.143	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-34
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	19.97	0.01	10 mm	1	04513	1	back	99.6	0.337	0.218	1.130	1.004	**0.247**	A67
2412	1	802.11b	DSSS	22	20.5	20.12	0.06	10 mm	2	04513	1	back	99.4	0.282	0.190	1.091	1.006	0.209	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-35
DTS Body-Worn MIMO 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																							
2452	9	802.11n	OFDM	20	18.5	17.63	18.5	17.92	0.13	10 mm	MIMO	04513	13	back	99.1	0.295	0.192	1.222	1.009	0.237	
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: To achieve the 21.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.5 dBm.

Table 11-36
DTS Body-Worn MIMO 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																							
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.09	10 mm	MIMO	04513	13	back	99.1	0.152	0.090	1.146	1.009	0.104	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram														

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 11-37
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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
5280	56	802.11a	OFDM	20	18.0	17.26	0.14	10 mm	1	04513	6	back	99.5	0.629	0.312	1.186	1.005	0.372	
5280	56	802.11a	OFDM	20	18.0	17.16	0.04	10 mm	2	04513	6	back	99.6	0.209	0.097	1.213	1.004	0.118	
5500	100	802.11a	OFDM	20	17.0	16.48	0.02	10 mm	1	04513	6	back	99.5	0.445	0.223	1.127	1.005	0.253	
5600	120	802.11a	OFDM	20	17.0	16.89	-0.01	10 mm	2	04513	6	back	99.6	0.391	0.167	1.026	1.004	0.172	
5785	157	802.11a	OFDM	20	18.0	17.36	0.04	10 mm	1	04513	6	back	99.5	0.321	0.144	1.159	1.005	0.168	
5825	165	802.11a	OFDM	20	18.0	17.41	0.10	10 mm	2	04513	6	back	99.6	0.981	0.408	1.146	1.004	**0.469**	
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
NII MIMO Body-Worn 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.03	10 mm	MIMO	04513	13	back	99.9	0.810	0.412	1.140	1.001	0.470	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.17	10 mm	MIMO	04513	13	back	99.9	0.697	0.301	1.079	1.001	0.325	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.02	10 mm	MIMO	04513	13	back	99.9	1.007	0.460	1.104	1.001	0.508	A69
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: For channel 56 and 165 to achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm. For channel 124 to achieve the 20.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm.

Table 11-39
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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
5270	54	802.11n	OFDM	40	15.0	14.99	15.0	14.67	0.04	10 mm	MIMO	04513	27	back	99.9	0.334	0.173	1.079	1.001	0.187	
5630	126	802.11n	OFDM	40	15.0	14.98	15.0	14.89	0.08	10 mm	MIMO	04513	27	back	99.9	0.326	0.145	1.026	1.001	0.149	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.06	10 mm	MIMO	04513	27	back	99.9	0.381	0.170	1.067	1.001	0.182	
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.

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Table 11-40
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	12.49	0.17	10 mm	04513	1	back	76.8	0.026	1.002	1.302	**0.034**	A70
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 11-41
CDMA Hotspot 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 (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.45	-0.02	10 mm	04422	1:1	back	0.488	1.012	0.494	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.45	0.00	10 mm	04422	1:1	front	0.499	1.012	0.505	A28
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.45	-0.07	10 mm	04422	1:1	bottom	0.208	1.012	0.210	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.45	0.07	10 mm	04422	1:1	right	0.243	1.012	0.246	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.45	-0.07	10 mm	04422	1:1	back	0.614	1.012	0.621	
824.70	1013	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.43	0.01	10 mm	04422	1:1	front	0.523	1.016	0.531	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.45	-0.01	10 mm	04422	1:1	front	0.619	1.012	0.626	A30
848.31	777	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.46	-0.04	10 mm	04422	1:1	front	0.612	1.009	0.618	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.45	-0.10	10 mm	04422	1:1	bottom	0.270	1.012	0.273	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.45	-0.03	10 mm	04422	1:1	right	0.212	1.012	0.215	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	0.04	10 mm	04430	1:1	back	0.424	1.002	0.425	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	-0.03	10 mm	04430	1:1	front	0.366	1.002	0.367	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.7	22.64	0.05	10 mm	04430	1:1	bottom	0.846	1.014	0.858	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	-0.05	10 mm	04430	1:1	bottom	0.898	1.002	0.900	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.7	22.65	-0.01	10 mm	04430	1:1	bottom	0.914	1.012	0.925	A32
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	-0.02	10 mm	04430	1:1	left	0.106	1.002	0.106	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**Body 1.6 W/kg (mW/g) averaged over 1 gram**									

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Table 11-42
GPRS 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)	
824.20	128	GSM 850	GPRS	29.2	28.28	0.10	10 mm	04422	4	1:2.076	back	0.369	1.236	0.456	
836.60	190	GSM 850	GPRS	29.2	28.41	0.02	10 mm	04422	4	1:2.076	back	0.525	1.199	0.629	
848.80	251	GSM 850	GPRS	29.2	28.58	-0.03	10 mm	04422	4	1:2.076	back	0.554	1.153	0.639	A33
836.60	190	GSM 850	GPRS	29.2	28.41	0.12	10 mm	04422	4	1:2.076	front	0.494	1.199	0.592	
836.60	190	GSM 850	GPRS	29.2	28.41	0.03	10 mm	04422	4	1:2.076	bottom	0.216	1.199	0.259	
836.60	190	GSM 850	GPRS	29.2	28.41	-0.10	10 mm	04422	4	1:2.076	right	0.182	1.199	0.218	
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.18	10 mm	04422	3	1:2.76	back	0.316	1.127	0.356	
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.07	10 mm	04422	3	1:2.76	front	0.340	1.127	0.383	
1850.20	512	GSM 1900	GPRS	27.2	26.45	-0.15	10 mm	04422	3	1:2.76	bottom	0.651	1.189	0.774	
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.03	10 mm	04422	3	1:2.76	bottom	0.625	1.127	0.704	
1909.80	810	GSM 1900	GPRS	27.2	26.37	-0.07	10 mm	04422	3	1:2.76	bottom	0.818	1.211	0.991	A35
1880.00	661	GSM 1900	GPRS	27.2	26.68	-0.05	10 mm	04422	3	1:2.76	left	0.094	1.127	0.106	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-43
UMTS Hotspot 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 (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
826.40	4132	UMTS 850	RMC	25.5	25.31	-0.03	10 mm	04422	1:1	back	0.571	1.045	0.597	
836.60	4183	UMTS 850	RMC	25.5	25.32	-0.03	10 mm	04422	1:1	back	0.658	1.042	0.686	
846.60	4233	UMTS 850	RMC	25.5	25.28	-0.04	10 mm	04422	1:1	back	0.700	1.052	0.736	A36
836.60	4183	UMTS 850	RMC	25.5	25.32	0.01	10 mm	04422	1:1	front	0.640	1.042	0.667	
836.60	4183	UMTS 850	RMC	25.5	25.32	-0.02	10 mm	04422	1:1	bottom	0.252	1.042	0.263	
836.60	4183	UMTS 850	RMC	25.5	25.32	0.00	10 mm	04422	1:1	right	0.236	1.042	0.246	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	0.02	10 mm	04448	1:1	back	0.470	1.040	0.489	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	0.05	10 mm	04448	1:1	front	0.415	1.040	0.432	
1712.40	1312	UMTS 1750	RMC	22.7	22.59	-0.01	10 mm	04448	1:1	bottom	0.611	1.026	0.627	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	-0.01	10 mm	04448	1:1	bottom	0.713	1.040	0.742	
1752.60	1513	UMTS 1750	RMC	22.7	22.42	-0.01	10 mm	04448	1:1	bottom	0.768	1.067	0.819	A38
1732.40	1412	UMTS 1750	RMC	22.7	22.53	0.04	10 mm	04448	1:1	left	0.126	1.040	0.131	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	-0.01	10 mm	04430	1:1	back	0.441	1.038	0.458	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	0.05	10 mm	04430	1:1	front	0.446	1.038	0.463	
1852.40	9262	UMTS 1900	RMC	22.7	22.44	0.02	10 mm	04430	1:1	bottom	0.793	1.062	0.842	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	-0.10	10 mm	04430	1:1	bottom	0.860	1.038	0.893	
1907.60	9538	UMTS 1900	RMC	22.7	22.46	-0.02	10 mm	04430	1:1	bottom	0.892	1.057	0.943	A40
1880.00	9400	UMTS 1900	RMC	22.7	22.54	0.04	10 mm	04430	1:1	left	0.130	1.038	0.135	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-44
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	-0.04	0	04448	QPSK	1	0	10 mm	back	1:1	0.308	1.038	0.320	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	-0.02	1	04448	QPSK	50	0	10 mm	back	1:1	0.210	1.183	0.248	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	-0.01	0	04448	QPSK	1	0	10 mm	front	1:1	0.276	1.038	0.286	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.02	1	04448	QPSK	50	0	10 mm	front	1:1	0.193	1.183	0.228	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	-0.01	0	04448	QPSK	1	0	10 mm	bottom	1:1	0.094	1.038	0.098	
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	0.04	1	04448	QPSK	50	0	10 mm	bottom	1:1	0.065	1.183	0.077	
680.50	133297	Mid	LTE Band 71	20	25.5	25.34	0.04	0	04448	QPSK	1	0	10 mm	right	1:1	0.425	1.038	0.441	A42
680.50	133297	Mid	LTE Band 71	20	24.5	23.77	-0.01	1	04448	QPSK	50	0	10 mm	right	1:1	0.295	1.183	0.349	
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 11-45
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	25.10	-0.01	0	04463	QPSK	1	49	10 mm	back	1:1	0.388	1.096	0.425	A43
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.02	1	04463	QPSK	25	25	10 mm	back	1:1	0.258	1.268	0.327	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	-0.01	0	04463	QPSK	1	49	10 mm	front	1:1	0.365	1.096	0.400	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.02	1	04463	QPSK	25	25	10 mm	front	1:1	0.248	1.268	0.314	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	0.05	0	04463	QPSK	1	49	10 mm	bottom	1:1	0.118	1.096	0.129	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	-0.03	1	04463	QPSK	25	25	10 mm	bottom	1:1	0.083	1.268	0.105	
707.50	23095	Mid	LTE Band 12	10	25.5	25.10	-0.05	0	04463	QPSK	1	49	10 mm	right	1:1	0.257	1.096	0.282	
707.50	23095	Mid	LTE Band 12	10	24.5	23.47	0.05	1	04463	QPSK	25	25	10 mm	right	1:1	0.164	1.268	0.208	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-46
LTE Band 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	25.08	-0.02	0	04463	QPSK	1	25	10 mm	back	1:1	0.463	1.102	0.510	A44
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.00	1	04463	QPSK	25	12	10 mm	back	1:1	0.326	1.271	0.414	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	-0.01	0	04463	QPSK	1	25	10 mm	front	1:1	0.455	1.102	0.501	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.02	1	04463	QPSK	25	12	10 mm	front	1:1	0.324	1.271	0.412	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	-0.02	0	04463	QPSK	1	25	10 mm	bottom	1:1	0.150	1.102	0.165	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.06	1	04463	QPSK	25	12	10 mm	bottom	1:1	0.108	1.271	0.137	
782.00	23230	Mid	LTE Band 13	10	25.5	25.08	-0.05	0	04463	QPSK	1	25	10 mm	right	1:1	0.212	1.102	0.234	
782.00	23230	Mid	LTE Band 13	10	24.5	23.46	0.00	1	04463	QPSK	25	12	10 mm	right	1:1	0.147	1.271	0.187	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

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Table 11-47
LTE Band 26 (Cell) 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)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	-0.04	0	04448	QPSK	1	36	10 mm	back	1:1	0.609	1.047	0.638	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	-0.02	1	04448	QPSK	36	37	10 mm	back	1:1	0.434	1.233	0.535	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	-0.01	0	04448	QPSK	1	36	10 mm	front	1:1	0.633	1.047	0.663	A46
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.00	1	04448	QPSK	36	37	10 mm	front	1:1	0.452	1.233	0.557	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	-0.09	0	04448	QPSK	1	36	10 mm	bottom	1:1	0.256	1.047	0.268	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.07	1	04448	QPSK	36	37	10 mm	bottom	1:1	0.177	1.233	0.218	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.30	0.10	0	04448	QPSK	1	36	10 mm	right	1:1	0.230	1.047	0.241	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	23.59	0.01	1	04448	QPSK	36	37	10 mm	right	1:1	0.155	1.233	0.191	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-48
LTE Band 5 (Cell) 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	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	-0.09	0	04455	QPSK	1	49	10 mm	back	1:1	0.639	1.007	0.643	A47
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.00	1	04455	QPSK	25	12	10 mm	back	1:1	0.413	1.164	0.481	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	0.00	0	04455	QPSK	1	49	10 mm	front	1:1	0.543	1.007	0.547	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.00	1	04455	QPSK	25	12	10 mm	front	1:1	0.397	1.164	0.462	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	-0.02	0	04455	QPSK	1	49	10 mm	bottom	1:1	0.229	1.007	0.231	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.01	1	04455	QPSK	25	12	10 mm	bottom	1:1	0.171	1.164	0.199	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.47	0.08	0	04455	QPSK	1	49	10 mm	right	1:1	0.198	1.007	0.199	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.84	0.05	1	04455	QPSK	25	12	10 mm	right	1:1	0.144	1.164	0.168	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

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Table 11-49
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	21.88	0.03	0	04448	QPSK	1	50	10 mm	back	1:1	0.471	1.208	0.569	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.05	0	04448	QPSK	50	25	10 mm	back	1:1	0.496	1.148	0.569	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	0.05	0	04448	QPSK	1	50	10 mm	front	1:1	0.445	1.208	0.538	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.07	0	04448	QPSK	50	25	10 mm	front	1:1	0.468	1.148	0.537	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	21.80	0.04	0	04448	QPSK	1	50	10 mm	bottom	1:1	0.655	1.230	0.806	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	0.02	0	04448	QPSK	1	50	10 mm	bottom	1:1	0.720	1.208	0.870	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	21.80	-0.01	0	04448	QPSK	1	50	10 mm	bottom	1:1	0.784	1.230	0.964	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	22.09	0.03	0	04448	QPSK	50	25	10 mm	bottom	1:1	0.686	1.151	0.790	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.03	0	04448	QPSK	50	25	10 mm	bottom	1:1	0.755	1.148	0.867	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	22.00	0.01	0	04448	QPSK	50	25	10 mm	bottom	1:1	0.803	1.175	0.944	A49
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.87	0.03	0	04448	QPSK	100	0	10 mm	bottom	1:1	0.747	1.211	0.905	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	0.10	0	04448	QPSK	1	50	10 mm	left	1:1	0.133	1.208	0.161	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.13	0	04448	QPSK	50	25	10 mm	left	1:1	0.143	1.148	0.164	
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 11-50
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.19	0	04430	QPSK	1	0	10 mm	back	1:1	0.526	1.047	0.551	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	0.05	0	04430	QPSK	50	0	10 mm	back	1:1	0.524	1.067	0.559	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.01	0	04430	QPSK	1	0	10 mm	front	1:1	0.450	1.047	0.471	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	0.06	0	04430	QPSK	50	0	10 mm	front	1:1	0.454	1.067	0.484	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.06	0	04430	QPSK	1	0	10 mm	bottom	1:1	0.860	1.047	0.900	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.47	-0.14	0	04430	QPSK	1	0	10 mm	bottom	1:1	0.920	1.054	0.970	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.43	-0.07	0	04430	QPSK	1	0	10 mm	bottom	1:1	0.934	1.064	0.994	A51
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	0.01	0	04430	QPSK	50	0	10 mm	bottom	1:1	0.887	1.067	0.946	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.29	-0.09	0	04430	QPSK	50	0	10 mm	bottom	1:1	0.894	1.099	0.983	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.41	0.03	0	04430	QPSK	50	25	10 mm	bottom	1:1	0.929	1.069	0.993	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.24	-0.02	0	04430	QPSK	100	0	10 mm	bottom	1:1	0.870	1.112	0.967	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.04	0	04430	QPSK	1	0	10 mm	left	1:1	0.139	1.047	0.146	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	-0.08	0	04430	QPSK	50	0	10 mm	left	1:1	0.137	1.067	0.146	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.43	-0.05	0	04430	QPSK	1	0	10 mm	bottom	1:1	0.829	1.064	0.882	
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.

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Table 11-51
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	22.38	-0.03	0	04455	QPSK	1	0	10 mm	back	1:1	0.447	1.076	0.481	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	-0.02	1	04455	QPSK	25	12	10 mm	back	1:1	0.342	1.104	0.378	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	-0.02	0	04455	QPSK	1	0	10 mm	front	1:1	0.404	1.076	0.435	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.01	1	04455	QPSK	25	12	10 mm	front	1:1	0.311	1.104	0.343	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	-0.08	0	04455	QPSK	1	0	10 mm	bottom	1:1	0.732	1.076	0.788	A53
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	-0.04	1	04455	QPSK	25	12	10 mm	bottom	1:1	0.549	1.104	0.606	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.38	0.19	0	04455	QPSK	1	0	10 mm	left	1:1	0.103	1.076	0.111	
2310.00	27710	Mid	LTE Band 30	10	21.7	21.27	0.02	1	04455	QPSK	25	12	10 mm	left	1:1	0.078	1.104	0.086	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-52
LTE Band 7 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	-0.07	0	04463	QPSK	1	50	10 mm	back	1:1	0.339	1.026	0.348	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.04	0	04463	QPSK	50	25	10 mm	back	1:1	0.353	1.000	0.353	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	0.04	0	04463	QPSK	1	50	10 mm	front	1:1	0.179	1.026	0.184	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	0.00	0	04463	QPSK	50	25	10 mm	front	1:1	0.189	1.000	0.189	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	-0.02	0	04463	QPSK	1	50	10 mm	bottom	1:1	0.562	1.026	0.577	A55
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.12	0	04463	QPSK	50	25	10 mm	bottom	1:1	0.542	1.000	0.542	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	0.09	0	04463	QPSK	1	50	10 mm	left	1:1	0.068	1.026	0.070	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	0.08	0	04463	QPSK	50	25	10 mm	left	1:1	0.068	1.000	0.068	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

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Table 11-53
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Dual Display Accessory Configuration	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
3560.00	55340	Low	LTE Band 48	20	-	22.5	21.71	-0.08	0	04448	QPSK	1	0	10 mm	back	1:1.58	1.000	1.199	**1.199**	A56
3560.00	55340	Low	LTE Band 48	20	#1	22.5	21.71	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.724	1.20	0.868	
3560.00	55340	Low	LTE Band 48	20	#2	22.5	21.71	-0.17	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.798	1.20	0.957	
3560.00	55340	Low	LTE Band 48	20	#3	22.5	21.71	0.15	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.036	1.20	0.043	
3603.30	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	-0.11	0	04448	QPSK	1	99	10 mm	back	1:1.58	0.929	1.186	1.102	
3646.70	56207	Mid-High	LTE Band 48	20	-	22.5	21.70	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.928	1.202	1.115	
3690.00	56640	High	LTE Band 48	20	-	22.5	21.68	-0.09	0	04448	QPSK	1	0	10 mm	back	1:1.58	0.832	1.208	1.005	
3560.00	55340	Low	LTE Band 48	20	-	21.5	20.73	-0.04	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.736	1.194	0.879	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.80	-0.13	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.753	1.175	0.885	
3646.70	56207	Mid-High	LTE Band 48	20	-	21.5	20.66	0.18	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.660	1.213	0.801	
3690.00	56640	High	LTE Band 48	20	-	21.5	20.59	0.16	1	04448	QPSK	50	25	10 mm	back	1:1.58	0.586	1.233	0.723	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.63	-0.11	1	04448	QPSK	100	0	10 mm	back	1:1.58	0.745	1.222	0.910	
3603.30	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	0.03	0	04448	QPSK	1	99	10 mm	front	1:1.58	0.022	1.186	0.026	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.80	0.12	1	04448	QPSK	50	25	10 mm	front	1:1.58	0.017	1.175	0.020	
3603.30	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	0.03	0	04448	QPSK	1	99	10 mm	right	1:1.58	0.275	1.186	0.326	
3603.30	55773	Low-Mid	LTE Band 48	20	-	21.5	20.80	0.09	1	04448	QPSK	50	25	10 mm	right	1:1.58	0.222	1.175	0.261	
3560	55340	Low	LTE Band 48	20	-	22.5	21.71	0.06	0	04448	QPSK	1	0	10 mm	back	1:1.58	1.000	1.199	**1.199**	
3603.3	55773	Low-Mid	LTE Band 48	20	-	22.5	21.76	-0.03	0	04448	QPSK	1	99	10 mm	back	1:1.58	0.924	1.186	1.108	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**															**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

Notes:
1. Green entry represents additional Hotspot SAR Position (DD #1: 0 degrees).
2. Purple entry represents additional Hotspot SAR Position (DD #2: 180 degrees).
3. Light orange entry represents additional Hotspot SAR Position (DD #3: 360 degrees).
4. Blue entry represents variability measurement.

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Table 11-54
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	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 - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	-0.03	0	04455	QPSK	1	50	10 mm	back	1:1.58	0.519	1.091	0.566	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	-0.01	1	04455	QPSK	50	25	10 mm	back	1:1.58	0.432	1.042	0.450	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	-0.05	0	04455	QPSK	1	50	10 mm	front	1:1.58	0.345	1.091	0.376	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	-0.02	1	04455	QPSK	50	25	10 mm	front	1:1.58	0.269	1.042	0.280	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	24.73	-0.07	0	04455	QPSK	1	50	10 mm	bottom	1:1.58	0.766	1.114	0.853	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	25.2	24.81	-0.07	0	04455	QPSK	1	50	10 mm	bottom	1:1.58	0.743	1.094	0.813	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.2	24.77	-0.09	0	04455	QPSK	1	50	10 mm	bottom	1:1.58	0.766	1.104	0.846	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.45	-0.03	0	04455	QPSK	1	0	10 mm	bottom	1:1.58	0.704	1.189	0.837	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	0.02	0	04455	QPSK	1	50	10 mm	bottom	1:1.58	0.822	1.091	0.897	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	24.70	0.03	0	04455	QPSK	1	99	10 mm	bottom	1:1.58	0.723	1.122	0.811	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.00	-0.05	1	04455	QPSK	50	25	10 mm	bottom	1:1.58	0.690	1.047	0.722	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.2	23.97	-0.08	1	04455	QPSK	50	25	10 mm	bottom	1:1.58	0.641	1.054	0.676	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.2	23.97	-0.07	1	04455	QPSK	50	25	10 mm	bottom	1:1.58	0.694	1.054	0.731	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	-0.07	1	04455	QPSK	50	25	10 mm	bottom	1:1.58	0.733	1.042	0.764	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	23.93	-0.06	1	04455	QPSK	50	50	10 mm	bottom	1:1.58	0.656	1.064	0.698	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	23.93	-0.06	1	04455	QPSK	100	0	10 mm	bottom	1:1.58	0.671	1.064	0.714	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.13	0.04	0	04455	QPSK	1	0	10 mm	bottom	1:2.31	0.828	1.140	0.944	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.56	-0.07	0	04455	QPSK	1	50	10 mm	bottom	1:2.31	0.980	1.033	1.012	
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.2	25.20	-0.08	0	04455	QPSK	1	0	10 mm	bottom	1:1.58	0.819	1.000	0.819	
	SCC	2616.70	40857										1	99							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.70	-0.12	0	04455	QPSK	1	0	10 mm	bottom	1:2.31	0.990	1.000	0.990	A58
	SCC	2616.70	40857										1	99							
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.82	0.03	0	04455	QPSK	1	50	10 mm	left	1:1.58	0.096	1.091	0.105	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.02	0.02	1	04455	QPSK	50	25	10 mm	left	1:1.58	0.070	1.042	0.073	
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.7	27.70	-0.12	0	04455	QPSK	1	0	10 mm	bottom	1:2.31	0.970	1.000	0.970	
	SCC	2616.70	40857										1	99							
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 11-55
NR Band n71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.04	0	04489	DFT-S-OFDM QPSK	1	104	10 mm	back	1:1	0.277	1.156	0.320	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.02	0	04489	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.274	1.064	0.292	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.06	0	04489	DFT-S-OFDM QPSK	1	104	10 mm	front	1:1	0.224	1.156	0.259	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.01	0	04489	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.267	1.064	0.284	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.05	0	04489	DFT-S-OFDM QPSK	1	104	10 mm	bottom	1:1	0.080	1.156	0.092	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.05	0	04489	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.081	1.064	0.086	
680.50	136100	Mid	NR Band n71	20	25.5	24.87	-0.01	0	04489	DFT-S-OFDM QPSK	1	104	10 mm	right	1:1	0.360	1.156	0.416	
680.50	136100	Mid	NR Band n71	20	25.5	25.23	0.07	0	04489	DFT-S-OFDM QPSK	50	28	10 mm	right	1:1	0.363	1.064	0.386	A60
680.50	136100	Mid	NR Band n71	20	25.5	23.90	0.02	0	04489	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.232	1.445	0.335	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-56
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	22.0	21.83	-0.04	0	04471	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.211	1.040	0.219	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	-0.03	0	04471	DFT-S-OFDM QPSK	50	56	10 mm	back	1:1	0.229	1.094	0.251	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	0.04	0	04471	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.287	1.040	0.298	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.02	0	04471	DFT-S-OFDM QPSK	50	56	10 mm	front	1:1	0.320	1.094	0.350	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	0.08	0	04471	DFT-S-OFDM QPSK	1	1	10 mm	bottom	1:1	0.019	1.040	0.020	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.03	0	04471	DFT-S-OFDM QPSK	50	56	10 mm	bottom	1:1	0.018	1.094	0.020	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.83	0.01	0	04471	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.310	1.040	0.322	
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.61	0.00	0	04471	DFT-S-OFDM QPSK	50	56	10 mm	right	1:1	0.322	1.094	0.352	A62
1720.00	344000	Low	NR Band n66 (AWS)	20	22.0	21.21	0.02	0	04471	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.298	1.199	0.357	
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 11-57
NR Band n25 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)	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.05	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.330	1.096	0.362	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	-0.04	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.342	1.089	0.372	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.02	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	front	1:1	0.393	1.096	0.431	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.02	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	front	1:1	0.416	1.089	0.453	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.11	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	bottom	1:1	0.083	1.096	0.091	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.05	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	bottom	1:1	0.079	1.089	0.086	
1860.00	372000	Low	NR Band n25 (PCS)	20	23.5	22.98	-0.02	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.763	1.127	0.860	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	23.07	0.09	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.843	1.104	0.931	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	0.07	0	04489	DFT-S-OFDM QPSK	1	53	10 mm	right	1:1	0.885	1.096	0.970	A64
1860.00	372000	Low	NR Band n25 (PCS)	20	23.5	22.90	0.13	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.763	1.148	0.876	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	23.08	0.02	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.865	1.102	0.953	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.14	0	04489	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.853	1.089	0.929	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.75	-0.14	0	04489	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.833	1.189	0.990	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.09	-0.09	0	04489	DFT-S-OFDM QPSK	100	0	10 mm	right	1:1	0.852	1.099	0.936	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

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Table 11-58
NR Band n41 Hotspot SAR

MEASUREMENT RESULTS																					
Power Class	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)	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.00	0	04489	DFT-S-OFDM QPSK	1	1	10 mm	back	1:4	0.133	1.358	0.181	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.04	0	04489	DFT-S-OFDM QPSK	135	0	10 mm	back	1:4	0.097	1.445	0.140	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	-0.11	0	04489	DFT-S-OFDM QPSK	1	1	10 mm	front	1:4	0.181	1.358	0.246	A66
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	-0.01	0	04489	DFT-S-OFDM QPSK	135	0	10 mm	front	1:4	0.175	1.445	0.253	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	26.7	25.89	0.13	1	04489	CP-OFDM QPSK	1	1	10 mm	front	1:4	0.175	1.205	0.211	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	0.03	0	04489	DFT-S-OFDM QPSK	1	1	10 mm	bottom	1:4	0.030	1.358	0.041	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.10	0	04489	DFT-S-OFDM QPSK	135	0	10 mm	bottom	1:4	0.029	1.445	0.042	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.37	-0.06	0	04489	DFT-S-OFDM QPSK	1	1	10 mm	right	1:4	0.131	1.358	0.178	
Power Class 2	2592.99	518598	Mid	NR Band n41	100	27.7	26.10	0.05	0	04489	DFT-S-OFDM QPSK	135	0	10 mm	right	1:4	0.130	1.445	0.188	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-59
WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	19.97	0.01	10 mm	1	04513	1	back	99.6	0.337	0.218	1.130	1.004	0.247	
2462	11	802.11b	DSSS	22	20.5	19.97	0.08	10 mm	1	04513	1	front	99.6	0.417	0.282	1.130	1.004	0.320	
2462	11	802.11b	DSSS	22	20.5	19.97	-0.03	10 mm	1	04513	1	top	99.6	0.304	-	1.130	1.004	-	
2462	11	802.11b	DSSS	22	20.5	19.97	0.01	10 mm	1	04513	1	left	99.6	0.736	0.470	1.130	1.004	**0.533**	A68
2412	1	802.11b	DSSS	22	20.5	20.12	0.06	10 mm	2	04513	1	back	99.4	0.282	0.190	1.091	1.006	0.209	
2412	1	802.11b	DSSS	22	20.5	20.12	0.03	10 mm	2	04513	1	front	99.4	0.314	0.196	1.091	1.006	0.215	
2412	1	802.11b	DSSS	22	20.5	20.12	0.00	10 mm	2	04513	1	top	99.4	0.633	0.386	1.091	1.006	0.424	
2412	1	802.11b	DSSS	22	20.5	20.12	-0.04	10 mm	2	04513	1	left	99.4	0.048	-	1.091	1.006	-	
5200	40	802.11a	OFDM	20	18.0	17.46	0.02	10 mm	1	04513	6	back	99.5	0.519	0.265	1.132	1.005	0.301	
5200	40	802.11a	OFDM	20	18.0	17.46	0.19	10 mm	1	04513	6	front	99.5	0.116	-	1.132	1.005	-	
5200	40	802.11a	OFDM	20	18.0	17.46	0.12	10 mm	1	04513	6	top	99.5	0.093	-	1.132	1.005	-	
5200	40	802.11a	OFDM	20	18.0	17.46	0.04	10 mm	1	04513	6	left	99.5	0.159	-	1.132	1.005	-	
5200	40	802.11a	OFDM	20	18.0	17.54	0.19	10 mm	2	04513	6	back	99.6	0.185	0.084	1.112	1.004	0.094	
5200	40	802.11a	OFDM	20	18.0	17.54	0.09	10 mm	2	04513	6	front	99.6	0.059	-	1.112	1.004	-	
5200	40	802.11a	OFDM	20	18.0	17.54	0.06	10 mm	2	04513	6	top	99.6	0.173	-	1.112	1.004	-	
5200	40	802.11a	OFDM	20	18.0	17.54	-0.05	10 mm	2	04513	6	left	99.6	0.042	-	1.112	1.004	-	
5785	157	802.11a	OFDM	20	18.0	17.36	0.04	10 mm	1	04513	6	back	99.5	0.321	0.144	1.159	1.005	0.168	
5785	157	802.11a	OFDM	20	18.0	17.36	0.03	10 mm	1	04513	6	front	99.5	0.118	-	1.159	1.005	-	
5785	157	802.11a	OFDM	20	18.0	17.36	0.02	10 mm	1	04513	6	top	99.5	0.059	-	1.159	1.005	-	
5785	157	802.11a	OFDM	20	18.0	17.36	0.18	10 mm	1	04513	6	left	99.5	0.112	-	1.159	1.005	-	
5825	165	802.11a	OFDM	20	18.0	17.41	0.10	10 mm	2	04513	6	back	99.6	0.981	0.408	1.146	1.004	**0.469**	
5825	165	802.11a	OFDM	20	18.0	17.41	-0.09	10 mm	2	04513	6	front	99.6	0.031	-	1.146	1.004	-	
5825	165	802.11a	OFDM	20	18.0	17.41	0.05	10 mm	2	04513	6	top	99.6	0.537	0.217	1.146	1.004	0.250	
5825	165	802.11a	OFDM	20	18.0	17.41	-0.08	10 mm	2	04513	6	left	99.6	0.121	-	1.146	1.004	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram					

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Table 11-60
DTS WLAN MIMO Hotspot 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
2452	9	802.11n	OFDM	20	18.5	17.63	18.5	17.92	0.13	10 mm	MIMO	04513	13	back	99.1	0.295	0.192	1.222	1.009	0.237		
2452	9	802.11n	OFDM	20	18.5	17.63	18.5	17.92	-0.07	10 mm	MIMO	04513	13	front	99.1	0.278	-	1.222	1.009	-		
2452	9	802.11n	OFDM	20	18.5	17.63	18.5	17.92	-0.08	10 mm	MIMO	04513	13	top	99.1	0.592	0.359	1.222	1.009	0.443		
2452	9	802.11n	OFDM	20	18.5	17.63	18.5	17.92	-0.02	10 mm	MIMO	04513	13	left	99.1	0.460	0.285	1.222	1.009	0.351		
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: For all channels to achieve the 21.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.5 dBm.

Table 11-61
DTS WLAN 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.09	10 mm	MIMO	04513	13	back	99.1	0.152	0.090	1.146	1.009	0.104		
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.12	10 mm	MIMO	04513	13	front	99.1	0.165	-	1.146	1.009	-		
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	-0.03	10 mm	MIMO	04513	13	top	99.1	0.322	0.195	1.146	1.009	0.225		
2437	6	802.11n	OFDM	20	15.5	14.91	15.5	15.04	0.14	10 mm	MIMO	04513	13	left	99.1	0.242	-	1.146	1.009	-		
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 11-62
NII WLAN MIMO Hotspot 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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
5200	40	802.11n	OFDM	20	18.0	17.62	18.0	17.68	-0.16	10 mm	MIMO	04513	13	back	99.9	0.704	0.349	1.091	1.001	0.381		
5200	40	802.11n	OFDM	20	18.0	17.62	18.0	17.68	0.03	10 mm	MIMO	04513	13	front	99.9	0.087	-	1.091	1.001	-		
5200	40	802.11n	OFDM	20	18.0	17.62	18.0	17.68	0.12	10 mm	MIMO	04513	13	top	99.9	0.218	-	1.091	1.001	-		
5200	40	802.11n	OFDM	20	18.0	17.62	18.0	17.68	0.03	10 mm	MIMO	04513	13	left	99.9	0.179	-	1.091	1.001	-		
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.02	10 mm	MIMO	04513	13	back	99.9	1.007	0.460	1.104	1.001	0.508	A69	
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	-0.05	10 mm	MIMO	04513	13	front	99.9	0.163	-	1.104	1.001	-		
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	0.04	10 mm	MIMO	04513	13	top	99.9	0.538	0.221	1.104	1.001	0.244		
5825	165	802.11n	OFDM	20	18.0	17.57	18.0	17.65	-0.03	10 mm	MIMO	04513	13	left	99.9	0.265	-	1.104	1.001	-		
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: For channel 40 and 165 to achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm.

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Table 11-63
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	14.98	15.0	14.67	0.13	10 mm	MIMO	04513	27	back	99.9	0.337	0.157	1.079	1.001	0.170	
5230	46	802.11n	OFDM	40	15.0	14.98	15.0	14.67	-0.04	10 mm	MIMO	04513	27	front	99.9	0.066	-	1.079	1.001	-	
5230	46	802.11n	OFDM	40	15.0	14.98	15.0	14.67	0.03	10 mm	MIMO	04513	27	top	99.9	0.099	-	1.079	1.001	-	
5230	46	802.11n	OFDM	40	15.0	14.98	15.0	14.67	0.03	10 mm	MIMO	04513	27	left	99.9	0.074	-	1.079	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.06	10 mm	MIMO	04513	27	back	99.9	0.381	0.170	1.067	1.001	0.182	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	-0.02	10 mm	MIMO	04513	27	front	99.9	0.047	-	1.067	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	0.03	10 mm	MIMO	04513	27	top	99.9	0.241	-	1.067	1.001	-	
5795	159	802.11n	OFDM	40	15.0	14.99	15.0	14.72	-0.16	10 mm	MIMO	04513	27	left	99.9	0.087	-	1.067	1.001	-	
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 11-64
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	12.49	0.17	10 mm	04513	1	back	76.8	0.026	1.002	1.302	0.034	
2441	39	Bluetooth	FHSS	12.5	12.49	-0.03	10 mm	04513	1	front	76.8	0.030	1.002	1.302	0.039	
2441	39	Bluetooth	FHSS	12.5	12.49	0.05	10 mm	04513	1	top	76.8	0.021	1.002	1.302	0.027	
2441	39	Bluetooth	FHSS	12.5	12.49	0.03	10 mm	04513	1	left	76.8	0.061	1.002	1.302	**0.080**	A71
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram				

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11.4 Standalone Phablet SAR Data

Table 11-65
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)	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.17	0.06	2 mm	04422	1:1	back	1.830	1.007	1.843	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.2	25.16	0.06	1 mm	04422	1:1	front	2.350	1.009	2.371	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.17	0.01	1 mm	04422	1:1	front	2.350	1.007	2.366	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.2	25.16	-0.01	1 mm	04422	1:1	front	2.350	1.009	2.371	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.2	25.16	-0.15	3 mm	04422	1:1	bottom	2.170	1.009	2.190	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.17	-0.07	3 mm	04422	1:1	bottom	2.380	1.007	2.397	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.2	25.16	-0.08	3 mm	04422	1:1	bottom	2.480	1.009	2.502	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.17	-0.15	0 mm	04422	1:1	left	0.583	1.007	0.587	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	0.05	0 mm	04448	1:1	back	1.650	1.002	1.653	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	-0.15	0 mm	04448	1:1	front	1.920	1.002	1.924	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.7	22.64	-0.02	0 mm	04448	1:1	bottom	2.450	1.014	2.484	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.7	22.69	-0.05	0 mm	04448	1:1	bottom	2.690	1.002	2.695	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.7	22.65	-0.01	0 mm	04448	1:1	bottom	2.810	1.012	2.844	A72
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams						

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Table 11-66
UMTS 1750 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	24.95	-0.02	2 mm	04224	1:1	back	1.770	1.059	1.874	
1712.40	1312	UMTS 1750	RMC	25.2	24.92	0.03	1 mm	04224	1:1	front	1.900	1.067	2.027	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	-0.05	1 mm	04224	1:1	front	1.980	1.059	2.097	
1752.60	1513	UMTS 1750	RMC	25.2	24.93	-0.03	1 mm	04224	1:1	front	2.020	1.064	2.149	
1712.40	1312	UMTS 1750	RMC	25.2	24.92	0.00	3 mm	04224	1:1	bottom	1.770	1.067	1.889	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	-0.02	3 mm	04224	1:1	bottom	1.920	1.059	2.033	
1752.60	1513	UMTS 1750	RMC	25.2	24.93	0.00	3 mm	04224	1:1	bottom	2.070	1.064	2.202	
1732.40	1412	UMTS 1750	RMC	25.2	24.95	-0.03	0 mm	04224	1:1	left	0.672	1.059	0.712	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	0.03	0 mm	04224	1:1	back	1.580	1.040	1.643	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	0.06	0 mm	04224	1:1	front	1.760	1.040	1.830	
1712.40	1312	UMTS 1750	RMC	22.7	22.59	-0.02	0 mm	04224	1:1	bottom	1.770	1.026	1.816	
1732.40	1412	UMTS 1750	RMC	22.7	22.53	-0.06	0 mm	04224	1:1	bottom	1.920	1.040	1.997	
1752.60	1513	UMTS 1750	RMC	22.7	22.42	-0.05	0 mm	04224	1:1	bottom	2.070	1.067	2.209	A73
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) averaged over 10 grams						

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Table 11-67
UMTS 1900 Phablet SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Cover Type	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1852.40	9262	UMTS 1900	RMC	25.2	24.82	0.04	2 mm	-	04430	1:1	back	2.300	1.091	2.509	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	0.03	2 mm	-	04430	1:1	back	2.280	1.069	2.437	
1907.60	9538	UMTS 1900	RMC	25.2	24.87	0.15	2 mm	-	04430	1:1	back	2.190	1.079	2.363	
1852.40	9262	UMTS 1900	RMC	25.2	24.82	0.08	1 mm	-	04430	1:1	front	2.470	1.091	2.695	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.04	1 mm	-	04430	1:1	front	2.360	1.069	2.523	
1907.60	9538	UMTS 1900	RMC	25.2	24.87	-0.06	1 mm	-	04430	1:1	front	2.340	1.079	2.525	
1852.40	9262	UMTS 1900	RMC	25.2	24.82	-0.02	3 mm	-	04430	1:1	bottom	2.080	1.091	2.269	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.02	3 mm	-	04430	1:1	bottom	2.290	1.069	2.448	
1907.60	9538	UMTS 1900	RMC	25.2	24.87	-0.05	3 mm	-	04430	1:1	bottom	2.330	1.079	2.514	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.01	0 mm	#1	04430	1:1	bottom	1.970	1.069	2.106	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.07	0 mm	#2	04430	1:1	bottom	1.690	1.069	1.807	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.10	0 mm	#3	04430	1:1	bottom	1.910	1.069	2.042	
1880.00	9400	UMTS 1900	RMC	25.2	24.91	-0.13	0 mm	-	04430	1:1	left	0.566	1.069	0.605	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	0.03	0 mm	-	04430	1:1	back	1.800	1.038	1.868	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	-0.09	0 mm	-	04430	1:1	front	1.900	1.038	1.972	
1852.40	9262	UMTS 1900	RMC	22.7	22.44	0.03	0 mm	-	04430	1:1	bottom	2.640	1.062	2.804	
1880.00	9400	UMTS 1900	RMC	22.7	22.54	0.07	0 mm	-	04430	1:1	bottom	2.810	1.038	2.917	
1907.60	9538	UMTS 1900	RMC	22.7	22.46	0.03	0 mm	-	04430	1:1	bottom	2.850	1.057	**3.012**	A74
1907.60	9538	UMTS 1900	RMC	22.7	22.46	-0.04	0 mm	-	04430	1:1	bottom	2.670	1.057	2.822	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams								

Notes:
1. Green entry represents additional Phablet SAR Position (DD #1: 0 degrees).
2. Purple entry represents additional Phablet SAR Position (DD #2: 180 degrees).
3. Light orange entry represents additional Phablet SAR Position (DD #3: 360 degrees).
4. Blue entry represents variability measurement.

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Table 11-68
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	-0.01	0	04448	QPSK	1	50	2 mm	back	1:1	1.650	1.035	1.708	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	-0.03	1	04448	QPSK	50	25	2 mm	back	1:1	1.340	1.045	1.400	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	24.91	-0.02	0	04448	QPSK	1	50	1 mm	front	1:1	2.260	1.069	2.416	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.00	0	04448	QPSK	1	50	1 mm	front	1:1	2.380	1.035	2.463	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.02	-0.02	0	04448	QPSK	1	0	1 mm	front	1:1	2.580	1.042	2.688	A75
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	23.99	0.00	1	04448	QPSK	50	25	1 mm	front	1:1	1.850	1.050	1.943	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	-0.03	1	04448	QPSK	50	25	1 mm	front	1:1	1.980	1.045	2.069	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.99	0.01	1	04448	QPSK	50	25	1 mm	front	1:1	2.040	1.050	2.142	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.98	-0.06	1	04448	QPSK	100	0	1 mm	front	1:1	1.950	1.052	2.051	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	24.91	0.01	0	04448	QPSK	1	50	3 mm	bottom	1:1	1.900	1.069	2.031	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	-0.02	0	04448	QPSK	1	50	3 mm	bottom	1:1	2.030	1.035	2.101	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.02	-0.02	0	04448	QPSK	1	0	3 mm	bottom	1:1	2.200	1.042	2.292	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	-0.05	1	04448	QPSK	50	25	3 mm	bottom	1:1	1.680	1.045	1.756	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.98	-0.06	1	04448	QPSK	100	0	3 mm	bottom	1:1	1.660	1.052	1.746	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.05	0.01	0	04448	QPSK	1	50	0 mm	left	1:1	0.705	1.035	0.730	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.01	0.08	1	04448	QPSK	50	25	0 mm	left	1:1	0.580	1.045	0.606	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	0.00	0	04448	QPSK	1	50	0 mm	back	1:1	1.450	1.208	1.752	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	-0.01	0	04448	QPSK	50	25	0 mm	back	1:1	1.530	1.148	1.756	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	0.00	0	04448	QPSK	1	50	0 mm	front	1:1	1.380	1.208	1.667	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.00	0	04448	QPSK	50	25	0 mm	front	1:1	1.450	1.148	1.665	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	21.80	0.02	0	04448	QPSK	1	50	0 mm	bottom	1:1	1.890	1.230	2.325	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.88	-0.01	0	04448	QPSK	1	50	0 mm	bottom	1:1	2.010	1.208	2.428	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	21.80	-0.01	0	04448	QPSK	1	50	0 mm	bottom	1:1	2.240	1.230	2.755	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.7	22.09	0.01	0	04448	QPSK	50	25	0 mm	bottom	1:1	1.980	1.151	2.279	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	22.10	0.00	0	04448	QPSK	50	25	0 mm	bottom	1:1	2.140	1.148	2.457	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.7	22.00	-0.01	0	04448	QPSK	50	25	0 mm	bottom	1:1	2.330	1.175	2.738	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.7	21.87	0.03	0	04448	QPSK	100	0	0 mm	bottom	1:1	2.110	1.211	2.555	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.02	0.03	0	04448	QPSK	1	0	1 mm	front	1:1	2.580	1.042	2.688	
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.

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Table 11-69
LTE Band 25 (PCS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	0.02	0	04448	QPSK	1	0	2 mm	back	1:1	1.750	1.000	1.750	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.02	1	04448	QPSK	50	25	2 mm	back	1:1	1.360	1.002	1.363	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.08	-0.03	0	04448	QPSK	1	0	1 mm	front	1:1	2.560	1.028	2.632	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	-0.11	0	04448	QPSK	1	0	1 mm	front	1:1	2.700	1.000	2.700	A76
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.06	-0.07	0	04448	QPSK	1	50	1 mm	front	1:1	2.410	1.033	2.490	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.12	0.04	1	04448	QPSK	50	25	1 mm	front	1:1	2.370	1.019	2.415	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.10	1	04448	QPSK	50	25	1 mm	front	1:1	2.350	1.002	2.355	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.08	0.04	1	04448	QPSK	50	25	1 mm	front	1:1	2.260	1.028	2.323	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.06	0.03	1	04448	QPSK	100	0	1 mm	front	1:1	2.210	1.033	2.283	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.08	-0.07	0	04448	QPSK	1	0	3 mm	bottom	1:1	2.250	1.028	2.313	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	-0.11	0	04448	QPSK	1	0	3 mm	bottom	1:1	2.470	1.000	2.470	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.06	-0.17	0	04448	QPSK	1	50	3 mm	bottom	1:1	2.680	1.033	2.768	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.12	-0.10	1	04448	QPSK	50	25	3 mm	bottom	1:1	1.860	1.019	1.895	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	-0.10	1	04448	QPSK	50	25	3 mm	bottom	1:1	2.030	1.002	2.034	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.08	0.11	1	04448	QPSK	50	25	3 mm	bottom	1:1	2.150	1.028	2.210	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.06	0.08	1	04448	QPSK	100	0	3 mm	bottom	1:1	2.150	1.033	2.221	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	25.20	0.01	0	04448	QPSK	1	0	0 mm	left	1:1	0.693	1.000	0.693	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.19	0.05	1	04448	QPSK	50	25	0 mm	left	1:1	0.512	1.002	0.513	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	0.03	0	04430	QPSK	1	0	0 mm	back	1:1	1.710	1.047	1.790	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	0.02	0	04430	QPSK	50	0	0 mm	back	1:1	1.760	1.067	1.878	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.14	0	04430	QPSK	1	0	0 mm	front	1:1	1.940	1.047	2.031	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.47	-0.18	0	04430	QPSK	1	0	0 mm	front	1:1	1.910	1.054	2.013	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.43	-0.17	0	04430	QPSK	1	0	0 mm	front	1:1	1.850	1.064	1.968	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	-0.02	0	04430	QPSK	50	0	0 mm	front	1:1	1.980	1.067	2.113	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.29	-0.12	0	04430	QPSK	50	0	0 mm	front	1:1	1.960	1.099	2.154	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.41	-0.19	0	04430	QPSK	50	25	0 mm	front	1:1	1.880	1.069	2.010	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.24	-0.14	0	04430	QPSK	100	0	0 mm	front	1:1	1.940	1.112	2.157	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.50	-0.03	0	04430	QPSK	1	0	0 mm	bottom	1:1	2.340	1.047	2.450	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.47	0.04	0	04430	QPSK	1	0	0 mm	bottom	1:1	2.470	1.054	2.603	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.43	-0.05	0	04430	QPSK	1	0	0 mm	bottom	1:1	2.510	1.064	2.671	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.42	-0.01	0	04430	QPSK	50	0	0 mm	bottom	1:1	2.470	1.067	2.635	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.29	-0.05	0	04430	QPSK	50	0	0 mm	bottom	1:1	2.580	1.099	2.835	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.41	-0.15	0	04430	QPSK	50	25	0 mm	bottom	1:1	2.660	1.069	2.844	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.24	-0.05	0	04430	QPSK	100	0	0 mm	bottom	1:1	2.440	1.112	2.713	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

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Table 11-70
LTE Band 7 Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	-0.17	0	04455	QPSK	1	0	2 mm	back	1:1	1.520	1.038	1.578	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	-0.16	1	04455	QPSK	50	50	2 mm	back	1:1	1.210	1.050	1.271	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.04	0	04455	QPSK	1	0	1 mm	front	1:1	1.300	1.038	1.349	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.00	1	04455	QPSK	50	50	1 mm	front	1:1	1.010	1.050	1.061	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	-0.02	0	04455	QPSK	1	0	3 mm	bottom	1:1	1.290	1.038	1.339	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	-0.02	1	04455	QPSK	50	50	3 mm	bottom	1:1	1.010	1.050	1.061	
2560.00	21350	High	LTE Band 7	20	23.7	23.54	0.01	0	04455	QPSK	1	0	0 mm	left	1:1	0.382	1.038	0.397	
2560.00	21350	High	LTE Band 7	20	22.7	22.49	0.00	1	04455	QPSK	50	50	0 mm	left	1:1	0.300	1.050	0.315	
2510.00	20850	Low	LTE Band 7	20	21.7	21.19	-0.02	0	04455	QPSK	1	0	0 mm	back	1:1	2.080	1.125	2.340	
2535.00	21100	Mid	LTE Band 7	20	21.7	21.30	-0.02	0	04455	QPSK	1	50	0 mm	back	1:1	2.020	1.096	2.214	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	-0.02	0	04455	QPSK	1	50	0 mm	back	1:1	1.890	1.026	1.939	
2510.00	20850	Low	LTE Band 7	20	21.7	21.30	-0.02	0	04455	QPSK	50	25	0 mm	back	1:1	2.120	1.096	2.324	
2535.00	21100	Mid	LTE Band 7	20	21.7	21.46	-0.02	0	04455	QPSK	50	50	0 mm	back	1:1	2.100	1.057	2.220	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.02	0	04455	QPSK	50	25	0 mm	back	1:1	1.980	1.000	1.980	
2560.00	21350	High	LTE Band 7	20	21.7	21.48	-0.18	0	04455	QPSK	100	0	0 mm	back	1:1	2.080	1.052	2.188	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	-0.13	0	04455	QPSK	1	50	0 mm	front	1:1	1.210	1.026	1.241	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.06	0	04455	QPSK	50	25	0 mm	front	1:1	1.270	1.000	1.270	
2510.00	20850	Low	LTE Band 7	20	21.7	21.19	-0.11	0	04455	QPSK	1	0	0 mm	bottom	1:1	2.160	1.125	2.430	
2535.00	21100	Mid	LTE Band 7	20	21.7	21.30	0.00	0	04455	QPSK	1	50	0 mm	bottom	1:1	2.110	1.096	2.313	
2560.00	21350	High	LTE Band 7	20	21.7	21.59	-0.04	0	04455	QPSK	1	50	0 mm	bottom	1:1	2.130	1.026	2.185	
2510.00	20850	Low	LTE Band 7	20	21.7	21.30	-0.14	0	04455	QPSK	50	25	0 mm	bottom	1:1	2.250	1.096	2.466	A77
2535.00	21100	Mid	LTE Band 7	20	21.7	21.46	-0.11	0	04455	QPSK	50	50	0 mm	bottom	1:1	2.220	1.057	2.347	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.02	0	04455	QPSK	50	25	0 mm	bottom	1:1	2.250	1.000	2.250	
2560.00	21350	High	LTE Band 7	20	21.7	21.48	-0.02	0	04455	QPSK	100	0	0 mm	bottom	1:1	2.180	1.052	2.293	
2510.00	20850	Low	LTE Band 7	20	21.7	21.30	0.05	0	04455	QPSK	50	25	0 mm	bottom	1:1	2.230	1.096	2.444	
2560.00	21350	High	LTE Band 7	20	21.7	21.70	-0.11	0	04455	QPSK	50	25	0 mm	bottom	1:1	2.240	1.000	2.240	
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 entries represent variability measurements.

Table 11-71
NR Band n25 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	372000	Low	NR Band n25 (PCS)	20	23.5	22.98	-0.03	0	04471	DFT-S-OFDM QPSK	1	53	0 mm	right	1:1	2.420	1.127	2.727	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	23.07	-0.01	0	04471	DFT-S-OFDM QPSK	1	53	0 mm	right	1:1	2.410	1.104	2.661	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.10	-0.11	0	04471	DFT-S-OFDM QPSK	1	53	0 mm	right	1:1	2.370	1.096	2.598	
1860.00	372000	Low	NR Band n25 (PCS)	20	23.5	22.90	0.04	0	04471	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.490	1.148	2.859	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	23.08	0.05	0	04471	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.630	1.102	2.898	A78
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.13	0.02	0	04471	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	2.550	1.089	2.777	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.75	-0.04	0	04471	CP-OFDM QPSK	1	1	0 mm	right	1:1	1.980	1.189	2.354	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	23.09	0.01	0	04471	DFT-S-OFDM QPSK	100	0	0 mm	right	1:1	2.560	1.099	2.813	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

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Table 11-72
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	17.26	-0.04	0 mm	1	04513	6	back	99.5	7.961	1.070	1.186	1.005	1.275	
5280	56	802.11a	OFDM	20	18.0	17.26	-0.03	0 mm	1	04513	6	front	99.5	2.340	0.371	1.186	1.005	0.442	
5280	56	802.11a	OFDM	20	18.0	17.26	0.06	0 mm	1	04513	6	top	99.5	0.338	-	1.186	1.005	-	
5280	56	802.11a	OFDM	20	18.0	17.26	0.08	0 mm	1	04513	6	left	99.5	1.452	-	1.186	1.005	-	
5280	56	802.11a	OFDM	20	18.0	17.16	0.03	0 mm	2	04513	6	back	99.6	2.173	0.395	1.213	1.004	0.481	
5280	56	802.11a	OFDM	20	18.0	17.16	-0.03	0 mm	2	04513	6	front	99.6	1.464	-	1.213	1.004	-	
5280	56	802.11a	OFDM	20	18.0	17.16	0.07	0 mm	2	04513	6	top	99.6	2.092	-	1.213	1.004	-	
5280	56	802.11a	OFDM	20	18.0	17.16	0.09	0 mm	2	04513	6	left	99.6	0.319	-	1.213	1.004	-	
5500	100	802.11a	OFDM	20	17.0	16.48	-0.16	0 mm	1	04513	6	back	99.5	5.695	0.831	1.127	1.005	0.941	
5500	100	802.11a	OFDM	20	17.0	16.48	-0.13	0 mm	1	04513	6	front	99.5	1.850	-	1.127	1.005	-	
5500	100	802.11a	OFDM	20	17.0	16.48	-0.08	0 mm	1	04513	6	top	99.5	0.845	-	1.127	1.005	-	
5500	100	802.11a	OFDM	20	17.0	16.48	0.09	0 mm	1	04513	6	left	99.5	0.846	-	1.127	1.005	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.03	0 mm	2	04513	6	back	99.6	4.495	0.667	1.026	1.004	0.687	
5600	120	802.11a	OFDM	20	17.0	16.89	0.11	0 mm	2	04513	6	front	99.6	1.582	-	1.026	1.004	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.03	0 mm	2	04513	6	top	99.6	3.526	-	1.026	1.004	-	
5600	120	802.11a	OFDM	20	17.0	16.89	0.02	0 mm	2	04513	6	left	99.6	0.449	-	1.026	1.004	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Phablet
Spatial Peak	4.0 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 10 grams

Table 11-73
WLAN MIMO Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.12	0 mm	MIMO	04513	13	back	99.9	9.902	1.320	1.140	1.001	1.506	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	-0.06	0 mm	MIMO	04513	13	front	99.9	4.317	0.514	1.140	1.001	0.587	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.05	0 mm	MIMO	04513	13	top	99.9	2.413	-	1.140	1.001	-	
5280	56	802.11n	OFDM	20	18.0	17.54	18.0	17.43	0.07	0 mm	MIMO	04513	13	left	99.9	1.394	-	1.140	1.001	-	
5500	100	802.11n	OFDM	20	17.0	16.74	17.0	16.70	0.03	0 mm	MIMO	04513	13	back	99.9	6.985	1.080	1.072	1.001	1.159	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.02	0 mm	MIMO	04513	13	back	99.9	10.267	1.420	1.079	1.001	1.534	A79
5720	144	802.11n	OFDM	20	17.0	16.67	17.0	16.63	0.03	0 mm	MIMO	04513	13	back	99.9	7.424	1.110	1.089	1.001	1.210	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.06	0 mm	MIMO	04513	13	front	99.9	4.082	-	1.079	1.001	-	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.13	0 mm	MIMO	04513	13	top	99.9	4.372	0.479	1.079	1.001	0.517	
5620	124	802.11n	OFDM	20	17.0	16.67	17.0	16.84	0.04	0 mm	MIMO	04513	13	left	99.9	1.258	-	1.079	1.001	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Phablet
Spatial Peak	4.0 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 10 grams

Note: For channel 56 to achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm. For channels 100, 124, and 144 to achieve the 20.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm.

11.5 SAR Test Notes

General Notes:

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

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5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
7. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
8. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
9. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
10. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
11. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the 1g thresholds for the equivalent test cases.
13. This device uses Qualcomm Smart Transmit for 2G/3G/4G/5G operations to control and manage transmitting power in real time to ensure RF Exposure compliance. Per FCC Guidance, compliance for was assessed at the minimum of the time averaged power and the maximum output power for each band/mode/exposure condition (DSI).
14. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.5. 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

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

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

UMTS Notes:

1. UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > 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 and LTE Band 48 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
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. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.
8. For LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

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9. This device supports LTE Band 41 ULCA active with Power Class 2. Highest SAR test configuration for each exposure condition in Power Class 3 with ULCA active was repeated with Power Class 2 with ULCA active.

NR Notes:

1. NR implementation is limited to EN-DC operations only. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
3. Simultaneous transmission analysis for EN-DC operations is addressed in the Part 2 Test Report (Serial Number can be found in the bibliography).
4. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
5. Per FCC Guidance, NR modulations and RB Sizes/Offsets were selected for testing such that configurations with the highest output power were evaluated for SAR tests.
6. For final implementation, NR slot configuration is synchronized using maximum duty cycle of 23.33%. SAR testing was performed using FTM mode with a 23.33% duty cycle applied to match final duty cycle.
7. NR band n41 supports both PC2 and PC3 uplink operations. Per FCC guidance, since the maximum duty cycle is the same between PC2 and PC3 operations, only PC2 was required to be evaluated.
8. Since NR Band n41 PC3 has same maximum output power and duty cycle as n41 PC2, SAR testing was not evaluated for n41 PC3 as the n41 PC2 measured powers and SAR results additionally represent n41 PC3.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.

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Bluetooth Notes

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

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific 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.

Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G and timeaveraged 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)	2.4 GHz WLAN MIMO at 18.5 dBm SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.697	0.550	0.852	0.874	0.727	1.029
	CDMA/EVDO BC0 (§22H)	0.181	0.697	0.550	0.852	0.878	0.731	1.033
	PCS CDMA/EVDO	0.102	0.697	0.550	0.852	0.799	0.652	0.954
	GSM 850	0.173	0.697	0.550	0.852	0.870	0.723	1.025
	GSM 1900	0.054	0.697	0.550	0.852	0.751	0.604	0.906
	UMTS 850	0.204	0.697	0.550	0.852	0.901	0.754	1.056
	UMTS 1750	0.092	0.697	0.550	0.852	0.789	0.642	0.944
	UMTS 1900	0.104	0.697	0.550	0.852	0.801	0.654	0.956
	LTE Band 71	0.202	0.697	0.550	0.852	0.899	0.752	1.054
	LTE Band 12	0.193	0.697	0.550	0.852	0.890	0.743	1.045
	LTE Band 13	0.212	0.697	0.550	0.852	0.909	0.762	1.064
	LTE Band 26 (Cell)	0.188	0.697	0.550	0.852	0.885	0.738	1.040
	LTE Band 5 (Cell)	0.171	0.697	0.550	0.852	0.868	0.721	1.023
	LTE Band 66 (AWS)	0.095	0.697	0.550	0.852	0.792	0.645	0.947
	LTE Band 25 (PCS)	0.110	0.697	0.550	0.852	0.807	0.660	0.962
	LTE Band 30	0.053	0.697	0.550	0.852	0.750	0.603	0.905
	LTE Band 7	0.074	0.697	0.550	0.852	0.771	0.624	0.926
	LTE Band 48	0.213	0.697	0.550	0.852	0.910	0.763	1.065
	LTE Band 41	0.070	0.697	0.550	0.852	0.767	0.620	0.922
	NR Band n71	0.115	0.697	0.550	0.852	0.812	0.665	0.967
	NR Band n66 (AWS)	0.274	0.697	0.550	0.852	0.971	0.824	1.126
	NR Band n25 (PCS)	0.309	0.697	0.550	0.852	1.006	0.859	**1.161**
	NR Band n41	0.106	0.697	0.550	0.852	0.803	0.656	0.958

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.585	0.509	0.842	0.762	0.686	1.019
	CDMA/EVDO BC0 (§22H)	0.181	0.585	0.509	0.842	0.766	0.690	1.023
	PCS CDMA/EVDO	0.102	0.585	0.509	0.842	0.687	0.611	0.944
	GSM 850	0.173	0.585	0.509	0.842	0.758	0.682	1.015
	GSM 1900	0.054	0.585	0.509	0.842	0.639	0.563	0.896
	UMTS 850	0.204	0.585	0.509	0.842	0.789	0.713	1.046
	UMTS 1750	0.092	0.585	0.509	0.842	0.677	0.601	0.934
	UMTS 1900	0.104	0.585	0.509	0.842	0.689	0.613	0.946
	LTE Band 71	0.202	0.585	0.509	0.842	0.787	0.711	1.044
	LTE Band 12	0.193	0.585	0.509	0.842	0.778	0.702	1.035
	LTE Band 13	0.212	0.585	0.509	0.842	0.797	0.721	1.054
	LTE Band 26 (Cell)	0.188	0.585	0.509	0.842	0.773	0.697	1.030
	LTE Band 5 (Cell)	0.171	0.585	0.509	0.842	0.756	0.680	1.013
	LTE Band 66 (AWS)	0.095	0.585	0.509	0.842	0.680	0.604	0.937
	LTE Band 25 (PCS)	0.110	0.585	0.509	0.842	0.695	0.619	0.952
	LTE Band 30	0.053	0.585	0.509	0.842	0.638	0.562	0.895
	LTE Band 7	0.074	0.585	0.509	0.842	0.659	0.583	0.916
	LTE Band 48	0.213	0.585	0.509	0.842	0.798	0.722	1.055
	LTE Band 41	0.070	0.585	0.509	0.842	0.655	0.579	0.912
	NR Band n71	0.115	0.585	0.509	0.842	0.700	0.624	0.957
	NR Band n66 (AWS)	0.274	0.585	0.509	0.842	0.859	0.783	1.116
	NR Band n25 (PCS)	0.309	0.585	0.509	0.842	0.894	0.818	**1.151**
	NR Band n41	0.106	0.585	0.509	0.842	0.691	0.615	0.948

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 18.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 18 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.852	0.374	1.403
	CDMA/EVDO BC0 (§22H)	0.181	0.852	0.374	1.407
	PCS CDMA/EVDO	0.102	0.852	0.374	1.328
	GSM 850	0.173	0.852	0.374	1.399
	GSM 1900	0.054	0.852	0.374	1.280
	UMTS 850	0.204	0.852	0.374	1.430
	UMTS 1750	0.092	0.852	0.374	1.318
	UMTS 1900	0.104	0.852	0.374	1.330
	LTE Band 71	0.202	0.852	0.374	1.428
	LTE Band 12	0.193	0.852	0.374	1.419
	LTE Band 13	0.212	0.852	0.374	1.438
	LTE Band 26 (Cell)	0.188	0.852	0.374	1.414
	LTE Band 5 (Cell)	0.171	0.852	0.374	1.397
	LTE Band 66 (AWS)	0.095	0.852	0.374	1.321
	LTE Band 25 (PCS)	0.110	0.852	0.374	1.336
	LTE Band 30	0.053	0.852	0.374	1.279
	LTE Band 7	0.074	0.852	0.374	1.300
	LTE Band 48	0.213	0.852	0.374	1.439
	LTE Band 41	0.070	0.852	0.374	1.296
	NR Band n71	0.115	0.852	0.374	1.341
	NR Band n66 (AWS)	0.274	0.852	0.374	1.500
	NR Band n25 (PCS)	0.309	0.852	0.374	**1.535**
	NR Band n41	0.106	0.852	0.374	1.332

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.351	0.528
	CDMA/EVDO BC0 (§22H)	0.181	0.351	0.532
	PCS CDMA/EVDO	0.102	0.351	0.453
	GSM 850	0.173	0.351	0.524
	GSM 1900	0.054	0.351	0.405
	UMTS 850	0.204	0.351	0.555
	UMTS 1750	0.092	0.351	0.443
	UMTS 1900	0.104	0.351	0.455
	LTE Band 71	0.202	0.351	0.553
	LTE Band 12	0.193	0.351	0.544
	LTE Band 13	0.212	0.351	0.563
	LTE Band 26 (Cell)	0.188	0.351	0.539
	LTE Band 5 (Cell)	0.171	0.351	0.522
	LTE Band 66 (AWS)	0.095	0.351	0.446
	LTE Band 25 (PCS)	0.110	0.351	0.461
	LTE Band 30	0.053	0.351	0.404
	LTE Band 7	0.074	0.351	0.425
	LTE Band 48	0.213	0.351	0.564
	LTE Band 41	0.070	0.351	0.421
	NR Band n71	0.115	0.351	0.466
	NR Band n66 (AWS)	0.274	0.351	0.625
	NR Band n25 (PCS)	0.309	0.351	**0.660**
	NR Band n41	0.106	0.351	0.457

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.351	0.550	1.078
	CDMA/EVDO BC0 (§22H)	0.181	0.351	0.550	1.082
	PCS CDMA/EVDO	0.102	0.351	0.550	1.003
	GSM 850	0.173	0.351	0.550	1.074
	GSM 1900	0.054	0.351	0.550	0.955
	UMTS 850	0.204	0.351	0.550	1.105
	UMTS 1750	0.092	0.351	0.550	0.993
	UMTS 1900	0.104	0.351	0.550	1.005
	LTE Band 71	0.202	0.351	0.550	1.103
	LTE Band 12	0.193	0.351	0.550	1.094
	LTE Band 13	0.212	0.351	0.550	1.113
	LTE Band 26 (Cell)	0.188	0.351	0.550	1.089
	LTE Band 5 (Cell)	0.171	0.351	0.550	1.072
	LTE Band 66 (AWS)	0.095	0.351	0.550	0.996
	LTE Band 25 (PCS)	0.110	0.351	0.550	1.011
	LTE Band 30	0.053	0.351	0.550	0.954
	LTE Band 7	0.074	0.351	0.550	0.975
	LTE Band 48	0.213	0.351	0.550	1.114
	LTE Band 41	0.070	0.351	0.550	0.971
	NR Band n71	0.115	0.351	0.550	1.016
	NR Band n66 (AWS)	0.274	0.351	0.550	1.175
	NR Band n25 (PCS)	0.309	0.351	0.550	**1.210**
	NR Band n41	0.106	0.351	0.550	1.007

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.177	0.351	0.842	1.370
	CDMA/EVDO BC0 (§22H)	0.181	0.351	0.842	1.374
	PCS CDMA/EVDO	0.102	0.351	0.842	1.295
	GSM 850	0.173	0.351	0.842	1.366
	GSM 1900	0.054	0.351	0.842	1.247
	UMTS 850	0.204	0.351	0.842	1.397
	UMTS 1750	0.092	0.351	0.842	1.285
	UMTS 1900	0.104	0.351	0.842	1.297
	LTE Band 71	0.202	0.351	0.842	1.395
	LTE Band 12	0.193	0.351	0.842	1.386
	LTE Band 13	0.212	0.351	0.842	1.405
	LTE Band 26 (Cell)	0.188	0.351	0.842	1.381
	LTE Band 5 (Cell)	0.171	0.351	0.842	1.364
	LTE Band 66 (AWS)	0.095	0.351	0.842	1.288
	LTE Band 25 (PCS)	0.110	0.351	0.842	1.303
	LTE Band 30	0.053	0.351	0.842	1.246
	LTE Band 7	0.074	0.351	0.842	1.267
	LTE Band 48	0.213	0.351	0.842	1.406
	LTE Band 41	0.070	0.351	0.842	1.263
	NR Band n71	0.115	0.351	0.842	1.308
	NR Band n66 (AWS)	0.274	0.351	0.842	1.467
	NR Band n25 (PCS)	0.309	0.351	0.842	**1.502**
	NR Band n41	0.106	0.351	0.842	1.299

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12.4 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Body-Worn	CDMA BC10 (§90S)	0.529	0.247	0.209	0.237	0.776	0.738	0.766
	CDMA BC0 (§22H)	0.670	0.247	0.209	0.237	0.917	0.879	0.907
	PCS CDMA	0.790	0.247	0.209	0.237	1.037	0.999	1.027
	GSM 850	0.639	0.247	0.209	0.237	0.886	0.848	0.876
	GSM 1900	0.356	0.247	0.209	0.237	0.603	0.565	0.593
	UMTS 850	0.736	0.247	0.209	0.237	0.983	0.945	0.973
	UMTS 1750	0.853	0.247	0.209	0.237	1.100	1.062	1.090
	UMTS 1900	0.921	0.247	0.209	0.237	1.168	1.130	1.158
	LTE Band 71	0.320	0.247	0.209	0.237	0.567	0.529	0.557
	LTE Band 12	0.425	0.247	0.209	0.237	0.672	0.634	0.662
	LTE Band 13	0.510	0.247	0.209	0.237	0.757	0.719	0.747
	LTE Band 26 (Cell)	0.638	0.247	0.209	0.237	0.885	0.847	0.875
	LTE Band 5 (Cell)	0.643	0.247	0.209	0.237	0.890	0.852	0.880
	LTE Band 66 (AWS)	0.952	0.247	0.209	0.237	1.199	1.161	1.189
	LTE Band 25 (PCS)	0.882	0.247	0.209	0.237	1.129	1.091	1.119
	LTE Band 30	0.481	0.247	0.209	0.237	0.728	0.690	0.718
	LTE Band 7	0.574	0.247	0.209	0.237	0.821	0.783	0.811
	LTE Band 48	1.199	0.247	0.209	0.237	**1.446**	1.408	1.436
	LTE Band 41	0.683	0.247	0.209	0.237	0.930	0.892	0.920
	NR Band n71	0.320	0.247	0.209	0.237	0.567	0.529	0.557
	NR Band n66 (AWS)	0.251	0.247	0.209	0.237	0.498	0.460	0.488
	NR Band n25 (PCS)	0.384	0.247	0.209	0.237	0.631	0.593	0.621
	NR Band n41	0.181	0.247	0.209	0.237	0.428	0.390	0.418

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)			SPLSR	
		1	2	3	4	1+2	1+3	1+4	1+3	1+4
Body-Worn	CDMA BC10 (§90S)	0.529	0.372	0.469	0.508	0.901	0.998	1.037	N/A	N/A
	CDMA BC0 (§22H)	0.670	0.372	0.469	0.508	1.042	1.139	1.178	N/A	N/A
	PCS CDMA	0.790	0.372	0.469	0.508	1.162	1.259	1.298	N/A	N/A
	GSM 850	0.639	0.372	0.469	0.508	1.011	1.108	1.147	N/A	N/A
	GSM 1900	0.356	0.372	0.469	0.508	0.728	0.825	0.864	N/A	N/A
	UMTS 850	0.736	0.372	0.469	0.508	1.108	1.205	1.244	N/A	N/A
	UMTS 1750	0.853	0.372	0.469	0.508	1.225	1.322	1.361	N/A	N/A
	UMTS 1900	0.921	0.372	0.469	0.508	1.293	1.390	1.429	N/A	N/A
	LTE Band 71	0.320	0.372	0.469	0.508	0.692	0.789	0.828	N/A	N/A
	LTE Band 12	0.425	0.372	0.469	0.508	0.797	0.894	0.933	N/A	N/A
	LTE Band 13	0.510	0.372	0.469	0.508	0.882	0.979	1.018	N/A	N/A
	LTE Band 26 (Cell)	0.638	0.372	0.469	0.508	1.010	1.107	1.146	N/A	N/A
	LTE Band 5 (Cell)	0.643	0.372	0.469	0.508	1.015	1.112	1.151	N/A	N/A
	LTE Band 66 (AWS)	0.952	0.372	0.469	0.508	1.324	1.421	1.460	N/A	N/A
	LTE Band 25 (PCS)	0.882	0.372	0.469	0.508	1.254	1.351	1.390	N/A	N/A
	LTE Band 30	0.481	0.372	0.469	0.508	0.853	0.950	0.989	N/A	N/A
	LTE Band 7	0.574	0.372	0.469	0.508	0.946	1.043	1.082	N/A	N/A
	LTE Band 48	1.199	0.372	0.469	0.508	**1.571**	See Note 1	See Note 1	0.03	0.03
	LTE Band 41	0.683	0.372	0.469	0.508	1.055	1.152	1.191	N/A	N/A
	NR Band n71	0.320	0.372	0.469	0.508	0.692	0.789	0.828	N/A	N/A
	NR Band n66 (AWS)	0.251	0.372	0.469	0.508	0.623	0.720	0.759	N/A	N/A
	NR Band n25 (PCS)	0.384	0.372	0.469	0.508	0.756	0.853	0.892	N/A	N/A
	NR Band n41	0.181	0.372	0.469	0.508	0.553	0.650	0.689	N/A	N/A

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 18.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 18 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	CDMA BC10 (§90S)	0.529	0.104	0.187	0.820
	CDMA BC0 (§22H)	0.670	0.104	0.187	0.961
	PCS CDMA	0.790	0.104	0.187	1.081
	GSM 850	0.639	0.104	0.187	0.930
	GSM 1900	0.356	0.104	0.187	0.647
	UMTS 850	0.736	0.104	0.187	1.027
	UMTS 1750	0.853	0.104	0.187	1.144
	UMTS 1900	0.921	0.104	0.187	1.212
	LTE Band 71	0.320	0.104	0.187	0.611
	LTE Band 12	0.425	0.104	0.187	0.716
	LTE Band 13	0.510	0.104	0.187	0.801
	LTE Band 26 (Cell)	0.638	0.104	0.187	0.929
	LTE Band 5 (Cell)	0.643	0.104	0.187	0.934
	LTE Band 66 (AWS)	0.952	0.104	0.187	1.243
	LTE Band 25 (PCS)	0.882	0.104	0.187	1.173
	LTE Band 30	0.481	0.104	0.187	0.772
	LTE Band 7	0.574	0.104	0.187	0.865
	LTE Band 48	1.199	0.104	0.187	**1.490**
	LTE Band 41	0.683	0.104	0.187	0.974
	NR Band n71	0.320	0.104	0.187	0.611
	NR Band n66 (AWS)	0.251	0.104	0.187	0.542
	NR Band n25 (PCS)	0.384	0.104	0.187	0.675
	NR Band n41	0.181	0.104	0.187	0.472

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	CDMA BC10 (§90S)	0.529	0.034	0.563
	CDMA BC0 (§22H)	0.670	0.034	0.704
	PCS CDMA	0.790	0.034	0.824
	GSM 850	0.639	0.034	0.673
	GSM 1900	0.356	0.034	0.390
	UMTS 850	0.736	0.034	0.770
	UMTS 1750	0.853	0.034	0.887
	UMTS 1900	0.921	0.034	0.955
	LTE Band 71	0.320	0.034	0.354
	LTE Band 12	0.425	0.034	0.459
	LTE Band 13	0.510	0.034	0.544
	LTE Band 26 (Cell)	0.638	0.034	0.672
	LTE Band 5 (Cell)	0.643	0.034	0.677
	LTE Band 66 (AWS)	0.952	0.034	0.986
	LTE Band 25 (PCS)	0.882	0.034	0.916
	LTE Band 30	0.481	0.034	0.515
	LTE Band 7	0.574	0.034	0.608
	LTE Band 48	1.199	0.034	**1.233**
	LTE Band 41	0.683	0.034	0.717
	NR Band n71	0.320	0.034	0.354
	NR Band n66 (AWS)	0.251	0.034	0.285
	NR Band n25 (PCS)	0.384	0.034	0.418
	NR Band n41	0.181	0.034	0.215

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	CDMA BC10 (§90S)	0.529	0.034	0.209	0.772
	CDMA BC0 (§22H)	0.670	0.034	0.209	0.913
	PCS CDMA	0.790	0.034	0.209	1.033
	GSM 850	0.639	0.034	0.209	0.882
	GSM 1900	0.356	0.034	0.209	0.599
	UMTS 850	0.736	0.034	0.209	0.979
	UMTS 1750	0.853	0.034	0.209	1.096
	UMTS 1900	0.921	0.034	0.209	1.164
	LTE Band 71	0.320	0.034	0.209	0.563
	LTE Band 12	0.425	0.034	0.209	0.668
	LTE Band 13	0.510	0.034	0.209	0.753
	LTE Band 26 (Cell)	0.638	0.034	0.209	0.881
	LTE Band 5 (Cell)	0.643	0.034	0.209	0.886
	LTE Band 66 (AWS)	0.952	0.034	0.209	1.195
	LTE Band 25 (PCS)	0.882	0.034	0.209	1.125
	LTE Band 30	0.481	0.034	0.209	0.724
	LTE Band 7	0.574	0.034	0.209	0.817
	LTE Band 48	1.199	0.034	0.209	**1.442**
	LTE Band 41	0.683	0.034	0.209	0.926
	NR Band n71	0.320	0.034	0.209	0.563
	NR Band n66 (AWS)	0.251	0.034	0.209	0.494
	NR Band n25 (PCS)	0.384	0.034	0.209	0.627
	NR Band n41	0.181	0.034	0.209	0.424

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Body-Worn	CDMA BC10 (§90S)	0.529	0.034	0.508	1.071	N/A	N/A	N/A
	CDMA BC0 (§22H)	0.670	0.034	0.508	1.212	N/A	N/A	N/A
	PCS CDMA	0.790	0.034	0.508	1.332	N/A	N/A	N/A
	GSM 850	0.639	0.034	0.508	1.181	N/A	N/A	N/A
	GSM 1900	0.356	0.034	0.508	0.898	N/A	N/A	N/A
	UMTS 850	0.736	0.034	0.508	1.278	N/A	N/A	N/A
	UMTS 1750	0.853	0.034	0.508	1.395	N/A	N/A	N/A
	UMTS 1900	0.921	0.034	0.508	1.463	N/A	N/A	N/A
	LTE Band 71	0.320	0.034	0.508	0.862	N/A	N/A	N/A
	LTE Band 12	0.425	0.034	0.508	0.967	N/A	N/A	N/A
	LTE Band 13	0.510	0.034	0.508	1.052	N/A	N/A	N/A
	LTE Band 26 (Cell)	0.638	0.034	0.508	1.180	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.643	0.034	0.508	1.185	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.952	0.034	0.508	**1.494**	N/A	N/A	N/A
	LTE Band 25 (PCS)	0.882	0.034	0.508	1.424	N/A	N/A	N/A
	LTE Band 30	0.481	0.034	0.508	1.023	N/A	N/A	N/A
	LTE Band 7	0.574	0.034	0.508	1.116	N/A	N/A	N/A
	LTE Band 48	1.199	0.034	0.508	See Note 1	0.02	0.03	0.01
	LTE Band 41	0.683	0.034	0.508	1.225	N/A	N/A	N/A
	NR Band n71	0.320	0.034	0.508	0.862	N/A	N/A	N/A
	NR Band n66 (AWS)	0.251	0.034	0.508	0.793	N/A	N/A	N/A
	NR Band n25 (PCS)	0.384	0.034	0.508	0.926	N/A	N/A	N/A
	NR Band n41	0.181	0.034	0.508	0.723	N/A	N/A	N/A

Notes:
1. No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

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12.5 Hotspot SAR 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 ("-").

(*) 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.

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)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.533	0.424	0.443	1.038	0.929	0.948
	EVDO BC0 (§22H)	0.626	0.533	0.424	0.443	1.159	1.050	1.069
	PCS EVDO	0.925	0.533	0.424	0.443	1.458	1.349	1.368
	GPRS 850	0.639	0.533	0.424	0.443	1.172	1.063	1.082
	GPRS 1900	0.991	0.533	0.424	0.443	1.524	1.415	1.434
	UMTS 850	0.736	0.533	0.424	0.443	1.269	1.160	1.179
	UMTS 1750	0.819	0.533	0.424	0.443	1.352	1.243	1.262
	UMTS 1900	0.943	0.533	0.424	0.443	1.476	1.367	1.386
	LTE Band 71	0.441	0.533	0.424	0.443	0.974	0.865	0.884
	LTE Band 12	0.425	0.533	0.424	0.443	0.958	0.849	0.868
	LTE Band 13	0.510	0.533	0.424	0.443	1.043	0.934	0.953
	LTE Band 26 (Cell)	0.663	0.533	0.424	0.443	1.196	1.087	1.106
	LTE Band 5 (Cell)	0.643	0.533	0.424	0.443	1.176	1.067	1.086
	LTE Band 66 (AWS)	0.964	0.533	0.424	0.443	1.497	1.388	1.407
	LTE Band 25 (PCS)	0.994	0.533	0.424	0.443	1.527	1.418	1.437
	LTE Band 30	0.788	0.533	0.424	0.443	1.321	1.212	1.231
	LTE Band 7	0.577	0.533	0.424	0.443	1.110	1.001	1.020
	LTE Band 48	1.199	0.533	0.424	0.443	See Table Below	See Table Below	See Table Below
	LTE Band 41	1.012	0.533	0.424	0.443	**1.545**	1.436	1.455
	NR Band n71	0.416	0.533	0.424	0.443	0.949	0.840	0.859
	NR Band n66 (AWS)	0.357	0.533	0.424	0.443	0.890	0.781	0.800
	NR Band n25 (PCS)	0.990	0.533	0.424	0.443	1.523	1.414	1.433
	NR Band n41	0.253	0.533	0.424	0.443	0.786	0.677	0.696

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Hotspot SAR	Back	1.199	0.247	0.209	0.237	1.446	1.408	1.436
	Front	0.026	0.320	0.215	0.443*	0.346	0.241	0.469
	Top	-	0.533*	0.424	0.443	0.533	0.424	0.443
	Right	0.326	-	-	-	0.326	0.326	0.326
	Left	-	0.533	0.424*	0.351	0.533	0.424	0.351

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2	1+3	1+4
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.301	0.469	0.508	0.806	0.974	1.013
	EVDO BC0 (§22H)	0.626	0.301	0.469	0.508	0.927	1.095	1.134
	PCS EVDO	0.925	0.301	0.469	0.508	1.226	1.394	1.433
	GPRS 850	0.639	0.301	0.469	0.508	0.940	1.108	1.147
	GPRS 1900	0.991	0.301	0.469	0.508	1.292	1.460	1.499
	UMTS 850	0.736	0.301	0.469	0.508	1.037	1.205	1.244
	UMTS 1750	0.819	0.301	0.469	0.508	1.120	1.288	1.327
	UMTS 1900	0.943	0.301	0.469	0.508	1.244	1.412	1.451
	LTE Band 71	0.441	0.301	0.469	0.508	0.742	0.910	0.949
	LTE Band 12	0.425	0.301	0.469	0.508	0.726	0.894	0.933
	LTE Band 13	0.510	0.301	0.469	0.508	0.811	0.979	1.018
	LTE Band 26 (Cell)	0.663	0.301	0.469	0.508	0.964	1.132	1.171
	LTE Band 5 (Cell)	0.643	0.301	0.469	0.508	0.944	1.112	1.151
	LTE Band 66 (AWS)	0.964	0.301	0.469	0.508	1.265	1.433	1.472
	LTE Band 25 (PCS)	0.994	0.301	0.469	0.508	1.295	1.463	1.502
	LTE Band 30	0.788	0.301	0.469	0.508	1.089	1.257	1.296
	LTE Band 7	0.577	0.301	0.469	0.508	0.878	1.046	1.085
	LTE Band 48	1.199	0.301	0.469	0.508	1.500	See Table Below	See Table Below
	LTE Band 41	1.012	0.301	0.469	0.508	1.313	1.481	**1.520**
	NR Band n71	0.416	0.301	0.469	0.508	0.717	0.885	0.924
	NR Band n66 (AWS)	0.357	0.301	0.469	0.508	0.658	0.826	0.865
	NR Band n25 (PCS)	0.990	0.301	0.469	0.508	1.291	1.459	1.498
	NR Band n41	0.253	0.301	0.469	0.508	0.554	0.722	0.761

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)		SPLSR	
		1	3	4	1+3	1+4	1+3	1+4
Hotspot SAR	Back	1.199	0.469	0.508	See Note 1	See Note 1	0.03	0.03
	Front	0.026	0.469*	0.508*	0.495	**0.534**	N/A	N/A
	Top	-	0.250	0.244	0.250	0.244	N/A	N/A
	Right	0.326	-	-	0.326	0.326	N/A	N/A
	Left	-	0.469*	0.508*	0.469	0.508	N/A	N/A

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN MIMO at 18.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 18 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.225	0.182	0.912
	EVDO BC0 (§22H)	0.626	0.225	0.182	1.033
	PCS EVDO	0.925	0.225	0.182	1.332
	GPRS 850	0.639	0.225	0.182	1.046
	GPRS 1900	0.991	0.225	0.182	1.398
	UMTS 850	0.736	0.225	0.182	1.143
	UMTS 1750	0.819	0.225	0.182	1.226
	UMTS 1900	0.943	0.225	0.182	1.350
	LTE Band 71	0.441	0.225	0.182	0.848
	LTE Band 12	0.425	0.225	0.182	0.832
	LTE Band 13	0.510	0.225	0.182	0.917
	LTE Band 26 (Cell)	0.663	0.225	0.182	1.070
	LTE Band 5 (Cell)	0.643	0.225	0.182	1.050
	LTE Band 66 (AWS)	0.964	0.225	0.182	1.371
	LTE Band 25 (PCS)	0.994	0.225	0.182	1.401
	LTE Band 30	0.788	0.225	0.182	1.195
	LTE Band 7	0.577	0.225	0.182	0.984
	LTE Band 48	1.199	0.225	0.182	See Table Below
	LTE Band 41	1.012	0.225	0.182	**1.419**
	NR Band n71	0.416	0.225	0.182	0.823
	NR Band n66 (AWS)	0.357	0.225	0.182	0.764
	NR Band n25 (PCS)	0.990	0.225	0.182	1.397
	NR Band n41	0.253	0.225	0.182	0.660

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN MIMO at 18.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 18 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.199	0.104	0.182	**1.485**
	Front	0.026	0.225*	0.182*	0.433
	Top	-	0.225	0.182*	0.407
	Right	0.326	-	-	0.326
	Left	-	0.225*	0.182*	0.407

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.080	0.585
	EVDO BC0 (§22H)	0.626	0.080	0.706
	PCS EVDO	0.925	0.080	1.005
	GPRS 850	0.639	0.080	0.719
	GPRS 1900	0.991	0.080	1.071
	UMTS 850	0.736	0.080	0.816
	UMTS 1750	0.819	0.080	0.899
	UMTS 1900	0.943	0.080	1.023
	LTE Band 71	0.441	0.080	0.521
	LTE Band 12	0.425	0.080	0.505
	LTE Band 13	0.510	0.080	0.590
	LTE Band 26 (Cell)	0.663	0.080	0.743
	LTE Band 5 (Cell)	0.643	0.080	0.723
	LTE Band 66 (AWS)	0.964	0.080	1.044
	LTE Band 25 (PCS)	0.994	0.080	1.074
	LTE Band 30	0.788	0.080	0.868
	LTE Band 7	0.577	0.080	0.657
	LTE Band 48	1.199	0.080	**1.279**
	LTE Band 41	1.012	0.080	1.092
	NR Band n71	0.416	0.080	0.496
	NR Band n66 (AWS)	0.357	0.080	0.437
	NR Band n25 (PCS)	0.990	0.080	1.070
	NR Band n41	0.253	0.080	0.333

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Table 12-17
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.080	0.424	1.009
	EVDO BC0 (§22H)	0.626	0.080	0.424	1.130
	PCS EVDO	0.925	0.080	0.424	1.429
	GPRS 850	0.639	0.080	0.424	1.143
	GPRS 1900	0.991	0.080	0.424	1.495
	UMTS 850	0.736	0.080	0.424	1.240
	UMTS 1750	0.819	0.080	0.424	1.323
	UMTS 1900	0.943	0.080	0.424	1.447
	LTE Band 71	0.441	0.080	0.424	0.945
	LTE Band 12	0.425	0.080	0.424	0.929
	LTE Band 13	0.510	0.080	0.424	1.014
	LTE Band 26 (Cell)	0.663	0.080	0.424	1.167
	LTE Band 5 (Cell)	0.643	0.080	0.424	1.147
	LTE Band 66 (AWS)	0.964	0.080	0.424	1.468
	LTE Band 25 (PCS)	0.994	0.080	0.424	1.498
	LTE Band 30	0.788	0.080	0.424	1.292
	LTE Band 7	0.577	0.080	0.424	1.081
	LTE Band 48	1.199	0.080	0.424	See Table Below
	LTE Band 41	1.012	0.080	0.424	**1.516**
	NR Band n71	0.416	0.080	0.424	0.920
	NR Band n66 (AWS)	0.357	0.080	0.424	0.861
	NR Band n25 (PCS)	0.990	0.080	0.424	1.494
	NR Band n41	0.253	0.080	0.424	0.757

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.199	0.034	0.209	**1.442**
	Front	0.026	0.039	0.215	0.280
	Top	-	0.027	0.424	0.451
	Right	0.326	-	-	0.326
	Left	-	0.080	0.424*	0.504

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

Exposure Condition	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.505	0.080	0.508	1.093
	EVDO BC0 (§22H)	0.626	0.080	0.508	1.214
	PCS EVDO	0.925	0.080	0.508	1.513
	GPRS 850	0.639	0.080	0.508	1.227
	GPRS 1900	0.991	0.080	0.508	1.579
	UMTS 850	0.736	0.080	0.508	1.324
	UMTS 1750	0.819	0.080	0.508	1.407
	UMTS 1900	0.943	0.080	0.508	1.531
	LTE Band 71	0.441	0.080	0.508	1.029
	LTE Band 12	0.425	0.080	0.508	1.013
	LTE Band 13	0.510	0.080	0.508	1.098
	LTE Band 26 (Cell)	0.663	0.080	0.508	1.251
	LTE Band 5 (Cell)	0.643	0.080	0.508	1.231
	LTE Band 66 (AWS)	0.964	0.080	0.508	1.552
	LTE Band 25 (PCS)	0.994	0.080	0.508	**1.582**
	LTE Band 30	0.788	0.080	0.508	1.376
	LTE Band 7	0.577	0.080	0.508	1.165
	LTE Band 48	1.199	0.080	0.508	See Table Below
	LTE Band 41	1.012	0.080	0.508	See Table Below
	NR Band n71	0.416	0.080	0.508	1.004
	NR Band n66 (AWS)	0.357	0.080	0.508	0.945
	NR Band n25 (PCS)	0.990	0.080	0.508	1.578
	NR Band n41	0.253	0.080	0.508	0.841

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	1.199	0.034	0.508	See Note 1	0.02	0.03	0.01
	Front	0.026	0.039	0.508*	0.573	N/A	N/A	N/A
	Top	-	0.027	0.244	0.271	N/A	N/A	N/A
	Right	0.326	-	-	0.326	N/A	N/A	N/A
	Left	-	0.080	0.508*	0.588	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.566	0.034	0.508	1.108
	Front	0.376	0.039	0.508*	0.923
	Top	-	0.027	0.244	0.271
	Bottom	1.012	-	-	1.012
	Left	0.105	0.080	0.508*	0.693

Notes:
1. No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

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12.6 Phablet 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 ("-").

(*) 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 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 SISO (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.843	1.275	0.687	**3.118**	2.530
	Front	2.371	0.442	0.687*	2.813	3.058
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	2.844	-	-	2.844	2.844
	Left	0.587	1.275*	0.687*	1.862	1.274

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.874	1.275	0.687	**3.149**	2.561
	Front	2.149	0.442	0.687*	2.591	2.836
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	2.209	-	-	2.209	2.209
	Left	0.712	1.275*	0.687*	1.987	1.399

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.509	1.275	0.687	**3.784**	3.196
	Front	2.695	0.442	0.687*	3.137	3.382
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	3.012	-	-	3.012	3.012
	Left	0.605	1.275*	0.687*	1.880	1.292

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.756	1.275	0.687	3.031	2.443
	Front	2.688	0.442	0.687*	3.130	**3.375**
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	2.755	-	-	2.755	2.755
	Left	0.730	1.275*	0.687*	2.005	1.417

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.878	1.275	0.687	3.153	2.565
	Front	2.700	0.442	0.687*	3.142	**3.387**
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	2.844	-	-	2.844	2.844
	Left	0.693	1.275*	0.687*	1.968	1.380

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.340	1.275	0.687	**3.615**	3.027
	Front	1.349	0.442	0.687*	1.791	2.036
	Top	-	1.275*	0.687*	1.275	0.687
	Bottom	2.466	-	-	2.466	2.466
	Left	0.397	1.275*	0.687*	1.672	1.084

Simult Tx	Configuration	NR Band n25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	-	1.275	0.687	1.275	0.687
	Front	-	0.442	0.687*	0.442	0.687
	Top	-	1.275*	0.687*	1.275	0.687
	Right	2.898	-	-	**2.898**	**2.898**
	Left	-	1.275*	0.687*	1.275	0.687

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Table 12-20
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Phablet SAR	Back	1.843	1.534	**3.377**	Phablet SAR	Back	1.874	1.534	**3.408**
	Front	2.371	0.587	2.958		Front	2.149	0.587	2.736
	Top	-	0.517	0.517		Top	-	0.517	0.517
	Bottom	2.844	-	2.844		Bottom	2.209	-	2.209
	Left	0.587	1.534*	2.121		Left	0.712	1.534*	2.246

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2	1+2			1	2	1+2
Phablet SAR	Back	2.509	1.534	See Note 1	0.05	Phablet SAR	Back	1.756	1.534	**3.290**
	Front	2.695	0.587	**3.282**	N/A		Front	2.688	0.587	3.275
	Top	-	0.517	0.517	N/A		Top	-	0.517	0.517
	Bottom	3.012	-	3.012	N/A		Bottom	2.755	-	2.755
	Left	0.605	1.534*	2.139	N/A		Left	0.730	1.534*	2.264

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Phablet SAR	Back	1.878	1.534	**3.412**	Phablet SAR	Back	-	1.534	1.534
	Front	2.700	0.587	3.287		Front	-	0.587	0.587
	Top	-	0.517	0.517		Top	-	0.517	0.517
	Bottom	2.844	-	2.844		Right	2.898	-	**2.898**
	Left	0.693	1.534*	2.227		Left	-	1.534*	1.534

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12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 1.6 W/kg for 1g and 4 W/kg for 10g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤ 0.04 for 1g and ≤ 0.10 for 10g, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

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

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

12.7.1 Back Side SPLSR Evaluation and Analysis

Table 12-21
Peak SAR Locations for Body-worn/Hotspot Back Side

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN Ant 2	-16.00	71.00	0.469
5 GHz WLAN MIMO	-16.00	75.00	0.508
Bluetooth	14.60	53.00	0.034
LTE Band 48	-62.20	24.00	1.199

Table 12-22
Body-worn/Hotspot Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
LTE Band 48	5 GHz WLAN Ant 2	1.199	0.469	1.668	65.90	0.03	1
LTE Band 48	5 GHz WLAN MIMO	1.199	0.508	1.707	68.81	0.03	2
LTE Band 48	Bluetooth	1.199	0.034	1.233	82.09	0.02	2
LTE Band 48	5 GHz WLAN MIMO	1.199	0.508	1.707	68.81	0.03	
Bluetooth	5 GHz WLAN MIMO	0.034	0.508	0.542	37.69	0.01	

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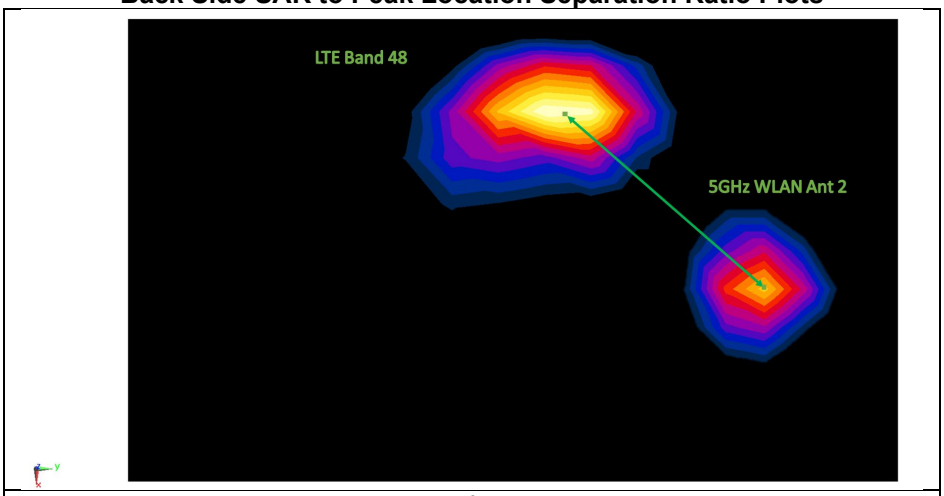
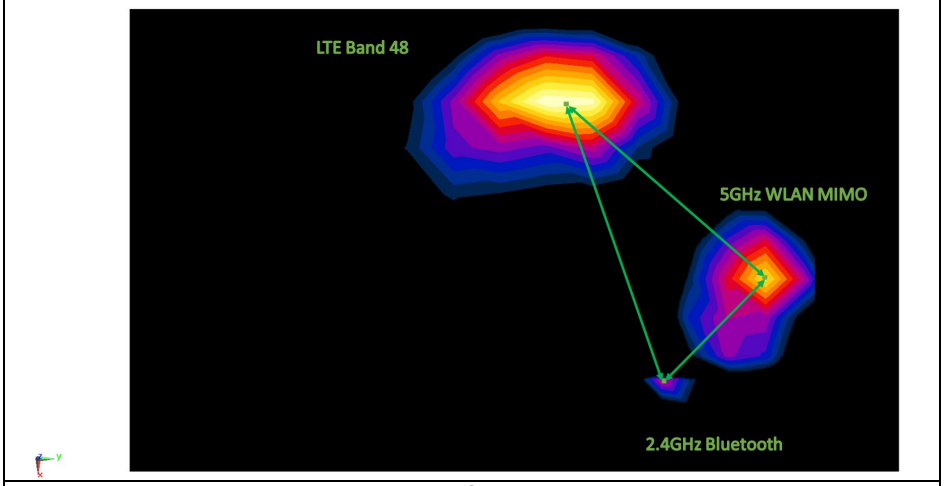
Table 12-23
Back Side SAR to Peak Location Separation Ratio Plots



1



2

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12.7.2 Back Phablet SPLSR Evaluation and Analysis

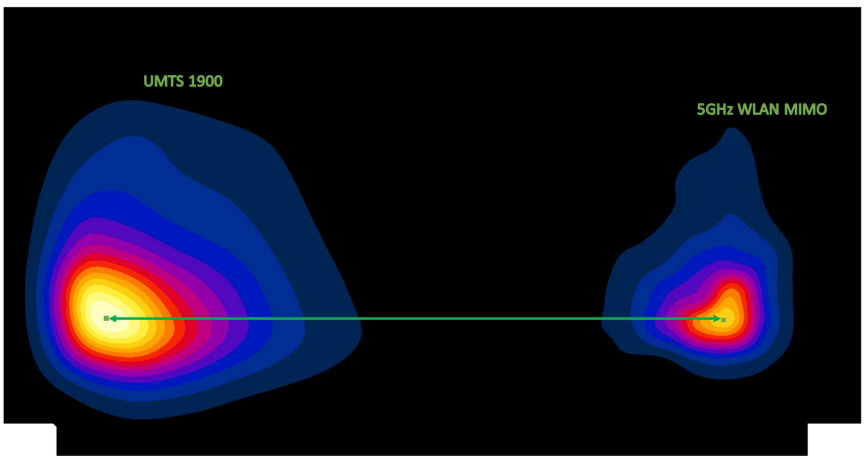
Table 12-24
Peak SAR Locations for Phablet Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	3.00	68.00
UMTS 1900	4.00	-82.50

Table 12-25
Phablet Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
UMTS 1900	5 GHz WLAN MIMO	2.509	1.534	4.043	150.50	0.05	3

Table 12-26
Back Side SAR to Peak Location Separation Ratio Plots



3

12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

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13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
5) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
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	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	10 mm	0.914	0.913	1.00	N/A	N/A	N/A	N/A
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	0.934	0.829	1.13	N/A	N/A	N/A	N/A
3500	3560.00	55340	LTE Band 48, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	10 mm	1.000	1.000	1.00	N/A	N/A	N/A	N/A
3700	3603.30	55773	LTE Band 48, 20 MHz Bandwidth	QPSK, 1 RB, 99 RB Offset	back	10 mm	0.929	0.924	1.01	N/A	N/A	N/A	N/A
2600	PCC: 2636.5	41055	LTE Band 41 PC2 ULCA, 20 MHz Bandwidth	PCC: QPSK, 1 RB, 0 RB Offset	bottom	10 mm	0.990	0.970	1.02	N/A	N/A	N/A	N/A
	SCC: 2616.7	40857		SCC: QPSK, 1 RB, 99 RB Offset									
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram						

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Table 13-2
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)	
1900	1907.60	9538	UMTS 1900	RMC	bottom	0 mm	2.850	2.670	1.07	N/A	N/A	N/A	N/A
1750	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	front	1 mm	2.580	2.580	1.00	N/A	N/A	N/A	N/A
2450	2510.00	20850	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	bottom	0 mm	2.250	2.230	1.01	N/A	N/A	N/A	N/A
2600	2560.00	21350	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	bottom	0 mm	2.250	2.240	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams						

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

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14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR for each exposure condition. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. When ULCA is active, the linearity between the Power Class 2 with ULCA active and Power Class 3 with ULCA active SAR results and the respective frame averaged powers was calculated to determine that the results were linear. Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes was < 10% and all reported SAR values were < 1.4 W/kg for 1g and < 3.5 W/kg for 10g.

Table 14-1
LTE Band 41 Standalone Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	24.82	27.56
Measured SAR (W/kg)	0.058	0.068
Measured Power (mW)	303.39	570.16
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	192.05	246.88
% deviation from expected linearity		-8.85%

Figure 14-1
LTE Band 41 Standalone Head Linearity

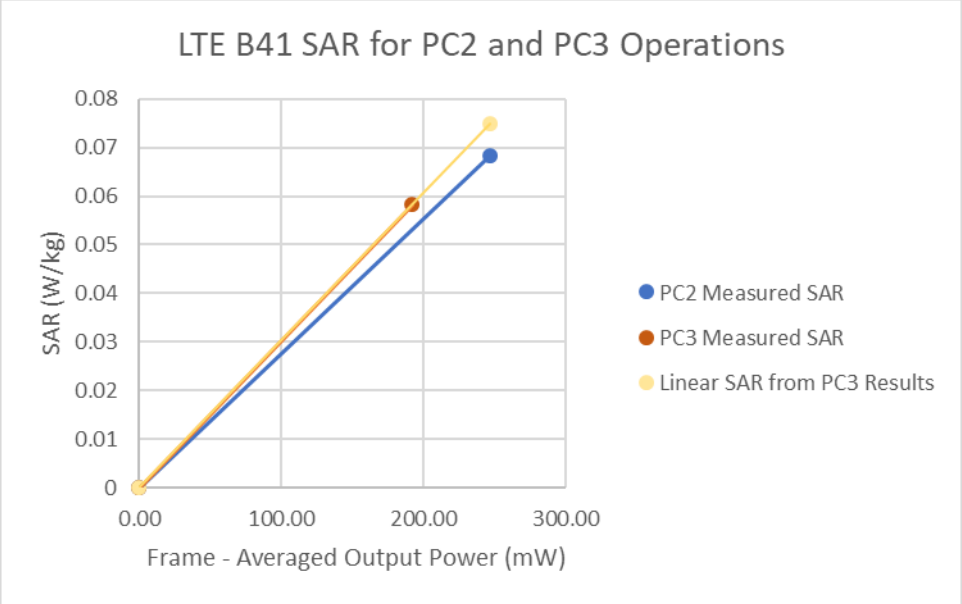

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Table 14-2
LTE Band 41 ULCA Standalone Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	25.2	27.7
Measured SAR (W/kg)	0.049	0.062
Measured Power (mW)	331.13	588.84
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	209.61	254.97
% deviation from expected linearity		4.05%

Figure 14-2
LTE Band 41 ULCA Standalone Head Linearity Data

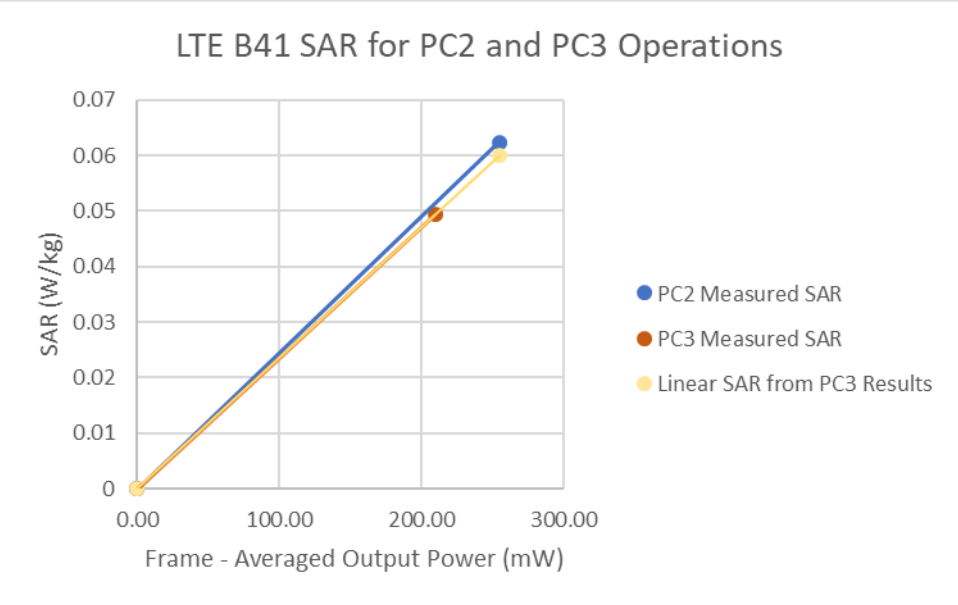

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Table 14-3
LTE Band 41 Standalone Bodyworn Linearity

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	24.45	27.13
Measured SAR (W/kg)	0.489	0.579
Measured Power (mW)	278.61	516.42
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	176.36	223.61
% deviation from expected linearity		-6.61%

Figure 14-3
LTE Band 41 Standalone Bodyworn Linearity

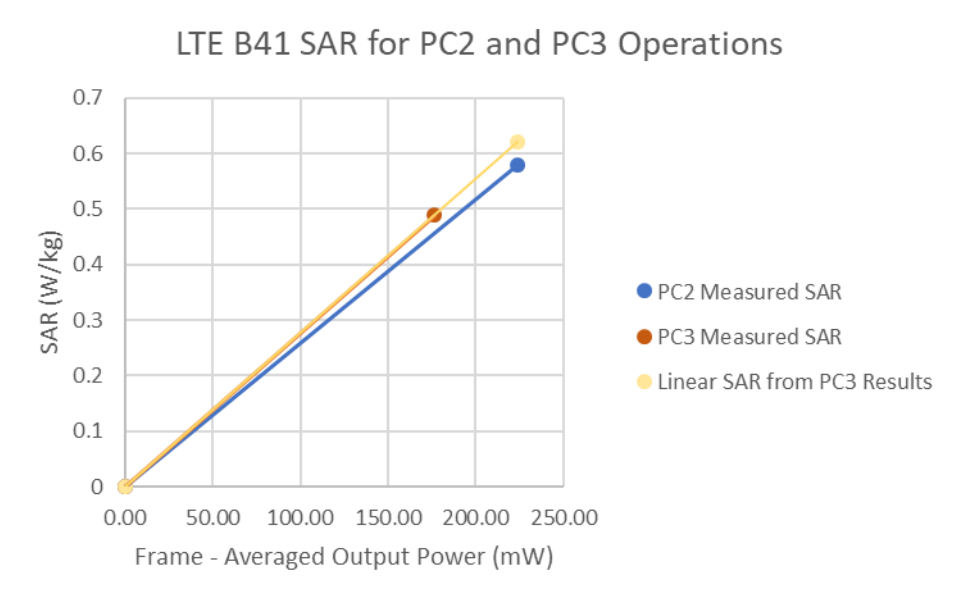

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Table 14-4
LTE Band 41 ULCA Standalone Bodyworn Linearity

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	25.2	27.7
Measured SAR (W/kg)	0.593	0.683
Measured Power (mW)	331.13	588.84
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	209.61	254.97
% deviation from expected linearity		-5.31%

Figure 14-4
LTE Band 41 ULCA Standalone Bodyworn Linearity

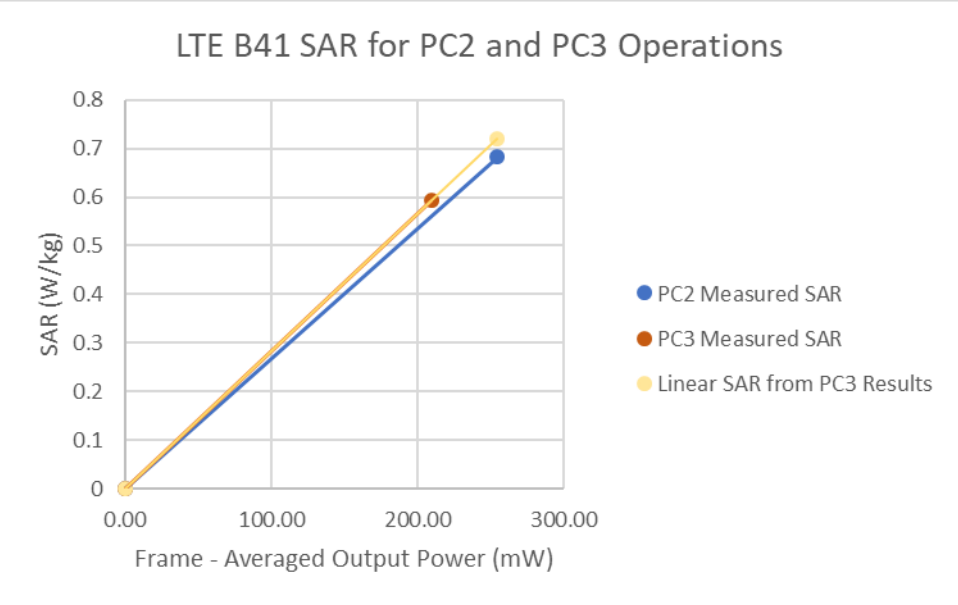

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Table 14-5
LTE Band 41 Standalone Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	24.82	27.56
Measured SAR (W/kg)	0.822	0.980
Measured Power (mW)	303.39	570.16
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	192.05	246.88
% deviation from expected linearity		-7.26%

Figure 14-5
LTE Band 41 Standalone Hotspot Linearity

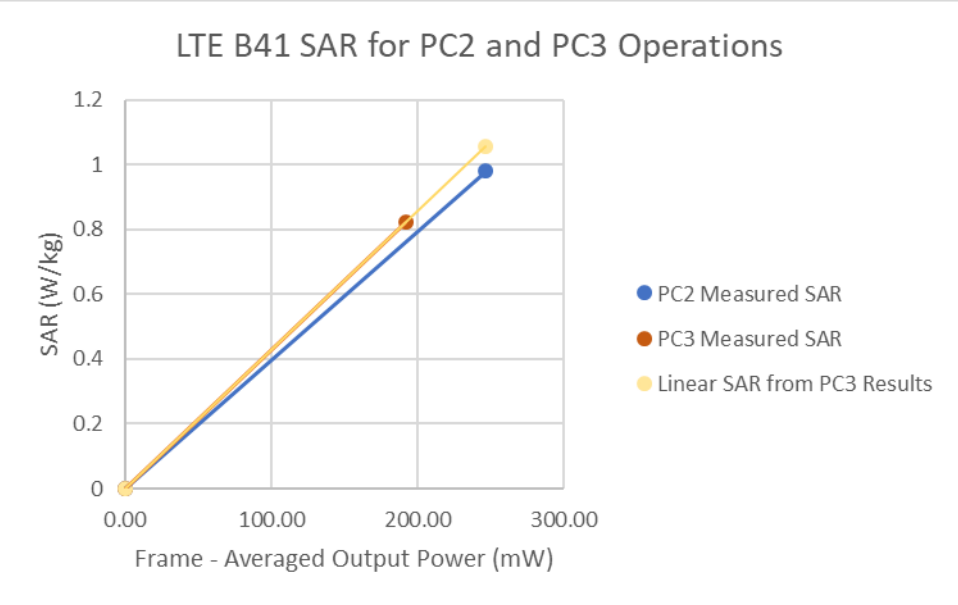

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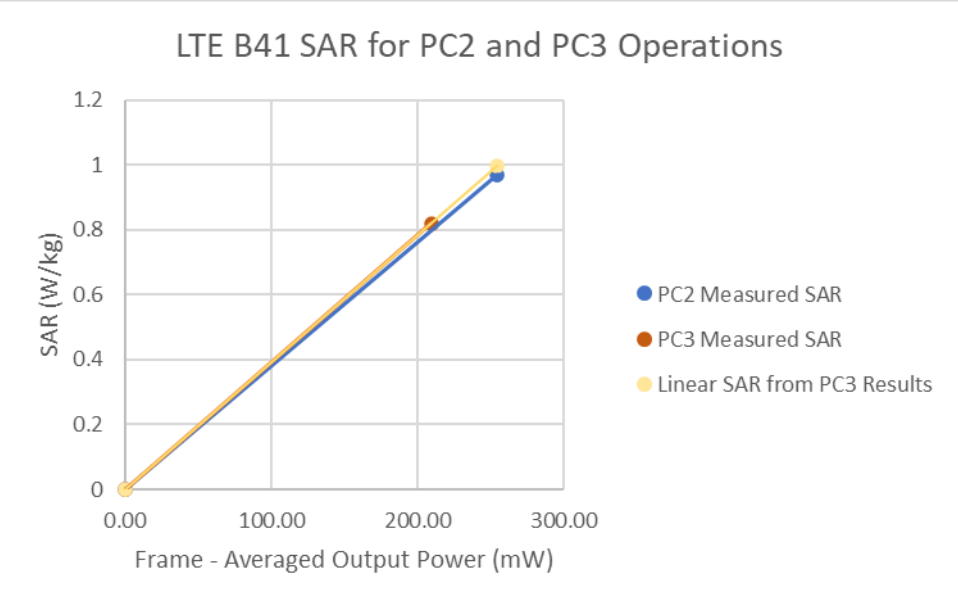
Table 14-6
LTE Band 41 ULCA Standalone Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.2	27.7
Measured Output Power (dBm)	25.2	27.7
Measured SAR (W/kg)	0.819	0.970
Measured Power (mW)	331.13	588.84
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	209.61	254.97
% deviation from expected linearity		-2.63%

Figure 14-6
LTE Band 41 ULCA Standalone Hotspot Linearity



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15 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	E5515C	8960 Series 10 Wireless Communications Test Set	2/10/2020	Annual	2/10/2021	GB42230325
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	12/13/2019	Annual	12/13/2020	MY42082659
Agilent	E4432B	ESG-D Series Signal Generator	7/14/2019	Annual	7/14/2020	US40053896
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N5182A	MXG Vector Signal Generator	7/10/2019	Annual	7/10/2020	MY47420800
Agilent	8753ES	S-Parameter Network Analyzer	8/26/2019	Annual	8/26/2020	MY40000670
Agilent	E5515C	Wireless Communications Test Set	9/25/2019	Annual	9/25/2020	GB43304278
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Amplifier Research	15S1G6	Amplifier	N/A	N/A	N/A	433976
Amplifier Research	15S1G6	Amplifier	N/A	N/A	N/A	433978
Anritsu	MA80002A	39GHz RF Converter	4/22/2019	Annual	4/22/2020	6261951702
Anritsu	MN8110B	I/O Adaptor	CBT	N/A	CBT	6261747881
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Anritsu	MA2411B	Pulse Power Sensor	12/4/2019	Annual	12/4/2020	1126066
Anritsu	MA2411B	Pulse Power Sensor	6/11/2019	Annual	6/11/2020	1207364
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Anritsu	MT8821C	Radio Communication Analyzer	11/22/2019	Annual	11/22/2020	6262044715
Anritsu	MA24106A	USB Power Sensor	5/22/2019	Annual	5/22/2020	1231535
Anritsu	MA24106A	USB Power Sensor	5/6/2019	Annual	5/6/2020	1231538
Anritsu	MT8862A	Wireless Connectivity Test Set	8/8/2019	Annual	8/8/2020	6261782395
Anritsu	MA180001A	28GGHz RF Converter	4/5/2019	Annual	4/5/2020	6261922958
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282739
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282753
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766777
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766817
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53004059
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	8/26/2019	Annual	8/26/2020	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	4/16/2019	Annual	4/16/2020	167286
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Seekonk	NC-100	Torque Wrench	4/18/2018	Biennial	4/18/2020	N/A
Seekonk	NC-100	Torque Wrench (8" lb)	5/10/2018	Biennial	5/10/2020	21053
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Triennial	1/15/2021	1003
SPEAG	D750V3	750 MHz SAR Dipole	3/18/2019	Annual	3/18/2020	1054
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	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	4d132
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Biennial	5/23/2020	1008
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Biennial	2/21/2021	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	8/13/2018	Biennial	8/13/2020	1073
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Biennial	8/16/2020	981
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Annual	6/14/2020	1064
SPEAG	D3500V2	3500 MHz SAR Dipole	1/11/2018	Triennial	1/11/2021	1059
SPEAG	D3700V2	3700 MHz SAR Dipole	1/11/2018	Triennial	1/11/2021	1018
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/16/2018	Triennial	1/16/2021	1057
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/17/2019	Annual	9/17/2020	1191
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/18/2019	Annual	12/18/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/5/2019	Annual	12/5/2020	1533
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	7488
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7570
SPEAG	EX3DV4	SAR Probe	12/11/2019	Annual	12/11/2020	7571
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091

Note: Equipment was solely used during its calibration period

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

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16 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	

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17 CONCLUSION

17.1 Measurement Conclusion

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

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

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18 REFERENCES

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.

[2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.

[3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.

[4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.

[5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

[6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.

[7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.

[8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 1 -124.

[9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.

[10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.

[11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.

[12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[13] G. Hartsgrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.

[14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.

[15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.

[16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

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[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hoschschule Zürich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz), July 2016.

[21] Innovation, Science, Economic Development Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 5, March 2015.

[22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2015

[23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07

[24] SAR Measurement Guidance for IEEE 802.11 Transmitters, KDB Publication 248227 D01

[25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D03-D04

[26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04

[27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02

[28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02

[29] Anexo à Resolução No. 533, de 10 de Septembro de 2009.

[30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

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