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SAR EVALUATION REPORT

Applicant Name:
Sony Corporation
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Tokyo, 108-0075, Japan

Date of Testing:
02/28/23 - 03/20/23
Test Site/Location:
Element Washington DC LLC,
Columbia, MD, USA
Document Serial No.:
1M2302060006-19.PY7 (Rev1)

FCC ID: **PY7-84558E**

APPLICANT: **SONY CORPORATION**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.13	0.44	0.42	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.26	0.28	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.16	0.42	0.42	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	< 0.1	0.17	0.23	N/A
PCE	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.28	0.46	N/A
PCE	LTE Band 71	665.5 - 695.5 MHz	0.12	0.17	0.17	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.59	0.19	0.19	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	0.72	0.22	0.22	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.63	0.30	0.30	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.99	0.22	0.34	0.76
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	0.19	0.26	0.41	0.95
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.84	0.23	0.32	0.71
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.67	0.16	0.16	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	< 0.1	0.16	N/A
CBE	LTE Band 48	3552.5 - 3697.5 MHz	0.11	0.31	0.31	N/A
PCE	NR Band n71	665.5 - 695.5 MHz	0.13	0.21	0.21	N/A
PCE	NR Band n5 (Cell)	826.5 - 846.5 MHz	0.48	0.43	0.43	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.12	0.17	0.23	N/A
PCE	NR Band n25 (PCS)	1852.5 - 1912.5 MHz	0.25	0.23	0.44	1.08
PCE	NR Band n2 (PCS)	1852.5 - 1907.5 MHz	N/A	N/A	N/A	N/A
PCE	NR Band n30	2307.5 - 2312.5 MHz	< 0.1	0.17	0.28	N/A
PCE	NR Band n41	2506.02 - 2679.99 MHz	0.93	0.20	0.30	1.72
PCE	NR Band n77 DoD	3460.02 - 3540 MHz	0.20	0.35	0.35	1.51
PCE	NR Band n77	3710.01 - 3969.99 MHz	0.23	0.94	0.94	1.39
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.45*	0.11*	0.18*	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	< 0.1*	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.16*	< 0.1*	N/A	0.31*
NII	U-NII-2C	5500 - 5720 MHz	0.18*	< 0.1*	N/A	0.63*
NII	U-NII-3	5745 - 5825 MHz	0.19*	< 0.1*	0.1*	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.22	< 0.1	< 0.1	N/A
DXX	NFC	13.56 MHz	N/A	N/A	N/A	< 0.1
Simultaneous SAR per KDB 690783 D01v01r03:			1.42	1.44	1.45	2.98

* Note: * SAR values represent RF exposure during MIMO operations.

Note: This revised Test Report supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.9 of this report; for North American frequency bands only.
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

RJ Ortanez
Executive Vice President

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

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/DTM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/DTM/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 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 41	Voice/Data	2498.5 - 2687.5 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 MHz
NR Band n71	Data	665.5 - 695.5 MHz
NR Band n5 (Cell)	Data	826.5 - 846.5 MHz
NR Band n66 (AWS)	Data	1712.5 - 1777.5 MHz
NR Band n25 (PCS)	Data	1852.5 - 1912.5 MHz
NR Band n2 (PCS)	Data	1852.5 - 1907.5 MHz
NR Band n30	Data	2307.5 - 2312.5 MHz
NR Band n41	Data	2506.02 - 2679.99 MHz
NR Band n77 DoD	Data	3460.02 - 3540 MHz
NR Band n77	Data	3710.01 - 3969.99 MHz
2.4 GHz WLAN	Data	2412 - 2462 MHz
U-NII-1	Data	5180 - 5240 MHz
U-NII-2A	Data	5260 - 5320 MHz
U-NII-2C	Data	5500 - 5720 MHz
U-NII-3	Data	5745 - 5825 MHz
U-NII-5	Data	5955 - 6415 MHz
U-NII-6	Data	6435 - 6515 MHz
U-NII-7	Data	6535 - 6875 MHz
U-NII-8	Data	6895 - 7115 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

1.2 Time-Averaging Algorithm for RF Exposure Compliance

This Device is enabled with the Qualcomm® Smart Transmit Gen2 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* or *PD_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 can be found in Section 1.11 - Bibliography).

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

Exposure Scenario			Free Space	Head	Body-Worn, Hotspot	Phablet	Maximum Tune-Up Output Power*
Averaging Volume			N/A	1g	1g	10g	
Spacing			N/A	0 mm	10 mm	0 mm	
DSI			1	2	3		
Technology/Band	Antenna	Antenna Group					Pmax
GSM 850	Main 1	AG0	22.7	22.7	22.7		22.7
GSM 1900	Main 2	AG0	20.6	17.8	17.8		20.6
UMTS 850	Main 1	AG0	24.0	22.0	22.0		24.0
UMTS 1750	Main 2	AG0	23.0	18.0	18.0		23.0
UMTS 1900	Main 2	AG0	23.0	19.0	19.0		23.0
LTE Band 71	Main 1	AG0	24.0	24.0	22.0		24.0
LTE Band 12/17	Main 1	AG0	24.0	24.0	21.0		24.0
LTE Band 12/17	Sub	AG1	23.5	20.0	22.0		23.5
LTE Band 13	Main 1	AG0	24.0	24.0	21.0		24.0
LTE Band 13	Sub	AG1	23.5	20.0	22.0		23.5
LTE Band 5 (Cell)	Main 1	AG0	24.0	24.0	21.0		24.0
LTE Band 5 (Cell)	Sub	AG1	23.5	20.0	22.0		23.5
LTE Band 66/4 (AWS)	Main 2	AG0	24.0	24.0	18.0		24.0
LTE Band 66 (AWS)	Sub	AG1	23.0	16.0	16.0		23.0
LTE Band 25/2 (PCS)	Main 2	AG0	24.0	24.0	19.0		24.0
LTE Band 2 (PCS)	Sub	AG1	23.0	15.0	15.0		23.0
LTE Band 30	Main 2	AG0	23.0	23.0	19.0		23.0
LTE Band 30	Sub	AG1	22.0	16.0	16.0		22.0
LTE Band 48	Main 1	AG0	22.0	22.0	17.0		22.0
LTE Band 48	Sub-UHB	AG1	21.0	15.0	15.0		21.0
LTE Band 41	Main 2	AG0	22.0	22.0	17.0		22.0

Exposure Scenario			Free Space	Head	Body-Worn, Hotspot	Phablet	Maximum Tune-Up Output Power*
Averaging Volume			N/A	1g	1g	10g	
Spacing			N/A	0 mm	10 mm	0 mm	
DSI			1	2	3		
Technology/Band	Antenna	Antenna Group					Pmax
NR Band n71	Main 1	AG0	24.0	24.0	22.0		24.0
NR Band n5	Main 1	AG0	24.0	24.0	21.0		24.0
NR Band n5	Sub	AG1	24.0	20.0	21.0		24.0
NR Band n66	Main 2	AG0	24.0	24.0	19.0		24.0
NR Band n25/n2 (PCS)	Main 2	AG0	24.0	24.0	19.0		24.0
NR Band n30	Main 2	AG0	23.0	23.0	19.0		23.0
NR Band n41 PC2	Main 2	AG0	26.0	20.0	19.0		26.0
NR Band n41 PC3	Main 2	AG0	26.0	20.0	19.0		24.0
NR Band n41 (PC3, UL-MIMO)	Main 2	AG0	19.5	17.0	17.0		19.5
NR Band n41 PC2 SRS 1T4R	Main 2	AG0	26.0	20.0	19.0		26.0
NR Band n41 PC3 SRS 1T4R	Main 2	AG0	26.0	20.0	19.0		24.0
NR Band n41 PC3 SRS 2T4R	Main 2	AG0	19.5	17.0	17.0		19.5
NR Band n41 (PC3, UL-MIMO)	Sub	AG1	19.5	17.0	17.0		19.5
NR Band n41 PC2 SRS 1T4R	Sub	AG1	21.5	15.5	14.5		21.5
NR Band n41 PC3 SRS 1T4R	Sub	AG1	21.5	15.5	14.5		19.5
NR Band n41 PC3 SRS 2T4R	Sub	AG1	19.5	17.0	17.0		19.5
NR Band n41 PC2 SRS 1T4R	3rd-LMHB	AG1	21.5	15.5	14.5		21.5
NR Band n41 PC3 SRS 1T4R	3rd-LMHB	AG1	21.5	15.5	14.5		19.5
NR Band n41 PC3 SRS 2T4R	3rd-LMHB	AG1	15.0	12.5	12.5		15.0
NR Band n41 PC2 SRS 1T4R	4th-MHB	AG1	23.0	17.0	16.0		23.0
NR Band n41 PC3 SRS 1T4R	4th-MHB	AG1	23.0	17.0	16.0		21.0
NR Band n41 PC3 SRS 2T4R	4th-MHB	AG1	16.5	14.0	14.0		16.5
NR Band n77 DoD PC2	Main 1	AG0	26.5	20.0	18.0		26.5
NR Band n77 DoD PC3	Main 1	AG0	26.5	20.0	18.0		24.3
NR Band n77 DoD (PC3, UL-MIMO/SRS 2T4R)	Main 1	AG0	19.8	17.0	17.0		19.8
NR Band n77 DoD PC2 SRS 1T4R	Main 1	AG0	26.5	20.0	18.0		26.5
NR Band n77 DoD PC3 SRS 1T4R	Main 1	AG0	26.5	20.0	18.0		24.3
NR Band n77 DoD PC2 AS-Div	Sub-UHB	AG1	22.5	13.0	13.0		22.5
NR Band n77 DoD PC3 AS-Div	Sub-UHB	AG1	22.5	13.0	13.0		20.3
NR Band n77 DoD PC2 SRS 1T4R	Sub-UHB	AG1	22.5	16.0	14.0		22.5
NR Band n77 DoD PC3 SRS 1T4R	Sub-UHB	AG1	22.5	16.0	14.0		20.3
NR Band n77 DoD (PC3, UL-MIMO/SRS 2T4R)	Sub-UHB	AG1	19.8	17.0	17.0		19.8
NR Band n77 DoD PC2 SRS 1T4R	3rd-LMHB	AG1	21.0	14.5	12.5		21.0
NR Band n77 DoD PC3 SRS 1T4R	3rd-LMHB	AG1	21.0	14.5	12.5		18.8
NR Band n77 DoD PC3 SRS 2T4R	3rd-LMHB	AG1	14.3	11.5	11.5		14.3
NR Band n77 DoD PC2 SRS 1T4R	4th-MHB	AG1	22.5	16.0	14.0		22.5
NR Band n77 DoD PC3 SRS 1T4R	4th-MHB	AG1	22.5	16.0	14.0		20.3
NR Band n77 DoD PC3 SRS 2T4R	4th-MHB	AG1	13.8	11.0	11.0		13.8
NR Band n77 PC2	Main 1	AG0	26.5	20.0	18.0		26.5
NR Band n77 PC3	Main 1	AG0	26.5	20.0	18.0		24.3
NR Band n77 (PC3, UL-MIMO/SRS 2T4R)	Main 1	AG0	19.8	17.0	17.0		19.8
NR Band n77 PC2 SRS 1T4R	Main 1	AG0	26.5	20.0	18.0		26.5
NR Band n77 PC3 SRS 1T4R	Main 1	AG0	26.5	20.0	18.0		24.3
NR Band n77 PC2 AS-Div	Sub-UHB	AG1	22.5	13.0	13.0		22.5
NR Band n77 PC3 AS-Div	Sub-UHB	AG1	22.5	13.0	13.0		20.3
NR Band n77 PC2 SRS 1T4R	Sub-UHB	AG1	22.5	16.0	14.0		22.5
NR Band n77 PC3 SRS 1T4R	Sub-UHB	AG1	22.5	16.0	14.0		20.3
NR Band n77 (PC3, UL-MIMO/SRS 2T4R)	Sub-UHB	AG1	19.8	17.0	17.0		19.8
NR Band n77 PC2 SRS 1T4R	3rd-LMHB	AG1	21.0	14.5	12.5		21.0
NR Band n77 PC3 SRS 1T4R	3rd-LMHB	AG1	21.0	14.5	12.5		18.8
NR Band n77 PC3 SRS 2T4R	3rd-LMHB	AG1	14.3	11.5	11.5		14.3
NR Band n77 PC2 SRS 1T4R	4th-MHB	AG1	22.5	16.0	14.0		22.5
NR Band n77 PC3 SRS 1T4R	4th-MHB	AG1	22.5	16.0	14.0		20.3
NR Band n77 PC3 SRS 2T4R	4th-MHB	AG1	13.8	11.0	11.0		13.8

*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 (e.g. GSM and 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 + 1dB device design uncertainty.

The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G Sub6 WWAN technology, band, and DSI = minimum of "P_{limit} EFS" and "Maximum tune up output power P_{max}" + 1dB 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 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.

1.3.1 2G/3G/4G/5G Output Power

GSM/GPRS/EDGE 850										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max Allowed Power	32.9	32.9	29.9	28.1	26.9	28.0	25.0	23.2	22.0
	Nominal	31.9	31.9	28.9	27.1	25.9	27.0	24.0	22.2	21.0

GSM/GPRS/EDGE 1900										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max Allowed Power	28.0	28.0	25.0	23.2	22.0	27.0	24.0	22.2	21.0
	Nominal	27.0	27.0	24.0	22.2	21.0	26.0	23.0	21.2	20.0

GSM/GPRS/EDGE 850										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
All DSI	Max Allowed Power	32.9	32.9	29.9	28.1	26.9	28.0	25.0	23.2	22.0
	Nominal	31.9	31.9	28.9	27.1	25.9	27.0	24.0	22.2	21.0

GSM/GPRS/EDGE 1900										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax	Max Allowed Power	30.8	30.8	27.8	26.0	24.8	27.0	24.0	22.2	21.0
	Nominal	29.8	29.8	26.8	25.0	23.8	26.0	23.0	21.2	20.0
DSI = 1 (Free Space)	Max Allowed Power	30.8	30.8	27.8	26.0	24.8	27.0	24.0	22.2	21.0
	Nominal	29.8	29.8	26.8	25.0	23.8	26.0	23.0	21.2	20.0
DSI = 2 (Head)	Max Allowed Power	28.0	28.0	25.0	23.2	22.0	27.0	24.0	22.2	21.0
	Nominal	27.0	27.0	24.0	22.2	21.0	26.0	23.0	21.2	20.0
DSI = 3 (Body-Worn, Hotspot, Phablet)	Max Allowed Power	28.0	28.0	25.0	23.2	22.0	27.0	24.0	22.2	21.0
	Nominal	27.0	27.0	24.0	22.2	21.0	26.0	23.0	21.2	20.0

GMS/DTM 850					
Power Level		DTM (GSM+GPRS) (in dBm)		DTM (GSM+EGPRS) (in dBm)	
		2 TX Slots	3 TX Slots	2 TX Slots	3 TX Slots
All DSI	Max Allowed Power	29.9	28.1	25.0	23.2
	Nominal	28.9	27.1	24.0	22.2

GSM/DTM 1900					
Power Level		DTM (GSM+GPRS) (in dBm)		DTM (GSM+EGPRS) (in dBm)	
		2 TX Slots	3 TX Slots	2 TX Slots	3 TX Slots
Pmax	Max Allowed Power	27.8	26.0	24.0	22.2
	Nominal	26.8	25.0	23.0	21.2
DSI = 1 (Free Space)	Max Allowed Power	27.8	26.0	24.0	22.2
	Nominal	26.8	25.0	23.0	21.2
DSI = 2 (Head)	Max Allowed Power	25.0	23.2	24.0	22.2
	Nominal	24.0	22.2	23.0	21.2
DSI = 3 (Body-Worn, Hotspot, Phablet)	Max Allowed Power	25.0	23.2	24.0	22.2
	Nominal	24.0	22.2	23.0	21.2

For GSM/DTM, the above powers listed are GSM/DTM burst average values.

UMTS Band 5 (850 MHz)					
Power Level		Modulated Average Output Power			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	Max Allowed Power	24.7	24.0	24.0	24.0
	Nominal	24.0	23.0	23.0	23.0
DSI = 1 (Free Space)	Max Allowed Power	24.7	24.0	24.0	24.0
	Nominal	24.0	23.0	23.0	23.0
DSI = 2 (Head)	Max Allowed Power	23.0	22.0	22.0	22.0
	Nominal	22.0	21.0	21.0	21.0
DSI = 3 (Body-Worn, Hotspot, Phablet)	Max Allowed Power	23.0	22.0	22.0	22.0
	Nominal	22.0	21.0	21.0	21.0
UMTS Band 4 (1750 MHz)					
Power Level		Modulated Average Output Power			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	Max Allowed Power	23.7	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
DSI = 1 (Free Space)	Max Allowed Power	23.7	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
DSI = 2 (Head)	Max Allowed Power	19.0	18.0	18.0	18.0
	Nominal	18.0	17.0	17.0	17.0
DSI = 3 (Body-Worn, Hotspot, Phablet)	Max Allowed Power	19.0	18.0	18.0	18.0
	Nominal	18.0	17.0	17.0	17.0
UMTS Band 2 (1900 MHz)					
Power Level		Modulated Average Output Power			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	Max Allowed Power	23.7	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
DSI = 1 (Free Space)	Max Allowed Power	23.7	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
DSI = 2 (Head)	Max Allowed Power	20.0	19.0	19.0	19.0
	Nominal	19.0	18.0	18.0	18.0
DSI = 3 (Body-Worn, Hotspot, Phablet)	Max Allowed Power	20.0	19.0	19.0	19.0
	Nominal	19.0	18.0	18.0	18.0

Mode / Band	Antenna		Modulated Average Output Power (in dBm)			
			Pmax	DSI = 1 (Free Space)	DSI = 2 (Head)	DSI = 3 (Body-Worn, Hotspot, Phablet)
LTE Band 71	Main 1	Max Allowed Power	25.0	25.0	25.0	23.0
		Nominal	24.0	24.0	24.0	22.0
LTE Band 12	Main 1	Max Allowed Power	25.0	25.0	25.0	22.0
		Nominal	24.0	24.0	24.0	21.0
LTE Band 12	Sub	Max Allowed Power	24.5	24.5	21.0	23.0
		Nominal	23.5	23.5	20.0	22.0
LTE Band 17	Main 1	Max Allowed Power	25.0	25.0	25.0	22.0
		Nominal	24.0	24.0	24.0	21.0
LTE Band 17	Sub	Max Allowed Power	24.5	24.5	21.0	23.0
		Nominal	23.5	23.5	20.0	22.0
LTE Band 13	Main 1	Max Allowed Power	25.0	25.0	25.0	22.0
		Nominal	24.0	24.0	24.0	21.0
LTE Band 13	Sub	Max Allowed Power	24.5	24.5	21.0	23.0
		Nominal	23.5	23.5	20.0	22.0
LTE Band 5 (Cell)	Main 1	Max Allowed Power	25.0	25.0	25.0	22.0
		Nominal	24.0	24.0	24.0	21.0
LTE Band 5 (Cell)	Sub	Max Allowed Power	24.5	24.5	21.0	23.0
		Nominal	23.5	23.5	20.0	22.0
LTE Band 66 (AWS)	Main 2	Max Allowed Power	25.0	25.0	25.0	19.0
		Nominal	24.0	24.0	24.0	18.0
LTE Band 66 (AWS)	Sub	Max Allowed Power	24.0	24.0	17.0	17.0
		Nominal	23.0	23.0	16.0	16.0
LTE Band 4 (AWS)	Main 2	Max Allowed Power	25.0	25.0	25.0	19.0
		Nominal	24.0	24.0	24.0	18.0
LTE Band 25 (PCS)	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
LTE Band 2 (PCS)	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
LTE Band 2 (PCS)	Sub	Max Allowed Power	24.0	24.0	16.0	16.0
		Nominal	23.0	23.0	15.0	15.0
LTE Band 30	Main 2	Max Allowed Power	24.0	24.0	24.0	20.0
		Nominal	23.0	23.0	23.0	19.0
LTE Band 30	Sub	Max Allowed Power	23.0	23.0	17.0	17.0
		Nominal	22.0	22.0	16.0	16.0
LTE Band 48	Main 1	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
LTE Band 48	Sub-UHB	Max Allowed Power	24.0	24.0	18.0	18.0
		Nominal	23.0	23.0	17.0	17.0
LTE Band 41 PC3	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0

Mode / Band	Antenna		Modulated Average Output Power (in dBm)			
			Pmax	DSI = 1 (Free Space)	DSI = 2 (Head)	DSI = 3 (Body-Worn, Hotspot, Phablet)
NR Band n71	Main 1	Max Allowed Power	25.0	25.0	25.0	23.0
		Nominal	24.0	24.0	24.0	22.0
NR Band n5	Main 1	Max Allowed Power	25.0	25.0	25.0	22.0
		Nominal	24.0	24.0	24.0	21.0
NR Band n5	Sub	Max Allowed Power	25.0	25.0	21.0	22.0
		Nominal	24.0	24.0	20.0	21.0
NR Band n66	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
NR Band n25	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
NR Band n2 (PCS)	Main 2	Max Allowed Power	25.0	25.0	25.0	20.0
		Nominal	24.0	24.0	24.0	19.0
NR Band n30	Main 2	Max Allowed Power	24.0	24.0	24.0	20.0
		Nominal	23.0	23.0	23.0	19.0
NR Band n41 PC2	Main 2	Max Allowed Power	27.0	27.0	21.0	20.0
		Nominal	26.0	26.0	20.0	19.0
NR Band n41 PC3	Main 2	Max Allowed Power	25.0	27.0	21.0	20.0
		Nominal	24.0	26.0	20.0	19.0
NR Band n41 (PC3, UL-MIMO)	Main 2	Max Allowed Power	20.5	20.5	18.0	18.0
		Nominal	19.5	19.5	17.0	17.0
NR Band n41 PC2 SRS 1T4R	Main 2	Max Allowed Power	27.0	27.0	21.0	20.0
		Nominal	26.0	26.0	20.0	19.0
NR Band n41 PC3 SRS 1T4R	Main 2	Max Allowed Power	25.0	27.0	21.0	20.0
		Nominal	24.0	26.0	20.0	19.0
NR Band n41 PC3 SRS 2T4R	Main 2	Max Allowed Power	20.5	20.5	18.0	18.0
		Nominal	19.5	19.5	17.0	17.0
NR Band n41 (PC3, UL-MIMO)	Sub	Max Allowed Power	20.5	20.5	18.0	18.0
		Nominal	19.5	19.5	17.0	17.0
NR Band n41 PC2 1T4R	Sub	Max Allowed Power	22.5	22.5	16.5	15.5
		Nominal	21.5	21.5	15.5	14.5
NR Band n41 PC3 1T4R	Sub	Max Allowed Power	20.5	22.5	16.5	15.5
		Nominal	19.5	21.5	15.5	14.5
NR Band n41 PC3 2T4R	Sub	Max Allowed Power	20.5	20.5	18.0	18.0
		Nominal	19.5	19.5	17.0	17.0
NR Band n41 PC2 1T4R	3rd-LMHB	Max Allowed Power	22.5	22.5	16.5	15.5
		Nominal	21.5	21.5	15.5	14.5
NR Band n41 PC3 1T4R	3rd-LMHB	Max Allowed Power	20.5	22.5	16.5	15.5
		Nominal	19.5	21.5	15.5	14.5
NR Band n41 PC3 2T4R	3rd-LMHB	Max Allowed Power	16.0	16.0	13.5	13.5
		Nominal	15.0	15.0	12.5	12.5
NR Band n41 PC2 1T4R	4th-MHB	Max Allowed Power	24.0	24.0	18.0	17.0
		Nominal	23.0	23.0	17.0	16.0
NR Band n41 PC3 1T4R	4th-MHB	Max Allowed Power	22.0	24.0	18.0	17.0
		Nominal	21.0	23.0	17.0	16.0
NR Band n41 PC3 2T4R	4th-MHB	Max Allowed Power	17.5	17.5	15.0	15.0
		Nominal	16.5	16.5	14.0	14.0

Mode / Band	Antenna		Modulated Average Output Power (in dBm)			
			Pmax	DSI = 1 (Free Space)	DSI = 2 (Head)	DSI = 3 (Body-Worn, Hotspot, Phablet)
NR Band n77 DoD PC2	Main 1	Max Allowed Power	27.5	27.5	21.0	19.0
		Nominal	26.5	26.5	20.0	18.0
NR Band n77 DoD PC3	Main 1	Max Allowed Power	25.3	27.5	21.0	19.0
		Nominal	24.3	26.5	20.0	18.0
NR Band n77 DoD (PC3, UL-MIMO / 2T4R)	Main 1	Max Allowed Power	20.8	20.8	18.0	18.0
		Nominal	19.8	19.8	17.0	17.0
NR Band n77 DoD PC2 SRS 1T4R	Main 1	Max Allowed Power	27.5	27.5	21.0	19.0
		Nominal	26.5	26.5	20.0	18.0
NR Band n77 DoD PC3 SRS 1T4R	Main 1	Max Allowed Power	25.3	27.5	21.0	19.0
		Nominal	24.3	26.5	20.0	18.0
NR Band n77 DoD PC2	Sub-UHB	Max Allowed Power	23.5	23.5	14.0	14.0
		Nominal	22.5	22.5	13.0	13.0
NR Band n77 DoD PC3	Sub-UHB	Max Allowed Power	21.3	23.5	14.0	14.0
		Nominal	20.3	22.5	13.0	13.0
NR Band n77 DoD PC2 1T4R	Sub-UHB	Max Allowed Power	23.5	23.5	17.0	15.0
		Nominal	22.5	22.5	16.0	14.0
NR Band n77 DoD PC3 1T4R	Sub-UHB	Max Allowed Power	21.3	23.5	17.0	15.0
		Nominal	20.3	22.5	16.0	14.0
NR Band n77 DoD (PC3, UL-MIMO / 2T4R)	Sub-UHB	Max Allowed Power	20.8	20.8	18.0	18.0
		Nominal	19.8	19.8	17.0	17.0
NR Band n77 DoD PC2 1T4R	3rd-LMHB	Max Allowed Power	22.0	22.0	15.5	13.5
		Nominal	21.0	21.0	14.5	12.5
NR Band n77 DoD PC3 1T4R	3rd-LMHB	Max Allowed Power	19.8	22.0	15.5	13.5
		Nominal	18.8	21.0	14.5	12.5
NR Band n77 DoD PC3 2T4R	3rd-LMHB	Max Allowed Power	15.3	15.3	12.5	12.5
		Nominal	14.3	14.3	11.5	11.5
NR Band n77 DoD PC2 1T4R	4th-MHB	Max Allowed Power	23.5	23.5	17.0	15.0
		Nominal	22.5	22.5	16.0	14.0
NR Band n77 DoD PC3 1T4R	4th-MHB	Max Allowed Power	21.3	23.5	17.0	15.0
		Nominal	20.3	22.5	16.0	14.0
NR Band n77 DoD PC3 2T4R	4th-MHB	Max Allowed Power	14.8	14.8	12.0	12.0
		Nominal	13.8	13.8	11.0	11.0
NR Band n77 PC2	Main 1	Max Allowed Power	27.5	27.5	21.0	19.0
		Nominal	26.5	26.5	20.0	18.0
NR Band n77 PC3	Main 1	Max Allowed Power	25.3	27.5	21.0	19.0
		Nominal	24.3	26.5	20.0	18.0
NR Band n77 (PC3, UL-MIMO / 2T4R)	Main 1	Max Allowed Power	20.8	20.8	18.0	18.0
		Nominal	19.8	19.8	17.0	17.0
NR Band n77 PC2 SRS 1T4R	Main 1	Max Allowed Power	27.5	27.5	21.0	19.0
		Nominal	26.5	26.5	20.0	18.0
NR Band n77 PC3 SRS 1T4R	Main 1	Max Allowed Power	25.3	27.5	21.0	19.0
		Nominal	24.3	26.5	20.0	18.0
NR Band n77 PC2	Sub-UHB	Max Allowed Power	23.5	23.5	14.0	14.0
		Nominal	22.5	22.5	13.0	13.0
NR Band n77 PC3	Sub-UHB	Max Allowed Power	21.3	23.5	14.0	14.0
		Nominal	20.3	22.5	13.0	13.0
NR Band n77 PC2 1T4R	Sub-UHB	Max Allowed Power	23.5	23.5	17.0	15.0
		Nominal	22.5	22.5	16.0	14.0
NR Band n77 PC3 1T4R	Sub-UHB	Max Allowed Power	21.3	23.5	17.0	15.0
		Nominal	20.3	22.5	16.0	14.0
NR Band n77 (PC3, UL-MIMO / 2T4R)	Sub-UHB	Max Allowed Power	20.8	20.8	18.0	18.0
		Nominal	19.8	19.8	17.0	17.0
NR Band n77 PC2 1T4R	3rd-LMHB	Max Allowed Power	22.0	22.0	15.5	13.5
		Nominal	21.0	21.0	14.5	12.5
NR Band n77 PC3 1T4R	3rd-LMHB	Max Allowed Power	19.8	22.0	15.5	13.5
		Nominal	18.8	21.0	14.5	12.5
NR Band n77 PC3 2T4R	3rd-LMHB	Max Allowed Power	15.3	15.3	12.5	12.5
		Nominal	14.3	14.3	11.5	11.5
NR Band n77 PC2 1T4R	4th-MHB	Max Allowed Power	23.5	23.5	17.0	15.0
		Nominal	22.5	22.5	16.0	14.0
NR Band n77 PC3 1T4R	4th-MHB	Max Allowed Power	21.3	23.5	17.0	15.0
		Nominal	20.3	22.5	16.0	14.0
NR Band n77 PC3 2T4R	4th-MHB	Max Allowed Power	14.8	14.8	12.0	12.0
		Nominal	13.8	13.8	11.0	11.0

For LTE TDD and NR TDD, the above powers listed are TDD burst average values.

1.3.2 2.4 GHz Maximum MIMO WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in 802.11ax RU SAR Exclusion Appendix.

Mode	Band	IEEE 802.11 (in dBm)							
		MIMO							
		WiFi Main				WiFi Sub			
		b (CDD + STBC)	g (CDD + STBC)	n (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)	b (CDD + STBC)	g (CDD + STBC)	n (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)
Maximum / Nominal Power		Max	Max	Max	Max	Max	Max	Max	Max
2.4 GHz WIFI	2.45 GHz	14.0	14.0	14.0	14.0	12.5	14.0	14.0	14.0

Note: in MIMO operations, each WiFi Main and WiFi Sub antenna transmits at maximum allowed powers as indicated above.

1.3.3 2.4 GHz Reduced WLAN Output Powers

The below table is applicable during simultaneous conditions with 5/6 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)							
		MIMO							
		WiFi Main				WiFi Sub			
		b (CDD + STBC)	g (CDD + STBC)	n (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)	b (CDD + STBC)	g (CDD + STBC)	n (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)
Maximum / Nominal Power		Max	Max	Max	Max	Max	Max	Max	Max
2.4 GHz	2.45 GHz	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0

Note: in MIMO operations, each WiFi Main and WiFi Sub antenna transmits at maximum allowed powers as indicated above.

1.3.4 5 GHz Maximum SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (in dBm)							
		MIMO							
		WiFi Main				WiFi Sub			
		a (CDD + STBC)	n (CDD + STBC, SDM)	ac (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)	a (CDD + STBC)	n (CDD + STBC, SDM)	ac (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)
Maximum / Nominal Power		Max	Max	Max	Max	Max	Max	Max	Max
5 GHz WIFI (20MHz BW)	UNII-1	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
	UNII-2A	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
	UNII-2C	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
	UNII-3	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
5 GHz WIFI (40MHz BW)	UNII-1		11.5	11.5	11.5		11.5	11.5	11.5
	UNII-2A		11.5	11.5	11.5		11.5	11.5	11.5
	UNII-2C		11.5	11.5	11.5		11.5	11.5	11.5
	UNII-3		11.5	11.5	11.5		11.5	11.5	11.5
5 GHz WIFI (80MHz BW)	UNII-1			11.5	11.5			11.5	11.5
	UNII-2A			11.5	11.5			11.5	11.5
	UNII-2C			11.5	11.5			11.5	11.5
	UNII-3			10.5	10.5			10.5	10.5
5 GHz WIFI (160MHz BW)	UNII-1/2A			11.5	11.5			11.5	11.5
	UNII-2C			11.5	11.5			11.5	11.5

Note: in MIMO operations, each WiFi Main and WiFi Sub antenna transmits at maximum allowed powers as indicated above.

1.3.5 5 GHz Reduced WLAN Output Powers

The below table is applicable during simultaneous conditions with 2.4 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)							
		MIMO							
		WiFi Main				WiFi Sub			
		a (CDD + STBC)	n (CDD + STBC, SDM)	ac (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)	a (CDD + STBC)	n (CDD + STBC, SDM)	ac (CDD + STBC, SDM)	ax (SU) (CDD + STBC, SDM)
Maximum / Nominal Power		Max	Max	Max	Max	Max	Max	Max	Max
5 GHz WIFI (20MHz BW)	UNII-1	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
	UNII-2A	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
	UNII-2C	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
	UNII-3	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
5 GHz WIFI (40MHz BW)	UNII-1		9.5	9.5	9.5		9.5	9.5	9.5
	UNII-2A		9.5	9.5	9.5		9.5	9.5	9.5
	UNII-2C		9.5	9.5	9.5		9.5	9.5	9.5
	UNII-3		9.5	9.5	9.5		9.5	9.5	9.5
5 GHz WIFI (80MHz BW)	UNII-1			9.5	9.5			9.5	9.5
	UNII-2A			9.5	9.5			9.5	9.5
	UNII-2C			9.5	9.5			9.5	9.5
	UNII-3			9.5	9.5			9.5	9.5
5 GHz WIFI (160MHz BW)	UNII-1/2A			9.5	9.5			9.5	9.5
	UNII-2C			9.5	9.5			9.5	9.5

Note: in MIMO operations, each WiFi Main and WiFi Sub antenna transmits at maximum allowed powers as indicated above.

1.3.6 2.4 GHz Maximum Bluetooth Output Power

WiFi Main	WiFi Sub
Bluetooth (in dBm)	**Bluetooth (in dBm)**
14	14
EDR (in dBm)	**EDR (in dBm)**
14	14
BLE 1Mbps (in dBm)	**BLE 1Mbps (in dBm)**
10.2	10.79
BLE 2Mbps (in dBm)	**BLE 2Mbps (in dBm)**
10.2	10.79
BLE LR s2 (in dBm)	**BLE LR s2 (in dBm)**
10.2	10.79
BLE LR s8 (in dBm)	**BLE LR s8 (in dBm)**
10.2	10.79

1.4 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 DUT Antenna Diagram & SAR Test Setup Photographs Appendix. Since the display diagonal dimension of this device is > 150 mm and <200 mm, it is considered a “phablet.” Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC filing.

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Antenna	Back	Front	Top	Bottom	Right	Left
GPRS/DTM 850	Main 1	Yes	Yes	No	Yes	No	Yes
GPRS/DTM 1900	Main 1	Yes	Yes	No	Yes	Yes	No
UMTS 850	Main 1	Yes	Yes	No	Yes	No	Yes
UMTS 1750	Main 2	Yes	Yes	No	Yes	Yes	No
UMTS 1900	Main 2	Yes	Yes	No	Yes	Yes	No
LTE Band 71	Main 1	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Main 1	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 13	Main 1	Yes	Yes	No	Yes	No	Yes
LTE Band 13	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 5 (Cell)	Main 1	Yes	Yes	No	Yes	No	Yes
LTE Band 5 (Cell)	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 66 (AWS)	Main 2	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS)	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 25 (PCS)	Main 2	Yes	Yes	No	Yes	Yes	No
LTE Band 2 (PCS)	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 30	Main 2	Yes	Yes	No	Yes	Yes	No
LTE Band 30	Sub	Yes	Yes	Yes	No	Yes	No
LTE Band 41	Main 2	Yes	Yes	No	Yes	Yes	No
LTE Band 48	Main 1	Yes	Yes	No	Yes	No	Yes
LTE Band 48	Sub-UHB	Yes	Yes	Yes	No	No	Yes
NR Band n71	Main 1	Yes	Yes	No	Yes	No	Yes
NR Band n5	Main 1	Yes	Yes	No	Yes	No	Yes
NR Band n5	Sub	Yes	Yes	Yes	No	Yes	No
NR Band n66	Main 2	Yes	Yes	No	Yes	Yes	No
NR Band n25	Main 2	Yes	Yes	No	Yes	Yes	No
NR Band n30	Main 2	Yes	Yes	No	Yes	Yes	No
NR Band n41	Main 2	Yes	Yes	No	Yes	Yes	No
NR Band n41	3rd LMHB	Yes	Yes	Yes	No	Yes	No
NR Band n41	4th MHB	Yes	Yes	Yes	No	No	Yes
NR Band n41	Sub	Yes	Yes	Yes	No	Yes	No
NR Band n77	Main 1	Yes	Yes	No	Yes	No	Yes
NR Band n77	3rd LMHB	Yes	Yes	Yes	No	Yes	No
NR Band n77	4th MHB	Yes	Yes	Yes	No	No	Yes
NR Band n77	Sub-UHB	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN	MIMO	Yes	Yes	Yes	Yes	No	Yes
5 GHz WLAN	MIMO	Yes	Yes	Yes	Yes	No	Yes
Bluetooth	WiFi Main	Yes	Yes	Yes	No	No	Yes
Bluetooth	WiFi Sub	Yes	Yes	No	Yes	No	Yes
NFC	NFC	Yes	Yes	No	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-1, U-NII-2A, U-NII-2C, and WIFI6E operations are disabled.

1.5 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 DUT Antenna Diagram & SAR Test Setup Photographs Appendix.

1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

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

1. No other simultaneous scenarios besides described above is supported for this model.
2. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
3. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
4. 2.4 GHz WLAN and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
5. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII-2A, and U-NII-2C were not evaluated for wireless router conditions.
6. This device supports 2x2 MIMO Tx for WLAN 802.11a/b/g/n/ac/ax. 802.11a/b/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM.
7. This device supports Bluetooth Tethering.
8. This device supports VoLTE.
9. NFC was evaluated for phablet based on expected usage conditions.
10. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands as shown in the NR FR1 checklist.
11. 5 GHz WLAN and 6 GHz WLAN share the same antenna path and cannot transmit simultaneously.
12. 6 GHz Wireless Router is not supported, therefore it was not evaluated for wireless router conditions.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-1, U-NII-2A, and U-NII-2C WIFI, only 2.4 GHz WIFI, 2.4 GHz Bluetooth, 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.

This device supports IEEE 802.11ax with the following features:

a) Up to 160 MHz Bandwidth only for 5 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) 2 Tx antenna output
d) Up to 1024 QAM is supported
e) TDWR and Band gap channels are supported for 5 GHz
f) MU-MIMO UL Operations are not supported

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the display diagonal dimension is greater than 150mm 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-1, U-NII-2A, and U-NII-2C WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz WLAN, 2.4 GHz Bluetooth, 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 6 GHz WIFI Operations. RF Exposure assessment for these bands can be found in the WIFI6E RF Exposure Report (report SN can be found in Section 1.11 – Bibliography). Simultaneous transmission analysis is addressed in the Simultaneous Numerical Calculations Appendix of this report.

(B) Licensed Transmitter(s)

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

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

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

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the display diagonal dimension is greater than 150mm 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.

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

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.
NR implementation supports SA and NSA mode. In EN-DC mode, NR operates with the LTE Bands shown in the NR FR1 checklist acting as anchor bands. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.

Per FCC Guidance, C-Band for NR n77 (3705 – 3975 MHz) was fully tested according to FCC procedures. For each exposure condition and antenna, the worst-case position was additionally evaluated for the NR n77 DoD (3455.01 – 3544.98 MHz).

This device uses two transmit pathways for n41 and n77 Sub-UHB and 4th-MBHB antenna operations (Path 1 and Path 2). For each exposure condition, the pathway with the highest target power was fully evaluated. The worst case for each antenna and exposure condition was additionally evaluated using the other path.

1.8 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r05, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D04v01 (General SAR Guidance)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE 4x4 Downlink MIMO)
- November 2017, April 2018, October 2018 TCB Workshop Notes (LTE Carrier Aggregation)
- April 2019 TCB Workshop Notes (IEEE 802.11ax)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)

1.9 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.

1.10 Bibliography

Report Type	Report Serial Number
RF Exposure Part 2 Test Report	1M2302060006-22.PY7
RF Exposure Compliance Summary Report	1M2302060006-23.PY7
WIFI 6GHz RF exposure	1M2302060006-20.PY7

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 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 41 (2498.5 - 2687.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 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 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 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 48: 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 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 41: 5 MHz	2506 (39750)	2549.5 (40185)	2549.5 (40185)	2593 (40620)	2636.5 (41055)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2549.5 (40185)	2593 (40620)	2636.5 (41055)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2549.5 (40185)	2593 (40620)	2636.5 (41055)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2549.5 (40185)	2593 (40620)	2636.5 (41055)
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)
UE Category	DL UE Cat 20, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation, downlink MIMO, LAA features as shown in Downlink LTE CA RF Conducted Powers Appendix. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

NR Information						
Form Factor	Portable Handset					
Frequency Range of each NR transmission band	NR Band n71 (665.5 - 695.5 MHz)					
	NR Band n5 (826.5 - 846.5 MHz)					
	NR Band n66 (1712.5 - 1777.5 MHz)					
	NR Band n25 (1852.5 - 1912.5 MHz)					
	NR Band n2 (1852.5 - 1907.5 MHz)					
	NR Band n30 (2310 - 2310 MHz)					
	NR Band n41 (2506.02 - 2679.99 MHz)					
	NR Band n77 DoD (3460.02 - 3540 MHz)					
	NR Band n77 (3710.01 - 3969.99 MHz)					
Channel Bandwidths	NR Band n71: 5 MHz, 10 MHz, 15 MHz, 20 MHz					
	NR Band n5: 5 MHz, 10 MHz, 15 MHz, 20 MHz					
	NR Band n66: 5 MHz, 10 MHz, 15 MHz, 20 MHz					
	NR Band n25: 5 MHz, 10 MHz, 15 MHz, 20 MHz					
	NR Band n2: 5 MHz, 10 MHz, 15 MHz, 20 MHz					
	NR Band n30: 10 MHz					
	NR Band n41: 20 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 80 MHz, 90 MHz, 100 MHz					
	NR Band n77 DoD: 20 MHz, 30 MHz, 40 MHz, 60 MHz, 80 MHz, 100 MHz					
	NR Band n77: 20 MHz, 30 MHz, 40 MHz, 60 MHz, 80 MHz, 100 MHz					
Channel Numbers and Frequencies (MHz)						
NR Band n71: 5 MHz	665.5 (133100)		680.5 (136100)		695.5 (139100)	
NR Band n71: 10 MHz	668 (133600)		680.5 (136100)		693 (138600)	
NR Band n71: 15 MHz	670.5 (134100)		680.5 (136100)		690.5 (138100)	
NR Band n71: 20 MHz	673 (134600)		680.5 (136100)		688 (137600)	
NR Band n5: 5 MHz	826.5 (165300)		836.5 (167300)		846.5 (169300)	
NR Band n5: 10 MHz	829 (165800)		836.5 (167300)		844 (168800)	
NR Band n5: 15 MHz	831.5 (166300)		836.5 (167300)		841.5 (168300)	
NR Band n5: 20 MHz	834 (166800)		836.5 (167300)		839 (167800)	
NR Band n66: 5 MHz	1712.5 (342500)		1745 (349000)		1777.5 (355500)	
NR Band n66: 10 MHz	1715 (343000)		1745 (349000)		1775 (355000)	
NR Band n66: 15 MHz	1717.5 (343500)		1745 (349000)		1772.5 (354500)	
NR Band n66: 20 MHz	1720 (344000)		1745 (349000)		1770 (354000)	
NR Band n25: 5 MHz	1852.5 (370500)		1882.5 (376500)		1912.5 (382500)	
NR Band n25: 10 MHz	1855 (371000)		1882.5 (376500)		1910 (382000)	
NR Band n25: 15 MHz	1857.5 (371500)		1882.5 (376500)		1907.5 (381500)	
NR Band n25: 20 MHz	1860 (372000)		1882.5 (376500)		1905 (381000)	
NR Band n2: 5 MHz	1852.5 (370500)		1880 (376000)		1907.5 (381500)	
NR Band n2: 10 MHz	1855 (371000)		1880 (376000)		1905 (381000)	
NR Band n2: 15 MHz	1857.5 (371500)		1880 (376000)		1902.5 (380500)	
NR Band n2: 20 MHz	1860 (372000)		1880 (376000)		1900 (380000)	
NR Band n30: 10 MHz	N/A		2310 (462000)		N/A	
NR Band n41: 20 MHz	2506.02 (501204)	2549.49 (509898)	2592.99 (518598)		2636.49 (527298)	2679.99 (535998)
NR Band n41: 30 MHz	2511 (502200)	2552.01 (510402)	2592.99 (518598)		2634 (526800)	2674.98 (534996)
NR Band n41: 40 MHz	2516.01 (503202)	2567.34 (513468)	N/A		2618.67 (523734)	2670 (534000)
NR Band n41: 50 MHz	2521.02 (504204)		2592.99 (518598)		2664.99 (532998)	
NR Band n41: 60 MHz	2526 (505200)		2592.99 (518598)		2659.98 (531996)	
NR Band n41: 80 MHz	2536.02 (507204)		N/A		2649.99 (529998)	
NR Band n41: 90 MHz	2541 (508200)		N/A		2644.98 (528996)	
NR Band n41: 100 MHz	2546.01 (509202)		2592.99 (518598)		2640 (528000)	
NR Band n77 DoD: 20 MHz	3460.02 (630668)		3500.01 (633334)		3540 (636000)	
NR Band n77 DoD: 30 MHz	3465 (631000)		3500.01 (633334)		3534.99 (635666)	
NR Band n77 DoD: 40 MHz	3470.01 (631334)		N/A		3470.01 (631334)	
NR Band n77 DoD: 60 MHz	N/A		3500.01(633334)		N/A	
NR Band n77 DoD: 80 MHz	N/A		3500.01(633334)		N/A	
NR Band n77 DoD: 100 MHz	N/A		3500.01(633334)		N/A	
NR Band n77: 20 MHz	3710.01 (647334)	3762 (650800)	3813.99 (654266)	3866.01 (657734)	3918 (661200)	3969.99 (664666)
NR Band n77: 30 MHz	3715.02 (647668)	3765 (651000)	3815.01 (654334)	3864.99 (657666)	3915 (661000)	3964.98 (664332)
NR Band n77: 40 MHz	3720 (648000)	3768 (651200)	3816 (654400)	3864 (657600)	3912 (660800)	3960 (664000)
NR Band n77: 60 MHz	3730.02 (648668)	3803.34 (653556)	N/A	N/A	3876.66 (658444)	3949.98 (663332)
NR Band n77: 80 MHz	3740.01 (649334)	N/A	3840 (656000)		N/A	3939.99 (662666)
NR Band n77: 100 MHz	3750 (650000)	N/A	N/A	N/A	N/A	3930 (662000)
SCS for NR Band n71/n5/n66/n2/n25/n30	15 kHz					
SCS for NR Band n41/n77	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					
LTE Anchor Bands for NR Band n5	LTE Band 66/2/48/30					
LTE Anchor Bands for NR Band n66	LTE Band 12/13/2/30/48/5					
LTE Anchor Bands for NR Band n25	LTE Band 66/12/48					
LTE Anchor Bands for NR Band n2	LTE Band 12/13/30/5/66					
LTE Anchor Bands for NR Band n30	LTE Band 12/2/5/66					
LTE Anchor Bands for NR Band n41	LTE Band 12/2/66					
LTE Anchor Bands for NR Band n77	LTE Band 12/13/2/30/5/66					

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

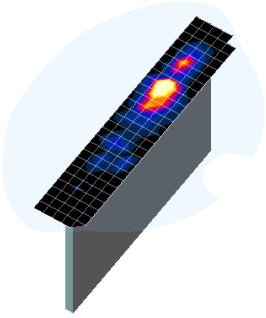

Figure 4-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

   a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).

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

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

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

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

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

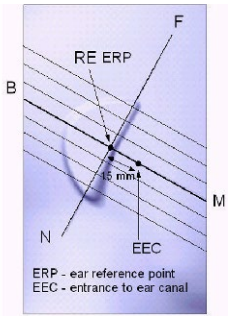

Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the "vertical centerline" on the front of the device aligned to the "ear reference point" (See Figure 5-3). The acoustic output was than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline" was bisecting the front surface of the handset at its top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.

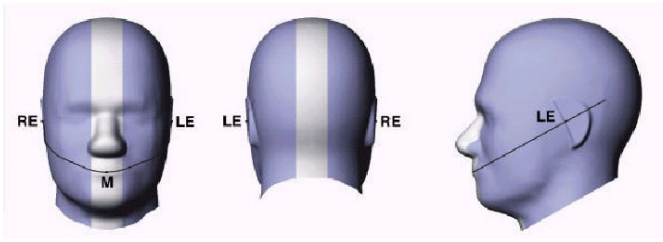

Figure 5-2
Front, back and side view of SAM Twin Phantom

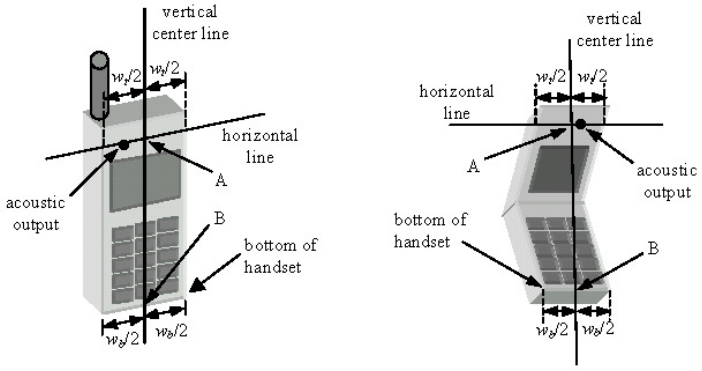

Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

1. The test device was positioned with the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6-1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

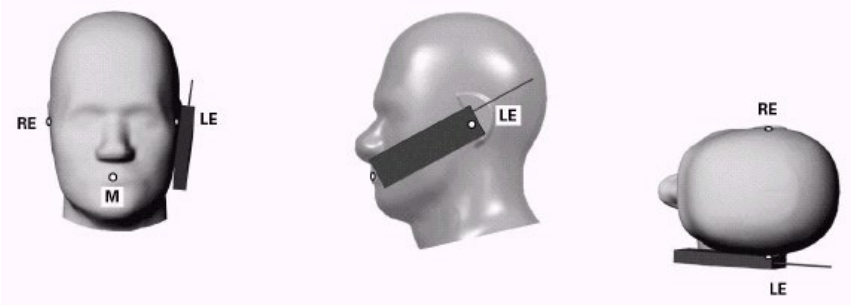

Figure 6-1 Front, Side and Top View of Cheek Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 6-2).

6.3 Positioning for Ear / 15º Tilt

With the test device aligned in the “Cheek Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 6-2).

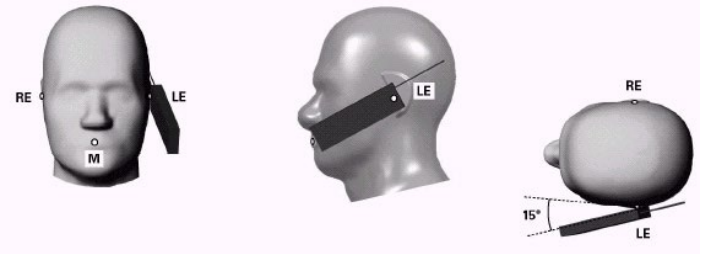

Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

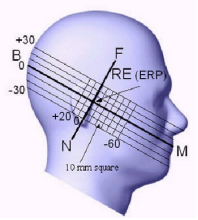

Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

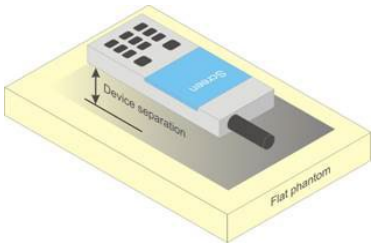

Figure 6-4
Sample Body-Worn Diagram

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

with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.
Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.
Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.6 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1g body and 10g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.
Per KDB Publication 447498 D01v06, Cell phones (handsets) are not normally designed to be used on extremities or operated in extremity only exposure conditions. The maximum output power levels of handsets generally do not require extremity SAR testing to show compliance. Therefore, extremity SAR was not evaluated for this device.

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

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

6.8 Phablet Configurations

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for UMTS

8.4.1 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.

8.4.2 Head SAR Measurements

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

8.4.3 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.

8.4.4 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.

8.4.5 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.

8.4.6 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.

8.5 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).

8.5.1 Spectrum Plots for RB Configurations

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

8.5.2 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.

8.5.3 A-MPR

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

8.5.4 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.

8.5.5 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.

8.5.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output

power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.6 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.

8.6.1 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.

8.6.2 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.

8.6.3 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.

8.6.4 2.4 GHz SAR Test Requirements

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

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

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

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

8.6.5 OFDM Transmission Mode and SAR Test Channel Selection

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

8.6.6 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 8.6.5). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.7 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.8 MIMO SAR considerations

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

9 RF CONDUCTED POWERS

All conducted power measurements for 2G/3G/4G/5G Sub6 WWAN technologies and bands in this section were performed by setting *Reserve_power_margin* (Qualcomm® Smart Transmit EFS entry) to 0dB, so that the EUT transmits continuously at minimum (P_{limit}, maximum tune up output power P_{max}).

9.1 GSM Conducted Powers

Table 9-1
Measured P_{Max} for all DSI for GSM/GPRS/EDGE 850 and P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) for GSM/GPRS/EDGE 1900

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	31.77	31.74	28.43	26.76	**25.42**	26.74	23.30	21.47	20.21
	190	31.94	31.93	28.63	26.43	**25.44**	26.83	23.45	21.62	20.55
	251	31.92	32.08	28.71	26.34	**25.65**	26.80	23.57	21.84	20.63
GSM 1900	512	26.98	26.93	23.72	21.94	**20.71**	25.72	22.53	20.65	19.02
	661	26.61	27.13	23.71	21.87	**20.85**	25.74	22.62	20.62	19.01
	810	26.91	26.94	23.57	21.87	**20.77**	25.41	22.53	20.67	19.00

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	22.57	22.54	22.24	22.33	**22.24**	17.54	17.11	17.04	17.03
	190	22.74	22.73	22.44	22.00	**22.26**	17.63	17.26	17.19	17.37
	251	22.72	22.88	22.52	21.91	**22.47**	17.60	17.38	17.41	17.45
GSM 1900	512	17.78	17.73	17.53	17.51	**17.53**	16.52	16.34	16.22	15.84
	661	17.41	17.93	17.52	17.44	**17.67**	16.54	16.43	16.19	15.83
	810	17.71	17.74	17.38	17.44	**17.59**	16.21	16.34	16.24	15.82
GSM 850	**Frame Avg.Targets:**	22.70	22.70	22.71	22.67	**22.72**	17.80	17.81	17.77	17.82
GSM 1900		17.80	17.80	17.81	17.77	**17.82**	16.80	16.81	16.77	16.82

Table 9-2
Measured *Pmax* for all DSI for DTM 850 and P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) for DTM 1900

Maximum Burst-Averaged Output Power					
		DTM (GSM + GPRS)		*DTM (GSM + EGPRS)*	
Band	**Channel**	**DTM [dBm] CS + PS (2 Slots)**	**DTM [dBm] CS + 2PS (3 Slots)**	**DTM [dBm] CS + PS (2 Slots)**	**DTM [dBm] CS + 2PS (3 Slots)**
GSM 850	128	28.56	**26.95**	23.56	21.66
	190	28.85	**26.57**	23.55	21.86
	251	28.87	**26.66**	23.99	22.19
GSM 1900	512	23.49	**21.99**	22.57	20.96
	661	23.70	**22.10**	22.85	21.20
	810	23.46	**21.97**	22.52	20.54

Calculated Maximum Frame-Averaged Output Power					
		GPRS/EDGE Data (GMSK)		*EDGE Data (8-PSK)*	
Band	**Channel**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**
GSM 850	128	22.37	**22.52**	17.37	17.23
	190	22.66	**22.14**	17.36	17.43
	251	22.68	**22.23**	17.80	17.76
GSM 1900	512	17.30	**17.56**	16.38	16.53
	661	17.51	**17.67**	16.66	16.77
	810	17.27	**17.54**	16.33	16.11
GSM 850	**Frame Avg.Targets:**	22.71	**22.67**	17.81	17.77
GSM 1900		17.81	**17.77**	16.81	16.77

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.
4. DTM output powers were measured with a communication test set with DTM supported when the device was operating in DTM using one CS slot plus PS multislots. The bolded DTM modes were selected for SAR testing according to the according to the maximum CS and PS slots according to KDB 941225 D04v01.

GSM Class: A
GPRS Multislot class: 33 (Max 4 Tx uplink slots)
EDGE Multislot class: 33 (Max 4 Tx uplink slots)
DTM Multislot Class: 11 (Max 3 Tx uplink slots)

Figure 9-1
Power Measurement Setup

9.2 UMTS Conducted Powers

Table 9-3
Measured P_{max} and/or DSI = 1 (Free Space)

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.61	23.69	23.68	22.01	22.05	22.01	22.10	22.07	22.01	-
99		12.2 kbps AMR	23.61	23.67	23.51	22.13	22.05	22.04	22.29	22.06	22.17	-
6	HSDPA	Subtest 1	22.71	22.85	22.69	21.72	21.69	21.67	21.65	21.59	21.44	0
6		Subtest 2	22.77	22.80	22.68	21.70	21.66	21.65	21.65	21.56	21.43	0
6		Subtest 3	22.07	22.22	22.10	21.22	21.19	21.20	21.07	21.08	20.84	0.5
6		Subtest 4	22.05	22.20	22.16	21.18	21.21	21.17	21.02	20.99	20.77	0.5
6	HSUPA	Subtest 1	23.10	23.14	23.11	22.36	22.48	21.67	22.20	22.15	21.90	0
6		Subtest 2	21.09	21.10	21.08	20.35	20.38	20.41	20.19	20.15	19.91	2
6		Subtest 3	22.02	22.12	22.10	21.31	21.35	21.23	20.98	20.95	20.75	1
6		Subtest 4	21.17	21.14	21.10	20.10	20.11	20.09	20.17	20.05	19.91	2
6		Subtest 5	23.12	23.15	23.14	22.12	22.10	22.13	22.15	22.05	21.93	0
8	DC-HSDPA	Subtest 1	23.02	23.15	23.07	21.99	21.84	21.81	21.85	21.79	21.81	0
8		Subtest 2	22.63	23.08	23.05	21.79	21.80	21.63	21.71	21.82	21.73	0
8		Subtest 3	22.33	22.49	22.52	21.25	21.24	21.22	21.42	21.34	21.19	0.5
8		Subtest 4	22.42	22.53	22.51	21.21	21.23	21.24	21.28	21.31	21.09	0.5

Table 9-4
Measured P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet)

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	21.73	21.74	21.80	17.57	17.60	17.48	18.48	18.49	18.29	-
99		12.2 kbps AMR	21.68	21.76	21.72	17.52	17.44	17.39	18.49	18.62	18.25	-
6	HSDPA	Subtest 1	20.84	20.91	20.82	16.67	16.63	16.64	17.82	17.74	17.54	0
6		Subtest 2	20.82	20.90	20.86	16.65	16.62	16.63	17.83	17.76	17.53	0
6		Subtest 3	20.34	20.42	20.38	16.15	16.12	16.12	17.33	17.25	17.04	0.5
6		Subtest 4	20.33	20.40	20.35	16.12	16.14	16.13	17.33	17.25	17.02	0.5
6	HSUPA	Subtest 1	20.80	20.87	20.82	16.65	16.64	16.61	17.80	17.70	17.71	0
6		Subtest 2	18.77	18.84	18.80	14.41	14.35	14.37	15.59	15.51	15.30	2
6		Subtest 3	19.79	19.92	19.91	15.42	15.34	15.32	16.63	16.45	16.29	1
6		Subtest 4	18.79	18.88	18.84	14.45	14.37	14.37	15.63	15.52	15.29	2
6		Subtest 5	20.80	20.87	20.86	16.54	16.43	16.38	17.68	17.51	17.52	0
8	DC-HSDPA	Subtest 1	20.80	20.87	20.84	16.50	16.42	16.47	17.81	17.58	17.41	0
8		Subtest 2	20.80	20.89	20.86	16.52	16.51	16.48	17.74	17.56	17.34	0
8		Subtest 3	20.31	20.37	20.35	16.00	15.94	15.96	17.24	17.01	16.87	0.5
8		Subtest 4	20.29	20.39	20.36	16.00	15.96	15.95	17.13	17.06	16.84	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

It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2 dB more than specified by 3GPP, but also as low as 0 dB according to the chipset implementation in this model.

Figure 9-2
Power Measurement Setup

9.3 LTE Conducted Powers

Note: Per FCC KDB Publication 941225 D05v02r05, LTE SAR for the lower bandwidths was not required for testing 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. Lower bandwidth conducted powers for all LTE bands can be found in the LTE and NR Lower Bandwidth Conducted Power Appendix.

Note: Some bands do 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.

9.3.1 LTE Band 71

Table 9-5
LTE Band 71 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	23.88	0	0
	1	50	24.03		0
	1	99	**24.08**		0
	50	0	22.91	0-1	1
	50	25	22.95		1
	50	50	**23.01**		1
	100	0	22.95		1
16QAM	1	0	23.12	0-1	1
	1	50	23.23		1
	1	99	23.18		1
	50	0	21.93	0-2	2
	50	25	21.97		2
	50	50	22.03		2
	100	0	21.95		2
64QAM	1	0	21.93	0-2	2
	1	50	22.30		2
	1	99	22.18		2
	50	0	20.93	0-3	3
	50	25	20.98		3
	50	50	21.03		3
	100	0	20.97		3

Table 9-6
LTE Band 71 Main 1 Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	21.84	0	0
	1	50	22.00		0
	1	99	**22.01**		0
	50	0	21.88	0-1	0
	50	25	21.92		0
	50	50	**21.98**		0
	100	0	21.92		0
16QAM	1	0	22.01	0-1	0
	1	50	22.33		0
	1	99	22.17		0
	50	0	21.41	0-2	0
	50	25	21.43		0
	50	50	21.50		0
	100	0	21.42		0
64QAM	1	0	21.39	0-2	0
	1	50	21.63		0
	1	99	21.54		0
	50	0	20.42	0-3	1
	50	25	20.42		1
	50	50	20.50		1
	100	0	20.41		1

9.3.2 LTE Band 12

Table 9-7
LTE Band 12 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	**24.54**	0	0
	1	25	24.26		0
	1	49	24.25		0
	25	0	23.24	0-1	1
	25	12	**23.34**		1
	25	25	23.30		1
	50	0	23.31		1
16QAM	1	0	23.67	0-1	1
	1	25	23.59		1
	1	49	23.53		1
	25	0	22.27	0-2	2
	25	12	22.35		2
	25	25	22.30		2
	50	0	22.33		2
64QAM	1	0	22.46	0-2	2
	1	25	22.40		2
	1	49	22.39		2
	25	0	21.26	0-3	3
	25	12	21.34		3
	25	25	21.29		3
	50	0	21.31		3

Table 9-8
LTE Band 12 Main 1 Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet)
- 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	**21.33**	0	0
	1	25	21.14		0
	1	49	21.10		0
	25	0	21.14	0-1	0
	25	12	21.15		0
	25	25	**21.17**		0
	50	0	21.14		0
16QAM	1	0	21.55	0-1	0
	1	25	21.55		0
	1	49	21.48		0
	25	0	21.21	0-2	0
	25	12	21.20		0
	25	25	21.25		0
	50	0	21.17		0
64QAM	1	0	21.40	0-2	0
	1	25	21.41		0
	1	49	21.41		0
	25	0	20.67	0-3	0
	25	12	20.66		0
	25	25	20.70		0
	50	0	20.63		0

Table 9-9
LTE Band 12 Sub Antenna Measured P_{limit} for DSI = 2 (Head) - 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	**19.81**	lcde	0
	1	25	19.66		0
	1	49	19.51		0
	25	0	19.61	0-1	0
	25	12	19.68		0
	25	25	**19.70**		0
	50	0	19.60		0
16QAM	1	0	19.99	0-1	0
	1	25	19.85		0
	1	49	19.67		0
	25	0	19.58	0-2	0
	25	12	19.66		0
	25	25	19.56		0
	50	0	19.66		0
64QAM	1	0	19.87	0-2	0
	1	25	19.75		0
	1	49	19.63		0
	25	0	19.56	0-3	0
	25	12	19.66		0
	25	25	19.65		0
	50	0	19.70		0

Table 9-10
LTE Band 12 Sub Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet)
- 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	**21.96**	0	0
	1	25	21.91		0
	1	49	21.87		0
	25	0	21.87	0-1	0
	25	12	21.88		0
	25	25	**21.92**		0
	50	0	21.86		0
16QAM	1	0	22.08	0-1	0
	1	25	22.14		0
	1	49	22.14		0
	25	0	21.36	0-2	0.5
	25	12	21.38		0.5
	25	25	21.40		0.5
	50	0	21.35		0.5
64QAM	1	0	21.50	0-2	0.5
	1	25	21.61		0.5
	1	49	21.54		0.5
	25	0	20.34	0-3	1.5
	25	12	20.36		1.5
	25	25	20.40		1.5
	50	0	20.33		1.5

9.3.3 LTE Band 13

Table 9-11
LTE Band 13 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.05**	0	0
	1	25	24.02		0
	1	49	23.91		0
	25	0	23.01	0-1	1
	25	12	22.99		1
	25	25	**23.03**		1
	50	0	23.01		1
16QAM	1	0	23.30	0-1	1
	1	25	23.24		1
	1	49	23.27		1
	25	0	22.02	0-2	2
	25	12	21.98		2
	25	25	22.01		2
	50	0	22.03		2
64QAM	1	0	22.31	0-2	2
	1	25	22.12		2
	1	49	22.13		2
	25	0	21.03	0-3	3
	25	12	21.02		3
	25	25	21.04		3
	50	0	21.01		3

Table 9-12
LTE Band 13 Main 1 Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	**21.18**	0	0
	1	25	21.06		0
	1	49	20.90		0
	25	0	20.97	0-1	0
	25	12	**20.98**		0
	25	25	20.95		0
	50	0	20.97		0
16QAM	1	0	21.38	0-1	0
	1	25	21.32		0
	1	49	21.31		0
	25	0	21.06	0-2	0
	25	12	21.05		0
	25	25	21.01		0
	50	0	20.99		0
64QAM	1	0	21.14	0-2	0
	1	25	21.21		0
	1	49	21.17		0
	25	0	20.51	0-3	0
	25	12	20.49		0
	25	25	20.44		0
	50	0	20.49		0

Table 9-13
LTE Band 13 Sub Antenna Measured P_{limit} for DSI = 2 (Head) - 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	**19.48**	0	0
	1	25	19.47		0
	1	49	19.34		0
	25	0	**19.42**	0-1	0
	25	12	19.41		0
	25	25	19.37		0
	50	0	19.38		0
16QAM	1	0	19.81	0-1	0
	1	25	19.65		0
	1	49	19.48		0
	25	0	19.39	0-2	0
	25	12	19.44		0
	25	25	19.38		0
	50	0	19.38		0
64QAM	1	0	19.69	0-2	0
	1	25	19.59		0
	1	49	19.27		0
	25	0	19.42	0-3	0
	25	12	19.35		0
	25	25	19.32		0
	50	0	19.30		0

Table 9-14
LTE Band 13 Sub Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	21.74	0	0
	1	25	**21.78**		0
	1	49	21.67		0
	25	0	21.72	0-1	0
	25	12	21.72		0
	25	25	**21.73**		0
	50	0	21.70		0
16QAM	1	0	22.00	0-1	0
	1	25	21.95		0
	1	49	21.91		0
	25	0	21.25	0-2	0.5
	25	12	21.25		0.5
	25	25	21.25		0.5
	50	0	21.23		0.5
64QAM	1	0	21.41	0-2	0.5
	1	25	21.44		0.5
	1	49	21.37		0.5
	25	0	20.24	0-3	1.5
	25	12	20.23		1.5
	25	25	20.25		1.5
	50	0	20.23		1.5

9.3.4 LTE Band 5

Table 9-15
LTE Band 5 (Cell) Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	24.05	0	0
	1	25	23.95		0
	1	49	**24.10**		0
	25	0	23.05	0-1	1
	25	12	23.00		1
	25	25	**23.07**		1
	50	0	22.99		1
16QAM	1	0	22.89	0-1	1
	1	25	22.86		1
	1	49	22.91		1
	25	0	21.72	0-2	2
	25	12	21.70		2
	25	25	21.73		2
	50	0	21.71		2
64QAM	1	0	21.93	0-2	2
	1	25	21.98		2
	1	49	21.94		2
	25	0	20.85	0-3	3
	25	12	20.73		3
	25	25	20.77		3
	50	0	20.71		3

LTE Band 5 (Cell) Main 1 Antenna Measured P_{limit} DSI = 3 (Body-worn, Hotspot or Phablet) - 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	**21.28**	0	0
	1	25	21.22		0
	1	49	21.20		0
	25	0	21.17	0-1	0
	25	12	21.20		0
	25	25	**21.23**		0
	50	0	21.16		0
16QAM	1	0	21.42	0-1	0
	1	25	21.58		0
	1	49	21.55		0
	25	0	21.23	0-2	0
	25	12	21.22		0
	25	25	21.26		0
	50	0	21.18		0
64QAM	1	0	21.37	0-2	0
	1	25	21.37		0
	1	49	21.36		0
	25	0	20.69	0-3	0
	25	12	20.72		0
	25	25	20.74		0
	50	0	20.68		0

Table 9-16
LTE Band 5 Sub Antenna Measured P_{limit} for DSI = 2 (Head) - 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	19.59	0	0
	1	25	**19.66**		0
	1	49	19.52		0
	25	0	19.51	0-1	0
	25	12	19.54		0
	25	25	**19.60**		0
	50	0	19.47		0
16QAM	1	0	19.62	0-1	0
	1	25	19.74		0
	1	49	19.64		0
	25	0	19.58	0-2	0
	25	12	19.56		0
	25	25	19.55		0
	50	0	19.63		0
64QAM	1	0	19.62	0-2	0
	1	25	19.69		0
	1	49	19.99		0
	25	0	19.54	0-3	0
	25	12	19.59		0
	25	25	19.56		0
	50	0	19.53		0

Table 9-17
LTE Band 5 Sub Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet)
- 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	**21.98**	0	0
	1	25	21.93		0
	1	49	21.90		0
	25	0	21.79	0-1	0
	25	12	21.82		0
	25	25	**21.85**		0
	50	0	21.81		0
16QAM	1	0	22.08	0-1	0
	1	25	22.08		0
	1	49	22.18		0
	25	0	21.34	0-2	0.5
	25	12	21.34		0.5
	25	25	21.37		0.5
	50	0	21.31		0.5
64QAM	1	0	21.49	0-2	0.5
	1	25	21.54		0.5
	1	49	21.58		0.5
	25	0	20.33	0-3	1.5
	25	12	20.35		1.5
	25	25	20.36		1.5
	50	0	20.30		1.5

9.3.5 LTE Band 66

Table 9-18
LTE Band 66 (AWS) Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space), and/or DSI = 2 (Head) – 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	24.19	**24.21**	23.97	0	0
	1	50	24.08	24.13	23.93		0
	1	99	24.20	23.94	23.97		0
	50	0	23.12	23.16	23.07	0-1	1
	50	25	23.18	23.17	23.19		1
	50	50	23.17	**23.23**	23.17		1
	100	0	23.18	23.11	23.15		1
16QAM	1	0	23.33	23.49	23.43	0-1	1
	1	50	23.28	23.60	23.40		1
	1	99	23.38	23.48	23.31		1
	50	0	22.21	22.26	22.16	0-2	2
	50	25	22.24	22.24	22.24		2
	50	50	22.24	22.28	22.19		2
	100	0	22.24	22.23	22.22		2
64QAM	1	0	22.46	22.45	22.33	0-2	2
	1	50	22.44	22.51	22.28		2
	1	99	22.45	22.48	22.21		2
	50	0	21.18	21.23	21.13	0-3	3
	50	25	21.25	21.24	21.20		3
	50	50	21.22	21.28	21.17		3
	100	0	21.25	21.22	21.23		3

Table 9-19
LTE Band 66 (AWS) Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	17.86	18.13	18.15	0	0
	1	50	17.80	18.12	18.10		0
	1	99	17.82	**18.20**	18.10		0
	50	0	17.95	18.11	18.05	0-1	0
	50	25	18.06	18.10	18.13		0
	50	50	18.07	**18.18**	18.08		0
	100	0	18.07	18.09	18.11		0
16QAM	1	0	18.29	18.19	18.26	0-1	0
	1	50	18.38	18.24	18.44		0
	1	99	18.24	18.22	18.35		0
	50	0	17.97	18.10	18.06	0-2	0
	50	25	18.06	18.09	18.11		0
	50	50	18.05	18.19	18.13		0
	100	0	18.06	18.08	18.12		0
64QAM	1	0	18.12	18.21	18.17	0-2	0
	1	50	18.32	18.42	18.32		0
	1	99	18.25	18.31	18.10		0
	50	0	17.98	18.10	18.06	0-3	0
	50	25	18.05	18.12	18.15		0
	50	50	18.03	18.19	18.13		0
	100	0	18.05	18.10	18.13		0

Table 9-20
LTE Band 66 (AWS) Sub Antenna Measured P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 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	15.82	15.88	15.69	0	0
	1	50	15.79	**15.90**	15.74		0
	1	99	15.86	15.81	15.61		0
	50	0	15.85	15.82	15.71	0-1	0
	50	25	15.90	15.84	15.69		0
	50	50	15.88	**15.91**	15.68		0
	100	0	15.84	15.84	15.68		0
16QAM	1	0	15.74	15.81	15.66	0-1	0
	1	50	15.76	15.77	15.64		0
	1	99	15.71	15.73	15.48		0
	50	0	15.81	15.82	15.67	0-2	0
	50	25	15.90	15.84	15.65		0
	50	50	15.89	15.87	15.72		0
	100	0	15.86	15.78	15.66		0
64QAM	1	0	15.78	15.87	15.72	0-2	0
	1	50	15.76	15.73	15.61		0
	1	99	15.72	15.78	15.59		0
	50	0	15.94	15.97	15.81	0-3	0
	50	25	16.02	15.94	15.79		0
	50	50	16.01	16.04	15.88		0
	100	0	15.92	15.79	15.68		0

9.3.6 LTE Band 25

Table 9-21
LTE Band 25 (PCS) Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	**24.30**	23.98	23.96	0	0
	1	50	24.25	24.28	24.17		0
	1	99	24.29	24.02	23.79		0
	50	0	23.05	23.11	23.00	0-1	1
	50	25	**23.14**	23.03	22.90		1
	50	50	23.09	22.93	22.89		1
	100	0	23.12	23.07	22.94		1
16QAM	1	0	23.41	23.45	23.14	0-1	1
	1	50	23.48	23.52	23.41		1
	1	99	23.38	23.35	23.14		1
	50	0	22.21	22.18	22.11	0-2	2
	50	25	22.29	22.19	22.09		2
	50	50	22.28	22.17	22.08		2
	100	0	22.29	22.17	22.11		2
64QAM	1	0	22.36	22.41	22.21	0-2	2
	1	50	22.50	22.51	22.28		2
	1	99	22.34	22.27	22.02		2
	50	0	21.19	21.19	21.06	0-3	3
	50	25	21.27	21.20	21.07		3
	50	50	21.26	21.13	21.03		3
	100	0	21.28	21.14	21.10		3

Table 9-22
LTE Band 25 (PCS) Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	18.89	18.95	18.94	0	0
	1	50	18.80	**18.99**	18.90		0
	1	99	18.74	18.95	18.90		0
	50	0	19.09	19.00	18.91	0-1	0
	50	25	19.08	19.05	18.93		0
	50	50	19.09	**19.10**	18.88		0
	100	0	18.97	18.98	18.90		0
16QAM	1	0	19.20	19.10	19.17	0-1	0
	1	50	19.39	19.15	19.18		0
	1	99	19.26	19.08	19.08		0
	50	0	19.10	18.99	18.92	0-2	0
	50	25	19.11	18.98	18.92		0
	50	50	19.06	19.04	18.90		0
	100	0	19.10	18.98	18.92		0
64QAM	1	0	19.18	19.17	18.99	0-2	0
	1	50	19.45	19.24	19.17		0
	1	99	19.09	19.05	18.93		0
	50	0	19.11	19.02	18.90	0-3	0
	50	25	19.13	18.99	18.93		0
	50	50	19.06	19.05	18.87		0
	100	0	19.11	19.02	18.92		0

9.3.1 LTE Band 2

Table 9-23
LTE Band 2 (PCS) Sub Antenna Measured P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**14.85**	14.75	14.71	0	0
	1	50	14.80	14.78	14.75		0
	1	99	14.79	14.71	14.69		0
	50	0	14.76	14.78	14.67	0-1	0
	50	25	**14.82**	14.76	14.74		0
	50	50	14.77	14.81	14.79		0
	100	0	14.80	14.78	14.76		0
16QAM	1	0	14.61	14.54	14.64	0-1	0
	1	50	14.65	14.66	14.60		0
	1	99	14.54	14.56	14.46		0
	50	0	14.67	14.76	14.69	0-2	0
	50	25	14.82	14.78	14.73		0
	50	50	14.75	14.82	14.77		0
	100	0	14.78	14.74	14.69		0
64QAM	1	0	14.72	14.55	14.72	0-2	0
	1	50	14.65	14.72	14.79		0
	1	99	14.71	14.72	14.52		0
	50	0	14.86	14.91	14.86	0-3	0
	50	25	14.94	14.91	14.86		0
	50	50	14.92	15.01	14.94		0
	100	0	14.79	14.77	14.69		0

9.3.2 LTE Band 30

Table 9-24
LTE Band 30 Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) – 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	23.32	0	0
	1	25	**23.37**		0
	1	49	23.31		0
	25	0	22.34	0-1	1
	25	12	22.41		1
	25	25	**22.45**		1
	50	0	22.38		1
16QAM	1	0	22.48	0-1	1
	1	25	22.54		1
	1	49	22.52		1
	25	0	21.30	0-2	2
	25	12	21.35		2
	25	25	21.46		2
	50	0	21.39		2
64QAM	1	0	21.62	0-2	2
	1	25	21.61		2
	1	49	21.53		2
	25	0	20.38	0-3	3
	25	12	20.41		3
	25	25	20.41		3
	50	0	20.33		3

table 9-25
LTE Band 30 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	**19.27**	0	0
	1	25	19.08		0
	1	49	19.04		0
	25	0	19.07	0-1	0
	25	12	**19.09**		0
	25	25	19.05		0
	50	0	19.06		0
16QAM	1	0	19.37	0-1	0
	1	25	19.40		0
	1	49	19.38		0
	25	0	19.13	0-2	0
	25	12	19.13		0
	25	25	19.10		0
	50	0	19.11		0
64QAM	1	0	19.30	0-2	0
	1	25	19.30		0
	1	49	19.28		0
	25	0	19.05	0-3	0
	25	12	19.11		0
	25	25	19.08		0
	50	0	19.07		0

Table 9-26
LTE Band 30 Sub Antenna Measured P_{limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 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	15.94	0	0
	1	25	**16.05**		0
	1	49	15.99		0
	25	0	15.94	0-1	0
	25	12	15.98		0
	25	25	**16.04**		0
	50	0	15.94		0
16QAM	1	0	15.83	0-1	0
	1	25	16.01		0
	1	49	15.95		0
	25	0	15.93	0-2	0
	25	12	15.96		0
	25	25	16.03		0
	50	0	15.93		0
64QAM	1	0	16.12	0-2	0
	1	25	16.27		0
	1	49	16.19		0
	25	0	16.01	0-3	0
	25	12	16.01		0
	25	25	16.09		0
	50	0	15.96		0

9.3.3 LTE Band 41

Table 9-27
LTE Band 41 PC3 Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) – 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	23.81	23.73	23.84	23.73	23.87	0	0
	1	50	23.84	23.71	23.82	23.66	23.86		0
	1	99	23.77	23.66	23.90	23.70	**23.92**		0
	50	0	22.90	22.85	22.92	22.81	22.92	0-1	1
	50	25	23.00	22.91	23.00	22.84	**23.07**		1
	50	50	22.96	22.84	23.01	22.80	22.99		1
	100	0	22.97	22.90	22.99	22.83	22.92		1
16QAM	1	0	22.95	22.85	22.88	22.93	22.95	0-1	1
	1	50	23.00	22.97	23.13	23.07	22.97		1
	1	99	22.91	22.79	22.98	22.93	22.98		1
	50	0	21.99	21.88	21.89	21.94	21.93	0-2	2
	50	25	22.06	21.97	21.96	21.94	22.02		2
	50	50	22.02	21.92	21.98	21.94	21.97		2
	100	0	22.08	21.97	21.96	21.94	21.92		2
64QAM	1	0	22.00	21.84	21.85	21.87	21.93	0-2	2
	1	50	22.01	21.85	21.96	22.02	21.91		2
	1	99	21.95	21.80	21.90	21.85	21.94		2
	50	0	21.01	20.89	20.87	20.94	20.94	0-3	3
	50	25	21.06	20.96	20.97	20.96	21.00		3
	50	50	21.04	20.93	20.97	20.97	20.99		3
	100	0	21.07	20.95	20.92	20.96	20.92		3

Table 9-28
LTE Band 41 PC3 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) – 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	19.26	19.00	18.98	19.21	19.17	0	0
	1	50	19.27	18.96	18.97	19.20	19.07		0
	1	99	19.24	19.05	19.06	**19.28**	19.12		0
	50	0	19.19	19.07	19.09	19.16	19.17	0-1	0
	50	25	19.25	19.14	19.17	**19.27**	19.26		0
	50	50	19.25	19.14	19.20	19.22	19.23		0
	100	0	19.26	19.14	19.16	19.18	19.17		0
16QAM	1	0	19.21	19.02	19.14	19.06	19.14	0-1	0
	1	50	19.32	19.22	19.23	19.18	19.28		0
	1	99	19.15	19.02	19.26	19.16	19.14		0
	50	0	19.21	19.08	19.09	19.16	19.19	0-2	0
	50	25	19.31	19.18	19.18	19.16	19.29		0
	50	50	19.29	19.14	19.22	19.17	19.28		0
	100	0	19.30	19.14	19.18	19.17	19.19		0
64QAM	1	0	19.18	19.03	19.10	19.01	19.21	0-2	0
	1	50	19.20	19.04	19.04	19.19	19.11		0
	1	99	19.18	19.00	19.14	19.19	19.20		0
	50	0	19.18	19.09	19.07	19.14	19.15	0-3	0
	50	25	19.26	19.17	19.18	19.20	19.24		0
	50	50	19.25	19.15	19.16	19.17	19.25		0
	100	0	19.24	19.12	19.15	19.14	19.13		0

9.3.1 LTE Band 48

Table 9-29
LTE Band 48 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	24.29	24.35	24.37	24.35	0	0
	1	50	24.31	24.41	24.37	24.35		0
	1	99	24.30	**24.43**	24.27	24.34		0
	50	0	23.45	23.55	23.48	23.55	0-1	1
	50	25	23.50	23.55	23.51	23.53		1
	50	50	23.47	**23.59**	23.49	23.58		1
	100	0	23.47	23.56	23.51	23.53		1
16QAM	1	0	23.20	23.35	23.25	23.28	0-1	1
	1	50	23.28	23.49	23.49	23.36		1
	1	99	23.24	23.48	23.25	23.19		1
	50	0	22.27	22.38	22.41	22.33	0-2	2
	50	25	22.32	22.41	22.43	22.34		2
	50	50	22.32	22.44	22.45	22.35		2
	100	0	22.28	22.39	22.43	22.36		2
64QAM	1	0	22.07	22.24	22.22	22.22	0-2	2
	1	50	22.37	22.40	22.42	22.21		2
	1	99	22.19	22.36	22.24	22.10		2
	50	0	21.25	21.36	21.42	21.31	0-3	3
	50	25	21.33	21.43	21.45	21.34		3
	50	50	21.33	21.46	21.46	21.34		3
	100	0	21.31	21.40	21.46	21.33		3

Table 9-30
LTE Band 48 Main 1 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	18.94	19.11	**19.27**	19.08	0	0
	1	50	18.97	19.07	19.23	19.09		0
	1	99	19.02	19.14	19.24	19.00		0
	50	0	19.12	19.15	19.23	19.24	0-1	0
	50	25	19.15	19.30	19.28	19.25		0
	50	50	19.19	19.31	**19.34**	19.23		0
	100	0	19.15	19.26	19.26	19.26		0
16QAM	1	0	18.95	19.03	19.17	19.17	0-1	0
	1	50	19.10	19.16	19.42	19.40		0
	1	99	19.10	19.18	19.21	19.04		0
	50	0	19.14	19.16	19.24	19.25	0-2	0
	50	25	19.16	19.28	19.28	19.27		0
	50	50	19.18	19.32	19.38	19.26		0
	100	0	19.16	19.28	19.26	19.25		0
64QAM	1	0	18.95	19.06	19.23	19.13	0-2	0
	1	50	19.14	19.17	19.30	19.16		0
	1	99	19.12	19.15	19.24	19.16		0
	50	0	19.10	19.13	19.25	19.25	0-3	0
	50	25	19.14	19.28	19.26	19.27		0
	50	50	19.19	19.31	19.35	19.25		0
	100	0	19.12	19.26	19.23	19.22		0

Table 9-31
LTE Band 48 Sub-UHB Antenna Measured P_{Limit} for DSI = 2 (Head) and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55340 (3560.0 MHz)	55773 (3603.3 MHz)	56207 (3646.7 MHz)	56640 (3690.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	17.62	17.65	17.82	17.83	0	0
	1	50	17.70	17.74	17.74	**17.84**		0
	1	99	17.67	17.68	17.71	17.78		0
	50	0	17.86	17.82	17.81	17.87	0-1	0
	50	25	17.88	17.84	17.84	17.89		0
	50	50	17.91	17.86	17.91	**17.96**		0
	100	0	17.82	17.81	17.82	17.83		0
16QAM	1	0	17.89	17.76	17.89	17.86	0-1	0
	1	50	17.79	18.00	17.86	18.00		0
	1	99	17.91	17.79	17.98	17.93		0
	50	0	17.87	17.84	17.81	17.91	0-2	0
	50	25	17.89	17.86	17.84	17.91		0
	50	50	17.91	17.86	17.95	17.96		0
	100	0	17.89	17.83	17.83	17.87		0
64QAM	1	0	17.64	17.70	17.81	17.82	0-2	0
	1	50	17.84	17.82	17.93	17.85		0
	1	99	17.73	17.78	17.83	17.81		0
	50	0	17.83	17.80	17.81	17.84	0-3	0
	50	25	17.87	17.83	17.84	17.86		0
	50	50	17.88	17.83	17.94	17.91		0
	100	0	17.86	17.82	17.81	17.86		0

Figure 9-3
Power Measurement Setup

9.4 NR Conducted Powers

Per October 2020 TCB Workshop Guidance, NR FR1 SAR evaluations are being generally based on adapting the existing LTE SAR procedures (FCC KDB Publication 941225 D05v02r05). Therefore, NR SAR for the lower bandwidths was not required for testing based on the measured output power and the reported NR SAR for the highest bandwidth. Lower bandwidth conducted powers for all NR bands can be found in the LTE and NR Lower Bandwidth Conducted Powers Appendix.

Note: Some bands do 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.

9.4.1 NR Band n71

Table 9-32
NR Band n71 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 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	23.59	0	0.0
	1	53	23.73		0.0
	1	104	23.74		0.0
	50	0	23.20	0-0.5	0.5
	50	28	23.84	0	0.0
	50	56	23.34	0-0.5	0.5
	100	0	23.34		0.5
DFT-s-OFDM QPSK	1	1	23.56	0	0.0
	1	53	23.62		0.0
	1	104	**23.69**		0.0
	50	0	22.73	0-1	1.0
	50	28	**23.86**	0	0.0
	50	56	22.81	0-1	1.0
	100	0	22.86		1.0
DFT-s-OFDM 16QAM	1	1	22.93	0-1	1.0
CP-OFDM QPSK	1	1	22.08	0-1.5	1.5

Table 9-33
NR Band n71 Main 1 Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	21.81	0	0.0
	1	53	21.79		0.0
	1	104	21.78		0.0
	50	0	21.78	0-0.5	0.0
	50	28	21.90	0	0.0
	50	56	21.89	0-0.5	0.0
	100	0	21.85		0.0
DFT-s-OFDM QPSK	1	1	21.84	0	0.0
	1	53	**21.88**		0.0
	1	104	21.84		0.0
	50	0	21.79	0-1	0.0
	50	28	**21.89**	0	0.0
	50	56	21.87	0-1	0.0
	100	0	21.85		0.0
DFT-s-OFDM 16QAM	1	1	21.42	0-1	0.0
CP-OFDM QPSK	1	1	21.58	0-1.5	0.0

9.4.2 NR Band n5

Table 9-34
NR Band n5 Main 1 Antenna Measured P_{Max} for DSI = 1 (Free Space) and/or DSI = 2 (Head) - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	23.60	0	0.0
	1	53	23.72		0.0
	1	104	23.58		0.0
	50	0	23.18	0-0.5	0.5
	50	28	23.85	0	0.0
	50	56	23.28	0-0.5	0.5
	100	0	23.23		0.5
DFT-s-OFDM QPSK	1	1	23.48	0	0.0
	1	53	**23.62**		0.0
	1	104	23.44		0.0
	50	0	22.70	0-1	1.0
	50	28	**23.77**	0	0.0
	50	56	22.71	0-1	1.0
	100	0	22.74		1.0
DFT-s-OFDM 16QAM	1	1	22.87	0-1	1.0
CP-OFDM QPSK	1	1	22.05	0-1.5	1.5

Table 9-35
NR Band n5 Main 1 Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	20.76	0	0.0
	1	53	20.87		0.0
	1	104	20.74		0.0
	50	0	20.79	0-0.5	0.0
	50	28	20.91	0	0.0
	50	56	20.86	0-0.5	0.0
	100	0	20.84		0.0
DFT-s-OFDM QPSK	1	1	20.65	0	0.0
	1	53	**20.79**		0.0
	1	104	20.69		0.0
	50	0	20.78	0-1	0.0
	50	28	**20.93**	0	0.0
	50	56	20.84	0-1	0.0
	100	0	20.76		0.0
DFT-s-OFDM 16QAM	1	1	20.63	0-1	0.0
CP-OFDM QPSK	1	1	20.87	0-1.5	0.0

Table 9-36
NR Band n5 Sub Antenna Measured P_{limit} for DSI = 2 (Head) - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	20.15	0	0.0
	1	53	20.29		0.0
	1	104	20.17		0.0
	50	0	20.26	0-0.5	0.0
	50	28	20.32	0	0.0
	50	56	20.21	0-0.5	0.0
	100	0	20.31		0.0
DFT-s-OFDM QPSK	1	1	20.14	0	0.0
	1	53	**20.36**		0.0
	1	104	20.23		0.0
	50	0	20.27	0-1	0.0
	50	28	**20.31**	0	0.0
	50	56	20.21	0-1	0.0
	100	0	20.23		0.0
DFT-s-OFDM 16QAM	1	1	20.06	0-1	0.0
CP-OFDM QPSK	1	1	20.24	0-1.5	0.0

Table 9-37
NR Band n5 Sub Antenna Measured P_{limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	21.12	0	0.0
	1	53	21.21		0.0
	1	104	21.11		0.0
	50	0	21.16	0-0.5	0.0
	50	28	21.15	0	0.0
	50	56	21.23	0-0.5	0.0
	100	0	21.19		0.0
DFT-s-OFDM QPSK	1	1	21.13	0	0.0
	1	53	**21.26**		0.0
	1	104	21.16		0.0
	50	0	21.15	0-1	0.0
	50	28	**21.22**	0	0.0
	50	56	21.21	0-1	0.0
	100	0	21.18		0.0
DFT-s-OFDM 16QAM	1	1	21.02	0-1	0.0
CP-OFDM QPSK	1	1	21.17	0-1.5	0.0

9.4.3 NR Band n66

Table 9-38
NR Band n66 Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space), and/or DSI = 2 (Head) - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	22.87	23.04	22.91	0	0.0
	1	53	22.84	23.07	22.89		0.0
	1	104	22.83	22.98	22.82		0.0
	50	0	22.34	22.53	22.43	0-0.5	0.5
	50	28	22.80	23.12	22.97	0	0.0
	50	56	22.26	22.60	22.46	0-0.5	0.5
	100	0	22.34	22.53	22.45		0.5
DFT-s-OFDM QPSK	1	1	22.56	22.86	22.81	0	0.0
	1	53	22.65	**22.93**	22.70		0.0
	1	104	22.61	22.81	22.73		0.0
	50	0	21.72	22.10	21.97	0-1	1.0
	50	28	22.75	**23.12**	22.97	0	0.0
	50	56	21.71	22.11	21.96	0-1	1.0
	100	0	21.81	22.11	21.96		1.0
DFT-s-OFDM 16QAM	1	1	22.12	22.38	22.28	0-1	1.0
CP-OFDM QPSK	1	1	21.26	21.60	21.45	0-1.5	1.5

Table 9-39
NR Band n66 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	18.71	18.68	18.55	0	0.0
	1	53	18.62	18.74	18.57		0.0
	1	104	18.67	18.65	18.51		0.0
	50	0	18.62	18.71	18.49	0-0.5	0.0
	50	28	18.61	18.73	18.54	0	0.0
	50	56	18.54	18.69	18.47	0-0.5	0.0
	100	0	18.64	18.71	18.48		0.0
DFT-s-OFDM QPSK	1	1	18.54	18.71	18.51	0	0.0
	1	53	18.61	**18.79**	18.53		0.0
	1	104	18.56	18.68	18.35		0.0
	50	0	18.51	18.67	18.51	0-1	0.0
	50	28	18.52	**18.72**	18.56	0	0.0
	50	56	18.59	18.66	18.46	0-1	0.0
	100	0	18.49	18.61	18.51		0.0
DFT-s-OFDM 16QAM	1	1	18.65	18.49	18.37	0-1	0.0
CP-OFDM QPSK	1	1	18.46	18.58	18.53	0-1.5	0.0

9.4.4 NR Band n25

Table 9-40
NR Band n25 Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space), and/or DSI = 2 (Head) - 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	23.24	23.13	23.19	0	0.0
	1	53	23.22	23.23	23.20		0.0
	1	104	23.17	23.18	23.06		0.0
	50	0	22.84	22.73	22.69	0-0.5	0.5
	50	28	23.31	23.17	23.26	0	0.0
	50	56	22.77	22.64	22.68	0-0.5	0.5
	100	0	22.79	22.72	22.73		0.5
DFT-s-OFDM QPSK	1	1	**23.13**	23.02	23.12	0	0.0
	1	53	23.09	23.04	23.05		0.0
	1	104	23.07	23.00	22.95		0.0
	50	0	22.33	22.26	22.19	0-1	1.0
	50	28	**23.30**	23.21	23.24	0	0.0
	50	56	22.29	22.23	22.22	0-1	1.0
	100	0	22.33	22.21	22.26		1.0
DFT-s-OFDM 16QAM	1	1	22.59	22.54	22.57	0-1	1.0
CP-OFDM QPSK	1	1	21.75	21.63	21.69	0-1.5	1.5

Table 9-41
NR Band n25 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 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	18.51	18.30	18.24	0	0.0
	1	53	18.46	18.39	18.21		0.0
	1	104	18.36	18.33	18.17		0.0
	50	0	18.47	18.36	18.26	0-0.5	0.0
	50	28	18.42	18.34	18.24	0	0.0
	50	56	18.39	18.32	18.23	0-0.5	0.0
	100	0	18.46	18.32	18.25		0.0
DFT-s-OFDM QPSK	1	1	**18.53**	18.40	18.21	0	0.0
	1	53	18.36	18.39	18.13		0.0
	1	104	18.37	18.33	18.09		0.0
	50	0	**18.48**	18.34	18.31	0-1	0.0
	50	28	18.44	18.31	18.28	0	0.0
	50	56	18.37	18.33	18.25	0-1	0.0
	100	0	18.43	18.31	18.29		0.0
DFT-s-OFDM 16QAM	1	1	18.21	18.17	18.33	0-1	0.0
CP-OFDM QPSK	1	1	18.63	18.34	18.16	0-1.5	0.0

9.4.5 NR Band n30

Table 9-42
NR Band n30 Main 2 Antenna Measured P_{Max} for DSI = 1 (Free Space), and/or DSI = 2 (Head) - 10 MHz Bandwidth

NR Band n30 10 MHz Bandwidth					
			Channel		
Modulation	RB Size	RB Offset	462000 (2310 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
DFT-s-OFDM π/2 BPSK	1	1	22.82	0	0.0
	1	26	22.96		0.0
	1	50	22.81		0.0
	25	0	22.32	0-0.5	0.5
	25	14	22.90	0	0.0
	25	27	22.43	0-0.5	0.5
	50	0	22.28		0.5
DFT-s-OFDM QPSK	1	1	**22.94**	0	0.0
	1	26	22.92		0.0
	1	50	22.79		0.0
	25	0	21.74	0-1	1.0
	25	14	**22.87**	0	0.0
	25	27	21.83	0-1	1.0
	50	0	21.73		1.0
DFT-s-OFDM 16QAM	1	1	22.09	0-1	1.0
CP-OFDM QPSK	1	1	21.38	0-1.5	1.5

Table 9-43
NR Band n30 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 10 MHz Bandwidth

NR Band n30 10 MHz Bandwidth					
			Channel		
Modulation	RB Size	RB Offset	462000 (2310 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
DFT-s-OFDM π/2 BPSK	1	1	18.92	0	0.0
	1	26	18.91		0.0
	1	50	18.93		0.0
	25	0	18.73	0-0.5	0.0
	25	14	18.81	0	0.0
	25	27	18.80	0-0.5	0.0
	50	0	18.81		0.0
DFT-s-OFDM QPSK	1	1	18.86	0	0.0
	1	26	**18.87**		0.0
	1	50	18.85		0.0
	25	0	18.72	0-1	0.0
	25	14	**18.84**	0	0.0
	25	27	18.79	0-1	0.0
	50	0	18.81		0.0
DFT-s-OFDM 16QAM	1	1	18.85	0-1	0.0
CP-OFDM QPSK	1	1	18.73	0-1.5	0.0

9.4.6 NR Band n41

Table 9-44
NR Band n41 PC2 Main 2 Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	518598 (2592.99 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	18.94	0	0.0
	1	137	19.15		0.0
	1	271	18.88		0.0
	135	0	18.95	0-0.5	0.0
	135	69	19.04	0	0.0
	135	138	18.94	0-0.5	0.0
	270	0	18.94		0.0
DFT-s-OFDM QPSK	1	1	19.00	0	0.0
	1	137	**19.36**		0.0
	1	271	19.20		0.0
	135	0	19.00	0-1	0.0
	135	69	**19.23**	0	0.0
	135	138	19.00	0-1	0.0
	270	0	18.98		0.0
DFT-s-OFDM 16QAM	1	1	18.98	0-1	0.0
CP-OFDM QPSK	1	1	19.00	0-1.5	0.0

Table 9-45
NR Band n41 PC2 Main 2 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	518598 (2592.99 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	18.00	0	0.0
	1	137	18.18		0.0
	1	271	18.01		0.0
	135	0	18.02	0-0.5	0.0
	135	69	18.16	0	0.0
	135	138	18.21	0-0.5	0.0
	270	0	18.05		0.0
DFT-s-OFDM QPSK	1	1	17.86	0	0.0
	1	137	**18.22**		0.0
	1	271	18.02		0.0
	135	0	18.04	0-1	0.0
	135	69	**18.10**	0	0.0
	135	138	18.00	0-1	0.0
	270	0	18.03		0.0
DFT-s-OFDM 16QAM	1	1	18.21	0-1	0.0
CP-OFDM QPSK	1	1	18.10	0-1.5	0.0

Table 9-46
NR Band n41 PC2 3rd -LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth	
	Channel
Antenna	518598 (2592.99 MHz)
	Conducted Power [dBm]
Cellular 4th	16.10
Cellular 3rd	15.13

Table 9-47
NR Band n41 PC2 3rd-LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth	
	Channel
Antenna	518598 (2592.99 MHz)
	Conducted Power [dBm]
Cellular 4th	15.10
Cellular 3rd	14.15

Table 9-48
NR Band n41 PC3 Sub Antenna Measured P_{Limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	518598 (2592.99 MHz) Conducted Power [dBm]		
CP-OFDM QPSK	1	1	**16.66**	0-1.5	0.0
	1	137	16.63		0.0
	1	271	16.59		0.0
	1	272	16.45	0-3	0.0
	137	0	**16.81**		0.0
	137	68	16.76	0-1.5	0.0
	137	136	16.75	0-3	0.0
	273	0	16.60		0.0

Table 9-49
NR Band n41 PC3 4th-MHB Antenna Measured P_{Limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth	
	Channel
Antenna	518598 (2592.99 MHz)
	Conducted Power [dBm]
Cellular 4th	13.03

Table 9-50
NR Band n41 PC2 Sub Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth	
	Channel
Antenna	518598 (2592.99 MHz)
	Conducted Power [dBm]
Sub	16.01

Table 9-51
NR Band n41 PC2 Sub Antenna Measured P_{Limit} DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth	
	Channel
Antenna	518598 (2592.99 MHz)
	Conducted Power [dBm]
Sub	15.12

9.4.7 NR Band n77 DoD

Table 9-52
NR Band n77 DoD PC2 Main 1 Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n77 DoD 100 MHz Bandwidth					
			Channel		
Modulation	RB Size	RB Offset	633334 (3500.01 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
DFT-s-OFDM π/2 BPSK	1	1	19.62	0	0.0
	1	137	19.74		0.0
	1	271	19.68		0.0
	135	0	19.76	0-0.5	0.0
	135	69	19.77	0	0.0
	135	138	19.61	0-0.5	0.0
	270	0	19.74		0.0
DFT-s-OFDM QPSK	1	1	19.60	0	0.0
	1	137	**19.73**		0.0
	1	271	19.67		0.0
	135	0	19.70	0-1	0.0
	135	69	19.72	0	0.0
	135	138	19.64	0-1	0.0
	270	0	19.70		0.0
DFT-s-OFDM 16QAM	1	1	19.70	0-1	0.0
CP-OFDM QPSK	1	1	19.54	0-1.5	0.0

Table 9-53
NR Band n77 DoD PC2 Main 1 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 DoD 100 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	633334 (3500.01 MHz) Conducted Power [dBm]		
DFT-s-OFDM π/2 BPSK	1	1	18.50	0	0.0
	1	137	18.59		0.0
	1	271	18.70		0.0
	135	0	18.76	0-0.5	0.0
	135	69	18.74	0	0.0
	135	138	18.57	0-0.5	0.0
	270	0	18.51		0.0
DFT-s-OFDM QPSK	1	1	18.52	0	0.0
	1	137	18.57		0.0
	1	271	18.58		0.0
	135	0	**18.64**	0-1	0.0
	135	69	18.52	0	0.0
	135	138	18.52	0-1	0.0
	270	0	18.53		0.0
DFT-s-OFDM 16QAM	1	1	18.73	0-1	0.0
CP-OFDM QPSK	1	1	18.45	0-1.5	0.0

Table 9-54
NR Band n77 DoD PC2 3rd-LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n77 DoD 100 MHz Bandwidth	
	Channel
Antenna	633334 (3500.01 MHz)
	Conducted Power [dBm]
Cellular 3rd	14.52
Cellular 4th	15.88

Table 9-55
NR Band n77 DoD PC2 3rd-LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 DoD 100 MHz Bandwidth	
	633334
	Channel
Antenna	633334 (3500.01 MHz)
	Conducted Power [dBm]
Cellular 3rd	13.46
Cellular 4th	14.90

Table 9-56
NR Band n77 DoD PC3 Sub-UHB Antenna P_{Limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 DoD 100 MHz Bandwidth					
			Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	633334 (3500.01 MHz) Conducted Power [dBm]		
CP-OFDM QPSK	1	1	15.72	0-1.5	0.0
	1	137	15.82		0.0
	1	271	**16.21**		0.0
	1	272	15.84	0-3	0.0
	137	0	16.05		0.0
	137	68	16.04	0-1.5	0.0
	137	136	15.71	0-3	0.0
	273	0	15.99		0.0

9.4.8 NR Band n77 C-Band

Table 9-57
NR Band n77 C-Band PC2 Main 1 Antenna Measured P_{Limit} for DSI = 2 (Head)
- 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	650000 (3750 MHz)	662000 (3930 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM π/2 BPSK	1	1	19.03	19.01	0	0.0
	1	137	19.09	19.52		0.0
	1	271	18.86	18.91		0.0
	135	0	19.11	19.27	0-0.5	0.0
	135	69	19.02	19.33	0	0.0
	135	138	18.90	19.17	0-0.5	0.0
	270	0	19.04	19.22		0.0
DFT-s-OFDM QPSK	1	1	18.96	19.13	0	0.0
	1	137	19.06	**19.55**		0.0
	1	271	19.09	19.02		0.0
	135	0	19.10	19.25	0-1	0.0
	135	69	19.03	**19.29**	0	0.0
	135	138	18.89	19.20	0-1	0.0
	270	0	19.04	19.18		0.0
DFT-s-OFDM 16QAM	1	1	18.77	19.06	0-1	0.0
CP-OFDM QPSK	1	1	18.75	19.13	0-1.5	0.0

Table 9-58
NR Band n77 C-Band PC2 Main 1 Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	650000 (3750 MHz)	662000 (3930 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM π/2 BPSK	1	1	17.91	17.96	0	0.0
	1	137	17.97	18.49		0.0
	1	271	17.82	18.09		0.0
	135	0	18.17	18.25	0-0.5	0.0
	135	69	17.99	18.31	0	0.0
	135	138	17.89	18.22	0-0.5	0.0
	270	0	18.01	18.20		0.0
DFT-s-OFDM QPSK	1	1	17.83	18.08	0	0.0
	1	137	18.01	**18.53**		0.0
	1	271	17.80	18.00		0.0
	135	0	18.10	18.24	0-1	0.0
	135	69	17.98	**18.39**	0	0.0
	135	138	17.84	18.17	0-1	0.0
	270	0	18.00	18.22		0.0
DFT-s-OFDM 16QAM	1	1	17.69	18.09	0-1	0.0
CP-OFDM QPSK	1	1	17.76	18.16	0-1.5	0.0

Table 9-59
NR Band n77 C-Band PC2 3rd-LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth		
	650000	662000
	Channel	
Antenna	650000 (3750 MHz)	662000 (3930 MHz)
	Conducted Power [dBm]	
Cellular 3rd	13.89	**14.58**
Cellular 4th	**15.02**	15.00

Table 9-60
NR Band n77 C-Band PC2 3rd-LMHB and 4th-MHB Antenna Measured P_{Limit} for DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth		
	Channel	
Antenna	650000 (3750 MHz)	662000 (3930 MHz)
	Conducted Power [dBm]	
Cellular 3rd	12.95	**13.50**
Cellular 4th	**14.02**	13.68

Table 9-61
NR Band n77 C-Band PC3 Sub-UHB Antenna Measured P_{Limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	650000 (3750 MHz)	662000 (3930 MHz)		
			Conducted Power [dBm]			
CP-OFDM QPSK	1	1	16.02	16.31	0-1.5	0.0
	1	137	16.06	**16.81**		0.0
	1	271	16.00	16.18		0.0
	1	272	16.05	16.11	0-3	0.0
	137	0	16.10	16.48		0.0
	137	68	16.02	**16.62**	0-1.5	0.0
	137	136	16.00	16.50	0-3	0.0
	273	0	16.03	16.55		0.0

Table 9-62
NR Band n77 PC3 4th-MHB Antenna Measured P_{Limit} for DSI = 2 (Head), and/or DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth		
	Channel	
Antenna	650000 (3750 MHz)	662000 (3930 MHz)
	Conducted Power [dBm]	
Cellular 4th	**10.10**	10.00

Table 9-63
NR Band n77 PC2 Sub-UHB Antenna Measured P_{Limit} for DSI = 2 (Head) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	650000 (3750 MHz)	662000 (3930 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM QPSK	1	1	15.09	15.03	0-6.5	0.0
	1	137	15.10	**15.35**		0.0
	1	271	15.00	15.00		0.0
	135	0	15.25	15.09		0.0
	135	69	15.00	15.16		0.0
	135	138	15.02	15.06		0.0
	270	0	15.00	15.10		0.0

Table 9-64
NR Band n77 PC2 Sub-UHB Antenna Measured P_{Limit} DSI = 3 (Body-worn, Hotspot or Phablet) - 100 MHz Bandwidth

NR Band n77 100 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	650000 (3750 MHz)	662000 (3930 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM QPSK	1	1	14.05	14.02	0-1.5	0.0
	1	137	14.02	**14.27**		0.0
	1	271	14.00	14.00		0.0
	135	0	14.11	14.11	0-3	0.0
	135	69	14.02	14.16	0-1.5	0.0
	135	138	14.00	14.09	0-3	0.0
	270	0	14.05	14.13		0.0

Figure 9-4
Power Measurement Setup – NR FDD

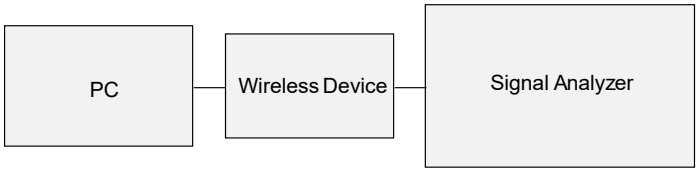

Figure 9-5
Power Measurement Setup – NR TDD

9.5 WLAN Conducted Powers

Table 9-65
2.4 GHz WLAN Maximum Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	WiFi Main	WiFi Sub	MIMO
2412	1	13.35	13.76	16.57
2437	6	13.74	13.57	16.67
2462	11	13.44	13.67	16.57

Table 9-66
2.4 GHz WLAN Reduced Average RF Power During conditions with 5/6 GHz - MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	WiFi Main	WiFi Sub	MIMO
2412	1	10.30	10.72	13.53
2437	6	10.25	10.74	13.51
2462	11	10.03	10.71	13.39

Table 9-67
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (40MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	WiFi Main	WiFi Sub	MIMO
5190	38	11.46	9.85	13.74
5230	46	11.38	9.83	13.68
5270	54	11.44	9.81	13.71
5310	62	11.12	9.79	13.52
5510	102	11.47	9.62	13.65
5590	118	11.36	9.54	13.55
5630	126	11.39	9.48	13.55
5710	142	11.42	10.39	13.95
5755	151	11.33	9.62	13.57
5795	159	11.49	9.51	13.62
5GHz (80MHz) 802.11ac Conducted Power [dBm]				
Freq [MHz]	Channel	WiFi Main	WiFi Sub	MIMO
5210	42	11.32	9.52	13.52
5290	58	11.34	9.72	13.62
5530	106	11.27	9.65	13.55
5610	122	11.39	9.39	13.51
5690	138	11.42	9.85	13.72
5775	155	10.41	8.91	12.73

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

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

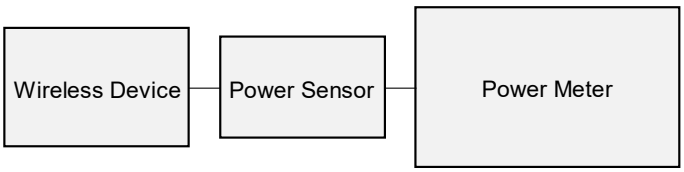

Figure 9-6
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-68
Bluetooth Maximum Average RF Power– WiFi Main

Frequency [MHz]	Data Rate [Mbps]	Mod.	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	1.0	GFSK	0	13.39	21.802
2441	1.0	GFSK	39	13.41	21.903
2480	1.0	GFSK	78	13.64	23.115

Table 9-69
Bluetooth Maximum Average RF Power – WiFi Sub

Frequency [MHz]	Data Rate [Mbps]	Mod.	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	1.0	GFSK	0	13.18	20.792
2441	1.0	GFSK	39	13.57	22.772
2480	1.0	GFSK	78	13.82	24.094

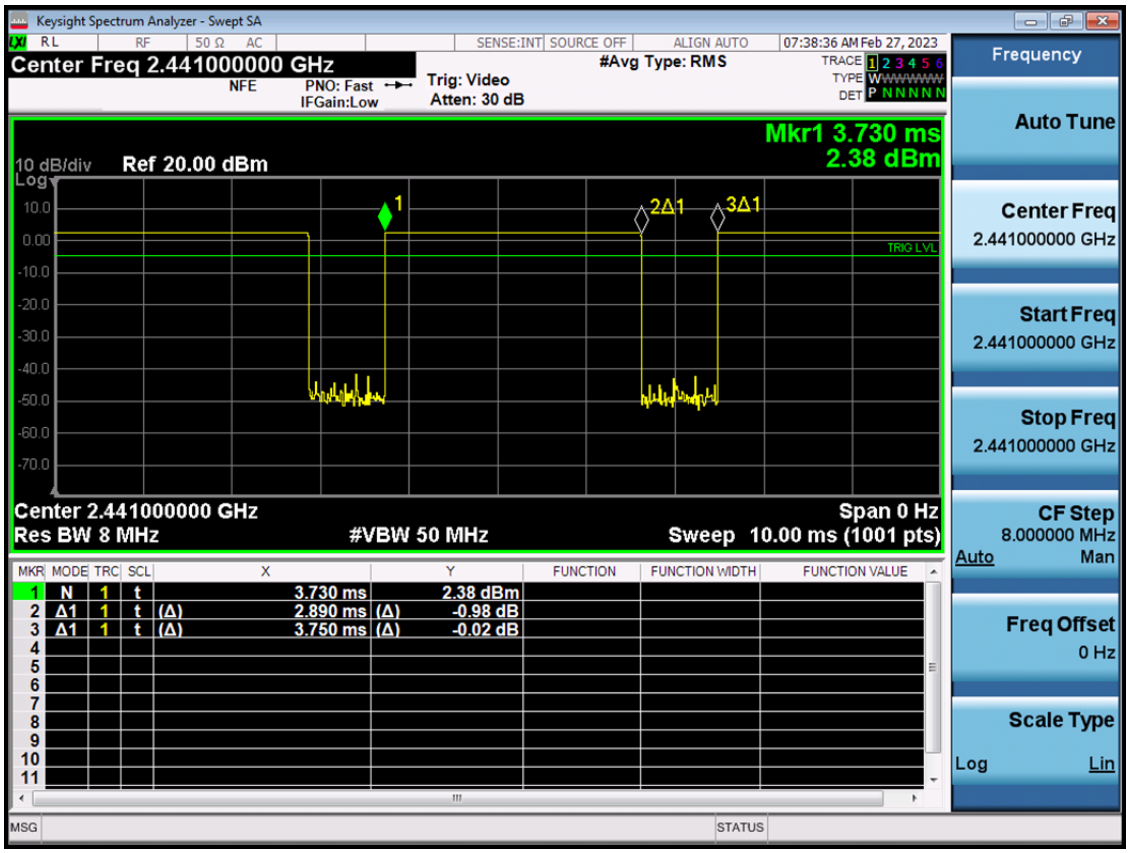

Figure 9-7
Bluetooth WiFi Main Transmission Plot

Equation 9-1
Bluetooth WiFi Main Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.890ms}{3.750ms} * 100\% = 77.07\%$$

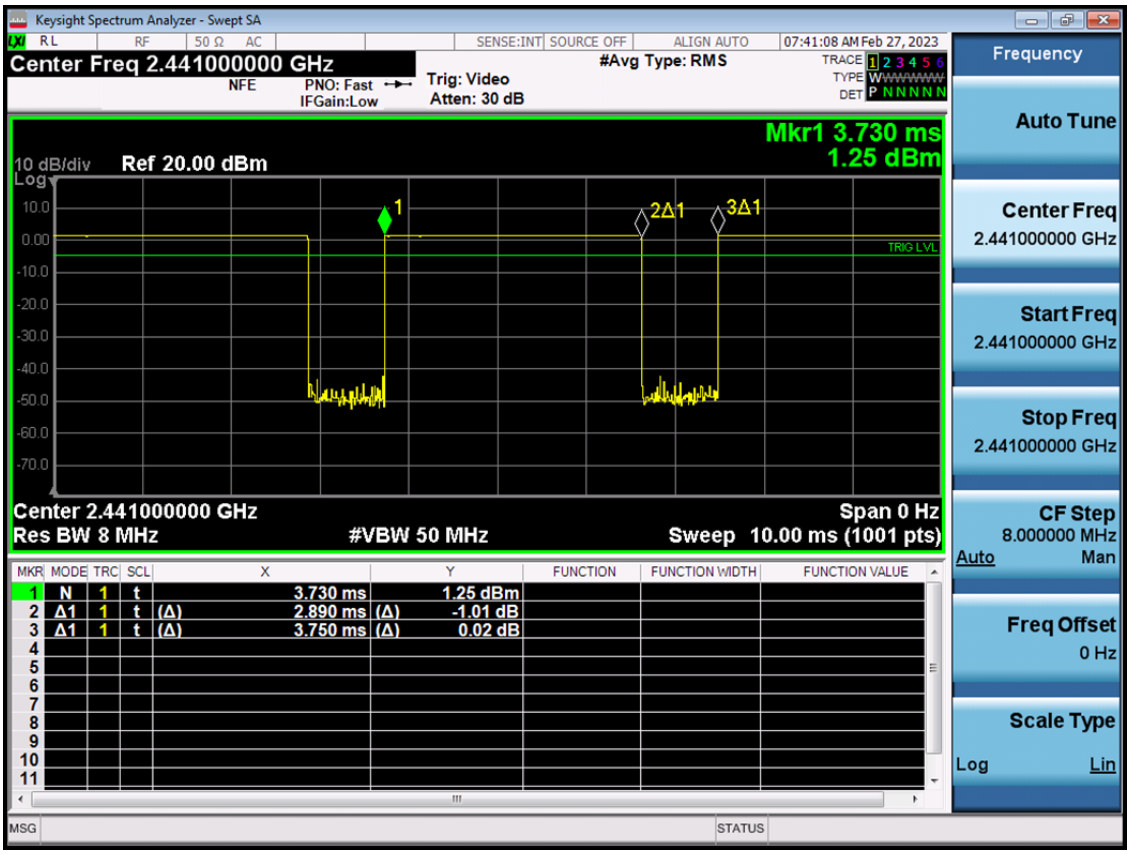

Figure 9-8
Bluetooth WiFi Sub Transmission Plot

Equation 9-2
Bluetooth WiFi Sub Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.890ms}{3.750ms} * 100\% = 77.07\%$$

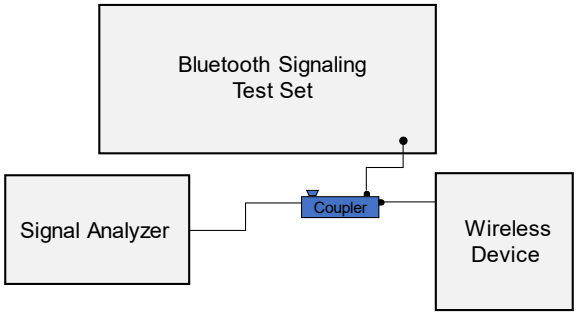

Figure 9-9
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
02/28/2023	30 Head	22.1	12	0.745	55.851	0.750	55.000	-0.67%	1.55%
			13	0.745	55.517	0.750	55.000	-0.67%	0.94%
			14	0.745	55.476	0.750	55.000	-0.67%	0.87%
03/09/2023	750 Head	19.9	700	0.846	41.233	0.889	42.201	-4.84%	-2.29%
			710	0.848	41.187	0.890	42.149	-4.72%	-2.28%
			725	0.852	41.091	0.891	42.071	-4.38%	-2.33%
			750	0.860	40.956	0.894	41.942	-3.80%	-2.35%
			770	0.868	40.924	0.895	41.838	-3.02%	-2.18%
			785	0.874	40.912	0.896	41.760	-2.46%	-2.03%
			800	0.880	40.884	0.897	41.682	-1.90%	-1.91%
03/20/2023	750 Head	21.9	680	0.896	42.184	0.888	42.305	0.90%	-0.29%
			695	0.900	42.112	0.889	42.227	1.24%	-0.27%
			700	0.902	42.090	0.889	42.201	1.46%	-0.26%
			710	0.905	42.050	0.890	42.149	1.69%	-0.23%
			725	0.911	41.992	0.891	42.071	2.24%	-0.19%
			750	0.920	41.898	0.894	41.942	2.91%	-0.10%
			770	0.926	41.829	0.895	41.838	3.46%	-0.02%
			785	0.931	41.789	0.896	41.760	3.91%	0.07%
			800	0.936	41.756	0.897	41.682	4.35%	0.18%
03/07/2023	835 Head	20.0	815	0.884	40.837	0.898	41.594	-1.56%	-1.82%
			820	0.886	40.817	0.899	41.578	-1.45%	-1.83%
			835	0.891	40.758	0.900	41.500	-1.00%	-1.79%
			850	0.897	40.704	0.916	41.500	-2.07%	-1.92%
03/10/2023	835 Head	21.6	815	0.924	40.093	0.898	41.594	2.90%	-3.61%
			820	0.927	40.076	0.899	41.578	3.11%	-3.61%
			835	0.933	40.022	0.900	41.500	3.67%	-3.56%
			850	0.938	39.977	0.916	41.500	2.40%	-3.67%
03/14/2023	835 Head	19.8	815	0.860	42.645	0.898	41.594	-4.23%	2.53%
			820	0.862	42.631	0.899	41.578	-4.12%	2.53%
			835	0.869	42.606	0.900	41.500	-3.44%	2.67%
			850	0.875	42.586	0.916	41.500	-4.48%	2.62%
03/13/2023	1750 Head	19.0	1710	1.285	41.499	1.348	40.142	-4.67%	3.38%
			1720	1.292	41.478	1.354	40.126	-4.58%	3.37%
			1745	1.309	41.427	1.368	40.087	-4.31%	3.34%
			1750	1.313	41.419	1.371	40.079	-4.23%	3.34%
			1770	1.325	41.394	1.383	40.047	-4.19%	3.36%
			1790	1.335	41.369	1.394	40.016	-4.23%	3.38%
03/16/2023	1750 Head	21.3	1710	1.373	40.498	1.348	40.142	1.85%	0.89%
			1720	1.379	40.477	1.354	40.126	1.85%	0.87%
			1745	1.394	40.428	1.368	40.087	1.90%	0.85%
			1750	1.397	40.419	1.371	40.079	1.90%	0.85%
			1770	1.409	40.383	1.383	40.047	1.88%	0.84%
			1790	1.421	40.348	1.394	40.016	1.94%	0.83%
03/10/2023	1900 Head	19.3	1850	1.384	40.245	1.400	40.000	-1.14%	0.61%
			1860	1.390	40.243	1.400	40.000	-0.71%	0.61%
			1880	1.401	40.227	1.400	40.000	0.07%	0.57%
			1900	1.412	40.190	1.400	40.000	0.86%	0.47%
			1905	1.415	40.179	1.400	40.000	1.07%	0.45%
			1910	1.419	40.169	1.400	40.000	1.36%	0.42%
03/13/2023	1900 Head	19.0	1850	1.375	41.268	1.400	40.000	-1.79%	3.17%
			1860	1.381	41.255	1.400	40.000	-1.36%	3.14%
			1880	1.393	41.228	1.400	40.000	-0.50%	3.07%
			1900	1.405	41.194	1.400	40.000	0.36%	2.99%
			1905	1.408	41.184	1.400	40.000	0.57%	2.96%
			1910	1.411	41.177	1.400	40.000	0.79%	2.94%
03/15/2023	1900 Head	20.1	1850	1.367	40.891	1.400	40.000	-2.36%	2.23%
			1860	1.372	40.869	1.400	40.000	-2.00%	2.17%
			1880	1.384	40.825	1.400	40.000	-1.14%	2.06%
			1900	1.397	40.794	1.400	40.000	-0.21%	1.98%
			1905	1.401	40.789	1.400	40.000	0.07%	1.97%
			1910	1.404	40.786	1.400	40.000	0.29%	1.97%
03/02/2023	2450 Head	20.0	2300	1.683	38.682	1.670	39.500	0.78%	-2.07%
			2310	1.691	38.665	1.679	39.480	0.71%	-2.06%
			2320	1.699	38.652	1.687	39.460	0.71%	-2.05%
			2400	1.756	38.544	1.756	39.289	0.00%	-1.90%
			2450	1.796	38.478	1.800	39.200	-0.22%	-1.84%
			2480	1.819	38.429	1.833	39.162	-0.76%	-1.87%
			2500	1.835	38.391	1.855	39.136	-1.08%	-1.90%
			2510	1.842	38.375	1.866	39.123	-1.29%	-1.91%
			2535	1.862	38.328	1.893	39.092	-1.64%	-1.95%
			2550	1.875	38.304	1.909	39.073	-1.78%	-1.97%
			2560	1.884	38.289	1.920	39.060	-1.88%	-1.97%
			2600	1.915	38.228	1.964	39.009	-2.49%	-2.00%
			2650	1.953	38.118	2.018	38.945	-3.22%	-2.12%
			2680	1.979	38.081	2.051	38.907	-3.51%	-2.12%
			2700	1.994	38.062	2.073	38.882	-3.81%	-2.11%

Table 10-2
Measured Head Tissue Properties (cont.)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/06/2023	2450 Head	20.5	2300	1.675	39.278	1.670	39.500	0.30%	-0.56%
			2310	1.683	39.258	1.679	39.480	0.24%	-0.56%
			2320	1.692	39.245	1.687	39.460	0.30%	-0.54%
			2400	1.749	39.142	1.756	39.289	-0.40%	-0.37%
			2450	1.792	39.055	1.800	39.200	-0.44%	-0.37%
			2480	1.816	39.022	1.833	39.162	-0.93%	-0.36%
			2500	1.829	38.987	1.855	39.136	-1.40%	-0.38%
			2510	1.836	38.966	1.866	39.123	-1.61%	-0.40%
			2535	1.856	38.909	1.893	39.092	-1.95%	-0.47%
			2550	1.869	38.881	1.909	39.073	-2.10%	-0.49%
			2560	1.878	38.864	1.920	39.060	-2.19%	-0.50%
			2600	1.909	38.811	1.964	39.009	-2.80%	-0.51%
			2650	1.944	38.685	2.018	38.945	-3.67%	-0.67%
			2680	1.973	38.646	2.051	38.907	-3.80%	-0.67%
			2700	1.989	38.637	2.073	38.882	-4.05%	-0.63%
03/10/2023	2450 Head	20.6	2300	1.747	40.903	1.670	39.500	4.61%	3.55%
			2310	1.755	40.894	1.679	39.480	4.53%	3.58%
			2320	1.763	40.883	1.687	39.460	4.51%	3.61%
			2400	1.828	40.774	1.756	39.289	4.10%	3.78%
			2450	1.867	40.678	1.800	39.200	3.72%	3.77%
			2480	1.892	40.626	1.833	39.162	3.22%	3.74%
			2500	1.910	40.608	1.855	39.136	2.96%	3.76%
			2510	1.918	40.594	1.866	39.123	2.79%	3.76%
			2535	1.939	40.552	1.893	39.092	2.43%	3.73%
			2550	1.950	40.514	1.909	39.073	2.15%	3.69%
			2560	1.958	40.490	1.920	39.060	1.98%	3.66%
			2600	1.994	40.429	1.964	39.009	1.53%	3.64%
			2650	2.038	40.325	2.018	38.945	0.99%	3.54%
			2680	2.063	40.264	2.051	38.907	0.59%	3.49%
			2700	2.081	40.233	2.073	38.882	0.39%	3.47%
03/13/2023	2450 Head	19.0	2300	1.684	40.614	1.670	39.500	0.84%	2.82%
			2310	1.691	40.603	1.679	39.480	0.71%	2.84%
			2320	1.699	40.583	1.687	39.460	0.71%	2.85%
			2400	1.761	40.477	1.756	39.289	0.28%	3.02%
			2450	1.805	40.380	1.800	39.200	0.28%	3.01%
			2480	1.831	40.340	1.833	39.162	-0.11%	3.01%
			2500	1.846	40.323	1.855	39.136	-0.49%	3.03%
			2510	1.854	40.315	1.866	39.123	-0.64%	3.05%
			2535	1.876	40.261	1.893	39.092	-0.90%	2.99%
			2550	1.891	40.219	1.909	39.073	-0.94%	2.93%
			2560	1.901	40.198	1.920	39.060	-0.99%	2.91%
			2600	1.933	40.156	1.964	39.009	-1.58%	2.94%
			2650	1.975	40.046	2.018	38.945	-2.13%	2.83%
			2680	2.005	39.987	2.051	38.907	-2.24%	2.78%
			2700	2.020	39.973	2.073	38.882	-2.56%	2.81%
03/20/2023	2450 Head	19.9	2300	1.701	39.091	1.670	39.500	1.86%	-1.04%
			2310	1.709	39.074	1.679	39.480	1.79%	-1.03%
			2320	1.717	39.060	1.687	39.460	1.78%	-1.01%
			2400	1.778	38.910	1.756	39.289	1.25%	-0.96%
			2450	1.813	38.856	1.800	39.200	0.72%	-0.88%
			2480	1.835	38.789	1.833	39.162	0.11%	-0.95%
			2500	1.851	38.763	1.855	39.136	-0.22%	-0.95%
			2510	1.859	38.753	1.866	39.123	-0.38%	-0.95%
			2535	1.878	38.721	1.893	39.092	-0.79%	-0.95%
			2550	1.889	38.692	1.909	39.073	-1.05%	-0.98%
			2560	1.896	38.671	1.920	39.060	-1.25%	-1.00%
			2600	1.929	38.608	1.964	39.009	-1.78%	-1.03%
			2650	1.970	38.539	2.018	38.945	-2.38%	-1.04%
			2680	1.993	38.484	2.051	38.907	-2.83%	-1.09%
			2700	2.011	38.445	2.073	38.882	-2.99%	-1.12%
03/15/2023	3600 Head	20.4	3300	2.601	39.459	2.708	38.157	-3.95%	3.41%
			3350	2.649	39.387	2.759	38.100	-3.99%	3.38%
			3450	2.744	39.210	2.861	37.986	-4.09%	3.22%
			3500	2.788	39.095	2.913	37.929	-4.29%	3.07%
			3550	2.841	39.016	2.964	37.871	-4.15%	3.02%
			3560	2.848	39.009	2.974	37.860	-4.24%	3.03%
			3600	2.883	38.931	3.015	37.814	-4.38%	2.95%
			3650	2.933	38.855	3.066	37.757	-4.34%	2.91%
			3690	2.969	38.782	3.107	37.711	-4.44%	2.84%
			3700	2.979	38.767	3.117	37.700	-4.43%	2.83%
			3750	3.030	38.705	3.169	37.643	-4.39%	2.82%
			3900	3.180	38.457	3.323	37.471	-4.30%	2.63%
			3930	3.215	38.406	3.353	37.437	-4.12%	2.59%
			4100	3.394	38.134	3.528	37.243	-3.80%	2.39%
			4150	3.450	38.083	3.579	37.186	-3.60%	2.41%

Table 10-3
Measured Head Tissue Properties (cont.)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/20/2023	3600 Head	19.0	3300	2.685	38.617	2.708	38.157	-0.85%	1.21%
			3350	2.731	38.534	2.759	38.100	-1.01%	1.14%
			3450	2.830	38.349	2.861	37.986	-1.08%	0.96%
			3500	2.874	38.237	2.913	37.929	-1.34%	0.81%
			3550	2.932	38.152	2.964	37.871	-1.08%	0.74%
			3560	2.941	38.133	2.974	37.860	-1.11%	0.72%
			3600	2.973	38.069	3.015	37.814	-1.39%	0.67%
			3650	3.033	37.961	3.066	37.757	-1.08%	0.54%
			3690	3.067	37.899	3.107	37.711	-1.29%	0.50%
			3700	3.075	37.873	3.117	37.700	-1.35%	0.46%
			3750	3.132	37.783	3.169	37.643	-1.17%	0.37%
			3900	3.290	37.511	3.323	37.471	-0.99%	0.11%
			3930	3.318	37.455	3.353	37.437	-1.04%	0.05%
			4100	3.516	37.132	3.528	37.243	-0.34%	-0.30%
			4150	3.566	37.060	3.579	37.186	-0.36%	-0.34%
03/12/2023	5200-5800 Head	19.0	5180	4.720	35.737	4.635	36.009	1.83%	-0.76%
			5190	4.731	35.702	4.645	35.998	1.85%	-0.82%
			5200	4.742	35.676	4.655	35.986	1.87%	-0.86%
			5210	4.753	35.649	4.666	35.975	1.86%	-0.91%
			5220	4.763	35.620	4.676	35.963	1.86%	-0.95%
			5240	4.782	35.579	4.696	35.940	1.83%	-1.00%
			5250	4.794	35.576	4.706	35.929	1.87%	-0.98%
			5260	4.809	35.558	4.717	35.917	1.95%	-1.00%
			5270	4.822	35.529	4.727	35.906	2.01%	-1.05%
			5280	4.832	35.499	4.737	35.894	2.01%	-1.10%
			5290	4.847	35.469	4.748	35.883	2.09%	-1.15%
			5300	4.865	35.454	4.758	35.871	2.25%	-1.16%
			5310	4.879	35.431	4.768	35.860	2.33%	-1.20%
			5320	4.888	35.408	4.778	35.849	2.30%	-1.23%
			5500	5.098	35.055	4.963	35.643	2.72%	-1.65%
			5510	5.107	35.032	4.973	35.632	2.69%	-1.68%
			5520	5.118	35.017	4.983	35.620	2.71%	-1.69%
			5530	5.127	35.009	4.994	35.609	2.66%	-1.68%
			5540	5.141	34.990	5.004	35.597	2.74%	-1.71%
			5550	5.157	34.968	5.014	35.586	2.85%	-1.74%
			5560	5.170	34.939	5.024	35.574	2.91%	-1.79%
			5580	5.196	34.891	5.045	35.551	2.99%	-1.86%
			5600	5.221	34.827	5.065	35.529	3.08%	-1.98%
			5610	5.230	34.796	5.076	35.518	3.03%	-2.03%
			5620	5.238	34.771	5.086	35.506	2.99%	-2.07%
			5640	5.262	34.728	5.106	35.483	3.06%	-2.13%
			5660	5.291	34.714	5.127	35.460	3.20%	-2.10%
			5670	5.307	34.701	5.137	35.449	3.31%	-2.11%
			5680	5.323	34.677	5.147	35.437	3.42%	-2.14%
			5690	5.336	34.644	5.158	35.426	3.45%	-2.21%
			5700	5.349	34.616	5.168	35.414	3.50%	-2.25%
			5710	5.359	34.592	5.178	35.403	3.50%	-2.29%
			5720	5.369	34.570	5.188	35.391	3.49%	-2.32%
			5745	5.393	34.540	5.214	35.363	3.43%	-2.33%
			5750	5.398	34.536	5.219	35.357	3.43%	-2.32%
			5755	5.404	34.530	5.224	35.351	3.45%	-2.32%
			5765	5.418	34.521	5.234	35.340	3.52%	-2.32%
			5775	5.434	34.503	5.245	35.329	3.60%	-2.34%
			5785	5.449	34.477	5.255	35.317	3.69%	-2.38%
			5795	5.462	34.445	5.265	35.305	3.74%	-2.44%
			5805	5.474	34.415	5.275	35.294	3.77%	-2.49%
			5825	5.496	34.357	5.296	35.271	3.78%	-2.59%
			5835	5.505	34.330	5.305	35.230	3.77%	-2.55%
			5845	5.519	34.313	5.315	35.210	3.84%	-2.55%
			5855	5.537	34.304	5.325	35.197	3.98%	-2.54%
			5875	5.566	34.297	5.347	35.183	4.10%	-2.52%
			5885	5.572	34.284	5.357	35.177	4.01%	-2.54%
			5905	5.589	34.225	5.379	35.163	3.90%	-2.67%

Table 10-4
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/06/2023	750 Body	20.3	680	0.913	54.127	0.958	55.804	-4.70%	-3.01%
			695	0.918	54.083	0.959	55.745	-4.28%	-2.98%
			700	0.920	54.071	0.959	55.726	-4.07%	-2.97%
			710	0.924	54.050	0.960	55.687	-3.75%	-2.94%
			725	0.929	54.029	0.961	55.629	-3.33%	-2.88%
			750	0.939	53.998	0.964	55.531	-2.59%	-2.76%
			770	0.947	53.956	0.965	55.453	-1.87%	-2.70%
			785	0.954	53.905	0.966	55.395	-1.24%	-2.69%
			800	0.960	53.847	0.967	55.336	-0.72%	-2.69%
03/07/2023	750 Body	22.3	680	0.927	55.941	0.958	55.804	-3.24%	0.25%
			695	0.934	55.893	0.959	55.745	-2.61%	0.27%
			700	0.936	55.882	0.959	55.726	-2.40%	0.28%
			710	0.941	55.858	0.960	55.687	-1.98%	0.31%
			725	0.947	55.821	0.961	55.629	-1.46%	0.35%
			750	0.955	55.738	0.964	55.531	-0.93%	0.37%
			770	0.962	55.662	0.965	55.453	-0.31%	0.38%
			785	0.967	55.603	0.966	55.395	0.10%	0.38%
			800	0.973	55.560	0.967	55.336	0.62%	0.40%
03/09/2023	750 Body	20.6	680	0.922	55.030	0.958	55.804	-3.76%	-1.39%
			695	0.928	54.959	0.959	55.745	-3.23%	-1.41%
			700	0.931	54.938	0.959	55.726	-2.92%	-1.41%
			710	0.935	54.908	0.960	55.687	-2.60%	-1.40%
			725	0.941	54.885	0.961	55.629	-2.08%	-1.34%
			750	0.950	54.856	0.964	55.531	-1.45%	-1.22%
			770	0.956	54.812	0.965	55.453	-0.93%	-1.16%
			785	0.961	54.751	0.966	55.395	-0.52%	-1.16%
			800	0.968	54.679	0.967	55.336	0.10%	-1.19%
03/06/2023	835 Body	20.4	815	0.947	55.117	0.968	55.271	-2.17%	-0.28%
			820	0.949	55.109	0.969	55.258	-2.06%	-0.27%
			835	0.955	55.073	0.970	55.200	-1.55%	-0.23%
			850	0.962	55.028	0.988	55.154	-2.63%	-0.23%
03/09/2023	835 Body	19.1	815	0.939	56.050	0.968	55.271	-3.00%	1.41%
			820	0.941	56.032	0.969	55.258	-2.89%	1.40%
			835	0.948	55.990	0.970	55.200	-2.27%	1.43%
			850	0.954	55.961	0.988	55.154	-3.44%	1.46%
03/14/2023	835 Body	19.8	815	0.934	54.996	0.968	55.271	-3.51%	-0.50%
			820	0.936	54.974	0.969	55.258	-3.41%	-0.51%
			835	0.942	54.914	0.970	55.200	-2.89%	-0.52%
			850	0.948	54.867	0.988	55.154	-4.05%	-0.52%
03/13/2023	1750 Body	21.3	1710	1.395	52.855	1.463	53.537	-4.65%	-1.27%
			1720	1.402	52.841	1.469	53.511	-4.56%	-1.25%
			1745	1.421	52.804	1.485	53.445	-4.31%	-1.20%
			1750	1.424	52.794	1.488	53.432	-4.30%	-1.19%
			1770	1.440	52.764	1.501	53.379	-4.06%	-1.15%
			1790	1.454	52.742	1.514	53.326	-3.96%	-1.10%
03/14/2023	1750 Body	19.8	1710	1.433	53.420	1.463	53.537	-2.05%	-0.22%
			1720	1.440	53.394	1.469	53.511	-1.97%	-0.22%
			1745	1.458	53.331	1.485	53.445	-1.82%	-0.21%
			1750	1.462	53.321	1.488	53.432	-1.75%	-0.21%
			1770	1.474	53.292	1.501	53.379	-1.80%	-0.16%
			1790	1.487	53.270	1.514	53.326	-1.78%	-0.11%
03/15/2023	1750 Body	19.0	1710	1.415	53.387	1.463	53.537	-3.28%	-0.28%
			1720	1.421	53.371	1.469	53.511	-3.27%	-0.26%
			1745	1.439	53.289	1.485	53.445	-3.10%	-0.29%
			1750	1.443	53.269	1.488	53.432	-3.02%	-0.31%
			1770	1.460	53.200	1.501	53.379	-2.73%	-0.34%
			1790	1.477	53.161	1.514	53.326	-2.44%	-0.31%
03/19/2023	1750 Body	19.3	1710	1.454	53.736	1.463	53.537	-0.62%	0.37%
			1720	1.462	53.721	1.469	53.511	-0.48%	0.39%
			1745	1.481	53.666	1.485	53.445	-0.27%	0.41%
			1750	1.485	53.655	1.488	53.432	-0.20%	0.42%
			1770	1.500	53.612	1.501	53.379	-0.07%	0.44%
			1790	1.514	53.574	1.514	53.326	0.00%	0.47%
03/13/2023	1900 Body	21.3	1850	1.496	52.650	1.520	53.300	-1.58%	-1.22%
			1860	1.504	52.627	1.520	53.300	-1.05%	-1.26%
			1880	1.519	52.587	1.520	53.300	-0.07%	-1.34%
			1900	1.534	52.558	1.520	53.300	0.92%	-1.39%
			1905	1.537	52.553	1.520	53.300	1.12%	-1.40%
			1910	1.541	52.546	1.520	53.300	1.38%	-1.41%
			1920	1.547	52.525	1.520	53.300	1.78%	-1.45%
03/15/2023	1900 Body	19.0	1850	1.517	53.104	1.520	53.300	-0.20%	-0.37%
			1860	1.524	53.072	1.520	53.300	0.26%	-0.43%
			1880	1.543	53.003	1.520	53.300	1.51%	-0.56%
			1900	1.561	52.962	1.520	53.300	2.70%	-0.63%
			1905	1.565	52.958	1.520	53.300	2.96%	-0.64%
			1910	1.569	52.956	1.520	53.300	3.22%	-0.65%

Table 10-5
Measured Body Tissue Properties (cont.)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/17/2023	1900 Body	19.3	1850	1.534	51.763	1.520	53.300	0.92%	-2.88%
			1860	1.541	51.754	1.520	53.300	1.38%	-2.90%
			1880	1.554	51.727	1.520	53.300	2.24%	-2.95%
			1900	1.569	51.696	1.520	53.300	3.22%	-3.01%
			1905	1.573	51.689	1.520	53.300	3.49%	-3.02%
			1910	1.577	51.682	1.520	53.300	3.75%	-3.04%
03/20/2023	1900 Body	22.6	1850	1.474	52.320	1.520	53.300	-3.03%	-1.84%
			1860	1.484	52.289	1.520	53.300	-2.37%	-1.90%
			1880	1.506	52.224	1.520	53.300	-0.92%	-2.02%
			1900	1.530	52.160	1.520	53.300	0.66%	-2.14%
			1905	1.536	52.144	1.520	53.300	1.05%	-2.17%
			1910	1.542	52.130	1.520	53.300	1.45%	-2.20%
			1920	1.553	52.096	1.520	53.300	2.17%	-2.26%
03/01/2023	2450 Body	20.3	2300	1.880	51.672	1.809	52.900	3.92%	-2.32%
			2310	1.889	51.661	1.816	52.887	4.02%	-2.32%
			2320	1.898	51.647	1.826	52.873	3.94%	-2.32%
			2400	1.964	51.538	1.902	52.767	3.26%	-2.33%
			2450	2.013	51.438	1.950	52.700	3.23%	-2.39%
			2480	2.041	51.422	1.993	52.662	2.41%	-2.35%
			2500	2.055	51.402	2.021	52.636	1.68%	-2.34%
			2510	2.063	51.383	2.035	52.623	1.38%	-2.36%
			2535	2.086	51.319	2.071	52.592	0.72%	-2.42%
			2550	2.102	51.283	2.092	52.573	0.48%	-2.45%
			2560	2.114	51.268	2.106	52.560	0.38%	-2.46%
			2600	2.149	51.235	2.163	52.509	-0.65%	-2.43%
			2650	2.191	51.110	2.234	52.445	-1.92%	-2.55%
			2680	2.225	51.079	2.277	52.407	-2.28%	-2.53%
			2700	2.242	51.075	2.305	52.382	-2.73%	-2.50%
03/13/2023	2450 Body	22.2	2300	1.801	53.407	1.809	52.900	-0.44%	0.96%
			2310	1.814	53.376	1.816	52.887	-0.11%	0.92%
			2320	1.827	53.341	1.826	52.873	0.05%	0.89%
			2400	1.938	53.102	1.902	52.767	1.89%	0.63%
			2450	2.010	52.937	1.950	52.700	3.08%	0.45%
			2480	2.052	52.840	1.993	52.662	2.96%	0.34%
			2500	2.081	52.763	2.021	52.636	2.97%	0.24%
			2510	2.096	52.722	2.035	52.623	3.00%	0.19%
			2535	2.134	52.619	2.071	52.592	3.04%	0.05%
			2550	2.157	52.559	2.092	52.573	3.11%	-0.03%
			2560	2.171	52.523	2.106	52.560	3.09%	-0.07%
			2600	2.224	52.362	2.163	52.509	2.82%	-0.28%
			2650	2.292	52.145	2.234	52.445	2.60%	-0.57%
			2680	2.332	52.023	2.277	52.407	2.42%	-0.73%
			2700	2.359	51.937	2.305	52.382	2.34%	-0.85%
03/13/2023	2450 Body	23.2	2300	1.843	52.054	1.809	52.900	1.88%	-1.60%
			2310	1.857	52.014	1.816	52.887	2.26%	-1.65%
			2320	1.871	51.974	1.826	52.873	2.46%	-1.70%
			2400	1.977	51.672	1.902	52.767	3.94%	-2.08%
			2450	2.047	51.474	1.950	52.700	4.97%	-2.33%
			2480	2.086	51.361	1.993	52.662	4.67%	-2.47%
			2500	2.111	51.285	2.021	52.636	4.45%	-2.57%
			2510	2.125	51.246	2.035	52.623	4.42%	-2.62%
			2535	2.163	51.151	2.071	52.592	4.44%	-2.74%
			2550	2.185	51.086	2.092	52.573	4.45%	-2.83%
			2560	2.200	51.051	2.106	52.560	4.46%	-2.87%
			2600	2.253	50.921	2.163	52.509	4.16%	-3.02%
			2650	2.326	50.703	2.234	52.445	4.12%	-3.32%
			2680	2.370	50.594	2.277	52.407	4.08%	-3.46%
			2700	2.398	50.525	2.305	52.382	4.03%	-3.55%
03/15/2023	2450 Body	23.2	2300	1.817	51.538	1.809	52.900	0.44%	-2.57%
			2310	1.830	51.498	1.816	52.887	0.77%	-2.63%
			2320	1.843	51.458	1.826	52.873	0.93%	-2.68%
			2400	1.951	51.154	1.902	52.767	2.58%	-3.06%
			2450	2.018	50.947	1.950	52.700	3.49%	-3.33%
			2480	2.058	50.842	1.993	52.662	3.26%	-3.46%
			2500	2.084	50.768	2.021	52.636	3.12%	-3.55%
			2510	2.097	50.727	2.035	52.623	3.05%	-3.60%
			2535	2.132	50.621	2.071	52.592	2.95%	-3.75%
			2550	2.154	50.559	2.092	52.573	2.96%	-3.83%
			2560	2.167	50.526	2.106	52.560	2.90%	-3.87%
			2600	2.222	50.389	2.163	52.509	2.73%	-4.04%
			2650	2.294	50.179	2.234	52.445	2.69%	-4.32%
			2680	2.334	50.075	2.277	52.407	2.50%	-4.45%
			2700	2.362	49.995	2.305	52.382	2.47%	-4.56%
03/14/2023	3600 Body	23.4	3300	3.203	51.585	3.080	51.593	3.99%	-0.02%
			3350	3.250	51.502	3.139	51.525	3.54%	-0.04%
			3450	3.359	51.359	3.256	51.389	3.16%	-0.06%
			3500	3.410	51.275	3.314	51.321	2.90%	-0.09%
			3550	3.466	51.181	3.372	51.254	2.79%	-0.14%
			3560	3.476	51.180	3.384	51.240	2.72%	-0.12%
			3600	3.519	51.130	3.431	51.186	2.56%	-0.11%
			3650	3.573	51.059	3.489	51.118	2.41%	-0.12%
			3690	3.618	50.999	3.536	51.063	2.32%	-0.13%
			3700	3.630	50.983	3.548	51.050	2.31%	-0.13%
			3750	3.685	50.932	3.606	50.982	2.19%	-0.10%
			3900	3.863	50.715	3.781	50.779	2.17%	-0.13%
			3930	3.897	50.665	3.816	50.738	2.12%	-0.14%
			4100	4.104	50.422	4.015	50.507	2.22%	-0.17%
			4150	4.162	50.369	4.073	50.439	2.19%	-0.14%

Table 10-6
Measured Body Tissue Properties (cont.)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/16/2023	3600 Body	19.6	3300	2.950	49.995	3.080	51.593	-4.22%	-3.10%
			3350	3.012	49.922	3.139	51.525	-4.05%	-3.11%
			3450	3.126	49.743	3.256	51.389	-3.99%	-3.20%
			3500	3.172	49.669	3.314	51.321	-4.28%	-3.22%
			3550	3.244	49.561	3.372	51.254	-3.80%	-3.30%
			3560	3.255	49.561	3.384	51.240	-3.81%	-3.28%
			3600	3.290	49.511	3.431	51.186	-4.11%	-3.27%
			3650	3.362	49.397	3.489	51.118	-3.64%	-3.37%
			3690	3.403	49.359	3.536	51.063	-3.76%	-3.34%
			3700	3.413	49.345	3.548	51.050	-3.80%	-3.34%
			3750	3.479	49.214	3.606	50.982	-3.52%	-3.47%
			3900	3.677	49.019	3.781	50.779	-2.75%	-3.47%
			3930	3.699	48.975	3.816	50.738	-3.07%	-3.47%
			4100	3.941	48.608	4.015	50.507	-1.84%	-3.76%
			4150	4.002	48.608	4.073	50.439	-1.74%	-3.63%
03/20/2023	3600 Body	23.5	3300	3.231	49.877	3.080	51.593	4.90%	-3.33%
			3350	3.282	49.803	3.139	51.525	4.56%	-3.34%
			3450	3.382	49.633	3.256	51.389	3.87%	-3.42%
			3500	3.434	49.546	3.314	51.321	3.62%	-3.46%
			3550	3.487	49.487	3.372	51.254	3.41%	-3.45%
			3560	3.495	49.474	3.384	51.240	3.28%	-3.45%
			3600	3.540	49.398	3.431	51.186	3.18%	-3.49%
			3650	3.596	49.335	3.489	51.118	3.07%	-3.49%
			3690	3.636	49.259	3.536	51.063	2.83%	-3.53%
			3700	3.647	49.253	3.548	51.050	2.79%	-3.52%
			3750	3.702	49.201	3.606	50.982	2.66%	-3.49%
			3900	3.873	48.958	3.781	50.779	2.43%	-3.59%
			3930	3.911	48.915	3.816	50.738	2.49%	-3.59%
			4100	4.112	48.670	4.015	50.507	2.42%	-3.64%
			4150	4.175	48.628	4.073	50.439	2.50%	-3.59%
02/28/2023	5200-5800 Body	21.9	5180	5.092	48.702	5.276	49.041	-3.49%	-0.69%
			5190	5.107	48.663	5.288	49.028	-3.42%	-0.74%
			5200	5.123	48.639	5.299	49.014	-3.32%	-0.77%
			5210	5.138	48.638	5.311	49.001	-3.26%	-0.74%
			5220	5.155	48.630	5.323	48.987	-3.16%	-0.73%
			5240	5.183	48.582	5.346	48.960	-3.05%	-0.77%
			5250	5.194	48.566	5.358	48.947	-3.06%	-0.78%
			5260	5.204	48.553	5.369	48.933	-3.07%	-0.78%
			5270	5.219	48.529	5.381	48.919	-3.01%	-0.80%
			5280	5.237	48.507	5.393	48.906	-2.89%	-0.82%
			5290	5.255	48.494	5.404	48.892	-2.76%	-0.81%
			5300	5.271	48.480	5.416	48.879	-2.68%	-0.82%
			5310	5.284	48.464	5.428	48.865	-2.65%	-0.82%
			5320	5.299	48.440	5.439	48.851	-2.57%	-0.84%
			5500	5.533	48.102	5.650	48.607	-2.07%	-1.04%
			5510	5.546	48.077	5.661	48.594	-2.03%	-1.06%
			5520	5.561	48.054	5.673	48.580	-1.97%	-1.08%
			5530	5.580	48.030	5.685	48.566	-1.85%	-1.10%
			5540	5.601	48.011	5.696	48.553	-1.67%	-1.12%
			5550	5.617	47.986	5.708	48.539	-1.59%	-1.14%
			5560	5.629	47.975	5.720	48.526	-1.59%	-1.14%
			5580	5.655	47.951	5.743	48.499	-1.53%	-1.13%
			5600	5.687	47.903	5.766	48.471	-1.37%	-1.17%
			5610	5.700	47.885	5.778	48.458	-1.35%	-1.18%
			5620	5.716	47.861	5.790	48.444	-1.28%	-1.20%
			5640	5.753	47.830	5.813	48.417	-1.03%	-1.21%
			5660	5.780	47.811	5.837	48.390	-0.98%	-1.20%
			5670	5.793	47.797	5.848	48.376	-0.94%	-1.20%
			5680	5.808	47.777	5.860	48.363	-0.89%	-1.21%
			5690	5.824	47.762	5.872	48.349	-0.82%	-1.21%
			5700	5.840	47.745	5.883	48.336	-0.73%	-1.22%
			5710	5.854	47.738	5.895	48.322	-0.70%	-1.21%
			5720	5.867	47.721	5.907	48.309	-0.68%	-1.22%
			5745	5.905	47.665	5.936	48.275	-0.52%	-1.26%
			5750	5.909	47.657	5.942	48.268	-0.56%	-1.27%
			5755	5.916	47.646	5.947	48.261	-0.52%	-1.27%
			5765	5.928	47.629	5.959	48.248	-0.52%	-1.28%
			5775	5.942	47.606	5.971	48.234	-0.49%	-1.30%
			5785	5.957	47.584	5.982	48.220	-0.42%	-1.32%
			5795	5.972	47.561	5.994	48.207	-0.37%	-1.34%
			5800	5.980	47.547	6.000	48.200	-0.33%	-1.35%
			5805	5.986	47.536	6.006	48.193	-0.33%	-1.36%
			5825	6.013	47.496	6.029	48.166	-0.27%	-1.39%
			5835	6.031	47.480	6.042	48.130	-0.18%	-1.35%
			5845	6.038	47.466	6.054	48.110	-0.26%	-1.34%
			5855	6.046	47.456	6.066	48.093	-0.33%	-1.32%
			5865	6.060	47.442	6.077	48.080	-0.28%	-1.33%
			5875	6.077	47.422	6.088	48.067	-0.18%	-1.34%
			5885	6.091	47.411	6.100	48.053	-0.15%	-1.34%
			5905	6.114	47.375	6.122	48.027	-0.13%	-1.36%

Table 10-7
Measured Body Tissue Properties (cont.)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
03/06/2023	5200-5800 Body	19.7	5180	5.072	47.594	5.276	49.041	-3.87%	-2.95%
			5190	5.087	47.573	5.288	49.028	-3.80%	-2.97%
			5200	5.102	47.552	5.299	49.014	-3.72%	-2.98%
			5210	5.120	47.533	5.311	49.001	-3.60%	-3.00%
			5220	5.132	47.514	5.323	48.987	-3.59%	-3.01%
			5240	5.155	47.467	5.346	48.960	-3.57%	-3.05%
			5250	5.168	47.447	5.358	48.947	-3.55%	-3.06%
			5260	5.187	47.426	5.369	48.933	-3.39%	-3.08%
			5270	5.204	47.413	5.381	48.919	-3.29%	-3.08%
			5280	5.218	47.398	5.393	48.906	-3.24%	-3.08%
			5290	5.231	47.376	5.404	48.892	-3.20%	-3.10%
			5300	5.243	47.356	5.416	48.879	-3.19%	-3.12%
			5310	5.257	47.340	5.428	48.865	-3.15%	-3.12%
			5320	5.275	47.335	5.439	48.851	-3.02%	-3.10%
			5500	5.516	46.982	5.650	48.607	-2.37%	-3.34%
			5510	5.528	46.968	5.661	48.594	-2.35%	-3.35%
			5520	5.543	46.952	5.673	48.580	-2.29%	-3.35%
			5530	5.559	46.932	5.685	48.566	-2.22%	-3.36%
			5540	5.579	46.907	5.696	48.553	-2.05%	-3.39%
			5550	5.594	46.880	5.708	48.539	-2.00%	-3.42%
			5560	5.607	46.855	5.720	48.526	-1.98%	-3.44%
			5580	5.631	46.811	5.743	48.499	-1.95%	-3.48%
			5600	5.663	46.778	5.766	48.471	-1.79%	-3.49%
			5610	5.681	46.760	5.778	48.458	-1.68%	-3.50%
			5620	5.699	46.736	5.790	48.444	-1.57%	-3.53%
			5640	5.726	46.703	5.813	48.417	-1.50%	-3.54%
			5660	5.751	46.675	5.837	48.390	-1.47%	-3.54%
			5670	5.766	46.648	5.848	48.376	-1.40%	-3.57%
			5680	5.780	46.627	5.860	48.363	-1.37%	-3.59%
			5690	5.795	46.602	5.872	48.349	-1.31%	-3.61%
			5700	5.812	46.583	5.883	48.336	-1.21%	-3.63%
			5710	5.828	46.563	5.895	48.322	-1.14%	-3.64%
			5720	5.845	46.542	5.907	48.309	-1.05%	-3.66%
			5745	5.880	46.502	5.936	48.275	-0.94%	-3.67%
			5750	5.886	46.497	5.942	48.268	-0.94%	-3.67%
			5755	5.892	46.490	5.947	48.261	-0.92%	-3.67%
			5765	5.904	46.465	5.959	48.248	-0.92%	-3.70%
			5775	5.917	46.450	5.971	48.234	-0.90%	-3.70%
			5785	5.933	46.435	5.982	48.220	-0.82%	-3.70%
			5795	5.953	46.416	5.994	48.207	-0.68%	-3.72%
			5800	5.962	46.403	6.000	48.200	-0.63%	-3.73%
			5805	5.968	46.384	6.006	48.193	-0.63%	-3.75%
			5825	5.998	46.346	6.029	48.166	-0.51%	-3.78%
			5835	6.011	46.342	6.042	48.130	-0.51%	-3.71%
			5845	6.022	46.325	6.054	48.110	-0.53%	-3.71%
			5855	6.033	46.291	6.066	48.093	-0.54%	-3.75%
			5865	6.042	46.269	6.077	48.080	-0.58%	-3.77%
			5875	6.056	46.268	6.088	48.067	-0.53%	-3.74%
			5885	6.069	46.256	6.100	48.053	-0.51%	-3.74%
			5905	6.100	46.225	6.122	48.027	-0.36%	-3.75%

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

10.2 Test System Verification

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

Table 10-2
System Verification Results

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	DAE	Measured SAR 1g (W/kg)	1W Target SAR 1g (W/kg)	1W Normalized SAR 1g (W/kg)	Deviation 1g (%)	Measured SAR 10g (W/kg)	1W Target SAR 10g (W/kg)	1W Normalized SAR 10g (W/kg)	Deviation 10g (%)
G	13	HEAD	02/28/2023	23.2	21.2	1.00	1002	7417	665	0.503	0.557	0.503	-9.69%	0.313	0.346	0.313	-9.54%
C	750	HEAD	03/09/2023	22.3	21.6	0.20	1161	7406	1677	1.690	8.440	8.450	0.12%	1.110	5.510	5.550	0.73%
K	750	HEAD	03/20/2023	22.3	21.9	0.20	1161	7659	1407	1.770	8.440	8.850	4.86%	1.160	5.510	5.800	5.26%
C	835	HEAD	03/07/2023	22.0	20.1	0.20	4d132	7406	1677	2.020	9.660	10.100	4.55%	1.310	6.270	6.550	4.47%
AM5	835	HEAD	03/10/2023	22.2	21.8	0.20	460	7639	1646	2.030	9.720	10.150	4.42%	1.310	6.340	6.550	3.31%
L	835	HEAD	03/14/2023	19.6	19.8	0.20	4d132	7410	1583	2.040	9.660	10.200	5.59%	1.340	6.270	6.700	6.86%
P	1750	HEAD	03/13/2023	19.1	19.0	0.10	1008	7409	1334	3.480	37.400	34.800	-6.95%	1.870	19.600	18.700	-4.59%
K	1750	HEAD	03/16/2023	22.3	21.3	0.10	1148	7659	1407	3.690	37.200	36.900	-0.81%	1.960	19.400	19.600	1.03%
P	1900	HEAD	03/10/2023	21.4	19.3	0.10	5d149	7409	1334	3.980	40.500	39.800	-1.73%	2.080	21.200	20.800	-1.89%
P	1900	HEAD	03/13/2023	19.1	19.0	0.10	5d149	7409	1334	3.940	40.500	39.400	-2.72%	2.050	21.200	20.500	-3.30%
S	1900	HEAD	03/15/2023	19.1	19.4	0.10	5d148	7713	1530	4.260	40.100	42.600	6.23%	2.230	21.000	22.300	6.19%
AM3	2300	HEAD	03/10/2023	21.0	20.6	0.10	1064	3837	793	4.820	48.900	48.200	-1.43%	2.280	23.400	22.800	-2.56%
P	2300	HEAD	03/13/2023	19.1	19.0	0.10	1073	7409	1334	5.100	48.600	51.000	4.94%	2.450	23.700	24.500	3.38%
C	2450	HEAD	03/02/2023	21.5	21.0	0.10	981	7406	1677	5.090	53.900	50.900	-5.57%	2.390	25.400	23.900	-5.91%
L	2450	HEAD	03/06/2023	21.7	20.5	0.10	797	7410	1583	5.290	52.000	52.900	1.73%	2.470	24.400	24.700	1.23%
L	2600	HEAD	03/06/2023	21.7	20.5	0.10	1064	7410	1583	5.560	56.400	55.600	-1.42%	2.490	25.200	24.900	-1.19%
AM1	2600	HEAD	03/20/2023	22.1	19.4	0.10	1069	7420	1333	5.460	55.600	54.600	-1.80%	2.450	24.900	24.500	-1.61%
AM7	3500	HEAD	03/15/2023	21.6	21.0	0.10	1055	7416	701	6.860	66.000	68.600	3.94%	2.640	24.900	26.400	6.02%
C	3500	HEAD	03/20/2023	21.7	19.0	0.10	1097	7406	1677	6.200	65.400	62.000	-5.20%	2.360	24.700	23.600	-4.45%
AM7	3700	HEAD	03/15/2023	21.6	21.0	0.10	1097	7416	701	6.400	68.100	64.000	-6.02%	2.370	24.500	23.700	-3.27%
C	3700	HEAD	03/20/2023	21.7	19.0	0.10	1018	7406	1677	6.560	67.000	65.600	-2.09%	2.460	24.200	24.600	1.65%
AM7	3900	HEAD	03/15/2023	21.6	21.0	0.10	1062	7416	701	6.430	68.600	64.300	-6.27%	2.290	23.800	22.900	-3.78%
O	5250	HEAD	03/12/2023	19.1	19.0	0.05	1057	7570	1558	3.860	81.200	77.200	-4.93%	1.120	23.200	22.400	-3.45%
O	5600	HEAD	03/12/2023	19.1	19.0	0.05	1057	7570	1558	4.190	84.200	83.800	-0.48%	1.200	23.900	24.000	0.42%
O	5750	HEAD	03/12/2023	19.1	19.0	0.05	1057	7570	1558	3.990	80.800	79.800	-1.24%	1.130	22.900	22.600	-1.31%
O	5800	HEAD	03/12/2023	19.1	19.0	0.05	1057	7570	1558	3.960	82.100	79.200	-3.53%	1.120	23.000	22.400	-2.61%
O	750	BODY	03/06/2023	22.7	20.3	0.20	1161	7570	1558	1.730	8.790	8.650	-1.59%	1.150	5.840	5.750	-1.54%
AM5	750	BODY	03/07/2023	21.4	20.5	0.20	1094	7639	1646	1.720	8.670	8.600	-0.81%	1.140	5.720	5.700	-0.35%
O	750	BODY	03/09/2023	20.7	19.6	0.20	1161	7570	1558	1.750	8.790	8.750	-0.46%	1.160	5.840	5.800	-0.68%
C	835	BODY	03/06/2023	23.7	20.1	0.20	4d132	7406	1677	2.020	9.810	10.100	2.96%	1.330	6.440	6.650	3.26%
AM5	835	BODY	03/09/2023	22.0	19.8	0.20	460	7639	1646	1.990	9.790	9.950	1.63%	1.320	6.460	6.600	2.17%
C	835	BODY	03/14/2023	22.9	19.7	0.20	4d132	7406	1677	1.860	9.810	9.300	-5.20%	1.220	6.440	6.100	-5.28%
AM5	1750	BODY	03/13/2023	21.9	20.8	0.10	1104	7639	1646	3.490	36.300	34.900	-3.86%	1.850	19.300	18.500	-4.15%
C	1750	BODY	03/14/2023	21.7	19.7	0.10	1008	7406	1677	3.820	37.800	38.200	1.06%	2.030	19.900	20.300	2.01%
P	1750	BODY	03/15/2023	19.1	19.0	0.10	1150	7409	1334	3.840	37.800	38.400	1.59%	2.070	20.000	20.700	3.50%
P	1750	BODY	03/19/2023	21.9	19.4	0.10	1150	7409	1334	3.890	37.800	38.900	2.91%	2.090	20.000	20.900	4.50%
AM5	1900	BODY	03/13/2023	21.9	20.8	0.10	5d181	7639	1646	4.040	39.700	40.400	1.76%	2.080	21.000	20.800	-0.95%
P	1900	BODY	03/15/2023	19.1	19.0	0.10	5d148	7409	1334	4.320	39.900	43.200	8.27%	2.250	20.900	22.500	7.66%
P	1900	BODY	03/17/2023	21.1	19.3	0.10	5d148	7409	1334	4.170	39.900	41.700	4.51%	2.180	20.900	21.800	4.31%
D	1900	BODY	03/20/2023	22.1	21.9	0.10	5d149	7551	1323	3.950	40.400	39.500	-2.23%	2.050	21.100	20.500	-2.84%
AM1	2300	BODY	03/13/2023	22.3	21.3	0.10	1038	7420	1333	5.010	47.300	50.100	5.92%	2.370	22.800	23.700	3.95%
D	2300	BODY	03/13/2023	22.3	21.7	0.10	1073	7551	1323	4.660	48.100	46.600	-3.12%	2.210	23.600	22.100	-6.36%
AM1	2300	BODY	03/15/2023	22.1	22.3	0.10	1064	7420	1333	4.920	48.400	49.200	1.65%	2.370	23.300	23.700	1.72%
L	2450	BODY	03/01/2023	22.3	20.5	0.10	981	7410	1583	5.140	50.300	51.400	2.19%	2.380	23.700	23.800	0.42%
D	2450	BODY	03/13/2023	22.3	21.7	0.10	981	7551	1323	4.830	50.300	48.300	-3.98%	2.190	23.700	21.900	-7.59%
AM1	2450	BODY	03/15/2023	22.1	22.3	0.10	750	7420	1333	5.200	50.500	52.000	2.97%	2.390	23.900	23.900	0.00%
D	2600	BODY	03/13/2023	22.3	21.7	0.10	1071	7551	1323	5.280	54.300	52.800	-2.76%	2.300	24.300	23.000	-5.35%
AM1	2600	BODY	03/15/2023	22.1	22.3	0.10	1069	7420	1333	5.530	54.400	55.300	1.65%	2.420	24.200	24.200	0.00%
AM3	3500	BODY	03/14/2023	22.1	21.6	0.10	1126	3837	793	6.050	63.600	60.500	-4.87%	2.230	23.600	22.300	-5.51%
L	3500	BODY	03/16/2023	21.3	19.7	0.10	1059	7410	1583	5.970	63.000	59.700	-5.24%	2.260	23.300	22.600	-3.00%
AM3	3500	BODY	03/20/2023	21.7	21.6	0.10	1126	3837	793	6.760	63.600	67.600	6.29%	2.490	23.600	24.900	5.51%
AM3	3700	BODY	03/14/2023	22.1	21.6	0.10	1097	3837	793	5.940	62.300	59.400	-4.65%	2.130	22.200	21.300	-4.05%
L	3700	BODY	03/16/2023	21.3	19.7	0.10	1067	7410	1583	6.310	64.200	63.100	-1.71%	2.320	23.000	23.200	0.87%
AM3	3700	BODY	03/20/2023	21.7	21.6	0.10	1097	3837	793	6.570	62.300	65.700	5.46%	2.340	22.200	23.400	5.41%
AM3	3900	BODY	03/14/2023	22.1	21.6	0.10	1062	3837	793	6.920	66.300	69.200	4.37%	2.370	23.100	23.700	2.60%
AM3	3900	BODY	03/20/2023	21.7	21.6	0.10	1062	3837	793	7.150	66.300	71.500	7.84%	2.450	23.100	24.500	6.06%
K	5250	BODY	02/28/2023	22.3	21.9	0.05	1191	7659	1407	3.540	74.600	70.800	-5.09%	1.010	20.700	20.200	-2.42%
K	5250	BODY	03/06/2023	23.0	21.3	0.05	1057	7659	1407	3.460	74.200	69.200	-6.74%	0.992	20.600	19.840	-3.69%
K	5600	BODY	02/28/2023	22.3	21.9	0.05	1191	7659	1407	3.760	78.600	75.200	-4.33%	1.070	21.800	21.400	-1.83%
K	5600	BODY	03/06/2023	23.0	21.3	0.05	1057	7659	1407	3.940	77.000	78.800	2.34%	1.110	21.200	22.200	4.72%
K	5750	BODY	02/28/2023	22.3	21.9	0.05	1191	7659	1407	3.500	74.900	70.000	-6.54%	0.993	20.700	19.860	-4.06%
K	5750	BODY	03/06/2023	23.0	21.3	0.05	1057	7659	1407	3.570	74.900	71.400	-4.67%	1.010	20.700	20.200	-2.42%
K	5800	BODY	02/28/2023	22.3	21.9	0.05	1191	7659	1407	3.530	72.200	70.600	-2.22%	1.000	20.000	20.000	0.00%
K	5800	BODY	03/06/2023	23.0	21.3	0.05	1057	7659	1407	3.970	74.800	79.400	6.15%	1.110	20.500	22.200	8.29%

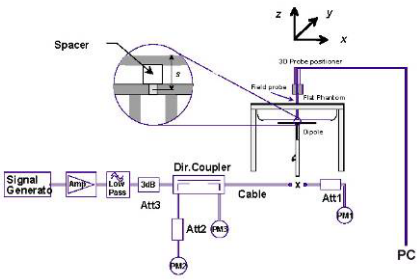

Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM/DTM 850 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	# of Time Slots	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	Right	Cheek	GSM 850	GSM	Main 1	02946	N/A	32.9	31.94	0.02	1:8.3	0.106	1.247	0.132	A1
836.60	190	Right	Tilt	GSM 850	GSM	Main 1	02946	N/A	32.9	31.94	0.07	1:8.3	0.045	1.247	0.056	
836.60	190	Left	Cheek	GSM 850	GSM	Main 1	02946	N/A	32.9	31.94	0.02	1:8.3	0.070	1.247	0.087	
836.60	190	Left	Tilt	GSM 850	GSM	Main 1	02946	N/A	32.9	31.94	0.02	1:8.3	0.033	1.247	0.041	
824.20	128	Right	Cheek	GSM 850	DTM	Main 1	02946	3	28.1	26.95	0.06	1:2.76	0.096	1.303	0.125	
824.20	128	Right	Tilt	GSM 850	DTM	Main 1	02946	3	28.1	26.95	-0.03	1:2.76	0.039	1.303	0.051	
824.20	128	Left	Cheek	GSM 850	DTM	Main 1	02946	3	28.1	26.95	0.05	1:2.76	0.067	1.303	0.087	
824.20	128	Left	Tilt	GSM 850	DTM	Main 1	02946	3	28.1	26.95	0.00	1:2.76	0.015	1.303	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-2
GSM/DTM 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	# of Time Slots	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1850.20	512	Right	Cheek	GSM 1900	GSM	Main 2	02946	N/A	28.0	26.98	0.03	1:8.3	0.037	1.265	0.047	A2
1850.20	512	Right	Tilt	GSM 1900	GSM	Main 2	02946	N/A	28.0	26.98	0.19	1:8.3	0.016	1.265	0.020	
1850.20	512	Left	Cheek	GSM 1900	GSM	Main 2	02946	N/A	28.0	26.98	0.10	1:8.3	0.027	1.265	0.034	
1850.20	512	Left	Tilt	GSM 1900	GSM	Main 2	02946	N/A	28.0	26.98	0.07	1:8.3	0.021	1.265	0.027	
1880.00	661	Right	Cheek	GSM 1900	DTM	Main 2	02946	3	23.2	22.10	0.13	1:2.76	0.031	1.288	0.040	
1880.00	661	Right	Tilt	GSM 1900	DTM	Main 2	02946	3	23.2	22.10	0.03	1:2.76	0.014	1.288	0.018	
1880.00	661	Left	Cheek	GSM 1900	DTM	Main 2	02946	3	23.2	22.10	0.06	1:2.76	0.031	1.288	0.040	
1880.00	661	Left	Tilt	GSM 1900	DTM	Main 2	02946	3	23.2	22.10	0.00	1:2.76	0.018	1.288	0.023	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
846.60	4233	Right	Cheek	UMTS 850	RMC	Main 1	02946	23.0	21.80	-0.09	1:1	0.118	1.318	0.156	A3
846.60	4233	Right	Tilt	UMTS 850	RMC	Main 1	02946	23.0	21.80	-0.02	1:1	0.053	1.318	0.070	
846.60	4233	Left	Cheek	UMTS 850	RMC	Main 1	02946	23.0	21.80	-0.02	1:1	0.084	1.318	0.111	
846.60	4233	Left	Tilt	UMTS 850	RMC	Main 1	02946	23.0	21.80	0.03	1:1	0.044	1.318	0.058	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	Right	Cheek	UMTS 1750	RMC	Main 2	02946	19.0	17.60	0.14	1:1	0.027	1.380	0.037	A4
1732.40	1412	Right	Tilt	UMTS 1750	RMC	Main 2	02946	19.0	17.60	0.11	1:1	0.018	1.380	0.025	
1732.40	1412	Left	Cheek	UMTS 1750	RMC	Main 2	02946	19.0	17.60	0.02	1:1	0.018	1.380	0.025	
1732.40	1412	Left	Tilt	UMTS 1750	RMC	Main 2	02946	19.0	17.60	0.03	1:1	0.016	1.380	0.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	9400	Right	Cheek	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.06	1:1	0.059	1.416	0.084	A5
1880.00	9400	Right	Tilt	UMTS 1900	RMC	Main 2	02144	20.0	18.49	-0.15	1:1	0.027	1.416	0.038	
1880.00	9400	Left	Cheek	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.10	1:1	0.053	1.416	0.075	
1880.00	9400	Left	Tilt	UMTS 1900	RMC	Main 2	02144	20.0	18.49	-0.19	1:1	0.030	1.416	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 11-6
LTE Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	Right	Cheek	LTE Band 71	Main 1	02946	20	QPSK	1	99	25.0	24.08	0	-0.03	1:1	0.098	1.236	0.121	A6
680.50	133297	Mid	Right	Cheek	LTE Band 71	Main 1	02946	20	QPSK	50	50	24.0	23.01	1	0.01	1:1	0.077	1.256	0.097	
680.50	133297	Mid	Right	Tilt	LTE Band 71	Main 1	02946	20	QPSK	1	99	25.0	24.08	0	0.06	1:1	0.036	1.236	0.044	
680.50	133297	Mid	Right	Tilt	LTE Band 71	Main 1	02946	20	QPSK	50	50	24.0	23.01	1	0.01	1:1	0.029	1.256	0.036	
680.50	133297	Mid	Left	Cheek	LTE Band 71	Main 1	02946	20	QPSK	1	99	25.0	24.08	0	0.02	1:1	0.084	1.236	0.104	
680.50	133297	Mid	Left	Cheek	LTE Band 71	Main 1	02946	20	QPSK	50	50	24.0	23.01	1	-0.01	1:1	0.077	1.256	0.097	
680.50	133297	Mid	Left	Tilt	LTE Band 71	Main 1	02946	20	QPSK	1	99	25.0	24.08	0	0.10	1:1	0.037	1.236	0.046	
680.50	133297	Mid	Left	Tilt	LTE Band 71	Main 1	02946	20	QPSK	50	50	24.0	23.01	1	-0.13	1:1	0.034	1.256	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 11-7
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	Right	Cheek	LTE Band 12	Main 1	02946	10	QPSK	1	0	25.0	24.54	0	-0.17	1:1	0.104	1.112	0.116	
707.50	23095	Mid	Right	Cheek	LTE Band 12	Main 1	02946	10	QPSK	25	12	24.0	23.34	1	0.01	1:1	0.088	1.164	0.102	
707.50	23095	Mid	Right	Tilt	LTE Band 12	Main 1	02946	10	QPSK	1	0	25.0	24.54	0	0.02	1:1	0.035	1.112	0.039	
707.50	23095	Mid	Right	Tilt	LTE Band 12	Main 1	02946	10	QPSK	25	12	24.0	23.34	1	0.14	1:1	0.028	1.164	0.033	
707.50	23095	Mid	Left	Cheek	LTE Band 12	Main 1	02946	10	QPSK	1	0	25.0	24.54	0	-0.04	1:1	0.101	1.112	0.112	
707.50	23095	Mid	Left	Cheek	LTE Band 12	Main 1	02946	10	QPSK	25	12	24.0	23.34	1	-0.03	1:1	0.078	1.164	0.091	
707.50	23095	Mid	Left	Tilt	LTE Band 12	Main 1	02946	10	QPSK	1	0	25.0	24.54	0	0.06	1:1	0.034	1.112	0.038	
707.50	23095	Mid	Left	Tilt	LTE Band 12	Main 1	02946	10	QPSK	25	12	24.0	23.34	1	0.08	1:1	0.028	1.164	0.033	
707.50	23095	Mid	Right	Cheek	LTE Band 12	Sub	02169	10	QPSK	1	0	21.0	19.81	0	0.05	1:1	0.381	1.315	0.501	
707.50	23095	Mid	Right	Cheek	LTE Band 12	Sub	02169	10	QPSK	25	25	21.0	19.70	0	-0.04	1:1	0.321	1.349	0.433	
707.50	23095	Mid	Right	Tilt	LTE Band 12	Sub	02169	10	QPSK	1	0	21.0	19.81	0	0.05	1:1	0.223	1.315	0.293	
707.50	23095	Mid	Right	Tilt	LTE Band 12	Sub	02169	10	QPSK	25	25	21.0	19.70	0	0.02	1:1	0.217	1.349	0.293	
707.50	23095	Mid	Left	Cheek	LTE Band 12	Sub	02169	10	QPSK	1	0	21.0	19.81	0	0.01	1:1	0.425	1.315	0.559	
707.50	23095	Mid	Left	Cheek	LTE Band 12	Sub	02169	10	QPSK	25	25	21.0	19.70	0	0.00	1:1	0.439	1.349	0.592	A7
707.50	23095	Mid	Left	Tilt	LTE Band 12	Sub	02169	10	QPSK	1	0	21.0	19.81	0	0.01	1:1	0.238	1.315	0.313	
707.50	23095	Mid	Left	Tilt	LTE Band 12	Sub	02169	10	QPSK	25	25	21.0	19.70	0	0.02	1:1	0.245	1.349	0.331	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-8
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	Right	Cheek	LTE Band 13	Main 1	02946	10	QPSK	1	0	25.0	24.05	0	-0.12	1:1	0.116	1.245	0.144	
782.00	23230	Mid	Right	Cheek	LTE Band 13	Main 1	02946	10	QPSK	25	25	24.0	23.03	1	-0.03	1:1	0.108	1.250	0.135	
782.00	23230	Mid	Right	Tilt	LTE Band 13	Main 1	02946	10	QPSK	1	0	25.0	24.05	0	0.01	1:1	0.048	1.245	0.060	
782.00	23230	Mid	Right	Tilt	LTE Band 13	Main 1	02946	10	QPSK	25	25	24.0	23.03	1	0.04	1:1	0.046	1.250	0.058	
782.00	23230	Mid	Left	Cheek	LTE Band 13	Main 1	02946	10	QPSK	1	0	25.0	24.05	0	0.12	1:1	0.100	1.245	0.125	
782.00	23230	Mid	Left	Cheek	LTE Band 13	Main 1	02946	10	QPSK	25	25	24.0	23.03	1	0.17	1:1	0.088	1.250	0.110	
782.00	23230	Mid	Left	Tilt	LTE Band 13	Main 1	02946	10	QPSK	1	0	25.0	24.05	0	0.04	1:1	0.060	1.245	0.075	
782.00	23230	Mid	Left	Tilt	LTE Band 13	Main 1	02946	10	QPSK	25	25	24.0	23.03	1	-0.02	1:1	0.047	1.250	0.059	
782.00	23230	Mid	Right	Cheek	LTE Band 13	Sub	02169	10	QPSK	1	0	21.0	19.48	0	0.05	1:1	0.414	1.419	0.587	
782.00	23230	Mid	Right	Cheek	LTE Band 13	Sub	02169	10	QPSK	25	0	21.0	19.42	0	-0.02	1:1	0.411	1.439	0.591	
782.00	23230	Mid	Right	Tilt	LTE Band 13	Sub	02169	10	QPSK	1	0	21.0	19.48	0	-0.05	1:1	0.236	1.419	0.335	
782.00	23230	Mid	Right	Tilt	LTE Band 13	Sub	02169	10	QPSK	25	0	21.0	19.42	0	0.07	1:1	0.231	1.439	0.332	
782.00	23230	Mid	Left	Cheek	LTE Band 13	Sub	02169	10	QPSK	1	0	21.0	19.48	0	0.00	1:1	0.504	1.419	0.715	A8
782.00	23230	Mid	Left	Cheek	LTE Band 13	Sub	02169	10	QPSK	25	0	21.0	19.42	0	0.01	1:1	0.487	1.439	0.701	
782.00	23230	Mid	Left	Tilt	LTE Band 13	Sub	02169	10	QPSK	1	0	21.0	19.48	0	-0.01	1:1	0.250	1.419	0.355	
782.00	23230	Mid	Left	Tilt	LTE Band 13	Sub	02169	10	QPSK	25	0	21.0	19.42	0	0.04	1:1	0.248	1.439	0.357	
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 5 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
836.50	20525	Mid	Right	Cheek	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	1	49	25.0	24.10	0	0.09	1:1	0.151	1.230	0.186	
836.50	20525	Mid	Right	Cheek	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	25	25	24.0	23.07	1	0.03	1:1	0.127	1.239	0.157	
836.50	20525	Mid	Right	Tilt	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	1	49	25.0	24.10	0	-0.02	1:1	0.058	1.230	0.071	
836.50	20525	Mid	Right	Tilt	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	25	25	24.0	23.07	1	-0.06	1:1	0.052	1.239	0.064	
836.50	20525	Mid	Left	Cheek	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	1	49	25.0	24.10	0	-0.05	1:1	0.129	1.230	0.159	
836.50	20525	Mid	Left	Cheek	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	25	25	24.0	23.07	1	-0.05	1:1	0.097	1.239	0.120	
836.50	20525	Mid	Left	Tilt	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	1	49	25.0	24.10	0	-0.06	1:1	0.064	1.230	0.079	
836.50	20525	Mid	Left	Tilt	LTE Band 5 (Cell)	Main 1	02946	10	QPSK	25	25	24.0	23.07	1	0.02	1:1	0.048	1.239	0.059	
836.50	20525	Mid	Right	Cheek	LTE Band 5 (Cell)	Sub	02169	10	QPSK	1	25	21.0	19.66	0	0.00	1:1	0.420	1.361	0.572	
836.50	20525	Mid	Right	Cheek	LTE Band 5 (Cell)	Sub	02169	10	QPSK	25	25	21.0	19.60	0	-0.02	1:1	0.419	1.380	0.578	
836.50	20525	Mid	Right	Tilt	LTE Band 5 (Cell)	Sub	02169	10	QPSK	1	25	21.0	19.66	0	-0.02	1:1	0.221	1.361	0.301	
836.50	20525	Mid	Right	Tilt	LTE Band 5 (Cell)	Sub	02169	10	QPSK	25	25	21.0	19.60	0	0.01	1:1	0.218	1.380	0.301	
836.50	20525	Mid	Left	Cheek	LTE Band 5 (Cell)	Sub	02169	10	QPSK	1	25	21.0	19.66	0	0.00	1:1	0.461	1.361	0.627	A9
836.50	20525	Mid	Left	Cheek	LTE Band 5 (Cell)	Sub	02169	10	QPSK	25	25	21.0	19.60	0	-0.02	1:1	0.459	1.380	0.633	
836.50	20525	Mid	Left	Tilt	LTE Band 5 (Cell)	Sub	02169	10	QPSK	1	25	21.0	19.66	0	-0.05	1:1	0.210	1.361	0.286	
836.50	20525	Mid	Left	Tilt	LTE Band 5 (Cell)	Sub	02169	10	QPSK	25	25	21.0	19.60	0	-0.03	1:1	0.212	1.380	0.293	
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 66 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1745.00	132322	Mid	Right	Cheek	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	1	0	25.0	24.21	0	0.09	1:1	0.116	1.199	0.139	
1745.00	132322	Mid	Right	Cheek	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	50	50	24.0	23.23	1	-0.01	1:1	0.095	1.194	0.113	
1745.00	132322	Mid	Right	Tilt	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	1	0	25.0	24.21	0	0.00	1:1	0.080	1.199	0.096	
1745.00	132322	Mid	Right	Tilt	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	50	50	24.0	23.23	1	-0.04	1:1	0.066	1.194	0.079	
1745.00	132322	Mid	Left	Cheek	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	1	0	25.0	24.21	0	0.04	1:1	0.065	1.199	0.078	
1745.00	132322	Mid	Left	Cheek	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	50	50	24.0	23.23	1	0.04	1:1	0.050	1.194	0.060	
1745.00	132322	Mid	Left	Tilt	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	1	0	25.0	24.21	0	-0.15	1:1	0.070	1.199	0.084	
1745.00	132322	Mid	Left	Tilt	LTE Band 66 (AWS)	Main 2	2946.00	20	QPSK	50	50	24.0	23.23	1	-0.04	1:1	0.054	1.194	0.064	
1745.00	132322	Mid	Right	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.03	1:1	0.522	1.288	0.672	
1745.00	132322	Mid	Right	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	0.01	1:1	0.545	1.285	0.700	
1745.00	132322	Mid	Right	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.03	1:1	0.581	1.288	0.748	
1745.00	132322	Mid	Right	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	0.00	1:1	0.589	1.285	0.757	
1720.00	132072	Low	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	99	17.0	15.86	0	-0.01	1:1	0.634	1.300	0.824	
1745.00	132322	Mid	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	-0.05	1:1	0.693	1.288	0.893	
1770.00	132572	High	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.74	0	0.05	1:1	0.646	1.337	0.864	
1720.00	132072	Low	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	25	17.0	15.90	0	0.04	1:1	0.663	1.288	0.854	
1745.00	132322	Mid	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	0.20	1:1	0.710	1.285	0.912	
1770.00	132572	High	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	0	17.0	15.71	0	0.02	1:1	0.676	1.346	0.910	
1745.00	132322	Mid	Left	Cheek	LTE Band 66 (AWS)	Sub	02185	20	QPSK	100	0	17.0	15.84	0	0.02	1:1	0.730	1.306	0.953	
1720.00	132072	Low	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	99	17.0	15.86	0	-0.01	1:1	0.709	1.300	0.922	
1745.00	132322	Mid	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	-0.02	1:1	0.755	1.288	0.972	
1770.00	132572	High	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.74	0	0.00	1:1	0.689	1.337	0.921	
1720.00	132072	Low	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	25	17.0	15.90	0	-0.03	1:1	0.753	1.288	0.970	
1745.00	132322	Mid	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	-0.03	1:1	0.759	1.285	0.975	A10
1770.00	132572	High	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	0	17.0	15.71	0	0.20	1:1	0.714	1.346	0.961	
1745.00	132322	Mid	Left	Tilt	LTE Band 66 (AWS)	Sub	02185	20	QPSK	100	0	17.0	15.84	0	-0.01	1:1	0.756	1.306	**0.987**	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Head** **1.6 W/kg (mW/g)** averaged over 1 gram								

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

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	Right	Cheek	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	1	0	25.0	24.30	0	0.05	1:1	0.165	1.175	0.194	A11
1860.00	26140	Low	Right	Cheek	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	50	25	24.0	23.14	1	0.10	1:1	0.130	1.219	0.158	
1860.00	26140	Low	Right	Tilt	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	1	0	25.0	24.30	0	0.09	1:1	0.096	1.175	0.113	
1860.00	26140	Low	Right	Tilt	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	50	25	24.0	23.14	1	0.04	1:1	0.059	1.219	0.072	
1860.00	26140	Low	Left	Cheek	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	1	0	25.0	24.30	0	-0.11	1:1	0.099	1.175	0.116	
1860.00	26140	Low	Left	Cheek	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	50	25	24.0	23.14	1	-0.12	1:1	0.087	1.219	0.106	
1860.00	26140	Low	Left	Tilt	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	1	0	25.0	24.30	0	-0.04	1:1	0.118	1.175	0.139	
1860.00	26140	Low	Left	Tilt	LTE Band 25 (PCS)	Main 2	02946	20	QPSK	50	25	24.0	23.14	1	0.07	1:1	0.082	1.219	0.100	
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 2 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	18700	Low	Right	Cheek	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.01	1:1	0.470	1.303	0.612	
1860.00	18700	Low	Right	Cheek	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.03	1:1	0.494	1.312	0.648	
1860.00	18700	Low	Right	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	-0.02	1:1	0.472	1.303	0.615	
1860.00	18700	Low	Right	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.02	1:1	0.494	1.312	0.648	
1860.00	18700	Low	Left	Cheek	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.03	1:1	0.536	1.303	0.698	
1860.00	18700	Low	Left	Cheek	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.04	1:1	0.556	1.312	0.729	
1860.00	18700	Low	Left	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.06	1:1	0.611	1.303	0.796	
1860.00	18700	Low	Left	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.01	1:1	0.642	1.312	0.842	A12
1880.00	18900	Mid	Left	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	50	16.0	14.81	0	0.02	1:1	0.594	1.315	0.781	
1900.00	19100	High	Left	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	50	16.0	14.79	0	-0.02	1:1	0.542	1.321	0.716	
1860.00	18700	Low	Left	Tilt	LTE Band 2 (PCS)	Sub	02185	20	QPSK	100	0	16.0	14.80	0	-0.03	1:1	0.604	1.318	0.796	
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 30 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
2310.00	27710	Mid	Right	Cheek	LTE Band 30	Main 2	02946	10	QPSK	1	25	24.0	23.37	0	-0.16	1:1	0.061	1.156	0.071	
2310.00	27710	Mid	Right	Cheek	LTE Band 30	Main 2	02946	10	QPSK	25	25	23.0	22.45	1	0.00	1:1	0.048	1.135	0.054	
2310.00	27710	Mid	Right	Tilt	LTE Band 30	Main 2	02946	10	QPSK	1	25	24.0	23.37	0	0.19	1:1	0.030	1.156	0.035	
2310.00	27710	Mid	Right	Tilt	LTE Band 30	Main 2	02946	10	QPSK	25	25	23.0	22.45	1	-0.06	1:1	0.021	1.135	0.024	
2310.00	27710	Mid	Left	Cheek	LTE Band 30	Main 2	02946	10	QPSK	1	25	24.0	23.37	0	0.15	1:1	0.061	1.156	0.071	
2310.00	27710	Mid	Left	Cheek	LTE Band 30	Main 2	02946	10	QPSK	25	25	23.0	22.45	1	0.08	1:1	0.043	1.135	0.049	
2310.00	27710	Mid	Left	Tilt	LTE Band 30	Main 2	02946	10	QPSK	1	25	24.0	23.37	0	0.01	1:1	0.035	1.156	0.040	
2310.00	27710	Mid	Left	Tilt	LTE Band 30	Main 2	02946	10	QPSK	25	25	23.0	22.45	1	0.03	1:1	0.030	1.135	0.034	
2310.00	27710	Mid	Right	Cheek	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	-0.01	1:1	0.374	1.245	0.466	
2310.00	27710	Mid	Right	Cheek	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.03	1:1	0.380	1.247	0.474	
2310.00	27710	Mid	Right	Tilt	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	0.00	1:1	0.378	1.245	0.471	
2310.00	27710	Mid	Right	Tilt	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.02	1:1	0.361	1.247	0.450	
2310.00	27710	Mid	Left	Cheek	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	0.01	1:1	0.534	1.245	0.665	A13
2310.00	27710	Mid	Left	Cheek	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	-0.01	1:1	0.525	1.247	0.655	
2310.00	27710	Mid	Left	Tilt	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	0.04	1:1	0.461	1.245	0.574	
2310.00	27710	Mid	Left	Tilt	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	-0.04	1:1	0.486	1.247	0.606	
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 11-14
LTE Band 41 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
2680.00	41490	High	Right	Cheek	LTE Band 41	Main 2	02946	20	QPSK	1	99	25.0	23.92	0	0.13	1:1.58	0.070	1.282	0.090	A14
2680.00	41490	High	Right	Cheek	LTE Band 41	Main 2	02946	20	QPSK	50	25	24.0	23.07	1	-0.02	1:1.58	0.054	1.239	0.067	
2680.00	41490	High	Right	Tilt	LTE Band 41	Main 2	02946	20	QPSK	1	99	25.0	23.92	0	0.02	1:1.58	0.032	1.282	0.041	
2680.00	41490	High	Right	Tilt	LTE Band 41	Main 2	02946	20	QPSK	50	25	24.0	23.07	1	0.00	1:1.58	0.030	1.239	0.037	
2680.00	41490	High	Left	Cheek	LTE Band 41	Main 2	02946	20	QPSK	1	99	25.0	23.92	0	0.11	1:1.58	0.055	1.282	0.071	
2680.00	41490	High	Left	Cheek	LTE Band 41	Main 2	02946	20	QPSK	50	25	24.0	23.07	1	-0.06	1:1.58	0.045	1.239	0.056	
2680.00	41490	High	Left	Tilt	LTE Band 41	Main 2	02946	20	QPSK	1	99	25.0	23.92	0	0.05	1:1.58	0.054	1.282	0.069	
2680.00	41490	High	Left	Tilt	LTE Band 41	Main 2	02946	20	QPSK	50	25	24.0	23.07	1	0.08	1:1.58	0.040	1.239	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-15
LTE Band 48 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Test Position	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
3603.30	55773	Low-Mid	Right	Cheek	LTE Band 48	Main 1	02946	20	QPSK	1	99	25.0	24.43	0	0.07	1:1.58	0.029	1.140	0.033	
3603.30	55773	Low-Mid	Right	Cheek	LTE Band 48	Main 1	02946	20	QPSK	50	50	24.0	23.59	1	0.09	1:1.58	0.025	1.099	0.027	
3603.30	55773	Low-Mid	Right	Tilt	LTE Band 48	Main 1	02946	20	QPSK	1	99	25.0	24.43	0	0.01	1:1.58	0.009	1.140	0.010	
3603.30	55773	Low-Mid	Right	Tilt	LTE Band 48	Main 1	02946	20	QPSK	50	50	24.0	23.59	1	0.07	1:1.58	0.007	1.099	0.008	
3603.30	55773	Low-Mid	Left	Cheek	LTE Band 48	Main 1	02946	20	QPSK	1	99	25.0	24.43	0	-0.03	1:1.58	0.017	1.140	0.019	
3603.30	55773	Low-Mid	Left	Cheek	LTE Band 48	Main 1	02946	20	QPSK	50	50	24.0	23.59	1	-0.02	1:1.58	0.014	1.099	0.015	
3603.30	55773	Low-Mid	Left	Tilt	LTE Band 48	Main 1	02946	20	QPSK	1	99	25.0	24.43	0	0.07	1:1.58	0.015	1.140	0.017	
3603.30	55773	Low-Mid	Left	Tilt	LTE Band 48	Main 1	02946	20	QPSK	50	50	24.0	23.59	1	0.05	1:1.58	0.011	1.099	0.012	
3690.00	56640	High	Right	Cheek	LTE Band 48	Sub-UHB	02169	20	QPSK	1	50	18.0	17.84	0	0.04	1:1.58	0.097	1.038	0.101	
3690.00	56640	High	Right	Cheek	LTE Band 48	Sub-UHB	02169	20	QPSK	50	50	18.0	17.96	0	-0.03	1:1.58	0.101	1.009	0.102	
3690.00	56640	High	Right	Tilt	LTE Band 48	Sub-UHB	02169	20	QPSK	1	50	18.0	17.84	0	0.05	1:1.58	0.077	1.038	0.080	
3690.00	56640	High	Right	Tilt	LTE Band 48	Sub-UHB	02169	20	QPSK	50	50	18.0	17.96	0	-0.16	1:1.58	0.079	1.009	0.080	
3690.00	56640	High	Left	Cheek	LTE Band 48	Sub-UHB	02169	20	QPSK	1	50	18.0	17.84	0	0.05	1:1.58	0.071	1.038	0.074	
3690.00	56640	High	Left	Cheek	LTE Band 48	Sub-UHB	02169	20	QPSK	50	50	18.0	17.96	0	-0.01	1:1.58	0.109	1.009	**0.110**	A15
3690.00	56640	High	Left	Tilt	LTE Band 48	Sub-UHB	02169	20	QPSK	1	50	18.0	17.84	0	0.12	1:1.58	0.072	1.038	0.075	
3690.00	56640	High	Left	Tilt	LTE Band 48	Sub-UHB	02169	20	QPSK	50	50	18.0	17.96	0	0.07	1:1.58	0.071	1.009	0.072	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-16
NR Band n71 Head SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
680.50	136100	Mid	Right	Cheek	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	1	104	25.0	23.69	0	0.02	1:1	0.093	1.352	0.126	
680.50	136100	Mid	Right	Cheek	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.86	0	0.07	1:1	0.102	1.300	0.133	A16
680.50	136100	Mid	Right	Cheek	NR Band n71	Main 1	02920	20	CP-OFDM	QPSK	1	1	23.5	22.08	1.5	-0.05	1:1	0.057	1.387	0.079	
680.50	136100	Mid	Right	Tilt	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	1	104	25.0	23.69	0	-0.07	1:1	0.033	1.352	0.045	
680.50	136100	Mid	Right	Tilt	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.86	0	-0.03	1:1	0.039	1.300	0.051	
680.50	136100	Mid	Left	Cheek	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	1	104	25.0	23.69	0	0.16	1:1	0.089	1.352	0.120	
680.50	136100	Mid	Left	Cheek	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.86	0	0.11	1:1	0.093	1.300	0.121	
680.50	136100	Mid	Left	Tilt	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	1	104	25.0	23.69	0	0.02	1:1	0.030	1.352	0.041	
680.50	136100	Mid	Left	Tilt	NR Band n71	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.86	0	-0.13	1:1	0.035	1.300	0.046	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-17
NR Band n5 Head SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	167300	Mid	Right	Cheek	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.62	0	-0.05	1:1	0.165	1.374	0.227	
836.50	167300	Mid	Right	Cheek	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.77	0	0.02	1:1	0.167	1.327	0.222	
836.50	167300	Mid	Right	Cheek	NR Band n5	Main 1	02920	20	CP-OFDM	QPSK	1	1	23.5	22.05	1.5	-0.07	1:1	0.118	1.396	0.165	
836.50	167300	Mid	Right	Tilt	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.62	0	0.04	1:1	0.068	1.374	0.093	
836.50	167300	Mid	Right	Tilt	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.77	0	-0.04	1:1	0.072	1.327	0.096	
836.50	167300	Mid	Left	Cheek	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.62	0	-0.04	1:1	0.128	1.374	0.176	
836.50	167300	Mid	Left	Cheek	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.77	0	-0.02	1:1	0.125	1.327	0.166	
836.50	167300	Mid	Left	Tilt	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.62	0	-0.09	1:1	0.065	1.374	0.089	
836.50	167300	Mid	Left	Tilt	NR Band n5	Main 1	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.77	0	0.05	1:1	0.062	1.327	0.082	
836.50	167300	Mid	Right	Cheek	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	21.0	20.36	0	-0.02	1:1	0.396	1.159	0.459	
836.50	167300	Mid	Right	Cheek	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	21.0	20.31	0	0.00	1:1	0.405	1.172	0.475	A17
836.50	167300	Mid	Right	Cheek	NR Band n5	Sub	02805	20	CP-OFDM	QPSK	1	1	21.0	20.24	0	-0.02	1:1	0.326	1.191	0.388	
836.50	167300	Mid	Right	Tilt	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	21.0	20.36	0	0.00	1:1	0.240	1.159	0.278	
836.50	167300	Mid	Right	Tilt	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	21.0	20.31	0	-0.01	1:1	0.315	1.172	0.369	
836.50	167300	Mid	Left	Cheek	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	21.0	20.36	0	0.01	1:1	0.380	1.159	0.440	
836.50	167300	Mid	Left	Cheek	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	21.0	20.31	0	-0.06	1:1	0.348	1.172	0.408	
836.50	167300	Mid	Left	Tilt	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	21.0	20.36	0	0.02	1:1	0.245	1.159	0.284	
836.50	167300	Mid	Left	Tilt	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	21.0	20.31	0	0.01	1:1	0.279	1.172	0.327	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-18
NR Band n66 Head SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1745.00	349000	Mid	Right	Cheek	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.93	0	0.04	1:1	0.078	1.279	0.100	
1745.00	349000	Mid	Right	Cheek	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.12	0	0.02	1:1	0.080	1.542	0.123	A18
1745.00	349000	Mid	Right	Cheek	NR Band n66	Main 2	02920	20	CP-OFDM	QPSK	1	1	23.5	21.60	1.5	0.09	1:1	0.062	1.549	0.096	
1745.00	349000	Mid	Right	Tilt	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.93	0	0.06	1:1	0.061	1.279	0.078	
1745.00	349000	Mid	Right	Tilt	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.12	0	-0.02	1:1	0.057	1.542	0.088	
1745.00	349000	Mid	Left	Cheek	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.93	0	0.04	1:1	0.060	1.279	0.077	
1745.00	349000	Mid	Left	Cheek	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.12	0	-0.07	1:1	0.052	1.542	0.080	
1745.00	349000	Mid	Left	Tilt	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	1	53	25.0	23.93	0	0.02	1:1	0.048	1.279	0.061	
1745.00	349000	Mid	Left	Tilt	NR Band n66	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.12	0	-0.20	1:1	0.046	1.542	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-19
NR Band n25 Head SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1860.00	372000	Low	Right	Cheek	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	1	1	25.0	23.13	0	0.01	1:1	0.163	1.538	0.251	A19
1860.00	372000	Low	Right	Cheek	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.30	0	-0.04	1:1	0.159	1.479	0.235	
1860.00	372000	Low	Right	Cheek	NR Band n25	Main 2	02920	20	CP-OFDM	QPSK	1	1	23.5	21.75	1.5	-0.03	1:1	0.120	1.496	0.180	
1860.00	372000	Low	Right	Tilt	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	1	1	25.0	23.13	0	0.10	1:1	0.085	1.538	0.131	
1860.00	372000	Low	Right	Tilt	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.30	0	0.10	1:1	0.080	1.479	0.118	
1860.00	372000	Low	Left	Cheek	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	1	1	25.0	23.13	0	-0.03	1:1	0.092	1.538	0.141	
1860.00	372000	Low	Left	Cheek	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.30	0	-0.15	1:1	0.105	1.479	0.155	
1860.00	372000	Low	Left	Tilt	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	1	1	25.0	23.13	0	-0.15	1:1	0.094	1.538	0.145	
1860.00	372000	Low	Left	Tilt	NR Band n25	Main 2	02920	20	DFT-S-OFDM	QPSK	50	28	25.0	23.30	0	-0.05	1:1	0.106	1.479	0.157	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-20
NR Band n30 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2310.00	462000	Mid	Right	Cheek	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	1	1	24.0	22.94	0	-0.10	1:1	0.034	1.276	0.043	
2310.00	462000	Mid	Right	Cheek	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	25	14	24.0	22.87	0	-0.14	1:1	0.035	1.297	0.045	A20
2310.00	462000	Mid	Right	Cheek	NR Band n30	Main 2	02888	10	CP-OFDM	QPSK	1	1	22.5	21.38	1.5	0.02	1:1	0.025	1.294	0.032	
2310.00	462000	Mid	Right	Tilt	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	1	1	24.0	22.94	0	0.05	1:1	0.014	1.276	0.018	
2310.00	462000	Mid	Right	Tilt	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	25	14	24.0	22.87	0	0.04	1:1	0.018	1.297	0.023	
2310.00	462000	Mid	Left	Cheek	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	1	1	24.0	22.94	0	-0.03	1:1	0.035	1.276	0.045	
2310.00	462000	Mid	Left	Cheek	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	25	14	24.0	22.87	0	0.04	1:1	0.030	1.297	0.039	
2310.00	462000	Mid	Left	Tilt	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	1	1	24.0	22.94	0	-0.19	1:1	0.026	1.276	0.033	
2310.00	462000	Mid	Left	Tilt	NR Band n30	Main 2	02888	10	DFT-S-OFDM	QPSK	25	14	24.0	22.87	0	0.05	1:1	0.025	1.297	0.032	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-21
NR Band n41 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	1	137	21.0	19.36	0	0.06	1:1	0.046	1.459	0.067	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	135	69	21.0	19.23	0	-0.07	1:1	0.044	1.503	0.066	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Main 2	02888	100	CP-OFDM	QPSK	1	1	21.0	19.00	0	0.06	1:1	0.046	1.585	0.073	
2592.99	518598	Mid	Right	Tilt	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	1	137	21.0	19.36	0	0.20	1:1	0.012	1.459	0.018	
2592.99	518598	Mid	Right	Tilt	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	135	69	21.0	19.23	0	0.20	1:1	0.011	1.503	0.017	
2592.99	518598	Mid	Left	Cheek	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	1	137	21.0	19.36	0	-0.09	1:1	0.030	1.459	0.044	
2592.99	518598	Mid	Left	Cheek	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	135	69	21.0	19.23	0	-0.11	1:1	0.028	1.503	0.042	
2592.99	518598	Mid	Left	Tilt	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	1	137	21.0	19.36	0	0.04	1:1	0.026	1.459	0.038	
2592.99	518598	Mid	Left	Tilt	NR Band n41	Main 2	02888	100	DFT-S-OFDM	QPSK	135	69	21.0	19.23	0	0.07	1:1	0.019	1.503	0.029	
2592.99	518598	Mid	Right	Cheek	NR Band n41	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	16.5	15.13	N/A	0.07	1:1	0.006	1.371	0.008	
2592.99	518598	Mid	Right	Tilt	NR Band n41	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	16.5	15.13	N/A	0.08	1:1	0.003	1.371	0.004	
2592.99	518598	Mid	Left	Cheek	NR Band n41	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	16.5	15.13	N/A	0.10	1:1	0.038	1.371	0.052	
2592.99	518598	Mid	Left	Tilt	NR Band n41	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	16.5	15.13	N/A	-0.12	1:1	0.017	1.371	0.023	
2592.99	518598	Mid	Right	Cheek	NR Band n41	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	18.0	16.10	N/A	-0.17	1:1	0.096	1.549	0.149	
2592.99	518598	Mid	Right	Cheek	NR Band n41	4th-MHB	02862	100	CW/SRS	N/A	N/A	N/A	15.0	13.03	N/A	0.06	1:1	0.058	1.574	0.091	
2592.99	518598	Mid	Right	Tilt	NR Band n41	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	18.0	16.10	N/A	-0.15	1:1	0.060	1.549	0.093	
2592.99	518598	Mid	Left	Cheek	NR Band n41	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	18.0	16.10	N/A	0.03	1:1	0.026	1.549	0.040	
2592.99	518598	Mid	Left	Tilt	NR Band n41	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	18.0	16.10	N/A	0.05	1:1	0.028	1.549	0.043	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.03	1:1	0.492	1.361	0.670	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	0.06	1:1	0.470	1.315	0.618	
2592.99	518598	Mid	Right	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	273	0	18.0	16.60	0	0.14	1:1	0.401	1.380	0.553	
2592.99	518598	Mid	Right	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.21	1:1	0.483	1.361	0.657	
2592.99	518598	Mid	Right	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	0.05	1:1	0.498	1.315	0.655	
2592.99	518598	Mid	Right	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	273	0	18.0	16.60	0	0.07	1:1	0.373	1.380	0.515	
2592.99	518598	Mid	Left	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.01	1:1	0.686	1.361	0.934	A21
2592.99	518598	Mid	Left	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	0.01	1:1	0.661	1.315	0.869	
2592.99	518598	Mid	Left	Cheek	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	273	0	18.0	16.60	0	0.01	1:1	0.601	1.380	0.829	
2592.99	518598	Mid	Left	Cheek	NR Band n41	Sub	02862	100	CW/SRS	N/A	N/A	N/A	16.5	16.01	0	0.02	1:1	0.432	1.119	0.483	
2592.99	518598	Mid	Left	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	-0.03	1:1	0.544	1.361	0.740	
2592.99	518598	Mid	Left	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	0.20	1:1	0.603	1.315	0.793	
2592.99	518598	Mid	Left	Tilt	NR Band n41	Sub	02508	100	CP-OFDM	QPSK	273	0	18.0	16.60	0	0.03	1:1	0.518	1.380	0.715	
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Note: Light brown entries indicate the additional check on the worst case exposure scenario for the n41 pathway that is not fully evaluated.

Table 11-22
NR Band n77 Head SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Test Position	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
3930.00	662000	High	Right	Cheek	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	1	137	21.0	19.55	0	0.08	1:1	0.015	1.396	0.021	
3930.00	662000	High	Right	Cheek	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	135	69	21.0	19.29	0	-0.19	1:1	0.015	1.483	0.022	
3930.00	662000	High	Right	Tilt	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	1	137	21.0	19.55	0	0.20	1:1	0.008	1.396	0.011	
3930.00	662000	High	Right	Tilt	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	135	69	21.0	19.29	0	0.20	1:1	0.007	1.483	0.010	
3930.00	662000	High	Left	Cheek	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	1	137	21.0	19.55	0	0.02	1:1	0.019	1.396	0.027	
3930.00	662000	High	Left	Cheek	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	135	69	21.0	19.29	0	-0.17	1:1	0.021	1.483	0.031	
3930.00	662000	High	Left	Cheek	NR Band n77	Main 1	02508	100	CP-OFDM	QPSK	1	1	21.0	19.13	0	0.05	1:1	0.010	1.538	0.015	
3500.01	633334	Mid	Left	Cheek	NR Band n77 DoD	Main 1	02508	100	DFT-S-OFDM	QPSK	1	137	21.0	19.73	0	0.08	1:1	0.018	1.340	0.024	
3930.00	662000	High	Left	Tilt	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	1	137	21.0	19.55	0	0.20	1:1	0.004	1.396	0.006	
3930.00	662000	High	Left	Tilt	NR Band n77	Main 1	02508	100	DFT-S-OFDM	QPSK	135	69	21.0	19.29	0	0.20	1:1	0.004	1.483	0.006	
3930.00	662000	High	Right	Cheek	NR Band n77	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	15.5	14.58	N/A	0.06	1:1	0.022	1.236	0.027	
3500.01	633334	Mid	Right	Cheek	NR Band n77 DoD	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	15.5	14.52	N/A	0.07	1:1	0.006	1.253	0.008	
3930.00	662000	High	Right	Tilt	NR Band n77	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	15.5	14.58	N/A	0.05	1:1	0.010	1.236	0.012	
3930.00	662000	High	Left	Cheek	NR Band n77	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	15.5	14.58	N/A	0.07	1:1	0.021	1.236	0.026	
3930.00	662000	High	Left	Tilt	NR Band n77	3rd-LMHB	02888	100	CW/SRS	N/A	N/A	N/A	15.5	14.58	N/A	0.08	1:1	0.014	1.236	0.017	
3750.00	650000	Low	Right	Cheek	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	17.0	15.02	N/A	0.01	1:1	0.014	1.578	0.022	
3750.00	650000	Low	Right	Tilt	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	17.0	15.02	N/A	0.08	1:1	0.011	1.578	0.017	
3750.00	650000	Low	Left	Cheek	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	17.0	15.02	N/A	0.20	1:1	0.034	1.578	0.054	
3750.00	650000	Low	Left	Cheek	NR Band n77	4th-MHB	02805	100	CW/SRS	N/A	N/A	N/A	12.0	10.10	N/A	0.05	1:1	0.002	1.549	0.003	
3500.01	633334	Mid	Left	Cheek	NR Band n77 DoD	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	17.0	15.88	N/A	-0.13	1:1	0.082	1.294	0.106	
3750.00	650000	Low	Left	Tilt	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	17.0	15.02	N/A	0.03	1:1	0.019	1.578	0.030	
3930.00	662000	High	Right	Cheek	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.03	1:1	0.149	1.315	0.196	
3930.00	662000	High	Right	Cheek	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.04	1:1	0.155	1.374	0.213	
3930.00	662000	High	Right	Tilt	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.14	1:1	0.116	1.315	0.153	
3930.00	662000	High	Right	Tilt	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.04	1:1	0.105	1.374	0.144	
3930.00	662000	High	Left	Cheek	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.06	1:1	0.171	1.315	0.225	A22
3930.00	662000	High	Left	Cheek	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.03	1:1	0.155	1.374	0.213	
3930.00	662000	High	Left	Cheek	NR Band n77	Sub-UHB	02805	100	DFT-S-OFDM	N/A	1	137	17.0	15.35	0	-0.03	1:1	0.143	1.462	0.209	
3500.01	633334	Mid	Left	Cheek	NR Band n77 DoD	Sub-UHB	02508	100	CP-OFDM	QPSK	1	271	18.0	16.21	0	-0.12	1:1	0.133	1.510	0.201	
3930.00	662000	High	Left	Tilt	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	-0.06	1:1	0.113	1.315	0.149	
3930.00	662000	High	Left	Tilt	NR Band n77	Sub-UHB	02508	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.11	1:1	0.107	1.374	0.147	
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: 1) Light purple entries indicate the additional DoD check on the worst case exposure scenario from C-band antennas. 2) Light brown entries indicate the additional check on the worst case exposure scenario for the n77 pathway that is not fully evaluated.

Table 11-23
DTS Head MIMO SAR

MEASUREMENT RESULTS																					
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)			(W/kg)	
2437	6	Right	Cheek	802.11n	OFDM	MIMO	02847	20	13	14.0	13.74	14.0	13.57	-0.10	100.00	99.71	0.406	1.104	1.003	**0.450**	A23
2437	6	Right	Tilt	802.11n	OFDM	MIMO	02847	20	13	14.0	13.74	14.0	13.57	0.03	100.00	99.71	0.070	1.104	1.003	0.078	
2437	6	Left	Cheek	802.11n	OFDM	MIMO	02847	20	13	14.0	13.74	14.0	13.57	-0.07	100.00	99.71	0.084	1.104	1.003	0.093	
2437	6	Left	Tilt	802.11n	OFDM	MIMO	02847	20	13	14.0	13.74	14.0	13.57	0.01	100.00	99.71	0.024	1.104	1.003	0.027	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: in MIMO operations, each antenna transmits at a maximum allowed power of 14.0 dBm.

Table 11-24
DTS Head MIMO SAR during Conditions with 5/6 GHz WLAN

MEASUREMENT RESULTS																					
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
2412	1	Right	Cheek	802.11n	OFDM	MIMO	02847	20	13	11.0	10.30	11.0	10.72	0.02	100.00	99.71	0.236	1.175	1.003	0.278	
2412	1	Right	Tilt	802.11n	OFDM	MIMO	02847	20	13	11.0	10.30	11.0	10.72	0.06	100.00	99.71	0.043	1.175	1.003	0.051	
2412	1	Left	Cheek	802.11n	OFDM	MIMO	02847	20	13	11.0	10.30	11.0	10.72	-0.05	100.00	99.71	0.050	1.175	1.003	0.059	
2412	1	Left	Tilt	802.11n	OFDM	MIMO	02847	20	13	11.0	10.30	11.0	10.72	0.09	100.00	99.71	0.016	1.175	1.003	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										

Note: 2.4 GHz MIMO was additionally evaluated at the maximum allowed output power during simultaneous operations with 5/6 GHz WLAN. 5/6 GHz WIFI was not transmitting during the above evaluations. in MIMO operations each antenna transmits at a maximum allowed power of 11.0 dBm.

Table 11-25
NII MIMO Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
5290	58	Right	Cheek	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.08	100.00	99.71	0.106	1.507	1.003	0.160	
5290	58	Right	Tilt	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.06	100.00	99.71	0.052	1.507	1.003	0.079	
5290	58	Left	Cheek	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.07	100.00	99.71	0.044	1.507	1.003	0.067	
5290	58	Left	Tilt	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.02	100.00	99.71	0.020	1.507	1.003	0.030	
5690	138	Right	Cheek	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	-0.05	100.00	99.71	0.116	1.462	1.003	0.170	
5690	138	Right	Tilt	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	-0.14	100.00	99.71	0.024	1.462	1.003	0.035	
5690	138	Left	Cheek	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.09	100.00	99.71	0.121	1.462	1.003	0.177	
5690	138	Left	Tilt	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.04	100.00	99.71	0.022	1.462	1.003	0.032	
5795	159	Right	Cheek	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	-0.15	100.00	99.72	0.122	1.581	1.003	**0.193**	A24
5795	159	Right	Tilt	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.09	100.00	99.72	0.031	1.581	1.003	0.049	
5795	159	Left	Cheek	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.01	100.00	99.72	0.060	1.581	1.003	0.095	
5795	159	Left	Tilt	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.07	100.00	99.72	0.025	1.581	1.003	0.040	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: in MIMO operations, each antenna transmits at a maximum allowed power of 11.5 dBm.

Table 11-26
DSS Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Side	Test Position	Mode	Service	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
2480	78	Right	Cheek	Bluetooth	FHSS	WiFi Main	02847	1	14.0	13.64	-0.12	83.30	77.07	0.188	1.087	1.081	**0.221**	A25
2480	78	Right	Tilt	Bluetooth	FHSS	WiFi Main	02847	1	14.0	13.64	0.03	83.30	77.07	0.028	1.087	1.081	0.033	
2480	78	Left	Cheek	Bluetooth	FHSS	WiFi Main	02847	1	14.0	13.64	0.04	83.30	77.07	0.042	1.087	1.081	0.049	
2480	78	Left	Tilt	Bluetooth	FHSS	WiFi Main	02847	1	14.0	13.64	0.01	83.30	77.07	0.008	1.087	1.081	0.009	
2480	78	Right	Cheek	Bluetooth	FHSS	WiFi Sub	02847	1	14.0	13.82	0.20	83.30	77.07	0.000	1.043	1.081	0.000	
2480	78	Right	Tilt	Bluetooth	FHSS	WiFi Sub	02847	1	14.0	13.82	0.04	83.30	77.07	0.000	1.043	1.081	0.000	
2480	78	Left	Cheek	Bluetooth	FHSS	WiFi Sub	02847	1	14.0	13.82	0.20	83.30	77.07	0.004	1.043	1.081	0.005	
2480	78	Left	Tilt	Bluetooth	FHSS	WiFi Sub	02847	1	14.0	13.82	0.02	83.30	77.07	0.001	1.043	1.081	0.001	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram								

11.2 Standalone Body-Worn SAR Data

Table 11-27
GSM Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	# of Time Slots	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	back	10 mm	GSM 850	GSM	Main 1	02144	N/A	32.9	31.94	-0.03	1:8.3	0.351	1.247	0.438	A26
824.20	128	back	10 mm	GSM 850	DTM	Main 1	02144	3	28.1	26.95	-0.03	1:2.76	0.322	1.303	0.420	
1850.20	512	back	10 mm	GSM 1900	GSM	Main 2	02144	N/A	28.0	26.98	-0.03	1:8.3	0.209	1.265	0.264	A27
1880.00	661	back	10 mm	GSM 1900	DTM	Main 2	02144	3	23.2	22.10	0.00	1:2.76	0.143	1.288	0.184	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-28
UMTS Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
846.60	4233	back	10 mm	UMTS 850	RMC	Main 1	02144	23.0	21.80	-0.05	1:1	0.321	1.318	0.423	A28
1732.40	1412	back	10 mm	UMTS 1750	RMC	Main 2	02144	19.0	17.60	0.00	1:1	0.125	1.380	0.173	A29
1880.00	9400	back	10 mm	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.02	1:1	0.198	1.416	0.280	A30
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-29
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	back	10 mm	LTE Band 71	Main 1	02144	20	QPSK	1	99	23.0	22.01	0	-0.01	1:1	0.136	1.256	0.171	A31
680.50	133297	Mid	back	10 mm	LTE Band 71	Main 1	02144	20	QPSK	50	50	23.0	21.98	0	-0.02	1:1	0.136	1.265	0.172	
707.50	23095	Mid	back	10 mm	LTE Band 12	Main 1	02144	10	QPSK	1	0	22.0	21.33	0	0.00	1:1	0.132	1.167	0.154	
707.50	23095	Mid	back	10 mm	LTE Band 12	Main 1	02144	10	QPSK	25	25	22.0	21.17	0	-0.02	1:1	0.144	1.211	0.174	
707.50	23095	Mid	back	10 mm	LTE Band 12	Sub	02185	10	QPSK	1	0	23.0	21.96	0	-0.01	1:1	0.150	1.271	0.191	A32
707.50	23095	Mid	back	10 mm	LTE Band 12	Sub	02185	10	QPSK	25	25	23.0	21.92	0	0.00	1:1	0.150	1.282	0.192	
782.00	23230	Mid	back	10 mm	LTE Band 13	Main 1	02144	10	QPSK	1	0	22.0	21.18	0	-0.04	1:1	0.167	1.208	0.202	
782.00	23230	Mid	back	10 mm	LTE Band 13	Main 1	02144	10	QPSK	25	12	22.0	20.98	0	0.02	1:1	0.171	1.265	0.216	A33
782.00	23230	Mid	back	10 mm	LTE Band 13	Sub	02185	10	QPSK	1	25	23.0	21.78	0	0.03	1:1	0.130	1.324	0.172	
782.00	23230	Mid	back	10 mm	LTE Band 13	Sub	02185	10	QPSK	25	25	23.0	21.73	0	-0.01	1:1	0.133	1.340	0.178	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	1	0	22.0	21.28	0	-0.03	1:1	0.253	1.180	0.299	A34
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	25	25	22.0	21.23	0	-0.02	1:1	0.251	1.194	0.300	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	1	0	23.0	21.98	0	0.01	1:1	0.079	1.265	0.100	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	25	25	23.0	21.85	0	0.00	1:1	0.078	1.303	0.102	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	1	99	19.0	18.20	0	0.06	1:1	0.130	1.202	0.156	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	50	50	19.0	18.18	0	0.00	1:1	0.133	1.208	0.161	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.00	1:1	0.167	1.288	0.215	A35
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	-0.01	1:1	0.163	1.285	0.209	
1882.50	26365	Mid	back	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	0.06	1:1	0.207	1.262	0.261	
1882.50	26365	Mid	back	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	0.01	1:1	0.209	1.230	0.257	A36
1860.00	18700	Low	back	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.04	1:1	0.155	1.303	0.202	
1860.00	18700	Low	back	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	-0.01	1:1	0.178	1.312	0.234	A37
2310.00	27710	Mid	back	10 mm	LTE Band 30	Main 2	02144	10	QPSK	1	0	20.0	19.27	0	0.12	1:1	0.130	1.183	0.154	A38
2310.00	27710	Mid	back	10 mm	LTE Band 30	Main 2	02144	10	QPSK	25	12	20.0	19.09	0	0.01	1:1	0.129	1.233	0.159	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	-0.07	1:1	0.079	1.245	0.098	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.03	1:1	0.084	1.247	0.105	
2636.50	41055	Mid-High	back	10 mm	LTE Band 41	Main 2	02144	20	QPSK	1	99	20.0	19.28	0	0.12	1:1.58	0.077	1.180	0.091	A39
2636.50	41055	Mid-High	back	10 mm	LTE Band 41	Main 2	02144	20	QPSK	50	25	20.0	19.27	0	-0.02	1:1.58	0.076	1.183	0.090	
3646.70	56207	Mid-High	back	10 mm	LTE Band 48	Main 1	02144	20	QPSK	1	0	20.0	19.27	0	-0.02	1:1.58	0.260	1.183	0.308	
3646.70	56207	Mid-High	back	10 mm	LTE Band 48	Main 1	02144	20	QPSK	50	50	20.0	19.34	0	0.01	1:1.58	0.270	1.164	**0.314**	A40
3690.00	56640	High	back	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	1	50	18.0	17.84	0	-0.02	1:1.58	0.158	1.038	0.164	
3690.00	56640	High	back	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	50	50	18.0	17.96	0	-0.02	1:1.58	0.164	1.009	0.165	

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

Table 11-29
NR Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	23.0	21.88	0	-0.07	1:1	0.151	1.294	0.195	
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	23.0	21.89	0	-0.02	1:1	0.161	1.291	0.208	A41
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	CP-OFDM	QPSK	1	1	23.0	21.58	0	-0.06	1:1	0.152	1.387	0.211	
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	20.79	0	-0.08	1:1	0.326	1.321	0.431	A42
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	20.93	0	0.01	1:1	0.313	1.279	0.400	
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	CP-OFDM	QPSK	1	1	22.0	20.87	0	0.04	1:1	0.316	1.297	0.410	
836.50	167300	Mid	back	10 mm	NR Band n5	Sub	02805	20	CP-OFDM	QPSK	1	1	22.0	21.17	0	0.03	1:1	0.092	1.211	0.111	
836.50	167300	Mid	back	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	21.26	0	-0.01	1:1	0.091	1.186	0.108	
836.50	167300	Mid	back	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	21.22	0	0.03	1:1	0.093	1.197	0.111	
1745.00	349000	Mid	back	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	1	53	20.0	18.79	0	-0.03	1:1	0.126	1.321	0.166	A43
1745.00	349000	Mid	back	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	50	28	20.0	18.72	0	0.02	1:1	0.126	1.343	0.169	
1745.00	349000	Mid	back	10 mm	NR Band n66	Main 2	02805	20	CP-OFDM	QPSK	1	1	20.0	18.58	0	0.04	1:1	0.124	1.387	0.172	
1860.00	372000	Low	back	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	-0.09	1:1	0.149	1.403	0.209	
1860.00	372000	Low	back	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	0.02	1:1	0.158	1.419	0.224	
1860.00	372000	Low	back	10 mm	NR Band n25	Main 2	02805	20	CP-OFDM	QPSK	1	1	20.0	18.63	0	-0.08	1:1	0.164	1.371	0.225	A44
2310.00	462000	Mid	back	10 mm	NR Band n30	Main 2	02508	10	CP-OFDM	QPSK	1	1	20.0	18.73	0	-0.01	1:1	0.124	1.340	0.166	
2310.00	462000	Mid	back	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	1	26	20.0	18.87	0	-0.08	1:1	0.133	1.297	0.173	A45
2310.00	462000	Mid	back	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	25	14	20.0	18.84	0	-0.09	1:1	0.126	1.306	0.165	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-30
NR Band n41 Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2592.99	518598	Mid	back	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	0.10	1:1	0.130	1.507	0.196	
2592.99	518598	Mid	back	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.01	1:1	0.123	1.549	0.191	
2592.99	518598	Mid	back	10 mm	NR Band n41	Main 2	02508	100	CP-OFDM	QPSK	1	1	20.0	18.10	0	0.00	1:1	0.082	1.549	0.127	
2592.99	518598	Mid	back	10 mm	NR Band n41	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	15.5	14.15	N/A	0.14	1:1	0.034	1.365	0.046	
2592.99	518598	Mid	back	10 mm	NR Band n41	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	17.0	15.10	N/A	0.07	1:1	0.092	1.549	0.143	
2592.99	518598	Mid	back	10 mm	NR Band n41	4th-MHB	02805	100	CW/SRS	N/A	N/A	N/A	15.0	13.03	N/A	-0.01	1:1	0.088	1.574	0.139	
2592.99	518598	Mid	back	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	N/A	1	1	18.0	16.66	0	0.01	1:1	0.126	1.361	0.171	
2592.99	518598	Mid	back	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	N/A	137	0	18.0	16.81	0	0.03	1:1	0.142	1.315	0.187	A46
2592.99	518598	Mid	back	10 mm	NR Band n41	Sub	02805	100	CW/SRS	N/A	N/A	N/A	15.5	15.12	N/A	0.01	1:1	0.048	1.091	0.052	
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: Light brown entries indicate the additional check on the worst case exposure scenario for the n41 pathway that is not fully evaluated.

Table 11-31
NR Band n77 Body-Worn SAR

MEASUREMENT RESULTS																							
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot "
MHz	Ch.																	(W/kg)		(W/kg)	
3750.00	650000	Low	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.01	0	0.00	1:1	0.506	1.256	0.636	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	-0.02	1:1	0.761	1.114	0.848	
3750.00	650000	Low	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.10	0	-0.10	1:1	0.513	1.230	0.631	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	-0.02	1:1	0.809	1.151	0.931	A47
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	270	0	19.0	18.22	0	-0.10	1:1	0.675	1.197	0.808	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	CP-OFDM	QPSK	1	1	19.0	18.16	0	0.06	1:1	0.771	1.213	**0.935**	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.64	0	0.04	1:1	0.324	1.086	0.352	
3930.00	662000	High	back	10 mm	NR Band n77	3rd-LMHB	02508	100	CW/SRS	N/A	NA	NA	13.5	13.50	N/A	-0.04	1:1	0.033	1.000	0.033	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	3rd-LMHB	02508	100	CW/SRS	N/A	NA	NA	13.5	13.46	N/A	0.09	1:1	0.020	1.009	0.020	
3750.00	650000	Low	back	10 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	NA	NA	15.0	14.02	N/A	-0.02	1:1	0.138	1.253	0.173	
3750.00	650000	Low	back	10 mm	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	NA	NA	12.0	10.10	N/A	0.19	1:1	0.037	1.549	0.057	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	4th-MHB	02508	100	CW/SRS	N/A	NA	NA	15.0	14.90	N/A	0.03	1:1	0.096	1.023	0.098	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	-0.01	1:1	0.233	1.315	0.306	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	-0.07	1:1	0.270	1.374	0.371	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	DFT-S-OFDM	QPSK	1	137	15.0	14.27	0	0.01	1:1	0.196	1.183	0.232	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	Sub-UHB	02888	100	CP-OFDM	QPSK	1	271	18.0	16.21	0	0.05	1:1	0.073	1.510	0.110	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	-0.08	1:1	0.711	1.151	0.818	
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: 1) Light purple entries indicate the additional DoD check on the worst case exposure scenario from C-band antennas. 2) Light brown entries indicate the additional check on the worst case exposure scenario for the n77 pathway that is not fully evaluated. 3) Blue Entry represents variability measurement.

Table 11-32
DTS Body-worn MIMO SAR

MEASUREMENT RESULTS																						
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)			(W/kg)	
2437	6	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.05	100.00	99.71	1	0.075	1.104	1.003	0.083	
2437	6	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	-0.01	100.00	99.71	2	0.098	1.104	1.003	**0.109**	A48
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: in MIMO operations, each antenna transmits at a maximum allowed power of 14.0 dBm. Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-33
DTS Body-worn MIMO SAR during conditions with 5/6 GHz WLAN

MEASUREMENT RESULTS																						
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)			(W/kg)	
2412	1	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.01	100.00	99.71	1	0.038	1.175	1.003	0.045	
2412	1	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.01	100.00	99.71	2	0.048	1.175	1.003	0.057	
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: 2.4 GHz MIMO was additionally evaluated at the maximum allowed output power during simultaneous operations with 5/6 GHz WLAN. 5/6 GHz WIFI was not transmitting during the above evaluations. in MIMO operations each antenna transmits at a maximum allowed power of 11.0 dBm. Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-34
NII MIMO Body-Worn SAR

MEASUREMENT RESULTS																						
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)			(W/kg)	
5290	58	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	-0.12	100.00	99.71	1	0.011	1.507	1.003	**0.017**	
5290	58	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.20	100.00	99.71	2	0.053	1.507	1.003	**0.080**	A49
5690	138	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.20	100.00	99.71	1	0.037	1.462	1.003	**0.054**	
5690	138	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.07	100.00	99.71	2	0.021	1.462	1.003	**0.031**	
5795	159	back	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.05	100.00	99.72	1	0.048	1.581	1.003	**0.076**	
5795	159	back	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.07	100.00	99.72	2	0.018	1.581	1.003	**0.029**	
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: in MIMO operations, each antenna transmits at a maximum allowed power of 11.5 dBm. Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-35
DSS Body-Worn SAR

MEASUREMENT RESULTS																	
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2480	78	back	10 mm	Bluetooth	FHSS	WiFi Main	02862	1	14.0	13.64	0.03	83.30	77.07	0.038	1.087	1.081	**0.045**	
2480	78	back	10 mm	Bluetooth	FHSS	WiFi Sub	02862	1	14.0	13.82	0.03	83.30	77.07	0.039	1.043	1.081	**0.044**	A50
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 11-36
GPRS/DTM Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	# of Time Slots	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
848.80	251	back	10 mm	GSM 850	GPRS	Main 1	02144	4	26.9	25.65	-0.04	1:2.076	0.309	1.334	0.412	
848.80	251	front	10 mm	GSM 850	GPRS	Main 1	02144	4	26.9	25.65	-0.04	1:2.076	0.301	1.334	0.402	
848.80	251	bottom	10 mm	GSM 850	GPRS	Main 1	02144	4	26.9	25.65	0.03	1:2.076	0.118	1.334	0.157	
848.80	251	left	10 mm	GSM 850	GPRS	Main 1	02144	4	26.9	25.65	-0.12	1:2.076	0.109	1.334	0.145	
824.20	128	back	10 mm	GSM 850	DTM	Main 1	02144	3	28.1	26.95	-0.03	1:2.76	0.322	1.303	0.420	A51
824.20	128	front	10 mm	GSM 850	DTM	Main 1	02144	3	28.1	26.95	0.04	1:2.76	0.314	1.303	0.409	
824.20	128	bottom	10 mm	GSM 850	DTM	Main 1	02144	3	28.1	26.95	-0.03	1:2.76	0.142	1.303	0.185	
824.20	128	left	10 mm	GSM 850	DTM	Main 1	02144	3	28.1	26.95	-0.09	1:2.76	0.121	1.303	0.158	
1880.00	661	back	10 mm	GSM 1900	GPRS	Main 2	02144	4	22.0	20.85	0.01	1:2.076	0.121	1.303	0.158	
1880.00	661	front	10 mm	GSM 1900	GPRS	Main 2	02144	4	22.0	20.85	0.05	1:2.076	0.120	1.303	0.156	
1880.00	661	bottom	10 mm	GSM 1900	GPRS	Main 2	02144	4	22.0	20.85	-0.03	1:2.076	0.215	1.303	0.280	A52
1880.00	661	right	10 mm	GSM 1900	GPRS	Main 2	02144	4	22.0	20.85	-0.04	1:2.076	0.061	1.303	0.079	
1880.00	661	back	10 mm	GSM 1900	DTM	Main 2	02144	3	23.2	22.10	0.00	1:2.76	0.143	1.288	0.184	
1880.00	661	front	10 mm	GSM 1900	DTM	Main 2	02144	3	23.2	22.10	-0.07	1:2.76	0.117	1.288	0.151	
1880.00	661	bottom	10 mm	GSM 1900	DTM	Main 2	02144	3	23.2	22.10	-0.03	1:2.76	0.190	1.288	0.245	
1880.00	661	right	10 mm	GSM 1900	DTM	Main 2	02144	3	23.2	22.10	-0.04	1:2.76	0.050	1.288	0.064	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-37
UMTS Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
846.60	4233	back	10 mm	UMTS 850	RMC	Main 1	02144	23.0	21.80	-0.05	1:1	0.321	1.318	0.423	A28
846.60	4233	front	10 mm	UMTS 850	RMC	Main 1	02144	23.0	21.80	-0.10	1:1	0.293	1.318	0.386	
846.60	4233	bottom	10 mm	UMTS 850	RMC	Main 1	02144	23.0	21.80	0.03	1:1	0.126	1.318	0.166	
846.60	4233	left	10 mm	UMTS 850	RMC	Main 1	02144	23.0	21.80	0.00	1:1	0.097	1.318	0.128	
1732.40	1412	back	10 mm	UMTS 1750	RMC	Main 2	02144	19.0	17.60	0.00	1:1	0.125	1.380	0.173	
1732.40	1412	front	10 mm	UMTS 1750	RMC	Main 2	02144	19.0	17.60	-0.01	1:1	0.130	1.380	0.179	
1732.40	1412	bottom	10 mm	UMTS 1750	RMC	Main 2	02144	19.0	17.60	-0.09	1:1	0.163	1.380	0.225	A53
1732.40	1412	right	10 mm	UMTS 1750	RMC	Main 2	02144	19.0	17.60	0.00	1:1	0.072	1.380	0.099	
1880.00	9400	back	10 mm	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.02	1:1	0.198	1.416	0.280	
1880.00	9400	front	10 mm	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.01	1:1	0.154	1.416	0.218	
1880.00	9400	bottom	10 mm	UMTS 1900	RMC	Main 2	02144	20.0	18.49	-0.02	1:1	0.326	1.416	0.462	A54
1880.00	9400	right	10 mm	UMTS 1900	RMC	Main 2	02144	20.0	18.49	0.04	1:1	0.079	1.416	0.112	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-38
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	back	10 mm	LTE Band 71	Main 1	02144	20	QPSK	1	99	23.0	22.01	0	-0.01	1:1	0.136	1.256	0.171	A31
680.50	133297	Mid	back	10 mm	LTE Band 71	Main 1	02144	20	QPSK	50	50	23.0	21.98	0	-0.02	1:1	0.136	1.265	0.172	
680.50	133297	Mid	front	10 mm	LTE Band 71	Main 1	02144	20	QPSK	1	99	23.0	22.01	0	0.01	1:1	0.119	1.256	0.149	
680.50	133297	Mid	front	10 mm	LTE Band 71	Main 1	02144	20	QPSK	50	50	23.0	21.98	0	0.00	1:1	0.117	1.265	0.148	
680.50	133297	Mid	bottom	10 mm	LTE Band 71	Main 1	02144	20	QPSK	1	99	23.0	22.01	0	0.00	1:1	0.053	1.256	0.067	
680.50	133297	Mid	bottom	10 mm	LTE Band 71	Main 1	02144	20	QPSK	50	50	23.0	21.98	0	0.02	1:1	0.054	1.265	0.068	
680.50	133297	Mid	left	10 mm	LTE Band 71	Main 1	02144	20	QPSK	1	99	23.0	22.01	0	-0.02	1:1	0.082	1.256	0.103	
680.50	133297	Mid	left	10 mm	LTE Band 71	Main 1	02144	20	QPSK	50	50	23.0	21.98	0	-0.02	1:1	0.083	1.265	0.105	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-39
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	back	10 mm	LTE Band 12	Main 1	02144	10	QPSK	1	0	22.0	21.33	0	0.00	1:1	0.132	1.167	0.154	
707.50	23095	Mid	back	10 mm	LTE Band 12	Main 1	02144	10	QPSK	25	25	22.0	21.17	0	-0.02	1:1	0.144	1.211	0.174	
707.50	23095	Mid	front	10 mm	LTE Band 12	Main 1	02144	10	QPSK	1	0	22.0	21.33	0	-0.01	1:1	0.106	1.167	0.124	
707.50	23095	Mid	front	10 mm	LTE Band 12	Main 1	02144	10	QPSK	25	25	22.0	21.17	0	0.01	1:1	0.115	1.211	0.139	
707.50	23095	Mid	bottom	10 mm	LTE Band 12	Main 1	02144	10	QPSK	1	0	22.0	21.33	0	0.06	1:1	0.058	1.167	0.068	
707.50	23095	Mid	bottom	10 mm	LTE Band 12	Main 1	02144	10	QPSK	25	25	22.0	21.17	0	-0.02	1:1	0.057	1.211	0.069	
707.50	23095	Mid	left	10 mm	LTE Band 12	Main 1	02144	10	QPSK	1	0	22.0	21.33	0	-0.10	1:1	0.055	1.167	0.064	
707.50	23095	Mid	left	10 mm	LTE Band 12	Main 1	02144	10	QPSK	25	25	22.0	21.17	0	-0.02	1:1	0.050	1.211	0.061	
707.50	23095	Mid	back	10 mm	LTE Band 12	Sub	02185	10	QPSK	1	0	23.0	21.96	0	-0.01	1:1	0.150	1.271	0.191	A32
707.50	23095	Mid	back	10 mm	LTE Band 12	Sub	02185	10	QPSK	25	25	23.0	21.92	0	0.00	1:1	0.150	1.282	0.192	
707.50	23095	Mid	front	10 mm	LTE Band 12	Sub	02185	10	QPSK	1	0	23.0	21.96	0	0.00	1:1	0.116	1.271	0.147	
707.50	23095	Mid	front	10 mm	LTE Band 12	Sub	02185	10	QPSK	25	25	23.0	21.92	0	-0.01	1:1	0.119	1.282	0.153	
707.50	23095	Mid	top	10 mm	LTE Band 12	Sub	02185	10	QPSK	1	0	23.0	21.96	0	-0.08	1:1	0.019	1.271	0.024	
707.50	23095	Mid	top	10 mm	LTE Band 12	Sub	02185	10	QPSK	25	25	23.0	21.92	0	0.04	1:1	0.019	1.282	0.024	
707.50	23095	Mid	right	10 mm	LTE Band 12	Sub	02185	10	QPSK	1	0	23.0	21.96	0	0.04	1:1	0.102	1.271	0.130	
707.50	23095	Mid	right	10 mm	LTE Band 12	Sub	02185	10	QPSK	25	25	23.0	21.92	0	0.02	1:1	0.102	1.282	0.131	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-40
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	back	10 mm	LTE Band 13	Main 1	02144	10	QPSK	1	0	22.0	21.18	0	-0.04	1:1	0.167	1.208	0.202	
782.00	23230	Mid	back	10 mm	LTE Band 13	Main 1	02144	10	QPSK	25	12	22.0	20.98	0	0.02	1:1	0.171	1.265	0.216	A33
782.00	23230	Mid	front	10 mm	LTE Band 13	Main 1	02144	10	QPSK	1	0	22.0	21.18	0	-0.03	1:1	0.152	1.208	0.184	
782.00	23230	Mid	front	10 mm	LTE Band 13	Main 1	02144	10	QPSK	25	12	22.0	20.98	0	0.11	1:1	0.155	1.265	0.196	
782.00	23230	Mid	bottom	10 mm	LTE Band 13	Main 1	02144	10	QPSK	1	0	22.0	21.18	0	0.04	1:1	0.064	1.208	0.077	
782.00	23230	Mid	bottom	10 mm	LTE Band 13	Main 1	02144	10	QPSK	25	12	22.0	20.98	0	-0.01	1:1	0.066	1.265	0.083	
782.00	23230	Mid	left	10 mm	LTE Band 13	Main 1	02144	10	QPSK	1	0	22.0	21.18	0	-0.01	1:1	0.060	1.208	0.072	
782.00	23230	Mid	left	10 mm	LTE Band 13	Main 1	02144	10	QPSK	25	12	22.0	20.98	0	0.01	1:1	0.063	1.265	0.080	
782.00	23230	Mid	back	10 mm	LTE Band 13	Sub	02185	10	QPSK	1	25	23.0	21.78	0	0.03	1:1	0.130	1.324	0.172	
782.00	23230	Mid	back	10 mm	LTE Band 13	Sub	02185	10	QPSK	25	25	23.0	21.73	0	-0.01	1:1	0.133	1.340	0.178	
782.00	23230	Mid	front	10 mm	LTE Band 13	Sub	02185	10	QPSK	1	25	23.0	21.78	0	-0.03	1:1	0.140	1.324	0.185	
782.00	23230	Mid	front	10 mm	LTE Band 13	Sub	02185	10	QPSK	25	25	23.0	21.73	0	0.00	1:1	0.143	1.340	0.192	
782.00	23230	Mid	top	10 mm	LTE Band 13	Sub	02185	10	QPSK	1	25	23.0	21.78	0	0.18	1:1	0.010	1.324	0.013	
782.00	23230	Mid	top	10 mm	LTE Band 13	Sub	02185	10	QPSK	25	25	23.0	21.73	0	-0.05	1:1	0.010	1.340	0.013	
782.00	23230	Mid	right	10 mm	LTE Band 13	Sub	02185	10	QPSK	1	25	23.0	21.78	0	0.01	1:1	0.113	1.324	0.150	
782.00	23230	Mid	right	10 mm	LTE Band 13	Sub	02185	10	QPSK	25	25	23.0	21.73	0	-0.01	1:1	0.111	1.340	0.149	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-41
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	1	0	22.0	21.28	0	-0.03	1:1	0.253	1.180	0.299	A34
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	25	25	22.0	21.23	0	-0.02	1:1	0.251	1.194	0.300	
836.50	20525	Mid	front	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	1	0	22.0	21.28	0	-0.01	1:1	0.229	1.180	0.270	
836.50	20525	Mid	front	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	25	25	22.0	21.23	0	0.00	1:1	0.227	1.194	0.271	
836.50	20525	Mid	bottom	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	1	0	22.0	21.28	0	0.00	1:1	0.106	1.180	0.125	
836.50	20525	Mid	bottom	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	25	25	22.0	21.23	0	0.00	1:1	0.102	1.194	0.122	
836.50	20525	Mid	left	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	1	0	22.0	21.28	0	0.02	1:1	0.083	1.180	0.098	
836.50	20525	Mid	left	10 mm	LTE Band 5 (Cell)	Main 1	02144	10	QPSK	25	25	22.0	21.23	0	0.00	1:1	0.078	1.194	0.093	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	1	0	23.0	21.98	0	0.01	1:1	0.079	1.265	0.100	
836.50	20525	Mid	back	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	25	25	23.0	21.85	0	0.00	1:1	0.078	1.303	0.102	
836.50	20525	Mid	front	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	1	0	23.0	21.98	0	0.04	1:1	0.072	1.265	0.091	
836.50	20525	Mid	front	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	25	25	23.0	21.85	0	-0.02	1:1	0.072	1.303	0.094	
836.50	20525	Mid	top	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	1	0	23.0	21.98	0	-0.11	1:1	0.009	1.265	0.011	
836.50	20525	Mid	top	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	25	25	23.0	21.85	0	-0.08	1:1	0.011	1.303	0.014	
836.50	20525	Mid	right	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	1	0	23.0	21.98	0	-0.08	1:1	0.064	1.265	0.081	
836.50	20525	Mid	right	10 mm	LTE Band 5 (Cell)	Sub	02185	10	QPSK	25	25	23.0	21.85	0	0.00	1:1	0.068	1.303	0.089	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-42
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	1	99	19.0	18.20	0	0.06	1:1	0.130	1.202	0.156	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	50	50	19.0	18.18	0	0.00	1:1	0.133	1.208	0.161	
1745.00	132322	Mid	front	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	1	99	19.0	18.20	0	0.07	1:1	0.141	1.202	0.169	
1745.00	132322	Mid	front	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	50	50	19.0	18.18	0	-0.02	1:1	0.141	1.208	0.170	
1745.00	132322	Mid	bottom	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	1	99	19.0	18.20	0	-0.07	1:1	0.172	1.202	0.207	
1745.00	132322	Mid	bottom	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	50	50	19.0	18.18	0	0.01	1:1	0.168	1.208	0.203	
1745.00	132322	Mid	right	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	1	99	19.0	18.20	0	-0.07	1:1	0.083	1.202	0.100	
1745.00	132322	Mid	right	10 mm	LTE Band 66 (AWS)	Main 2	02144	20	QPSK	50	50	19.0	18.18	0	-0.05	1:1	0.079	1.208	0.095	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.00	1:1	0.167	1.288	0.215	
1745.00	132322	Mid	back	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	-0.01	1:1	0.163	1.285	0.209	
1745.00	132322	Mid	front	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	-0.03	1:1	0.139	1.288	0.179	
1745.00	132322	Mid	front	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	0.03	1:1	0.147	1.285	0.189	
1745.00	132322	Mid	top	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.00	1:1	0.265	1.288	0.341	A55
1745.00	132322	Mid	top	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	-0.03	1:1	0.251	1.285	0.323	
1745.00	132322	Mid	right	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.02	1:1	0.009	1.288	0.012	
1745.00	132322	Mid	right	10 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	-0.18	1:1	0.009	1.285	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-43
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1882.50	26365	Mid	back	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	0.06	1:1	0.207	1.262	0.261	
1882.50	26365	Mid	back	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	0.01	1:1	0.209	1.230	0.257	
1882.50	26365	Mid	front	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	0.05	1:1	0.189	1.262	0.239	
1882.50	26365	Mid	front	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	0.02	1:1	0.185	1.230	0.228	
1882.50	26365	Mid	bottom	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	-0.02	1:1	0.328	1.262	0.414	A56
1882.50	26365	Mid	bottom	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	0.00	1:1	0.318	1.230	0.391	
1882.50	26365	Mid	right	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	0.06	1:1	0.079	1.262	0.100	
1882.50	26365	Mid	right	10 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	-0.01	1:1	0.081	1.230	0.100	

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

Table 11-44
LTE Band 2 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	18700	Low	back	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.04	1:1	0.155	1.303	0.202	
1860.00	18700	Low	back	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	-0.01	1:1	0.178	1.312	0.234	
1860.00	18700	Low	front	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.00	1:1	0.141	1.303	0.184	
1860.00	18700	Low	front	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.01	1:1	0.142	1.312	0.186	
1860.00	18700	Low	top	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.03	1:1	0.249	1.303	0.324	A57
1860.00	18700	Low	top	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	-0.02	1:1	0.234	1.312	0.307	
1860.00	18700	Low	right	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.17	1:1	0.010	1.303	0.013	
1860.00	18700	Low	right	10 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.03	1:1	0.016	1.312	0.021	

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

Table 11-45
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Main 2	02144	10	QPSK	1	0	20.0	19.27	0	0.12	1:1	0.130	1.183	0.154	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Main 2	02144	10	QPSK	25	12	20.0	19.09	0	0.01	1:1	0.129	1.233	0.159	
2310.00	27710	Mid	front	10 mm	LTE Band 30	Main 2	02144	10	QPSK	1	0	20.0	19.27	0	-0.01	1:1	0.138	1.183	0.163	A58
2310.00	27710	Mid	front	10 mm	LTE Band 30	Main 2	02144	10	QPSK	25	12	20.0	19.09	0	0.04	1:1	0.130	1.233	0.160	
2310.00	27710	Mid	bottom	10 mm	LTE Band 30	Main 2	02144	10	QPSK	1	0	20.0	19.27	0	0.00	1:1	0.115	1.183	0.136	
2310.00	27710	Mid	bottom	10 mm	LTE Band 30	Main 2	02144	10	QPSK	25	12	20.0	19.09	0	-0.01	1:1	0.113	1.233	0.139	
2310.00	27710	Mid	right	10 mm	LTE Band 30	Main 2	02144	10	QPSK	1	0	20.0	19.27	0	-0.11	1:1	0.057	1.183	0.067	
2310.00	27710	Mid	right	10 mm	LTE Band 30	Main 2	02144	10	QPSK	25	12	20.0	19.09	0	0.01	1:1	0.057	1.233	0.070	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	-0.07	1:1	0.079	1.245	0.098	
2310.00	27710	Mid	back	10 mm	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.03	1:1	0.084	1.247	0.105	
2310.00	27710	Mid	front	10 mm	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	0.00	1:1	0.078	1.245	0.097	
2310.00	27710	Mid	front	10 mm	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.01	1:1	0.067	1.247	0.084	
2310.00	27710	Mid	top	10 mm	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	-0.09	1:1	0.126	1.245	0.157	
2310.00	27710	Mid	top	10 mm	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	0.00	1:1	0.121	1.247	0.151	
2310.00	27710	Mid	right	10 mm	LTE Band 30	Sub	02185	10	QPSK	1	25	17.0	16.05	0	-0.01	1:1	0.071	1.245	0.088	
2310.00	27710	Mid	right	10 mm	LTE Band 30	Sub	02185	10	QPSK	25	25	17.0	16.04	0	-0.01	1:1	0.064	1.247	0.080	
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 41 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
2636.50	41055	Mid-High	back	10 mm	LTE Band 41	Main 2	02144	20	QPSK	1	99	20.0	19.28	0	0.12	1:1.58	0.077	1.180	0.091	
2636.50	41055	Mid-High	back	10 mm	LTE Band 41	Main 2	02144	20	QPSK	50	25	20.0	19.27	0	-0.02	1:1.58	0.076	1.183	0.090	
2636.50	41055	Mid-High	front	10 mm	LTE Band 41	Main 2	02144	20	QPSK	1	99	20.0	19.28	0	0.03	1:1.58	0.136	1.180	0.160	
2636.50	41055	Mid-High	front	10 mm	LTE Band 41	Main 2	02144	20	QPSK	50	25	20.0	19.27	0	0.00	1:1.58	0.136	1.183	0.161	A59
2636.50	41055	Mid-High	bottom	10 mm	LTE Band 41	Main 2	02144	20	QPSK	1	99	20.0	19.28	0	0.02	1:1.58	0.095	1.180	0.112	
2636.50	41055	Mid-High	bottom	10 mm	LTE Band 41	Main 2	02144	20	QPSK	50	25	20.0	19.27	0	-0.02	1:1.58	0.099	1.183	0.117	
2636.50	41055	Mid-High	right	10 mm	LTE Band 41	Main 2	02144	20	QPSK	1	99	20.0	19.28	0	0.20	1:1.58	0.030	1.180	0.035	
2636.50	41055	Mid-High	right	10 mm	LTE Band 41	Main 2	02144	20	QPSK	50	25	20.0	19.27	0	0.04	1:1.58	0.028	1.183	0.033	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-47
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
3646.70	56207	Mid-High	back	10 mm	LTE Band 48	Main 1	02144	20	QPSK	1	0	20.0	19.27	0	-0.02	1:1.58	0.260	1.183	0.308	
3646.70	56207	Mid-High	back	10 mm	LTE Band 48	Main 1	02144	20	QPSK	50	50	20.0	19.34	0	0.01	1:1.58	0.270	1.164	**0.314**	A40
3646.70	56207	Mid-High	front	10 mm	LTE Band 48	Main 1	02144	20	QPSK	1	0	20.0	19.27	0	0.07	1:1.58	0.036	1.183	0.043	
3646.70	56207	Mid-High	front	10 mm	LTE Band 48	Main 1	02144	20	QPSK	50	50	20.0	19.34	0	-0.16	1:1.58	0.027	1.164	0.031	
3646.70	56207	Mid-High	bottom	10 mm	LTE Band 48	Main 1	02144	20	QPSK	1	0	20.0	19.27	0	0.03	1:1.58	0.116	1.183	0.137	
3646.70	56207	Mid-High	bottom	10 mm	LTE Band 48	Main 1	02144	20	QPSK	50	50	20.0	19.34	0	-0.03	1:1.58	0.112	1.164	0.130	
3646.70	56207	Mid-High	left	10 mm	LTE Band 48	Main 1	02144	20	QPSK	1	0	20.0	19.27	0	0.07	1:1.58	0.016	1.183	0.019	
3646.70	56207	Mid-High	left	10 mm	LTE Band 48	Main 1	02144	20	QPSK	50	50	20.0	19.34	0	0.06	1:1.58	0.016	1.164	0.019	
3690.00	56640	High	back	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	1	50	18.0	17.84	0	-0.02	1:1.58	0.158	1.038	0.164	
3690.00	56640	High	back	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	50	50	18.0	17.96	0	-0.02	1:1.58	0.164	1.009	0.165	
3690.00	56640	High	front	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	1	50	18.0	17.84	0	-0.12	1:1.58	0.016	1.038	0.017	
3690.00	56640	High	front	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	50	50	18.0	17.96	0	-0.20	1:1.58	0.016	1.009	0.016	
3690.00	56640	High	top	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	1	50	18.0	17.84	0	0.08	1:1.58	0.023	1.038	0.024	
3690.00	56640	High	top	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	50	50	18.0	17.96	0	0.14	1:1.58	0.027	1.009	0.027	
3690.00	56640	High	left	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	1	50	18.0	17.84	0	0.02	1:1.58	0.039	1.038	0.040	
3690.00	56640	High	left	10 mm	LTE Band 48	Sub-UHB	02185	20	QPSK	50	50	18.0	17.96	0	0.01	1:1.58	0.042	1.009	0.042	
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
NR Band n71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	23.0	21.88	0	-0.07	1:1	0.151	1.294	0.195	
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	23.0	21.89	0	-0.02	1:1	0.161	1.291	0.208	A41
680.50	136100	Mid	back	10 mm	NR Band n71	Main 1	02805	20	CP-OFDM	QPSK	1	1	23.0	21.58	0	-0.06	1:1	0.152	1.387	0.211	
680.50	136100	Mid	front	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	23.0	21.88	0	-0.01	1:1	0.137	1.294	0.177	
680.50	136100	Mid	front	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	23.0	21.89	0	-0.03	1:1	0.122	1.291	0.158	
680.50	136100	Mid	bottom	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	23.0	21.88	0	-0.04	1:1	0.048	1.294	0.062	
680.50	136100	Mid	bottom	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	23.0	21.89	0	0.04	1:1	0.050	1.291	0.065	
680.50	136100	Mid	left	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	23.0	21.88	0	-0.01	1:1	0.088	1.294	0.114	
680.50	136100	Mid	left	10 mm	NR Band n71	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	23.0	21.89	0	0.05	1:1	0.085	1.291	0.110	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-49
NR Band n5 Hotspot SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	20.79	0	-0.08	1:1	0.326	1.321	0.431	A42
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	20.93	0	0.01	1:1	0.313	1.279	0.400	
836.50	167300	Mid	back	10 mm	NR Band n5	Main 1	02805	20	CP-OFDM	QPSK	1	1	22.0	20.87	0	0.04	1:1	0.316	1.297	0.410	
836.50	167300	Mid	front	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	20.79	0	-0.02	1:1	0.276	1.321	0.365	
836.50	167300	Mid	front	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	20.93	0	0.01	1:1	0.275	1.279	0.352	
836.50	167300	Mid	bottom	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	20.79	0	0.02	1:1	0.141	1.321	0.186	
836.50	167300	Mid	bottom	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	20.93	0	-0.03	1:1	0.143	1.279	0.183	
836.50	167300	Mid	left	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	20.79	0	-0.04	1:1	0.115	1.321	0.152	
836.50	167300	Mid	left	10 mm	NR Band n5	Main 1	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	20.93	0	-0.01	1:1	0.100	1.279	0.128	
836.50	167300	Mid	back	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	21.26	0	-0.01	1:1	0.091	1.186	0.108	
836.50	167300	Mid	back	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	21.22	0	0.03	1:1	0.093	1.197	0.111	
836.50	167300	Mid	front	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	21.26	0	-0.02	1:1	0.109	1.186	0.129	
836.50	167300	Mid	front	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	21.22	0	-0.03	1:1	0.109	1.197	0.130	
836.50	167300	Mid	front	10 mm	NR Band n5	Sub	02805	20	CP-OFDM	QPSK	1	1	22.0	21.17	0	0.02	1:1	0.109	1.211	0.132	
836.50	167300	Mid	top	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	21.26	0	0.16	1:1	0.013	1.186	0.015	
836.50	167300	Mid	top	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	21.22	0	-0.16	1:1	0.013	1.197	0.016	
836.50	167300	Mid	right	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	1	53	22.0	21.26	0	-0.03	1:1	0.085	1.186	0.101	
836.50	167300	Mid	right	10 mm	NR Band n5	Sub	02805	20	DFT-S-OFDM	QPSK	50	28	22.0	21.22	0	-0.01	1:1	0.093	1.197	0.111	
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
NR Band n66 Hotspot SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1745.00	349000	Mid	back	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	1	53	20.0	18.79	0	-0.03	1:1	0.126	1.321	0.166	
1745.00	349000	Mid	back	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	50	28	20.0	18.72	0	0.02	1:1	0.126	1.343	0.169	
1745.00	349000	Mid	front	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	1	53	20.0	18.79	0	-0.01	1:1	0.120	1.321	0.159	
1745.00	349000	Mid	front	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	50	28	20.0	18.72	0	-0.04	1:1	0.115	1.343	0.154	
1745.00	349000	Mid	bottom	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	1	53	20.0	18.79	0	0.01	1:1	0.177	1.321	0.234	A60
1745.00	349000	Mid	bottom	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	50	28	20.0	18.72	0	-0.01	1:1	0.154	1.343	0.207	
1745.00	349000	Mid	bottom	10 mm	NR Band n66	Main 2	02805	20	CP-OFDM	QPSK	1	1	20.0	18.58	0	-0.02	1:1	0.153	1.387	0.212	
1745.00	349000	Mid	right	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	1	53	20.0	18.79	0	-0.05	1:1	0.094	1.321	0.124	
1745.00	349000	Mid	right	10 mm	NR Band n66	Main 2	02805	20	DFT-S-OFDM	QPSK	50	28	20.0	18.72	0	-0.04	1:1	0.075	1.343	0.101	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-51
NR Band n25 Hotspot SAR

MEASUREMENT RESULTS																						
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1860.00	372000	Low	back	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	-0.09	1:1	0.149	1.403	0.209	
1860.00	372000	Low	back	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	0.02	1:1	0.158	1.419	0.224	
1860.00	372000	Low	front	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	-0.01	1:1	0.161	1.403	0.226	
1860.00	372000	Low	front	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	-0.05	1:1	0.154	1.419	0.219	
1860.00	372000	Low	bottom	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	0.03	1:1	0.301	1.403	0.422	
1860.00	372000	Low	bottom	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	-0.11	1:1	0.307	1.419	0.436	A61
1860.00	372000	Low	bottom	10 mm	NR Band n25	Main 2	02805	20	CP-OFDM	QPSK	1	1	20.0	18.63	0	0.03	1:1	0.290	1.371	0.398	
1860.00	372000	Low	right	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	-0.07	1:1	0.085	1.403	0.119	
1860.00	372000	Low	right	10 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	-0.05	1:1	0.075	1.419	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							

Table 11-52
NR Band n30 Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
2310.00	462000	Mid	back	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	1	26	20.0	18.87	0	-0.08	1:1	0.133	1.297	0.173	
2310.00	462000	Mid	back	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	25	14	20.0	18.84	0	-0.09	1:1	0.126	1.306	0.165	
2310.00	462000	Mid	front	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	1	26	20.0	18.87	0	-0.16	1:1	0.096	1.297	0.125	
2310.00	462000	Mid	front	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	25	14	20.0	18.84	0	0.02	1:1	0.088	1.306	0.115	
2310.00	462000	Mid	bottom	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	1	26	20.0	18.87	0	0.01	1:1	0.206	1.297	0.267	
2310.00	462000	Mid	bottom	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	25	14	20.0	18.84	0	0.06	1:1	0.216	1.306	0.282	A62
2310.00	462000	Mid	bottom	10 mm	NR Band n30	Main 2	02508	10	CP-OFDM	QPSK	1	1	20.0	18.73	0	0.06	1:1	0.208	1.340	0.279	
2310.00	462000	Mid	right	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	1	26	20.0	18.87	0	0.06	1:1	0.036	1.297	0.047	
2310.00	462000	Mid	right	10 mm	NR Band n30	Main 2	02508	10	DFT-S-OFDM	QPSK	25	14	20.0	18.84	0	-0.15	1:1	0.041	1.306	0.054	
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 11-53
NR Band n41 Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
2592.99	518598	Mid	back	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	0.10	1:1	0.130	1.507	0.196	
2592.99	518598	Mid	back	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.01	1:1	0.123	1.549	0.191	
2592.99	518598	Mid	front	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	0.06	1:1	0.158	1.507	0.238	
2592.99	518598	Mid	front	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.04	1:1	0.191	1.549	0.296	
2592.99	518598	Mid	front	10 mm	NR Band n41	Main 2	02508	100	CP-OFDM	QPSK	1	1	20.0	18.10	0	-0.06	1:1	0.157	1.549	0.243	
2592.99	518598	Mid	bottom	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	-0.21	1:1	0.162	1.507	0.244	
2592.99	518598	Mid	bottom	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	-0.02	1:1	0.158	1.549	0.245	
2592.99	518598	Mid	right	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	-0.08	1:1	0.062	1.507	0.093	
2592.99	518598	Mid	right	10 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.09	1:1	0.054	1.549	0.084	
2592.99	518598	Mid	back	10 mm	NR Band n41	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	15.5	14.15	N/A	0.14	1:1	0.034	1.365	0.046	
2592.99	518598	Mid	front	10 mm	NR Band n41	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	15.5	14.15	N/A	0.04	1:1	0.006	1.365	0.008	
2592.99	518598	Mid	top	10 mm	NR Band n41	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	15.5	14.15	N/A	0.07	1:1	0.000	1.365	0.000	
2592.99	518598	Mid	right	10 mm	NR Band n41	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	15.5	14.15	N/A	0.09	1:1	0.012	1.365	0.016	
2592.99	518598	Mid	back	10 mm	NR Band n41	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	17.0	15.10	N/A	0.07	1:1	0.092	1.549	0.143	
2592.99	518598	Mid	back	10 mm	NR Band n41	4th-MHB	02805	100	CW/SRS	N/A	N/A	N/A	15.0	13.03	N/A	-0.01	1:1	0.088	1.574	0.139	
2592.99	518598	Mid	front	10 mm	NR Band n41	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	17.0	15.10	N/A	-0.12	1:1	0.004	1.549	0.006	
2592.99	518598	Mid	top	10 mm	NR Band n41	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	17.0	15.10	N/A	0.07	1:1	0.004	1.549	0.006	
2592.99	518598	Mid	left	10 mm	NR Band n41	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	17.0	15.10	N/A	0.02	1:1	0.014	1.549	0.022	
2592.99	518598	Mid	back	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.01	1:1	0.126	1.361	0.171	
2592.99	518598	Mid	back	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	0.03	1:1	0.142	1.315	0.187	
2592.99	518598	Mid	front	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.10	1:1	0.099	1.361	0.135	
2592.99	518598	Mid	front	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	-0.01	1:1	0.088	1.315	0.116	
2592.99	518598	Mid	top	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	-0.02	1:1	0.206	1.361	0.280	A63
2592.99	518598	Mid	top	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	-0.10	1:1	0.206	1.315	0.271	
2592.99	518598	Mid	top	10 mm	NR Band n41	Sub	02805	100	CW/SRS	N/A	N/A	N/A	15.5	15.12	N/A	-0.10	1:1	0.071	1.091	0.077	
2592.99	518598	Mid	right	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	1	1	18.0	16.66	0	0.03	1:1	0.114	1.361	0.155	
2592.99	518598	Mid	right	10 mm	NR Band n41	Sub	02805	100	CP-OFDM	QPSK	137	0	18.0	16.81	0	-0.03	1:1	0.133	1.315	0.175	
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: Light brown entries indicate the additional check on the worst case exposure scenario for the n41 pathway that is not fully evaluated.

Table 11-54
NR Band n77 Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
3750.00	650000	Low	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.01	0	0.00	1:1	0.506	1.256	0.636	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	-0.02	1:1	0.761	1.114	0.848	
3750.00	650000	Low	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.10	0	-0.10	1:1	0.513	1.230	0.631	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	-0.02	1:1	0.809	1.151	0.931	A47
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	270	0	19.0	18.22	0	-0.10	1:1	0.675	1.197	0.808	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	CP-OFDM	QPSK	1	1	19.0	18.16	0	0.06	1:1	0.771	1.213	**0.935**	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.64	0	0.04	1:1	0.324	1.086	0.352	
3930.00	662000	High	front	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	0.00	1:1	0.084	1.114	0.094	
3930.00	662000	High	front	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	0.10	1:1	0.081	1.151	0.093	
3930.00	662000	High	bottom	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	-0.02	1:1	0.089	1.114	0.099	
3930.00	662000	High	bottom	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	0.02	1:1	0.094	1.151	0.108	
3930.00	662000	High	left	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	0.20	1:1	0.026	1.114	0.029	
3930.00	662000	High	left	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	0.08	1:1	0.036	1.151	0.041	
3930.00	662000	High	back	10 mm	NR Band n77	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	13.5	13.50	N/A	-0.04	1:1	0.033	1.000	0.033	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	13.5	13.46	N/A	0.09	1:1	0.020	1.009	0.020	
3930.00	662000	High	front	10 mm	NR Band n77	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	13.5	13.50	N/A	0.06	1:1	0.001	1.000	0.001	
3930.00	662000	High	top	10 mm	NR Band n77	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	13.5	13.50	N/A	0.05	1:1	0.005	1.000	0.005	
3930.00	662000	High	right	10 mm	NR Band n77	3rd-LMHB	02508	100	CW/SRS	N/A	N/A	N/A	13.5	13.50	N/A	0.08	1:1	0.006	1.000	0.006	
3750.00	650000	Low	back	10 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	15.0	14.02	N/A	-0.02	1:1	0.138	1.253	0.173	
3750.00	650000	Low	back	10 mm	NR Band n77	4th-MHB	02888	100	CW/SRS	N/A	N/A	N/A	12.0	10.10	N/A	0.19	1:1	0.037	1.549	0.057	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	15.0	14.90	N/A	0.03	1:1	0.096	1.023	0.098	
3750.00	650000	Low	front	10 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	15.0	14.02	N/A	0.09	1:1	0.000	1.253	0.000	
3750.00	650000	Low	top	10 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	15.0	14.02	N/A	0.20	1:1	0.005	1.253	0.006	
3750.00	650000	Low	left	10 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	15.0	14.02	N/A	0.03	1:1	0.013	1.253	0.016	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	-0.01	1:1	0.233	1.315	0.306	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	-0.07	1:1	0.270	1.374	0.371	
3930.00	662000	High	back	10 mm	NR Band n77	Sub-UHB	02888	100	DFT-S-OFDM	QPSK	1	137	15.0	14.27	0	0.01	1:1	0.196	1.183	0.232	
3500.01	633334	Mid	back	10 mm	NR Band n77 DoD	Sub-UHB	02888	100	CP-OFDM	QPSK	1	271	18.0	16.21	0	0.05	1:1	0.073	1.510	0.110	
3930.00	662000	High	front	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.05	1:1	0.021	1.315	0.028	
3930.00	662000	High	front	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.03	1:1	0.019	1.374	0.026	
3930.00	662000	High	top	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.01	1:1	0.033	1.315	0.043	
3930.00	662000	High	top	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.09	1:1	0.032	1.374	0.044	
3930.00	662000	High	left	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	-0.18	1:1	0.057	1.315	0.075	
3930.00	662000	High	left	10 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.11	1:1	0.068	1.374	0.093	
3930.00	662000	High	back	10 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	-0.08	1:1	0.711	1.151	0.818	
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: 1) Light purple entries indicate the additional DoD check on the worst case exposure scenario from C-band antennas. 2) Light brown entries indicate the additional check on the worst case exposure scenario for the n77 pathway that is not fully evaluated. 3) Blue Entry represents variability measurement.

Table 11-55
DTS Hotspot MIMO SAR

MEASUREMENT RESULTS																							
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																						
2437	6	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.05	100.00	99.71	1	0.075	1.104	1.003	0.083	
2437	6	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	-0.01	100.00	99.71	2	0.098	1.104	1.003	0.109	
2437	6	front	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.04	100.00	99.71	-	0.074	1.104	1.003	0.082	
2437	6	top	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.01	100.00	99.71	-	0.015	1.104	1.003	0.017	
2437	6	bottom	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.07	100.00	99.71	-	0.020	1.104	1.003	0.022	
2437	6	left	10 mm	802.11n	OFDM	MIMO	02748	20	13	14.0	13.74	14.0	13.57	0.00	100.00	99.71	-	0.162	1.104	1.003	**0.179**	A64
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: in MIMO operations, each antenna transmits at a maximum allowed power of 14.0 dBm. Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-56
DTS Hotspot MIMO SAR during Conditions with 5/6 GHz WLAN

MEASUREMENT RESULTS																							
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																						
2412	1	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.01	100.00	99.71	1	0.038	1.175	1.003	0.045	
2412	1	back	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.01	100.00	99.71	2	0.048	1.175	1.003	0.057	
2412	1	front	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.15	100.00	99.71	-	0.028	1.175	1.003	0.033	
2412	1	top	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.04	100.00	99.71	-	0.008	1.175	1.003	0.009	
2412	1	bottom	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.01	100.00	99.71	-	0.009	1.175	1.003	0.011	
2412	1	left	10 mm	802.11n	OFDM	MIMO	02748	20	13	11.0	10.30	11.0	10.72	0.16	100.00	99.71	-	0.063	1.175	1.003	0.074	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram												

Note: 2.4 GHz MIMO was additionally evaluated at the maximum allowed output power during simultaneous operations with 5/6 GHz WLAN. 5/6 GHz WIFI was not transmitting during the above evaluations. in MIMO operations each antenna transmits at a maximum allowed power of 11.0 dBm. Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-57
NII MIMO WLAN Hotspot SAR

MEASUREMENT RESULTS																							
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	Peak Number	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																						
5210	42	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	-0.01	100.00	99.71	1	0.015	1.578	1.003	**0.024**	
5210	42	back	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	0.02	100.00	99.71	2	0.054	1.578	1.003	**0.085**	
5210	42	front	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	-0.05	100.00	99.71	-	0.019	1.578	1.003	**0.030**	
5210	42	top	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	0.03	100.00	99.71	-	0.007	1.578	1.003	**0.011**	
5210	42	bottom	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	0.02	100.00	99.71	-	0.009	1.578	1.003	**0.014**	
5210	42	left	10 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.32	11.5	9.52	-0.03	100.00	99.71		0.045	1.578	1.003	**0.071**	
5795	159	back	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.05	100.00	99.72	1	0.048	1.581	1.003	**0.076**	
5795	159	back	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.07	100.00	99.72	2	0.018	1.581	1.003	**0.029**	
5795	159	front	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.20	100.00	99.72	-	0.013	1.581	1.003	**0.021**	
5795	159	top	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.20	100.00	99.72	-	0.015	1.581	1.003	**0.024**	
5795	159	bottom	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.20	100.00	99.72	-	0.004	1.581	1.003	**0.006**	
5795	159	left	10 mm	802.11n	OFDM	MIMO	02748	40	27	11.5	11.49	11.5	9.51	0.03	100.00	99.72	-	0.060	1.581	1.003	**0.095**	A65
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: in MIMO operations, each antenna transmits at a maximum allowed power of 11.5 dBm.
Peak Number 1 and 2 correspond to the top and bottom of DUT respectively.

Table 11-58
DSS Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2480	78	back	10 mm	Bluetooth	FHSS	WiFi Main	02862	1	14.0	13.64	0.03	83.30	77.07	0.038	1.087	1.081	**0.045**	
2480	78	front	10 mm	Bluetooth	FHSS	WiFi Main	02862	1	14.0	13.64	-0.07	83.30	77.07	0.023	1.087	1.081	**0.027**	
2480	78	top	10 mm	Bluetooth	FHSS	WiFi Main	02862	1	14.0	13.64	0.02	83.30	77.07	0.004	1.087	1.081	**0.005**	
2480	78	left	10 mm	Bluetooth	FHSS	WiFi Main	02862	1	14.0	13.64	0.15	83.30	77.07	0.078	1.087	1.081	**0.092**	A66
2480	78	back	10 mm	Bluetooth	FHSS	WiFi Sub	02862	1	14.0	13.82	0.03	83.30	77.07	0.039	1.043	1.081	**0.044**	
2480	78	front	10 mm	Bluetooth	FHSS	WiFi Sub	02862	1	14.0	13.82	0.06	83.30	77.07	0.003	1.043	1.081	**0.003**	
2480	78	bottom	10 mm	Bluetooth	FHSS	WiFi Sub	02862	1	14.0	13.82	0.08	83.30	77.07	0.004	1.043	1.081	**0.005**	
2480	78	left	10 mm	Bluetooth	FHSS	WiFi Sub	02862	1	14.0	13.82	0.03	83.30	77.07	0.004	1.043	1.081	**0.005**	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**										**Body** **1.6 W/kg (mW/g)** averaged over 1 gram								

11.4 Standalone Phablet SAR Data

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

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1745.00	132322	Mid	top	0 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	1	50	17.0	15.90	0	0.00	1:1	0.588	1.288	0.757	A67
1745.00	132322	Mid	top	0 mm	LTE Band 66 (AWS)	Sub	02185	20	QPSK	50	50	17.0	15.91	0	0.02	1:1	0.575	1.285	0.739	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams								

Table 11-60
LTE Band 25 (PCS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1882.50	26365	Mid	bottom	0 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	1	50	20.0	18.99	0	0.01	1:1	0.749	1.262	0.945	
1882.50	26365	Mid	bottom	0 mm	LTE Band 25 (PCS)	Main 2	02144	20	QPSK	50	50	20.0	19.10	0	-0.02	1:1	0.759	1.230	0.934	A68
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams								

Table 11-61
LTE Band 2 Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Side	Spacing	Mode	Antenna Config.	Serial Number	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	18700	Low	back	0 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.06	1:1	0.422	1.303	0.550	
1860.00	18700	Low	back	0 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.02	1:1	0.419	1.312	0.550	
1860.00	18700	Low	top	0 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	1	0	16.0	14.85	0	0.05	1:1	0.546	1.303	0.711	A69
1860.00	18700	Low	top	0 mm	LTE Band 2 (PCS)	Sub	02185	20	QPSK	50	25	16.0	14.82	0	0.01	1:1	0.514	1.312	0.674	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams								

Table 11-63
NR Band n25 Phablet SAR

FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																				
1860.00	372000	Low	bottom	0 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	1	1	20.0	18.53	0	-0.01	1:1	0.713	1.403	1.000	
1860.00	372000	Low	bottom	0 mm	NR Band n25	Main 2	02805	20	DFT-S-OFDM	QPSK	50	0	20.0	18.48	0	0.01	1:1	0.731	1.419	1.037	
1860.00	372000	Low	bottom	0 mm	NR Band n25	Main 2	02805	20	CP-OFDM	QPSK	1	1	20.0	18.63	0	0.01	1:1	0.790	1.371	1.083	A70
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Phablet 4.0 W/kg (mW/g) averaged over 10 grams												

Table 11-64
NR Band n41 Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																				
2592.99	518598	Mid	front	0 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	0.03	1:1	1.140	1.507	1.718	A71
2592.99	518598	Mid	front	0 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.00	1:1	1.030	1.549	1.595	
2592.99	518598	Mid	front	0 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	270	0	20.0	18.03	0	-0.04	1:1	0.927	1.574	1.459	
2592.99	518598	Mid	front	0 mm	NR Band n41	Main 2	02508	100	CP-OFDM	QPSK	1	1	20.0	18.10	0	-0.11	1:1	1.000	1.549	1.549	
2592.99	518598	Mid	bottom	0 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	1	137	20.0	18.22	0	0.00	1:1	0.662	1.507	0.998	
2592.99	518598	Mid	bottom	0 mm	NR Band n41	Main 2	02508	100	DFT-S-OFDM	QPSK	135	69	20.0	18.10	0	0.02	1:1	0.621	1.549	0.962	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Phablet 4.0 W/kg (mW/g) averaged over 10 grams												

Table 11-65
NR Band n77 Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Side	Spacing	Mode	Antenna Config	Serial Number	Bandwidth [MHz]	Waveform	Modulation	RB Size	RB Offset	Maximum Allowed Power [dBm]	Conducted Power [dBm]	MPR [dB]	Power Drift [dB]	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																				
3750.00	650000	Low	back	0 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.01	0	-0.04	1:1	1.110	1.256	1.394	
3930.00	662000	High	back	0 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	1	137	19.0	18.53	0	0.01	1:1	0.775	1.114	0.863	
3750.00	650000	Low	back	0 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.10	0	0.02	1:1	1.100	1.230	1.353	
3930.00	662000	High	back	0 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	135	69	19.0	18.39	0	0.02	1:1	0.758	1.151	0.872	
3930.00	662000	High	back	0 mm	NR Band n77	Main 1	02888	100	DFT-S-OFDM	QPSK	270	0	19.0	18.22	0	0.00	1:1	0.802	1.197	0.960	
3930.00	662000	High	back	0 mm	NR Band n77	Main 1	02888	100	CP-OFDM	QPSK	1	1	19.0	18.16	0	0.07	1:1	0.994	1.213	1.206	
3500.01	633334	Mid	back	0 mm	NR Band n77 DoD	Main 1	02888	100	DFT-S-OFDM	QPSK	135	0	19.0	18.64	0	-0.02	1:1	1.390	1.086	1.510	A72
3750.00	650000	Low	back	0 mm	NR Band n77	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	16.0	14.02	N/A	-0.01	1:1	0.528	1.578	0.833	
3500.01	633334	Mid	back	0 mm	NR Band n77 DoD	4th-MHB	02508	100	CW/SRS	N/A	N/A	N/A	16.0	14.90	N/A	0.00	1:1	0.377	1.288	0.486	
3750.00	650000	Low	back	0 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.06	0	0.00	1:1	0.444	1.563	0.694	
3930.00	662000	High	back	0 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	1	137	18.0	16.81	0	0.01	1:1	0.831	1.315	1.093	
3750.00	650000	Low	back	0 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	0	18.0	16.10	0	0.04	1:1	0.429	1.549	0.665	
3930.00	662000	High	back	0 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	137	68	18.0	16.62	0	0.01	1:1	0.857	1.374	1.178	
3930.00	662000	High	back	0 mm	NR Band n77	Sub-UHB	02888	100	CP-OFDM	QPSK	273	0	18.0	16.55	0	-0.11	1:1	0.745	1.396	1.040	
3500.01	633334	Mid	back	0 mm	NR Band n77 DoD	Sub-UHB	02888	100	CP-OFDM	QPSK	1	271	18.0	16.21	0	0.00	1:1	0.292	1.510	0.441	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Phablet 4 W/kg (mW/g) averaged over 10 grams												

Note: Light purple entries indicate the additional check on the worst case exposure scenario for the n77 pathway that is not fully evaluated.

Table 11-66
WLAN MIMO Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY		Side	Spacing	Mode	Service	Antenna Config.	Device Serial Number	Bandwidth [MHz]	Data Rate (Mbps)	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]	Maximum Duty Cycle (%)	Duty Cycle (%)	SAR (10g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																				
5290	58	back	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.20	100.00	99.71	0.177	1.507	1.003	0.268	
5290	58	front	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.07	100.00	99.71	0.087	1.507	1.003	0.132	
5290	58	top	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.01	100.00	99.71	0.006	1.507	1.003	0.009	
5290	58	bottom	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.01	100.00	99.71	0.024	1.507	1.003	0.036	
5290	58	left	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.34	11.5	9.72	0.09	100.00	99.71	0.208	1.507	1.003	0.314	
5690	138	back	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.20	100.00	99.71	0.123	1.462	1.003	0.180	
5690	138	front	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.20	100.00	99.71	0.144	1.462	1.003	0.211	
5690	138	top	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.03	100.00	99.71	0.026	1.462	1.003	0.038	
5690	138	bottom	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.20	100.00	99.71	0.013	1.462	1.003	0.019	
5690	138	left	0 mm	802.11ac	OFDM	MIMO	02748	80	58.5	11.5	11.42	11.5	9.85	0.08	100.00	99.71	0.427	1.462	1.003	0.626	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											

Note: in MIMO operations, each antenna transmits at a maximum allowed power of 11.5 dBm.

Table 11-67
NFC Phablet SAR

MEASUREMENT RESULTS											
FREQUENCY	Side	Test Position	Mode	Type	Antenna Config.	Device Serial Number	Power Drift	SAR (10g)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz								(W/kg)		(W/kg)	
13.56	back	0 mm	NFC	B	NFC	02748	0.05	0.021	1.000	**0.021**	A74
13.56	front	0 mm	NFC	B	NFC	02748	0.06	0.000	1.000	0.000	
13.56	left	0 mm	NFC	B	NFC	02748	0.04	0.000	1.000	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams				

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 D04v01.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D04v01.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 1 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the display diagonal dimension is > 150 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.
11. 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.
12. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
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).

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 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).
4. DTM SAR was evaluated with CMW500 Radio Communication Tester FW version 3.7.26 when the device was operating in DTM using maximum CS and PS slots according to FCC KDB 941225 D04v01.

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 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).

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 8.5.4.
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 and MCC=001 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 D04v01, when the reported 1g SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for LTE B41, 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.

NR Notes:

1. NR implementation supports SA and NSA mode. In EN-DC mode, NR operates with the LTE Bands shown in the NR FR1 checklist acting as anchor bands. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Due to test setup limitations, SAR testing for NR TDD 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. Per FCC KDB Publication 447498 D01v06, when the reported NR Band n77 C-Band SAR measured at the highest output power channel in a given a test configuration was > 0.4 W/kg for 1g evaluations and > 1 W/kg for 10g evaluation, testing at the other channels was required for such test configurations.
7. Per FCC KDB Publication 447498 D01v06, when the reported NR Band n41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations and > 1 W/kg for 10g evaluation, testing at the other channels was required for such test configurations.
8. For final implementation, NR Band n41 and n77 slot configuration is synchronized using maximum duty cycle of 100%. SAR testing was performed using FTM mode with a 100% duty cycle applied to match final duty cycle.
9. Per FCC Guidance, C-Band for NR n77 (3705 – 3975 MHz) was fully tested according to FCC procedures. For each exposure condition and antenna, the worst-case position was additionally evaluated for the NR n77 DoD (3455.01 – 3544.98 MHz).

10. This device uses two transmit pathways for n41 and n77 Sub-UHB and 4th- MBHB antenna operations (Path 1 and Path 2). For each exposure condition, the pathway with the highest target power was fully evaluated. The worst case for each antenna and exposure condition was additionally evaluated using the other path.

WLAN Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n/ax) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.6.4 for more information.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI 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 8.6.5 for more information.
3. 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.
4. 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.
5. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D04v01 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 Multi-TX and Antenna SAR Considerations Appendix for complete analysis.

Bluetooth Notes

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 83.3% transmission duty factor to determine compliance. See RF Conducted Power Section for the time domain plot and calculation for the duty factor of the device.
2. Head and Hotspot Bluetooth SAR were evaluated for BT BR tethering applications.

12 SAR MEASUREMENT VARIABILITY

12.1 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 12-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS															
Band	FREQUENCY		Mode	Service	Side	Spacing	Antenna Config	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)	
3900	3930.00	662000	NR Band n77, 100 MHz Bandwidth	DFT-S-OFDM, QPSK, 135 RB, 69 RB Offset	back	10 mm	Main 1	0.809	0.711	1.14	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Body 1.6 W/kg (mW/g) averaged over 1 gram									

12.2 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.

13 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	E4404B	Spectrum Analyzer	N/A	N/A	N/A	MY45113242
Agilent	E4438C	ESG Vector Signal Generator	1/18/2023	Annual	1/18/2024	MY47270002
Agilent	E4438C	ESG Vector Signal Generator	11/17/2022	Annual	11/17/2023	MY45093852
Agilent	N5182A	MXG Vector Signal Generator	11/30/2022	Annual	11/30/2023	MY47420603
Agilent	N5182A	MXG Vector Signal Generator	11/17/2022	Annual	11/17/2023	US46240505
Agilent	8753ES	S-Parameter Vector Network Analyzer	6/14/2022	Annual	6/14/2023	US39170118
Agilent	8753ES	S-Parameter Vector Network Analyzer	1/12/2023	Annual	1/12/2024	MY40001472
Agilent	E5515C	Wireless Communications Test Set	5/12/2022	Annual	5/12/2023	GB43304278
Agilent	E5515C	Wireless Communications Test Set	5/4/2021	Biennial	5/4/2023	GB41450275
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	No cal required	CBT	343972
Amplifier Research	150A100C	Amplifier	CBT	N/A	CBT	350132
Anritsu	MN8110B	I/O Adaptor	CBT	N/A	CBT	6261747881
Anritsu	ML2496A	Power Meter	8/16/2022	Annual	8/16/2023	1351001
Anritsu	ML2496A	Power Meter	3/31/2022	Annual	3/31/2023	1138001
Anritsu	MA2411B	Pulse Power Sensor	1/10/2023	Annual	1/10/2024	1315051
Anritsu	MA2411B	Pulse Power Sensor	3/28/2022	Annual	3/28/2023	1339007
Anritsu	MT8821C	Radio Communication Analyzer MT8821C	1/10/2023	Annual	1/10/2024	6201524637
Anritsu	MT8821C	Radio Communication Analyzer MT8821C	1/20/2023	Annual	1/20/2024	6201144419
Anritsu	MT8821C	Radio Communication Analyzer MT8821C	11/28/2022	Annual	11/28/2023	6262150047
Anritsu	MT8821C	Radio Communication Analyzer MT8821C	6/27/2022	Annual	6/27/2023	6261895213
Anritsu	MT8000A	Radio Communication Test Station	3/1/2023	Annual	3/1/2024	6272337419
Anritsu	MT8000A	Radio Communication Test Station	4/15/2022	Annual	4/15/2023	6272337439
Anritsu	MT8000A	Radio Communication Test Station	2/9/2023	Annual	2/9/2024	6272337408
Anritsu	MA24106A	USB Power Sensor	2/9/2023	Annual	2/9/2024	1520505
Anritsu	MA24106A	USB Power Sensor	2/14/2023	Annual	2/14/2024	1827531
Mini-Circuits	PWR-4GHS	USB Power Sensor	11/11/2022	Annual	11/11/2023	11710330062
Control Company	4352	Long Stem Thermometer	9/10/2021	Biennial	9/10/2023	210774678
Control Company	4352	Long Stem Thermometer	9/10/2021	Biennial	9/10/2023	210774685
Control Company	4352	Long Stem Thermometer	9/10/2021	Biennial	9/10/2023	210774675
Control Company	4040	Therm./ Clock/ Humidity Monitor	1/17/2023	Annual	1/17/2024	160574418
Mitutoyo	500-196-30	CD-6"ASX Ginch Digital Caliper	2/16/2022	Triennial	2/16/2025	A20238413
Keysight Technologies	N6705B	DC Power Analyzer	5/5/2021	Triennial	5/5/2024	MY53004059
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2023	Annual	3/15/2024	US46470561
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	VLF-6000+	Low Pass Filter DC to 6000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	VLF-6000+	Low Pass Filter DC to 6000 MHz	7/5/2022	Annual	7/5/2023	31634
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
Mini-Circuits	ZUDC10-83-S+	Directional Coupler	CBT	N/A	CBT	2050
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Seekonk	TSF-100	Torque Wrench	7/11/2022	Annual	7/11/2023	47639-29
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2/17/2023	Annual	2/17/2024	164948
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2/10/2023	Annual	2/10/2024	101699
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	11/30/2022	Annual	11/30/2023	128635
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	9/1/2022	Annual	9/1/2023	128636
SPEAG	DAK-3.5	Dielectric Assessment Kit	12/15/2022	Annual	12/15/2023	1278
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	8/15/2022	Annual	8/15/2023	1041
SPEAG	DAK-12	Dielectric Assessment Kit (4MHz - 3GHz)	11/14/2022	Annual	11/14/2023	1121
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1379
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1237
SPEAG	CLA-13	Confined Loop Antenna	9/13/2022	Annual	9/13/2023	1002
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2021	Biennial	10/19/2023	1161
SPEAG	D750V3	750 MHz SAR Dipole	11/18/2022	Annual	11/18/2023	1094
SPEAG	D835V2	835 MHz SAR Dipole	5/16/2022	Annual	5/16/2023	460
SPEAG	D835V2	835 MHz SAR Dipole	1/21/2021	Triennial	1/21/2024	4d132
SPEAG	D1765V2	1750 MHz SAR Dipole	5/14/2021	Biennial	5/14/2023	1008
SPEAG	D1750V2	1750 MHz SAR Dipole	1/18/2022	Biennial	1/18/2024	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	9/9/2020	Triennial	9/9/2023	1104
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2021	Biennial	10/22/2023	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	9/21/2021	Biennial	9/21/2023	5d149
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2022	Biennial	2/21/2024	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	9/10/2020	Triennial	9/10/2023	5d181
SPEAG	D2300V2	2300 MHz SAR Dipole	11/10/2020	Triennial	11/10/2023	1064
SPEAG	D2300V2	2300 MHz SAR Dipole	8/25/2022	Annual	8/25/2023	1073
SPEAG	D2300V2	2300 MHz SAR Dipole	3/15/2021	Biennial	3/15/2023	1038
SPEAG	D2450V2	2450 MHz SAR Dipole	11/25/2021	Biennial	11/25/2023	981
SPEAG	D2450V2	2450 MHz SAR Dipole	11/15/2022	Annual	11/15/2023	797
SPEAG	D2450V2	2450 MHz SAR Dipole	5/11/2022	Annual	5/11/2023	750
SPEAG	D2600V2	2600 MHz SAR Dipole	6/13/2022	Annual	6/13/2023	1064
SPEAG	D2600V2	2600 MHz SAR Dipole	9/9/2020	Triennial	9/9/2023	1069
SPEAG	D2600V2	2600 MHz SAR Dipole	11/15/2022	Annual	11/15/2023	1071
SPEAG	D3700V2	3700 MHz SAR Dipole	6/9/2021	Biennial	6/9/2023	1097
SPEAG	D3500V2	3500 MHz SAR Dipole	1/19/2021	Triennial	1/19/2024	1059
SPEAG	D3500V2	3500 MHz SAR Dipole	1/10/2023	Annual	1/10/2024	1097
SPEAG	D3700V2	3700 MHz SAR Dipole	1/19/2021	Triennial	1/19/2024	1018
SPEAG	D3700V2	3700 MHz SAR Dipole	1/13/2023	Annual	1/13/2024	1067
SPEAG	D3900V2	3900 MHz SAR Dipole	11/13/2020	Triennial	11/13/2023	1062
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/10/2022	Biennial	1/10/2024	1057
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/18/2023	Annual	1/18/2024	1191
SPEAG	D6.5GHzV2	6.5 GHz SAR Dipole	12/7/2022	Annual	12/7/2023	1018
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/15/2023	Annual	2/15/2024	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/18/2022	Annual	7/18/2023	1677
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/13/2022	Annual	4/13/2023	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/10/2022	Annual	11/10/2023	1646
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/18/2022	Annual	7/18/2023	1583
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/14/2022	Annual	6/14/2023	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/18/2023	Annual	1/18/2024	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/17/2023	Annual	1/17/2024	793
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/13/2022	Annual	10/13/2023	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/16/2022	Annual	5/16/2023	701
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/17/2023	Annual	1/17/2024	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/10/2022	Annual	11/10/2023	1323
SPEAG	EX3DV4	SAR Probe	2/8/2023	Annual	2/8/2024	7417
SPEAG	EX3DV4	SAR Probe	7/18/2022	Annual	7/18/2023	7406
SPEAG	EX3DV4	SAR Probe	4/20/2022	Annual	4/20/2023	7659
SPEAG	EX3DV4	SAR Probe	11/14/2022	Annual	11/14/2023	7639
SPEAG	EX3DV4	SAR Probe	7/19/2022	Annual	7/19/2023	7410
SPEAG	EX3DV4	SAR Probe	6/16/2022	Annual	6/16/2023	7409
SPEAG	EX3DV4	SAR Probe	1/17/2023	Annual	1/17/2024	7713
SPEAG	EX3DV4	SAR Probe	1/17/2023	Annual	1/17/2024	3837
SPEAG	EX3DV4	SAR Probe	10/20/2022	Annual	10/20/2023	7420
SPEAG	EX3DV4	SAR Probe	5/18/2022	Annual	5/18/2023	7416
SPEAG	EX3DV4	SAR Probe	1/11/2023	Annual	1/11/2024	7570
SPEAG	EX3DV4	SAR Probe	11/11/2022	Annual	11/11/2023	7551

Note: 1) All equipment was used solely within its respective calibration period. 2) CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. 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.

14 MEASUREMENT UNCERTAINTIES

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c_i 1gm	c_i 10 gms	1gm u_i (± %)	10gms u_i (± %)	v_i
Measurement System									
Probe Calibration	E.2.1	7	N	1	1	1	7.0	7.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	E.2.3	2	R	1.732	1	1	1.2	1.2	∞
Linearity	E.2.4	0.3	N	1	1	1	0.3	0.3	∞
System Detection Limits	E.2.4	0.25	R	1.732	1	1	0.1	0.1	∞
Modulation Response	E.2.5	4.8	R	1.732	1	1	2.8	2.8	∞
Readout Electronics	E.2.6	0.3	N	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	R	1.732	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.732	1	1	0.5	0.5	∞
Probe Positioning w/ respect to Phantom	E.6.3	6.7	R	1.732	1	1	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	4	R	1.732	1	1	2.3	2.3	∞
Test Sample Related									
Test Sample Positioning	E.4.2	3.12	N	1	1	1	3.1	3.1	35
Device Holder Uncertainty	E.4.1	1.67	N	1	1	1	1.7	1.7	5
Output Power Variation - SAR drift measurement	E.2.9	5	R	1.732	1	1	2.9	2.9	∞
SAR Scaling	E.6.5	0	R	1.732	1	1	0.0	0.0	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	E.3.3	4.3	N	1	0.78	0.71	3.3	3.0	76
Liquid Permittivity - measurement uncertainty	E.3.3	4.2	N	1	0.23	0.26	1.0	1.1	75
Liquid Conductivity - Temperature Uncertainty	E.3.4	3.4	R	1.732	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	E.3.4	0.6	R	1.732	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)			RSS				12.2	12.0	191
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.4	24.0	

The above measurement uncertainties are according to IEEE Std. 1528-2013

15 CONCLUSION

15.1 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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