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

SAR EVALUATION REPORT

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
04/13/2021 - 06/21/2021
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M2104130035-01.A3L (Rev 1)

FCC ID: **A3LSMF711B**

APPLICANT: **SAMSUNG ELECTRONICS CO., LTD.**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: SM-F711B

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	0.23	0.21	0.83	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.31	0.94	2.84
PCE	UMTS 850	826.40 - 846.60 MHz	0.29	0.40	1.06	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.10	0.86	0.86	3.27
PCE	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.92	0.78	3.00
PCE	LTE Band 12	699.7 - 715.3 MHz	0.26	0.26	0.70	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	0.19	0.27	0.71	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.23	0.36	0.81	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.14	0.93	0.80	2.66
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	< 0.1	0.76	0.96	2.48
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.28	0.95	2.16
PCE	NR Band n5 (Cell)	826.5 - 846.5 MHz	0.33	0.43	0.72	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.17	0.79	0.71	2.65
DTS	2.4 GHz WLAN	2412 - 2472 MHz	0.35	< 0.1	0.39	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.24	< 0.1	N/A	0.44
NII	U-NII-2C	5500 - 5720 MHz	< 0.1	< 0.1	N/A	0.61
NII	U-NII-3	5745 - 5825 MHz	< 0.1	< 0.1	0.40	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.26	< 0.1	0.36	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.42	1.56	1.59	3.98

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 0 of this report; for North American frequency bands only.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

Randy Ortanez
President

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

TABLE OF CONTENTS

1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n5 (Cell)	Data	826.5 - 846.5 MHz
NR Band n66 (AWS)	Data	1712.5 - 1777.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2472 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

1.2 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions and under some conditions when the device is being used in close proximity to the user's hand. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in phablet use conditions. Detailed descriptions of the power reduction mechanism are included in the operational description.

This device used an independent fixed level power reduction mechanism for WLAN when 5G NR is active and also for WLAN/BT during all voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

1.3 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
Max	Max allowed power	33.0	33.0	32.0	30.0	27.5	27.5	26.0	24.0	23.0
	Nominal	32.0	32.0	31.0	29.0	26.5	26.5	25.0	23.0	22.0
Hotspot Mode Active	Max allowed power	N/A	31.5	30.5	28.5	26.0	27.5	26.0	24.0	23.0
	Nominal	N/A	30.5	29.5	27.5	25.0	26.5	25.0	23.0	22.0
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
Max	Max allowed power	30.5	30.5	29.5	27.5	25.5	26.5	25.5	23.5	22.5
	Nominal	29.5	29.5	28.5	26.5	24.5	25.5	24.5	22.5	21.5
Hotspot Mode Active	Max allowed power	N/A	26.0	25.0	23.5	21.5	25.0	24.0	22.5	20.5
	Nominal	N/A	25.0	24.0	22.5	20.5	24.0	23.0	21.5	19.5
Proximity Sensor and/or Earjack Mode Active	Max allowed power	28.5	28.5	27.5	25.5	23.5	26.5	25.5	23.5	22.5
	Nominal	27.5	27.5	26.5	24.5	22.5	25.5	24.5	22.5	21.5

UMTS Band 5 (850 MHz)					
Power Level		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Max	Max allowed power	25.5	24.5	24.5	24.5
	Nominal	24.5	23.5	23.5	23.5
Hotspot Mode Active	Max allowed power	24.0	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
UMTS Band 4 (1750 MHz)					
Power Level		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Max	Max allowed power	24.0	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
Hotspot Mode Active	Max allowed power	17.5	16.5	16.5	16.5
	Nominal	16.5	15.5	15.5	15.5
Proximity Sensor and/or Earjack Mode Active	Max allowed power	21.0	20.0	20.0	20.0
	Nominal	20.0	19.0	19.0	19.0
UMTS Band 2 (1900 MHz)					
Power Level		Modulated Average Output Power (in dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Max	Max allowed power	24.0	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
Hotspot Mode Active	Max allowed power	19.0	18.0	18.0	18.0
	Nominal	18.0	17.0	17.0	17.0
Proximity Sensor and/or Earjack Mode Active	Max allowed power	22.0	21.0	21.0	21.0
	Nominal	21.0	20.0	20.0	20.0

Mode / Band		Modulated Average Output Power (in dBm)		
		Max	Hotspot Mode Active	Proximity Sensor and/or Earjack Mode Active
LTE FDD Band 12	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
LTE FDD Band 17	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
LTE FDD Band 13	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
LTE FDD Band 5	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
LTE FDD Band 26	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
LTE FDD Band 4	Max allowed power	24.0	17.0	21.0
	Nominal	23.0	16.0	20.0
LTE FDD Band 66	Max allowed power	24.0	17.0	21.0
	Nominal	23.0	16.0	20.0
LTE FDD Band 2	Max allowed power	24.0	18.0	21.0
	Nominal	23.0	17.0	20.0
LTE FDD Band 25	Max allowed power	24.0	18.0	21.0
	Nominal	23.0	17.0	20.0
LTE TDD Band 41 (PC3)	Max allowed power	25.0	19.5	23.5
	Nominal	24.0	18.5	22.5
LTE TDD Band 41 (PC2)	Max allowed power	27.5	19.5	23.5
	Nominal	26.5	18.5	22.5

Mode / Band		Modulated Average Output Power (in dBm)		
		Max	Hotspot Mode Active	Proximity Sensor and/or Earjack Mode Active
NR FDD Band n5	Max allowed power	25.0	23.5	25.0
	Nominal	24.0	22.5	24.0
NR FDD Band n66	Max allowed power	24.0	16.5	21.0
	Nominal	23.0	15.5	20.0

1.3.2 2.4 GHz Maximum Bluetooth and SISO/MIMO WLAN Output Power

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

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		b		g		n		ax (SU)		b (CDD + STBC)		g (CDD + STBC)		n (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	19.0	18.0	18.0	17.0	18.0	17.0	18.0	17.0	22.0	21.0	21.0	20.0	21.0	20.0	21.0	20.0
		ch. 12: 6.0 ch. 13: 0.0	5.0 -1.0	ch. 12: 6.0 ch. 13: 0.0	5.0 -1.0	ch. 12: 6.0 ch. 13: 0.0	5.0 -1.0	ch. 12: 6.0 ch. 13: 0.0	5.0 -1.0	ch. 12: 9.0 ch. 13: 3.0	8.0 2.0	ch. 12: 9.0 ch. 13: 3.0	8.0 2.0	ch. 12: 9.0 ch. 13: 3.0	8.0 2.0	ch. 12: 9.0 ch. 13: 3.0	8.0 2.0

(Upper tolerance: Target + 1.0 dB)

Mode		Single Antenna	
		Antenna 1	Antenna 2
Bluetooth (in dBm)	Maximum	16.0	17.0
	Nominal	15.0	16.0
Bluetooth EDR (in dBm)	Maximum	13.5	14.5
	Nominal	12.5	13.5
Bluetooth LE 2Mbps (in dBm)	Maximum	6.0	
	Nominal	5.0	
Bluetooth LE 1Mbps, 125/500 kbps (in dBm)	Maximum	6.0	
	Nominal	5.0	

(Upper tolerance: Target + 1.0 dB)

1.3.3 2.4 GHz Reduced Bluetooth and WLAN Output Power

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

The below table is applicable in the following conditions:

- Simultaneous conditions with 5 GHz WLAN
- Simultaneous conditions with 5G NR

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		b		g		n		ax (SU)		b (CDD + STBC)		g (CDD + STBC)		n (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
		ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0
		ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0

(Upper tolerance: Target + 1.0 dB)

The below table is applicable in the following conditions:

- RCV Active
- RCV active during simultaneous conditions with 5G NR and/or 5 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		b		g		n		ax (SU)		b (CDD + STBC)		g (CDD + STBC)		n (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	13.0	12.0	13.0	12.0	13.0	12.0	13.0	12.0	16.0	15.0	16.0	15.0	16.0	15.0	16.0	15.0
		ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 6.0	5.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0	ch. 12: 9.0	8.0
		ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 0.0	-1.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0	ch. 13: 3.0	2.0

(Upper tolerance: Target + 1.0 dB)

The below table is applicable to the following conditions:

- Simultaneous conditions with 5G NR

Mode		Single Antenna	
		Antenna 1	Antenna 2
Bluetooth (in dBm)	Maximum	14	
	Nominal	13.0	
Bluetooth EDR (in dBm)	Maximum	13.5	14.0
	Nominal	12.5	13.0
Bluetooth LE 2Mbps (in dBm)	Maximum	6.0	
	Nominal	5.0	
Bluetooth LE 1Mbps, 125/500 kbps (in dBm)	Maximum	6.0	
	Nominal	5.0	

(Upper tolerance: Target + 1.0 dB)

The below table is applicable I the following conditions:

- RCV Active

Mode		Single Antenna	
		Antenna 1	Antenna 2
Bluetooth (in dBm)	Maximum	10.0	
	Nominal	9.0	
Bluetooth EDR (in dBm)	Maximum	10.0	
	Nominal	9.0	
Bluetooth LE 2Mbps (in dBm)	Maximum	6.0	
	Nominal	5.0	
Bluetooth LE 1Mbps, 125/500 kbps (in dBm)	Maximum	6.0	
	Nominal	5.0	

(Upper tolerance: Target + 1.0 dB)

1.3.4 5 GHz Maximum SISO/MIMO WLAN Output Power

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

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		a		n		ac		ax (SU)		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WIFI (20MHz BW)	5200 MHz	18.0 ch. 36: 16.5	17.0 15.5	18.0 ch. 36: 15.5	17.0 14.5	18.0 ch. 36: 15.5	17.0 14.5	18.0 ch. 36: 15.5	17.0 14.5	21.0 ch. 36: 19.5	20.0 18.5	21.0 ch. 36: 18.5	20.0 17.5	21.0 ch. 36: 18.5	20.0 17.5	21.0 ch. 36: 18.5	20.0 17.5
	5300 MHz	18.0	17.0	18.0 ch. 64: 17.0	17.0 16.0	18.0 ch. 64: 17.0	17.0 16.0	18.0 ch. 64: 17.0	17.0 16.0	21.0	20.0	21.0 ch. 64: 20.0	20.0 19.0	21.0 ch. 64: 20.0	20.0 19.0	21.0 ch. 64: 20.0	20.0 19.0
	5500 MHz	18.0	17.0	18.0 ch. 100: 17.0	17.0 16.0	18.0 ch. 100: 17.0	17.0 16.0	18.0 ch. 100: 17.0	17.0 16.0	21.0	20.0	21.0 ch. 100: 20.0	20.0 19.0	21.0 ch. 100: 20.0	20.0 19.0	21.0 ch. 100: 20.0	20.0 19.0
	5800 MHz	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	21.0	20.0	21.0	20.0	21.0	20.0	21.0	20.0
5 GHz WIFI (40MHz BW)	5200 MHz			17.0 ch. 38: 14.0	16.0 13.0	17.0 ch. 38: 14.0	16.0 13.0	17.0 ch. 38: 14.0	16.0 13.0			20.0 ch. 38: 17.0	19.0 16.0	20.0 ch. 38: 17.0	19.0 16.0	20.0 ch. 38: 17.0	19.0 16.0
	5300 MHz			17.0 ch. 62: 15.0	16.0 14.0	17.0 ch. 62: 15.0	16.0 14.0	17.0 ch. 62: 15.0	16.0 14.0			20.0 ch. 62: 18.0	19.0 17.0	20.0 ch. 62: 18.0	19.0 17.0	20.0 ch. 62: 18.0	19.0 17.0
	5500 MHz			17.0 ch. 102: 15.5	16.0 14.5	17.0 ch. 102: 15.5	16.0 14.5	17.0 ch. 102: 15.5	16.0 14.5			20.0 ch. 102: 18.5	19.0 17.5	20.0 ch. 102: 18.5	19.0 17.5	20.0 ch. 102: 18.5	19.0 17.5
	5800 MHz			17.0	16.0	17.0	16.0	17.0	16.0			20.0	19.0	20.0	19.0	20.0	19.0
5 GHz WIFI (80MHz BW)	5200 MHz					12.5	11.5	12.5	11.5					15.5	14.5	15.5	14.5
	5300 MHz					13.0	12.0	13.0	12.0					16.0	15.0	16.0	15.0
	5500 MHz					16.0 ch. 106: 15.0	15.0 14.0	16.0 ch. 106: 15.0	15.0 14.0					19.0 ch. 106: 18.0	18.0 17.0	19.0 ch. 106: 18.0	18.0 17.0
	5800 MHz					16.0	15.0	16.0	15.0					19.0	18.0	19.0	18.0

(Upper tolerance: Target + 1.0 dB)

1.3.5 5 GHz Reduced SISO/MIMO WLAN Output Power

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

The below table is applicable in the following conditions:

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

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		a		n		ac		ax (SU)		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WIFI (20MHz BW)	5200 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5300 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5500 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
	5800 MHz	15.0	14.0	15.0	14.0	15.0	14.0	15.0	14.0	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0
5 GHz WIFI (40MHz BW)	5200 MHz			15.0 ch. 38: 14.0	14.0 13.0	15.0 ch. 38: 14.0	14.0 13.0	15.0 ch. 38: 14.0	14.0 13.0			18.0 ch. 38: 17.0	17.0 16.0	18.0 ch. 38: 17.0	17.0 16.0	18.0 ch. 38: 17.0	17.0 16.0
	5300 MHz			15.0	14.0	15.0	14.0	15.0	14.0			18.0	17.0	18.0	17.0	18.0	17.0
	5500 MHz			15.0	14.0	15.0	14.0	15.0	14.0			18.0	17.0	18.0	17.0	18.0	17.0
	5800 MHz			15.0	14.0	15.0	14.0	15.0	14.0			18.0	17.0	18.0	17.0	18.0	17.0
5 GHz WIFI (80MHz BW)	5200 MHz					12.5	11.5	12.5	11.5					15.5	14.5	15.5	14.5
	5300 MHz					13.0	12.0	13.0	12.0					16.0	15.0	16.0	15.0
	5500 MHz					15.0	14.0	15.0	14.0					18.0	17.0	18.0	17.0
	5800 MHz					15.0	14.0	15.0	14.0					18.0	17.0	18.0	17.0

(Upper tolerance: Target + 1.0 dB)

The below table is applicable in the following conditions:

- RCV Active
- RCV active during simultaneous conditions with 2.4 GHz WLAN
- RCV active during simultaneous conditions with 5G NR

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1/2															
		a		n		ac		ax (SU)		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)		ax (SU) (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WIFI (20MHz BW)	5200 MHz	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0	14.0	13.0	14.0	13.0	14.0	13.0	14.0	13.0
	5300 MHz	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0	14.0	13.0	14.0	13.0	14.0	13.0	14.0	13.0
	5500 MHz	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0	14.0	13.0	14.0	13.0	14.0	13.0	14.0	13.0
	5800 MHz	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0	14.0	13.0	14.0	13.0	14.0	13.0	14.0	13.0
5 GHz WIFI (40MHz BW)	5200 MHz			11.0	10.0	11.0	10.0	11.0	10.0			14.0	13.0	14.0	13.0	14.0	13.0
	5300 MHz			11.0	10.0	11.0	10.0	11.0	10.0			14.0	13.0	14.0	13.0	14.0	13.0
	5500 MHz			11.0	10.0	11.0	10.0	11.0	10.0			14.0	13.0	14.0	13.0	14.0	13.0
	5800 MHz			11.0	10.0	11.0	10.0	11.0	10.0			14.0	13.0	14.0	13.0	14.0	13.0
5 GHz WIFI (80MHz BW)	5200 MHz					11.0	10.0	11.0	10.0					14.0	13.0	14.0	13.0
	5300 MHz					11.0	10.0	11.0	10.0					14.0	13.0	14.0	13.0
	5500 MHz					11.0	10.0	11.0	10.0					14.0	13.0	14.0	13.0
	5800 MHz					11.0	10.0	11.0	10.0					14.0	13.0	14.0	13.0

(Upper tolerance: Target + 1.0 dB)

1.4 DUT Antenna Locations

A diagram showing the location of the device antennas for both open and closed configurations can be found in Appendix E. When the device is open, the overall dimensions of this device are > 9 x 5 cm. Since the diagonal dimension of this device when open is > 160 mm and <200 mm, it is considered a “phablet.” and operates similar to a traditional portable handset. In the closed configuration, only a simple display/interaction of notifications occurs and overall dimensions are < 9 x5 cm. Therefore, when the device is closed, the only testing considered is for body-worn and hotspot.

Table 1-1
Device Edges/Sides for SAR Testing Open

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
NR Band n66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN MIMO	Yes	Yes	Yes	No	Yes	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	Yes	No
5 GHz WLAN MIMO	Yes	Yes	Yes	No	Yes	Yes
Bluetooth Ant 1	Yes	Yes	Yes	No	Yes	No
Bluetooth Ant 2	Yes	Yes	Yes	No	No	Yes

Table 1-2
Device Edges/Sides for SAR Testing Closed

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
NR Band n66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN MIMO	Yes	Yes	No	Yes	Yes	Yes
5 GHz WLAN Ant 1	Yes	Yes	No	Yes	Yes	No
5 GHz WLAN MIMO	Yes	Yes	No	Yes	Yes	Yes
Bluetooth Ant 1	Yes	Yes	No	Yes	Yes	No
Bluetooth Ant 2	Yes	Yes	No	Yes	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 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 Appendix E.

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 1-3
Simultaneous Transmission Scenarios

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

1. 2.4 GHz WLAN and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is 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.
5. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
6. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. 2.4 GHz WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports VoWIFI.
8. This device supports Bluetooth Tethering.
9. This device supports VoLTE.
10. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands as shown in the NR FR1 checklist.

1.7 Miscellaneous SAR Test Considerations

When on the device dimensions when closed, hotspot SAR in the closed configuration was performed at 5mm per KDB Publication 941225 D06v02r01.
There are two WIFI Variants for this model referenced as Variant N and Variant P in this report. Both variants were fully tested for BT/WLAN SAR conditions.

(A) WIFI/BT

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

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-1, U-NII-2A & U-NII-2C WIFI, only 2.4 GHz WLAN, 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 80 MHz Bandwidth only for 5 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) No aggregate channel configurations
d) 2 Tx antenna output
e) Up to 1024 QAM is supported
f) TDWR and Band gap channels are supported for 5 GHz
g) MU-MIMO UL Operations are not supported

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-1, U-NII-2A & 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 channel 1-13 for 2.4 GHZ WLAN. However, because channel 12/13 targets are not higher than that of channels 1-11, default channels for SAR testing are determined per FCC KDB 248227 D01v02r02.

(B) Licensed Transmitter(s)

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

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

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

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

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.

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

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

This device supports both Power Class 2 (PC2) and Power Class 3 (PC3) for LTE Band 41. Per May 2017 TCB Workshop Notes, SAR tests were performed with Power Class 3 (given the specific UL/DL limitations for Power Class 2). Additionally, SAR testing for the power class 2 condition was evaluated for the highest configuration in Power Class 3 for each test configuration to confirm the results were scalable linearly (See Section 14)

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.

1.8 Guidance Applied

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

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.

2 LTE INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 20, UL UE Cat 18				
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation and downlink MIMO features as shown in Appendix H. 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, WIFI Offloading, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

NR Information			
Form Factor	Portable Handset		
Frequency Range of each LTE transmission band	NR Band n5 (Cell) (826.5 - 846.5 MHz)		
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)		
Channel Bandwidths	NR Band n5 (Cell): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
Channel Numbers and Frequencies (MHz)			
NR Band n5 (Cell): 5 MHz	826.5 (165300)	836.5 (167300)	846.5 (169300)
NR Band n5 (Cell): 10 MHz	829 (165800)	836.5 (167300)	844 (168800)
NR Band n5 (Cell): 15 MHz	831.5 (166300)	836.5 (167300)	841.5 (168300)
NR Band n5 (Cell): 20 MHz	834 (166800)	836.5 (167300)	839 (167800)
NR Band n66 (AWS): 5 MHz	1712.5 (342500)	1745 (349000)	1777.5 (355500)
NR Band n66 (AWS): 10 MHz	1715 (343000)	1745 (349000)	1775 (355000)
NR Band n66 (AWS): 15 MHz	1717.5 (343500)	1745 (349000)	1772.5 (354500)
NR Band n66 (AWS): 20 MHz	1720 (344000)	1745 (349000)	1770 (354000)
SCS for NR Band n5/n66	15 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 n5 (Cell)	LTE Band 66/2		
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 5/12		

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:

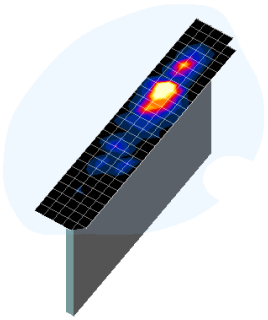


Figure 4-1
Sample SAR Area Scan

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].

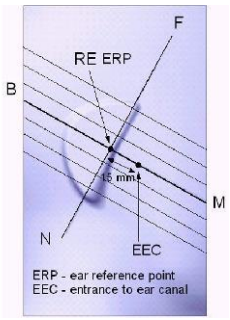


Figure 5-1
Close-Up Side view of ERP

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

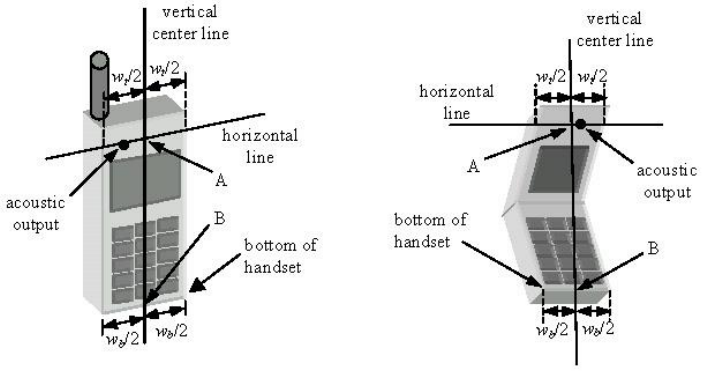


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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).

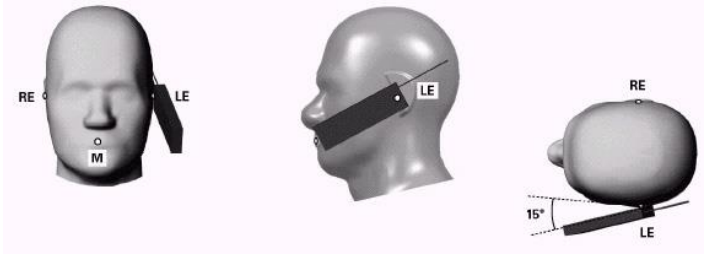


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

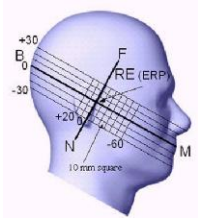


Figure 6-3
Side view w/ relevant markings

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.

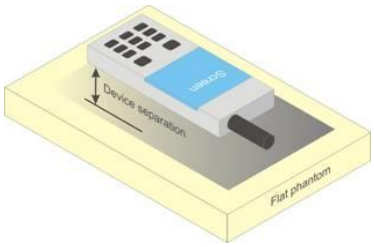


Figure 6-4
Sample Body-Worn Diagram

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.

6.9 Proximity Sensor Considerations

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

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

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for 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 Initial Test Position Procedure

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

8.6.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.6.6 OFDM Transmission Mode and SAR Test Channel Selection

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

8.6.7 Initial Test Configuration Procedure

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

The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.6.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.8 Subsequent Test Configuration Procedures

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

8.6.9 MIMO SAR considerations

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

9 RF CONDUCTED POWERS

9.1 GSM Conducted Powers

Table 9-1
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	32.29	32.70	31.49	**29.38**	27.32	26.63	25.02	23.01	22.20
	190	32.23	31.96	31.53	**29.49**	27.38	26.53	25.27	23.31	22.32
	251	32.22	32.20	30.91	**29.07**	27.18	26.80	24.92	22.91	21.85
GSM 1900	512	29.89	29.57	28.77	**26.63**	25.19	25.85	24.39	22.21	21.14
	661	29.62	29.39	28.93	**26.95**	25.20	25.83	24.47	22.71	21.58
	810	29.55	29.54	28.27	**26.78**	24.76	25.88	24.33	22.34	21.33

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	23.09	23.50	25.30	**24.95**	24.14	17.43	18.83	18.58	19.02
	190	23.03	22.76	25.34	**25.06**	24.20	17.33	19.08	18.88	19.14
	251	23.02	23.00	24.72	**24.64**	24.00	17.60	18.73	18.48	18.67
GSM 1900	512	20.69	20.37	22.58	**22.20**	22.01	16.65	18.20	17.78	17.96
	661	20.42	20.19	22.74	**22.52**	22.02	16.63	18.28	18.28	18.40
	810	20.35	20.34	22.08	**22.35**	21.58	16.68	18.14	17.91	18.15

GSM 850	**Frame Avg.Targets:**	22.80	22.80	24.81	**24.57**	23.32	17.30	18.81	18.57	18.82
GSM 1900		20.30	20.30	22.31	**22.07**	21.32	16.30	18.31	18.07	18.32

Table 9-2
Reduced Conducted Powers- Hotspot Mode Active

Maximum Burst-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**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	30.22	29.54	**27.35**	25.56	26.63	25.02	23.01	22.20
	190	30.30	29.69	**27.55**	25.71	26.53	25.27	23.31	22.32
	251	29.71	29.01	**27.38**	25.25	26.80	24.92	22.91	21.85
GSM 1900	512	25.10	23.65	**22.30**	20.32	24.06	23.06	21.29	19.65
	661	25.30	23.94	**22.37**	20.50	24.11	23.01	21.42	19.84
	810	25.07	23.75	**22.21**	20.33	24.05	22.93	21.23	19.64

Calculated Maximum Frame-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**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	21.02	23.35	**22.92**	22.38	17.43	18.83	18.58	19.02
	190	21.10	23.50	**23.12**	22.53	17.33	19.08	18.88	19.14
	251	20.51	22.82	**22.95**	22.07	17.60	18.73	18.48	18.67
GSM 1900	512	15.90	17.46	**17.87**	17.14	14.86	16.87	16.86	16.47
	661	16.10	17.75	**17.94**	17.32	14.91	16.82	16.99	16.66
	810	15.87	17.56	**17.78**	17.15	14.85	16.74	16.80	16.46

GSM 850	**Frame Avg.Targets:**	21.30	23.31	**23.07**	21.82	17.30	18.81	18.57	18.82
GSM 1900		15.80	17.81	**18.07**	17.32	14.80	16.81	17.07	16.32

Table 9-3
Reduced Conducted Powers- Grip Sensor or Earjack Mode Active

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 1900	512	27.64	27.96	25.61	**24.81**	22.41	25.85	24.39	22.21	21.14
	661	28.17	27.32	26.12	**24.91**	22.80	25.83	24.47	22.71	21.58
	810	27.48	27.39	26.05	**24.85**	22.38	25.88	24.33	22.34	21.33

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 1900	512	18.44	18.76	19.42	**20.38**	19.23	16.65	18.20	17.78	17.96
	661	18.97	18.12	19.93	**20.48**	19.62	16.63	18.28	18.28	18.40
	810	18.28	18.19	19.86	**20.42**	19.20	16.68	18.14	17.91	18.15
GSM 1900	**Frame Avg.Targets:**	18.30	18.30	20.31	**20.07**	19.32	16.30	18.31	18.07	18.32

Note:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. GPRS/EDGE (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
3. EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8-PSK modulation do not have an impact on output power.

GSM Class: B
GPRS Multislot class: 33 (Max 4 Tx uplink slots)
EDGE Multislot class: 33 (Max 4 Tx uplink slots)
DTM Multislot Class: N/A

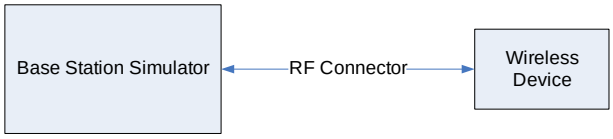


Figure 9-1
Power Measurement Setup

9.2 UMTS Conducted Powers

Table 9-4
Maximum Conducted Power

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	24.71	24.81	24.71	23.42	23.16	23.25	23.90	23.75	23.64	-
99		12.2 kbps AMR	24.78	24.89	24.75	23.40	23.15	23.21	23.96	23.81	23.68	-
6	HSDPA	Subtest 1	23.44	23.55	23.52	22.14	21.87	21.84	22.55	22.37	22.32	0
6		Subtest 2	23.46	23.51	23.53	22.11	21.91	21.86	22.34	22.48	22.35	0
6		Subtest 3	22.96	23.03	23.07	21.67	21.38	21.30	22.04	21.94	21.82	0.5
6		Subtest 4	22.96	23.03	23.05	21.66	21.32	21.30	22.06	21.90	21.84	0.5
6	HSUPA	Subtest 1	23.12	23.20	23.10	21.82	21.58	21.51	22.23	22.12	22.00	0
6		Subtest 2	21.11	21.24	21.06	19.75	19.50	19.44	20.14	20.02	19.99	2
6		Subtest 3	22.11	22.22	22.06	20.77	20.52	20.45	21.19	21.05	20.93	1
6		Subtest 4	21.12	21.21	21.07	19.74	19.52	19.47	20.19	20.08	19.94	2
6		Subtest 5	23.15	23.26	23.12	21.83	21.59	21.51	22.21	22.09	22.00	0
8	DC-HSDPA	Subtest 1	23.26	23.25	23.09	21.67	21.59	21.59	22.28	22.12	22.01	0
8		Subtest 2	23.25	23.20	23.05	21.81	21.57	21.55	22.25	22.06	22.06	0
8		Subtest 3	22.77	22.72	22.64	21.30	21.15	21.02	21.83	21.60	21.62	0.5
8		Subtest 4	22.74	22.73	22.61	21.32	21.06	21.04	21.75	21.63	21.53	0.5

Table 9-5
Reduced Conducted Powers- Hotspot Mode Active

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	22.69	22.71	22.81	16.39	16.22	16.05	18.30	18.15	18.05	-
99		12.2 kbps AMR	22.70	22.75	22.71	16.35	16.21	16.00	18.30	18.00	18.05	-
6	HSDPA	Subtest 1	21.65	21.75	21.65	15.66	15.37	15.31	17.25	17.15	17.05	0
6		Subtest 2	21.68	21.86	21.69	15.65	15.33	15.32	17.25	17.12	17.03	0
6		Subtest 3	21.18	21.33	21.18	15.15	14.84	14.80	16.78	16.57	16.51	0.5
6		Subtest 4	21.22	21.32	21.15	15.16	14.84	14.77	16.78	16.62	16.50	0.5
6	HSUPA	Subtest 1	21.65	21.71	21.61	15.64	15.30	15.27	17.20	17.05	16.92	0
6		Subtest 2	19.61	19.73	19.57	13.64	13.31	13.25	15.15	15.03	14.90	2
6		Subtest 3	20.65	20.70	20.58	14.61	14.31	14.27	16.15	16.01	15.89	1
6		Subtest 4	19.66	19.72	19.60	13.63	13.31	13.27	15.24	15.05	14.92	2
6		Subtest 5	21.83	21.89	21.75	15.64	15.30	15.26	17.28	17.10	16.96	0
8	DC-HSDPA	Subtest 1	21.63	21.66	21.62	15.65	15.30	15.28	17.25	17.07	17.00	0
8		Subtest 2	21.64	21.78	21.59	15.64	15.32	15.26	17.15	17.12	16.88	0
8		Subtest 3	21.18	21.29	21.10	15.14	14.82	14.75	16.73	16.57	16.47	0.5
8		Subtest 4	21.16	21.31	21.13	15.13	14.81	14.76	16.68	16.55	16.47	0.5

Table 9-6
Reduced Conducted Powers- Grip Sensor or Earjack Mode Active

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	20.39	20.26	20.17	21.92	21.78	21.64	-
99		12.2 kbps AMR	20.37	20.16	20.13	21.94	21.81	21.69	-
6	HSDPA	Subtest 1	18.83	18.61	18.52	20.27	20.14	19.94	0
6		Subtest 2	18.88	18.59	18.54	20.24	20.24	20.05	0
6		Subtest 3	18.34	18.06	17.97	19.72	19.62	19.52	0.5
6		Subtest 4	18.27	18.04	18.02	19.70	19.54	19.43	0.5
6	HSUPA	Subtest 1	18.78	18.50	18.47	20.22	20.07	20.01	0
6		Subtest 2	16.75	16.53	16.46	18.15	18.05	17.95	2
6		Subtest 3	17.78	17.52	17.47	19.17	19.05	18.97	1
6		Subtest 4	16.73	16.52	16.45	18.20	18.04	17.99	2
6		Subtest 5	19.18	18.88	18.67	20.41	20.20	20.07	0
8	DC-HSDPA	Subtest 1	18.86	18.60	18.54	20.26	20.13	20.03	0
8		Subtest 2	18.87	18.86	18.53	20.25	20.13	20.08	0
8		Subtest 3	18.41	18.10	18.06	19.77	19.63	19.57	0.5
8		Subtest 4	18.33	18.07	18.00	19.67	19.56	19.45	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.

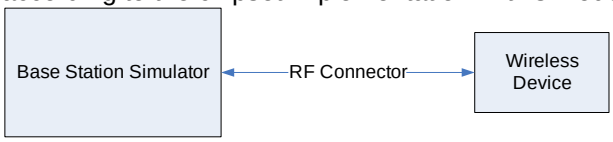


Figure 9-2
Power Measurement Setup

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 Appendix F.

9.3.1 LTE Band 12

Table 9-7
LTE Band 12 Maximum Conducted Powers - 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	**24.55**	0	0
	1	25	24.45		0
	1	49	24.42		0
	25	0	23.63	0-1	1
	25	12	23.67		1
	25	25	**23.70**		1
	50	0	23.62		1
16QAM	1	0	23.69	0-1	1
	1	25	23.64		1
	1	49	23.57		1
	25	0	22.70	0-2	2
	25	12	22.72		2
	25	25	22.74		2
	50	0	22.70		2
64QAM	1	0	22.86	0-2	2
	1	25	23.00		2
	1	49	22.80		2
	25	0	21.73	0-3	3
	25	12	21.77		3
	25	25	21.78		3
	50	0	21.69		3
256QAM	1	0	19.27	0-5	5
	1	25	19.60		5
	1	49	19.38		5
	25	0	19.67		5
	25	12	19.73		5
	25	25	19.75		5
	50	0	19.61		5

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

Table 9-8
LTE Band 12 Reduced Conducted Powers - Hotspot Mode Active - 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	22.25	0	0
	1	25	**22.31**		0
	1	49	22.20		0
	25	0	22.24	0-1	0
	25	12	**22.37**		0
	25	25	22.26		0
	50	0	22.23		0
16QAM	1	0	22.73	0-1	0
	1	25	22.69		0
	1	49	22.64		0
	25	0	21.75	0-2	0.5
	25	12	21.80		0.5
	25	25	21.77		0.5
	50	0	21.71		0.5
64QAM	1	0	22.00	0-2	0.5
	1	25	21.95		0.5
	1	49	21.82		0.5
	25	0	20.83	0-3	1.5
	25	12	20.82		1.5
	25	25	20.94		1.5
	50	0	20.80		1.5
256QAM	1	0	18.70	0-5	3.5
	1	25	18.92		3.5
	1	49	18.76		3.5
	25	0	18.77		3.5
	25	12	18.72		3.5
	25	25	18.88		3.5
	50	0	18.81		3.5

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

9.3.2 LTE Band 13

Table 9-9
LTE Band 13 Maximum Conducted Powers - 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	24.44	0	0
	1	25	**24.64**		0
	1	49	24.48		0
	25	0	23.52	0-1	1
	25	12	23.56		1
	25	25	**23.62**		1
	50	0	23.55		1
16QAM	1	0	23.69	0-1	1
	1	25	23.95		1
	1	49	23.95		1
	25	0	22.55	0-2	2
	25	12	22.62		2
	25	25	22.69		2
	50	0	22.56		2
64QAM	1	0	21.98	0-2	2
	1	25	22.35		2
	1	49	22.40		2
	25	0	20.95	0-3	3
	25	12	21.17		3
	25	25	21.50		3
	50	0	21.04		3
256QAM	1	0	19.37	0-5	5
	1	25	19.77		5
	1	49	19.52		5
	25	0	19.49		5
	25	12	19.56		5
	25	25	19.49		5
	50	0	19.56		5

Table 9-10
LTE Band 13 Reduced Conducted Powers - Hotspot Mode Active - 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	22.52	0	0
	1	25	22.57		0
	1	49	**22.60**		0
	25	0	22.61	0-1	0
	25	12	**22.64**		0
	25	25	22.61		0
	50	0	22.59		0
16QAM	1	0	23.04	0-1	0
	1	25	23.09		0
	1	49	23.18		0
	25	0	22.12	0-2	0.5
	25	12	22.19		0.5
	25	25	22.20		0.5
	50	0	22.09		0.5
64QAM	1	0	22.21	0-2	0.5
	1	25	22.25		0.5
	1	49	22.44		0.5
	25	0	21.19	0-3	1.5
	25	12	21.12		1.5
	25	25	21.11		1.5
	50	0	21.09		1.5
256QAM	1	0	18.90	0-5	3.5
	1	25	19.19		3.5
	1	49	19.10		3.5
	25	0	18.97		3.5
	25	12	19.03		3.5
	25	25	19.09		3.5
	50	0	19.03		3.5

9.3.3 LTE Band 26

Table 9-11
LTE Band 26 (Cell) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.21	0	0
	1	36	**24.26**		0
	1	74	24.11		0
	36	0	23.21	0-1	1
	36	18	23.30		1
	36	37	**23.32**		1
	75	0	23.24		1
16QAM	1	0	23.82	0-1	1
	1	36	23.89		1
	1	74	23.61		1
	36	0	22.16	0-2	2
	36	18	22.30		2
	36	37	22.30		2
	75	0	22.26		2
64QAM	1	0	22.50	0-2	2
	1	36	22.50		2
	1	74	22.51		2
	36	0	21.30	0-3	3
	36	18	21.35		3
	36	37	21.34		3
	75	0	21.25		3
256QAM	1	0	19.62	0-5	5
	1	36	19.45		5
	1	74	19.27		5
	36	0	19.24		5
	36	18	19.33		5
	36	37	19.32		5
	75	0	19.30		5

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

Table 9-12
LTE Band 26 (Cell) Reduced Conducted Powers - Hotspot Mode Active - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	22.28	0	0
	1	36	22.23		0
	1	74	**22.29**		0
	36	0	22.20	0-1	0
	36	18	**22.31**		0
	36	37	22.24		0
	75	0	22.25		0
16QAM	1	0	22.72	0-1	0
	1	36	22.66		0
	1	74	22.68		0
	36	0	21.80	0-2	0.5
	36	18	21.83		0.5
	36	37	21.85		0.5
	75	0	21.70		0.5
64QAM	1	0	22.01	0-2	0.5
	1	36	21.90		0.5
	1	74	21.95		0.5
	36	0	20.80	0-3	1.5
	36	18	20.93		1.5
	36	37	20.90		1.5
	75	0	20.81		1.5
256QAM	1	0	18.66	0-5	3.5
	1	36	18.89		3.5
	1	74	18.82		3.5
	36	0	18.73		3.5
	36	18	18.82		3.5
	36	37	18.74		3.5
	75	0	18.76		3.5

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

9.3.4 LTE Band 66

Table 9-13
LTE Band 66 (AWS) Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.57	22.40	22.76	0	0
	1	50	22.68	22.49	22.67		0
	1	99	22.46	22.52	**22.77**		0
	50	0	21.87	21.64	21.87	0-1	1
	50	25	21.83	21.71	21.90		1
	50	50	21.66	21.61	**21.91**		1
	100	0	21.76	21.67	21.86		1
16QAM	1	0	22.30	21.96	22.44	0-1	1
	1	50	22.46	22.15	22.51		1
	1	99	22.18	22.05	22.54		1
	50	0	21.01	20.79	20.85	0-2	2
	50	25	20.97	20.82	20.98		2
	50	50	20.87	20.75	21.00		2
	100	0	20.90	20.75	20.87		2
64QAM	1	0	21.06	21.13	21.04	0-2	2
	1	50	21.27	21.33	21.15		2
	1	99	20.96	21.20	21.20		2
	50	0	20.06	19.79	19.94	0-3	3
	50	25	19.99	19.83	20.04		3
	50	50	19.91	19.73	20.02		3
	100	0	19.90	19.73	19.92		3
256QAM	1	0	17.95	17.64	17.58	0-5	5
	1	50	18.04	17.82	17.99		5
	1	99	17.78	17.72	17.78		5
	50	0	17.88	17.78	17.92		5
	50	25	17.96	17.83	18.01		5
	50	50	17.84	17.74	18.01		5
	100	0	17.87	17.75	17.93		5

Table 9-14
LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	15.23	15.15	15.38	0	0
	1	50	**15.61**	15.28	15.53		0
	1	99	15.24	15.14	15.59		0
	50	0	15.72	15.35	15.53	0-1	0
	50	25	**15.82**	15.40	15.74		0
	50	50	15.62	15.36	15.68		0
	100	0	15.60	15.33	15.50		0
16QAM	1	0	15.58	15.20	15.65	0-1	0
	1	50	15.51	15.41	15.46		0
	1	99	15.55	15.39	15.44		0
	50	0	15.61	15.37	15.55	0-2	0
	50	25	15.84	15.47	15.73		0
	50	50	15.57	15.36	15.65		0
	100	0	15.53	15.39	15.56		0
64QAM	1	0	15.66	15.33	15.60	0-2	0
	1	50	16.00	15.15	15.87		0
	1	99	15.59	15.31	15.94		0
	50	0	15.77	15.39	15.60	0-3	0
	50	25	15.71	15.41	15.71		0
	50	50	15.57	15.51	15.71		0
	100	0	15.55	15.46	15.50		0
256QAM	1	0	15.49	15.19	15.30	0-5	0
	1	50	15.32	15.35	15.66		0
	1	99	15.16	15.27	15.53		0
	50	0	15.73	15.38	15.55		0
	50	25	15.81	15.50	15.66		0
	50	50	15.54	15.36	15.62		0
	100	0	15.62	15.40	15.57		0

Table 9-15
LTE Band 66 (AWS) Reduced Conducted Powers - Grip Sensor and/or Earjack Mode Active - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.85	19.66	**20.27**	0	0
	1	50	20.13	19.95	20.24		0
	1	99	19.88	19.96	20.26		0
	50	0	20.24	20.06	20.27	0-1	0
	50	25	20.22	20.09	**20.41**		0
	50	50	20.14	20.12	20.38		0
	100	0	20.12	20.05	20.25		0
16QAM	1	0	20.12	20.28	20.55	0-1	0
	1	50	20.23	20.50	20.71		0
	1	99	20.10	20.33	20.77		0
	50	0	20.27	20.15	20.27	0-2	0
	50	25	20.22	20.25	20.50		0
	50	50	20.10	20.18	20.35		0
	100	0	20.17	20.10	20.33		0
64QAM	1	0	20.17	20.08	20.44	0-2	0
	1	50	20.40	20.28	20.55		0
	1	99	20.20	20.24	20.53		0
	50	0	20.27	20.12	20.34	0-3	0
	50	25	20.25	20.19	20.48		0
	50	50	20.13	20.13	20.43		0
	100	0	20.23	20.14	20.32		0
256QAM	1	0	18.10	17.93	18.11	0-5	2
	1	50	18.25	18.09	18.44		2
	1	99	18.35	18.14	18.27		2
	50	0	18.23	18.10	18.33		2
	50	25	18.14	18.11	18.40		2
	50	50	18.11	18.20	18.42		2
	100	0	18.18	18.15	18.27		2

9.3.5 LTE Band 25

Table 9-16
LTE Band 25 (PCS) Maximum Conducted Powers - 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	**23.74**	23.55	23.48	0	0
	1	50	23.73	23.57	23.45		0
	1	99	23.70	23.48	23.47		0
	50	0	**22.81**	22.60	22.51	0-1	1
	50	25	22.71	22.48	22.48		1
	50	50	22.69	22.61	22.50		1
	100	0	22.64	22.55	22.45		1
16QAM	1	0	23.00	22.89	22.84	0-1	1
	1	50	22.96	22.95	22.85		1
	1	99	22.98	22.94	22.85		1
	50	0	21.82	21.65	21.44	0-2	2
	50	25	21.83	21.68	21.46		2
	50	50	21.77	21.63	21.50		2
	100	0	21.71	21.58	21.42		2
64QAM	1	0	22.00	21.85	21.61	0-2	2
	1	50	21.82	21.86	21.71		2
	1	99	21.88	21.88	21.70		2
	50	0	20.86	20.70	20.50	0-3	3
	50	25	20.84	20.67	20.51		3
	50	50	20.78	20.68	20.56		3
	100	0	20.74	20.62	20.53		3
256QAM	1	0	18.78	18.35	18.15	0-5	5
	1	50	18.62	18.64	18.50		5
	1	99	18.65	18.60	18.44		5
	50	0	18.69	18.57	18.49		5
	50	25	18.70	18.66	18.42		5
	50	50	18.69	18.63	18.54		5
	100	0	18.75	18.56	18.44		5

Table 9-17
LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**17.77**	17.67	17.68	0	0
	1	50	17.55	17.65	17.57		0
	1	99	17.56	17.67	17.57		0
	50	0	17.85	17.73	17.55	0-1	0
	50	25	**17.86**	17.70	17.55		0
	50	50	17.80	17.67	17.69		0
	100	0	17.66	17.63	17.50		0
16QAM	1	0	17.97	17.98	17.87	0-1	0
	1	50	17.98	17.99	17.98		0
	1	99	17.99	17.92	17.97		0
	50	0	17.88	17.72	17.59	0-2	0
	50	25	17.93	17.72	17.56		0
	50	50	17.87	17.69	17.61		0
	100	0	17.70	17.64	17.50		0
64QAM	1	0	17.98	17.74	17.55	0-2	0
	1	50	17.97	17.67	17.65		0
	1	99	17.98	17.58	17.69		0
	50	0	17.89	17.78	17.62	0-3	0
	50	25	17.92	17.77	17.62		0
	50	50	17.83	17.79	17.70		0
	100	0	17.69	17.66	17.51		0
256QAM	1	0	17.66	17.37	17.40	0-5	0
	1	50	17.97	17.74	17.75		0
	1	99	17.73	17.44	17.49		0
	50	0	17.80	17.64	17.45		0
	50	25	17.94	17.79	17.59		0
	50	50	17.80	17.75	17.60		0
	100	0	17.78	17.67	17.48		0

Table 9-18
LTE Band 25 (PCS) Reduced Conducted Powers - Grip Sensor and/or Earjack Mode Active - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**20.23**	20.22	20.07	0	0
	1	50	20.14	20.15	20.06		0
	1	99	20.13	20.17	20.09		0
	50	0	20.40	20.26	20.06	0-1	0
	50	25	**20.42**	20.28	20.07		0
	50	50	20.35	20.23	20.10		0
	100	0	20.22	20.20	20.02		0
16QAM	1	0	20.70	20.51	20.60	0-1	0
	1	50	20.72	20.49	20.58		0
	1	99	20.71	20.49	20.57		0
	50	0	20.50	20.13	20.03	0-2	0
	50	25	20.47	20.19	20.06		0
	50	50	20.40	20.15	20.12		0
	100	0	20.35	20.15	20.01		0
64QAM	1	0	20.70	20.40	20.38	0-2	0
	1	50	20.73	20.45	20.39		0
	1	99	20.69	20.33	20.38		0
	50	0	20.55	20.25	20.15	0-3	0
	50	25	20.44	20.25	20.13		0
	50	50	20.33	20.24	20.18		0
	100	0	20.21	20.16	20.17		0
256QAM	1	0	18.20	18.22	18.00	0-5	2
	1	50	18.45	18.25	17.88		2
	1	99	18.16	18.19	17.92		2
	50	0	18.30	18.22	18.04		2
	50	25	18.31	18.23	18.01		2
	50	50	18.30	18.22	18.08		2
	100	0	18.30	18.20	18.11		2

9.3.6 LTE Band 41

Table 9-19
LTE Band 41 PC3 Maximum Conducted Powers - 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	23.80	23.87	23.55	23.76	23.60	0	0
	1	50	23.78	23.83	24.02	24.01	**24.06**		0
	1	99	23.77	23.87	23.75	23.64	24.04		0
	50	0	22.75	22.83	22.87	22.93	22.92	0-1	1
	50	25	22.96	22.98	22.93	22.99	23.10		1
	50	50	22.89	22.85	23.00	22.95	**23.17**		1
	100	0	22.86	22.87	22.90	22.92	23.03		1
16QAM	1	0	23.33	22.98	22.89	23.08	22.70	0-1	1
	1	50	23.28	23.00	23.23	23.33	23.16		1
	1	99	23.29	22.99	23.05	22.89	23.12		1
	50	0	21.79	21.85	21.85	21.91	21.96	0-2	2
	50	25	21.97	22.01	21.95	21.96	22.11		2
	50	50	21.91	21.86	21.99	21.92	22.20		2
	100	0	21.88	21.88	21.87	21.89	22.00		2
64QAM	1	0	21.45	21.88	21.80	21.93	21.60	0-2	2
	1	50	21.45	21.90	22.19	22.25	22.11		2
	1	99	21.48	21.88	21.93	21.85	22.05		2
	50	0	20.78	20.91	20.89	20.95	20.98	0-3	3
	50	25	20.97	21.05	21.00	21.02	21.18		3
	50	50	20.91	20.93	21.00	20.96	21.22		3
	100	0	20.89	20.92	20.91	20.90	21.09		3
256QAM	1	0	18.43	19.09	18.79	18.90	19.16	0-5	5
	1	50	18.83	19.37	19.14	19.20	19.51		5
	1	99	18.55	19.04	18.88	18.74	19.55		5
	50	0	18.78	18.84	18.87	18.96	18.99		5
	50	25	18.97	19.01	18.99	19.02	19.16		5
	50	50	18.94	18.89	18.98	18.96	19.22		5
	100	0	18.90	18.88	18.88	18.93	19.04		5

Table 9-20
LTE Band 41 PC3 Reduced Conducted Powers - Hotspot Mode Active - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	**18.70**	18.47	17.88	18.23	18.01	0	0
	1	50	18.55	18.37	18.14	18.29	18.38		0
	1	99	18.53	18.32	17.85	17.83	18.34		0
	50	0	18.60	18.36	18.12	18.36	18.26	0-1	0
	50	25	**18.69**	18.46	18.36	18.39	18.39		0
	50	50	18.53	18.25	18.22	18.31	18.48		0
	100	0	18.64	18.33	18.20	18.28	18.36		0
16QAM	1	0	18.48	18.40	17.86	18.24	18.02	0-1	0
	1	50	18.33	18.31	18.50	18.31	18.35		0
	1	99	18.25	18.24	17.88	17.81	18.32		0
	50	0	18.38	18.29	18.16	18.40	18.28	0-2	0
	50	25	18.49	18.49	18.37	18.39	18.45		0
	50	50	18.30	18.30	18.24	18.27	18.53		0
	100	0	18.39	18.40	18.24	18.31	18.34		0
64QAM	1	0	18.45	18.19	17.62	17.94	17.73	0-2	0
	1	50	18.32	18.19	17.99	18.11	18.15		0
	1	99	18.23	18.07	17.63	17.61	18.14		0
	50	0	18.37	18.41	18.16	18.41	18.32	0-3	0
	50	25	18.48	18.47	18.44	18.40	18.51		0
	50	50	18.31	18.33	18.28	18.29	18.58		0
	100	0	18.41	18.37	18.21	18.28	18.36		0
256QAM	1	0	18.25	18.00	17.80	18.09	17.90	0-5	0
	1	50	18.56	18.28	18.11	18.23	18.34		0
	1	99	18.08	17.80	17.85	17.77	18.25		0
	50	0	18.42	18.43	18.24	18.51	18.36		0
	50	25	18.53	18.58	18.39	18.47	18.55		0
	50	50	18.33	18.38	18.38	18.35	18.61		0
	100	0	18.39	18.36	18.24	18.31	18.41		0

Table 9-21
LTE Band 41 PC3 Reduced Conducted Powers - Grip Sensor and/or Earjack Mode Active - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.37	22.35	22.12	22.25	22.07	0	0
	1	50	22.37	22.34	22.47	22.56	**22.57**		0
	1	99	22.35	22.35	22.20	22.18	22.48		0
	50	0	22.28	22.34	22.42	22.51	22.47	0-1	0
	50	25	22.44	22.49	22.54	22.57	22.63		0
	50	50	22.42	22.36	22.55	22.51	**22.69**		0
	100	0	22.40	22.40	22.45	22.50	22.53		0
16QAM	1	0	22.72	22.88	22.28	22.05	22.56	0-1	0
	1	50	22.72	22.86	22.61	22.28	22.97		0
	1	99	22.74	22.87	22.35	22.00	22.94		0
	50	0	21.77	21.83	21.96	21.89	21.92	0-2	0.5
	50	25	21.95	22.00	22.09	21.94	22.06		0.5
	50	50	21.90	21.87	22.09	21.87	22.18		0.5
	100	0	21.89	21.90	21.96	21.88	22.02		0.5
64QAM	1	0	22.10	21.48	21.65	21.94	21.47	0-2	0.5
	1	50	22.14	21.54	22.06	22.22	21.73		0.5
	1	99	22.11	21.53	21.79	21.81	21.64		0.5
	50	0	20.83	20.85	21.04	20.94	20.97	0-3	1.5
	50	25	20.98	21.00	21.15	20.99	21.14		1.5
	50	50	20.95	20.89	21.16	20.92	21.23		1.5
	100	0	20.89	20.92	21.05	20.88	21.10		1.5
256QAM	1	0	18.67	18.47	19.21	18.84	19.06	0-5	3.5
	1	50	19.06	18.88	19.58	19.16	19.05		3.5
	1	99	18.78	18.46	19.35	18.71	18.95		3.5
	50	0	18.77	18.84	18.98	18.94	18.96		3.5
	50	25	18.99	19.00	19.09	18.99	19.11		3.5
	50	50	18.90	18.91	19.10	18.91	19.18		3.5
	100	0	18.89	18.93	18.98	18.90	19.03		3.5

Table 9-22
LTE Band 41 PC2 Maximum Conducted Powers - 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	26.32	26.33	26.16	26.09	26.06	0	0
	1	50	26.35	26.31	26.40	26.39	26.42		0
	1	99	26.33	26.33	26.18	25.98	26.38		0
	50	0	25.24	25.28	25.42	25.45	25.42	0-1	1
	50	25	25.43	25.45	25.51	25.49	25.59		1
	50	50	25.36	25.33	25.50	25.44	25.67		1
	100	0	25.35	25.36	25.41	25.40	25.51		1

Table 9-23
LTE Band 41 PC2 Reduced Conducted Powers - Hotspot Mode Active - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	18.81	18.35	17.87	17.90	17.95	0	0
	1	50	18.72	18.39	18.17	18.17	18.35		0
	1	99	18.65	18.37	17.76	17.72	18.28		0
	50	0	18.70	18.37	18.13	18.21	18.18	0-1	0
	50	25	18.81	18.55	18.28	18.25	18.42		0
	50	50	18.65	18.37	18.22	18.21	18.47		0
	100	0	18.68	18.42	18.19	18.20	18.32		0

Table 9-24
LTE Band 41 PC2 Reduced Conducted Powers - Grip Sensor and/or Earjack Mode Active - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.35	22.27	22.15	22.23	21.93	0	0
	1	50	22.32	22.25	22.47	22.44	22.49		0
	1	99	22.31	22.28	22.18	22.05	22.37		0
	50	0	22.26	22.31	22.38	22.42	22.41	0-1	0
	50	25	22.45	22.47	22.48	22.49	22.56		0
	50	50	22.38	22.34	22.49	22.42	22.63		0
	100	0	22.37	22.39	22.42	22.38	22.49		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 appendix F.

9.4.1 NR Band n5

Table 9-25
NR Band n5 Maximum Conducted Powers - 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	23.59	0	0.0
	1	53	23.72		0.0
	1	104	23.66		0.0
	50	0	23.67	0-0.5	0.5
	50	28	23.65	0	0.0
	50	56	23.60	0-0.5	0.5
	100	0	23.63		0.5
DFT-s-OFDM QPSK	1	1	23.59	0	0.0
	1	53	**23.69**		0.0
	1	104	23.64		0.0
	50	0	23.10	0-1	1.0
	50	28	**23.61**	0	0.0
	50	56	23.08	0-1	1.0
	100	0	23.09		1.0
DFT-s-OFDM 16QAM	1	1	23.39	0-1	1.0
CP-OFDM QPSK	1	1	22.95	0-1.5	1.5

Note: NR Band n5 at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-26
NR Band n5 Reduced Conducted Powers - Hotspot Mode Active - 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	22.61	0	0.0
	1	53	22.66		0.0
	1	104	22.65		0.0
	50	0	22.66	0-0.5	0.0
	50	28	22.69	0	0.0
	50	56	22.68	0-0.5	0.0
	100	0	22.73		0.0
DFT-s-OFDM QPSK	1	1	22.61	0	0.0
	1	53	**22.94**		0.0
	1	104	22.62		0.0
	50	0	22.74	0-1	0.0
	50	28	**22.92**	0	0.0
	50	56	22.60	0-1	0.0
	100	0	22.73		0.0
DFT-s-OFDM 16QAM	1	1	23.04	0-1	0.0
CP-OFDM QPSK	1	1	22.56	0-1.5	0.0

Note: NR Band n5 at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

9.4.1 NR Band n66

Table 9-27
NR Band n66 Maximum Conducted Powers - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	23.25	23.23	23.28	0	0.0
	1	53	23.35	23.05	23.16		0.0
	1	104	23.41	23.08	23.31		0.0
	50	0	22.67	22.62	22.79	0-0.5	0.5
	50	28	23.21	23.13	23.23	0	0.0
	50	56	22.74	22.60	22.84	0-0.5	0.5
	100	0	22.80	22.58	22.78		0.5
DFT-s-OFDM QPSK	1	1	22.74	23.30	22.96	0	0.0
	1	53	23.20	23.20	23.32		0.0
	1	104	**23.39**	23.05	22.57		0.0
	50	0	22.00	22.20	22.15	0-1	1.0
	50	28	**23.28**	23.16	23.27	0	0.0
	50	56	22.00	22.19	21.90	0-1	1.0
	100	0	22.28	22.15	22.11		1.0
DFT-s-OFDM 16QAM	1	1	21.61	22.26	21.90	0-1	1.0
CP-OFDM QPSK	1	1	21.20	21.95	21.26	0-1.5	1.5

Table 9-28
NR Band n66 Reduced Conducted Powers - Hotspot Mode Active - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM π/2 BPSK	1	1	16.03	15.84	15.85	0	0.0
	1	53	15.82	15.60	16.05		0.0
	1	104	15.76	15.80	15.77		0.0
	50	0	15.95	15.74	15.88	0-0.5	0.0
	50	28	15.93	15.68	15.96	0	0.0
	50	56	15.82	15.67	15.94	0-0.5	0.0
	100	0	15.79	15.67	15.81		0.0
DFT-s-OFDM QPSK	1	1	15.88	15.76	15.99	0	0.0
	1	53	15.84	15.61	15.95		0.0
	1	104	15.77	15.72	**16.00**		0.0
	50	0	15.92	15.72	15.83	0-1	0.0
	50	28	15.91	15.64	**15.98**	0	0.0
	50	56	15.83	15.66	15.97	0-1	0.0
	100	0	15.84	15.69	15.82		0.0
DFT-s-OFDM 16QAM	1	1	16.08	15.77	15.90	0-1	0.0
CP-OFDM QPSK	1	1	15.86	15.72	15.61	0-1.5	0.0

Table 9-29
NR Band n66 Reduced Conducted Powers - Grip Sensor and/or Earjack Mode Active - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	20.75	20.49	20.71	0	0.0
	1	53	20.60	20.37	20.66		0.0
	1	104	20.66	20.45	20.80		0.0
	50	0	20.67	20.45	20.79	0-0.5	0.0
	50	28	20.62	20.40	20.67	0	0.0
	50	56	20.70	20.34	20.77	0-0.5	0.0
	100	0	20.68	20.44	20.74		0.0
DFT-s-OFDM QPSK	1	1	20.77	20.54	20.78	0	0.0
	1	53	20.64	20.38	20.69		0.0
	1	104	20.63	20.41	**20.81**		0.0
	50	0	20.67	20.42	20.72	0-1	0.0
	50	28	20.67	20.36	**20.73**	0	0.0
	50	56	20.66	20.34	20.71	0-1	0.0
	100	0	20.67	20.38	20.69		0.0
DFT-s-OFDM 16QAM	1	1	20.68	20.52	20.57	0-1	0.0
CP-OFDM QPSK	1	1	20.54	20.38	20.41	0-1.5	0.0

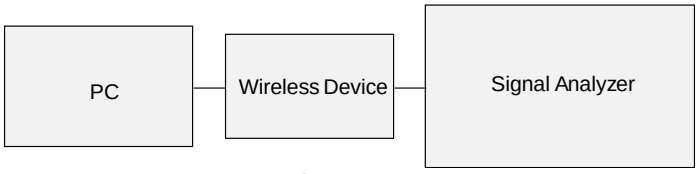


Figure 9-4
Power Measurement Setup

9.5 WLAN Conducted Powers

Table 9-30
2.4 GHz WLAN Maximum Average RF Power – Ant 2, Q

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	18.65	17.71	17.37	17.40
2437	6	18.23	17.86	17.54	17.59
2462	11	18.39	17.98	17.71	17.76

Table 9-31
2.4 GHz WLAN Maximum Average RF Power – Ant 2, N

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	18.84	17.60	17.41	17.50
2437	6	18.69	17.40	17.21	17.33
2462	11	18.74	17.44	17.30	17.34

Table 9-32
2.4 GHz WLAN Maximum Average RF Power – MIMO, Q

2.4GHz 802.11b Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	18.61	18.58	21.61
2437	6	18.48	18.75	21.63
2462	11	18.39	18.80	21.61

Table 9-33
2.4 GHz WLAN Maximum Average RF Power – MIMO, N

2.4GHz 802.11b Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	18.60	18.55	21.59
2437	6	18.89	18.86	21.89
2462	11	18.56	18.82	21.70

Table 9-34
5 GHz WLAN Maximum Average RF Power – Ant 1, Q

5GHz (20MHz) Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11a	802.11n	802.11ac	802.11ax
		Average	Average	Average	Average
5180	36	16.15	14.82	14.83	15.40
5200	40	17.98	17.92	17.93	17.85
5220	44	17.87	17.50	17.49	17.45
5240	48	17.77	17.41	17.41	17.37
5260	52	17.97	17.19	17.16	17.10
5280	56	17.99	17.51	17.40	17.36
5300	60	17.89	17.23	17.27	17.27
5320	64	17.71	16.10	16.13	16.34
5500	100	17.90	16.39	16.38	16.92
5600	120	17.98	17.83	17.60	17.55
5620	124	17.89	17.79	17.56	17.32
5720	144	17.85	17.32	17.31	17.28
5745	149	17.92	17.04	17.36	17.38
5785	157	17.84	17.23	17.23	17.21
5825	165	17.74	17.14	17.16	17.18

Table 9-35
5 GHz WLAN Maximum Average RF Power – Ant 1, N

5GHz (20MHz) Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11a	802.11n	802.11ac	802.11ax
		Average	Average	Average	Average
5180	36	15.56	14.93	14.91	14.88
5200	40	17.72	17.17	17.13	17.25
5220	44	17.98	17.32	17.29	17.36
5240	48	17.70	17.42	17.37	17.51
5260	52	17.98	17.30	17.26	17.32
5280	56	17.82	17.23	17.20	17.23
5300	60	17.74	17.08	17.05	17.12
5320	64	17.91	16.49	16.49	16.13
5500	100	17.71	16.44	16.41	16.42
5600	120	17.85	17.43	17.42	17.47
5620	124	17.84	17.53	17.49	17.54
5720	144	17.86	17.91	17.89	17.95
5745	149	17.71	17.92	17.89	17.94
5785	157	17.58	17.69	17.68	17.73
5825	165	17.80	17.37	17.36	17.40

Table 9-36
5 GHz WLAN Maximum Average RF Power – MIMO, Q

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	14.77	14.98	17.89
5200	40	17.84	17.94	20.90
5220	44	17.59	17.79	20.70
5240	48	17.49	17.78	20.65
5260	52	17.87	17.77	20.83
5280	56	17.89	17.63	20.77
5300	60	17.74	17.95	20.86
5320	64	16.30	16.74	19.54
5500	100	15.83	16.81	19.36
5520	104	16.71	17.53	20.15
5600	120	17.98	17.65	20.83
5620	124	17.95	17.62	20.80
5720	144	17.92	17.64	20.79
5745	149	17.58	17.78	20.69
5785	157	17.97	17.63	20.81
5825	165	17.94	17.94	20.95

Table 9-37
5 GHz WLAN Maximum Average RF Power – MIMO, N

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	14.46	14.33	17.41
5200	40	17.65	17.70	20.69
5220	44	17.93	17.99	20.97
5240	48	17.98	17.88	20.94
5260	52	17.91	17.89	20.91
5280	56	17.71	17.68	20.71
5300	60	17.63	17.82	20.74
5320	64	16.10	15.90	19.01
5500	100	16.50	16.78	19.65
5520	104	17.21	17.81	20.53
5600	120	17.77	17.99	20.89
5620	124	17.77	17.83	20.81
5720	144	17.79	17.67	20.74
5745	149	17.64	17.59	20.63
5785	157	17.90	17.99	20.96
5825	165	17.69	17.93	20.82

Table 9-38
2.4 GHz WLAN Reduced Average RF Power for conditions with RCV active or RCV active During Conditions with 5 GHz WLAN and/or with 5G NR – Ant 2, Q

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	12.60	12.46	12.13	12.16
2437	6	12.77	12.63	12.37	12.39
2462	11	12.66	12.55	12.25	12.26

Table 9-39
2.4 GHz WLAN Reduced Average RF Power for conditions with RCV active or RCV active During Conditions with 5 GHz WLAN and/or with 5G NR – Ant 2, N

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	12.76	12.47	12.26	12.34
2437	6	12.72	12.50	12.32	12.37
2462	11	12.73	12.41	12.24	12.36

Table 9-40
2.4 GHz WLAN Reduced Average RF Power for conditions with RCV active or RCV active During Conditions with 5 GHz WLAN and/or with 5G NR (FR1) – MIMO, Q

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	12.83	12.80	15.83
2437	6	12.21	12.96	15.61
2462	11	12.25	12.96	15.63

Table 9-41
2.4 GHz WLAN Reduced Average RF Power for conditions with RCV active or RCV active During Conditions with 5 GHz WLAN and/or with 5G NR (FR1) – MIMO, N

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	12.69	12.61	15.66
2437	6	12.65	12.55	15.61
2462	11	12.82	12.89	15.87

Table 9-42
5 GHz WLAN Reduced Average RF Power for Conditions with RCV active or RCV active During Conditions with 2.4 GHz WLAN and/or with 5G NR – Ant 1, Q

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax
		Average	Average
5210	42	10.99	10.57
5290	58	10.80	10.43
5530	106	10.64	10.23
5610	122	10.96	10.33
5690	138	10.64	10.61
5775	155	10.84	10.36

Table 9-43
5 GHz WLAN Reduced Average RF Power for Conditions with RCV active or RCV active During Conditions with 2.4 GHz WLAN and/or 5G NR – Ant 1, N

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax
		Average	Average
5210	42	10.55	10.43
5290	58	10.75	10.71
5530	106	10.73	10.11
5610	122	10.82	10.40
5690	138	10.66	10.69
5775	155	10.81	10.79

Table 9-44
5 GHz WLAN Reduced Average RF Power for Conditions with RCV active or RCV active During Conditions with 2.4 GHz WLAN and/or 5G NR – MIMO, Q

5GHz (80MHz) 802.11ac Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5210	42	10.98	10.53	13.77
5290	58	10.66	10.82	13.75
5530	106	10.49	10.27	13.39
5610	122	10.78	10.07	13.45
5690	138	10.91	10.45	13.70
5775	155	10.68	10.81	13.76

Table 9-45
5 GHz WLAN Reduced Average RF Power for Conditions with RCV active or RCV active During Conditions with 2.4 GHz WLAN and/or 5G NR – MIMO, N

5GHz (80MHz) 802.11ac Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5210	42	10.69	10.60	13.66
5290	58	10.88	10.98	13.94
5530	106	10.80	10.97	13.90
5610	122	10.89	10.98	13.95
5690	138	10.73	10.77	13.76
5775	155	10.85	10.78	13.83

Table 9-46
2.4 GHz WLAN Reduced Average RF Power during Conditions with 5GHz WLAN and/or with 5G NR - Ant 2, Q

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	14.50	14.54	14.15	14.21
2437	6	14.58	14.48	14.12	14.23
2462	11	14.60	14.58	14.28	14.31

Table 9-47
2.4 GHz WLAN Reduced Average RF Power during Conditions with 5GHz WLAN and/or with 5G NR - Ant 2, N

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax
		Average	Average	Average	Average
2412	1	14.74	14.68	14.53	14.62
2437	6	14.55	14.47	14.28	14.27
2462	11	14.65	14.50	14.28	14.39

Table 9-48
2.4 GHz WLAN Reduced Average RF Power during Conditions with 5GHz WLAN and/or with 5G NR – MIMO, Q

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	14.41	14.45	17.44
2437	6	14.33	14.82	17.59
2462	11	14.30	14.82	17.58

Table 9-49
2.4 GHz WLAN Reduced Average RF Power during Conditions with 5GHz WLAN and/or with 5G NR – MIMO, N

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	14.86	14.07	17.49
2437	6	14.73	13.92	17.35
2462	11	14.98	13.84	17.46

Table 9-50
5 GHz WLAN Reduced Average RF Power during Conditions with 2.4 GHz WLAN and/or with 5G NR – Ant 1, Q

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax
		Average	Average	Average
5190	38	13.91	13.81	13.98
5230	46	14.74	14.70	14.89
5270	54	14.93	14.91	14.52
5310	62	14.83	14.84	14.94

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax
		Average	Average
5530	106	14.59	14.39
5610	122	14.61	14.41
5690	138	14.64	14.47
5775	155	14.32	14.15

Table 9-51
5 GHz WLAN Reduced Average RF Power f during Conditions with 2.4 GHz WLAN and/or with 5G NR – Ant 1, N

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax
		Average	Average	Average
5190	38	13.82	13.82	13.88
5230	46	14.67	14.49	14.62
5270	54	14.65	14.98	14.62
5310	62	14.60	14.95	14.57

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax
		Average	Average
5530	106	14.68	14.62
5610	122	14.50	14.48
5690	138	14.31	14.30
5775	155	14.28	14.25

Table 9-52
5 GHz WLAN Reduced Average RF Power during Conditions with 2.4 GHz WLAN and/or with 5G NR – MIMO, Q

5GHz (40MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	**Channel**	**ANT1**	**ANT2**	**MIMO**
5190	38	13.68	13.65	16.68
5230	46	14.54	14.84	17.70
5270	54	14.71	14.90	17.82
5310	62	14.62	14.82	17.73
5GHz (80MHz) 802.11ac Conducted Power [dBm]				
Freq [MHz]	**Channel**	**ANT1**	**ANT2**	**MIMO**
5530	106	14.54	14.87	17.72
5610	122	14.46	14.87	17.68
5690	138	14.15	14.68	17.43
5775	155	13.80	14.95	17.42

Table 9-53
5 GHz WLAN Reduced Average RF Power during Conditions with 2.4 GHz WLAN and/or with 5G NR – MIMO, N

5GHz (40MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	**Channel**	**ANT1**	**ANT2**	**MIMO**
5190	38	13.90	13.47	16.70
5230	46	14.57	14.66	17.63
5270	54	14.52	14.68	17.61
5310	62	14.98	14.65	17.83
5GHz (80MHz) 802.11ac Conducted Power [dBm]				
Freq [MHz]	**Channel**	**ANT1**	**ANT2**	**MIMO**
5530	106	14.47	14.17	17.33
5610	122	14.32	14.11	17.23
5690	138	14.51	14.18	17.36
5775	155	14.44	14.52	17.49

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.

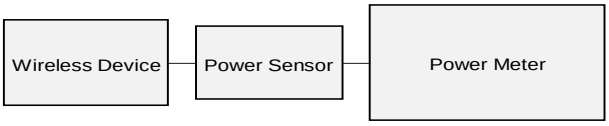


Figure 9-5
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-54
Bluetooth Antenna 1 Maximum Average RF Power - Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	14.18	26.182
2441	1.0	GFSK	ePA	39	15.43	34.914
2480	1.0	GFSK	ePA	78	14.13	25.882
2402	2.0	π/4-DQPSK	ePA	0	12.16	16.444
2441	2.0	π/4-DQPSK	ePA	39	12.88	19.409
2480	2.0	π/4-DQPSK	ePA	78	12.16	16.444
2402	3.0	8DPSK	ePA	0	11.88	15.417
2441	3.0	8DPSK	ePA	39	12.93	19.634
2480	3.0	8DPSK	ePA	78	11.92	15.560

Table 9-55
Bluetooth Antenna 2 Maximum Average RF Power Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	14.97	31.405
2441	1.0	GFSK	ePA	39	16.61	45.814
2480	1.0	GFSK	ePA	78	15.66	36.813
2402	2.0	π/4-DQPSK	ePA	0	12.40	17.378
2441	2.0	π/4-DQPSK	ePA	39	13.96	24.889
2480	2.0	π/4-DQPSK	ePA	78	12.31	17.022
2402	3.0	8DPSK	ePA	0	12.40	17.378
2441	3.0	8DPSK	ePA	39	14.29	26.853
2480	3.0	8DPSK	ePA	78	13.33	21.528

Table 9-56
Bluetooth Antenna 1 Maximum Average RF Power - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	14.92	31.046
2441	1.0	GFSK	ePA	39	15.55	35.892
2480	1.0	GFSK	ePA	78	14.75	29.854
2402	2.0	π/4-DQPSK	ePA	0	12.73	18.750
2441	2.0	π/4-DQPSK	ePA	39	13.38	21.777
2480	2.0	π/4-DQPSK	ePA	78	12.56	18.030
2402	3.0	8DPSK	ePA	0	12.75	18.836
2441	3.0	8DPSK	ePA	39	13.36	21.677
2480	3.0	8DPSK	ePA	78	12.73	18.750

Table 9-57
Bluetooth Antenna 2 Maximum Average RF Power - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	15.26	33.574
2441	1.0	GFSK	ePA	39	16.55	45.186
2480	1.0	GFSK	ePA	78	16.60	45.709
2402	2.0	π/4-DQPSK	ePA	0	13.13	20.559
2441	2.0	π/4-DQPSK	ePA	39	14.15	26.002
2480	2.0	π/4-DQPSK	ePA	78	13.28	21.281
2402	3.0	8DPSK	ePA	0	13.06	20.230
2441	3.0	8DPSK	ePA	39	13.48	22.284
2480	3.0	8DPSK	ePA	78	14.48	28.054

Table 9-58
Bluetooth Antenna 1 BT Reduced 5G NR Active - Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	11.76	15.004
2441	1.0	GFSK	ePA	39	13.10	20.408
2480	1.0	GFSK	ePA	78	12.38	17.286

Table 9-59
Bluetooth Antenna 2 BT Reduced 5G NR Active - Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	12.24	16.742
2441	1.0	GFSK	ePA	39	13.93	24.706
2480	1.0	GFSK	ePA	78	13.61	22.956

Table 9-60
Bluetooth Antenna 1 BT Reduced 5G NR Active - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	12.41	17.398
2441	1.0	GFSK	ePA	39	13.11	20.446
2480	1.0	GFSK	ePA	78	12.33	17.104

Table 9-61
Bluetooth Antenna 2 BT Reduced 5G NR Active - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	12.96	19.751
2441	1.0	GFSK	ePA	39	13.25	21.120
2480	1.0	GFSK	ePA	78	13.67	23.259

Table 9-62
Bluetooth Antenna 1 BT Reduced RCV Active Conducted Power - Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	7.80	6.026
2441	1.0	GFSK	ePA	39	8.62	7.278
2480	1.0	GFSK	ePA	78	7.74	5.938

Table 9-63
Bluetooth Antenna 2 BT Reduced RCV Active Conducted Power - Q

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	7.79	6.008
2441	1.0	GFSK	ePA	39	9.29	8.492
2480	1.0	GFSK	ePA	78	8.94	7.828

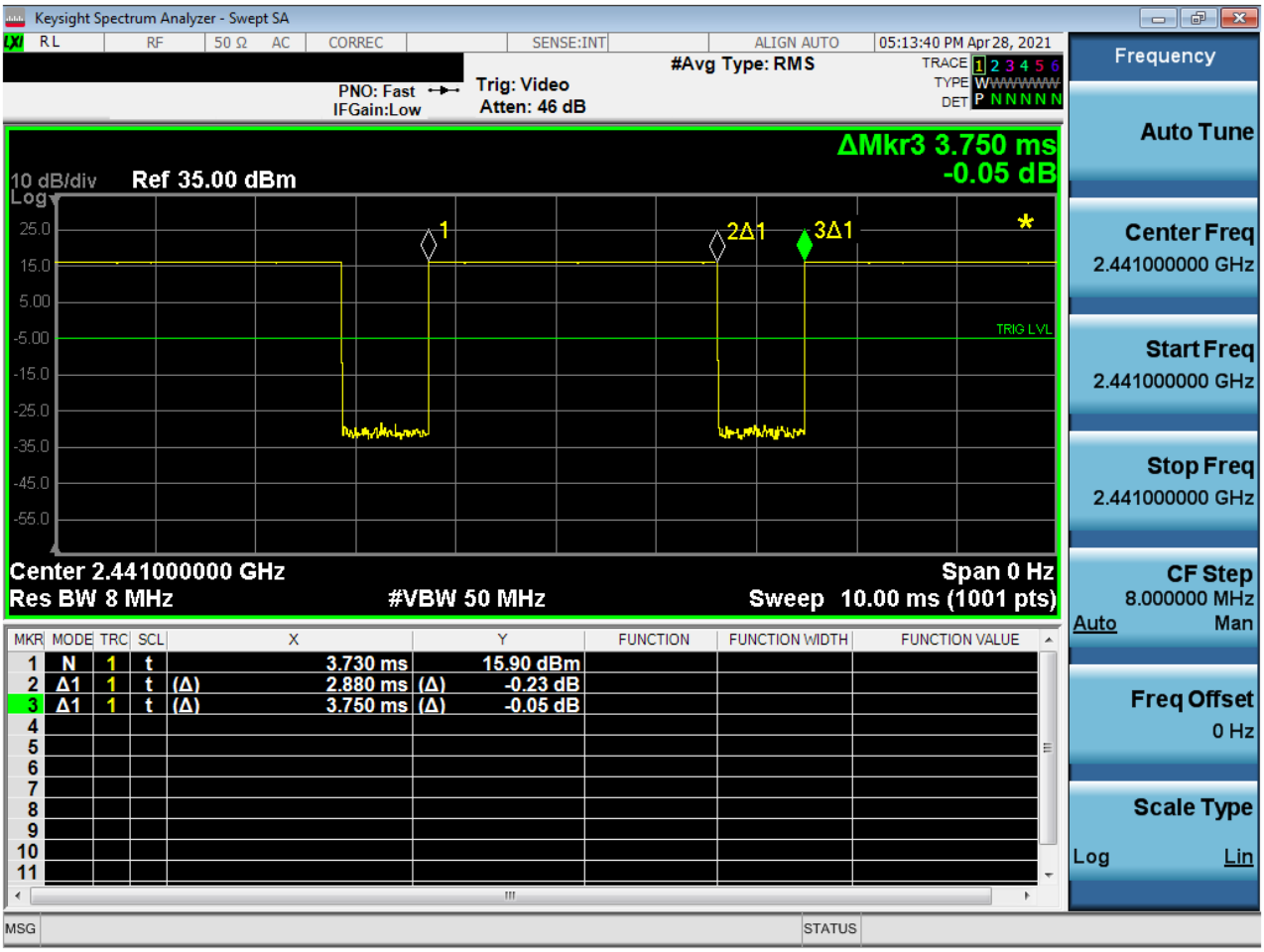
Table 9-64
Bluetooth Antenna 1 BT Reduced RCV Active Conducted Power - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	7.50	5.628
2441	1.0	GFSK	ePA	39	8.43	6.966
2480	1.0	GFSK	ePA	78	7.62	5.778

Table 9-65
Bluetooth Antenna 2 BT Reduced RCV Active Conducted Power - N

Frequency [MHz]	Data Rate [Mbps]	Mod.	Power Scheme	Channel No.	Avg Conducted Power	
					[dBm]	[mW]
2402	1.0	GFSK	ePA	0	7.85	6.098
2441	1.0	GFSK	ePA	39	8.99	7.931
2480	1.0	GFSK	ePA	78	9.44	8.785

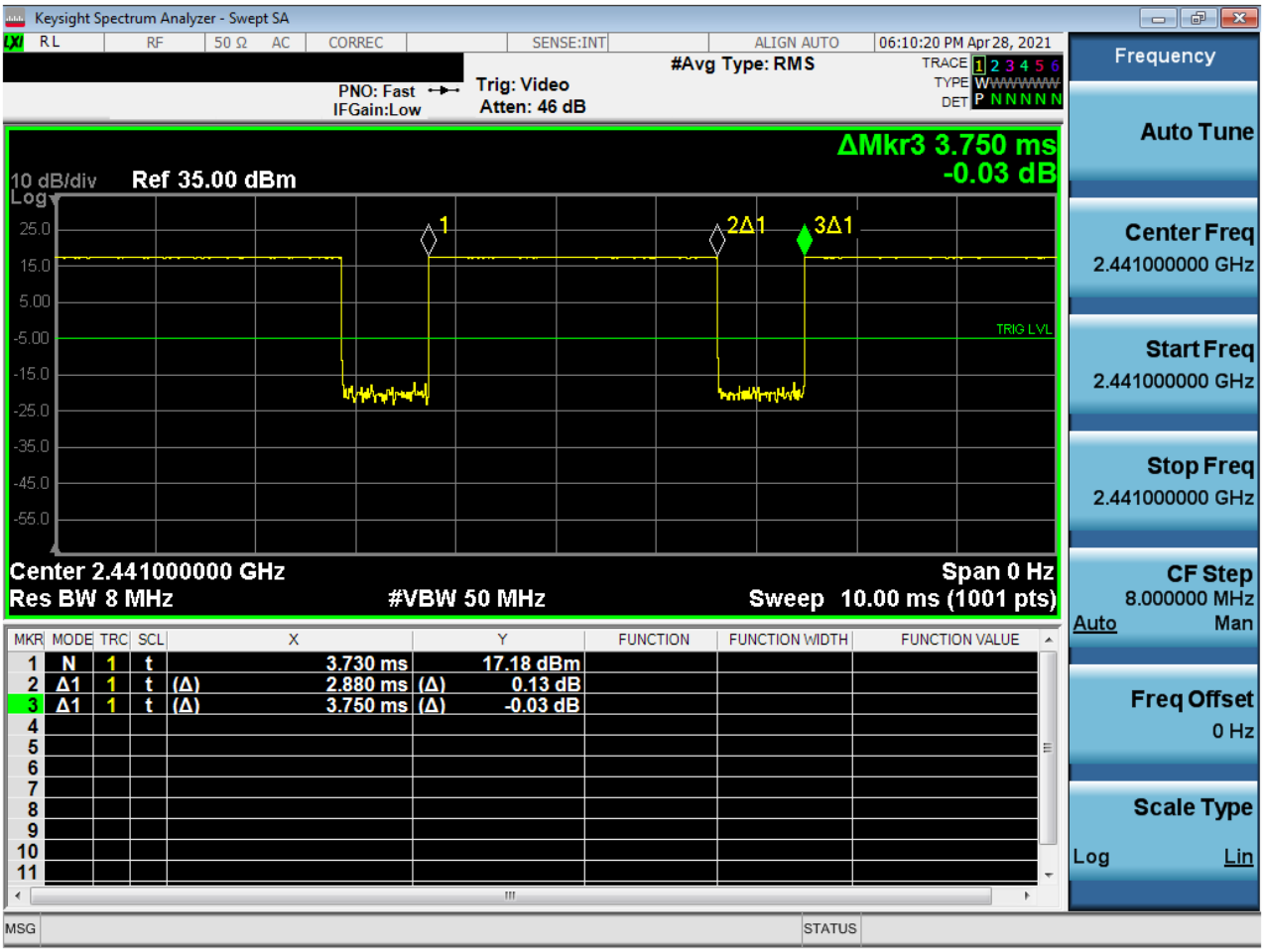
Figure 9-6
Bluetooth Antenna 1 Transmission Plot - Q



Equation 9-1
Bluetooth Antenna 1 Duty Cycle Calculation - Q

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

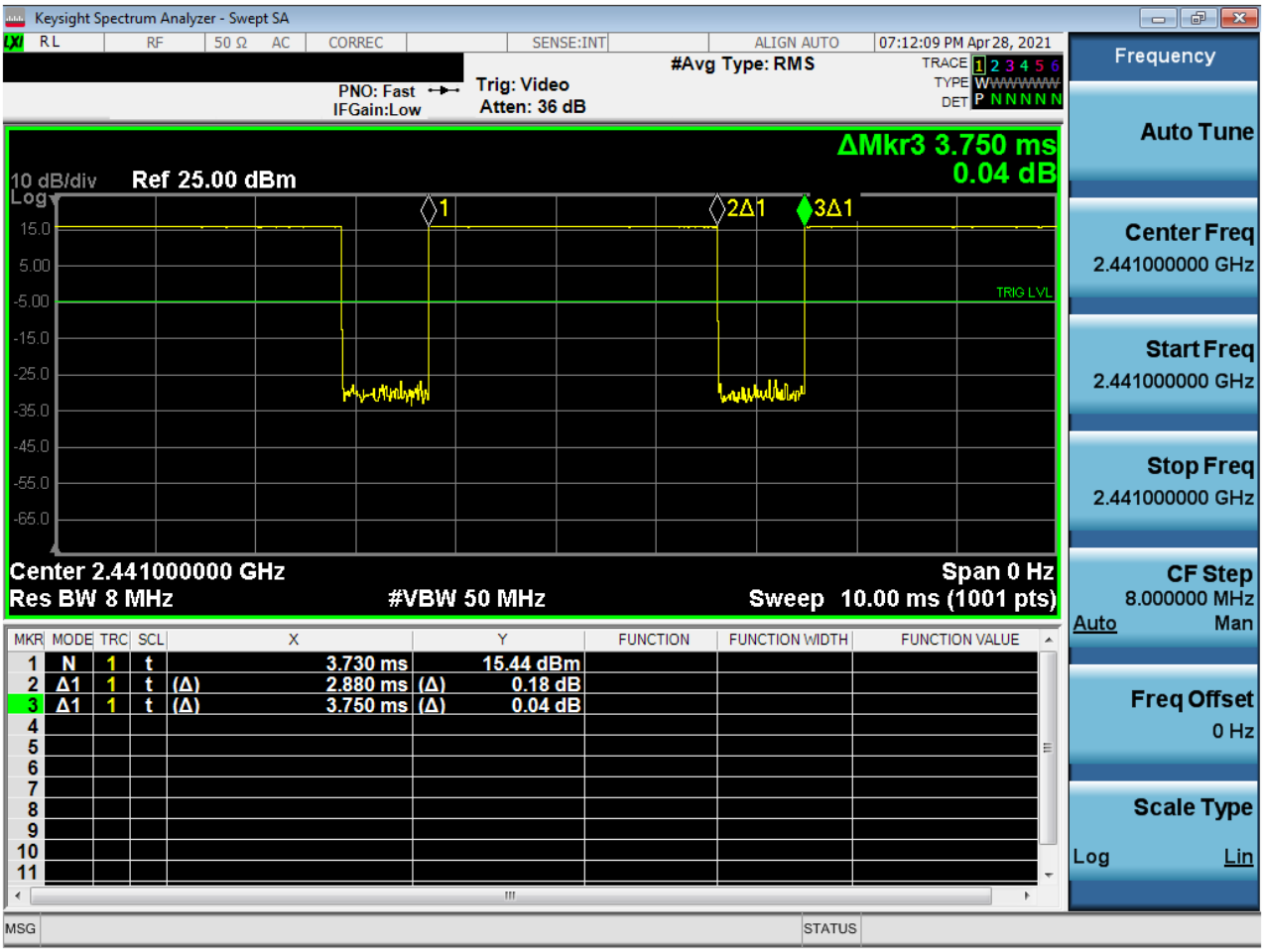
Figure 9-7
Bluetooth Antenna 2 Transmission Plot - Q



Equation 9-2
Bluetooth Antenna 2 Duty Cycle Calculation - Q

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

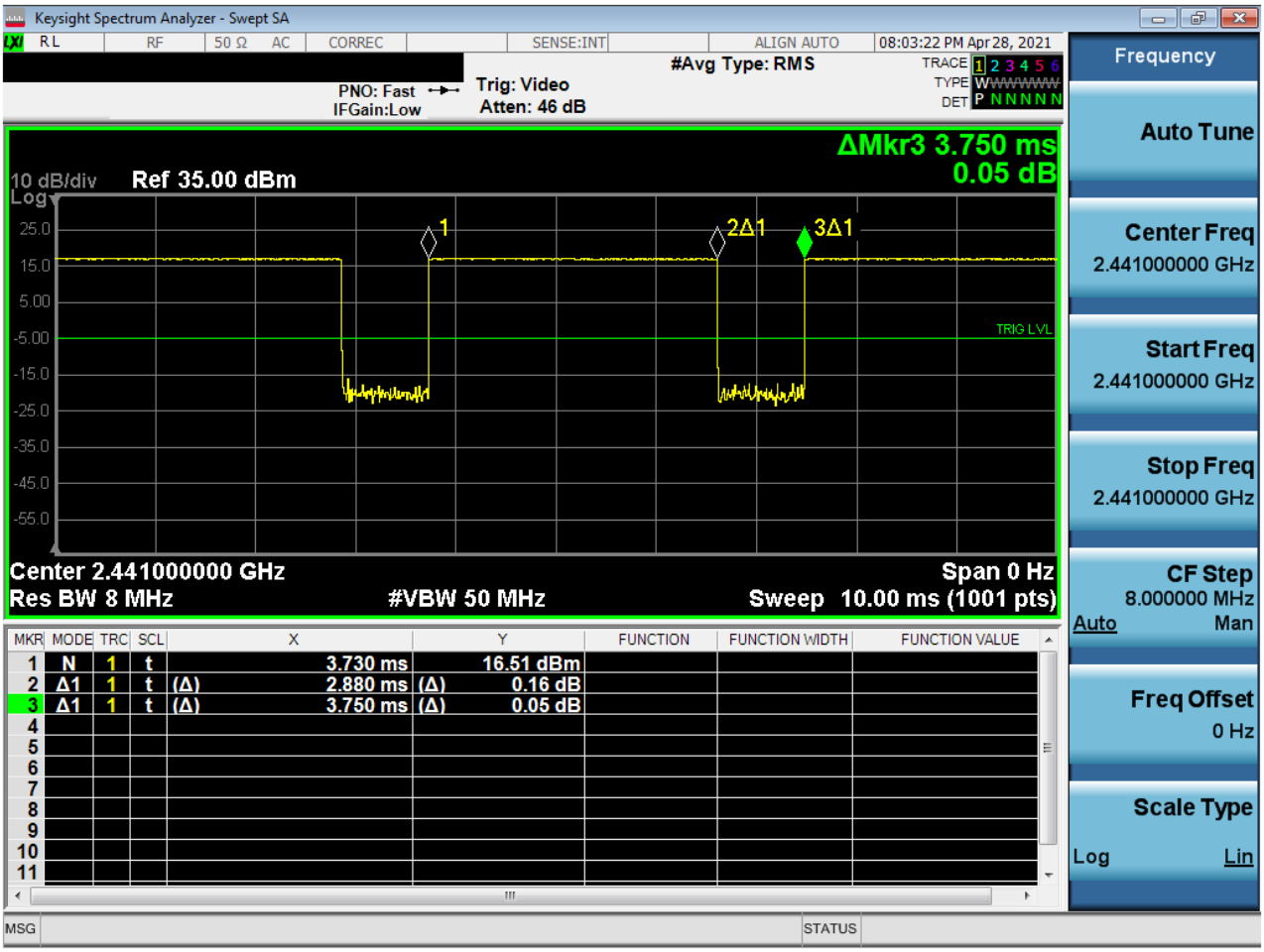
Figure 9-8
Bluetooth Antenna 1 Transmission Plot - N



Equation 9-3
Bluetooth Antenna 1 Duty Cycle Calculation - N

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

Figure 9-9
Bluetooth Antenna 2 Transmission Plot - N



Equation 9-4
Bluetooth Antenna 2 Duty Cycle Calculation - N

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

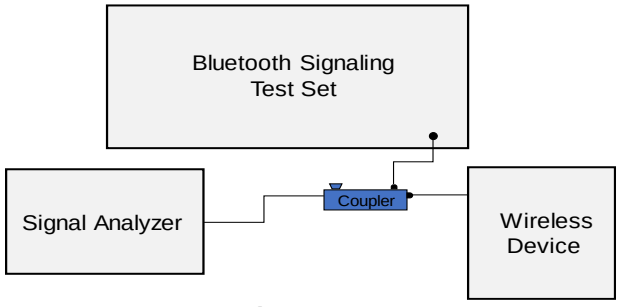


Figure 9-10
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties (1 of 2)

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
05/20/2021	750 Head	23.7	700	0.906	43.966	0.889	42.201	1.91%	4.18%
			710	0.909	43.936	0.890	42.149	2.13%	4.24%
			725	0.914	43.894	0.891	42.071	2.58%	4.33%
			750	0.923	43.827	0.894	41.942	3.24%	4.49%
			770	0.930	43.769	0.895	41.838	3.91%	4.62%
			785	0.935	43.721	0.896	41.760	4.35%	4.70%
06/01/2021	835 Head	21.7	820	0.926	41.477	0.899	41.578	3.00%	-0.24%
			835	0.932	41.465	0.900	41.500	3.56%	-0.08%
			850	0.938	41.447	0.916	41.500	2.40%	-0.13%
05/16/2021	1750 Head	21.4	1710	1.352	40.563	1.348	40.142	0.30%	1.05%
			1720	1.363	40.515	1.354	40.126	0.66%	0.97%
			1745	1.388	40.397	1.368	40.087	1.46%	0.77%
			1750	1.393	40.373	1.371	40.079	1.60%	0.73%
			1770	1.414	40.276	1.383	40.047	2.24%	0.57%
			1790	1.434	40.177	1.394	40.016	2.87%	0.40%
05/18/2021	1750 Head	22.2	1710	1.356	41.289	1.348	40.142	0.59%	2.86%
			1720	1.366	41.244	1.354	40.126	0.89%	2.79%
			1745	1.392	41.131	1.368	40.087	1.75%	2.60%
			1750	1.397	41.108	1.371	40.079	1.90%	2.57%
			1770	1.417	41.014	1.383	40.047	2.46%	2.41%
			1790	1.437	40.921	1.394	40.016	3.08%	2.26%
05/03/2021	1900 Head	21.8	1850	1.376	38.294	1.400	40.000	-1.71%	-4.27%
			1860	1.386	38.252	1.400	40.000	-1.00%	-4.37%
			1880	1.407	38.164	1.400	40.000	0.50%	-4.59%
			1900	1.428	38.076	1.400	40.000	2.00%	-4.81%
			1905	1.433	38.054	1.400	40.000	2.36%	-4.87%
			1910	1.439	38.034	1.400	40.000	2.79%	-4.92%
04/13/2021	2450 Head	24.0	2400	1.807	38.755	1.756	39.289	2.90%	-1.36%
			2450	1.862	38.554	1.800	39.200	3.44%	-1.65%
			2480	1.893	38.428	1.833	39.162	3.27%	-1.87%
			2500	1.914	38.346	1.855	39.136	3.18%	-2.02%
			2510	1.925	38.304	1.866	39.123	3.16%	-2.09%
			2535	1.952	38.196	1.893	39.092	3.12%	-2.29%
			2550	1.969	38.135	1.909	39.073	3.14%	-2.40%
			2560	1.980	38.095	1.920	39.060	3.13%	-2.47%
			2600	2.021	37.949	1.964	39.009	2.90%	-2.72%
			2650	2.074	37.739	2.018	38.945	2.78%	-3.10%
			2680	2.108	37.636	2.051	38.907	2.78%	-3.27%
			2700	2.128	37.572	2.073	38.882	2.65%	-3.37%
05/26/2021	2450 Head	19.1	2400	1.806	39.392	1.756	39.289	2.85%	0.26%
			2450	1.845	39.321	1.800	39.200	2.50%	0.31%
			2480	1.867	39.279	1.833	39.162	1.85%	0.30%
			2500	1.884	39.240	1.855	39.136	1.56%	0.27%
05/24/2021	2450 Head	19.8	2400	1.800	39.724	1.756	39.289	2.51%	1.11%
			2450	1.839	39.643	1.800	39.200	2.17%	1.13%
			2480	1.861	39.604	1.833	39.162	1.53%	1.13%
			2500	1.876	39.563	1.855	39.136	1.13%	1.09%

Table 10-2
Measured Head Tissue Properties (2 of 2)

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
05/17/2021	5200-5800 Head	19.9	5180	4.593	36.566	4.635	36.009	-0.91%	1.55%
			5190	4.604	36.580	4.645	35.998	-0.88%	1.62%
			5200	4.608	36.578	4.655	35.986	-1.01%	1.65%
			5210	4.612	36.556	4.666	35.975	-1.16%	1.62%
			5220	4.613	36.517	4.676	35.963	-1.35%	1.54%
			5240	4.625	36.428	4.696	35.940	-1.51%	1.36%
			5250	4.639	36.382	4.706	35.929	-1.42%	1.26%
			5260	4.658	36.368	4.717	35.917	-1.25%	1.26%
			5270	4.679	36.389	4.727	35.906	-1.02%	1.35%
			5280	4.696	36.408	4.737	35.894	-0.87%	1.43%
			5290	4.708	36.389	4.748	35.883	-0.84%	1.41%
			5300	4.720	36.375	4.758	35.871	-0.80%	1.41%
			5310	4.725	36.386	4.768	35.860	-0.90%	1.47%
			5320	4.728	36.411	4.778	35.849	-1.05%	1.57%
			5500	4.908	36.040	4.963	35.643	-1.11%	1.11%
			5510	4.921	36.043	4.973	35.632	-1.05%	1.15%
			5520	4.934	36.027	4.983	35.620	-0.98%	1.14%
			5530	4.940	36.011	4.994	35.609	-1.08%	1.13%
			5540	4.946	35.988	5.004	35.597	-1.16%	1.10%
			5550	4.953	35.968	5.014	35.586	-1.22%	1.07%
			5560	4.962	35.941	5.024	35.574	-1.23%	1.03%
			5580	4.985	35.887	5.045	35.551	-1.19%	0.95%
			5600	5.020	35.874	5.065	35.529	-0.89%	0.97%
			5610	5.036	35.860	5.076	35.518	-0.79%	0.96%
			5620	5.049	35.858	5.086	35.506	-0.73%	0.99%
			5640	5.064	35.846	5.106	35.483	-0.82%	1.02%
			5660	5.072	35.799	5.127	35.460	-1.07%	0.96%
			5670	5.081	35.779	5.137	35.449	-1.09%	0.93%
			5680	5.093	35.750	5.147	35.437	-1.05%	0.88%
			5690	5.112	35.730	5.158	35.426	-0.89%	0.86%
			5700	5.130	35.724	5.168	35.414	-0.74%	0.88%
			5710	5.144	35.722	5.178	35.403	-0.66%	0.90%
			5720	5.157	35.711	5.188	35.391	-0.60%	0.90%
			5745	5.176	35.705	5.214	35.363	-0.73%	0.97%
			5750	5.178	35.697	5.219	35.357	-0.79%	0.96%
			5755	5.179	35.687	5.224	35.351	-0.86%	0.95%
			5765	5.184	35.658	5.234	35.340	-0.96%	0.90%
			5775	5.191	35.623	5.245	35.329	-1.03%	0.83%
			5785	5.202	35.611	5.255	35.317	-1.01%	0.83%
			5795	5.215	35.593	5.265	35.305	-0.95%	0.82%
			5800	5.222	35.589	5.270	35.300	-0.91%	0.82%
			5800	5.222	35.589	5.270	35.300	-0.91%	0.82%
			5805	5.231	35.584	5.275	35.294	-0.83%	0.82%
			5825	5.265	35.582	5.296	35.271	-0.59%	0.88%

Table 10-3
Measured Body Tissue Properties (1 of 3)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
04/14/2021	750 Body	22.6	700	0.969	54.422	0.959	55.726	1.04%	-2.34%
			710	0.973	54.402	0.960	55.687	1.35%	-2.31%
			725	0.979	54.368	0.961	55.629	1.87%	-2.27%
			750	0.989	54.303	0.964	55.531	2.59%	-2.21%
			770	0.996	54.240	0.965	55.453	3.21%	-2.19%
			785	1.001	54.196	0.966	55.395	3.62%	-2.16%
05/13/2021	750 Body	22.2	700	0.938	54.666	0.959	55.726	-2.19%	-1.90%
			710	0.941	54.642	0.960	55.687	-1.98%	-1.88%
			725	0.947	54.605	0.961	55.629	-1.46%	-1.84%
			750	0.956	54.537	0.964	55.531	-0.83%	-1.79%
			770	0.963	54.477	0.965	55.453	-0.21%	-1.76%
			785	0.969	54.436	0.966	55.395	0.31%	-1.73%
05/10/2021	835 Body	20.6	820	0.946	53.835	0.969	55.258	-2.37%	-2.58%
			835	0.962	53.676	0.970	55.200	-0.82%	-2.76%
			850	0.978	53.525	0.988	55.154	-1.01%	-2.95%
05/17/2021	835 Body	20.6	820	0.948	53.822	0.969	55.258	-2.17%	-2.60%
			835	0.964	53.676	0.970	55.200	-0.62%	-2.76%
			850	0.980	53.537	0.988	55.154	-0.81%	-2.93%
05/02/2021	1750 Body	20.6	1710	1.488	51.255	1.463	53.537	1.71%	-4.26%
			1720	1.500	51.217	1.469	53.511	2.11%	-4.29%
			1745	1.529	51.122	1.485	53.445	2.96%	-4.35%
			1750	1.535	51.102	1.488	53.432	3.16%	-4.36%
			1770	1.558	51.019	1.501	53.379	3.80%	-4.42%
			1790	1.582	50.935	1.514	53.326	4.49%	-4.48%
05/11/2021	1750 Body	22.3	1710	1.452	51.842	1.463	53.537	-0.75%	-3.17%
			1720	1.463	51.809	1.469	53.511	-0.41%	-3.18%
			1745	1.490	51.723	1.485	53.445	0.34%	-3.22%
			1750	1.496	51.704	1.488	53.432	0.54%	-3.23%
			1770	1.517	51.625	1.501	53.379	1.07%	-3.29%
			1790	1.539	51.550	1.514	53.326	1.65%	-3.33%
05/28/2021	1750 Body	22.1	1710	1.448	52.225	1.463	53.537	-1.03%	-2.45%
			1720	1.459	52.185	1.469	53.511	-0.68%	-2.48%
			1745	1.485	52.086	1.485	53.445	0.00%	-2.54%
			1750	1.490	52.066	1.488	53.432	0.13%	-2.56%
			1770	1.511	51.987	1.501	53.379	0.67%	-2.61%
			1790	1.533	51.907	1.514	53.326	1.25%	-2.66%
06/01/2021	1750 Body	21.6	1710	1.464	52.232	1.463	53.537	0.07%	-2.44%
			1720	1.475	52.192	1.469	53.511	0.41%	-2.46%
			1745	1.502	52.099	1.485	53.445	1.14%	-2.52%
			1750	1.507	52.081	1.488	53.432	1.28%	-2.53%
			1770	1.528	52.003	1.501	53.379	1.80%	-2.58%
			1790	1.550	51.928	1.514	53.326	2.38%	-2.62%
06/03/2021	1750 Body	22.9	1710	1.432	51.133	1.463	53.537	-2.12%	-4.49%
			1720	1.442	51.095	1.469	53.511	-1.84%	-4.51%
			1745	1.468	51.003	1.485	53.445	-1.14%	-4.57%
			1750	1.473	50.984	1.488	53.432	-1.01%	-4.58%
			1770	1.494	50.913	1.501	53.379	-0.47%	-4.62%
			1790	1.515	50.849	1.514	53.326	0.07%	-4.65%
06/05/2021	1750 Body	22.4	1710	1.438	51.709	1.463	53.537	-1.71%	-3.41%
			1720	1.450	51.676	1.469	53.511	-1.29%	-3.43%
			1745	1.478	51.594	1.485	53.445	-0.47%	-3.46%
			1750	1.483	51.577	1.488	53.432	-0.34%	-3.47%
			1770	1.506	51.502	1.501	53.379	0.33%	-3.52%
			1790	1.528	51.426	1.514	53.326	0.92%	-3.56%
06/14/2021	1750 Body	22.4	1710	1.495	51.727	1.463	53.537	2.19%	-3.38%
			1720	1.506	51.692	1.469	53.511	2.52%	-3.40%
			1745	1.533	51.602	1.485	53.445	3.23%	-3.45%
			1750	1.539	51.582	1.488	53.432	3.43%	-3.46%
			1770	1.560	51.498	1.501	53.379	3.93%	-3.52%
			1790	1.582	51.420	1.514	53.326	4.49%	-3.57%
06/16/2021	1750 Body	23.3	1710	1.484	51.590	1.463	53.537	1.44%	-3.64%
			1720	1.495	51.549	1.469	53.511	1.77%	-3.67%
			1745	1.524	51.443	1.485	53.445	2.63%	-3.75%
			1750	1.530	51.423	1.488	53.432	2.82%	-3.76%
			1770	1.552	51.354	1.501	53.379	3.40%	-3.79%
			1790	1.574	51.291	1.514	53.326	3.96%	-3.82%
06/20/2021	1750 Body	21.2	1710	1.498	51.057	1.463	53.537	2.39%	-4.63%
			1720	1.509	51.011	1.469	53.511	2.72%	-4.67%
			1745	1.536	50.900	1.485	53.445	3.43%	-4.76%
			1750	1.542	50.880	1.488	53.432	3.63%	-4.78%
			1770	1.564	50.803	1.501	53.379	4.20%	-4.83%
			1790	1.586	50.728	1.514	53.326	4.76%	-4.87%

Table 10-4
Measured Body Tissue Properties (2 of 3)

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
06/02/2021	1900 Body	24.4	1850	1.449	52.403	1.520	53.300	-4.67%	-1.68%
			1860	1.459	52.368	1.520	53.300	-4.01%	-1.75%
			1880	1.479	52.297	1.520	53.300	-2.70%	-1.88%
			1900	1.499	52.225	1.520	53.300	-1.38%	-2.02%
			1905	1.505	52.206	1.520	53.300	-0.99%	-2.05%
			1910	1.510	52.187	1.520	53.300	-0.66%	-2.09%
06/06/2021	1900 Body	23.5	1850	1.479	52.248	1.520	53.300	-2.70%	-1.97%
			1860	1.490	52.215	1.520	53.300	-1.97%	-2.04%
			1880	1.512	52.149	1.520	53.300	-0.53%	-2.16%
			1900	1.534	52.082	1.520	53.300	0.92%	-2.29%
			1905	1.540	52.065	1.520	53.300	1.32%	-2.32%
			1910	1.545	52.049	1.520	53.300	1.64%	-2.35%
06/09/2021	1900 Body	22.1	1850	1.523	51.400	1.520	53.300	0.20%	-3.56%
			1860	1.534	51.365	1.520	53.300	0.92%	-3.63%
			1880	1.557	51.290	1.520	53.300	2.43%	-3.77%
			1900	1.580	51.212	1.520	53.300	3.95%	-3.92%
			1905	1.586	51.193	1.520	53.300	4.34%	-3.95%
			1910	1.592	51.171	1.520	53.300	4.74%	-3.99%
06/13/2021	1900 Body	24.8	1850	1.488	53.138	1.520	53.300	-2.11%	-0.30%
			1860	1.499	53.106	1.520	53.300	-1.38%	-0.36%
			1880	1.521	53.049	1.520	53.300	0.07%	-0.47%
			1900	1.544	53.001	1.520	53.300	1.58%	-0.56%
			1905	1.549	52.991	1.520	53.300	1.91%	-0.58%
			1910	1.555	52.981	1.520	53.300	2.30%	-0.60%
06/17/2021	1900 Body	24.8	1850	1.501	52.006	1.520	53.300	-1.25%	-2.43%
			1860	1.512	51.973	1.520	53.300	-0.53%	-2.49%
			1880	1.534	51.910	1.520	53.300	0.92%	-2.61%
			1900	1.556	51.840	1.520	53.300	2.37%	-2.74%
			1905	1.561	51.822	1.520	53.300	2.70%	-2.77%
			1910	1.567	51.803	1.520	53.300	3.09%	-2.81%
06/20/2021	1900 Body	24.4	1850	1.471	51.335	1.520	53.300	-3.22%	-3.69%
			1860	1.482	51.296	1.520	53.300	-2.50%	-3.76%
			1880	1.503	51.224	1.520	53.300	-1.12%	-3.89%
			1900	1.525	51.164	1.520	53.300	0.33%	-4.01%
			1905	1.531	51.149	1.520	53.300	0.72%	-4.04%
			1910	1.536	51.131	1.520	53.300	1.05%	-4.07%
04/27/2021	2450 Body	22.6	2400	1.987	51.932	1.902	52.767	4.47%	-1.58%
			2450	2.047	51.798	1.950	52.700	4.97%	-1.71%
			2480	2.082	51.712	1.993	52.662	4.47%	-1.80%
			2500	2.105	51.650	2.021	52.636	4.16%	-1.87%
			2510	2.117	51.621	2.035	52.623	4.03%	-1.90%
			2535	2.148	51.546	2.071	52.592	3.72%	-1.99%
			2550	2.167	51.504	2.092	52.573	3.59%	-2.03%
			2560	2.179	51.476	2.106	52.560	3.47%	-2.06%
			2600	2.226	51.359	2.163	52.509	2.91%	-2.19%
			2650	2.286	51.206	2.234	52.445	2.33%	-2.36%
			2680	2.322	51.123	2.277	52.407	1.98%	-2.45%
			2700	2.346	51.066	2.305	52.382	1.78%	-2.51%
05/02/2021	2450 Body	21.5	2400	1.984	50.782	1.902	52.767	4.31%	-3.76%
			2450	2.040	50.647	1.950	52.700	4.62%	-3.90%
			2480	2.075	50.572	1.993	52.662	4.11%	-3.97%
			2500	2.098	50.518	2.021	52.636	3.81%	-4.02%
			2510	2.110	50.488	2.035	52.623	3.69%	-4.06%
			2535	2.141	50.412	2.071	52.592	3.38%	-4.15%
			2550	2.160	50.370	2.092	52.573	3.25%	-4.19%
			2560	2.172	50.344	2.106	52.560	3.13%	-4.22%
			2600	2.219	50.236	2.163	52.509	2.59%	-4.33%
			2650	2.278	50.079	2.234	52.445	1.97%	-4.51%
			2680	2.315	49.986	2.277	52.407	1.67%	-4.62%
			2700	2.339	49.923	2.305	52.382	1.48%	-4.69%
05/17/2021	2450 Body	22.1	2400	1.972	51.707	1.902	52.767	3.68%	-2.01%
			2450	2.031	51.538	1.950	52.700	4.15%	-2.20%
			2480	2.069	51.492	1.993	52.662	3.81%	-2.22%
			2500	2.093	51.448	2.021	52.636	3.56%	-2.26%
05/23/2021	2450 Body	22.1	2400	1.987	50.851	1.902	52.767	4.47%	-3.63%
			2450	2.044	50.715	1.950	52.700	4.82%	-3.77%
			2480	2.077	50.617	1.993	52.662	4.21%	-3.88%
			2500	2.101	50.541	2.021	52.636	3.96%	-3.98%
06/13/2021	2450 Body	22.5	2400	1.985	53.209	1.902	52.767	4.36%	0.84%
			2450	2.040	53.127	1.950	52.700	4.62%	0.81%
			2480	2.063	53.121	1.993	52.662	3.51%	0.87%
			2500	2.078	53.057	2.021	52.636	2.82%	0.80%
06/21/2021	2450 Body	23.8	2400	1.973	52.836	1.902	52.767	3.73%	0.13%
			2450	2.034	52.689	1.950	52.700	4.31%	-0.02%
			2480	2.069	52.606	1.993	52.662	3.81%	-0.11%
			2500	2.092	52.546	2.021	52.636	3.51%	-0.17%
			2510	2.104	52.515	2.035	52.623	3.39%	-0.21%
			2535	2.134	52.439	2.071	52.592	3.04%	-0.29%
			2550	2.152	52.398	2.092	52.573	2.87%	-0.33%
			2560	2.164	52.369	2.106	52.560	2.75%	-0.36%
			2600	2.211	52.251	2.163	52.509	2.22%	-0.49%
			2650	2.271	52.104	2.234	52.445	1.66%	-0.65%
			2680	2.306	52.020	2.277	52.407	1.27%	-0.74%
			2700	2.329	51.959	2.305	52.382	1.04%	-0.81%

Table 10-5
Measured Body Tissue Properties (3 of 3)

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
05/23/2021	5200-5800 Body	21.8	5180	5.271	47.408	5.276	49.041	-0.09%	-3.33%
			5190	5.278	47.373	5.288	49.028	-0.19%	-3.38%
			5200	5.294	47.374	5.299	49.014	-0.09%	-3.35%
			5210	5.314	47.377	5.311	49.001	0.06%	-3.31%
			5220	5.330	47.359	5.323	48.987	0.13%	-3.32%
			5240	5.353	47.339	5.346	48.960	0.13%	-3.31%
			5250	5.369	47.336	5.358	48.947	0.21%	-3.29%
			5260	5.387	47.294	5.369	48.933	0.34%	-3.35%
			5270	5.400	47.254	5.381	48.919	0.35%	-3.40%
			5280	5.413	47.226	5.393	48.906	0.37%	-3.44%
			5290	5.426	47.203	5.404	48.892	0.41%	-3.45%
			5300	5.444	47.169	5.416	48.879	0.52%	-3.50%
			5310	5.463	47.123	5.428	48.865	0.64%	-3.56%
			5320	5.472	47.096	5.439	48.851	0.61%	-3.59%
			5500	5.722	46.810	5.650	48.607	1.27%	-3.70%
			5510	5.731	46.785	5.661	48.594	1.24%	-3.72%
			5520	5.747	46.779	5.673	48.580	1.30%	-3.71%
			5530	5.766	46.771	5.685	48.566	1.42%	-3.70%
			5540	5.782	46.752	5.696	48.553	1.51%	-3.71%
			5550	5.793	46.726	5.708	48.539	1.49%	-3.74%
			5560	5.806	46.707	5.720	48.526	1.50%	-3.75%
			5580	5.837	46.668	5.743	48.499	1.64%	-3.78%
			5600	5.868	46.619	5.766	48.471	1.77%	-3.82%
			5610	5.890	46.595	5.778	48.458	1.94%	-3.84%
			5620	5.908	46.567	5.790	48.444	2.04%	-3.87%
			5640	5.924	46.543	5.813	48.417	1.91%	-3.87%
			5660	5.949	46.522	5.837	48.390	1.92%	-3.86%
			5670	5.966	46.492	5.848	48.376	2.02%	-3.89%
			5680	5.984	46.471	5.860	48.363	2.12%	-3.91%
			5690	6.006	46.456	5.872	48.349	2.28%	-3.92%
			5700	6.028	46.434	5.883	48.336	2.46%	-3.93%
			5710	6.043	46.404	5.895	48.322	2.51%	-3.97%
			5720	6.050	46.378	5.907	48.309	2.42%	-4.00%
			5745	6.086	46.363	5.936	48.275	2.53%	-3.96%
			5750	6.095	46.351	5.942	48.268	2.57%	-3.97%
			5755	6.103	46.338	5.947	48.261	2.62%	-3.98%
			5765	6.113	46.316	5.959	48.248	2.58%	-4.00%
			5775	6.125	46.310	5.971	48.234	2.58%	-3.99%
			5785	6.147	46.296	5.982	48.220	2.76%	-3.99%
			5795	6.167	46.251	5.994	48.207	2.89%	-4.06%
			5800	6.176	46.232	6.000	48.200	2.93%	-4.08%
			5805	6.183	46.221	6.006	48.193	2.95%	-4.09%
			5825	6.215	46.196	6.029	48.166	3.09%	-4.09%
05/30/2021	5200-5800 Body	23.3	5180	5.256	47.296	5.276	49.041	-0.38%	-3.56%
			5190	5.277	47.316	5.288	49.028	-0.21%	-3.49%
			5200	5.286	47.307	5.299	49.014	-0.25%	-3.48%
			5210	5.287	47.286	5.311	49.001	-0.45%	-3.50%
			5220	5.287	47.234	5.323	48.987	-0.68%	-3.58%
			5240	5.302	47.128	5.346	48.960	-0.82%	-3.74%
			5250	5.324	47.108	5.358	48.947	-0.63%	-3.76%
			5260	5.354	47.111	5.369	48.933	-0.28%	-3.72%
			5270	5.386	47.141	5.381	48.919	0.09%	-3.63%
			5280	5.409	47.196	5.393	48.906	0.30%	-3.50%
			5290	5.427	47.260	5.404	48.892	0.43%	-3.34%
			5300	5.436	47.302	5.416	48.879	0.37%	-3.23%
			5310	5.441	47.300	5.428	48.865	0.24%	-3.20%
			5320	5.440	47.256	5.439	48.851	0.02%	-3.27%
			5500	5.663	46.715	5.650	48.607	0.23%	-3.89%
			5510	5.677	46.734	5.661	48.594	0.28%	-3.83%
			5520	5.681	46.732	5.673	48.580	0.14%	-3.80%
			5530	5.680	46.700	5.685	48.566	-0.09%	-3.84%
			5540	5.683	46.637	5.696	48.553	-0.23%	-3.95%
			5550	5.689	46.561	5.708	48.539	-0.33%	-4.08%
			5560	5.702	46.491	5.720	48.526	-0.31%	-4.19%
			5580	5.747	46.388	5.743	48.499	0.07%	-4.35%
			5600	5.805	46.377	5.766	48.471	0.68%	-4.32%
			5610	5.824	46.403	5.778	48.458	0.80%	-4.24%
			5620	5.835	46.429	5.790	48.444	0.78%	-4.16%
			5640	5.851	46.404	5.813	48.417	0.65%	-4.16%
			5660	5.869	46.296	5.837	48.390	0.55%	-4.33%
			5670	5.887	46.245	5.848	48.376	0.67%	-4.41%
			5680	5.912	46.204	5.860	48.363	0.89%	-4.46%
			5690	5.944	46.196	5.872	48.349	1.23%	-4.45%
			5700	5.976	46.234	5.883	48.336	1.58%	-4.35%
			5710	6.005	46.269	5.895	48.322	1.87%	-4.25%
			5720	6.025	46.291	5.907	48.309	2.00%	-4.18%
			5745	6.048	46.313	5.936	48.275	1.89%	-4.06%
			5750	6.051	46.308	5.942	48.268	1.83%	-4.06%
			5755	6.055	46.296	5.947	48.261	1.82%	-4.07%
			5765	6.062	46.247	5.959	48.248	1.73%	-4.15%
			5775	6.069	46.204	5.971	48.234	1.64%	-4.21%
			5785	6.079	46.168	5.982	48.220	1.62%	-4.26%
			5795	6.103	46.156	5.994	48.207	1.82%	-4.25%
			5800	6.122	46.144	6.000	48.200	2.03%	-4.27%
			5805	6.140	46.132	6.006	48.193	2.23%	-4.28%
			5825	6.192	46.190	6.029	48.166	2.70%	-4.10%

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

10.2 Test System Verification

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

Table 10-6
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp. (C)	Liquid Temp. (C)	Input Power (W)	Source SN	Probe SN	Measured SAR1g (W/kg)	1W Target SAR1g (W/kg)	1W Normalized SAR 1g (W/kg)	Deviation1g (%)
G	750	HEAD	05/20/2021	24.8	22.7	0.20	1003	7357	1.83	8.78	9.150	4.21%
J	835	HEAD	06/01/2021	21.7	21.7	0.20	4d133	7526	2.02	9.43	10.100	7.10%
G	1750	HEAD	05/16/2021	22.0	21.4	0.10	1150	7357	3.51	36.50	35.100	-3.84%
G	1750	HEAD	05/18/2021	23.0	22.2	0.10	1150	7357	3.82	36.50	38.200	4.66%
E	1900	HEAD	05/03/2021	23.6	23.4	0.10	5d149	7571	4.17	39.30	41.700	6.11%
P	2450	HEAD	04/13/2021	23.5	22.5	0.10	719	7308	5.01	51.40	50.100	-2.53%
K2	2450	HEAD	05/24/2021	20.9	19.8	0.10	882	7527	5.50	52.50	55.000	4.76%
K2	2450	HEAD	05/26/2021	19.5	19.1	0.10	882	7527	5.49	52.50	54.900	4.57%
P	2600	HEAD	04/13/2021	23.5	22.5	0.10	1064	7308	5.85	58.10	58.500	0.69%
K1	5250	HEAD	05/17/2021	20.2	19.9	0.05	1120	7637	3.86	81.80	77.200	-5.62%
K1	5600	HEAD	05/17/2021	20.2	19.9	0.05	1120	7637	3.98	84.50	79.600	-5.80%
K1	5750	HEAD	05/17/2021	20.2	19.9	0.05	1120	7637	3.87	81.20	77.400	-4.68%
G	750	BODY	04/14/2021	22.8	24.5	0.20	1003	7406	1.79	8.61	8.950	3.95%
G	750	BODY	05/13/2021	23.4	22.2	0.20	1003	7406	1.81	8.61	9.050	5.11%
P	835	BODY	05/10/2021	23.6	20.6	0.20	4d047	7308	1.97	9.47	9.850	4.01%
P	835	BODY	05/17/2021	23.9	20.6	0.20	4d047	7308	1.96	9.47	9.800	3.48%
H	1750	BODY	05/02/2021	20.9	20.1	0.10	1150	7410	3.88	36.60	38.800	6.01%
H	1750	BODY	05/11/2021	20.5	21.1	0.10	1148	7410	3.65	36.30	36.500	0.55%
H	1750	BODY	06/01/2021	23.2	22.2	0.10	1150	7410	3.90	36.60	39.000	6.56%
H	1750	BODY	06/03/2021	23.0	23.4	0.10	1148	7410	3.56	36.30	35.600	-1.93%
P	1750	BODY	06/14/2021	22.2	20.8	0.10	1148	7308	3.63	36.30	36.300	0.00%
P	1750	BODY	06/16/2021	24.5	21.3	0.10	1148	7308	3.73	36.30	37.300	2.75%
P	1750	BODY	06/20/2021	22.0	21.2	0.10	1150	7308	3.60	36.60	36.000	-1.64%
E	1900	BODY	06/02/2021	24.4	23.4	0.10	5d080	7571	4.12	39.20	41.200	5.10%
D	1900	BODY	06/09/2021	23.7	22.1	0.10	5d080	3589	3.75	39.20	37.500	-4.34%
H	1900	BODY	06/13/2021	25.0	25.0	0.10	5d080	7410	4.20	39.20	42.000	7.14%
H	1900	BODY	06/20/2021	22.4	22.4	0.10	5d149	7410	4.02	39.40	40.200	2.03%
K	2450	BODY	04/27/2021	24.3	22.6	0.10	719	7538	5.07	50.70	50.700	0.00%
K	2450	BODY	05/02/2021	23.5	21.5	0.10	719	7538	5.17	50.70	51.700	1.97%
K2	2450	BODY	05/17/2021	20.6	22.1	0.10	882	7527	5.07	50.60	50.700	0.20%
K2	2450	BODY	05/23/2021	20.8	22.1	0.10	882	7527	5.11	50.60	51.100	0.99%
K2	2450	BODY	06/13/2021	21.0	22.5	0.10	882	7527	5.15	50.60	51.500	1.78%
K	2600	BODY	04/27/2021	24.3	22.6	0.10	1064	7538	5.75	55.60	57.500	3.42%
K	2600	BODY	05/02/2021	23.5	21.5	0.10	1064	7538	5.52	55.60	55.200	-0.72%
K	2600	BODY	06/21/2021	23.4	22.1	0.10	1064	7538	5.54	55.60	55.400	-0.36%
K1	5250	BODY	05/23/2021	21.0	21.8	0.05	1120	7637	3.60	74.30	72.000	-3.90%
K1	5600	BODY	05/23/2021	21.0	21.8	0.05	1120	7637	3.76	77.80	75.200	6.17%
K1	5750	BODY	05/23/2021	21.0	21.8	0.05	1120	7637	3.67	72.30	73.400	5.95%

Table 10-7
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp. (C)	Liquid Temp. (C)	Input Power (W)	Source SN	Probe SN	Measured SAR10g (W/kg)	1W Target SAR10g (W/kg)	1W Normalized SAR10g (W/kg)	Deviation10g (%)
H	1750	BODY	05/28/2021	23.5	22.8	0.10	1150	7410	2.020	19.40	20.200	4.12%
H	1750	BODY	06/01/2021	23.2	22.2	0.10	1150	7410	2.060	19.40	20.600	6.19%
H	1750	BODY	06/05/2021	22.6	22.4	0.10	1150	7410	1.980	19.40	19.800	2.06%
E	1900	BODY	06/06/2021	23.6	23.5	0.10	5d149	7571	2.190	20.70	21.900	5.80%
D	1900	BODY	06/09/2021	23.7	22.1	0.10	5d080	3589	1.920	20.60	19.200	-6.80%
H	1900	BODY	06/17/2021	23.6	23.6	0.10	5d149	7410	2.110	20.70	21.100	1.93%
K	2450	BODY	04/27/2021	24.3	22.6	0.10	719	7538	2.330	23.90	23.300	-2.51%
K	2600	BODY	04/27/2021	24.3	22.6	0.10	1064	7538	2.540	25.00	25.400	1.60%
K1	5250	BODY	05/30/2021	22.0	23.3	0.05	1120	7637	1.020	20.80	20.400	-1.92%
K1	5600	BODY	05/30/2021	22.0	23.3	0.05	1120	7637	1.090	21.70	21.800	0.46%
K1	5750	BODY	05/30/2021	22.0	23.3	0.05	1120	7637	1.010	20.10	20.200	0.50%

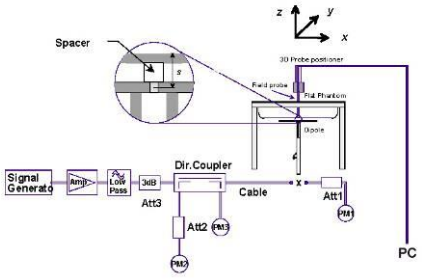


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

REV 21.4 M
09/11/2019

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR - Open

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
824.20	128	GSM 850	GSM	33.0	32.29	-0.05	Right	Cheek	0803M	1:8.3	0.192	1.178	0.226	A1
824.20	128	GSM 850	GSM	33.0	32.29	-0.11	Right	Tilt	0803M	1:8.3	0.102	1.178	0.120	
824.20	128	GSM 850	GSM	33.0	32.29	-0.07	Left	Cheek	0803M	1:8.3	0.179	1.178	0.211	
824.20	128	GSM 850	GSM	33.0	32.29	-0.07	Left	Tilt	0803M	1:8.3	0.101	1.178	0.119	
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
GMS 1900 Head SAR - Open

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1850.20	512	GSM 1900	GSM	30.5	29.89	0.19	Right	Cheek	0100M	1:8.3	0.035	1.151	0.040	
1850.20	512	GSM 1900	GSM	30.5	29.89	0.16	Right	Tilt	0100M	1:8.3	0.021	1.151	0.024	
1850.20	512	GSM 1900	GSM	30.5	29.89	0.20	Left	Cheek	0100M	1:8.3	0.037	1.151	0.043	A2
1850.20	512	GSM 1900	GSM	30.5	29.89	0.13	Left	Tilt	0100M	1:8.3	0.022	1.151	0.025	
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 – Open

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	24.81	0	-0.09	Right	Cheek	0803M	1:1	0.207	1.172	0.243	
836.60	4183	UMTS 850	RMC	25.5	24.81	0	0.07	Right	Tilt	0803M	1:1	0.111	1.172	0.130	
836.60	4183	UMTS 850	RMC	25.5	24.81	0	0.12	Left	Cheek	0803M	1:1	0.248	1.172	0.291	A3
836.60	4183	UMTS 850	RMC	25.5	24.81	0	-0.13	Left	Tilt	0803M	1:1	0.145	1.172	0.170	
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 - Open

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.21	Right	Cheek	0799M	1:1	0.085	1.143	0.097	A4
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.08	Right	Tilt	0799M	1:1	0.052	1.143	0.059	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.21	Left	Cheek	0799M	1:1	0.063	1.143	0.072	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.13	Left	Tilt	0799M	1:1	0.042	1.143	0.048	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-5
UMTS 1900 Head SAR - Open

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.14	Right	Cheek	0100M	1:1	0.069	1.023	0.071	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.17	Right	Tilt	0100M	1:1	0.046	1.023	0.047	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.12	Left	Cheek	0100M	1:1	0.088	1.023	0.090	A5
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.03	Left	Tilt	0100M	1:1	0.047	1.023	0.048	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-6
LTE Band 12 Head SAR - Open

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	-0.16	0	Right	Cheek	QPSK	1	0	0799M	1:1	0.206	1.109	0.228	
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	-0.03	1	Right	Cheek	QPSK	25	25	0799M	1:1	0.178	1.072	0.191	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	0.17	0	Right	Tilt	QPSK	1	0	0799M	1:1	0.093	1.109	0.103	
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	-0.13	1	Right	Tilt	QPSK	25	25	0799M	1:1	0.078	1.072	0.084	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	0.04	0	Left	Cheek	QPSK	1	0	0799M	1:1	0.233	1.109	0.258	A6
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	0.20	1	Left	Cheek	QPSK	25	25	0799M	1:1	0.185	1.072	0.198	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	0.08	0	Left	Tilt	QPSK	1	0	0799M	1:1	0.093	1.109	0.103	
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	0.06	1	Left	Tilt	QPSK	25	25	0799M	1:1	0.083	1.072	0.089	
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 13 Head SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	13	-0.11	0	Right	Cheek	QPSK	1	25	0799M	1:1	0.153	1.086	0.166	
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	13	0.00	1	Right	Cheek	QPSK	25	25	0799M	1:1	0.122	1.091	0.133	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	13	-0.04	0	Right	Tilt	QPSK	1	25	0799M	1:1	0.077	1.086	0.084	
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	13	-0.21	1	Right	Tilt	QPSK	25	25	0799M	1:1	0.058	1.091	0.063	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	13	-0.11	0	Left	Cheek	QPSK	1	25	0799M	1:1	0.174	1.086	0.189	A7
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	13	0.02	1	Left	Cheek	QPSK	25	25	0799M	1:1	0.154	1.091	0.168	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	13	0.02	0	Left	Tilt	QPSK	1	25	0799M	1:1	0.091	1.086	0.099	
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	13	0.09	1	Left	Tilt	QPSK	25	25	0799M	1:1	0.068	1.091	0.074	
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 26 (Cell) Head SAR – Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	0	-0.16	0	Right	Cheek	QPSK	1	36	0803M	1:1	0.197	1.186	0.234	A8
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	0	0.02	1	Right	Cheek	QPSK	36	37	0803M	1:1	0.153	1.169	0.179	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	0	-0.07	0	Right	Tilt	QPSK	1	36	0803M	1:1	0.076	1.186	0.090	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	0	0.10	1	Right	Tilt	QPSK	36	37	0803M	1:1	0.057	1.169	0.067	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	0	-0.07	0	Left	Cheek	QPSK	1	36	0803M	1:1	0.192	1.186	0.228	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	0	-0.14	1	Left	Cheek	QPSK	36	37	0803M	1:1	0.142	1.169	0.166	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	0	0.01	0	Left	Tilt	QPSK	1	36	0803M	1:1	0.090	1.186	0.107	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	0	0.05	1	Left	Tilt	QPSK	36	37	0803M	1:1	0.069	1.169	0.081	
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 66 (AWS) Head SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	69	0.14	0	Right	Cheek	QPSK	1	99	0799M	1:1	0.105	1.327	0.139	A9
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	69	0.09	1	Right	Cheek	QPSK	50	50	0799M	1:1	0.083	1.285	0.107	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	69	-0.09	0	Right	Tilt	QPSK	1	99	0799M	1:1	0.041	1.327	0.054	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	69	0.09	1	Right	Tilt	QPSK	50	50	0799M	1:1	0.030	1.285	0.039	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	69	-0.14	0	Left	Cheek	QPSK	1	99	0799M	1:1	0.054	1.327	0.072	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	69	0.21	1	Left	Cheek	QPSK	50	50	0799M	1:1	0.042	1.285	0.054	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	69	-0.12	0	Left	Tilt	QPSK	1	99	0799M	1:1	0.035	1.327	0.046	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	69	0.16	1	Left	Tilt	QPSK	50	50	0799M	1:1	0.026	1.285	0.033	
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 25 (PCS) Head SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	52	0.00	0	Right	Cheek	QPSK	1	0	0069M	1:1	0.061	1.062	0.065	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	52	0.13	1	Right	Cheek	QPSK	50	0	0069M	1:1	0.047	1.045	0.049	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	52	-0.06	0	Right	Tilt	QPSK	1	0	0069M	1:1	0.038	1.062	0.040	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	52	0.13	1	Right	Tilt	QPSK	50	0	0069M	1:1	0.027	1.045	0.028	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	52	0.09	0	Left	Cheek	QPSK	1	0	0069M	1:1	0.075	1.062	0.080	A10
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	52	0.11	1	Left	Cheek	QPSK	50	0	0069M	1:1	0.064	1.045	0.067	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	52	0.17	0	Left	Tilt	QPSK	1	0	0069M	1:1	0.026	1.062	0.028	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	52	0.19	1	Left	Tilt	QPSK	50	0	0069M	1:1	0.025	1.045	0.026	
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 41 Head SAR - Open

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.12	0	Right	Cheek	QPSK	1	50	0086M	1:1.58	0.050	1.242	0.062	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.21	1	Right	Cheek	QPSK	50	50	0086M	1:1.58	0.038	1.211	0.046	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.17	0	Right	Tilt	QPSK	1	50	0086M	1:1.58	0.027	1.242	0.034	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.15	1	Right	Tilt	QPSK	50	50	0086M	1:1.58	0.017	1.211	0.021	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	-0.06	0	Left	Cheek	QPSK	1	50	0086M	1:1.58	0.067	1.242	0.083	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.17	1	Left	Cheek	QPSK	50	50	0086M	1:1.58	0.052	1.211	0.063	
Power Class 2	2680.00	41490	High	LTE Band 41	20	27.5	26.42	0.13	0	Left	Cheek	QPSK	1	50	0086M	1:2.31	0.071	1.282	0.091	A11
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.16	0	Left	Tilt	QPSK	1	50	0086M	1:1.58	0.025	1.242	0.031	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.20	1	Left	Tilt	QPSK	50	50	0086M	1:1.58	0.011	1.211	0.013	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-12
NR Band n5 Head SAR - Open

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna State	Waveform	Modulation	RB Size	RB Offset	Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	-0.10	0	Right	Cheek	0	DFT-S-OFDM	QPSK	1	53	0803M	1:1	0.241	1.352	0.326	A12
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	-0.07	0	Right	Cheek	0	DFT-S-OFDM	QPSK	50	28	0803M	1:1	0.237	1.377	0.326	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.95	-0.04	1.5	Right	Cheek	0	CP-OFDM	QPSK	1	1	0803M	1:1	0.161	1.135	0.183	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	0.08	0	Right	Tilt	0	DFT-S-OFDM	QPSK	1	53	0803M	1:1	0.080	1.352	0.108	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	0.19	0	Right	Tilt	0	DFT-S-OFDM	QPSK	50	28	0803M	1:1	0.084	1.377	0.116	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	0.01	0	Left	Cheek	0	DFT-S-OFDM	QPSK	1	53	0803M	1:1	0.185	1.352	0.250	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	-0.04	0	Left	Cheek	0	DFT-S-OFDM	QPSK	50	28	0803M	1:1	0.195	1.377	0.269	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	0.14	0	Left	Tilt	0	DFT-S-OFDM	QPSK	1	53	0803M	1:1	0.090	1.352	0.122	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	0.05	0	Left	Tilt	0	DFT-S-OFDM	QPSK	50	28	0803M	1:1	0.090	1.377	0.124	
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
NR Band n66 Head SAR - Open

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna State	Waveform	Modulation	RB Size	RB Offset	Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.20	0	Right	Cheek	69	DFT-S-OFDM	QPSK	1	104	0799M	1:1	0.150	1.151	0.173	A13
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	-0.21	0	Right	Cheek	69	DFT-S-OFDM	QPSK	50	28	0799M	1:1	0.138	1.180	0.163	
1745.00	349000	Mid	NR Band n66 (AWS)	20	22.5	21.95	0.14	1.5	Right	Cheek	69	CP-OFDM	QPSK	1	1	0799M	1:1	0.089	1.135	0.101	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.19	0	Right	Tilt	69	DFT-S-OFDM	QPSK	1	104	0799M	1:1	0.070	1.151	0.081	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.12	0	Right	Tilt	69	DFT-S-OFDM	QPSK	50	28	0799M	1:1	0.069	1.180	0.081	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.13	0	Left	Cheek	69	DFT-S-OFDM	QPSK	1	104	0799M	1:1	0.097	1.151	0.112	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	-0.11	0	Left	Cheek	69	DFT-S-OFDM	QPSK	50	28	0799M	1:1	0.091	1.180	0.107	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.17	0	Left	Tilt	69	DFT-S-OFDM	QPSK	1	104	0799M	1:1	0.043	1.151	0.049	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.14	0	Left	Tilt	69	DFT-S-OFDM	QPSK	50	28	0799M	1:1	0.054	1.180	0.064	

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
DTS Head SAR – Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	13.0	12.77	0.06	Right	Cheek	2	Q	0798M	1	99.9	0.633	0.329	1.054	1.001	**0.347**	
2437	6	802.11b	DSSS	22	13.0	12.77	0.03	Right	Tilt	2	Q	0798M	1	99.9	0.366	-	1.054	1.001	-	
2437	6	802.11b	DSSS	22	13.0	12.77	0.14	Left	Cheek	2	Q	0798M	1	99.9	0.156	-	1.054	1.001	-	
2437	6	802.11b	DSSS	22	13.0	12.77	0.00	Left	Tilt	2	Q	0798M	1	99.9	0.138	-	1.054	1.001	-	
2412	1	802.11b	DSSS	22	13.0	12.76	-0.02	Right	Cheek	2	N	1391M	1	99.9	0.510	0.262	1.057	1.001	0.277	
2412	1	802.11b	DSSS	22	13.0	12.76	0.11	Right	Tilt	2	N	1391M	1	99.9	0.277	-	1.057	1.001	-	
2412	1	802.11b	DSSS	22	13.0	12.76	0.15	Left	Cheek	2	N	1391M	1	99.9	0.120	-	1.057	1.001	-	
2412	1	802.11b	DSSS	22	13.0	12.76	0.10	Left	Tilt	2	N	1391M	1	99.9	0.083	-	1.057	1.001	-	

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

Table 11-15
DTS MIMO Head SAR – Open

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	13.0	12.83	13.0	12.80	0.09	Right	Cheek	MIMO	Q	0798M	13	99.7	0.600	0.351	1.047	1.003	0.369	A14
2412	1	802.11n	OFDM	20	13.0	12.83	13.0	12.80	0.21	Right	Tilt	MIMO	Q	0798M	13	99.7	0.362	-	1.047	1.003	-	
2412	1	802.11n	OFDM	20	13.0	12.83	13.0	12.80	0.11	Left	Cheek	MIMO	Q	0798M	13	99.7	0.331	-	1.047	1.003	-	
2412	1	802.11n	OFDM	20	13.0	12.83	13.0	12.80	0.02	Left	Tilt	MIMO	Q	0798M	13	99.7	0.339	-	1.047	1.003	-	
2462	11	802.11n	OFDM	20	13.0	12.82	13.0	12.89	0.02	Right	Cheek	MIMO	N	1391M	13	99.7	0.512	0.315	1.042	1.003	0.329	
2462	11	802.11n	OFDM	20	13.0	12.82	13.0	12.89	0.08	Right	Tilt	MIMO	N	1391M	13	99.7	0.421	-	1.042	1.003	-	
2462	11	802.11n	OFDM	20	13.0	12.82	13.0	12.89	0.10	Left	Cheek	MIMO	N	1391M	13	99.7	0.269	-	1.042	1.003	-	
2462	11	802.11n	OFDM	20	13.0	12.82	13.0	12.89	0.07	Left	Tilt	MIMO	N	1391M	13	99.7	0.290	-	1.042	1.003	-	

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

Note: To achieve the 16.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 13.0 dBm.

Table 11-16
NII SISO Head SAR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	11.0	10.80	0.20	Right	Cheek	1	Q	0798M	29.3	99.7	0.182	-	1.047	1.003	-	
5290	58	802.11ac	OFDM	80	11.0	10.80	0.15	Right	Tilt	1	Q	0798M	29.3	99.7	0.172	-	1.047	1.003	-	
5290	58	802.11ac	OFDM	80	11.0	10.80	0.14	Left	Cheek	1	Q	0798M	29.3	99.7	0.322	0.117	1.047	1.003	0.123	
5290	58	802.11ac	OFDM	80	11.0	10.80	0.12	Left	Tilt	1	Q	0798M	29.3	99.7	0.309	-	1.047	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.96	0.12	Right	Cheek	1	Q	0798M	29.3	99.7	0.110	-	1.009	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.96	0.12	Right	Tilt	1	Q	0798M	29.3	99.7	0.104	-	1.009	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.96	0.13	Left	Cheek	1	Q	0798M	29.3	99.7	0.160	-	1.009	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.96	0.19	Left	Tilt	1	Q	0798M	29.3	99.7	0.198	0.064	1.009	1.003	0.065	
5775	155	802.11ac	OFDM	80	11.0	10.84	0.12	Right	Cheek	1	Q	0798M	29.3	99.7	0.077	-	1.038	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.84	0.19	Right	Tilt	1	Q	0798M	29.3	99.7	0.070	-	1.038	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.84	0.18	Left	Cheek	1	Q	0798M	29.3	99.7	0.122	-	1.038	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.84	0.17	Left	Tilt	1	Q	0798M	29.3	99.7	0.134	0.044	1.038	1.003	0.046	
5290	58	802.11ac	OFDM	80	11.0	10.75	0.19	Right	Cheek	1	N	1391M	29.3	99.7	0.426	-	1.059	1.003	-	
5290	58	802.11ac	OFDM	80	11.0	10.75	0.21	Right	Tilt	1	N	1391M	29.3	99.7	0.376	-	1.059	1.003	-	
5290	58	802.11ac	OFDM	80	11.0	10.75	0.13	Left	Cheek	1	N	1391M	29.3	99.7	0.578	-	1.059	1.003	-	
5290	58	802.11ac	OFDM	80	11.0	10.75	0.11	Left	Tilt	1	N	1391M	29.3	99.7	0.591	0.221	1.059	1.003	**0.235**	
5610	122	802.11ac	OFDM	80	11.0	10.82	0.19	Right	Cheek	1	N	1391M	29.3	99.7	0.116	-	1.042	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.82	0.18	Right	Tilt	1	N	1391M	29.3	99.7	0.103	-	1.042	1.003	-	
5610	122	802.11ac	OFDM	80	11.0	10.82	0.13	Left	Cheek	1	N	1391M	29.3	99.7	0.237	0.079	1.042	1.003	0.083	
5610	122	802.11ac	OFDM	80	11.0	10.82	0.12	Left	Tilt	1	N	1391M	29.3	99.7	0.214	-	1.042	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.81	0.21	Right	Cheek	1	N	1391M	29.3	99.7	0.064	-	1.045	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.81	0.10	Right	Tilt	1	N	1391M	29.3	99.7	0.035	-	1.045	1.003	-	
5775	155	802.11ac	OFDM	80	11.0	10.81	0.18	Left	Cheek	1	N	1391M	29.3	99.7	0.087	0.027	1.045	1.003	0.028	
5775	155	802.11ac	OFDM	80	11.0	10.81	0.12	Left	Tilt	1	N	1391M	29.3	99.7	0.071	-	1.045	1.003	-	

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

Table 11-17
NII MIMO Head SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	11.0	10.66	11.0	10.82	0.13	Right	Cheek	MIMO	Q	0798M	58.5	99.7	0.479	0.267	1.081	1.003	0.289	
5290	58	802.11ac	OFDM	80	11.0	10.66	11.0	10.82	0.20	Right	Tilt	MIMO	Q	0798M	58.5	99.7	0.278	0.153	1.081	1.003	0.166	
5290	58	802.11ac	OFDM	80	11.0	10.66	11.0	10.82	0.12	Left	Cheek	MIMO	Q	0798M	58.5	99.7	0.371	0.140	1.081	1.003	0.152	
5290	58	802.11ac	OFDM	80	11.0	10.66	11.0	10.82	0.18	Left	Tilt	MIMO	Q	0798M	58.5	99.7	0.322	0.109	1.081	1.003	0.118	
5690	138	802.11ac	OFDM	80	11.0	10.91	11.0	10.45	0.13	Right	Cheek	MIMO	Q	0798M	58.5	99.7	0.928	0.321	1.135	1.003	0.365	
5690	138	802.11ac	OFDM	80	11.0	10.91	11.0	10.45	0.18	Right	Tilt	MIMO	Q	0798M	58.5	99.7	0.563	0.219	1.135	1.003	0.249	
5690	138	802.11ac	OFDM	80	11.0	10.91	11.0	10.45	0.18	Left	Cheek	MIMO	Q	0798M	58.5	99.7	0.198	0.067	1.135	1.003	0.076	
5690	138	802.11ac	OFDM	80	11.0	10.91	11.0	10.45	0.15	Left	Tilt	MIMO	Q	0798M	58.5	99.7	0.174	0.071	1.135	1.003	0.081	
5775	155	802.11ac	OFDM	80	11.0	10.68	11.0	10.81	0.19	Right	Cheek	MIMO	Q	0798M	58.5	99.7	1.125	0.418	1.076	1.003	0.451	A22
5775	155	802.11ac	OFDM	80	11.0	10.68	11.0	10.81	0.18	Right	Tilt	MIMO	Q	0798M	58.5	99.7	0.795	0.274	1.076	1.003	0.296	
5775	155	802.11ac	OFDM	80	11.0	10.68	11.0	10.81	0.18	Left	Cheek	MIMO	Q	0798M	58.5	99.7	0.355	0.116	1.076	1.003	0.125	
5775	155	802.11ac	OFDM	80	11.0	10.68	11.0	10.81	0.17	Left	Tilt	MIMO	Q	0798M	58.5	99.7	0.297	0.097	1.076	1.003	0.105	
5290	58	802.11ac	OFDM	80	11.0	10.88	11.0	10.98	0.16	Right	Cheek	MIMO	N	1391M	58.5	99.7	0.140	0.047	1.028	1.003	0.048	
5290	58	802.11ac	OFDM	80	11.0	10.88	11.0	10.98	0.12	Right	Tilt	MIMO	N	1391M	58.5	99.7	0.069	0.025	1.028	1.003	0.026	
5290	58	802.11ac	OFDM	80	11.0	10.88	11.0	10.98	0.12	Left	Cheek	MIMO	N	1391M	58.5	99.7	0.114	0.037	1.028	1.003	0.038	
5290	58	802.11ac	OFDM	80	11.0	10.88	11.0	10.98	0.13	Left	Tilt	MIMO	N	1391M	58.5	99.7	0.125	0.041	1.028	1.003	0.042	
5610	122	802.11ac	OFDM	80	11.0	10.89	11.0	10.98	0.12	Right	Cheek	MIMO	N	1391M	58.5	99.7	0.337	0.096	1.026	1.003	0.099	
5610	122	802.11ac	OFDM	80	11.0	10.89	11.0	10.98	0.20	Right	Tilt	MIMO	N	1391M	58.5	99.7	0.193	0.055	1.026	1.003	0.057	
5610	122	802.11ac	OFDM	80	11.0	10.89	11.0	10.98	0.14	Left	Cheek	MIMO	N	1391M	58.5	99.7	0.105	0.030	1.026	1.003	0.031	
5610	122	802.11ac	OFDM	80	11.0	10.89	11.0	10.98	0.12	Left	Tilt	MIMO	N	1391M	58.5	99.7	0.089	0.027	1.026	1.003	0.028	
5775	155	802.11ac	OFDM	80	11.0	10.85	11.0	10.78	0.20	Right	Cheek	MIMO	N	1391M	58.5	99.7	0.326	0.094	1.052	1.003	0.099	
5775	155	802.11ac	OFDM	80	11.0	10.85	11.0	10.78	0.12	Right	Tilt	MIMO	N	1391M	58.5	99.7	0.158	0.043	1.052	1.003	0.045	
5775	155	802.11ac	OFDM	80	11.0	10.85	11.0	10.78	0.18	Left	Cheek	MIMO	N	1391M	58.5	99.7	0.093	0.029	1.052	1.003	0.031	
5775	155	802.11ac	OFDM	80	11.0	10.85	11.0	10.78	0.12	Left	Tilt	MIMO	N	1391M	58.5	99.7	0.074	0.020	1.052	1.003	0.021	
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: To achieve the 14.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 11.0 dBm.

Table 11-18
DSS Head SAR - Open

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	10.0	8.62	0.19	Right	Cheek	1	Q	0798M	1	76.80	0.035	1.374	1.302	0.063	
2441.00	39	Bluetooth	FHSS	10.0	8.62	0.03	Right	Tilt	1	Q	0798M	1	76.80	0.026	1.374	1.302	0.047	
2441.00	39	Bluetooth	FHSS	10.0	8.62	0.15	Left	Cheek	1	Q	0798M	1	76.80	0.048	1.374	1.302	0.086	
2441.00	39	Bluetooth	FHSS	10.0	8.62	0.17	Left	Tilt	1	Q	0798M	1	76.80	0.039	1.374	1.302	0.070	
2441.00	39	Bluetooth	FHSS	10.0	9.29	-0.04	Right	Cheek	2	Q	0798M	1	76.80	0.077	1.178	1.302	0.118	
2441.00	39	Bluetooth	FHSS	10.0	9.29	-0.07	Right	Tilt	2	Q	0798M	1	76.80	0.060	1.178	1.302	0.092	
2441.00	39	Bluetooth	FHSS	10.0	9.29	0.18	Left	Cheek	2	Q	0798M	1	76.80	0.020	1.178	1.302	0.031	
2441.00	39	Bluetooth	FHSS	10.0	9.29	-0.16	Left	Tilt	2	Q	0798M	1	76.80	0.021	1.178	1.302	0.032	
2441.00	39	Bluetooth	FHSS	10.0	8.43	0.04	Right	Cheek	1	N	1391M	1	76.80	0.078	1.435	1.302	0.146	
2441.00	39	Bluetooth	FHSS	10.0	8.43	0.15	Right	Tilt	1	N	1391M	1	76.80	0.057	1.435	1.302	0.106	
2441.00	39	Bluetooth	FHSS	10.0	8.43	-0.02	Left	Cheek	1	N	1391M	1	76.80	0.085	1.435	1.302	0.159	
2441.00	39	Bluetooth	FHSS	10.0	8.43	0.07	Left	Tilt	1	N	1391M	1	76.80	0.075	1.435	1.302	0.140	
2480.00	78	Bluetooth	FHSS	10.0	9.44	0.07	Right	Cheek	2	N	1391M	1	76.80	0.173	1.138	1.302	**0.256**	A16
2480.00	78	Bluetooth	FHSS	10.0	9.44	0.15	Right	Tilt	2	N	1391M	1	76.80	0.098	1.138	1.302	0.145	
2480.00	78	Bluetooth	FHSS	10.0	9.44	0.03	Left	Cheek	2	N	1391M	1	76.80	0.041	1.138	1.302	0.061	
2480.00	78	Bluetooth	FHSS	10.0	9.44	0.15	Left	Tilt	2	N	1391M	1	76.80	0.036	1.138	1.302	0.053	

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

11.2 Standalone Open Body-Worn SAR Data

Table 11-19
GSM/UMTS Body-Worn SAR Data - Open

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
824.20	128	GSM 850	GSM	33.0	32.29	N/A	0.00	15 mm	0803M	1:8.3	back	0.170	1.178	0.200	
1850.20	512	GSM 1900	GSM	30.5	29.89	N/A	0.03	15 mm	0799M	1:8.3	back	0.272	1.151	0.313	A19
836.60	4183	UMTS 850	RMC	25.5	24.81	2	0.02	15 mm	0803M	1:1	back	0.234	1.172	0.274	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.03	15 mm	0089M	1:1	back	0.629	1.143	0.719	
1732.40	1412	UMTS 1750	RMC	24.0	23.16	0	0.05	15 mm	0089M	1:1	back	0.684	1.213	0.830	
1752.60	1513	UMTS 1750	RMC	24.0	23.25	0	0.03	15 mm	0089M	1:1	back	0.723	1.189	0.860	A23
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.01	15 mm	0065M	1:1	back	0.804	1.023	0.822	
1880.00	9400	UMTS 1900	RMC	24.0	23.75	52	0.02	15 mm	0065M	1:1	back	0.869	1.059	0.920	A25
1907.60	9538	UMTS 1900	RMC	24.0	23.64	52	0.01	15 mm	0065M	1:1	back	0.561	1.086	0.609	
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 11-20
LTE Body-Worn SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	-0.05	0	0799M	QPSK	1	0	15 mm	back	1:1	0.197	1.109	0.218	
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	0.03	1	0799M	QPSK	25	25	15 mm	back	1:1	0.170	1.072	0.182	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	53	-0.03	0	0799M	QPSK	1	25	15 mm	back	1:1	0.182	1.086	0.198	
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	53	0.04	1	0799M	QPSK	25	25	15 mm	back	1:1	0.152	1.091	0.166	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	3	-0.01	0	0069M	QPSK	1	36	15 mm	back	1:1	0.166	1.186	0.197	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	3	-0.02	1	0069M	QPSK	36	37	15 mm	back	1:1	0.133	1.169	0.155	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	22.68	10	0.02	0	0069M	QPSK	1	50	15 mm	back	1:1	0.543	1.355	0.736	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	22.52	116	0.03	0	0069M	QPSK	1	99	15 mm	back	1:1	0.573	1.406	0.806	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	57	0.04	0	0069M	QPSK	1	99	15 mm	back	1:1	0.703	1.327	**0.933**	A33
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	57	0.04	1	0069M	QPSK	50	50	15 mm	back	1:1	0.558	1.285	0.717	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.86	57	0.07	1	0069M	QPSK	100	0	15 mm	back	1:1	0.533	1.300	0.693	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	-0.02	0	0339M	QPSK	1	0	15 mm	back	1:1	0.718	1.062	0.763	A35
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.57	2	-0.18	0	0339M	QPSK	1	50	15 mm	back	1:1	0.651	1.104	0.719	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	23.48	2	-0.01	0	0339M	QPSK	1	0	15 mm	back	1:1	0.624	1.127	0.703	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	0.01	1	0339M	QPSK	50	0	15 mm	back	1:1	0.568	1.045	0.594	
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 11-21
LTE Band 41 Body-Worn SAR - Open

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
	MHz	Ch.																		
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.00	0	0065M	QPSK	1	50	15 mm	back	1:1.58	0.198	1.242	0.246	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.04	1	0065M	QPSK	50	50	15 mm	back	1:1.58	0.139	1.211	0.168	
Power Class 2	2680.00	41490	High	LTE Band 41	20	27.5	26.42	0.02	0	0065M	QPSK	1	50	15 mm	back	1:2.31	0.218	1.282	0.279	A37
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 11-22
NR Body-Worn SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	0.17	0	3	0803M	DFT-S-OFDM	QPSK	1	53	15 mm	back	1:1	0.177	1.352	0.239	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	0.08	0	3	0803M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.176	1.377	0.242	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.95	0.04	1.5	3	0803M	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.131	1.135	0.149	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	-0.01	0	10	0069M	DFT-S-OFDM	QPSK	1	104	15 mm	back	1:1	0.578	1.151	0.665	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.13	0	57	0069M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.628	1.180	0.741	
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.16	0.19	0	57	0069M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.643	1.213	0.780	
1770.00	354000	High	NR Band n66 (AWS)	20	24.0	23.27	0.14	0	57	0069M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.666	1.183	0.788	A41
1745.00	349000	Mid	NR Band n66 (AWS)	20	22.5	21.95	-0.02	1.5	116	0069M	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.408	1.135	0.463	
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 11-23
DTS Body-Worn SISO SAR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
2412	1	802.11b	DSSS	22	19.0	18.65	0.02	15 mm	2	Q	0798M	1	back	99.9	0.082	0.051	1.084	1.001	0.055	
2412	1	802.11b	DSSS	22	19.0	18.84	0.08	15 mm	2	N	1391M	1	back	99.9	0.095	0.059	1.038	1.001	0.061	
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 11-24
DTS Body-Worn SISO SAR for Conditions with 5 GHz WLAN SAR and/or 5G NR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
2462	11	802.11b	DSSS	22	15.0	14.60	0.00	15 mm	2	Q	0798M	1	back	99.9	0.033	0.022	1.096	1.001	0.024	
2412	1	802.11b	DSSS	22	15.0	14.74	-0.01	15 mm	2	N	1391M	1	back	99.9	0.021	0.011	1.062	1.001	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					

Note: 2.4 GHZ WLAN was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-25
DTS MIMO Body-Worn SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.09	15 mm	MIMO	Q	0798M	1	back	99.9	0.358	0.238	1.127	1.001	0.268	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.01	15 mm	MIMO	N	1391M	1	back	99.9	0.460	0.307	1.033	1.001	0.317	A43
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: To achieve the 22 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 19.0 dBm.

Table 11-26
DTS MIMO Body-Worn SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.15	15 mm	MIMO	Q	0798M	13	back	99.7	0.046	0.031	1.167	1.003	0.036	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.09	15 mm	MIMO	N	1391M	13	back	99.7	0.035	0.019	1.239	1.003	0.024	
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 WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-27
NII SISO Body-Worn SAR – Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.99	0.16	15 mm	1	Q	0798M	6	back	98.9	0.109	0.050	1.002	1.011	0.051	
5600	120	802.11a	OFDM	20	18.0	17.98	-0.17	15 mm	1	Q	0798M	6	back	98.9	0.103	0.052	1.005	1.011	0.053	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.03	15 mm	1	Q	0798M	6	back	98.9	0.131	0.053	1.019	1.011	**0.055**	
5260	52	802.11a	OFDM	20	18.0	17.98	-0.15	15 mm	1	N	1391M	6	back	98.9	0.059	0.030	1.005	1.011	0.030	
5720	144	802.11a	OFDM	20	18.0	17.86	0.01	15 mm	1	N	1391M	6	back	98.9	0.108	0.042	1.033	1.011	0.044	
5825	165	802.11a	OFDM	20	18.0	17.80	0.05	15 mm	1	N	1391M	6	back	98.9	0.114	0.045	1.047	1.011	0.048	
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
NII SISO Body-Worn SAR for Conditions with 5G NR – Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.93	0.12	15 mm	1	Q	0798M	13.5	back	99.7	0.037	0.017	1.016	1.003	0.017	
5690	138	802.11ac	OFDM	80	15.0	14.64	0.16	15 mm	1	Q	0798M	29.3	back	99.7	0.019	0.008	1.086	1.003	0.009	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.12	15 mm	1	Q	0798M	29.3	back	99.7	0.027	0.011	1.169	1.003	0.013	
5270	54	802.11n	OFDM	40	15.0	14.65	-0.17	15 mm	1	N	1391M	13.5	back	99.7	0.040	0.014	1.084	1.003	0.015	
5530	106	802.11ac	OFDM	80	15.0	14.68	0.20	15 mm	1	N	1391M	29.3	back	99.7	0.025	0.008	1.076	1.003	0.009	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.13	15 mm	1	N	1391M	29.3	back	99.7	0.025	0.009	1.180	1.003	0.011	
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: 5G NR was not transmitting during 5 GHz WLAN evaluations.

Table 11-29
NII MIMO Body-Worn SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	-0.01	15 mm	MIMO	Q	0798M	13	back	99.7	0.459	0.246	1.062	1.003	0.262	A45
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	0.04	15 mm	MIMO	Q	0798M	13	back	99.7	0.417	0.204	1.084	1.003	0.222	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.11	15 mm	MIMO	Q	0798M	13	back	99.7	0.384	0.182	1.014	1.003	0.185	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	-0.07	15 mm	MIMO	N	1391M	13	back	99.7	0.190	0.069	1.026	1.003	0.071	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	0.21	15 mm	MIMO	N	1391M	13	back	99.7	0.283	0.107	1.054	1.003	0.113	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.10	15 mm	MIMO	N	1391M	13	back	99.7	0.197	0.077	1.023	1.003	0.079	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: To achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 18.0 dBm.

Table 11-30
NII MIMO Body-Worn SAR for Conditions with 2.4 GHz WLAN SAR and/or with 5G NR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.71	15.0	14.90	0.13	15 mm	MIMO	Q	0798M	27	back	99.7	0.251	0.123	1.069	1.003	0.132	
5530	106	802.11ac	OFDM	80	15.0	14.54	15.0	14.87	0.10	15 mm	MIMO	Q	0798M	58.5	back	99.7	0.148	0.065	1.112	1.003	0.072	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.20	15 mm	MIMO	Q	0798M	58.5	back	99.7	0.102	0.040	1.318	1.003	0.053	
5310	62	802.11n	OFDM	40	15.0	14.98	15.0	14.65	0.18	15 mm	MIMO	N	1391M	27	back	99.7	0.085	0.039	1.084	1.003	0.042	
5690	138	802.11ac	OFDM	80	15.0	14.51	15.0	14.18	-0.05	15 mm	MIMO	N	1391M	58.5	back	99.7	0.015	0.006	1.208	1.003	0.007	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.21	15 mm	MIMO	N	1391M	58.5	back	99.7	0.014	0.005	1.138	1.003	0.006	
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: 5 GHZ WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and 2.4 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-31
DSS Body-Worn SAR - Open

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	16.0	15.43	0.12	15 mm	1	Q	0798M	1	back	76.8	0.024	1.140	1.302	0.036	
2441	39	Bluetooth	FHSS	17.0	16.61	0.05	15 mm	2	Q	0798M	1	back	76.8	0.022	1.094	1.302	0.031	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.06	15 mm	1	N	1391M	1	back	76.8	0.042	1.109	1.302	**0.061**	A47
2480	78	Bluetooth	FHSS	17.0	16.60	-0.10	15 mm	2	N	1391M	1	back	76.8	0.037	1.096	1.302	0.053	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-32
DSS Body-Worn SAR for Conditions with 5G NR - Open

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
2441	39	Bluetooth	FHSS	14.0	13.10	0.11	15 mm	1	Q	0827M	1	back	76.8	0.008	1.231	1.302	0.013	
2441	39	Bluetooth	FHSS	14.0	13.93	0.13	15 mm	2	Q	0827M	1	back	76.8	0.007	1.017	1.302	0.009	
2441	39	Bluetooth	FHSS	14.0	13.11	-0.18	15 mm	1	N	3724M	1	back	76.8	0.014	1.229	1.302	0.022	
2480	78	Bluetooth	FHSS	14.0	13.67	0.08	15 mm	2	N	3724M	1	back	76.8	0.021	1.080	1.302	0.030	
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: BT was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5G NR active. 5G NR was not transmitting during BT evaluations.

11.3 Standalone Open Hotspot SAR Data

Table 11-33
GPRS/UMTS Hotspot SAR Data – Open

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	-0.04	10 mm	0803M	3	1:2.76	back	0.351	1.245	0.437	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	0.03	10 mm	0803M	3	1:2.76	front	0.302	1.245	0.376	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	-0.18	10 mm	0803M	3	1:2.76	bottom	0.119	1.245	0.148	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	-0.02	10 mm	0803M	3	1:2.76	right	0.289	1.245	0.360	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	-0.13	10 mm	0803M	3	1:2.76	left	0.115	1.245	0.143	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	-0.04	10 mm	0339M	3	1:2.76	back	0.337	1.297	0.437	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	-0.05	10 mm	0339M	3	1:2.76	front	0.308	1.297	0.399	
1850.20	512	GSM 1900	GPRS	23.5	22.30	N/A	-0.08	10 mm	0339M	3	1:2.76	bottom	0.551	1.318	0.726	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	0.01	10 mm	0339M	3	1:2.76	bottom	0.728	1.297	0.944	A20
1909.80	810	GSM 1900	GPRS	23.5	22.21	N/A	-0.14	10 mm	0339M	3	1:2.76	bottom	0.598	1.346	0.805	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	0.09	10 mm	0339M	3	1:2.76	right	0.038	1.297	0.049	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	0.05	10 mm	0339M	3	1:2.76	left	0.041	1.297	0.053	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.01	10 mm	0803M	N/A	1:1	back	0.354	1.315	0.466	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.01	10 mm	0803M	N/A	1:1	front	0.199	1.315	0.262	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.06	10 mm	0803M	N/A	1:1	bottom	0.150	1.315	0.197	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.06	10 mm	0803M	N/A	1:1	right	0.264	1.315	0.347	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	0.02	10 mm	0803M	N/A	1:1	left	0.054	1.315	0.071	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.04	10 mm	0329M	N/A	1:1	back	0.361	1.291	0.466	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.00	10 mm	0329M	N/A	1:1	front	0.294	1.291	0.380	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	-0.06	10 mm	0329M	N/A	1:1	bottom	0.422	1.291	0.545	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.18	10 mm	0329M	N/A	1:1	right	0.014	1.291	0.018	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	-0.02	10 mm	0329M	N/A	1:1	left	0.064	1.291	0.083	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	-0.12	10 mm	0065M	N/A	1:1	back	0.482	1.175	0.566	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	0.10	10 mm	0065M	N/A	1:1	front	0.357	1.175	0.419	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	-0.01	10 mm	0065M	N/A	1:1	bottom	0.637	1.175	0.748	
1880.00	9400	UMTS 1900	RMC	19.0	18.15	52	0.02	10 mm	0065M	N/A	1:1	bottom	0.639	1.216	0.777	A26
1907.60	9538	UMTS 1900	RMC	19.0	18.05	52	0.05	10 mm	0065M	N/A	1:1	bottom	0.599	1.245	0.746	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	0.14	10 mm	0065M	N/A	1:1	right	0.045	1.175	0.053	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	0.05	10 mm	0065M	N/A	1:1	left	0.064	1.175	0.075	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-34
LTE Band 12 Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.04	0	0799M	QPSK	1	25	10 mm	back	1:1	0.192	1.315	0.252	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.05	0	0799M	QPSK	25	12	10 mm	back	1:1	0.195	1.297	0.253	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	-0.02	0	0799M	QPSK	1	25	10 mm	front	1:1	0.165	1.315	0.217	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.02	0	0799M	QPSK	25	12	10 mm	front	1:1	0.168	1.297	0.218	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.02	0	0799M	QPSK	1	25	10 mm	bottom	1:1	0.037	1.315	0.049	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.02	0	0799M	QPSK	25	12	10 mm	bottom	1:1	0.036	1.297	0.047	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.02	0	0799M	QPSK	1	25	10 mm	right	1:1	0.165	1.315	0.217	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.02	0	0799M	QPSK	25	12	10 mm	right	1:1	0.165	1.297	0.214	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.05	0	0799M	QPSK	1	25	10 mm	left	1:1	0.118	1.315	0.155	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.03	0	0799M	QPSK	25	12	10 mm	left	1:1	0.122	1.297	0.158	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-35
LTE Band 13 Hotspot SAR – Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.02	0	0799M	QPSK	1	49	10 mm	back	1:1	0.258	1.230	0.317	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	-0.01	0	0799M	QPSK	25	12	10 mm	back	1:1	0.260	1.219	0.317	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.05	0	0799M	QPSK	1	49	10 mm	front	1:1	0.171	1.230	0.210	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.01	0	0799M	QPSK	25	12	10 mm	front	1:1	0.171	1.219	0.208	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	0.11	0	0799M	QPSK	1	49	10 mm	bottom	1:1	0.098	1.230	0.121	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.03	0	0799M	QPSK	25	12	10 mm	bottom	1:1	0.098	1.219	0.119	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.03	0	0799M	QPSK	1	49	10 mm	right	1:1	0.132	1.230	0.162	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	-0.06	0	0799M	QPSK	25	12	10 mm	right	1:1	0.131	1.219	0.160	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.14	0	0799M	QPSK	1	49	10 mm	left	1:1	0.045	1.230	0.055	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.04	0	0799M	QPSK	25	12	10 mm	left	1:1	0.043	1.219	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						

Table 11-36
LTE Band 26 (Cell) Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	0	-0.05	0	0069M	QPSK	1	74	10 mm	back	1:1	0.278	1.321	0.367	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	0	-0.03	0	0069M	QPSK	36	18	10 mm	back	1:1	0.289	1.315	0.380	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	3	0.00	0	0069M	QPSK	1	74	10 mm	front	1:1	0.185	1.321	0.244	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	3	-0.04	0	0069M	QPSK	36	18	10 mm	front	1:1	0.189	1.315	0.249	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	27	-0.04	0	0069M	QPSK	1	74	10 mm	bottom	1:1	0.076	1.321	0.100	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	27	-0.03	0	0069M	QPSK	36	18	10 mm	bottom	1:1	0.073	1.315	0.096	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	28	0.01	0	0069M	QPSK	1	74	10 mm	right	1:1	0.127	1.321	0.168	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	28	0.06	0	0069M	QPSK	36	18	10 mm	right	1:1	0.125	1.315	0.164	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	27	0.16	0	0069M	QPSK	1	74	10 mm	left	1:1	0.036	1.321	0.048	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	27	0.11	0	0069M	QPSK	36	18	10 mm	left	1:1	0.042	1.315	0.055	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-37
LTE Band 66 (AWS) Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	18	0.09	0	0339M	QPSK	1	50	10 mm	back	1:1	0.313	1.377	0.431	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	18	0.05	0	0339M	QPSK	50	25	10 mm	back	1:1	0.322	1.312	0.422	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	18	0.00	0	0339M	QPSK	1	50	10 mm	front	1:1	0.230	1.377	0.317	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	18	0.02	0	0339M	QPSK	50	25	10 mm	front	1:1	0.237	1.312	0.311	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	2	0.07	0	0339M	QPSK	1	50	10 mm	bottom	1:1	0.343	1.377	0.472	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	2	-0.02	0	0339M	QPSK	50	25	10 mm	bottom	1:1	0.367	1.312	0.482	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	14	0.18	0	0339M	QPSK	1	50	10 mm	right	1:1	0.019	1.377	0.026	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	14	0.01	0	0339M	QPSK	50	25	10 mm	right	1:1	0.020	1.312	0.026	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	14	0.04	0	0339M	QPSK	1	50	10 mm	left	1:1	0.054	1.377	0.074	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	14	-0.01	0	0339M	QPSK	50	25	10 mm	left	1:1	0.057	1.312	0.075	
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 25 (PCS) Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.05	0	0329M	QPSK	1	0	10 mm	back	1:1	0.504	1.054	0.531	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.03	0	0329M	QPSK	50	25	10 mm	back	1:1	0.508	1.033	0.525	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.09	0	0329M	QPSK	1	0	10 mm	front	1:1	0.485	1.054	0.511	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.07	0	0329M	QPSK	50	25	10 mm	front	1:1	0.490	1.033	0.506	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.02	0	0329M	QPSK	1	0	10 mm	bottom	1:1	0.798	1.054	0.841	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	18.0	17.67	2	0.03	0	0329M	QPSK	1	0	10 mm	bottom	1:1	0.775	1.079	0.836	
1905.00	26590	High	LTE Band 25 (PCS)	20	18.0	17.68	2	0.00	0	0329M	QPSK	1	0	10 mm	bottom	1:1	0.750	1.076	0.807	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.00	0	0329M	QPSK	50	25	10 mm	bottom	1:1	0.783	1.033	0.809	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	18.0	17.73	2	0.03	0	0329M	QPSK	50	0	10 mm	bottom	1:1	0.788	1.064	0.838	
1905.00	26590	High	LTE Band 25 (PCS)	20	18.0	17.69	2	0.03	0	0329M	QPSK	50	50	10 mm	bottom	1:1	0.775	1.074	0.832	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.66	2	0.01	0	0329M	QPSK	100	0	10 mm	bottom	1:1	0.783	1.081	0.846	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	-0.01	0	0329M	QPSK	1	0	10 mm	right	1:1	0.060	1.054	0.063	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.05	0	0329M	QPSK	50	25	10 mm	right	1:1	0.062	1.033	0.064	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	-0.13	0	0329M	QPSK	1	0	10 mm	left	1:1	0.043	1.054	0.045	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.00	0	0329M	QPSK	50	25	10 mm	left	1:1	0.043	1.033	0.044	
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 41 Hotspot SAR - Open

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	0.00	0	0065M	QPSK	1	0	10 mm	back	1:1.58	0.147	1.202	0.177	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	0.02	0	0065M	QPSK	50	25	10 mm	back	1:1.58	0.146	1.205	0.176	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	0.02	0	0065M	QPSK	1	0	10 mm	front	1:1.58	0.091	1.202	0.109	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	0.00	0	0065M	QPSK	50	25	10 mm	front	1:1.58	0.094	1.205	0.113	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	-0.03	0	0065M	QPSK	1	0	10 mm	bottom	1:1.58	0.417	1.202	0.501	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	0.01	0	0065M	QPSK	50	25	10 mm	bottom	1:1.58	0.397	1.205	0.478	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	0.00	0	0065M	QPSK	1	0	10 mm	left	1:1.58	0.087	1.202	0.105	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	-0.01	0	0065M	QPSK	50	25	10 mm	left	1:1.58	0.090	1.205	0.108	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-40
NR Band n5 Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	-0.01	0.0	0	0803M	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.351	1.138	0.399	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	0.03	0.0	0	0803M	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.351	1.143	0.401	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.56	-0.01	0.0	0	0803M	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.326	1.242	0.405	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	0.12	0.0	3	0803M	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.200	1.138	0.228	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	-0.02	0.0	3	0803M	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.206	1.143	0.235	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	0.12	0.0	27	0803M	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.109	1.138	0.124	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	0.10	0.0	27	0803M	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.105	1.143	0.120	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	-0.01	0.0	28	0803M	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.162	1.138	0.184	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	0.04	0.0	28	0803M	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.159	1.143	0.182	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	0.15	0.0	27	0803M	DFT-S-OFDM	QPSK	1	53	10 mm	left	1:1	0.059	1.138	0.067	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	0.14	0.0	27	0803M	DFT-S-OFDM	QPSK	50	28	10 mm	left	1:1	0.060	1.143	0.069	
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
NR Band n66 Hotspot SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	0.02	0.0	18	0329M	DFT-S-OFDM	QPSK	1	104	10 mm	back	1:1	0.373	1.122	0.419	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	0.05	0.0	18	0329M	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.371	1.127	0.418	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	-0.02	0.0	18	0329M	DFT-S-OFDM	QPSK	1	104	10 mm	front	1:1	0.264	1.122	0.296	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.04	0.0	18	0329M	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.265	1.127	0.299	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	0.05	0.0	2	0329M	DFT-S-OFDM	QPSK	1	104	10 mm	bottom	1:1	0.409	1.122	0.459	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.02	0.0	2	0329M	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.426	1.127	0.480	
1720.00	344000	Low	NR Band n66 (AWS)	20	16.5	15.86	0.05	0.0	2	0339M	CP-OFDM	QPSK	1	1	10 mm	bottom	1:1	0.418	1.159	0.484	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	-0.03	0.0	14	0329M	DFT-S-OFDM	QPSK	1	104	10 mm	right	1:1	0.033	1.122	0.037	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.05	0.0	14	0329M	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.032	1.127	0.036	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	-0.02	0.0	14	0329M	DFT-S-OFDM	QPSK	1	104	10 mm	left	1:1	0.027	1.122	0.030	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	0.04	0.0	14	0329M	DFT-S-OFDM	QPSK	50	28	10 mm	left	1:1	0.030	1.127	0.034	
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
DTS SISO Hotspot SAR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	19.0	18.65	0.12	10 mm	2	Q	0798M	1	back	99.9	0.206	0.145	1.084	1.001	0.157	
2412	1	802.11b	DSSS	22	19.0	18.65	0.04	10 mm	2	Q	0798M	1	front	99.9	0.223	0.127	1.084	1.001	0.138	
2412	1	802.11b	DSSS	22	19.0	18.65	-0.02	10 mm	2	Q	0798M	1	top	99.9	0.118	-	1.084	1.001	-	
2412	1	802.11b	DSSS	22	19.0	18.65	0.08	10 mm	2	Q	0798M	1	left	99.9	0.259	0.159	1.084	1.001	0.173	
2412	1	802.11b	DSSS	22	19.0	18.84	0.00	10 mm	2	N	1391M	1	back	99.9	0.232	0.143	1.038	1.001	0.149	
2412	1	802.11b	DSSS	22	19.0	18.84	0.18	10 mm	2	N	1391M	1	front	99.9	0.229	0.156	1.038	1.001	0.162	
2412	1	802.11b	DSSS	22	19.0	18.84	0.15	10 mm	2	N	1391M	1	top	99.9	0.127	-	1.038	1.001	-	
2412	1	802.11b	DSSS	22	19.0	18.84	-0.08	10 mm	2	N	1391M	1	left	99.9	0.275	0.163	1.038	1.001	0.169	
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
DTS SISO Hotspot SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.15	10 mm	2	Q	0798M	1	back	99.9	0.086	0.057	1.096	1.001	0.063	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.07	10 mm	2	Q	0798M	1	front	99.9	0.108	0.065	1.096	1.001	0.071	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.01	10 mm	2	Q	0798M	1	top	99.9	0.071	0.047	1.096	1.001	0.052	
2462	11	802.11b	DSSS	22	15.0	14.60	0.09	10 mm	2	Q	0798M	1	left	99.9	0.113	0.072	1.096	1.001	0.079	
2412	1	802.11b	DSSS	22	15.0	14.74	-0.03	10 mm	2	N	1391M	1	back	99.9	0.064	0.039	1.062	1.001	0.041	
2412	1	802.11b	DSSS	22	15.0	14.74	-0.11	10 mm	2	N	1391M	1	front	99.9	0.064	0.041	1.062	1.001	0.044	
2412	1	802.11b	DSSS	22	15.0	14.74	0.04	10 mm	2	N	1391M	1	top	99.9	0.039	0.026	1.062	1.001	0.028	
2412	1	802.11b	DSSS	22	15.0	14.74	0.03	10 mm	2	N	1391M	1	left	99.9	0.076	0.047	1.062	1.001	0.050	
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 WLAN was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and/or 5G NR active. 5GHz WLAN and/or 5G NR were not transmitting during the above evaluations.

Table 11-44
DTS MIMO Hotspot SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	-0.01	10 mm	MIMO	Q	0798M	1	back	99.9	0.764	0.521	1.127	1.001	0.588	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.12	10 mm	MIMO	Q	0798M	1	front	99.9	0.570	0.353	1.127	1.001	0.398	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.04	10 mm	MIMO	Q	0798M	1	top	99.9	0.459	-	1.127	1.001	-	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	-0.05	10 mm	MIMO	Q	0798M	1	right	99.9	0.195	-	1.127	1.001	-	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.12	10 mm	MIMO	Q	0798M	1	left	99.9	0.819	0.485	1.127	1.001	0.547	
2412	1	802.11b	DSSS	22	19.0	18.60	19.0	18.55	0.02	10 mm	MIMO	N	1391M	1	back	99.9	0.724	0.531	1.109	1.001	0.589	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.05	10 mm	MIMO	N	1391M	1	back	99.9	0.868	0.624	1.033	1.001	0.645	
2462	11	802.11b	DSSS	22	19.0	18.56	19.0	18.82	-0.02	10 mm	MIMO	N	1391M	1	back	99.9	0.671	0.424	1.107	1.001	0.470	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.00	10 mm	MIMO	N	1391M	1	front	99.9	0.590	0.388	1.033	1.001	0.401	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.00	10 mm	MIMO	N	1391M	1	top	99.9	0.476	-	1.033	1.001	-	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.02	10 mm	MIMO	N	1391M	1	right	99.9	0.190	-	1.033	1.001	-	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.11	10 mm	MIMO	N	1391M	1	left	99.9	0.765	0.483	1.033	1.001	0.499	
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: To achieve the 22 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 19.0 dBm.

Table 11-45
DTS MIMO Hotspot SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.01	10 mm	MIMO	Q	0798M	13	back	99.7	0.100	0.074	1.167	1.003	0.087	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.08	10 mm	MIMO	Q	0798M	13	front	99.7	0.097	0.068	1.167	1.003	0.080	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	-0.05	10 mm	MIMO	Q	0798M	13	top	99.7	0.063	0.040	1.167	1.003	0.047	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.05	10 mm	MIMO	Q	0798M	13	right	99.7	0.036	0.023	1.167	1.003	0.027	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.01	10 mm	MIMO	Q	0798M	13	left	99.7	0.115	0.068	1.167	1.003	0.080	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.04	10 mm	MIMO	N	1391M	13	back	99.7	0.067	0.049	1.239	1.003	0.061	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	-0.06	10 mm	MIMO	N	1391M	13	front	99.7	0.066	0.043	1.239	1.003	0.053	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.03	10 mm	MIMO	N	1391M	13	top	99.7	0.048	0.030	1.239	1.003	0.037	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.18	10 mm	MIMO	N	1391M	13	right	99.7	0.015	0.009	1.239	1.003	0.011	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.01	10 mm	MIMO	N	1391M	13	left	99.7	0.065	0.037	1.239	1.003	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						

Note: 2.4 GHZ WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-46
NII SISO Hotspot SAR – Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5745	149	802.11a	OFDM	20	18.0	17.92	0.17	10 mm	1	Q	0798M	6	back	98.9	0.189	0.073	1.019	1.011	0.075	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.21	10 mm	1	Q	0798M	6	front	98.9	0.124	0.048	1.019	1.011	0.049	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.02	10 mm	1	Q	0798M	6	top	98.9	0.232	0.084	1.019	1.011	0.087	
5745	149	802.11a	OFDM	20	18.0	17.92	0.17	10 mm	1	Q	0798M	6	right	98.9	0.060	-	1.019	1.011	-	
5825	165	802.11a	OFDM	20	18.0	17.80	-0.21	10 mm	1	N	1391M	6	back	98.9	0.279	0.156	1.047	1.011	0.165	
5825	165	802.11a	OFDM	20	18.0	17.80	0.19	10 mm	1	N	1391M	6	front	98.9	0.181	0.048	1.047	1.011	0.051	
5825	165	802.11a	OFDM	20	18.0	17.80	0.17	10 mm	1	N	1391M	6	top	98.9	0.294	0.116	1.047	1.011	0.123	
5825	165	802.11a	OFDM	20	18.0	17.80	0.19	10 mm	1	N	1391M	6	right	98.9	0.100	-	1.047	1.011	-	
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
NII SISO Hotspot SAR for Conditions with 2.4 GHz WLAN SAR and/or 5G NR – Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.14	10 mm	1	Q	0798M	29.3	back	99.7	0.055	0.019	1.169	1.003	0.022	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.00	10 mm	1	Q	0798M	29.3	front	99.7	0.019	0.006	1.169	1.003	0.007	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.14	10 mm	1	Q	0798M	29.3	top	99.7	0.070	0.024	1.169	1.003	0.028	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.17	10 mm	1	Q	0798M	29.3	right	99.7	0.019	0.008	1.169	1.003	0.009	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.00	10 mm	1	N	1391M	29.3	back	99.7	0.041	0.015	1.180	1.003	0.018	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.00	10 mm	1	N	1391M	29.3	front	99.7	0.028	0.011	1.180	1.003	0.013	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.19	10 mm	1	N	1391M	29.3	top	99.7	0.071	0.021	1.180	1.003	0.025	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.17	10 mm	1	N	1391M	29.3	right	99.7	0.019	0.006	1.180	1.003	0.007	
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: 5 GHZ WLAN SISO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and 2.4 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-48
NII MIMO Hotspot SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.13	10 mm	MIMO	Q	0798M	13	back	99.7	0.699	0.310	1.014	1.003	0.315	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.19	10 mm	MIMO	Q	0798M	13	front	99.7	0.856	0.396	1.014	1.003	0.403	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.13	10 mm	MIMO	Q	0798M	13	top	99.7	0.423	-	1.014	1.003	-	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.20	10 mm	MIMO	Q	0798M	13	right	99.7	0.150	-	1.014	1.003	-	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	-0.03	10 mm	MIMO	Q	0798M	13	left	99.7	0.693	-	1.014	1.003	-	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.13	10 mm	MIMO	N	1391M	13	back	99.7	0.303	0.216	1.023	1.003	0.222	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	-0.17	10 mm	MIMO	N	1391M	13	front	99.7	0.451	0.285	1.023	1.003	0.292	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.18	10 mm	MIMO	N	1391M	13	top	99.7	0.323	-	1.023	1.003	-	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.19	10 mm	MIMO	N	1391M	13	right	99.7	0.175	-	1.023	1.003	-	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.12	10 mm	MIMO	N	1391M	13	left	99.7	0.503	0.273	1.023	1.003	0.280	
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: To achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 18.0 dBm.

Table 11-49
NII MIMO Hotspot SAR for Conditions with 2.4 GHz WLAN SAR and/or with 5G NR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.20	10 mm	MIMO	Q	0798M	58.5	back	99.7	0.177	0.072	1.318	1.003	0.095	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	-0.01	10 mm	MIMO	Q	0798M	58.5	front	99.7	0.188	0.084	1.318	1.003	0.111	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.05	10 mm	MIMO	Q	0798M	58.5	top	99.7	0.093	-	1.318	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	-0.12	10 mm	MIMO	Q	0798M	58.5	right	99.7	0.029	-	1.318	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.05	10 mm	MIMO	Q	0798M	58.5	left	99.7	0.184	-	1.318	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.19	10 mm	MIMO	N	1391M	58.5	back	99.7	0.076	0.028	1.138	1.003	0.032	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	-0.19	10 mm	MIMO	N	1391M	58.5	front	99.7	0.071	0.025	1.138	1.003	0.029	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.19	10 mm	MIMO	N	1391M	58.5	top	99.7	0.065	-	1.138	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.13	10 mm	MIMO	N	1391M	58.5	right	99.7	0.013	-	1.138	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.18	10 mm	MIMO	N	1391M	58.5	left	99.7	0.072	-	1.138	1.003	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram						

Note: 5 GHZ WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and 2.4 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-50
DSS Hotspot SAR - Open

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	16.0	15.43	0.20	10 mm	1	Q	0798M	1	back	76.8	0.055	1.140	1.302	0.082	
2441	39	Bluetooth	FHSS	16.0	15.43	0.08	10 mm	1	Q	0798M	1	front	76.8	0.045	1.140	1.302	0.067	
2441	39	Bluetooth	FHSS	16.0	15.43	0.10	10 mm	1	Q	0798M	1	top	76.8	0.030	1.140	1.302	0.045	
2441	39	Bluetooth	FHSS	16.0	15.43	0.10	10 mm	1	Q	0798M	1	right	76.8	0.016	1.140	1.302	0.024	
2441	39	Bluetooth	FHSS	17.0	16.61	0.06	10 mm	2	Q	0798M	1	back	76.8	0.054	1.094	1.302	0.077	
2441	39	Bluetooth	FHSS	17.0	16.61	0.03	10 mm	2	Q	0798M	1	front	76.8	0.068	1.094	1.302	0.097	
2441	39	Bluetooth	FHSS	17.0	16.61	-0.04	10 mm	2	Q	0798M	1	top	76.8	0.042	1.094	1.302	0.060	
2441	39	Bluetooth	FHSS	17.0	16.61	-0.15	10 mm	2	Q	0798M	1	left	76.8	0.049	1.094	1.302	0.070	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.02	10 mm	1	N	1391M	1	back	76.8	0.091	1.109	1.302	0.131	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.11	10 mm	1	N	1391M	1	front	76.8	0.075	1.109	1.302	0.108	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.12	10 mm	1	N	1391M	1	top	76.8	0.047	1.109	1.302	0.068	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.11	10 mm	1	N	1391M	1	right	76.8	0.024	1.109	1.302	0.035	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.07	10 mm	2	N	1391M	1	back	76.8	0.084	1.096	1.302	0.120	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.05	10 mm	2	N	1391M	1	front	76.8	0.104	1.096	1.302	0.148	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.06	10 mm	2	N	1391M	1	top	76.8	0.080	1.096	1.302	0.114	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.09	10 mm	2	N	1391M	1	left	76.8	0.123	1.096	1.302	0.176	
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
DSS Hotspot SAR for Conditions with 5G NR - Open

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	14.0	13.10	-0.16	10 mm	1	Q	0827M	1	back	76.8	0.016	1.231	1.302	0.026	
2441	39	Bluetooth	FHSS	14.0	13.10	0.10	10 mm	1	Q	0827M	1	front	76.8	0.013	1.231	1.302	0.021	
2441	39	Bluetooth	FHSS	14.0	13.10	-0.19	10 mm	1	Q	0827M	1	top	76.8	0.007	1.231	1.302	0.011	
2441	39	Bluetooth	FHSS	14.0	13.10	-0.12	10 mm	1	Q	0827M	1	right	76.8	0.004	1.231	1.302	0.006	
2441	39	Bluetooth	FHSS	14.0	13.93	0.07	10 mm	2	Q	0827M	1	back	76.8	0.017	1.017	1.302	0.023	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.10	10 mm	2	Q	0827M	1	front	76.8	0.013	1.017	1.302	0.017	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.20	10 mm	2	Q	0827M	1	top	76.8	0.007	1.017	1.302	0.009	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.15	10 mm	2	Q	0827M	1	left	76.8	0.006	1.017	1.302	0.008	
2441	39	Bluetooth	FHSS	14.0	13.11	-0.12	10 mm	1	N	3724M	1	back	76.8	0.033	1.229	1.302	0.053	
2441	39	Bluetooth	FHSS	14.0	13.11	-0.05	10 mm	1	N	3724M	1	front	76.8	0.027	1.229	1.302	0.043	
2441	39	Bluetooth	FHSS	14.0	13.11	-0.17	10 mm	1	N	3724M	1	top	76.8	0.012	1.229	1.302	0.019	
2441	39	Bluetooth	FHSS	14.0	13.11	0.20	10 mm	1	N	3724M	1	right	76.8	0.007	1.229	1.302	0.011	
2480	78	Bluetooth	FHSS	14.0	13.67	0.03	10 mm	2	N	3724M	1	back	76.8	0.040	1.080	1.302	0.056	
2480	78	Bluetooth	FHSS	14.0	13.67	0.01	10 mm	2	N	3724M	1	front	76.8	0.042	1.080	1.302	0.059	
2480	78	Bluetooth	FHSS	14.0	13.67	0.10	10 mm	2	N	3724M	1	top	76.8	0.041	1.080	1.302	0.058	
2480	78	Bluetooth	FHSS	14.0	13.67	0.11	10 mm	2	N	3724M	1	left	76.8	0.057	1.080	1.302	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											

Note: BT was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5G NR active. 5G NR was not transmitting during BT evaluations.

11.4 Standalone Open Phablet SAR Data

Table 11-52
GPRS/UMTS Phablet SAR Data - Open

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GPRS	27.5	26.95	N/A	-0.02	8 mm	0799M	3	1:2.76	back	0.463	1.135	0.526	
1880.00	661	GSM 1900	GPRS	27.5	26.95	N/A	-0.05	6 mm	0799M	3	1:2.76	front	0.521	1.135	0.591	
1880.00	661	GSM 1900	GPRS	27.5	26.95	N/A	-0.14	11 mm	0799M	3	1:2.76	bottom	0.547	1.135	0.621	
1880.00	661	GSM 1900	GPRS	27.5	26.95	N/A	-0.03	0 mm	0799M	3	1:2.76	right	0.164	1.135	0.186	
1880.00	661	GSM 1900	GPRS	27.5	26.95	N/A	-0.06	0 mm	0799M	3	1:2.76	left	0.189	1.135	0.215	
1850.20	512	GSM 1900	GPRS	25.5	24.81	N/A	0.01	0 mm	0799M	3	1:2.76	back	2.240	1.172	2.625	
1880.00	661	GSM 1900	GPRS	25.5	24.91	N/A	0.13	0 mm	0799M	3	1:2.76	back	2.480	1.146	2.842	A49
1909.80	810	GSM 1900	GPRS	25.5	24.85	N/A	0.10	0 mm	0799M	3	1:2.76	back	1.970	1.161	2.287	
1880.00	661	GSM 1900	GPRS	25.5	24.91	N/A	0.06	0 mm	0799M	3	1:2.76	front	1.690	1.146	1.937	
1880.00	661	GSM 1900	GPRS	25.5	24.91	N/A	-0.04	0 mm	0799M	3	1:2.76	bottom	1.860	1.146	2.132	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.05	8 mm	1121M	N/A	1:1	back	0.648	1.143	0.741	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.06	6 mm	1121M	N/A	1:1	front	0.640	1.143	0.732	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	-0.06	11 mm	1121M	N/A	1:1	bottom	0.741	1.143	0.847	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	-0.08	0 mm	1121M	N/A	1:1	right	0.188	1.143	0.215	
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	-0.09	0 mm	1121M	N/A	1:1	left	0.172	1.143	0.197	
1712.40	1312	UMTS 1750	RMC	21.0	20.39	0	0.19	0 mm	0799M	N/A	1:1	back	2.410	1.151	2.774	
1732.40	1412	UMTS 1750	RMC	21.0	20.26	0	-0.19	0 mm	0799M	N/A	1:1	back	2.760	1.186	**3.273**	A50
1752.60	1513	UMTS 1750	RMC	21.0	20.17	0	0.11	0 mm	0799M	N/A	1:1	back	2.310	1.211	2.797	
1712.40	1312	UMTS 1750	RMC	21.0	20.39	0	0.06	0 mm	0799M	N/A	1:1	front	1.580	1.151	1.819	
1712.40	1312	UMTS 1750	RMC	21.0	20.39	0	-0.05	0 mm	0799M	N/A	1:1	bottom	1.640	1.151	1.888	
1732.40	1412	UMTS 1750	RMC	21.0	20.26	N/A	0.05	0 mm	0799M	N/A	1:1	back	2.720	1.186	3.226	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.07	8 mm	0724M	N/A	1:1	back	0.764	1.023	0.782	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.06	6 mm	0724M	N/A	1:1	front	0.780	1.023	0.798	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	-0.04	11 mm	0724M	N/A	1:1	bottom	0.820	1.023	0.839	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.02	0 mm	0724M	N/A	1:1	right	0.247	1.023	0.253	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.01	0 mm	0724M	N/A	1:1	left	0.273	1.023	0.279	
1852.40	9262	UMTS 1900	RMC	22.0	21.92	52	0.06	0 mm	0065M	N/A	1:1	back	2.940	1.019	2.996	A51
1880.00	9400	UMTS 1900	RMC	22.0	21.78	52	0.16	0 mm	0065M	N/A	1:1	back	2.510	1.052	2.641	
1907.60	9538	UMTS 1900	RMC	22.0	21.64	52	0.11	0 mm	0065M	N/A	1:1	back	1.910	1.086	2.074	
1852.40	9262	UMTS 1900	RMC	22.0	21.92	52	0.00	0 mm	0065M	N/A	1:1	front	2.340	1.019	2.384	
1880.00	9400	UMTS 1900	RMC	22.0	21.78	52	0.13	0 mm	0065M	N/A	1:1	front	1.830	1.052	1.925	
1907.60	9538	UMTS 1900	RMC	22.0	21.64	52	-0.04	0 mm	0065M	N/A	1:1	front	1.640	1.086	1.781	
1852.40	9262	UMTS 1900	RMC	22.0	21.92	52	0.11	0 mm	0065M	N/A	1:1	bottom	2.130	1.019	2.170	
1880.00	9400	UMTS 1900	RMC	22.0	21.78	52	0.19	0 mm	0065M	N/A	1:1	bottom	1.880	1.052	1.978	
1907.60	9538	UMTS 1900	RMC	22.0	21.64	52	0.13	0 mm	0065M	N/A	1:1	bottom	1.090	1.086	1.184	
1852.40	9262	UMTS 1900	RMC	22.0	21.92	N/A	0.06	0 mm	0065M	N/A	1:1	back	2.840	1.019	2.894	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Phablet 4.0 W/kg (mW/g) averaged over 10 grams				

Note: Blue entries represent variability measurements.

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

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	53	0.09	0	0069M	QPSK	1	99	8 mm	back	1:1	0.903	1.327	1.198	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	57	0.06	1	0069M	QPSK	50	50	8 mm	back	1:1	0.708	1.285	0.910	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	18	0.05	0	0069M	QPSK	1	99	6 mm	front	1:1	0.936	1.327	1.242	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	18	0.01	1	0069M	QPSK	50	50	6 mm	front	1:1	0.749	1.285	0.962	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	0	0.00	0	0069M	QPSK	1	99	11 mm	bottom	1:1	0.820	1.327	1.088	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	0	0.00	1	0069M	QPSK	50	50	11 mm	bottom	1:1	0.676	1.285	0.869	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	0	-0.19	0	0069M	QPSK	1	99	0 mm	right	1:1	0.326	1.327	0.433	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	0	0.07	1	0069M	QPSK	50	50	0 mm	right	1:1	0.267	1.285	0.343	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	116	-0.12	0	0069M	QPSK	1	99	0 mm	left	1:1	0.296	1.327	0.393	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	116	-0.08	1	0069M	QPSK	50	50	0 mm	left	1:1	0.245	1.285	0.315	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.13	10	0.00	0	0069M	QPSK	1	50	0 mm	back	1:1	1.720	1.222	2.102	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	19.96	7	0.05	0	0069M	QPSK	1	99	0 mm	back	1:1	1.990	1.271	2.529	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.27	59	0.06	0	0069M	QPSK	1	0	0 mm	back	1:1	2.000	1.183	2.366	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.24	10	0.04	0	0069M	QPSK	50	0	0 mm	back	1:1	1.800	1.191	2.144	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.12	7	0.09	0	0069M	QPSK	50	50	0 mm	back	1:1	2.170	1.225	2.658	A52
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.41	59	0.08	0	0069M	QPSK	50	25	0 mm	back	1:1	2.100	1.146	2.407	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.25	59	0.07	0	0069M	QPSK	100	0	0 mm	back	1:1	2.050	1.189	2.437	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.27	58	0.05	0	0069M	QPSK	1	0	0 mm	front	1:1	1.260	1.183	1.491	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.41	58	0.05	0	0069M	QPSK	50	25	0 mm	front	1:1	1.350	1.146	1.547	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.27	59	0.06	0	0069M	QPSK	1	0	0 mm	bottom	1:1	1.230	1.183	1.455	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.41	71	0.02	0	0069M	QPSK	50	25	0 mm	bottom	1:1	1.230	1.146	1.410	

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

Table 11-54
LTE Band 25 (PCS) Phablet SAR - Open

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	0.04	0	0339M	QPSK	1	0	8 mm	back	1:1	0.926	1.062	0.983	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	0.07	1	0339M	QPSK	50	0	8 mm	back	1:1	0.748	1.045	0.782	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	0.04	0	0339M	QPSK	1	0	6 mm	front	1:1	1.060	1.062	1.126	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	0.05	1	0339M	QPSK	50	0	6 mm	front	1:1	0.857	1.045	0.896	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	-0.06	0	0339M	QPSK	1	0	11 mm	bottom	1:1	1.190	1.062	1.264	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	-0.03	1	0339M	QPSK	50	0	11 mm	bottom	1:1	0.936	1.045	0.978	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	-0.06	0	0339M	QPSK	1	0	0 mm	right	1:1	0.381	1.062	0.405	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	-0.06	1	0339M	QPSK	50	0	0 mm	right	1:1	0.301	1.045	0.315	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	-0.17	0	0339M	QPSK	1	0	0 mm	left	1:1	0.359	1.062	0.381	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	-0.15	1	0339M	QPSK	50	0	0 mm	left	1:1	0.283	1.045	0.296	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.23	2	0.08	0	0329M	QPSK	1	0	0 mm	back	1:1	1.750	1.194	2.090	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.22	2	0.10	0	0329M	QPSK	1	0	0 mm	back	1:1	1.660	1.197	1.987	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.09	2	0.06	0	0329M	QPSK	1	99	0 mm	back	1:1	1.780	1.233	2.195	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.42	2	0.08	0	0329M	QPSK	50	25	0 mm	back	1:1	1.780	1.143	2.035	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.28	2	0.09	0	0329M	QPSK	50	25	0 mm	back	1:1	1.660	1.180	1.959	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.10	2	0.07	0	0329M	QPSK	50	50	0 mm	back	1:1	1.930	1.230	2.374	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.22	2	0.11	0	0329M	QPSK	100	0	0 mm	back	1:1	1.750	1.197	2.095	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.23	2	0.06	0	0329M	QPSK	1	0	0 mm	front	1:1	1.740	1.194	2.078	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.22	2	0.07	0	0329M	QPSK	1	0	0 mm	front	1:1	1.870	1.197	2.238	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.09	2	0.00	0	0329M	QPSK	1	99	0 mm	front	1:1	1.570	1.233	1.936	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.42	2	0.10	0	0329M	QPSK	50	25	0 mm	front	1:1	1.800	1.143	2.057	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.28	2	0.04	0	0329M	QPSK	50	25	0 mm	front	1:1	1.890	1.180	2.230	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.10	2	0.03	0	0329M	QPSK	50	50	0 mm	front	1:1	1.700	1.230	2.091	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.22	2	0.03	0	0329M	QPSK	100	0	0 mm	front	1:1	1.940	1.197	2.322	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.23	2	0.11	0	0329M	QPSK	1	0	0 mm	bottom	1:1	2.080	1.194	2.484	A53
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.22	2	0.11	0	0329M	QPSK	1	0	0 mm	bottom	1:1	1.870	1.197	2.238	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.09	2	0.08	0	0329M	QPSK	1	99	0 mm	bottom	1:1	1.490	1.233	1.837	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.42	2	0.12	0	0329M	QPSK	50	25	0 mm	bottom	1:1	2.060	1.143	2.355	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.28	2	0.10	0	0329M	QPSK	50	25	0 mm	bottom	1:1	1.870	1.180	2.207	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.10	2	0.09	0	0329M	QPSK	50	50	0 mm	bottom	1:1	1.600	1.230	1.968	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.22	2	0.07	0	0329M	QPSK	100	0	0 mm	bottom	1:1	2.020	1.197	2.418	

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

Table 11-55
LTE Band 41 Phablet SAR - Open

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	-0.02	0	0085M	QPSK	1	50	8 mm	back	1:1.58	0.368	1.242	0.457	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.03	1	0085M	QPSK	50	50	8 mm	back	1:1.58	0.290	1.211	0.351	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	-0.03	0	0085M	QPSK	1	50	6 mm	front	1:1.58	0.290	1.242	0.360	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	-0.04	1	0085M	QPSK	50	50	6 mm	front	1:1.58	0.230	1.211	0.279	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	-0.01	0	0085M	QPSK	1	50	11 mm	bottom	1:1.58	0.384	1.242	0.477	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.01	1	0085M	QPSK	50	50	11 mm	bottom	1:1.58	0.310	1.211	0.375	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.03	0	0085M	QPSK	1	50	0 mm	left	1:1.58	0.901	1.242	1.119	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.02	1	0085M	QPSK	50	50	0 mm	left	1:1.58	0.747	1.211	0.905	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.5	22.37	0.01	0	0065M	QPSK	1	0	0 mm	back	1:1.58	1.230	1.297	1.595	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.5	22.35	0.00	0	0065M	QPSK	1	99	0 mm	back	1:1.58	1.200	1.303	1.564	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.5	22.47	0.01	0	0065M	QPSK	1	50	0 mm	back	1:1.58	1.320	1.268	1.674	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.56	0.00	0	0065M	QPSK	1	50	0 mm	back	1:1.58	1.520	1.242	1.888	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.57	-0.01	0	0065M	QPSK	1	50	0 mm	back	1:1.58	1.740	1.239	2.156	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.5	22.44	0.01	0	0065M	QPSK	50	25	0 mm	back	1:1.58	1.280	1.276	1.633	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.5	22.49	0.02	0	0065M	QPSK	50	25	0 mm	back	1:1.58	1.240	1.262	1.565	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.5	22.55	-0.01	0	0065M	QPSK	50	50	0 mm	back	1:1.58	1.350	1.245	1.681	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.57	0.02	0	0065M	QPSK	50	25	0 mm	back	1:1.58	1.530	1.239	1.896	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.69	0.01	0	0065M	QPSK	50	50	0 mm	back	1:1.58	1.760	1.205	2.121	A54
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.53	-0.02	0	0065M	QPSK	100	0	0 mm	back	1:1.58	1.700	1.250	2.125	
Power Class 2	2680.00	41490	High	LTE Band 41	20	23.5	22.49	-0.02	0	0065M	QPSK	1	50	0 mm	back	1:2.31	1.100	1.262	1.388	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.57	-0.06	0	0065M	QPSK	1	50	0 mm	front	1:1.58	0.607	1.239	0.752	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.69	-0.01	0	0065M	QPSK	50	50	0 mm	front	1:1.58	0.605	1.205	0.729	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.5	22.37	0.01	0	0065M	QPSK	1	0	0 mm	bottom	1:1.58	0.949	1.297	1.231	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.5	22.35	-0.04	0	0065M	QPSK	1	99	0 mm	bottom	1:1.58	0.992	1.303	1.293	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.5	22.47	0.04	0	0065M	QPSK	1	50	0 mm	bottom	1:1.58	1.100	1.268	1.395	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.56	0.02	0	0065M	QPSK	1	50	0 mm	bottom	1:1.58	1.540	1.242	1.913	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.57	0.00	0	0065M	QPSK	1	50	0 mm	bottom	1:1.58	1.430	1.239	1.772	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.5	22.44	0.04	0	0065M	QPSK	50	25	0 mm	bottom	1:1.58	0.995	1.276	1.270	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.5	22.49	0.01	0	0065M	QPSK	50	25	0 mm	bottom	1:1.58	1.030	1.262	1.300	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.5	22.55	0.05	0	0065M	QPSK	50	50	0 mm	bottom	1:1.58	1.110	1.245	1.382	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.57	0.00	0	0065M	QPSK	50	25	0 mm	bottom	1:1.58	1.390	1.239	1.722	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.69	-0.02	0	0065M	QPSK	50	50	0 mm	bottom	1:1.58	1.470	1.205	1.771	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.5	22.53	-0.02	0	0065M	QPSK	100	0	0 mm	bottom	1:1.58	1.430	1.250	1.788	

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

Table 11-56
NR Band n66 (AWS) Phablet SAR - Open

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.00	0	53	0069M	DFT-S-OFDM	QPSK	1	104	8 mm	back	1:1	0.728	1.151	0.838	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.07	0	57	0069M	DFT-S-OFDM	QPSK	50	28	8 mm	back	1:1	0.794	1.180	0.937	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.00	0	18	0069M	DFT-S-OFDM	QPSK	1	104	6 mm	front	1:1	0.750	1.151	0.863	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	-0.02	0	18	0069M	DFT-S-OFDM	QPSK	50	28	6 mm	front	1:1	0.726	1.180	0.857	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.02	0	0	0069M	DFT-S-OFDM	QPSK	1	104	11 mm	bottom	1:1	0.865	1.151	0.996	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	-0.06	0	0	0069M	DFT-S-OFDM	QPSK	50	28	11 mm	bottom	1:1	0.824	1.180	0.972	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.14	0	0	0069M	DFT-S-OFDM	QPSK	1	104	0 mm	right	1:1	0.323	1.151	0.372	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.15	0	0	0069M	DFT-S-OFDM	QPSK	50	28	0 mm	right	1:1	0.311	1.180	0.367	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	-0.15	0	116	0069M	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	0.233	1.151	0.268	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	-0.13	0	116	0069M	DFT-S-OFDM	QPSK	50	28	0 mm	left	1:1	0.223	1.180	0.263	
1720.00	344000	Low	NR Band n66 (AWS)	20	21.0	20.77	0.12	0	10	0069M	DFT-S-OFDM	QPSK	1	1	0 mm	back	1:1	1.970	1.054	2.076	
1745.00	349000	Mid	NR Band n66 (AWS)	20	21.0	20.54	0.07	0	7	0069M	DFT-S-OFDM	QPSK	1	1	0 mm	back	1:1	2.380	1.112	2.647	A55
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.81	0.10	0	59	0069M	DFT-S-OFDM	QPSK	1	104	0 mm	back	1:1	2.230	1.045	2.330	
1720.00	344000	Low	NR Band n66 (AWS)	20	21.0	20.67	0.07	0	10	0069M	DFT-S-OFDM	QPSK	50	0	0 mm	back	1:1	1.950	1.079	2.104	
1745.00	349000	Mid	NR Band n66 (AWS)	20	21.0	20.42	0.09	0	7	0069M	DFT-S-OFDM	QPSK	50	0	0 mm	back	1:1	2.230	1.143	2.549	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.73	0.08	0	59	0069M	DFT-S-OFDM	QPSK	50	28	0 mm	back	1:1	2.190	1.064	2.330	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.69	0.08	0	59	0069M	DFT-S-OFDM	QPSK	100	0	0 mm	back	1:1	2.140	1.074	2.298	
1720.00	344000	Low	NR Band n66 (AWS)	20	21.0	20.54	0.05	0	10	0069M	CP-OFDM	QPSK	1	1	0 mm	back	1:1	1.950	1.112	2.168	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.81	-0.01	0	58	0069M	DFT-S-OFDM	QPSK	1	104	0 mm	front	1:1	1.490	1.045	1.557	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.73	0.04	0	58	0069M	DFT-S-OFDM	QPSK	50	28	0 mm	front	1:1	1.470	1.064	1.564	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.81	0.08	0	59	0069M	DFT-S-OFDM	QPSK	1	104	0 mm	bottom	1:1	1.580	1.045	1.651	
1770.00	354000	High	NR Band n66 (AWS)	20	21.0	20.73	0.14	0	71	0069M	DFT-S-OFDM	QPSK	50	28	0 mm	bottom	1:1	1.220	1.064	1.298	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Extremity 4.0 W/kg (mW/g) averaged over 10 grams								

Table 11-57
WLAN SISO Phablet SAR - Open

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.99	0.14	0 mm	1	Q	0798M	6	back	98.9	3.370	0.432	1.002	1.011	0.438	
5280	56	802.11a	OFDM	20	18.0	17.99	-0.21	0 mm	1	Q	0798M	6	front	98.9	2.771	0.356	1.002	1.011	0.361	
5280	56	802.11a	OFDM	20	18.0	17.99	0.12	0 mm	1	Q	0798M	6	top	98.9	6.313	0.410	1.002	1.011	0.415	
5280	56	802.11a	OFDM	20	18.0	17.99	-0.09	0 mm	1	Q	0798M	6	right	98.9	1.281	-	1.002	1.011	-	
5600	120	802.11a	OFDM	20	18.0	17.98	0.17	0 mm	1	Q	0798M	6	back	98.9	2.894	0.506	1.005	1.011	0.514	
5600	120	802.11a	OFDM	20	18.0	17.98	-0.15	0 mm	1	Q	0798M	6	front	98.9	2.105	0.246	1.005	1.011	0.250	
5600	120	802.11a	OFDM	20	18.0	17.98	-0.20	0 mm	1	Q	0798M	6	top	98.9	4.559	0.275	1.005	1.011	0.279	
5600	120	802.11a	OFDM	20	18.0	17.98	0.05	0 mm	1	Q	0798M	6	right	98.9	0.950	-	1.005	1.011	-	
5260	52	802.11a	OFDM	20	18.0	17.98	0.16	0 mm	1	N	1391M	6	back	98.9	3.005	0.382	1.005	1.011	0.388	
5260	52	802.11a	OFDM	20	18.0	17.98	-0.21	0 mm	1	N	1391M	6	front	98.9	2.094	0.300	1.005	1.011	0.305	
5260	52	802.11a	OFDM	20	18.0	17.98	-0.06	0 mm	1	N	1391M	6	top	98.9	4.155	0.324	1.005	1.011	0.329	
5260	52	802.11a	OFDM	20	18.0	17.98	0.18	0 mm	1	N	1391M	6	right	98.9	0.858	-	1.005	1.011	-	
5720	144	802.11a	OFDM	20	18.0	17.86	0.01	0 mm	1	N	1391M	6	back	98.9	2.726	0.587	1.033	1.011	**0.613**	
5720	144	802.11a	OFDM	20	18.0	17.86	0.10	0 mm	1	N	1391M	6	front	98.9	3.252	0.319	1.033	1.011	0.333	
5720	144	802.11a	OFDM	20	18.0	17.86	0.03	0 mm	1	N	1391M	6	top	98.9	5.270	0.396	1.033	1.011	0.414	
5720	144	802.11a	OFDM	20	18.0	17.86	0.11	0 mm	1	N	1391M	6	right	98.9	0.994	-	1.033	1.011	-	
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 11-58
WLAN MIMO Phablet SAR - Open

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	-0.15	0 mm	MIMO	Q	0798M	13	back	99.7	12.604	1.150	1.062	1.003	1.225	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	-0.06	0 mm	MIMO	Q	0798M	13	front	99.7	4.762	0.719	1.062	1.003	0.766	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	-0.02	0 mm	MIMO	Q	0798M	13	top	99.7	5.994	-	1.062	1.003	-	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	0.00	0 mm	MIMO	Q	0798M	13	right	99.7	1.296	-	1.062	1.003	-	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	0.14	0 mm	MIMO	Q	0798M	13	left	99.7	10.795	1.010	1.062	1.003	1.076	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	0.00	0 mm	MIMO	Q	0798M	13	back	99.7	13.581	1.130	1.084	1.003	1.229	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	0.02	0 mm	MIMO	Q	0798M	13	front	99.7	8.098	0.991	1.084	1.003	1.077	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	-0.05	0 mm	MIMO	Q	0798M	13	top	99.7	6.482	-	1.084	1.003	-	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	0.05	0 mm	MIMO	Q	0798M	13	right	99.7	1.040	-	1.084	1.003	-	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	0.16	0 mm	MIMO	Q	0798M	13	left	99.7	17.507	1.230	1.084	1.003	1.337	A56
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	-0.12	0 mm	MIMO	N	1391M	13	back	99.7	2.887	0.522	1.026	1.003	0.537	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	0.12	0 mm	MIMO	N	1391M	13	front	99.7	3.158	0.366	1.026	1.003	0.377	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	0.05	0 mm	MIMO	N	1391M	13	top	99.7	5.210	-	1.026	1.003	-	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	-0.04	0 mm	MIMO	N	1391M	13	right	99.7	0.909	-	1.026	1.003	-	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	0.10	0 mm	MIMO	N	1391M	13	left	99.7	8.209	0.592	1.026	1.003	0.609	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	-0.17	0 mm	MIMO	N	1391M	13	back	99.7	7.522	0.739	1.054	1.003	0.781	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	-0.12	0 mm	MIMO	N	1391M	13	front	99.7	3.531	0.450	1.054	1.003	0.476	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	-0.18	0 mm	MIMO	N	1391M	13	top	99.7	3.954	-	1.054	1.003	-	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	-0.01	0 mm	MIMO	N	1391M	13	right	99.7	1.004	-	1.054	1.003	-	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	0.05	0 mm	MIMO	N	1391M	13	left	99.7	11.352	0.840	1.054	1.003	0.888	

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

Note: To achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 18.0 dBm.

11.5 Standalone Closed Body-Worn SAR Data

Table 11-59
GSM/UMTS Body-Worn SAR Data – Closed

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
824.20	128	GSM 850	GSM	33.0	32.29	N/A	-0.05	15 mm	0069M	1:8.3	back	0.182	1.178	0.214	A17
1850.20	512	GSM 1900	GSM	30.5	29.89	N/A	0.04	15 mm	0807M	1:8.3	back	0.097	1.151	0.112	
836.60	4183	UMTS 850	RMC	25.5	24.81	2	0.03	15 mm	0069M	1:1	back	0.343	1.172	0.402	A21
1712.40	1312	UMTS 1750	RMC	24.0	23.42	0	0.05	15 mm	0089M	1:1	back	0.234	1.143	0.267	
1852.40	9262	UMTS 1900	RMC	24.0	23.90	52	0.04	15 mm	1335M	1:1	back	0.179	1.023	0.183	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-60
LTE Body-Worn SAR - Closed

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.0	24.55	0	0.00	0	0069M	QPSK	1	0	15 mm	back	1:1	0.237	1.109	0.263	A27
707.50	23095	Mid	LTE Band 12	10	24.0	23.70	0	0.04	1	0069M	QPSK	25	25	15 mm	back	1:1	0.173	1.072	0.185	
782.00	23230	Mid	LTE Band 13	10	25.0	24.64	53	0.02	0	0799M	QPSK	1	25	15 mm	back	1:1	0.246	1.086	0.267	A29
782.00	23230	Mid	LTE Band 13	10	24.0	23.62	53	-0.02	1	0799M	QPSK	25	25	15 mm	back	1:1	0.197	1.091	0.215	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.26	3	0.01	0	0069M	QPSK	1	36	15 mm	back	1:1	0.300	1.186	0.356	A31
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.32	3	0.00	1	0069M	QPSK	36	37	15 mm	back	1:1	0.235	1.169	0.275	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	22.77	0	0.06	0	0069M	QPSK	1	99	15 mm	back	1:1	0.209	1.327	0.277	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	21.91	0	-0.17	1	0069M	QPSK	50	50	15 mm	back	1:1	0.161	1.285	0.207	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.74	2	-0.01	0	0339M	QPSK	1	0	15 mm	back	1:1	0.167	1.062	0.177	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.81	2	0.01	1	0339M	QPSK	50	0	15 mm	back	1:1	0.125	1.045	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 11-61
LTE Band 41 Body-Worn SAR - Closed

MEASUREMENT RESULTS																				
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.06	0.17	0	0065M	QPSK	1	50	15 mm	back	1:1.58	0.116	1.242	0.144	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	23.17	0.16	1	0065M	QPSK	50	50	15 mm	back	1:1.58	0.091	1.211	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 11-62
NR Body-Worn SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.69	0.04	0	3	0803M	DFT-S-OFDM	QPSK	1	53	15 mm	back	1:1	0.316	1.352	0.427	A39
836.50	167300	Mid	NR Band n5 (Cell)	20	25.0	23.61	0.03	0	3	0803M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.312	1.377	0.430	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.95	0.02	1.5	3	0803M	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.188	1.135	0.213	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.39	0.15	0	0	0069M	DFT-S-OFDM	QPSK	1	104	15 mm	back	1:1	0.253	1.151	0.291	
1720.00	344000	Low	NR Band n66 (AWS)	20	24.0	23.28	0.13	0	0	0069M	DFT-S-OFDM	QPSK	50	28	15 mm	back	1:1	0.261	1.180	0.308	
1745.00	349000	Mid	NR Band n66 (AWS)	20	22.5	21.95	0.07	1.5	0	0069M	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.173	1.135	0.196	
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 11-63
DTS Body-Worn SAR – Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	19.0	18.65	0.05	15 mm	2	Q	0798M	1	back	99.9	0.026	0.014	1.084	1.001	0.015	
2412	1	802.11b	DSSS	22	19.0	18.84	0.00	15 mm	2	N	1391M	1	back	99.9	0.032	0.017	1.038	1.001	0.018	
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 11-64
DTS SISO Body-Worn SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR – Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.01	15 mm	2	Q	0798M	1	back	99.9	0.008	0.004	1.096	1.001	0.004	
2412	1	802.11b	DSSS	22	15.0	14.74	0.09	15 mm	2	N	0798M	1	back	99.9	0.011	0.006	1.062	1.001	0.006	
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 WLAN SISO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-65
DTS MIMO Body-Worn SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.09	15 mm	MIMO	Q	0798M	1	back	99.9	0.125	0.081	1.127	1.001	0.091	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.03	15 mm	MIMO	N	1391M	1	back	99.9	0.143	0.095	1.033	1.001	0.098	
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: To achieve the 22.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 19.0 dBm.

Table 11-66
DTS MIMO Body-Worn SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Closed

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	-0.09	15 mm	MIMO	Q	0798M	13	back	99.7	0.022	0.011	1.167	1.003	0.013	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.07	15 mm	MIMO	N	1391M	13	back	99.7	0.013	0.006	1.239	1.003	0.007	
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 WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-67
NII SISO Body-Worn SAR - Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.99	0.14	15 mm	1	Q	0798M	6	back	98.9	0.021	0.002	1.002	1.011	0.002	
5600	120	802.11a	OFDM	20	18.0	17.98	0.12	15 mm	1	Q	0798M	6	back	98.9	0.027	0.004	1.005	1.011	0.004	
5745	149	802.11a	OFDM	20	18.0	17.92	0.19	15 mm	1	Q	0798M	6	back	98.9	0.024	0.008	1.019	1.011	0.008	
5260	52	802.11a	OFDM	20	18.0	17.98	0.18	15 mm	1	N	1391M	6	back	98.9	0.028	0.010	1.005	1.011	0.010	
5720	144	802.11a	OFDM	20	18.0	17.86	0.20	15 mm	1	N	1391M	6	back	98.9	0.034	0.012	1.033	1.011	0.013	
5825	165	802.11a	OFDM	20	18.0	17.80	-0.16	15 mm	1	N	1391M	6	back	98.9	0.057	0.020	1.047	1.011	0.021	
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 11-68
NII SISO Body-Worn SAR for Conditions with 5G NR – Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.93	-0.14	15 mm	1	Q	0798M	13.5	back	99.7	0.010	0.001	1.016	1.003	0.001	
5690	138	802.11ac	OFDM	80	15.0	14.64	0.19	15 mm	1	Q	0798M	29.3	back	99.7	0.022	0.000	1.086	1.003	0.000	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.00	15 mm	1	Q	0798M	29.3	back	99.7	0.030	0.000	1.169	1.003	0.000	
5270	54	802.11n	OFDM	40	15.0	14.65	0.12	15 mm	1	N	1391M	13.5	back	99.7	0.014	0.004	1.084	1.003	0.004	
5530	106	802.11ac	OFDM	80	15.0	14.68	0.19	15 mm	1	N	1391M	29.3	back	99.7	0.027	0.001	1.076	1.003	0.001	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.20	15 mm	1	N	1391M	29.3	back	99.7	0.024	0.000	1.180	1.003	0.000	
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: 5G NR was not transmitting during 5 GHz WLAN evaluations.

Table 11-69
NII MIMO Body-Worn SAR - Closed

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5300	60	802.11n	OFDM	20	18.0	17.74	18.0	17.95	0.18	15 mm	MIMO	Q	0798M	13	back	99.7	0.066	0.026	1.062	1.003	0.028	
5600	120	802.11n	OFDM	20	18.0	17.98	18.0	17.65	-0.21	15 mm	MIMO	Q	0798M	13	back	99.7	0.082	0.033	1.084	1.003	0.036	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.21	15 mm	MIMO	Q	0798M	13	back	99.7	0.065	0.022	1.014	1.003	0.022	
5260	52	802.11n	OFDM	20	18.0	17.91	18.0	17.89	0.12	15 mm	MIMO	N	1391M	13	back	99.7	0.038	0.016	1.026	1.003	0.016	
5600	120	802.11n	OFDM	20	18.0	17.77	18.0	17.99	0.13	15 mm	MIMO	N	1391M	13	back	99.7	0.052	0.021	1.054	1.003	0.022	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.20	15 mm	MIMO	N	1391M	13	back	99.7	0.062	0.017	1.023	1.003	0.017	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: To achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 18.0 dBm.

Table 11-70
NII MIMO Body-Worn SAR for Conditions with 2.4 GHz WLAN SAR and/or with 5G NR - Closed

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.71	15.0	14.90	0.15	15 mm	MIMO	Q	0798M	27	back	99.7	0.027	0.010	1.069	1.003	0.011	
5530	106	802.11ac	OFDM	80	15.0	14.54	15.0	14.87	0.17	15 mm	MIMO	Q	0798M	58.5	back	99.7	0.019	0.008	1.112	1.003	0.009	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.18	15 mm	MIMO	Q	0798M	58.5	back	99.7	0.017	0.008	1.318	1.003	0.011	
5310	62	802.11n	OFDM	40	15.0	14.98	15.0	14.65	0.19	15 mm	MIMO	N	1391M	27	back	99.7	0.030	0.010	1.084	1.003	0.011	
5690	138	802.11ac	OFDM	80	15.0	14.51	15.0	14.18	0.19	15 mm	MIMO	N	1391M	58.5	back	99.7	0.019	0.009	1.208	1.003	0.011	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.19	15 mm	MIMO	N	1391M	58.5	back	99.7	0.015	0.003	1.138	1.003	0.003	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: 5 GHZ WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and 2.4 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-71
DSS Body-Worn SAR – Closed

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	16.0	15.43	0.19	15 mm	1	Q	0798M	1	back	76.8	0.002	1.140	1.302	0.003	
2441	39	Bluetooth	FHSS	17.0	16.61	-0.11	15 mm	2	Q	0798M	1	back	76.8	0.004	1.094	1.302	0.006	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.02	15 mm	1	N	1391M	1	back	76.8	0.013	1.109	1.302	0.019	
2480	78	Bluetooth	FHSS	17.0	16.60	0.09	15 mm	2	N	1391M	1	back	76.8	0.005	1.096	1.302	0.007	
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 11-72
DSS Body-Worn SAR for Conditions with 5G NR - Closed

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	14.0	13.10	0.00	15 mm	1	Q	0798M	1	back	76.8	0.000	1.231	1.302	0.000	
2441	39	Bluetooth	FHSS	14.0	13.93	0.12	15 mm	2	Q	0798M	1	back	76.8	0.001	1.017	1.302	0.001	
2441	39	Bluetooth	FHSS	14.0	13.11	-0.13	15 mm	1	N	1391M	1	back	76.8	0.002	1.229	1.302	0.003	
2480	78	Bluetooth	FHSS	14.0	13.67	0.18	15 mm	2	N	1391M	1	back	76.8	0.001	1.080	1.302	0.001	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram											

Note: BT was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5G NR active. 5G NR was not transmitting during BT evaluations.

11.6 Standalone Closed Hotspot SAR Data

Table 11-73
GPRS/UMTS Hotspot SAR Data - Closed

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
824.20	128	GSM 850	GPRS	28.5	27.35	N/A	-0.13	5 mm	0069M	3	1:2.76	back	0.531	1.303	0.692	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	0.01	5 mm	0069M	3	1:2.76	back	0.667	1.245	0.830	A18
848.80	251	GSM 850	GPRS	28.5	27.38	N/A	-0.12	5 mm	0069M	3	1:2.76	back	0.554	1.294	0.717	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	0.06	5 mm	0069M	3	1:2.76	front	0.180	1.245	0.224	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	0.02	5 mm	0069M	3	1:2.76	bottom	0.158	1.245	0.197	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	-0.20	5 mm	0069M	3	1:2.76	right	0.115	1.245	0.143	
836.60	190	GSM 850	GPRS	28.5	27.55	N/A	0.21	5 mm	0069M	3	1:2.76	left	0.160	1.245	0.199	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	-0.14	5 mm	0339M	3	1:2.76	back	0.321	1.297	0.416	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	0.06	5 mm	0339M	3	1:2.76	front	0.144	1.297	0.187	
1850.20	512	GSM 1900	GPRS	23.5	22.30	N/A	-0.15	5 mm	0339M	3	1:2.76	bottom	0.574	1.318	0.757	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	0.15	5 mm	0339M	3	1:2.76	bottom	0.551	1.297	0.715	
1909.80	810	GSM 1900	GPRS	23.5	22.21	N/A	0.16	5 mm	0339M	3	1:2.76	bottom	0.464	1.346	0.625	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	-0.04	5 mm	0339M	3	1:2.76	right	0.042	1.297	0.054	
1880.00	661	GSM 1900	GPRS	23.5	22.37	N/A	-0.14	5 mm	0339M	3	1:2.76	left	0.084	1.297	0.109	
826.40	4132	UMTS 850	RMC	24.0	22.69	2	-0.03	5 mm	0069M	N/A	1:1	back	0.766	1.352	1.036	
836.60	4183	UMTS 850	RMC	24.0	22.71	2	-0.02	5 mm	0069M	N/A	1:1	back	0.788	1.346	**1.061**	A22
846.60	4233	UMTS 850	RMC	24.0	22.81	2	0.01	5 mm	0069M	N/A	1:1	back	0.748	1.315	0.984	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	0.03	5 mm	0069M	N/A	1:1	front	0.203	1.315	0.267	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.11	5 mm	0069M	N/A	1:1	bottom	0.192	1.315	0.252	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	0.07	5 mm	0069M	N/A	1:1	right	0.126	1.315	0.166	
846.60	4233	UMTS 850	RMC	24.0	22.81	2	-0.03	5 mm	0069M	N/A	1:1	left	0.161	1.315	0.212	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.07	5 mm	0329M	N/A	1:1	back	0.471	1.291	0.608	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.17	5 mm	0329M	N/A	1:1	front	0.151	1.291	0.195	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	-0.06	5 mm	0329M	N/A	1:1	bottom	0.650	1.291	0.839	A24
1732.40	1412	UMTS 1750	RMC	17.5	16.22	0	-0.01	5 mm	0329M	N/A	1:1	bottom	0.642	1.343	0.862	
1752.60	1513	UMTS 1750	RMC	17.5	16.05	0	-0.05	5 mm	0329M	N/A	1:1	bottom	0.560	1.396	0.782	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.17	5 mm	0329M	N/A	1:1	right	0.016	1.291	0.021	
1712.40	1312	UMTS 1750	RMC	17.5	16.39	0	0.03	5 mm	0329M	N/A	1:1	left	0.126	1.291	0.163	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	-0.18	5 mm	0339M	N/A	1:1	back	0.457	1.175	0.537	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	0.03	5 mm	0339M	N/A	1:1	front	0.098	1.175	0.115	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	-0.12	5 mm	0339M	N/A	1:1	bottom	0.582	1.175	0.684	
1880.00	9400	UMTS 1900	RMC	19.0	18.15	52	-0.18	5 mm	0339M	N/A	1:1	bottom	0.539	1.216	0.655	
1907.60	9538	UMTS 1900	RMC	19.0	18.05	52	-0.04	5 mm	0339M	N/A	1:1	bottom	0.571	1.245	0.711	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	-0.06	5 mm	0339M	N/A	1:1	right	0.035	1.175	0.041	
1852.40	9262	UMTS 1900	RMC	19.0	18.30	52	0.17	5 mm	0339M	N/A	1:1	left	0.083	1.175	0.098	
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 11-74
LTE Band 12 Hotspot SAR - Closed

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	-0.04	0	0799M	QPSK	1	25	5 mm	back	1:1	0.534	1.315	0.702	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	-0.05	0	0799M	QPSK	25	12	5 mm	back	1:1	0.542	1.297	0.703	A28
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.12	0	0799M	QPSK	1	25	5 mm	front	1:1	0.106	1.315	0.139	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.12	0	0799M	QPSK	25	12	5 mm	front	1:1	0.104	1.297	0.135	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	-0.15	0	0799M	QPSK	1	25	5 mm	bottom	1:1	0.080	1.315	0.105	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	-0.08	0	0799M	QPSK	25	12	5 mm	bottom	1:1	0.079	1.297	0.102	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.12	0	0799M	QPSK	1	25	5 mm	right	1:1	0.081	1.315	0.107	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.15	0	0799M	QPSK	25	12	5 mm	right	1:1	0.081	1.297	0.105	
707.50	23095	Mid	LTE Band 12	10	23.5	22.31	0	0.07	0	0799M	QPSK	1	25	5 mm	left	1:1	0.151	1.315	0.199	
707.50	23095	Mid	LTE Band 12	10	23.5	22.37	0	0.13	0	0799M	QPSK	25	12	5 mm	left	1:1	0.151	1.297	0.196	

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 11-75
LTE Band 13 Hotspot SAR – Closed

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.17	0	0799M	QPSK	1	49	5 mm	back	1:1	0.553	1.230	0.680	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	-0.14	0	0799M	QPSK	25	12	5 mm	back	1:1	0.580	1.219	0.707	A30
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	0.08	0	0799M	QPSK	1	49	5 mm	front	1:1	0.137	1.230	0.169	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.06	0	0799M	QPSK	25	12	5 mm	front	1:1	0.162	1.219	0.197	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.17	0	0799M	QPSK	1	49	5 mm	bottom	1:1	0.177	1.230	0.218	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	-0.06	0	0799M	QPSK	25	12	5 mm	bottom	1:1	0.172	1.219	0.210	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	-0.03	0	0799M	QPSK	1	49	5 mm	right	1:1	0.079	1.230	0.097	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.00	0	0799M	QPSK	25	12	5 mm	right	1:1	0.072	1.219	0.088	
782.00	23230	Mid	LTE Band 13	10	23.5	22.60	53	0.02	0	0799M	QPSK	1	49	5 mm	left	1:1	0.092	1.230	0.113	
782.00	23230	Mid	LTE Band 13	10	23.5	22.64	53	0.12	0	0799M	QPSK	25	12	5 mm	left	1:1	0.103	1.219	0.126	

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 11-76
LTE Band 26 (Cell) Hotspot SAR - Closed

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	109	-0.19	0	0069M	QPSK	1	74	5 mm	back	1:1	0.594	1.321	0.785	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	109	-0.15	0	0069M	QPSK	36	18	5 mm	back	1:1	0.603	1.315	0.793	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.25	109	-0.03	0	0069M	QPSK	75	0	5 mm	back	1:1	0.605	1.334	0.807	A32
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	27	0.08	0	0069M	QPSK	1	74	5 mm	front	1:1	0.097	1.321	0.128	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	27	0.05	0	0069M	QPSK	36	18	5 mm	front	1:1	0.113	1.315	0.149	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	27	-0.12	0	0069M	QPSK	1	74	5 mm	bottom	1:1	0.119	1.321	0.157	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	27	-0.14	0	0069M	QPSK	36	18	5 mm	bottom	1:1	0.121	1.315	0.159	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	3	0.02	0	0069M	QPSK	1	74	5 mm	right	1:1	0.074	1.321	0.098	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	3	0.04	0	0069M	QPSK	36	18	5 mm	right	1:1	0.073	1.315	0.096	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.29	27	0.13	0	0069M	QPSK	1	74	5 mm	left	1:1	0.089	1.321	0.118	
831.50	26865	Mid	LTE Band 26 (Cell)	15	23.5	22.31	27	0.17	0	0069M	QPSK	36	18	5 mm	left	1:1	0.086	1.315	0.113	
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 11-77
LTE Band 66 (AWS) Hotspot SAR - Closed

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	13	-0.03	0	0339M	QPSK	1	50	5 mm	back	1:1	0.380	1.377	0.523	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	13	0.01	0	0339M	QPSK	50	25	5 mm	back	1:1	0.390	1.312	0.512	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	13	0.06	0	0339M	QPSK	1	50	5 mm	front	1:1	0.127	1.377	0.175	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	13	-0.01	0	0339M	QPSK	50	25	5 mm	front	1:1	0.131	1.312	0.172	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	2	-0.04	0	0339M	QPSK	1	50	5 mm	bottom	1:1	0.580	1.377	0.799	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	17.0	15.28	2	-0.07	0	0339M	QPSK	1	50	5 mm	bottom	1:1	0.497	1.486	0.739	
1770.00	132572	High	LTE Band 66 (AWS)	20	17.0	15.59	2	-0.01	0	0339M	QPSK	1	99	5 mm	bottom	1:1	0.476	1.384	0.659	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	2	-0.08	0	0339M	QPSK	50	25	5 mm	bottom	1:1	0.604	1.312	0.792	A34
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	13	0.13	0	0339M	QPSK	1	50	5 mm	right	1:1	0.015	1.377	0.021	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	13	0.21	0	0339M	QPSK	50	25	5 mm	right	1:1	0.014	1.312	0.018	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.61	0	-0.05	0	0339M	QPSK	1	50	5 mm	left	1:1	0.105	1.377	0.145	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.0	15.82	0	-0.01	0	0339M	QPSK	50	25	5 mm	left	1:1	0.108	1.312	0.142	
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 11-78
LTE Band 25 (PCS) Hotspot SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Tune State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	-0.07	0	0339M	QPSK	1	0	5 mm	back	1:1	0.407	1.054	0.429	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	-0.10	0	0339M	QPSK	50	25	5 mm	back	1:1	0.394	1.033	0.407	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.09	0	0339M	QPSK	1	0	5 mm	front	1:1	0.261	1.054	0.275	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.07	0	0339M	QPSK	50	25	5 mm	front	1:1	0.251	1.033	0.259	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	-0.10	0	0339M	QPSK	1	0	5 mm	bottom	1:1	0.850	1.054	0.896	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	18.0	17.67	2	-0.05	0	0339M	QPSK	1	0	5 mm	bottom	1:1	0.780	1.079	0.842	
1905.00	26590	High	LTE Band 25 (PCS)	20	18.0	17.68	2	0.10	0	0339M	QPSK	1	0	5 mm	bottom	1:1	0.882	1.076	0.949	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	-0.06	0	0339M	QPSK	50	25	5 mm	bottom	1:1	0.835	1.033	0.863	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	18.0	17.73	2	0.02	0	0339M	QPSK	50	0	5 mm	bottom	1:1	0.807	1.064	0.859	
1905.00	26590	High	LTE Band 25 (PCS)	20	18.0	17.69	2	0.12	0	0339M	QPSK	50	50	5 mm	bottom	1:1	0.894	1.074	0.960	A36
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.66	2	-0.03	0	0339M	QPSK	100	0	5 mm	bottom	1:1	0.809	1.081	0.875	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.16	0	0339M	QPSK	1	0	5 mm	right	1:1	0.037	1.054	0.039	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.04	0	0339M	QPSK	50	25	5 mm	right	1:1	0.043	1.033	0.044	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.77	2	0.02	0	0339M	QPSK	1	0	5 mm	left	1:1	0.163	1.054	0.172	
1860.00	26140	Low	LTE Band 25 (PCS)	20	18.0	17.86	2	0.02	0	0339M	QPSK	50	25	5 mm	left	1:1	0.170	1.033	0.176	
1905.00	26590	High	LTE Band 25 (PCS)	20	18.0	17.69	N/A	-0.18	0	0339M	QPSK	50	50	5 mm	bottom	1:1	0.864	1.074	0.928	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entries represent variability measurements.

Table 11-79
LTE Band 41 Hotspot SAR - Closed

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	0.00	0	0339M	QPSK	1	0	5 mm	back	1:1.58	0.344	1.202	0.413	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	-0.02	0	0339M	QPSK	50	25	5 mm	back	1:1.58	0.349	1.205	0.421	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	0.01	0	0339M	QPSK	1	0	5 mm	front	1:1.58	0.040	1.202	0.048	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	0.00	0	0339M	QPSK	50	25	5 mm	front	1:1.58	0.040	1.205	0.048	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	-0.03	0	0339M	QPSK	1	0	5 mm	bottom	1:1.58	0.637	1.202	0.766	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	19.5	18.47	-0.04	0	0339M	QPSK	1	0	5 mm	bottom	1:1.58	0.620	1.268	0.786	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	19.5	18.14	0.03	0	0339M	QPSK	1	50	5 mm	bottom	1:1.58	0.227	1.368	0.311	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	19.5	18.29	0.03	0	0339M	QPSK	1	50	5 mm	bottom	1:1.58	0.718	1.321	0.948	A38
Power Class 3	2680.00	41490	High	LTE Band 41	20	19.5	18.38	0.00	0	0339M	QPSK	1	50	5 mm	bottom	1:1.58	0.503	1.294	0.651	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	-0.01	0	0339M	QPSK	50	25	5 mm	bottom	1:1.58	0.634	1.205	0.764	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	19.5	18.46	0.00	0	0339M	QPSK	50	25	5 mm	bottom	1:1.58	0.606	1.271	0.770	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	19.5	18.36	0.01	0	0339M	QPSK	50	25	5 mm	bottom	1:1.58	0.224	1.300	0.291	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	19.5	18.39	0.01	0	0339M	QPSK	50	25	5 mm	bottom	1:1.58	0.703	1.291	0.908	
Power Class 3	2680.00	41490	High	LTE Band 41	20	19.5	18.48	0.01	0	0339M	QPSK	50	50	5 mm	bottom	1:1.58	0.510	1.265	0.645	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.64	0.01	0	0339M	QPSK	100	0	5 mm	bottom	1:1.58	0.622	1.219	0.758	
Power Class 2	2636.50	41055	Mid-High	LTE Band 41	20	19.5	18.17	-0.01	0	0339M	QPSK	1	50	5 mm	bottom	1:2.31	0.465	1.358	0.631	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.70	-0.04	0	0339M	QPSK	1	0	5 mm	left	1:1.58	0.116	1.202	0.139	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	19.5	18.69	-0.01	0	0339M	QPSK	50	25	5 mm	left	1:1.58	0.117	1.205	0.141	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Body 1.6 W/kg (mW/g) averaged over 1 gram						

REV 21.4 M
09/11/2019

Table 11-80
NR Band n5 Hotspot SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Antenna Config	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																		(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	B	-0.13	0	109	0803M	DFT-S-OFDM	QPSK	1	53	5 mm	back	1:1	0.636	1.138	0.724	A40
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	B	-0.07	0	109	0803M	DFT-S-OFDM	QPSK	50	28	5 mm	back	1:1	0.630	1.143	0.720	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.56	B	-0.06	0	109	0803M	CP-OFDM	QPSK	1	1	5 mm	back	1:1	0.577	1.242	0.717	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	B	0.15	0	27	0803M	DFT-S-OFDM	QPSK	1	53	5 mm	front	1:1	0.145	1.138	0.165	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	B	-0.11	0	27	0803M	DFT-S-OFDM	QPSK	50	28	5 mm	front	1:1	0.147	1.143	0.168	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	B	-0.12	0	27	0803M	DFT-S-OFDM	QPSK	1	53	5 mm	bottom	1:1	0.156	1.138	0.178	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	B	-0.07	0	27	0803M	DFT-S-OFDM	QPSK	50	28	5 mm	bottom	1:1	0.154	1.143	0.176	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	B	0.16	0	3	0803M	DFT-S-OFDM	QPSK	1	53	5 mm	right	1:1	0.101	1.138	0.115	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	B	-0.02	0	3	0803M	DFT-S-OFDM	QPSK	50	28	5 mm	right	1:1	0.108	1.143	0.123	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.94	B	0.14	0	27	0803M	DFT-S-OFDM	QPSK	1	53	5 mm	left	1:1	0.111	1.138	0.126	
836.50	167300	Mid	NR Band n5 (Cell)	20	23.5	22.92	B	-0.12	0	27	0803M	DFT-S-OFDM	QPSK	50	28	5 mm	left	1:1	0.112	1.143	0.128	
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 11-81
NR Band n66 Hotspot SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna State	Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																		(W/kg)		(W/kg)	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	-0.08	0	13	0329M	DFT-S-OFDM	QPSK	1	104	5 mm	back	1:1	0.264	1.122	0.296	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.11	0	13	0329M	DFT-S-OFDM	QPSK	50	28	5 mm	back	1:1	0.259	1.127	0.292	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	0.10	0	13	0329M	DFT-S-OFDM	QPSK	1	104	5 mm	front	1:1	0.078	1.122	0.088	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.01	0	13	0329M	DFT-S-OFDM	QPSK	50	28	5 mm	front	1:1	0.095	1.127	0.107	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	-0.05	0	2	0329M	DFT-S-OFDM	QPSK	1	104	5 mm	bottom	1:1	0.437	1.122	0.490	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	-0.01	0	2	0329M	DFT-S-OFDM	QPSK	50	28	5 mm	bottom	1:1	0.440	1.127	0.496	
1720.00	344000	Low	NR Band n66 (AWS)	20	16.5	15.86	-0.14	0	2	0329M	CP-OFDM	QPSK	1	1	5 mm	bottom	1:1	0.608	1.159	0.705	A42
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	0.20	0	13	0329M	DFT-S-OFDM	QPSK	1	104	5 mm	right	1:1	0.004	1.122	0.004	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	0.19	0	13	0329M	DFT-S-OFDM	QPSK	50	28	5 mm	right	1:1	0.008	1.127	0.009	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	16.00	0.07	0	0	0329M	DFT-S-OFDM	QPSK	1	104	5 mm	left	1:1	0.077	1.122	0.086	
1770.00	354000	High	NR Band n66 (AWS)	20	16.5	15.98	0.00	0	0	0329M	DFT-S-OFDM	QPSK	50	28	5 mm	left	1:1	0.086	1.127	0.097	
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 11-82
DTS Hotspot SAR – Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	19.0	18.65	-0.02	5 mm	2	Q	0798M	1	back	99.9	0.107	0.060	1.084	1.001	0.065	
2412	1	802.11b	DSSS	22	19.0	18.65	0.13	5 mm	2	Q	0798M	1	front	99.9	0.470	0.268	1.084	1.001	0.291	
2412	1	802.11b	DSSS	22	19.0	18.65	0.04	5 mm	2	Q	0798M	1	bottom	99.9	0.329	0.171	1.084	1.001	0.186	
2412	1	802.11b	DSSS	22	19.0	18.65	0.03	5 mm	2	Q	0798M	1	left	99.9	0.598	0.316	1.084	1.001	0.343	
2412	1	802.11b	DSSS	22	19.0	18.84	-0.02	5 mm	2	N	1391M	1	back	99.9	0.119	0.073	1.038	1.001	0.076	
2412	1	802.11b	DSSS	22	19.0	18.84	0.08	5 mm	2	N	1391M	1	front	99.9	0.739	0.378	1.038	1.001	**0.393**	
2412	1	802.11b	DSSS	22	19.0	18.84	-0.01	5 mm	2	N	1391M	1	bottom	99.9	0.268	0.135	1.038	1.001	0.140	
2412	1	802.11b	DSSS	22	19.0	18.84	-0.01	5 mm	2	N	1391M	1	left	99.9	0.647	0.321	1.038	1.001	0.334	
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 11-83
DTS SISO Hotspot SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	15.0	14.60	0.20	5 mm	2	Q	0798M	1	back	99.9	0.028	0.018	1.096	1.001	0.020	
2462	11	802.11b	DSSS	22	15.0	14.60	0.13	5 mm	2	Q	0798M	1	front	99.9	0.139	0.091	1.096	1.001	0.100	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.03	5 mm	2	Q	0798M	1	bottom	99.9	0.143	0.074	1.096	1.001	0.081	
2462	11	802.11b	DSSS	22	15.0	14.60	-0.07	5 mm	2	Q	0798M	1	left	99.9	0.342	0.188	1.096	1.001	0.206	
2412	1	802.11b	DSSS	22	15.0	14.74	0.03	5 mm	2	N	1391M	1	back	99.9	0.030	0.019	1.062	1.001	0.020	
2412	1	802.11b	DSSS	22	15.0	14.74	-0.09	5 mm	2	N	1391M	1	front	99.9	0.188	0.097	1.062	1.001	0.103	
2412	1	802.11b	DSSS	22	15.0	14.74	0.09	5 mm	2	N	1391M	1	bottom	99.9	0.074	0.039	1.062	1.001	0.041	
2412	1	802.11b	DSSS	22	15.0	14.74	-0.08	5 mm	2	N	1391M	1	left	99.9	0.206	0.108	1.062	1.001	0.115	
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 WLAN was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and/or 5G NR active. 5GHz WLAN and/or 5G NR were not transmitting during the above evaluations.

Table 11-84
DTS MIMO Hotspot SAR - Closed

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	-0.06	5 mm	MIMO	Q	0798M	1	back	99.9	0.457	0.292	1.127	1.001	0.329	
2412	1	802.11b	DSSS	22	19.0	18.61	19.0	18.58	0.06	5 mm	MIMO	Q	0798M	1	front	99.9	1.631	1.030	1.102	1.001	1.136	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.05	5 mm	MIMO	Q	0798M	1	front	99.9	1.551	0.873	1.127	1.001	0.985	
2462	11	802.11b	DSSS	22	19.0	18.39	19.0	18.80	-0.03	5 mm	MIMO	Q	0798M	1	front	99.9	2.159	1.110	1.151	1.001	1.279	A44
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.06	5 mm	MIMO	Q	0798M	1	bottom	99.9	0.968	0.560	1.127	1.001	0.632	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.04	5 mm	MIMO	Q	0798M	1	right	99.9	0.480	-	1.127	1.001	-	
2412	1	802.11b	DSSS	22	19.0	18.61	19.0	18.58	-0.06	5 mm	MIMO	Q	0798M	1	left	99.9	1.730	0.889	1.102	1.001	0.981	
2437	6	802.11b	DSSS	22	19.0	18.48	19.0	18.75	0.08	5 mm	MIMO	Q	0798M	1	left	99.9	1.633	0.904	1.127	1.001	1.020	
2462	11	802.11b	DSSS	22	19.0	18.39	19.0	18.80	-0.03	5 mm	MIMO	Q	0798M	1	left	99.9	1.528	1.020	1.151	1.001	1.175	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.01	5 mm	MIMO	N	1391M	1	back	99.9	0.493	0.323	1.033	1.001	0.334	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.03	5 mm	MIMO	N	1391M	1	front	99.9	1.429	0.901	1.033	1.001	0.932	
2462	11	802.11b	DSSS	22	19.0	18.56	19.0	18.82	-0.06	5 mm	MIMO	N	1391M	1	front	99.9	1.634	0.811	1.107	1.001	0.899	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.16	5 mm	MIMO	N	1391M	1	bottom	99.9	0.947	0.580	1.033	1.001	0.600	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	0.04	5 mm	MIMO	N	1391M	1	right	99.9	0.516	-	1.033	1.001	-	
2412	1	802.11b	DSSS	22	19.0	18.60	19.0	18.55	-0.09	5 mm	MIMO	N	1391M	1	left	99.9	1.405	0.774	1.109	1.001	0.859	
2437	6	802.11b	DSSS	22	19.0	18.89	19.0	18.86	-0.04	5 mm	MIMO	N	1391M	1	left	99.9	1.601	0.906	1.033	1.001	0.937	
2462	11	802.11b	DSSS	22	19.0	18.56	19.0	18.82	-0.17	5 mm	MIMO	N	1391M	1	left	99.9	1.917	0.931	1.107	1.001	1.032	
2462	11	802.11b	DSSS	22	19.0	18.39	19.0	18.80	0.00	5 mm	MIMO	Q	0798M	1	front	99.9	2.058	1.090	1.151	1.001	1.256	
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: To achieve the 22.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 19.0 dBm.
Blue entries represent variability measurements.

Table 11-85
DTS MIMO Hotspot SAR for Conditions with 5 GHz WLAN SAR and/or with 5G NR - Closed

MEASUREMENT RESULTS																							
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.08	5 mm	MIMO	Q	0798M	13	back	99.7	0.078	0.050	1.167	1.003	0.059	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.04	5 mm	MIMO	Q	0798M	13	front	99.7	0.246	0.137	1.167	1.003	0.160	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	-0.03	5 mm	MIMO	Q	0798M	13	bottom	99.7	0.121	0.073	1.167	1.003	0.085	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	0.00	5 mm	MIMO	Q	0798M	13	right	99.7	0.080	-	1.167	1.003	-	
2437	6	802.11n	OFDM	20	15.0	14.33	15.0	14.82	-0.01	5 mm	MIMO	Q	0798M	13	left	99.7	0.243	0.140	1.167	1.003	0.164	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	-0.09	5 mm	MIMO	N	1391M	13	back	99.9	0.047	0.029	1.239	1.001	0.036	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	0.10	5 mm	MIMO	N	1391M	13	front	99.9	0.123	0.085	1.239	1.001	0.105	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	-0.06	5 mm	MIMO	N	1391M	13	bottom	99.9	0.106	0.059	1.239	1.001	0.073	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	-0.06	5 mm	MIMO	N	1391M	13	right	99.9	0.037	-	1.239	1.001	-	
2412	1	802.11n	OFDM	20	15.0	14.86	15.0	14.07	-0.17	5 mm	MIMO	N	1391M	13	left	99.9	0.172	0.087	1.239	1.001	0.108	
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 WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 5 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-86
NII SISO Hotspot SAR - Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5745	149	802.11a	OFDM	20	18.0	17.92	0.17	5 mm	1	Q	0798M	6	back	98.9	0.066	0.019	1.019	1.011	0.020	
5745	149	802.11a	OFDM	20	18.0	17.92	0.20	5 mm	1	Q	0798M	6	front	98.9	0.417	0.160	1.019	1.011	0.165	
5745	149	802.11a	OFDM	20	18.0	17.92	0.14	5 mm	1	Q	0798M	6	bottom	98.9	0.747	0.236	1.019	1.011	0.243	
5745	149	802.11a	OFDM	20	18.0	17.92	0.00	5 mm	1	Q	0798M	6	right	98.9	0.099	-	1.019	1.011	-	
5825	165	802.11a	OFDM	20	18.0	17.80	-0.13	5 mm	1	N	1391M	6	back	98.9	0.145	0.062	1.047	1.011	0.066	
5825	165	802.11a	OFDM	20	18.0	17.80	0.16	5 mm	1	N	1391M	6	front	98.9	0.859	0.363	1.047	1.011	0.384	
5825	165	802.11a	OFDM	20	18.0	17.80	0.01	5 mm	1	N	1391M	6	bottom	98.9	1.070	0.379	1.047	1.011	**0.401**	
5825	165	802.11a	OFDM	20	18.0	17.80	0.18	5 mm	1	N	1391M	6	right	98.9	0.206	-	1.047	1.011	-	
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 11-87
NII SISO Hotspot SAR for Conditions with 2.4 GHz WLAN SAR and/or with 5G NR – Closed

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5775	155	802.11ac	OFDM	80	15.0	14.32	-0.15	5 mm	1	Q	0798M	29.3	back	99.7	0.030	0.009	1.169	1.003	0.011	
5775	155	802.11ac	OFDM	80	15.0	14.32	0.14	5 mm	1	Q	0798M	29.3	front	99.7	0.218	0.078	1.169	1.003	0.091	
5775	155	802.11ac	OFDM	80	15.0	14.32	-0.21	5 mm	1	Q	0798M	29.3	bottom	99.7	0.273	0.090	1.169	1.003	0.106	
5775	155	802.11ac	OFDM	80	15.0	14.32	-0.13	5 mm	1	Q	0798M	29.3	right	99.7	0.033	-	1.169	1.003	-	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.16	5 mm	1	N	1391M	29.3	back	99.7	0.101	0.013	1.180	1.003	0.015	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.18	5 mm	1	N	1391M	29.3	front	99.7	0.148	0.058	1.180	1.003	0.069	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.14	5 mm	1	N	1391M	29.3	bottom	99.7	0.196	0.058	1.180	1.003	0.069	
5775	155	802.11ac	OFDM	80	15.0	14.28	0.14	5 mm	1	N	1391M	29.3	right	99.7	0.028	-	1.180	1.003	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram												

Note: 5 GHZ WLAN SISO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-88
NII MIMO Hotspot SAR - Closed

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.20	5 mm	MIMO	Q	0798M	13	back	99.7	0.366	0.138	1.014	1.003	0.140	
5745	149	802.11n	OFDM	20	18.0	17.58	18.0	17.78	0.19	5 mm	MIMO	Q	0798M	13	front	99.7	1.792	0.651	1.102	1.003	0.720	
5785	157	802.11n	OFDM	20	18.0	17.97	18.0	17.63	0.13	5 mm	MIMO	Q	0798M	13	front	99.7	2.446	0.859	1.089	1.003	0.938	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.19	5 mm	MIMO	Q	0798M	13	front	99.7	2.233	0.869	1.014	1.003	0.884	A46
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.05	5 mm	MIMO	Q	0798M	13	bottom	99.7	0.936	0.351	1.014	1.003	0.357	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	0.17	5 mm	MIMO	Q	0798M	13	right	99.7	0.357	0.176	1.014	1.003	0.179	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	-0.04	5 mm	MIMO	Q	0798M	13	left	99.7	2.041	0.766	1.014	1.003	0.779	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.17	5 mm	MIMO	N	1391M	13	back	99.7	0.172	0.060	1.023	1.003	0.062	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.16	5 mm	MIMO	N	1391M	13	front	99.7	1.130	0.495	1.023	1.003	0.508	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	-0.04	5 mm	MIMO	N	1391M	13	bottom	99.7	0.819	0.342	1.023	1.003	0.351	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	0.20	5 mm	MIMO	N	1391M	13	right	99.7	0.191	0.072	1.023	1.003	0.074	
5785	157	802.11n	OFDM	20	18.0	17.90	18.0	17.99	-0.09	5 mm	MIMO	N	1391M	13	left	99.7	0.881	0.404	1.023	1.003	0.415	
5825	165	802.11n	OFDM	20	18.0	17.94	18.0	17.94	-0.07	5 mm	MIMO	Q	0798M	13	front	99.7	1.888	0.797	1.014	1.003	0.811	
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: To achieve the 21.0 dBm maximum allowed MIMO power shown in the documentation each antenna transmits at a maximum allowed power of 18.0 dBm.
Blue entries represent variability measurements.

Table 11-89
NII MIMO Hotspot SAR for Conditions with 2.4 GHz WLAN SAR and/or with 5G NR - Closed

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.14	5 mm	MIMO	Q	0798M	58.5	back	99.7	0.073	0.023	1.318	1.003	0.030	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.18	5 mm	MIMO	Q	0798M	58.5	front	99.7	0.438	0.199	1.318	1.003	0.263	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.16	5 mm	MIMO	Q	0798M	58.5	bottom	99.7	0.189	0.055	1.318	1.003	0.073	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.03	5 mm	MIMO	Q	0798M	58.5	right	99.7	0.057	0.020	1.318	1.003	0.026	
5775	155	802.11ac	OFDM	80	15.0	13.80	15.0	14.95	0.02	5 mm	MIMO	Q	0798M	58.5	left	99.7	0.511	0.203	1.318	1.003	0.268	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.15	5 mm	MIMO	N	1391M	58.5	back	99.7	0.028	0.010	1.138	1.003	0.011	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	-0.11	5 mm	MIMO	N	1391M	58.5	front	99.7	0.251	0.086	1.138	1.003	0.098	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.14	5 mm	MIMO	N	1391M	58.5	bottom	99.7	0.148	0.054	1.138	1.003	0.062	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.12	5 mm	MIMO	N	1391M	58.5	right	99.7	0.033	0.011	1.138	1.003	0.013	
5775	155	802.11ac	OFDM	80	15.0	14.44	15.0	14.52	0.18	5 mm	MIMO	N	1391M	58.5	left	99.7	0.209	-	1.138	1.003	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram					

Note: 5 GHZ WLAN MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5 GHz WLAN and 2.4 GHz WLAN and/or 5G NR active. 2.4 GHz WIFI and/or 5G NR were not transmitting during the above evaluations.

Table 11-90
DSS Hotspot SAR – Closed

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
2441	39	Bluetooth	FHSS	16.0	15.43	0.06	5 mm	1	Q	0798M	1	back	76.8	0.025	1.140	1.302	0.037	
2441	39	Bluetooth	FHSS	16.0	15.43	0.02	5 mm	1	Q	0798M	1	front	76.8	0.110	1.140	1.302	0.163	
2441	39	Bluetooth	FHSS	16.0	15.43	-0.02	5 mm	1	Q	0798M	1	bottom	76.8	0.054	1.140	1.302	0.080	
2441	39	Bluetooth	FHSS	16.0	15.43	0.15	5 mm	1	Q	0798M	1	right	76.8	0.035	1.140	1.302	0.052	
2441	39	Bluetooth	FHSS	17.0	16.61	0.14	5 mm	2	Q	0798M	1	back	76.8	0.027	1.094	1.302	0.038	
2441	39	Bluetooth	FHSS	17.0	16.61	0.07	5 mm	2	Q	0798M	1	front	76.8	0.160	1.094	1.302	0.228	
2441	39	Bluetooth	FHSS	17.0	16.61	0.03	5 mm	2	Q	0798M	1	bottom	76.8	0.086	1.094	1.302	0.122	
2441	39	Bluetooth	FHSS	17.0	16.61	-0.08	5 mm	2	Q	0798M	1	left	76.8	0.181	1.094	1.302	0.258	
2441	39	Bluetooth	FHSS	16.0	15.55	0.07	5 mm	1	N	1391M	1	back	76.8	0.054	1.109	1.302	0.078	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.18	5 mm	1	N	1391M	1	front	76.8	0.219	1.109	1.302	0.316	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.05	5 mm	1	N	1391M	1	bottom	76.8	0.109	1.109	1.302	0.157	
2441	39	Bluetooth	FHSS	16.0	15.55	-0.02	5 mm	1	N	1391M	1	right	76.8	0.070	1.109	1.302	0.101	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.18	5 mm	2	N	1391M	1	back	76.8	0.032	1.096	1.302	0.046	
2480	78	Bluetooth	FHSS	17.0	16.60	0.09	5 mm	2	N	1391M	1	front	76.8	0.206	1.096	1.302	0.294	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.09	5 mm	2	N	1391M	1	bottom	76.8	0.125	1.096	1.302	0.178	
2480	78	Bluetooth	FHSS	17.0	16.60	-0.03	5 mm	2	N	1391M	1	left	76.8	0.251	1.096	1.302	**0.358**	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											

Table 11-91
DSS Hotspot SAR for Conditions with 5G NR – Closed

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Chipset Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
2441	39	Bluetooth	FHSS	14.0	13.10	-0.08	5 mm	1	Q	0798M	1	back	76.8	0.008	1.231	1.302	0.013	
2441	39	Bluetooth	FHSS	14.0	13.10	0.01	5 mm	1	Q	0798M	1	front	76.8	0.039	1.231	1.302	0.063	
2441	39	Bluetooth	FHSS	14.0	13.10	0.17	5 mm	1	Q	0798M	1	bottom	76.8	0.018	1.231	1.302	0.029	
2441	39	Bluetooth	FHSS	14.0	13.10	-0.04	5 mm	1	Q	0798M	1	right	76.8	0.017	1.231	1.302	0.027	
2441	39	Bluetooth	FHSS	14.0	13.93	0.03	5 mm	2	Q	0798M	1	back	76.8	0.007	1.017	1.302	0.009	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.01	5 mm	2	Q	0798M	1	front	76.8	0.052	1.017	1.302	0.069	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.15	5 mm	2	Q	0798M	1	bottom	76.8	0.027	1.017	1.302	0.036	
2441	39	Bluetooth	FHSS	14.0	13.93	-0.07	5 mm	2	Q	0798M	1	left	76.8	0.059	1.017	1.302	0.078	
2441	39	Bluetooth	FHSS	14.0	13.11	0.09	5 mm	1	N	1391M	1	back	76.8	0.013	1.229	1.302	0.021	
2441	39	Bluetooth	FHSS	14.0	13.11	0.07	5 mm	1	N	1391M	1	front	76.8	0.075	1.229	1.302	0.120	
2441	39	Bluetooth	FHSS	14.0	13.11	0.07	5 mm	1	N	1391M	1	bottom	76.8	0.027	1.229	1.302	0.043	
2441	39	Bluetooth	FHSS	14.0	13.11	0.00	5 mm	1	N	1391M	1	right	76.8	0.018	1.229	1.302	0.029	
2480	78	Bluetooth	FHSS	14.0	13.67	0.03	5 mm	2	N	1391M	1	back	76.8	0.006	1.080	1.302	0.008	
2480	78	Bluetooth	FHSS	14.0	13.67	0.02	5 mm	2	N	1391M	1	front	76.8	0.066	1.080	1.302	0.093	
2480	78	Bluetooth	FHSS	14.0	13.67	0.19	5 mm	2	N	1391M	1	bottom	76.8	0.040	1.080	1.302	0.056	
2480	78	Bluetooth	FHSS	14.0	13.67	-0.01	5 mm	2	N	1391M	1	left	76.8	0.091	1.080	1.302	0.128	
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: BT was additionally evaluated at the maximum allowed output power during operations with Simultaneous 5G NR active. 5G NR was not transmitting during BT evaluations.

11.7 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 15 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 12.1 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 diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
11. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
12. This device supports dynamic antenna tuning for some bands. Per FCC Guidance, SAR was measured according to the normally required SAR measurement configurations with tuner active. The auto-tune state determined by the device was verified before and after each SAR measurement and is listed in tables above. Please see Section 14 for supplemental data.
13. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
14. This device has an open and closed configuration. When closed, 1g SAR test are required for back side at a test separation distance of 15mm for body-worn, and on all surfaces and edges with an antenna <=25 mm from that surface or edge at a test separation distance 5mm for hotspot.

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s).

UMTS Notes:

1. UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s).

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 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.

NR Notes:

1. Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
2. Simultaneous transmission analysis for EN-DC operations is included in Section 12. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only. Per FCC guidance, all unique uplink combinations were assessed.
3. 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.
4. Per FCC Guidance, the device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency as the NR test results. Additional tuner states were evaluated per April 2019 TCBC Workshop Guidance. Please see Section 14 for supplemental data.
5. 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.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.6.5 for more information.
3. 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.
4. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.
7. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Bluetooth Notes

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 100% transmission duty factor to determine compliance. See Section 9.6 for the time domain plot and calculation for the duty factor of the device.
2. Head and Hotspot Bluetooth SAR were evaluated for BT BR tethering applications.

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

LTE B25 SAR was used for EN-DC simultaneous analysis since the transmission frequency range of LTE B25 and B2 are overlapped and they share the same transmission path and signal characteristics. LTE B26 SAR was used for EN-DC simultaneous analysis since the transmission frequency range of LTE B26 and B5 are overlapped and they share the same transmission path and signal characteristics.

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

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.226	0.235	0.461
	GSM 1900	0.043	0.235	0.278
	UMTS 850	0.291	0.235	0.526
	UMTS 1750	0.097	0.235	0.332
	UMTS 1900	0.090	0.235	0.325
	LTE Band 12	0.258	0.235	0.493
	LTE Band 13	0.189	0.235	0.424
	LTE Band 26 (Cell)	0.234	0.235	0.469
	LTE Band 66 (AWS)	0.139	0.235	0.374
	LTE Band 25 (PCS)	0.080	0.235	0.315
	LTE Band 41	0.091	0.235	0.326
	NR Band n5 (Cell)	0.326	0.235	**0.561**
	NR Band n66 (AWS)	0.173	0.235	0.408

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.235	0.641
	LTE Band 66 (AWS)	0.139	0.326	0.235	**0.700**
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.235	0.642
	LTE Band 12	0.258	0.173	0.235	**0.666**

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.226	0.451	0.677
	GSM 1900	0.043	0.451	0.494
	UMTS 850	0.291	0.451	0.742
	UMTS 1750	0.097	0.451	0.548
	UMTS 1900	0.090	0.451	0.541
	LTE Band 12	0.258	0.451	0.709
	LTE Band 13	0.189	0.451	0.640
	LTE Band 26 (Cell)	0.234	0.451	0.685
	LTE Band 66 (AWS)	0.139	0.451	0.590
	LTE Band 25 (PCS)	0.080	0.451	0.531
	LTE Band 41	0.091	0.451	0.542
	NR Band n5 (Cell)	0.326	0.451	**0.777**
	NR Band n66 (AWS)	0.173	0.451	0.624

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.451	0.857
	LTE Band 66 (AWS)	0.139	0.326	0.451	**0.916**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.451	0.858
	LTE Band 12	0.258	0.173	0.451	**0.882**

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.226	0.369	0.595
	GSM 1900	0.043	0.369	0.412
	UMTS 850	0.291	0.369	0.660
	UMTS 1750	0.097	0.369	0.466
	UMTS 1900	0.090	0.369	0.459
	LTE Band 12	0.258	0.369	0.627
	LTE Band 13	0.189	0.369	0.558
	LTE Band 26 (Cell)	0.234	0.369	0.603
	LTE Band 66 (AWS)	0.139	0.369	0.508
	LTE Band 25 (PCS)	0.080	0.369	0.449
	LTE Band 41	0.091	0.369	0.460
	NR Band n5 (Cell)	0.326	0.369	**0.695**
	NR Band n66 (AWS)	0.173	0.369	0.542

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.369	0.775
	LTE Band 66 (AWS)	0.139	0.326	0.369	**0.834**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.369	0.776
	LTE Band 12	0.258	0.173	0.369	**0.800**

Table 12-4
Simultaneous Transmission Scenario with Bluetooth Antenna 1 (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.226	0.159	0.385
	GSM 1900	0.043	0.159	0.202
	UMTS 850	0.291	0.159	0.450
	UMTS 1750	0.097	0.159	0.256
	UMTS 1900	0.090	0.159	0.249
	LTE Band 12	0.258	0.159	0.417
	LTE Band 13	0.189	0.159	0.348
	LTE Band 26 (Cell)	0.234	0.159	0.393
	LTE Band 66 (AWS)	0.139	0.159	0.298
	LTE Band 25 (PCS)	0.080	0.159	0.239
	LTE Band 41	0.091	0.159	0.250
	NR Band n5 (Cell)	0.326	0.159	**0.485**
	NR Band n66 (AWS)	0.173	0.159	0.332

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.565
	LTE Band 66 (AWS)	0.139	0.326	0.159	**0.624**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.566
	LTE Band 12	0.258	0.173	0.159	**0.590**

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.226	0.256	0.482
	GSM 1900	0.043	0.256	0.299
	UMTS 850	0.291	0.256	0.547
	UMTS 1750	0.097	0.256	0.353
	UMTS 1900	0.090	0.256	0.346
	LTE Band 12	0.258	0.256	0.514
	LTE Band 13	0.189	0.256	0.445
	LTE Band 26 (Cell)	0.234	0.256	0.490
	LTE Band 66 (AWS)	0.139	0.256	0.395
	LTE Band 25 (PCS)	0.080	0.256	0.336
	LTE Band 41	0.091	0.256	0.347
	NR Band n5 (Cell)	0.326	0.256	**0.582**
	NR Band n66 (AWS)	0.173	0.256	0.429

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.256	0.662
	LTE Band 66 (AWS)	0.139	0.326	0.256	**0.721**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.256	0.663
	LTE Band 12	0.258	0.173	0.256	**0.687**

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

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.159	0.235	0.620
	GSM 1900	0.043	0.159	0.235	0.437
	UMTS 850	0.291	0.159	0.235	0.685
	UMTS 1750	0.097	0.159	0.235	0.491
	UMTS 1900	0.090	0.159	0.235	0.484
	LTE Band 12	0.258	0.159	0.235	0.652
	LTE Band 13	0.189	0.159	0.235	0.583
	LTE Band 26 (Cell)	0.234	0.159	0.235	0.628
	LTE Band 66 (AWS)	0.139	0.159	0.235	0.533
	LTE Band 25 (PCS)	0.080	0.159	0.235	0.474
	LTE Band 41	0.091	0.159	0.235	0.485
	NR Band n5 (Cell)	0.326	0.159	0.235	**0.720**
	NR Band n66 (AWS)	0.173	0.159	0.235	0.567

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.235	0.800
	LTE Band 66 (AWS)	0.139	0.326	0.159	0.235	**0.859**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.235	0.801
	LTE Band 12	0.258	0.173	0.159	0.235	**0.825**

Table 12-7
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5 GHz Antenna 1 WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.256	0.235	0.717
	GSM 1900	0.043	0.256	0.235	0.534
	UMTS 850	0.291	0.256	0.235	0.782
	UMTS 1750	0.097	0.256	0.235	0.588
	UMTS 1900	0.090	0.256	0.235	0.581
	LTE Band 12	0.258	0.256	0.235	0.749
	LTE Band 13	0.189	0.256	0.235	0.680
	LTE Band 26 (Cell)	0.234	0.256	0.235	0.725
	LTE Band 66 (AWS)	0.139	0.256	0.235	0.630
	LTE Band 25 (PCS)	0.080	0.256	0.235	0.571
	LTE Band 41	0.091	0.256	0.235	0.582
	NR Band n5 (Cell)	0.326	0.256	0.235	**0.817**
	NR Band n66 (AWS)	0.173	0.256	0.235	0.664

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.256	0.235	0.897
	LTE Band 66 (AWS)	0.139	0.326	0.256	0.235	**0.956**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.256	0.235	0.898
	LTE Band 12	0.258	0.173	0.256	0.235	**0.922**

Table 12-8
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5GHz MIMO WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.159	0.451	0.836
	GSM 1900	0.043	0.159	0.451	0.653
	UMTS 850	0.291	0.159	0.451	0.901
	UMTS 1750	0.097	0.159	0.451	0.707
	UMTS 1900	0.090	0.159	0.451	0.700
	LTE Band 12	0.258	0.159	0.451	0.868
	LTE Band 13	0.189	0.159	0.451	0.799
	LTE Band 26 (Cell)	0.234	0.159	0.451	0.844
	LTE Band 66 (AWS)	0.139	0.159	0.451	0.749
	LTE Band 25 (PCS)	0.080	0.159	0.451	0.690
	LTE Band 41	0.091	0.159	0.451	0.701
	NR Band n5 (Cell)	0.326	0.159	0.451	**0.936**
	NR Band n66 (AWS)	0.173	0.159	0.451	0.783

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.451	1.016
	LTE Band 66 (AWS)	0.139	0.326	0.159	0.451	**1.075**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.451	1.017
	LTE Band 12	0.258	0.173	0.159	0.451	**1.041**

Table 12-9
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5GHz MIMO WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.256	0.451	0.933
	GSM 1900	0.043	0.256	0.451	0.750
	UMTS 850	0.291	0.256	0.451	0.998
	UMTS 1750	0.097	0.256	0.451	0.804
	UMTS 1900	0.090	0.256	0.451	0.797
	LTE Band 12	0.258	0.256	0.451	0.965
	LTE Band 13	0.189	0.256	0.451	0.896
	LTE Band 26 (Cell)	0.234	0.256	0.451	0.941
	LTE Band 66 (AWS)	0.139	0.256	0.451	0.846
	LTE Band 25 (PCS)	0.080	0.256	0.451	0.787
	LTE Band 41	0.091	0.256	0.451	0.798
	NR Band n5 (Cell)	0.326	0.256	0.451	**1.033**
	NR Band n66 (AWS)	0.173	0.256	0.451	0.880

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.256	0.451	1.113
	LTE Band 66 (AWS)	0.139	0.326	0.256	0.451	**1.172**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.256	0.451	1.114
	LTE Band 12	0.258	0.173	0.256	0.451	**1.138**

Table 12-10
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 2.4 GHz WLAN Antenna 2 (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.159	0.347	0.732
	GSM 1900	0.043	0.159	0.347	0.549
	UMTS 850	0.291	0.159	0.347	0.797
	UMTS 1750	0.097	0.159	0.347	0.603
	UMTS 1900	0.090	0.159	0.347	0.596
	LTE Band 12	0.258	0.159	0.347	0.764
	LTE Band 13	0.189	0.159	0.347	0.695
	LTE Band 26 (Cell)	0.234	0.159	0.347	0.740
	LTE Band 66 (AWS)	0.139	0.159	0.347	0.645
	LTE Band 25 (PCS)	0.080	0.159	0.347	0.586
	LTE Band 41	0.091	0.159	0.347	0.597
	NR Band n5 (Cell)	0.326	0.159	0.347	**0.832**
	NR Band n66 (AWS)	0.173	0.159	0.347	0.679

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.347	0.912
	LTE Band 66 (AWS)	0.139	0.326	0.159	0.347	**0.971**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.347	0.913
	LTE Band 12	0.258	0.173	0.159	0.347	**0.937**

Table 12-11
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz Antenna 1 WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	GSM 850	0.226	0.159	0.347	0.235	0.967
	GSM 1900	0.043	0.159	0.347	0.235	0.784
	UMTS 850	0.291	0.159	0.347	0.235	1.032
	UMTS 1750	0.097	0.159	0.347	0.235	0.838
	UMTS 1900	0.090	0.159	0.347	0.235	0.831
	LTE Band 12	0.258	0.159	0.347	0.235	0.999
	LTE Band 13	0.189	0.159	0.347	0.235	0.930
	LTE Band 26 (Cell)	0.234	0.159	0.347	0.235	0.975
	LTE Band 66 (AWS)	0.139	0.159	0.347	0.235	0.880
	LTE Band 25 (PCS)	0.080	0.159	0.347	0.235	0.821
	LTE Band 41	0.091	0.159	0.347	0.235	0.832
	NR Band n5 (Cell)	0.326	0.159	0.347	0.235	**1.067**
	NR Band n66 (AWS)	0.173	0.159	0.347	0.235	0.914

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.347	0.235	1.147
	LTE Band 66 (AWS)	0.139	0.326	0.159	0.347	0.235	**1.206**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.347	0.235	1.148
	LTE Band 12	0.258	0.173	0.159	0.347	0.235	**1.172**

Table 12-12
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz MIMO WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	GSM 850	0.226	0.159	0.347	0.451	1.183
	GSM 1900	0.043	0.159	0.347	0.451	1.000
	UMTS 850	0.291	0.159	0.347	0.451	1.248
	UMTS 1750	0.097	0.159	0.347	0.451	1.054
	UMTS 1900	0.090	0.159	0.347	0.451	1.047
	LTE Band 12	0.258	0.159	0.347	0.451	1.215
	LTE Band 13	0.189	0.159	0.347	0.451	1.146
	LTE Band 26 (Cell)	0.234	0.159	0.347	0.451	1.191
	LTE Band 66 (AWS)	0.139	0.159	0.347	0.451	1.096
	LTE Band 25 (PCS)	0.080	0.159	0.347	0.451	1.037
	LTE Band 41	0.091	0.159	0.347	0.451	1.048
	NR Band n5 (Cell)	0.326	0.159	0.347	0.451	**1.283**
	NR Band n66 (AWS)	0.173	0.159	0.347	0.451	1.130

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.159	0.347	0.451	1.363
	LTE Band 66 (AWS)	0.139	0.326	0.159	0.347	0.451	**1.422**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.159	0.347	0.451	1.364
	LTE Band 12	0.258	0.173	0.159	0.347	0.451	**1.388**

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN and 5 GHz MIMO WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.226	0.369	0.451	1.046
	GSM 1900	0.043	0.369	0.451	0.863
	UMTS 850	0.291	0.369	0.451	1.111
	UMTS 1750	0.097	0.369	0.451	0.917
	UMTS 1900	0.090	0.369	0.451	0.910
	LTE Band 12	0.258	0.369	0.451	1.078
	LTE Band 13	0.189	0.369	0.451	1.009
	LTE Band 26 (Cell)	0.234	0.369	0.451	1.054
	LTE Band 66 (AWS)	0.139	0.369	0.451	0.959
	LTE Band 25 (PCS)	0.080	0.369	0.451	0.900
	LTE Band 41	0.091	0.369	0.451	0.911
	NR Band n5 (Cell)	0.326	0.369	0.451	**1.146**
	NR Band n66 (AWS)	0.173	0.369	0.451	0.993

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 25 (PCS)	0.080	0.326	0.369	0.451	1.226
	LTE Band 66 (AWS)	0.139	0.326	0.369	0.451	**1.285**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	LTE Band 26 (Cell)	0.234	0.173	0.369	0.451	1.227
	LTE Band 12	0.258	0.173	0.369	0.451	**1.251**

12.4 Open Body-Worn Simultaneous Transmission Analysis

Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.200	0.055	0.255
	GSM 1900	0.313	0.055	0.368
	UMTS 850	0.274	0.055	0.329
	UMTS 1750	0.860	0.055	0.915
	UMTS 1900	0.920	0.055	0.975
	LTE Band 12	0.218	0.055	0.273
	LTE Band 13	0.198	0.055	0.253
	LTE Band 26 (Cell)	0.197	0.055	0.252
	LTE Band 66 (AWS)	0.933	0.055	**0.988**
	LTE Band 25 (PCS)	0.763	0.055	0.818
	LTE Band 41	0.279	0.055	0.334
	NR Band n5 (Cell)	0.242	0.055	0.297
	NR Band n66 (AWS)	0.788	0.055	0.843

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.055	1.060
	LTE Band 66 (AWS)	0.933	0.242	0.055	**1.230**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.055	1.040
	LTE Band 12	0.218	0.788	0.055	**1.061**

Table 12-15
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.200	0.262	0.462
	GSM 1900	0.313	0.262	0.575
	UMTS 850	0.274	0.262	0.536
	UMTS 1750	0.860	0.262	1.122
	UMTS 1900	0.920	0.262	1.182
	LTE Band 12	0.218	0.262	0.480
	LTE Band 13	0.198	0.262	0.460
	LTE Band 26 (Cell)	0.197	0.262	0.459
	LTE Band 66 (AWS)	0.933	0.262	**1.195**
	LTE Band 25 (PCS)	0.763	0.262	1.025
	LTE Band 41	0.279	0.262	0.541
	NR Band n5 (Cell)	0.242	0.262	0.504
	NR Band n66 (AWS)	0.788	0.262	1.050

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.262	1.267
	LTE Band 66 (AWS)	0.933	0.242	0.262	**1.437**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.262	1.247
	LTE Band 12	0.218	0.788	0.262	**1.268**

Table 12-16
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.200	0.317	0.517
	GSM 1900	0.313	0.317	0.630
	UMTS 850	0.274	0.317	0.591
	UMTS 1750	0.860	0.317	1.177
	UMTS 1900	0.920	0.317	1.237
	LTE Band 12	0.218	0.317	0.535
	LTE Band 13	0.198	0.317	0.515
	LTE Band 26 (Cell)	0.197	0.317	0.514
	LTE Band 66 (AWS)	0.933	0.317	**1.250**
	LTE Band 25 (PCS)	0.763	0.317	1.080
	LTE Band 41	0.279	0.317	0.596
	NR Band n5 (Cell)	0.242	0.317	0.559
	NR Band n66 (AWS)	0.788	0.317	1.105

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.317	1.322
	LTE Band 66 (AWS)	0.933	0.242	0.317	**1.492**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.317	1.302
	LTE Band 12	0.218	0.788	0.317	**1.323**

REV 21.4 M
09/11/2019

Table 12-17
Simultaneous Transmission Scenario with Bluetooth Antenna 1 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.200	0.061	0.261
	GSM 1900	0.313	0.061	0.374
	UMTS 850	0.274	0.061	0.335
	UMTS 1750	0.860	0.061	0.921
	UMTS 1900	0.920	0.061	0.981
	LTE Band 12	0.218	0.061	0.279
	LTE Band 13	0.198	0.061	0.259
	LTE Band 26 (Cell)	0.197	0.061	0.258
	LTE Band 66 (AWS)	0.933	0.061	**0.994**
	LTE Band 25 (PCS)	0.763	0.061	0.824
	LTE Band 41	0.279	0.061	0.340
	NR Band n5 (Cell)	0.242	0.061	0.303
	NR Band n66 (AWS)	0.788	0.061	0.849

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	1.066
	LTE Band 66 (AWS)	0.933	0.242	0.061	**1.236**
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	1.046
	LTE Band 12	0.218	0.788	0.061	**1.067**

Table 12-18
Simultaneous Transmission Scenario with Bluetooth Antenna 2 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.200	0.053	0.253
	GSM 1900	0.313	0.053	0.366
	UMTS 850	0.274	0.053	0.327
	UMTS 1750	0.860	0.053	0.913
	UMTS 1900	0.920	0.053	0.973
	LTE Band 12	0.218	0.053	0.271
	LTE Band 13	0.198	0.053	0.251
	LTE Band 26 (Cell)	0.197	0.053	0.250
	LTE Band 66 (AWS)	0.933	0.053	**0.986**
	LTE Band 25 (PCS)	0.763	0.053	0.816
	LTE Band 41	0.279	0.053	0.332
	NR Band n5 (Cell)	0.242	0.053	0.295
	NR Band n66 (AWS)	0.788	0.053	0.841

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.053	1.058
	LTE Band 66 (AWS)	0.933	0.242	0.053	**1.228**
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.053	1.038
	LTE Band 12	0.218	0.788	0.053	**1.059**

Table 12-19
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.061	0.055	0.316
	GSM 1900	0.313	0.061	0.055	0.429
	UMTS 850	0.274	0.061	0.055	0.390
	UMTS 1750	0.860	0.061	0.055	0.976
	UMTS 1900	0.920	0.061	0.055	1.036
	LTE Band 12	0.218	0.061	0.055	0.334
	LTE Band 13	0.198	0.061	0.055	0.314
	LTE Band 26 (Cell)	0.197	0.061	0.055	0.313
	LTE Band 66 (AWS)	0.933	0.061	0.055	**1.049**
	LTE Band 25 (PCS)	0.763	0.061	0.055	0.879
	LTE Band 41	0.279	0.061	0.055	0.395
	NR Band n5 (Cell)	0.242	0.061	0.055	0.358
	NR Band n66 (AWS)	0.788	0.061	0.055	0.904

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	0.055	1.121
	LTE Band 66 (AWS)	0.933	0.242	0.061	0.055	**1.291**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	0.055	1.101
	LTE Band 12	0.218	0.788	0.061	0.055	**1.122**

Table 12-20
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.053	0.055	0.308
	GSM 1900	0.313	0.053	0.055	0.421
	UMTS 850	0.274	0.053	0.055	0.382
	UMTS 1750	0.860	0.053	0.055	0.968
	UMTS 1900	0.920	0.053	0.055	1.028
	LTE Band 12	0.218	0.053	0.055	0.326
	LTE Band 13	0.198	0.053	0.055	0.306
	LTE Band 26 (Cell)	0.197	0.053	0.055	0.305
	LTE Band 66 (AWS)	0.933	0.053	0.055	**1.041**
	LTE Band 25 (PCS)	0.763	0.053	0.055	0.871
	LTE Band 41	0.279	0.053	0.055	0.387
	NR Band n5 (Cell)	0.242	0.053	0.055	0.350
	NR Band n66 (AWS)	0.788	0.053	0.055	0.896

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.053	0.055	1.113
	LTE Band 66 (AWS)	0.933	0.242	0.053	0.055	**1.283**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.053	0.055	1.093
	LTE Band 12	0.218	0.788	0.053	0.055	**1.114**

Table 12-21
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.061	0.262	0.523
	GSM 1900	0.313	0.061	0.262	0.636
	UMTS 850	0.274	0.061	0.262	0.597
	UMTS 1750	0.860	0.061	0.262	1.183
	UMTS 1900	0.920	0.061	0.262	1.243
	LTE Band 12	0.218	0.061	0.262	0.541
	LTE Band 13	0.198	0.061	0.262	0.521
	LTE Band 26 (Cell)	0.197	0.061	0.262	0.520
	LTE Band 66 (AWS)	0.933	0.061	0.262	**1.256**
	LTE Band 25 (PCS)	0.763	0.061	0.262	1.086
	LTE Band 41	0.279	0.061	0.262	0.602
	NR Band n5 (Cell)	0.242	0.061	0.262	0.565
	NR Band n66 (AWS)	0.788	0.061	0.262	1.111

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	0.262	1.328
	LTE Band 66 (AWS)	0.933	0.242	0.061	0.262	**1.498**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	0.262	1.308
	LTE Band 12	0.218	0.788	0.061	0.262	**1.329**

Table 12-22
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.053	0.262	0.515
	GSM 1900	0.313	0.053	0.262	0.628
	UMTS 850	0.274	0.053	0.262	0.589
	UMTS 1750	0.860	0.053	0.262	1.175
	UMTS 1900	0.920	0.053	0.262	1.235
	LTE Band 12	0.218	0.053	0.262	0.533
	LTE Band 13	0.198	0.053	0.262	0.513
	LTE Band 26 (Cell)	0.197	0.053	0.262	0.512
	LTE Band 66 (AWS)	0.933	0.053	0.262	**1.248**
	LTE Band 25 (PCS)	0.763	0.053	0.262	1.078
	LTE Band 41	0.279	0.053	0.262	0.594
	NR Band n5 (Cell)	0.242	0.053	0.262	0.557
	NR Band n66 (AWS)	0.788	0.053	0.262	1.103

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.053	0.262	1.320
	LTE Band 66 (AWS)	0.933	0.242	0.053	0.262	**1.490**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.053	0.262	1.300
	LTE Band 12	0.218	0.788	0.053	0.262	**1.321**

Table 12-23
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 2.4 GHz WLAN Antenna 2
(Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.061	0.061	0.322
	GSM 1900	0.313	0.061	0.061	0.435
	UMTS 850	0.274	0.061	0.061	0.396
	UMTS 1750	0.860	0.061	0.061	0.982
	UMTS 1900	0.920	0.061	0.061	1.042
	LTE Band 12	0.218	0.061	0.061	0.340
	LTE Band 13	0.198	0.061	0.061	0.320
	LTE Band 26 (Cell)	0.197	0.061	0.061	0.319
	LTE Band 66 (AWS)	0.933	0.061	0.061	**1.055**
	LTE Band 25 (PCS)	0.763	0.061	0.061	0.885
	LTE Band 41	0.279	0.061	0.061	0.401
	NR Band n5 (Cell)	0.242	0.061	0.061	0.364
	NR Band n66 (AWS)	0.788	0.061	0.061	0.910

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	0.061	1.127
	LTE Band 66 (AWS)	0.933	0.242	0.061	0.061	**1.297**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	0.061	1.107
	LTE Band 12	0.218	0.788	0.061	0.061	**1.128**

Table 12-24
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	GSM 850	0.200	0.061	0.061	0.055	0.377
	GSM 1900	0.313	0.061	0.061	0.055	0.490
	UMTS 850	0.274	0.061	0.061	0.055	0.451
	UMTS 1750	0.860	0.061	0.061	0.055	1.037
	UMTS 1900	0.920	0.061	0.061	0.055	1.097
	LTE Band 12	0.218	0.061	0.061	0.055	0.395
	LTE Band 13	0.198	0.061	0.061	0.055	0.375
	LTE Band 26 (Cell)	0.197	0.061	0.061	0.055	0.374
	LTE Band 66 (AWS)	0.933	0.061	0.061	0.055	**1.110**
	LTE Band 25 (PCS)	0.763	0.061	0.061	0.055	0.940
	LTE Band 41	0.279	0.061	0.061	0.055	0.456
	NR Band n5 (Cell)	0.242	0.061	0.061	0.055	0.419
	NR Band n66 (AWS)	0.788	0.061	0.061	0.055	0.965

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	0.061	0.055	1.182
	LTE Band 66 (AWS)	0.933	0.242	0.061	0.061	0.055	**1.352**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	0.061	0.055	1.162
	LTE Band 12	0.218	0.788	0.061	0.061	0.055	**1.183**

Table 12-25
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	GSM 850	0.200	0.061	0.061	0.262	0.584
	GSM 1900	0.313	0.061	0.061	0.262	0.697
	UMTS 850	0.274	0.061	0.061	0.262	0.658
	UMTS 1750	0.860	0.061	0.061	0.262	1.244
	UMTS 1900	0.920	0.061	0.061	0.262	1.304
	LTE Band 12	0.218	0.061	0.061	0.262	0.602
	LTE Band 13	0.198	0.061	0.061	0.262	0.582
	LTE Band 26 (Cell)	0.197	0.061	0.061	0.262	0.581
	LTE Band 66 (AWS)	0.933	0.061	0.061	0.262	**1.317**
	LTE Band 25 (PCS)	0.763	0.061	0.061	0.262	1.147
	LTE Band 41	0.279	0.061	0.061	0.262	0.663
	NR Band n5 (Cell)	0.242	0.061	0.061	0.262	0.626
	NR Band n66 (AWS)	0.788	0.061	0.061	0.262	1.172

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.061	0.061	0.262	1.389
	LTE Band 66 (AWS)	0.933	0.242	0.061	0.061	0.262	**1.559**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.061	0.061	0.262	1.369
	LTE Band 12	0.218	0.788	0.061	0.061	0.262	**1.390**

Table 12-26
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN and 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.200	0.317	0.262	0.779
	GSM 1900	0.313	0.317	0.262	0.892
	UMTS 850	0.274	0.317	0.262	0.853
	UMTS 1750	0.860	0.317	0.262	1.439
	UMTS 1900	0.920	0.317	0.262	1.499
	LTE Band 12	0.218	0.317	0.262	0.797
	LTE Band 13	0.198	0.317	0.262	0.777
	LTE Band 26 (Cell)	0.197	0.317	0.262	0.776
	LTE Band 66 (AWS)	0.933	0.317	0.262	**1.512**
	LTE Band 25 (PCS)	0.763	0.317	0.262	1.342
	LTE Band 41	0.279	0.317	0.262	0.858
	NR Band n5 (Cell)	0.242	0.317	0.262	0.821
	NR Band n66 (AWS)	0.788	0.317	0.262	1.367

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 25 (PCS)	0.763	0.242	0.087	0.111	1.203
	LTE Band 66 (AWS)	0.933	0.242	0.036	0.132	**1.343**

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.197	0.788	0.087	0.111	**1.183**
	LTE Band 12	0.218	0.788	0.036	0.132	1.174

12.5 Open Hotspot SAR Simultaneous Transmission Analysis

Table 12-27
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.437	0.165	0.602
	GPRS 1900	0.944	0.165	**1.109**
	UMTS 850	0.466	0.165	0.631
	UMTS 1750	0.545	0.165	0.710
	UMTS 1900	0.777	0.165	0.942
	LTE Band 12	0.253	0.165	0.418
	LTE Band 13	0.317	0.165	0.482
	LTE Band 26 (Cell)	0.380	0.165	0.545
	LTE Band 66 (AWS)	0.482	0.165	0.647
	LTE Band 25 (PCS)	0.846	0.165	1.011
	LTE Band 41	0.501	0.165	0.666
	NR Band n5 (Cell)	0.405	0.165	0.570
	NR Band n66 (AWS)	0.484	0.165	0.649

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.028	**1.279**
	LTE Band 66 (AWS)	0.482	0.405	0.028	0.915
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.028	**0.892**
	LTE Band 12	0.253	0.484	0.028	0.765

Table 12-28
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.437	0.403	0.840
	GPRS 1900	0.944	0.403	**1.347**
	UMTS 850	0.466	0.403	0.869
	UMTS 1750	0.545	0.403	0.948
	UMTS 1900	0.777	0.403	1.180
	LTE Band 12	0.253	0.403	0.656
	LTE Band 13	0.317	0.403	0.720
	LTE Band 26 (Cell)	0.380	0.403	0.783
	LTE Band 66 (AWS)	0.482	0.403	0.885
	LTE Band 25 (PCS)	0.846	0.403	1.249
	LTE Band 41	0.501	0.403	0.904
	NR Band n5 (Cell)	0.405	0.403	0.808
	NR Band n66 (AWS)	0.484	0.403	0.887

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.111	**1.362**
	LTE Band 66 (AWS)	0.482	0.405	0.111	0.998
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.111	**0.975**
	LTE Band 12	0.253	0.484	0.111	0.848

Table 12-29
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.437	0.645	1.082
	GPRS 1900	0.944	0.645	**1.589**
	UMTS 850	0.466	0.645	1.111
	UMTS 1750	0.545	0.645	1.190
	UMTS 1900	0.777	0.645	1.422
	LTE Band 12	0.253	0.645	0.898
	LTE Band 13	0.317	0.645	0.962
	LTE Band 26 (Cell)	0.380	0.645	1.025
	LTE Band 66 (AWS)	0.482	0.645	1.127
	LTE Band 25 (PCS)	0.846	0.645	1.491
	LTE Band 41	0.501	0.645	1.146
	NR Band n5 (Cell)	0.405	0.645	1.050
	NR Band n66 (AWS)	0.484	0.645	1.129

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.087	**1.338**
	LTE Band 66 (AWS)	0.482	0.405	0.087	0.974
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.087	**0.951**
	LTE Band 12	0.253	0.484	0.087	0.824

Table 12-30
Simultaneous Transmission Scenario with Bluetooth Antenna 1 (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.437	0.131	0.568
	GPRS 1900	0.944	0.131	**1.075**
	UMTS 850	0.466	0.131	0.597
	UMTS 1750	0.545	0.131	0.676
	UMTS 1900	0.777	0.131	0.908
	LTE Band 12	0.253	0.131	0.384
	LTE Band 13	0.317	0.131	0.448
	LTE Band 26 (Cell)	0.380	0.131	0.511
	LTE Band 66 (AWS)	0.482	0.131	0.613
	LTE Band 25 (PCS)	0.846	0.131	0.977
	LTE Band 41	0.501	0.131	0.632
	NR Band n5 (Cell)	0.405	0.131	0.536
	NR Band n66 (AWS)	0.484	0.131	0.615

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.131	**1.382**
	LTE Band 66 (AWS)	0.482	0.405	0.131	1.018
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.131	**0.995**
	LTE Band 12	0.253	0.484	0.131	0.868

Table 12-31
Simultaneous Transmission Scenario with Bluetooth Antenna 2 (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.437	0.176	0.613
	GPRS 1900	0.944	0.176	**1.120**
	UMTS 850	0.466	0.176	0.642
	UMTS 1750	0.545	0.176	0.721
	UMTS 1900	0.777	0.176	0.953
	LTE Band 12	0.253	0.176	0.429
	LTE Band 13	0.317	0.176	0.493
	LTE Band 26 (Cell)	0.380	0.176	0.556
	LTE Band 66 (AWS)	0.482	0.176	0.658
	LTE Band 25 (PCS)	0.846	0.176	1.022
	LTE Band 41	0.501	0.176	0.677
	NR Band n5 (Cell)	0.405	0.176	0.581
	NR Band n66 (AWS)	0.484	0.176	0.660

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.176	**1.427**
	LTE Band 66 (AWS)	0.482	0.405	0.176	1.063
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.176	**1.040**
	LTE Band 12	0.253	0.484	0.176	0.913

Table 12-32
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5 GHz Antenna 1 WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	2	1+2+3
Hotspot SAR	GPRS 850	0.437	0.131	0.165	0.733
	GPRS 1900	0.944	0.131	0.165	**1.240**
	UMTS 850	0.466	0.131	0.165	0.762
	UMTS 1750	0.545	0.131	0.165	0.841
	UMTS 1900	0.777	0.131	0.165	1.073
	LTE Band 12	0.253	0.131	0.165	0.549
	LTE Band 13	0.317	0.131	0.165	0.613
	LTE Band 26 (Cell)	0.380	0.131	0.165	0.676
	LTE Band 66 (AWS)	0.482	0.131	0.165	0.778
	LTE Band 25 (PCS)	0.846	0.131	0.165	1.142
	LTE Band 41	0.501	0.131	0.165	0.797
	NR Band n5 (Cell)	0.405	0.131	0.165	0.701
	NR Band n66 (AWS)	0.484	0.131	0.165	0.780

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.131	0.165	**1.547**
	LTE Band 66 (AWS)	0.482	0.405	0.131	0.165	1.183

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.131	0.165	**1.160**
	LTE Band 12	0.253	0.484	0.131	0.165	1.033

Table 12-33
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5 GHz Antenna 1 WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.437	0.176	0.165	0.778
	GPRS 1900	0.944	0.176	0.165	**1.285**
	UMTS 850	0.466	0.176	0.165	0.807
	UMTS 1750	0.545	0.176	0.165	0.886
	UMTS 1900	0.777	0.176	0.165	1.118
	LTE Band 12	0.253	0.176	0.165	0.594
	LTE Band 13	0.317	0.176	0.165	0.658
	LTE Band 26 (Cell)	0.380	0.176	0.165	0.721
	LTE Band 66 (AWS)	0.482	0.176	0.165	0.823
	LTE Band 25 (PCS)	0.846	0.176	0.165	1.187
	LTE Band 41	0.501	0.176	0.165	0.842
	NR Band n5 (Cell)	0.405	0.176	0.165	0.746
	NR Band n66 (AWS)	0.484	0.176	0.165	0.825

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.176	0.165	**1.592**
	LTE Band 66 (AWS)	0.482	0.405	0.176	0.165	1.228

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.176	0.165	**1.205**
	LTE Band 12	0.253	0.484	0.176	0.165	1.078

Table 12-34
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.437	0.131	0.403	0.971
	GPRS 1900	0.944	0.131	0.403	**1.478**
	UMTS 850	0.466	0.131	0.403	1.000
	UMTS 1750	0.545	0.131	0.403	1.079
	UMTS 1900	0.777	0.131	0.403	1.311
	LTE Band 12	0.253	0.131	0.403	0.787
	LTE Band 13	0.317	0.131	0.403	0.851
	LTE Band 26 (Cell)	0.380	0.131	0.403	0.914
	LTE Band 66 (AWS)	0.482	0.131	0.403	1.016
	LTE Band 25 (PCS)	0.846	0.131	0.403	1.380
	LTE Band 41	0.501	0.131	0.403	1.035
	NR Band n5 (Cell)	0.405	0.131	0.403	0.939
	NR Band n66 (AWS)	0.484	0.131	0.403	1.018

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.131	0.111	**1.493**
	LTE Band 66 (AWS)	0.482	0.405	0.131	0.111	1.129

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.131	0.111	**1.106**
	LTE Band 12	0.253	0.484	0.131	0.111	0.979

Table 12-35
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.437	0.176	0.403	1.016
	GPRS 1900	0.944	0.176	0.403	**1.523**
	UMTS 850	0.466	0.176	0.403	1.045
	UMTS 1750	0.545	0.176	0.403	1.124
	UMTS 1900	0.777	0.176	0.403	1.356
	LTE Band 12	0.253	0.176	0.403	0.832
	LTE Band 13	0.317	0.176	0.403	0.896
	LTE Band 26 (Cell)	0.380	0.176	0.403	0.959
	LTE Band 66 (AWS)	0.482	0.176	0.403	1.061
	LTE Band 25 (PCS)	0.846	0.176	0.403	1.425
	LTE Band 41	0.501	0.176	0.403	1.080
	NR Band n5 (Cell)	0.405	0.176	0.403	0.984
	NR Band n66 (AWS)	0.484	0.176	0.403	1.063

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.176	0.111	**1.538**
	LTE Band 66 (AWS)	0.482	0.405	0.176	0.111	1.174

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.176	0.111	**1.151**
	LTE Band 12	0.253	0.484	0.176	0.111	1.024

Table 12-36
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 2.4 GHz WLAN Antenna 2 (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	2	1+2+3
Hotspot SAR	GPRS 850	0.437	0.131	0.173	0.741
	GPRS 1900	0.944	0.131	0.173	**1.248**
	UMTS 850	0.466	0.131	0.173	0.770
	UMTS 1750	0.545	0.131	0.173	0.849
	UMTS 1900	0.777	0.131	0.173	1.081
	LTE Band 12	0.253	0.131	0.173	0.557
	LTE Band 13	0.317	0.131	0.173	0.621
	LTE Band 26 (Cell)	0.380	0.131	0.173	0.684
	LTE Band 66 (AWS)	0.482	0.131	0.173	0.786
	LTE Band 25 (PCS)	0.846	0.131	0.173	1.150
	LTE Band 41	0.501	0.131	0.173	0.805
	NR Band n5 (Cell)	0.405	0.131	0.173	0.709
	NR Band n66 (AWS)	0.484	0.131	0.173	0.788

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.131	0.173	**1.555**
	LTE Band 66 (AWS)	0.482	0.405	0.131	0.173	1.191

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.131	0.173	**1.168**
	LTE Band 12	0.253	0.484	0.131	0.173	1.041

Table 12-37
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz Antenna 1 WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	GPRS 850	0.437	0.131	0.079	0.028	0.675
	GPRS 1900	0.944	0.131	0.079	0.028	**1.182**
	UMTS 850	0.466	0.131	0.079	0.028	0.704
	UMTS 1750	0.545	0.131	0.079	0.028	0.783
	UMTS 1900	0.777	0.131	0.079	0.028	1.015
	LTE Band 12	0.253	0.131	0.079	0.028	0.491
	LTE Band 13	0.317	0.131	0.079	0.028	0.555
	LTE Band 26 (Cell)	0.380	0.131	0.079	0.028	0.618
	LTE Band 66 (AWS)	0.482	0.131	0.079	0.028	0.720
	LTE Band 25 (PCS)	0.846	0.131	0.079	0.028	1.084
	LTE Band 41	0.501	0.131	0.079	0.028	0.739
	NR Band n5 (Cell)	0.405	0.131	0.079	0.028	0.643
	NR Band n66 (AWS)	0.484	0.131	0.079	0.028	0.722

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.026	0.079	0.028	**1.384**
	LTE Band 66 (AWS)	0.482	0.405	0.026	0.079	0.028	1.020

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.026	0.079	0.028	**0.997**
	LTE Band 12	0.253	0.484	0.026	0.079	0.028	0.870

Table 12-38
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	GPRS 850	0.437	0.131	0.079	0.111	0.758
	GPRS 1900	0.944	0.131	0.079	0.111	**1.265**
	UMTS 850	0.466	0.131	0.079	0.111	0.787
	UMTS 1750	0.545	0.131	0.079	0.111	0.866
	UMTS 1900	0.777	0.131	0.079	0.111	1.098
	LTE Band 12	0.253	0.131	0.079	0.111	0.574
	LTE Band 13	0.317	0.131	0.079	0.111	0.638
	LTE Band 26 (Cell)	0.380	0.131	0.079	0.111	0.701
	LTE Band 66 (AWS)	0.482	0.131	0.079	0.111	0.803
	LTE Band 25 (PCS)	0.846	0.131	0.079	0.111	1.167
	LTE Band 41	0.501	0.131	0.079	0.111	0.822
	NR Band n5 (Cell)	0.405	0.131	0.079	0.111	0.726
	NR Band n66 (AWS)	0.484	0.131	0.079	0.111	0.805

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.026	0.079	0.111	**1.467**
	LTE Band 66 (AWS)	0.482	0.405	0.026	0.079	0.111	1.103

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.026	0.079	0.111	**1.080**
	LTE Band 12	0.253	0.484	0.026	0.079	0.111	0.953

Table 12-39
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN and 5 GHz MIMO WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.437	0.087	0.111	0.635
	GPRS 1900	0.944	0.087	0.111	**1.142**
	UMTS 850	0.466	0.087	0.111	0.664
	UMTS 1750	0.545	0.087	0.111	0.743
	UMTS 1900	0.777	0.087	0.111	0.975
	LTE Band 12	0.253	0.087	0.111	0.451
	LTE Band 13	0.317	0.087	0.111	0.515
	LTE Band 26 (Cell)	0.380	0.087	0.111	0.578
	LTE Band 66 (AWS)	0.482	0.087	0.111	0.680
	LTE Band 25 (PCS)	0.846	0.087	0.111	1.044
	LTE Band 41	0.501	0.087	0.111	0.699
	NR Band n5 (Cell)	0.405	0.087	0.111	0.603
	NR Band n66 (AWS)	0.484	0.087	0.111	0.682

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 25 (PCS)	0.846	0.405	0.087	0.111	**1.449**
	LTE Band 66 (AWS)	0.482	0.405	0.087	0.111	1.085

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	LTE Band 26 (Cell)	0.380	0.484	0.087	0.111	**1.062**
	LTE Band 12	0.253	0.484	0.087	0.111	0.935

12.6 Phablet Simultaneous Transmission Analysis

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

For SAR summation, the highest reported SAR across all test distances was used as the most conservative evaluation for simultaneous transmission analysis for each device edge.

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore, no further analysis beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

Table 12-40
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	GPRS 1900	2.842	0.613	3.455
	UMTS 1750	3.273	0.613	**3.886**
	UMTS 1900	2.996	0.613	3.609
	LTE Band 66 (AWS)	2.658	0.613	3.271
	LTE Band 25 (PCS)	2.484	0.613	3.097
	LTE Band 41	2.156	0.613	2.769
	NR Band n66 (AWS)	2.647	0.613	3.260

Table 12-41
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	GPRS 1900	2.842	1.337	See Table Below
	UMTS 1750	3.273	1.337	See Table Below
	UMTS 1900	2.996	1.337	See Table Below
	LTE Band 66 (AWS)	2.658	1.337	See Table Below
	LTE Band 25 (PCS)	2.484	1.337	3.821
	LTE Band 41	2.156	1.337	3.493
	NR Band n66 (AWS)	2.647	1.337	**3.984**

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.842	1.229	See Note 1	0.05
	Front	1.937	1.077	**3.014**	N/A
	Top	-	1.337*	1.337	N/A
	Bottom	2.132	-	2.132	N/A
	Right	0.186	1.337*	1.523	N/A
	Left	0.215	1.337	1.552	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	3.273	1.229	See Note 1	0.06
	Front	1.819	1.077	**2.896**	N/A
	Top	-	1.337*	1.337	N/A
	Bottom	1.888	-	1.888	N/A
	Right	0.215	1.337*	1.552	N/A
	Left	0.197	1.337	1.534	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.996	1.229	See Note 1	0.05
	Front	2.384	1.077	**3.461**	N/A
	Top	-	1.337*	1.337	N/A
	Bottom	2.170	-	2.170	N/A
	Right	0.253	1.337*	1.590	N/A
	Left	0.279	1.337	1.616	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.658	1.229	**3.887**
	Front	1.547	1.077	2.624
	Top	-	1.337*	1.337
	Bottom	1.455	-	1.455
	Right	0.433	1.337*	1.770
	Left	0.393	1.337	1.730

Notes:

1. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. See Section 12.9 for detailed SPLS ratio analysis.

12.7 Closed Body-Worn Simultaneous Transmission Analysis

Table 12-42
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.214	0.021	0.235
	GSM 1900	0.112	0.021	0.133
	UMTS 850	0.402	0.021	0.423
	UMTS 1750	0.267	0.021	0.288
	UMTS 1900	0.183	0.021	0.204
	LTE Band 12	0.263	0.021	0.284
	LTE Band 13	0.267	0.021	0.288
	LTE Band 26 (Cell)	0.356	0.021	0.377
	LTE Band 66 (AWS)	0.277	0.021	0.298
	LTE Band 25 (PCS)	0.177	0.021	0.198
	LTE Band 41	0.144	0.021	0.165
	NR Band n5 (Cell)	0.430	0.021	**0.451**
	NR Band n66 (AWS)	0.308	0.021	0.329

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.021	**0.728**
	LTE Band 25 (PCS)	0.177	0.430	0.021	0.628

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.021	**0.685**
	LTE Band 12	0.263	0.308	0.021	0.592

Table 12-43
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.214	0.036	0.250
	GSM 1900	0.112	0.036	0.148
	UMTS 850	0.402	0.036	0.438
	UMTS 1750	0.267	0.036	0.303
	UMTS 1900	0.183	0.036	0.219
	LTE Band 12	0.263	0.036	0.299
	LTE Band 13	0.267	0.036	0.303
	LTE Band 26 (Cell)	0.356	0.036	0.392
	LTE Band 66 (AWS)	0.277	0.036	0.313
	LTE Band 25 (PCS)	0.177	0.036	0.213
	LTE Band 41	0.144	0.036	0.180
	NR Band n5 (Cell)	0.430	0.036	**0.466**
	NR Band n66 (AWS)	0.308	0.036	0.344

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.036	**0.743**
	LTE Band 25 (PCS)	0.177	0.430	0.036	0.643

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.036	**0.700**
	LTE Band 12	0.263	0.308	0.036	0.607

Table 12-44
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.214	0.098	0.312
	GSM 1900	0.112	0.098	0.210
	UMTS 850	0.402	0.098	0.500
	UMTS 1750	0.267	0.098	0.365
	UMTS 1900	0.183	0.098	0.281
	LTE Band 12	0.263	0.098	0.361
	LTE Band 13	0.267	0.098	0.365
	LTE Band 26 (Cell)	0.356	0.098	0.454
	LTE Band 66 (AWS)	0.277	0.098	0.375
	LTE Band 25 (PCS)	0.177	0.098	0.275
	LTE Band 41	0.144	0.098	0.242
	NR Band n5 (Cell)	0.430	0.098	**0.528**
	NR Band n66 (AWS)	0.308	0.098	0.406

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.098	**0.805**
	LTE Band 25 (PCS)	0.177	0.430	0.098	0.705

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.098	**0.762**
	LTE Band 12	0.263	0.308	0.098	0.669

Table 12-45
Simultaneous Transmission Scenario with Bluetooth Antenna 1 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.214	0.019	0.233
	GSM 1900	0.112	0.019	0.131
	UMTS 850	0.402	0.019	0.421
	UMTS 1750	0.267	0.019	0.286
	UMTS 1900	0.183	0.019	0.202
	LTE Band 12	0.263	0.019	0.282
	LTE Band 13	0.267	0.019	0.286
	LTE Band 26 (Cell)	0.356	0.019	0.375
	LTE Band 66 (AWS)	0.277	0.019	0.296
	LTE Band 25 (PCS)	0.177	0.019	0.196
	LTE Band 41	0.144	0.019	0.163
	NR Band n5 (Cell)	0.430	0.019	**0.449**
	NR Band n66 (AWS)	0.308	0.019	0.327

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	**0.726**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.626

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	**0.683**
	LTE Band 12	0.263	0.308	0.019	0.590

Table 12-46
Simultaneous Transmission Scenario with Bluetooth Antenna 2 (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body - Worn SAR	GSM 850	0.214	0.007	0.221
	GSM 1900	0.112	0.007	0.119
	UMTS 850	0.402	0.007	0.409
	UMTS 1750	0.267	0.007	0.274
	UMTS 1900	0.183	0.007	0.190
	LTE Band 12	0.263	0.007	0.270
	LTE Band 13	0.267	0.007	0.274
	LTE Band 26 (Cell)	0.356	0.007	0.363
	LTE Band 66 (AWS)	0.277	0.007	0.284
	LTE Band 25 (PCS)	0.177	0.007	0.184
	LTE Band 41	0.144	0.007	0.151
	NR Band n5 (Cell)	0.430	0.007	**0.437**
	NR Band n66 (AWS)	0.308	0.007	0.315

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.007	**0.714**
	LTE Band 25 (PCS)	0.177	0.430	0.007	0.614

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.007	**0.671**
	LTE Band 12	0.263	0.308	0.007	0.578

Table 12-47
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.019	0.021	0.254
	GSM 1900	0.112	0.019	0.021	0.152
	UMTS 850	0.402	0.019	0.021	0.442
	UMTS 1750	0.267	0.019	0.021	0.307
	UMTS 1900	0.183	0.019	0.021	0.223
	LTE Band 12	0.263	0.019	0.021	0.303
	LTE Band 13	0.267	0.019	0.021	0.307
	LTE Band 26 (Cell)	0.356	0.019	0.021	0.396
	LTE Band 66 (AWS)	0.277	0.019	0.021	0.317
	LTE Band 25 (PCS)	0.177	0.019	0.021	0.217
	LTE Band 41	0.144	0.019	0.021	0.184
	NR Band n5 (Cell)	0.430	0.019	0.021	**0.470**
	NR Band n66 (AWS)	0.308	0.019	0.021	0.348

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	0.021	**0.747**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.021	0.647

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	0.021	**0.704**
	LTE Band 12	0.263	0.308	0.019	0.021	0.611

Table 12-48
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.007	0.021	0.242
	GSM 1900	0.112	0.007	0.021	0.140
	UMTS 850	0.402	0.007	0.021	0.430
	UMTS 1750	0.267	0.007	0.021	0.295
	UMTS 1900	0.183	0.007	0.021	0.211
	LTE Band 12	0.263	0.007	0.021	0.291
	LTE Band 13	0.267	0.007	0.021	0.295
	LTE Band 26 (Cell)	0.356	0.007	0.021	0.384
	LTE Band 66 (AWS)	0.277	0.007	0.021	0.305
	LTE Band 25 (PCS)	0.177	0.007	0.021	0.205
	LTE Band 41	0.144	0.007	0.021	0.172
	NR Band n5 (Cell)	0.430	0.007	0.021	**0.458**
	NR Band n66 (AWS)	0.308	0.007	0.021	0.336

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.007	0.021	**0.735**
	LTE Band 25 (PCS)	0.177	0.430	0.007	0.021	0.635

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.007	0.021	**0.692**
	LTE Band 12	0.263	0.308	0.007	0.021	0.599

Table 12-49
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.019	0.036	0.269
	GSM 1900	0.112	0.019	0.036	0.167
	UMTS 850	0.402	0.019	0.036	0.457
	UMTS 1750	0.267	0.019	0.036	0.322
	UMTS 1900	0.183	0.019	0.036	0.238
	LTE Band 12	0.263	0.019	0.036	0.318
	LTE Band 13	0.267	0.019	0.036	0.322
	LTE Band 26 (Cell)	0.356	0.019	0.036	0.411
	LTE Band 66 (AWS)	0.277	0.019	0.036	0.332
	LTE Band 25 (PCS)	0.177	0.019	0.036	0.232
	LTE Band 41	0.144	0.019	0.036	0.199
	NR Band n5 (Cell)	0.430	0.019	0.036	**0.485**
	NR Band n66 (AWS)	0.308	0.019	0.036	0.363

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	0.036	**0.762**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.036	0.662

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	0.036	**0.719**
	LTE Band 12	0.263	0.308	0.019	0.036	0.626

Table 12-50
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.007	0.036	0.257
	GSM 1900	0.112	0.007	0.036	0.155
	UMTS 850	0.402	0.007	0.036	0.445
	UMTS 1750	0.267	0.007	0.036	0.310
	UMTS 1900	0.183	0.007	0.036	0.226
	LTE Band 12	0.263	0.007	0.036	0.306
	LTE Band 13	0.267	0.007	0.036	0.310
	LTE Band 26 (Cell)	0.356	0.007	0.036	0.399
	LTE Band 66 (AWS)	0.277	0.007	0.036	0.320
	LTE Band 25 (PCS)	0.177	0.007	0.036	0.220
	LTE Band 41	0.144	0.007	0.036	0.187
	NR Band n5 (Cell)	0.430	0.007	0.036	**0.473**
	NR Band n66 (AWS)	0.308	0.007	0.036	0.351

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.007	0.036	**0.750**
	LTE Band 25 (PCS)	0.177	0.430	0.007	0.036	0.650

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.007	0.036	**0.707**
	LTE Band 12	0.263	0.308	0.007	0.036	0.614

Table 12-51
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 2.4 GHz WLAN Antenna 2
(Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.019	0.018	0.251
	GSM 1900	0.112	0.019	0.018	0.149
	UMTS 850	0.402	0.019	0.018	0.439
	UMTS 1750	0.267	0.019	0.018	0.304
	UMTS 1900	0.183	0.019	0.018	0.220
	LTE Band 12	0.263	0.019	0.018	0.300
	LTE Band 13	0.267	0.019	0.018	0.304
	LTE Band 26 (Cell)	0.356	0.019	0.018	0.393
	LTE Band 66 (AWS)	0.277	0.019	0.018	0.314
	LTE Band 25 (PCS)	0.177	0.019	0.018	0.214
	LTE Band 41	0.144	0.019	0.018	0.181
	NR Band n5 (Cell)	0.430	0.019	0.018	**0.467**
	NR Band n66 (AWS)	0.308	0.019	0.018	0.345

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	0.018	**0.744**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.018	0.644

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	0.018	**0.701**
	LTE Band 12	0.263	0.308	0.019	0.018	0.608

Table 12-52
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz Antenna 1 WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	GSM 850	0.214	0.019	0.018	0.021	0.272
	GSM 1900	0.112	0.019	0.018	0.021	0.170
	UMTS 850	0.402	0.019	0.018	0.021	0.460
	UMTS 1750	0.267	0.019	0.018	0.021	0.325
	UMTS 1900	0.183	0.019	0.018	0.021	0.241
	LTE Band 12	0.263	0.019	0.018	0.021	0.321
	LTE Band 13	0.267	0.019	0.018	0.021	0.325
	LTE Band 26 (Cell)	0.356	0.019	0.018	0.021	0.414
	LTE Band 66 (AWS)	0.277	0.019	0.018	0.021	0.335
	LTE Band 25 (PCS)	0.177	0.019	0.018	0.021	0.235
	LTE Band 41	0.144	0.019	0.018	0.021	0.202
	NR Band n5 (Cell)	0.430	0.019	0.018	0.021	**0.488**
	NR Band n66 (AWS)	0.308	0.019	0.018	0.021	0.366

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	0.018	0.021	**0.765**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.018	0.021	0.665

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	0.018	0.021	**0.722**
	LTE Band 12	0.263	0.308	0.019	0.018	0.021	0.629

Table 12-53
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	GSM 850	0.214	0.019	0.018	0.036	0.287
	GSM 1900	0.112	0.019	0.018	0.036	0.185
	UMTS 850	0.402	0.019	0.018	0.036	0.475
	UMTS 1750	0.267	0.019	0.018	0.036	0.340
	UMTS 1900	0.183	0.019	0.018	0.036	0.256
	LTE Band 12	0.263	0.019	0.018	0.036	0.336
	LTE Band 13	0.267	0.019	0.018	0.036	0.340
	LTE Band 26 (Cell)	0.356	0.019	0.018	0.036	0.429
	LTE Band 66 (AWS)	0.277	0.019	0.018	0.036	0.350
	LTE Band 25 (PCS)	0.177	0.019	0.018	0.036	0.250
	LTE Band 41	0.144	0.019	0.018	0.036	0.217
	NR Band n5 (Cell)	0.430	0.019	0.018	0.036	**0.503**
	NR Band n66 (AWS)	0.308	0.019	0.018	0.036	0.381

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.019	0.018	0.036	**0.780**
	LTE Band 25 (PCS)	0.177	0.430	0.019	0.018	0.036	0.680

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.019	0.018	0.036	**0.737**
	LTE Band 12	0.263	0.308	0.019	0.018	0.036	0.644

Table 12-54
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN and 5 GHz MIMO WLAN (Body-Worn at 1.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	GSM 850	0.214	0.098	0.036	0.348
	GSM 1900	0.112	0.098	0.036	0.246
	UMTS 850	0.402	0.098	0.036	0.536
	UMTS 1750	0.267	0.098	0.036	0.401
	UMTS 1900	0.183	0.098	0.036	0.317
	LTE Band 12	0.263	0.098	0.036	0.397
	LTE Band 13	0.267	0.098	0.036	0.401
	LTE Band 26 (Cell)	0.356	0.098	0.036	0.490
	LTE Band 66 (AWS)	0.277	0.098	0.036	0.411
	LTE Band 25 (PCS)	0.177	0.098	0.036	0.311
	LTE Band 41	0.144	0.098	0.036	0.278
	NR Band n5 (Cell)	0.430	0.098	0.036	**0.564**
	NR Band n66 (AWS)	0.308	0.098	0.036	0.442

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS)	0.277	0.430	0.098	0.036	**0.841**
	LTE Band 25 (PCS)	0.177	0.430	0.098	0.036	0.741

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 26 (Cell)	0.356	0.308	0.098	0.036	**0.798**
	LTE Band 12	0.263	0.308	0.098	0.036	0.705

12.8 Closed Hotspot SAR Simultaneous Transmission Analysis

Table 12-55
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.401	1.231
	GPRS 1900	0.757	0.401	1.158
	UMTS 850	1.061	0.401	**1.462**
	UMTS 1750	0.862	0.401	1.263
	UMTS 1900	0.711	0.401	1.112
	LTE Band 12	0.703	0.401	1.104
	LTE Band 13	0.707	0.401	1.108
	LTE Band 26 (Cell)	0.807	0.401	1.208
	LTE Band 66 (AWS)	0.799	0.401	1.200
	LTE Band 25 (PCS)	0.960	0.401	1.361
	LTE Band 41	0.948	0.401	1.349
	NR Band n5 (Cell)	0.724	0.401	1.125
	NR Band n66 (AWS)	0.705	0.401	1.106

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 66 (AWS)	0.799	0.724	0.106	See Table Below
	LTE Band 25 (PCS)	0.960	0.724	0.106	See Table Below
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.807	0.705	0.106	See Table Below
	LTE Band 12	0.703	0.705	0.106	**1.514**

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.724	0.015	**1.262**
	Front	0.175	0.168	0.091	0.434
	Bottom	0.799	0.178	0.106	1.083
	Right	0.021	0.123	0.011	0.155
	Left	0.145	0.128	-	0.273
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.724	0.015	1.168
	Front	0.275	0.168	0.091	0.534
	Bottom	0.960	0.178	0.106	**1.244**
	Right	0.044	0.123	0.011	0.178
	Left	0.176	0.128	-	0.304
Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.296	0.015	**1.118**
	Front	0.149	0.107	0.091	0.347
	Bottom	0.159	0.705	0.106	0.970
	Right	0.098	0.009	0.011	0.118
	Left	0.118	0.097	-	0.215

Table 12-56
Simultaneous Transmission Scenario with 5 GHz MIMO WLAN (Hotspot at 0.5 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.830	0.140	0.970
	Front	0.224	0.938	**1.162**
	Bottom	0.197	0.357	0.554
	Right	0.143	0.179	0.322
	Left	0.199	0.779	0.978

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.416	0.140	0.556
	Front	0.187	0.938	**1.125**
	Bottom	0.757	0.357	1.114
	Right	0.054	0.179	0.233
	Left	0.109	0.779	0.888

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	1.061	0.140	1.201
	Front	0.267	0.938	**1.205**
	Bottom	0.252	0.357	0.609
	Right	0.166	0.179	0.345
	Left	0.212	0.779	0.991

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.608	0.140	0.748
	Front	0.195	0.938	1.133
	Bottom	0.862	0.357	**1.219**
	Right	0.021	0.179	0.200
	Left	0.163	0.779	0.942

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.537	0.140	0.677
	Front	0.115	0.938	1.053
	Bottom	0.711	0.357	**1.068**
	Right	0.098	0.179	0.277
	Left	0.041	0.779	0.820

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.703	0.140	0.843
	Front	0.139	0.938	**1.077**
	Bottom	0.105	0.357	0.462
	Right	0.107	0.179	0.286
	Left	0.199	0.779	0.978

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.707	0.140	0.847
	Front	0.197	0.938	**1.135**
	Bottom	0.218	0.357	0.575
	Right	0.097	0.179	0.276
	Left	0.126	0.779	0.905

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.807	0.140	0.947
	Front	0.149	0.938	**1.087**
	Bottom	0.159	0.357	0.516
	Right	0.098	0.179	0.277
	Left	0.118	0.779	0.897

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.523	0.140	0.663
	Front	0.175	0.938	1.113
	Bottom	0.799	0.357	**1.156**
	Right	0.021	0.179	0.200
	Left	0.145	0.779	0.924

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.429	0.140	0.569
	Front	0.275	0.938	1.213
	Bottom	0.960	0.357	**1.317**
	Right	0.044	0.179	0.223
	Left	0.176	0.779	0.955

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.421	0.140	0.561
	Front	0.048	0.938	0.986
	Bottom	0.948	0.357	**1.305**
	Right	-	0.179	0.179
	Left	0.141	0.779	0.920

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.724	0.140	0.864
	Front	0.168	0.938	**1.106**
	Bottom	0.178	0.357	0.535
	Right	0.123	0.179	0.302
	Left	0.128	0.779	0.907

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.296	0.140	0.436
	Front	0.107	0.938	1.045
	Bottom	0.705	0.357	**1.062**
	Right	0.009	0.179	0.188
	Left	0.097	0.779	0.876

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.724	0.030	1.277
	Front	0.175	0.168	0.263	0.606
	Bottom	0.799	0.178	0.073	1.050
	Right	0.021	0.123	0.026	0.170
	Left	0.145	0.128	0.268	0.541
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.724	0.030	1.183
	Front	0.275	0.168	0.263	0.706
	Bottom	0.960	0.178	0.073	1.211
	Right	0.044	0.123	0.026	0.193
	Left	0.176	0.128	0.268	0.572
Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.296	0.030	**1.133**
	Front	0.149	0.107	0.263	0.519
	Bottom	0.159	0.705	0.073	0.937
	Right	0.098	0.009	0.026	0.133
	Left	0.118	0.097	0.268	0.483
Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.703	0.296	0.030	**1.029**
	Front	0.139	0.107	0.263	0.509
	Bottom	0.105	0.705	0.073	0.883
	Right	0.107	0.009	0.026	0.142
	Left	0.199	0.097	0.268	0.564

Table 12-57
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN (Hotspot at 0.5 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.830	0.334	1.164
	Front	0.224	1.279	**1.503**
	Bottom	0.197	0.632	0.829
	Right	0.143	1.279*	1.422
	Left	0.199	1.175	1.374

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.416	0.334	0.750
	Front	0.187	1.279	**1.466**
	Bottom	0.757	0.632	1.389
	Right	0.054	1.279*	1.333
	Left	0.109	1.175	1.284

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	1.061	0.334	1.395
	Front	0.267	1.279	**1.546**
	Bottom	0.252	0.632	0.884
	Right	0.166	1.279*	1.445
	Left	0.212	1.175	1.387

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.608	0.334	0.942
	Front	0.195	1.279	1.474
	Bottom	0.862	0.632	**1.494**
	Right	0.021	1.279*	1.300
	Left	0.163	1.175	1.338

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.537	0.334	0.871
	Front	0.115	1.279	**1.394**
	Bottom	0.711	0.632	1.343
	Right	0.098	1.279*	1.377
	Left	0.041	1.175	1.216

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.703	0.334	1.037
	Front	0.139	1.279	**1.418**
	Bottom	0.105	0.632	0.737
	Right	0.107	1.279*	1.386
	Left	0.199	1.175	1.374

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.707	0.334	1.041
	Front	0.197	1.279	**1.476**
	Bottom	0.218	0.632	0.850
	Right	0.097	1.279*	1.376
	Left	0.126	1.175	1.301

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.807	0.334	1.141
	Front	0.149	1.279	**1.428**
	Bottom	0.159	0.632	0.791
	Right	0.098	1.279*	1.377
	Left	0.118	1.175	1.293

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.523	0.334	0.857
	Front	0.175	1.279	**1.454**
	Bottom	0.799	0.632	1.431
	Right	0.021	1.279*	1.300
	Left	0.145	1.175	1.320

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.429	0.334	0.763
	Front	0.275	1.279	1.554
	Bottom	0.960	0.632	**1.592**
	Right	0.044	1.279*	1.323
	Left	0.176	1.175	1.351

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.421	0.334	0.755
	Front	0.048	1.279	1.327
	Bottom	0.948	0.632	**1.580**
	Right	-	1.279*	1.279
	Left	0.141	1.175	1.316

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.724	0.334	1.058
	Front	0.168	1.279	**1.447**
	Bottom	0.178	0.632	0.810
	Right	0.123	1.279*	1.402
	Left	0.128	1.175	1.303

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.296	0.334	0.630
	Front	0.107	1.279	**1.386**
	Bottom	0.705	0.632	1.337
	Right	0.009	1.279*	1.288
	Left	0.097	1.175	1.272

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 66 (AWS)	0.799	0.724	0.164	See Table Below
	LTE Band 25 (PCS)	0.960	0.724	0.164	See Table Below
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.793	0.705	0.164	See Table Below
	LTE Band 12	0.703	0.705	0.164	**1.572**

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.724	0.061	**1.308**
	Front	0.175	0.168	0.160	0.503
	Bottom	0.799	0.178	0.085	1.062
	Right	0.021	0.123	0.164*	0.308
	Left	0.145	0.128	0.164	0.437
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.724	0.061	1.214
	Front	0.275	0.168	0.160	0.603
	Bottom	0.960	0.178	0.085	**1.223**
	Right	0.044	0.123	0.164*	0.331
	Left	0.176	0.128	0.164	0.468
Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.296	0.061	**1.164**
	Front	0.149	0.107	0.160	0.416
	Bottom	0.159	0.705	0.085	0.949
	Right	0.098	0.009	0.164*	0.271
	Left	0.118	0.097	0.164	0.379

Table 12-58
Simultaneous Transmission Scenario with Bluetooth Antenna 1 (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.316	1.146
	GPRS 1900	0.757	0.316	1.073
	UMTS 850	1.061	0.316	**1.377**
	UMTS 1750	0.862	0.316	1.178
	UMTS 1900	0.711	0.316	1.027
	LTE Band 12	0.703	0.316	1.019
	LTE Band 13	0.707	0.316	1.023
	LTE Band 26 (Cell)	0.807	0.316	1.123
	LTE Band 66 (AWS)	0.799	0.316	1.115
	LTE Band 25 (PCS)	0.960	0.316	1.276
	LTE Band 41	0.948	0.316	1.264
	NR Band n5 (Cell)	0.724	0.316	1.040
	NR Band n66 (AWS)	0.705	0.316	1.021

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 66 (AWS)	0.799	0.724	0.120	See Table Below
	LTE Band 25 (PCS)	0.960	0.724	0.120	See Table Below
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.807	0.705	0.120	See Table Below
	LTE Band 12	0.703	0.705	0.120	**1.528**

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.724	0.021	**1.268**
	Front	0.175	0.168	0.120	0.463
	Bottom	0.799	0.178	0.043	1.020
	Right	0.021	0.123	0.029	0.173
	Left	0.145	0.128	-	0.273

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.724	0.021	**1.174**
	Front	0.275	0.168	0.120	0.563
	Bottom	0.960	0.178	0.043	1.181
	Right	0.044	0.123	0.029	0.196
	Left	0.176	0.128	-	0.304

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.296	0.021	**1.124**
	Front	0.149	0.107	0.120	0.376
	Bottom	0.159	0.705	0.043	0.907
	Right	0.098	0.009	0.029	0.136
	Left	0.118	0.097	-	0.215

Table 12-59
Simultaneous Transmission Scenario with Bluetooth Antenna 2 (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.358	1.188
	GPRS 1900	0.757	0.358	1.115
	UMTS 850	1.061	0.358	**1.419**
	UMTS 1750	0.862	0.358	1.220
	UMTS 1900	0.711	0.358	1.069
	LTE Band 12	0.703	0.358	1.061
	LTE Band 13	0.707	0.358	1.065
	LTE Band 26 (Cell)	0.807	0.358	1.165
	LTE Band 66 (AWS)	0.799	0.358	1.157
	LTE Band 25 (PCS)	0.960	0.358	1.318
	LTE Band 41	0.948	0.358	1.306
	NR Band n5 (Cell)	0.724	0.358	1.082
	NR Band n66 (AWS)	0.705	0.358	1.063

Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 66 (AWS)	0.799	0.724	0.128	See Table Below
	LTE Band 25 (PCS)	0.960	0.724	0.128	See Table Below
Configuration	LTE Anchor Band	4G SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	LTE Band 26 (Cell)	0.807	0.705	0.128	See Table Below
	LTE Band 12	0.703	0.705	0.128	**1.536**

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.724	0.009	**1.256**
	Front	0.175	0.168	0.093	0.436
	Bottom	0.799	0.178	0.056	1.033
	Right	0.021	0.123	-	0.144
	Left	0.145	0.128	0.128	0.401

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.724	0.009	1.162
	Front	0.275	0.168	0.093	0.536
	Bottom	0.960	0.178	0.056	**1.194**
	Right	0.044	0.123	-	0.167
	Left	0.176	0.128	0.128	0.432

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.296	0.009	**1.112**
	Front	0.149	0.107	0.093	0.349
	Bottom	0.159	0.705	0.056	0.920
	Right	0.098	0.009	-	0.107
	Left	0.118	0.097	0.128	0.343

Table 12-60
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5 GHz Antenna 1 WLAN (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	2	1+2+3
Hotspot SAR	GPRS 850	0.830	0.316	0.401	1.547
	GPRS 1900	0.757	0.316	0.401	1.474
	UMTS 850	1.061	0.316	0.401	See Table Below
	UMTS 1750	0.862	0.316	0.401	**1.579**
	UMTS 1900	0.711	0.316	0.401	1.428
	LTE Band 12	0.703	0.316	0.401	1.420
	LTE Band 13	0.707	0.316	0.401	1.424
	LTE Band 26 (Cell)	0.807	0.316	0.401	1.524
	LTE Band 66 (AWS)	0.799	0.316	0.401	1.516
	LTE Band 25 (PCS)	0.960	0.316	0.401	See Table Below
	LTE Band 41	0.948	0.316	0.401	See Table Below
	NR Band n5 (Cell)	0.724	0.316	0.401	1.441
	NR Band n66 (AWS)	0.705	0.316	0.401	1.422

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.021	0.015	**1.283**
	Front	0.175	0.168	0.120	0.091	0.554
	Bottom	0.799	0.178	0.043	0.106	1.126
	Right	0.021	0.123	0.029	0.011	0.184
	Left	0.145	0.128	-	-	0.273

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.021	0.015	1.189
	Front	0.275	0.168	0.120	0.091	0.654
	Bottom	0.960	0.178	0.043	0.106	**1.287**
	Right	0.044	0.123	0.029	0.011	0.207
	Left	0.176	0.128	-	-	0.304

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.021	0.015	**1.139**
	Front	0.149	0.107	0.120	0.091	0.467
	Bottom	0.159	0.705	0.043	0.106	1.013
	Right	0.098	0.009	0.029	0.011	0.147
	Left	0.118	0.097	-	-	0.215

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.021	0.015	**1.035**
	Front	0.139	0.107	0.120	0.091	0.457
	Bottom	0.105	0.705	0.043	0.106	0.959
	Right	0.107	0.009	0.029	0.011	0.156
	Left	0.199	0.097	-	-	0.296

Table 12-61
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5 GHz Antenna 1 WLAN (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.830	0.358	0.401	**1.589**
	GPRS 1900	0.757	0.358	0.401	1.516
	UMTS 850	1.061	0.358	0.401	See Table Below
	UMTS 1750	0.862	0.358	0.401	See Table Below
	UMTS 1900	0.711	0.358	0.401	1.470
	LTE Band 12	0.703	0.358	0.401	1.462
	LTE Band 13	0.707	0.358	0.401	1.466
	LTE Band 26 (Cell)	0.807	0.358	0.401	1.566
	LTE Band 66 (AWS)	0.799	0.358	0.401	1.558
	LTE Band 25 (PCS)	0.960	0.358	0.401	See Table Below
	LTE Band 41	0.948	0.358	0.401	See Table Below
	NR Band n5 (Cell)	0.724	0.358	0.401	1.483
	NR Band n66 (AWS)	0.705	0.358	0.401	1.464

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.061	0.046	0.066	**1.173**
	Front	0.267	0.294	0.384	0.945
	Bottom	0.252	0.178	0.401	0.831
	Right	0.166	-	0.401*	0.567
	Left	0.212	0.358	-	0.570

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.046	0.066	0.541
	Front	0.275	0.294	0.384	0.953
	Bottom	0.960	0.178	0.401	**1.539**
	Right	0.044	-	0.401*	0.445
	Left	0.176	0.358	-	0.534

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.608	0.046	0.066	0.720
	Front	0.195	0.294	0.384	0.873
	Bottom	0.862	0.178	0.401	**1.441**
	Right	0.021	-	0.401*	0.422
	Left	0.163	0.358	-	0.521

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.421	0.046	0.066	0.533
	Front	0.048	0.294	0.384	0.726
	Bottom	0.948	0.178	0.401	**1.527**
	Right	-	-	0.401*	0.401
	Left	0.141	0.358	-	0.499

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.009	0.015	**1.271**
	Front	0.175	0.168	0.093	0.091	0.527
	Bottom	0.799	0.178	0.056	0.106	1.139
	Right	0.021	0.123	-	0.011	0.155
	Left	0.145	0.128	0.128	-	0.401

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.009	0.015	**1.127**
	Front	0.149	0.107	0.093	0.091	0.440
	Bottom	0.159	0.705	0.056	0.106	1.026
	Right	0.098	0.009	-	0.011	0.118
	Left	0.118	0.097	0.128	-	0.343

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.009	0.015	1.177
	Front	0.275	0.168	0.093	0.091	0.627
	Bottom	0.960	0.178	0.056	0.106	**1.300**
	Right	0.044	0.123	-	0.011	0.178
	Left	0.176	0.128	0.128	-	0.432

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.009	0.015	**1.023**
	Front	0.139	0.107	0.093	0.091	0.430
	Bottom	0.105	0.705	0.056	0.106	0.972
	Right	0.107	0.009	-	0.011	0.127
	Left	0.199	0.097	0.128	-	0.424

Table 12-62
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 5GHz MIMO WLAN (Hotspot at 0.5 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.830	0.078	0.140	1.048
	Front	0.224	0.316	0.938	**1.478**
	Bottom	0.197	0.157	0.357	0.711
	Right	0.143	0.101	0.179	0.423
	Left	0.199	-	0.779	0.978

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.416	0.078	0.140	0.634
	Front	0.187	0.316	0.938	**1.441**
	Bottom	0.757	0.157	0.357	1.271
	Right	0.054	0.101	0.179	0.334
	Left	0.109	-	0.779	0.888

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.061	0.078	0.140	1.279
	Front	0.267	0.316	0.938	**1.521**
	Bottom	0.252	0.157	0.357	0.766
	Right	0.166	0.101	0.179	0.446
	Left	0.212	-	0.779	0.991

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.608	0.078	0.140	0.826
	Front	0.195	0.316	0.938	**1.449**
	Bottom	0.862	0.157	0.357	1.376
	Right	0.021	0.101	0.179	0.301
	Left	0.163	-	0.779	0.942

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.537	0.078	0.140	0.755
	Front	0.115	0.316	0.938	**1.369**
	Bottom	0.711	0.157	0.357	1.225
	Right	0.098	0.101	0.179	0.378
	Left	0.041	-	0.779	0.820

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.703	0.078	0.140	0.921
	Front	0.139	0.316	0.938	**1.393**
	Bottom	0.105	0.157	0.357	0.619
	Right	0.107	0.101	0.179	0.387
	Left	0.199	-	0.779	0.978

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.707	0.078	0.140	0.925
	Front	0.197	0.316	0.938	**1.451**
	Bottom	0.218	0.157	0.357	0.732
	Right	0.097	0.101	0.179	0.377
	Left	0.126	-	0.779	0.905

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.078	0.140	1.025
	Front	0.149	0.316	0.938	**1.403**
	Bottom	0.159	0.157	0.357	0.673
	Right	0.098	0.101	0.179	0.378
	Left	0.118	-	0.779	0.897

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.078	0.140	0.741
	Front	0.175	0.316	0.938	**1.429**
	Bottom	0.799	0.157	0.357	1.313
	Right	0.021	0.101	0.179	0.301
	Left	0.145	-	0.779	0.924

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.078	0.140	0.647
	Front	0.275	0.316	0.938	**1.529**
	Bottom	0.960	0.157	0.357	1.474
	Right	0.044	0.101	0.179	0.324
	Left	0.176	-	0.779	0.955

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.421	0.078	0.140	0.639
	Front	0.048	0.316	0.938	1.302
	Bottom	0.948	0.157	0.357	**1.462**
	Right	-	0.101	0.179	0.280
	Left	0.141	-	0.779	0.920

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.724	0.078	0.140	0.942
	Front	0.168	0.316	0.938	**1.422**
	Bottom	0.178	0.157	0.357	0.692
	Right	0.123	0.101	0.179	0.403
	Left	0.128	-	0.779	0.907

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.296	0.078	0.140	0.514
	Front	0.107	0.316	0.938	**1.361**
	Bottom	0.705	0.157	0.357	1.219
	Right	0.009	0.101	0.179	0.289
	Left	0.097	-	0.779	0.876

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.021	0.030	**1.298**
	Front	0.175	0.168	0.120	0.263	0.726
	Bottom	0.799	0.178	0.043	0.073	1.093
	Right	0.021	0.123	0.029	0.026	0.199
	Left	0.145	0.128	-	0.268	0.541
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.021	0.030	1.204
	Front	0.275	0.168	0.120	0.263	0.826
	Bottom	0.960	0.178	0.043	0.073	**1.254**
	Right	0.044	0.123	0.029	0.026	0.222
	Left	0.176	0.128	-	0.268	0.572
Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.021	0.030	**1.154**
	Front	0.149	0.107	0.120	0.263	0.639
	Bottom	0.159	0.705	0.043	0.073	0.980
	Right	0.098	0.009	0.029	0.026	0.162
	Left	0.118	0.097	-	0.268	0.483
Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.021	0.030	**1.050**
	Front	0.139	0.107	0.120	0.263	0.629
	Bottom	0.105	0.705	0.043	0.073	0.926
	Right	0.107	0.009	0.029	0.026	0.171
	Left	0.199	0.097	-	0.268	0.564

Table 12-63
Simultaneous Transmission Scenario with Bluetooth Antenna 2 and 5GHz MIMO WLAN (Hotspot at 0.5 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.830	0.046	0.140	1.016
	Front	0.224	0.294	0.938	**1.456**
	Bottom	0.197	0.178	0.357	0.732
	Right	0.143	-	0.179	0.322
	Left	0.199	0.358	0.779	1.336

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.416	0.046	0.140	0.602
	Front	0.187	0.294	0.938	**1.419**
	Bottom	0.757	0.178	0.357	1.292
	Right	0.054	-	0.179	0.233
	Left	0.109	0.358	0.779	1.246

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.061	0.046	0.140	1.247
	Front	0.267	0.294	0.938	**1.499**
	Bottom	0.252	0.178	0.357	0.787
	Right	0.166	-	0.179	0.345
	Left	0.212	0.358	0.779	1.349

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.608	0.046	0.140	0.794
	Front	0.195	0.294	0.938	**1.427**
	Bottom	0.862	0.178	0.357	1.397
	Right	0.021	-	0.179	0.200
	Left	0.163	0.358	0.779	1.300

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.537	0.046	0.140	0.723
	Front	0.115	0.294	0.938	**1.347**
	Bottom	0.711	0.178	0.357	1.246
	Right	0.098	-	0.179	0.277
	Left	0.041	0.358	0.779	1.178

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.703	0.046	0.140	0.889
	Front	0.139	0.294	0.938	**1.371**
	Bottom	0.105	0.178	0.357	0.640
	Right	0.107	-	0.179	0.286
	Left	0.199	0.358	0.779	1.336

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.707	0.046	0.140	0.893
	Front	0.197	0.294	0.938	**1.429**
	Bottom	0.218	0.178	0.357	0.753
	Right	0.097	-	0.179	0.276
	Left	0.126	0.358	0.779	1.263

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.807	0.046	0.140	0.993
	Front	0.149	0.294	0.938	**1.381**
	Bottom	0.159	0.178	0.357	0.694
	Right	0.098	-	0.179	0.277
	Left	0.118	0.358	0.779	1.255

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.523	0.046	0.140	0.709
	Front	0.175	0.294	0.938	**1.407**
	Bottom	0.799	0.178	0.357	1.334
	Right	0.021	-	0.179	0.200
	Left	0.145	0.358	0.779	1.282

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.046	0.140	0.615
	Front	0.275	0.294	0.938	**1.507**
	Bottom	0.960	0.178	0.357	1.495
	Right	0.044	-	0.179	0.223
	Left	0.176	0.358	0.779	1.313

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.421	0.046	0.140	0.607
	Front	0.048	0.294	0.938	1.280
	Bottom	0.948	0.178	0.357	**1.483**
	Right	-	-	0.179	0.179
	Left	0.141	0.358	0.779	1.278

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.724	0.046	0.140	0.910
	Front	0.168	0.294	0.938	**1.400**
	Bottom	0.178	0.178	0.357	0.713
	Right	0.123	-	0.179	0.302
	Left	0.128	0.358	0.779	1.265

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.296	0.046	0.140	0.482
	Front	0.107	0.294	0.938	**1.339**
	Bottom	0.705	0.178	0.357	1.240
	Right	0.009	-	0.179	0.188
	Left	0.097	0.358	0.779	1.234

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.009	0.030	**1.286**
	Front	0.175	0.168	0.093	0.263	0.699
	Bottom	0.799	0.178	0.056	0.073	1.106
	Right	0.021	0.123	-	0.026	0.170
	Left	0.145	0.128	0.128	0.268	0.669

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.009	0.030	1.192
	Front	0.275	0.168	0.093	0.263	0.799
	Bottom	0.960	0.178	0.056	0.073	**1.267**
	Right	0.044	0.123	-	0.026	0.193
	Left	0.176	0.128	0.128	0.268	0.700

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.009	0.030	**1.142**
	Front	0.149	0.107	0.093	0.263	0.612
	Bottom	0.159	0.705	0.056	0.073	0.993
	Right	0.098	0.009	-	0.026	0.133
	Left	0.118	0.097	0.128	0.268	0.611

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 2 at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.009	0.030	**1.038**
	Front	0.139	0.107	0.093	0.263	0.602
	Bottom	0.105	0.705	0.056	0.073	0.939
	Right	0.107	0.009	-	0.026	0.142
	Left	0.199	0.097	0.128	0.268	0.692

Table 12-64
Simultaneous Transmission Scenario with Bluetooth Antenna 1 and 2.4 GHz WLAN Antenna 2 (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	2	1+2+3
Hotspot SAR	GPRS 850	0.830	0.316	0.393	1.539
	GPRS 1900	0.757	0.316	0.393	1.466
	UMTS 850	1.061	0.316	0.393	See Table Below
	UMTS 1750	0.862	0.316	0.393	**1.571**
	UMTS 1900	0.711	0.316	0.393	1.420
	LTE Band 12	0.703	0.316	0.393	1.412
	LTE Band 13	0.707	0.316	0.393	1.416
	LTE Band 26 (Cell)	0.807	0.316	0.393	1.516
	LTE Band 66 (AWS)	0.799	0.316	0.393	1.508
	LTE Band 25 (PCS)	0.960	0.316	0.393	See Table Below
	LTE Band 41	0.948	0.316	0.393	See Table Below
	NR Band n5 (Cell)	0.724	0.316	0.393	1.433
	NR Band n66 (AWS)	0.705	0.316	0.393	1.414

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	1.061	0.078	0.076	**1.215**
	Front	0.267	0.316	0.393	0.976
	Bottom	0.252	0.157	0.186	0.595
	Right	0.166	0.101	-	0.267
	Left	0.212	-	0.343	0.555

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.429	0.078	0.076	0.583
	Front	0.275	0.316	0.393	0.984
	Bottom	0.960	0.157	0.186	**1.303**
	Right	0.044	0.101	-	0.145
	Left	0.176	-	0.343	0.519

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.421	0.078	0.076	0.575
	Front	0.048	0.316	0.393	0.757
	Bottom	0.948	0.157	0.186	**1.291**
	Right	-	0.101	-	0.101
	Left	0.141	-	0.343	0.484

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.021	0.020	**1.288**
	Front	0.175	0.168	0.120	0.103	0.566
	Bottom	0.799	0.178	0.043	0.081	1.101
	Right	0.021	0.123	0.029	-	0.173
	Left	0.145	0.128	-	0.206	0.479

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.021	0.020	1.194
	Front	0.275	0.168	0.120	0.103	0.666
	Bottom	0.960	0.178	0.043	0.081	**1.262**
	Right	0.044	0.123	0.029	-	0.196
	Left	0.176	0.128	-	0.206	0.510

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.021	0.020	**1.144**
	Front	0.149	0.107	0.120	0.103	0.479
	Bottom	0.159	0.705	0.043	0.081	0.988
	Right	0.098	0.009	0.029	-	0.136
	Left	0.118	0.097	-	0.206	0.421

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.021	0.020	**1.040**
	Front	0.139	0.107	0.120	0.103	0.469
	Bottom	0.105	0.705	0.043	0.081	0.934
	Right	0.107	0.009	0.029	-	0.145
	Left	0.199	0.097	-	0.206	0.502

REV 21.4 M
09/11/2019

Table 12-65
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz Antenna 1 WLAN (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	GPRS 850	0.830	0.316	0.206	0.106	1.458
	GPRS 1900	0.757	0.316	0.206	0.106	1.385
	UMTS 850	1.061	0.316	0.206	0.106	See Table Below
	UMTS 1750	0.862	0.316	0.206	0.106	1.490
	UMTS 1900	0.711	0.316	0.206	0.106	1.339
	LTE Band 12	0.703	0.316	0.206	0.106	1.331
	LTE Band 13	0.707	0.316	0.206	0.106	1.335
	LTE Band 26 (Cell)	0.807	0.316	0.206	0.106	1.435
	LTE Band 66 (AWS)	0.799	0.316	0.206	0.106	1.427
	LTE Band 25 (PCS)	0.960	0.316	0.206	0.106	**1.588**
	LTE Band 41	0.948	0.316	0.206	0.106	1.576
	NR Band n5 (Cell)	0.724	0.316	0.206	0.106	1.352
	NR Band n66 (AWS)	0.705	0.316	0.206	0.106	1.333

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	1.061	0.078	0.020	0.015	**1.174**
	Front	0.267	0.316	0.103	0.091	0.777
	Bottom	0.252	0.157	0.081	0.106	0.596
	Right	0.166	0.101	-	0.011	0.278
	Left	0.212	-	0.206	-	0.418

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.523	0.724	0.021	0.020	0.015	**1.303**
	Front	0.175	0.168	0.120	0.103	0.091	0.657
	Bottom	0.799	0.178	0.043	0.081	0.106	1.207
	Right	0.021	0.123	0.029	-	0.011	0.184
	Left	0.145	0.128	-	0.206	-	0.479

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.429	0.724	0.021	0.020	0.015	1.209
	Front	0.275	0.168	0.120	0.103	0.091	0.757
	Bottom	0.960	0.178	0.043	0.081	0.106	**1.368**
	Right	0.044	0.123	0.029	-	0.011	0.207
	Left	0.176	0.128	-	0.206	-	0.510

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.807	0.296	0.021	0.020	0.015	**1.159**
	Front	0.149	0.107	0.120	0.103	0.091	0.570
	Bottom	0.159	0.705	0.043	0.081	0.106	1.094
	Right	0.098	0.009	0.029	-	0.011	0.147
	Left	0.118	0.097	-	0.206	-	0.421

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN Ant 1 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.703	0.296	0.021	0.020	0.015	**1.055**
	Front	0.139	0.107	0.120	0.103	0.091	0.560
	Bottom	0.105	0.705	0.043	0.081	0.106	1.040
	Right	0.107	0.009	0.029	-	0.011	0.156
	Left	0.199	0.097	-	0.206	-	0.502

Table 12-66
Simultaneous Transmission Scenario with Bluetooth Antenna 1, 2.4 GHz Antenna 2 WLAN, and 5 GHz MIMO WLAN (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	GPRS 850	0.830	0.316	0.206	0.268	See Table Below
	GPRS 1900	0.757	0.316	0.206	0.268	1.547
	UMTS 850	1.061	0.316	0.206	0.268	See Table Below
	UMTS 1750	0.862	0.316	0.206	0.268	See Table Below
	UMTS 1900	0.711	0.316	0.206	0.268	1.501
	LTE Band 12	0.703	0.316	0.206	0.268	1.493
	LTE Band 13	0.707	0.316	0.206	0.268	1.497
	LTE Band 26 (Cell)	0.807	0.316	0.206	0.268	See Table Below
	LTE Band 66 (AWS)	0.799	0.316	0.206	0.268	**1.589**
	LTE Band 25 (PCS)	0.960	0.316	0.206	0.268	See Table Below
	LTE Band 41	0.948	0.316	0.206	0.268	See Table Below
	NR Band n5 (Cell)	0.724	0.316	0.206	0.268	1.514
	NR Band n66 (AWS)	0.705	0.316	0.206	0.268	1.495

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.830	0.078	0.020	0.030	**0.958**
	Front	0.224	0.316	0.103	0.263	0.906
	Bottom	0.197	0.157	0.081	0.073	0.508
	Right	0.143	0.101	-	0.026	0.270
	Left	0.199	-	0.206	0.268	0.673

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	1.061	0.078	0.020	0.030	**1.189**
	Front	0.267	0.316	0.103	0.263	0.949
	Bottom	0.252	0.157	0.081	0.073	0.563
	Right	0.166	0.101	-	0.026	0.293
	Left	0.212	-	0.206	0.268	0.686

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.608	0.078	0.020	0.030	0.736
	Front	0.195	0.316	0.103	0.263	0.877
	Bottom	0.862	0.157	0.081	0.073	**1.173**
	Right	0.021	0.101	-	0.026	0.148
	Left	0.163	-	0.206	0.268	0.637

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.078	0.020	0.030	0.557
	Front	0.275	0.316	0.103	0.263	0.957
	Bottom	0.960	0.157	0.081	0.073	**1.271**
	Right	0.044	0.101	-	0.026	0.171
	Left	0.176	-	0.206	0.268	0.650

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz Bluetooth Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.421	0.078	0.020	0.030	0.549
	Front	0.048	0.316	0.103	0.263	0.730
	Bottom	0.948	0.157	0.081	0.073	**1.259**
	Right	-	0.101	-	0.026	0.127
	Left	0.141	-	0.206	0.268	0.615

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.523	0.724	0.021	0.020	0.030	**1.318**
	Front	0.175	0.168	0.120	0.103	0.263	0.829
	Bottom	0.799	0.178	0.043	0.081	0.073	1.174
	Right	0.021	0.123	0.029	-	0.026	0.199
	Left	0.145	0.128	-	0.206	0.268	0.747

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.429	0.724	0.021	0.020	0.030	1.224
	Front	0.275	0.168	0.120	0.103	0.263	0.929
	Bottom	0.960	0.178	0.043	0.081	0.073	**1.335**
	Right	0.044	0.123	0.029	-	0.026	0.222
	Left	0.176	0.128	-	0.206	0.268	0.778

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.807	0.296	0.021	0.020	0.030	**1.174**
	Front	0.149	0.107	0.120	0.103	0.263	0.742
	Bottom	0.159	0.705	0.043	0.081	0.073	1.061
	Right	0.098	0.009	0.029	-	0.026	0.162
	Left	0.118	0.097	-	0.206	0.268	0.689

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz Bluetooth Ant 1 at 13 dBm SAR (W/kg)	2.4 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Hotspot SAR	Back	0.703	0.296	0.021	0.020	0.030	**1.070**
	Front	0.139	0.107	0.120	0.103	0.263	0.732
	Bottom	0.105	0.705	0.043	0.081	0.073	1.007
	Right	0.107	0.009	0.029	-	0.026	0.171
	Left	0.199	0.097	-	0.206	0.268	0.770

Table 12-67
Simultaneous Transmission Scenario with 2.4 GHz MIMO WLAN and 5 GHz MIMO WLAN (Hotspot at 0.5 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.830	0.164	0.268	1.262
	GPRS 1900	0.757	0.164	0.268	1.189
	UMTS 850	1.061	0.164	0.268	**1.493**
	UMTS 1750	0.862	0.164	0.268	1.294
	UMTS 1900	0.711	0.164	0.268	1.143
	LTE Band 12	0.703	0.164	0.268	1.135
	LTE Band 13	0.707	0.164	0.268	1.139
	LTE Band 26 (Cell)	0.807	0.164	0.268	1.239
	LTE Band 66 (AWS)	0.799	0.164	0.268	1.231
	LTE Band 25 (PCS)	0.960	0.164	0.268	1.392
	LTE Band 41	0.948	0.164	0.268	1.380
	NR Band n5 (Cell)	0.724	0.164	0.268	1.156
	NR Band n66 (AWS)	0.705	0.164	0.268	1.137

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.523	0.724	0.061	0.030	**1.338**
	Front	0.175	0.168	0.160	0.263	0.766
	Bottom	0.799	0.178	0.085	0.073	1.135
	Right	0.021	0.123	0.164*	0.026	0.334
	Left	0.145	0.128	0.164	0.268	0.705

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.429	0.724	0.061	0.030	1.244
	Front	0.275	0.168	0.160	0.263	0.866
	Bottom	0.960	0.178	0.085	0.073	**1.296**
	Right	0.044	0.123	0.164*	0.026	0.357
	Left	0.176	0.128	0.164	0.268	0.736

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.807	0.296	0.061	0.030	**1.194**
	Front	0.149	0.107	0.160	0.263	0.679
	Bottom	0.159	0.705	0.085	0.073	1.022
	Right	0.098	0.009	0.164*	0.026	0.297
	Left	0.118	0.097	0.164	0.268	0.647

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17 dBm SAR (W/kg)	5 GHz WLAN MIMO at 17 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.703	0.296	0.061	0.030	**1.090**
	Front	0.139	0.107	0.160	0.263	0.669
	Bottom	0.105	0.705	0.085	0.073	0.968
	Right	0.107	0.009	0.164*	0.026	0.306
	Left	0.199	0.097	0.164	0.268	0.728

12.9 SPLSR Evaluation and Analysis

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

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

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

12.9.1 Phablet Back Side SPLSR Evaluation and Analysis

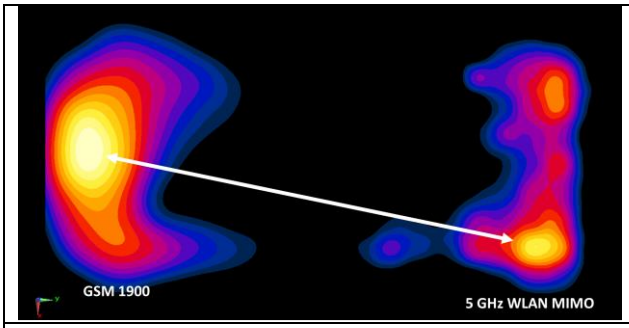
Table 12-68
Peak SAR Locations for Phablet Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	4.00	72.00
GPRS 1900	-23.40	-79.80
UMTS 1750	-33.70	-85.10
UMTS 1900	-35.00	-86.30

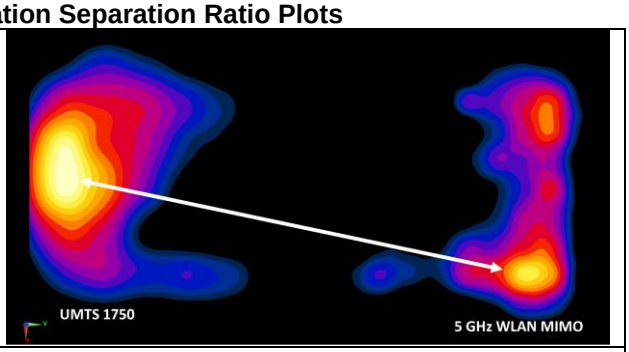
Table 12-69
Phablet Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
GPRS 1900	5 GHz WLAN MIMO	2.842	1.229	4.071	154.25	0.05	1
UMTS 1750	5 GHz WLAN MIMO	3.273	1.229	4.502	161.56	0.06	2
UMTS 1900	5 GHz WLAN MIMO	2.996	1.229	4.225	163.03	0.05	3

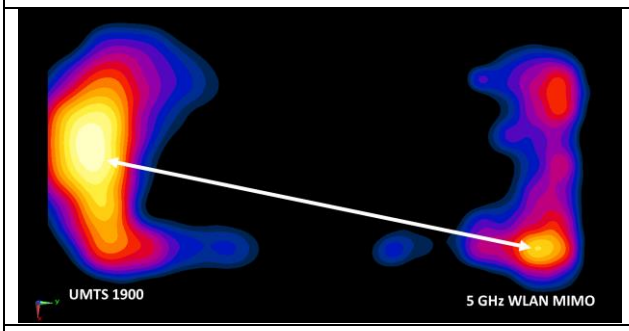
Table 12-70
Back Side SAR to Peak Location Separation Ratio Plots



1



2



3

12.10 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

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

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS															
Band	FREQUENCY		Mode	Service	Chipset Variant	Data Rate (Mbps)	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.							(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 50 RB, 50 RB Offset	N/A	N/A	bottom	5 mm	0.894	0.864	1.03	N/A	N/A	N/A	N/A
2450	2462.00	11	802.11b, 22 MHz Bandwidth	DSSS , MIMO	Q	1	front	5 mm	1.110	1.090	1.02	N/A	N/A	N/A	N/A
5750	5825.00	165	802.11n, 20 MHz Bandwidth	OFDM , MIMO	Q	13	front	5 mm	0.869	0.797	1.09	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 13-2
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1732.40	1412	UMTS 1750	RMC	back	0 mm	2.760	2.720	1.01	N/A	N/A	N/A	N/A
1900	1852.40	9262	UMTS 1900	RMC	back	0 mm	2.940	2.840	1.04	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams						

13.2 Measurement Uncertainty

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

14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 Tuner Testing

Per April 2019 TCB Workshop Notes, the following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. Per FCC Guidance, during NR testing the device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency.

For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other than impedance matching.

To evaluate all the tuner states, the 120 tuner states were divided among the aggregate band, mode and exposure combinations. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band/mode/exposure condition, point SAR measurements were made for all 120 states.

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

Table 14-1
UMTS Supplemental Head SAR Data

Supplemental Head SAR Data					
UMTS B5		UMTS B4		UMTS B2	
RMC		RMC		RMC	
Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	836.60	Frequency (MHz)	1712.40	Frequency (MHz)	1852.40
Channel	4183	Channel	1312	Channel	9262
Measured 1g SAR (W/kg)	0.248	Measured 1g SAR (W/kg)	0.085	Measured 1g SAR (W/kg)	0.088
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 0)	0.291	Auto-tune (State 0)	0.136	Auto-tune (State 52)	0.127
Default (State 0)	0.323	Default (State 0)	0.142	Default (State 13)	0.126
State 0	0.323	State 0	0.142	State 7	0.091
State 9	0.067	State 8	0.118	State 29	0.004
State 31	0.174	State 30	0.025	State 51	0.001
State 53	0.254	State 52	0.137	State 52	0.126
State 75	0.019	State 74	0.142	State 73	0.116
State 97	0.182	State 96	0.088	State 95	0.041
State 119	0.158	State 118	0.083	State 117	0.020

Table 14-2
LTE Supplemental Head SAR Data

Supplemental Head SAR Data									
LTE B12		LTE B13		LTE B26		LTE B66		LTE B25	
QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offset		QPSK, 15 MHz Bandwidth, 1 RB, 36 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 99 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset	
Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	831.50	Frequency (MHz)	1770.00	Frequency (MHz)	1860.00
Channel	23095	Channel	23230	Channel	26865	Channel	132572	Channel	26140
Measured 1g SAR (W/kg)	0.233	Measured 1g SAR (W/kg)	0.174	Measured 1g SAR (W/kg)	0.197	Measured 1g SAR (W/kg)	0.105	Measured 1g SAR (W/kg)	0.075
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 0)	0.265	Auto-tune (State 13)	0.228	Auto-tune (State 0)	0.287	Auto-tune (State 69)	0.135	Auto-tune (State 52)	0.118
Default (State 0)	0.259	Default (State 0)	0.187	Default (State 0)	0.277	Default (State 0)	0.144	Default (State 13)	0.110
State 0	0.259	State 5	0.108	State 0	0.277	State 2	0.158	State 1	0.097
State 6	0.230	State 13	0.187	State 3	0.238	State 24	0.106	State 23	0.106
State 28	0.197	State 27	0.104	State 25	0.012	State 46	0.064	State 45	0.017
State 50	0.021	State 49	0.036	State 47	0.103	State 68	0.137	State 52	0.106
State 72	0.032	State 71	0.114	State 69	0.216	State 69	0.141	State 67	0.084
State 94	0.112	State 93	0.173	State 91	0.118	State 90	0.012	State 89	0.009
State 116	0.112	State 115	0.135	State 113	0.239	State 112	0.159	State 111	0.043

Table 14-3
NR Supplemental Head SAR Data

Supplemental Head SAR Data			
NR Band n5		NR Band n66	
DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1 RB, 53 RB Offset		DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1 RB, 104 RB Offset	
Test Position	Right Cheek	Test Position	Right Cheek
Frequency (MHz)	836.50	Frequency (MHz)	1720.00
Channel	167300	Channel	344000
Measured 1g SAR (W/kg)	0.241	Measured 1g SAR (W/kg)	0.150
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 0)	0.347	Auto-tune (State 69)	0.187
Default (State 0)	0.347	Default (State 0)	0.189
State 0	0.347	State 13	0.168
State 22	0.071	State 21	0.215
State 44	0.264	State 43	0.078
State 66	0.245	State 65	0.119
State 88	0.023	State 69	0.187
State 107	0.246	State 87	0.029
State 110	0.217	State 109	0.037

Table 14-4
UMTS Supplemental Body SAR Data

Supplemental Body SAR Data					
UMTS B5		UMTS B4		UMTS B2	
RMC		RMC		RMC	
Test Position	Back	Test Position	Bottom	Test Position	Back
Spacing	5 mm	Spacing	5mm	Spacing	15 mm
Frequency (MHz)	836.60	Frequency (MHz)	1732.40	Frequency (MHz)	1880.00
Channel	4183	Channel	1412	Channel	9400
Measured 1g SAR (W/kg)	0.788	Measured 1g SAR (W/kg)	0.642	Measured 1g SAR (W/kg)	0.869
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 2)	1.197	Auto-tune (State 0)	1.173	Auto-tune (State 19)	1.351
Default (State 0)	1.186	Default (State 0)	1.127	Default (State 13)	1.285
State 2	1.193	State 0	1.127	State 0	1.218
State 20	0.576	State 19	0.985	State 1	1.154
State 33	0.605	State 41	0.485	State 2	1.138
State 42	1.005	State 48	0.266	State 3	1.126
State 64	0.073	State 63	0.980	State 4	1.097
State 86	0.261	State 85	0.359	State 5	1.092
State 108	1.160	State 107	0.255	State 6	1.012
				State 7	0.957
				State 8	0.872
				State 9	0.752
				State 10	0.661
				State 11	0.545
				State 12	0.402
				State 13	1.285
				State 14	1.299
				State 15	1.303
				State 16	1.302
				State 17	1.301
				State 18	1.299
				State 19	1.302
				State 20	1.297
				State 21	1.285
				State 22	1.245
				State 23	1.195
				State 24	1.104
				State 25	0.934
				State 26	0.089
				State 27	0.101
				State 28	0.097
				State 29	0.094
				State 30	0.088
				State 31	0.095
				State 32	0.080
				State 33	0.073
				State 34	0.058
				State 35	0.041
				State 36	0.030
				State 37	0.019
				State 38	0.008
				State 39	0.272
				State 40	0.277
				State 41	0.269
				State 42	0.261
				State 43	0.249
				State 44	0.256
				State 45	0.223
				State 46	0.204
				State 47	0.171
				State 48	0.131
				State 49	0.103
				State 51	0.042
				State 52	1.310
				State 53	1.281
				State 54	1.271
				State 55	1.260
				State 56	1.235
				State 57	1.226
				State 58	1.160
				State 59	1.103
				State 60	1.016
				State 61	0.884
				State 62	0.780
				State 63	0.648
				State 64	0.482
				State 65	0.949
				State 66	0.971
				State 67	0.980
				State 68	0.989
				State 69	1.002
				State 70	0.997
				State 71	1.031
				State 72	1.049
				State 73	1.075
				State 74	1.094
				State 75	1.092
				State 76	1.053
				State 77	0.925
				State 78	0.109
				State 79	0.171
				State 80	0.174
				State 81	0.176
				State 82	0.184
				State 83	0.206
				State 84	0.216
				State 85	0.222
				State 86	0.200
				State 87	0.156
				State 88	0.121
				State 89	0.085
				State 90	0.053
				State 91	0.384
				State 92	0.482
				State 93	0.484
				State 94	0.481
				State 95	0.484
				State 96	0.508
				State 97	0.488
				State 98	0.466
				State 99	0.405
				State 101	0.246
				State 102	0.177
				State 103	0.112
				State 104	1.226
				State 105	0.087
				State 106	1.322
				State 107	0.103
				State 108	1.228
				State 109	0.088
				State 110	1.314
				State 111	0.106
				State 112	1.305
				State 113	0.267
				State 114	0.955
				State 115	0.370
				State 116	1.306
				State 117	0.268
				State 118	0.953
				State 119	0.373

Table 14-5
LTE Supplemental Body SAR Data

Supplemental Body SAR Data										
LTE B12		LTE B13		LTE B26		LTE B66		LTE B25	
QPSK, 10 MHz Bandwidth, 25 RB, 12 RB Offset		QPSK, 10 MHz Bandwidth, 25 RB, 12 RB Offset		QPSK, 15 MHz Bandwidth, 75 RB, 0 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 99 RB Offset		QPSK, 20 MHz Bandwidth, 50 RB, 50 RB Offset	
Test Position	Back	Test Position	Back	Test Position	Back	Test Position	Back	Test Position	Bottom
Spacing	5 mm	Spacing	5 mm	Spacing	5 mm	Spacing	15 mm	Spacing	5 mm
Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	831.50	Frequency (MHz)	1770.00	Frequency (MHz)	1905.00
Channel	23095	Channel	23230	Channel	26865	Channel	132572	Channel	26590
Measured 1g SAR (W/kg)	0.542	Measured 1g SAR (W/kg)	0.580	Measured 1g SAR (W/kg)	0.605	Measured 1g SAR (W/kg)	0.703	Measured 1g SAR (W/kg)	0.894
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 0)	0.871	Auto-tune (State 53)	0.916	Auto-tune (State 109)	1.009	Auto-tune (State 57)	1.091	Auto-tune (State 2)	1.680
Default (State 0)	0.861	Default (State 0)	0.881	Default (State 0)	1.002	Default (State 0)	1.152	Default (State 13)	1.509
State 0	0.861	State 0	0.881	State 14	0.676	State 5	1.146	State 0	1.719
State 17	0.467	State 16	0.696	State 36	0.233	State 13	1.107	State 1	1.715
State 39	0.600	State 38	0.039	State 39	0.726	State 28	0.157	State 2	1.719
State 46	0.331	State 53	0.917	State 58	0.585	State 35	0.067	State 3	1.704
State 61	0.083	State 60	0.152	State 80	0.649	State 57	1.127	State 4	1.693
State 73	0.063	State 79	0.890	State 102	0.060	State 69	0.826	State 5	1.690
State 83	0.343	State 82	0.672	State 109	1.023	State 79	0.293	State 6	1.646
State 105	0.810	State 104	0.883	State 111	0.592	State 101	0.328	State 7	1.608
								State 8	1.533
								State 9	1.391
								State 10	1.259
								State 11	1.070
								State 12	0.805
								State 13	1.509
								State 14	1.529
								State 15	1.533
								State 16	1.530
								State 17	1.524
								State 18	1.519
								State 19	1.487
								State 20	1.449
								State 21	1.363
								State 22	1.203
								State 23	1.058
								State 24	0.862
								State 25	0.618
								State 26	0.173
								State 27	0.174
								State 28	0.165
								State 29	0.157
								State 30	0.144
								State 31	0.153
								State 32	0.122
								State 33	0.107
								State 34	0.083
								State 35	0.057
								State 36	0.042
								State 37	0.025
								State 38	0.012
								State 39	0.530
								State 40	0.505
								State 41	0.489
								State 42	0.474
								State 43	0.449
								State 44	0.458
								State 46	0.361
								State 47	0.306
								State 48	0.241
								State 49	0.196
								State 50	0.145
								State 51	0.092
								State 52	1.281
								State 53	1.341
								State 54	1.358
								State 55	1.372
								State 56	1.404
								State 57	1.404
								State 58	1.482
								State 59	1.540
								State 60	1.617
								State 61	1.704
								State 62	1.735
								State 63	1.718
								State 64	1.552
								State 65	0.874
								State 66	0.939
								State 67	0.958
								State 68	0.974
								State 69	1.007
								State 70	1.007
								State 71	1.099
								State 72	1.166
								State 73	1.268
								State 74	1.394
								State 75	1.451
								State 76	1.448
								State 77	1.250
								State 78	0.195
								State 79	0.264
								State 80	0.264
								State 81	0.262
								State 82	0.266
								State 83	0.293
								State 84	0.293
								State 85	0.303
								State 86	0.289
								State 87	0.260
								State 88	0.226
								State 89	0.180
								State 90	0.124
								State 91	0.676
								State 92	0.770
								State 93	0.768
								State 95	0.768
								State 96	0.796
								State 97	0.786
								State 98	0.787
								State 99	0.750
								State 100	0.682
								State 101	0.615
								State 102	0.516
								State 103	0.384
								State 104	1.731
								State 105	0.168
								State 106	1.276
								State 107	0.184
								State 108	1.735
								State 109	0.170
								State 110	1.274
								State 111	0.187
								State 112	1.482
								State 113	0.521
								State 114	0.864
								State 115	0.650
								State 116	1.479
								State 117	0.522
								State 118	0.863
								State 119	0.651

Table 14-6
NR Supplemental Body SAR Data

Supplemental Body SAR Data			
NR Band n5		NR Band n66	
DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1 RB, 53 RB Offset		DFT-s-OFDM QPSK, 20 MHz Bandwidth, 50 RB, 28 RB Offset	
Test Position	Back	Test Position	Back
Spacing	5 mm	Spacing	15 mm
Frequency (MHz)	836.50	Frequency (MHz)	1770.00
Channel	167300	Channel	354000
Measured 1g SAR (W/kg)	0.636	Measured 1g SAR (W/kg)	0.666
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 109)	1.062	Auto-tune (State 57)	1.044
Default (State 0)	1.099	Default (State 0)	1.087
State 11	0.118	State 4	1.008
State 26	1.064	State 10	0.639
State 33	0.428	State 32	0.117
State 55	1.113	State 54	1.043
State 77	0.018	State 57	1.044
State 99	0.216	State 76	1.033
State 109	1.062	State 98	0.536

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

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

Table 14-7
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	27.5
Measured Output Power (dBm)	24.06	26.42
Measured SAR (W/kg)	0.067	0.071
Measured Power (mW)	254.68	438.53
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	161.21	189.88
% deviation from expected linearity		-9.88%

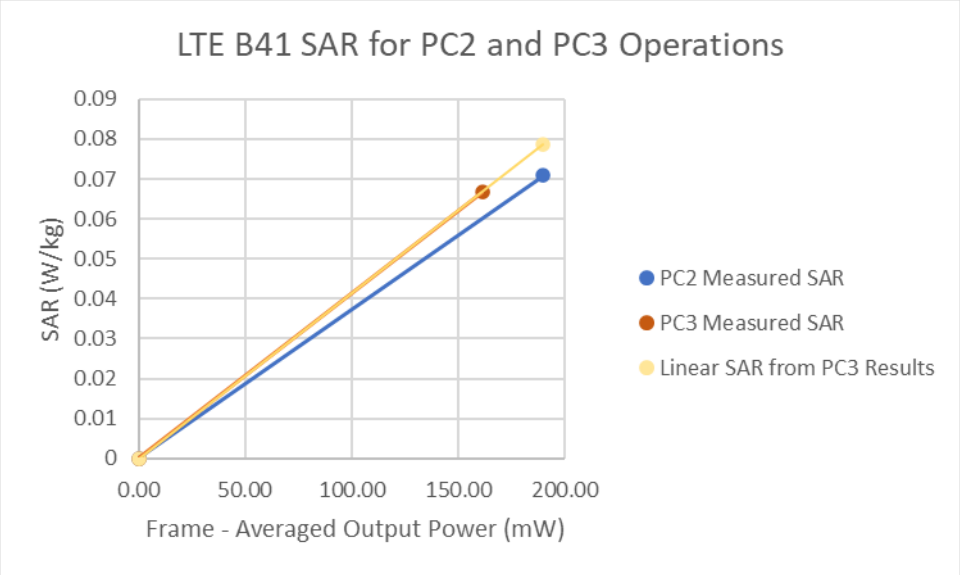


Figure 14-1
LTE Band 41 Head Linearity

Table 14-8
LTE Band 41 Open Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	27
Measured Output Power (dBm)	24.06	26.42
Measured SAR (W/kg)	0.198	0.218
Measured Power (mW)	254.68	438.53
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	161.21	189.88
% deviation from expected linearity		-6.52%

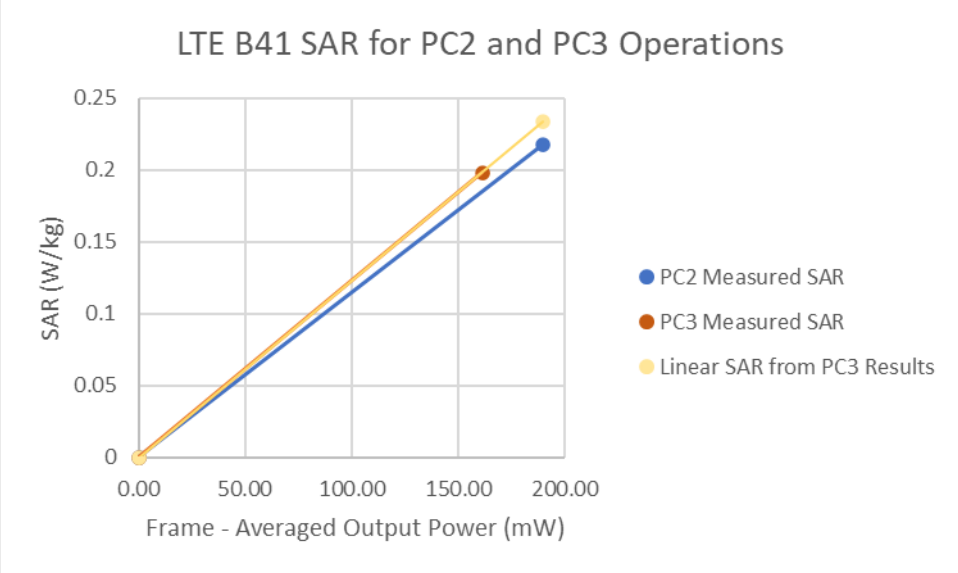


Figure 14-2
LTE Band 41 Open Body-Worn Linearity

Table 14-9
LTE Band 41 Closed Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	19.5	19.5
Measured Output Power (dBm)	18.29	18.17
Measured SAR (W/kg)	0.718	0.465
Measured Power (mW)	67.45	65.61
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	42.70	28.41
% deviation from expected linearity		-2.67%

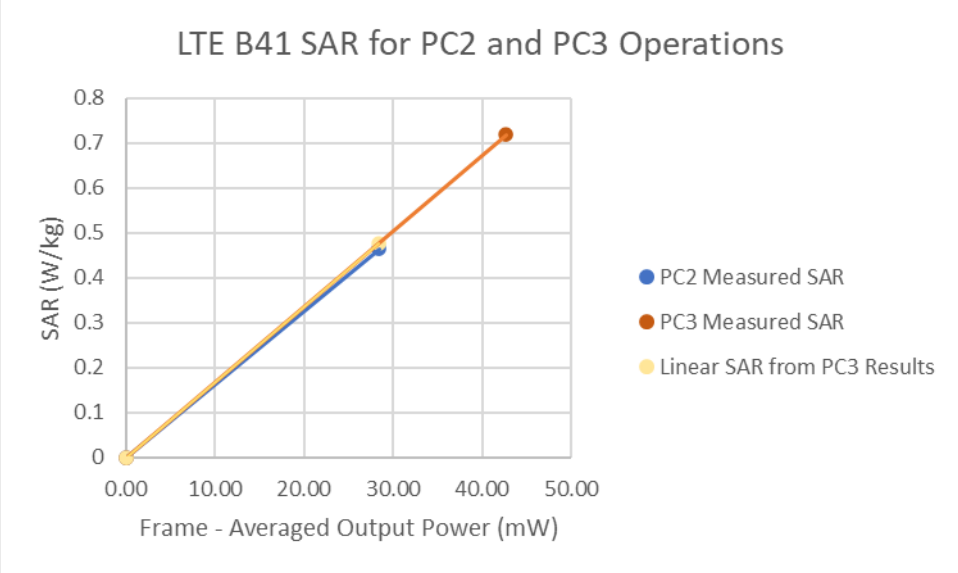


Figure 14-3
LTE Band 41 Closed Hotspot Linearity

Table 14-10
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.5	23.5
Measured Output Power (dBm)	22.57	22.49
Measured SAR (W/kg)	1.740	1.100
Measured Power (mW)	180.72	177.42
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	114.39	76.82
% deviation from expected linearity		-5.86%

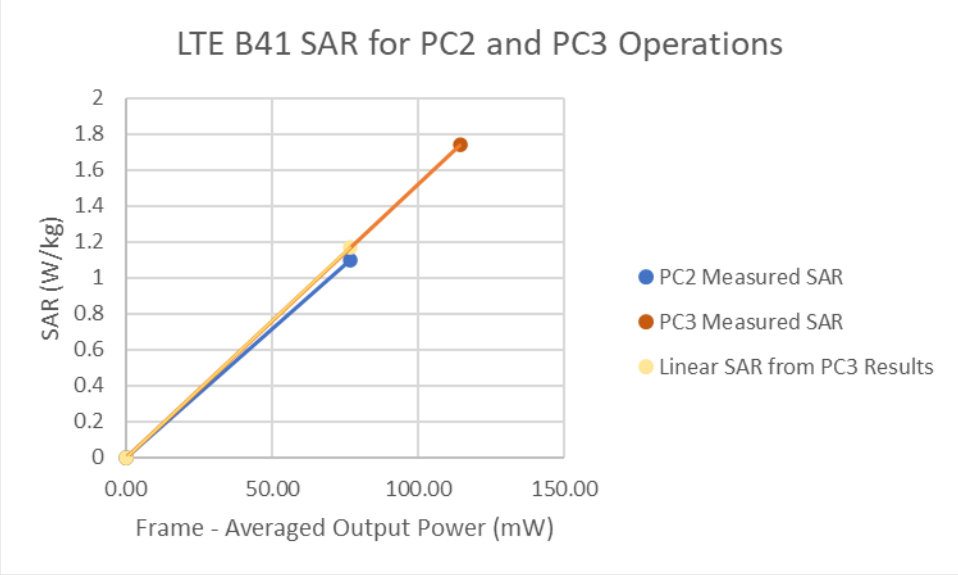


Figure 14-4
LTE Band 41 Phablet Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	CBT	N/A	CBT	3051A00187
Agilent	E4438C	ESG Vector Signal Generator	12/14/2020	Biennial	12/14/2022	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	8/10/2020	Annual	8/10/2021	MY47270002
Agilent	E4432B	ESG-D Series Signal Generator	2/24/2021	Annual	2/24/2022	US40053896
Agilent	N5182A	MXG Vector Signal Generator	12/1/2020	Annual	12/1/2021	MY47420837
Agilent	8753ES	S-Parameter Network Analyzer	2/2/2021	Annual	2/2/2022	US39170122
Agilent	8753ES	S-Parameter Vector Network Analyzer	12/15/2020	Annual	12/15/2021	MY40003841
Agilent	E5515C	Wireless Communications Test Set	2/4/2021	Annual	2/4/2022	GB43193563
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	1S51G6	Amplifier	CBT	N/A	CBT	353317
Amplifier Research	1S51G6	Amplifier	CBT	N/A	CBT	433978
Anritsu	ML2495A	Power Meter	1/18/2021	Annual	1/18/2022	941001
Anritsu	ML2496A	Power Meter	3/3/2021	Annual	3/3/2022	1306009
Anritsu	MA2411B	Pulse Power Sensor	12/18/2020	Annual	12/18/2021	1126066
Anritsu	MA2411B	Pulse Power Sensor	7/28/2020	Annual	7/28/2021	1339018
Anritsu	MT8821C	Radio Communication Analyzer	3/23/2021	Annual	3/23/2022	6201144418
Anritsu	MT8821C	Radio Communication Analyzer	4/16/2021	Annual	4/16/2022	6200901190
Anritsu	MT8821C	Radio Communication Analyzer	7/3/2020	Annual	7/3/2021	6262150047
Anritsu	MA24106A	USB Power Sensor	7/24/2020	Annual	7/24/2021	1231535
Anritsu	MA24106A	USB Power Sensor	3/2/2021	Annual	3/2/2022	1244524
Anritsu	MA24106A	USB Power Sensor	9/15/2020	Annual	9/15/2021	1520505
Anritsu	MT8862A	Wireless Connectivity Test Set	10/29/2020	Annual	10/29/2021	6261782395
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M15SA00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282739
Control Company	4352	Long Stem Thermometer	5/16/2020	Biennial	5/16/2022	200294567
Control Company	4040	Therm./ Clock/ Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113269
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	N9020A	MXA Signal Analyzer	2/24/2021	Annual	2/24/2022	MY48010233
Keysight Technologies	N9020A	MXA Signal Analyzer	8/14/2020	Annual	8/14/2021	US46470561
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	9/1/2020	Annual	9/1/2021	MY53401181
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
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
Insize	1108-150	Digital Caliper	1/17/2020	Biennial	1/17/2022	409193536
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	1445
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	6/9/2020	Annual	6/9/2021	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	1/19/2021	Annual	1/19/2022	111427
Rohde & Schwarz	CMW500	Radio Communication Tester	10/16/2020	Annual	10/16/2021	101699
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	9/29/2020	Annual	9/29/2021	101307
SPEAG	D750V3	750 MHz SAR Dipole	3/16/2020	Biennial	3/16/2022	1003
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Triennial	3/13/2022	4d047
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Triennial	10/19/2021	4d133
SPEAG	D1750V2	1750 MHz SAR Dipole	5/12/2020	Biennial	5/12/2022	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Triennial	10/22/2021	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Triennial	10/23/2021	5d080
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Triennial	10/23/2021	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2020	Annual	8/14/2021	719
SPEAG	D2450V2	2450 MHz SAR Dipole	2/8/2021	Annual	2/8/2022	882
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Biennial	6/14/2021	1064
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/12/2021	Annual	2/12/2022	1120
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/18/2021	Annual	3/18/2022	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/15/2020	Annual	7/15/2021	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/7/2021	Annual	4/7/2022	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/10/2020	Annual	9/10/2021	1449
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/11/2020	Annual	8/11/2021	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/7/2020	Annual	12/7/2021	1533
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2021	Annual	1/13/2022	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/14/2020	Annual	5/14/2021	1583
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/1/2021	Annual	3/1/2022	1652
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/6/2020	Annual	11/6/2021	1466
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2021	Annual	5/1/2022	1070
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/14/2020	Annual	10/14/2021	1091
SPEAG	EX3DV4	SAR Probe	1/20/2021	Annual	1/20/2022	3589
SPEAG	EX3DV4	SAR Probe	7/31/2020	Annual	7/31/2021	7308
SPEAG	EX3DV4	SAR Probe	4/19/2021	Annual	4/19/2022	7357
SPEAG	EX3DV4	SAR Probe	6/23/2020	Annual	6/23/2021	7406
SPEAG	EX3DV4	SAR Probe	7/20/2020	Annual	7/20/2021	7410
SPEAG	EX3DV4	SAR Probe	3/16/2021	Annual	3/16/2022	7526
SPEAG	EX3DV4	SAR Probe	11/23/2020	Annual	11/23/2021	7538
SPEAG	EX3DV4	SAR Probe	12/11/2020	Annual	12/11/2021	7571
SPEAG	EX3DV4	SAR Probe	3/3/2021	Annual	3/3/2022	7637
SPEAG	EX3DV4	SAR Probe	3/16/2021	Annual	3/16/2022	7527

Notes:

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

REV 21.4 M
09/11/2019

16 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	1.73	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	1.73	1	1	0.1	0.1	∞
Modulation Response	E.2.5	4.8	R	1.73	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	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E.6.1	3	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	3	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.73	1	1	0.5	0.5	∞
Probe Positioning w/ respect to Phantom	E.6.3	6.7	R	1.73	1	1	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	4	R	1.73	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	1.73	1	1	2.9	2.9	∞
SAR Scaling	E.6.5	0	R	1.73	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	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	E.3.4	0.6	R	1.73	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

17 CONCLUSION

17.1 Measurement Conclusion

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

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

18 REFERENCES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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