



SAR EVALUATION REPORT

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

Date of Testing:
07/26/20 - 09/17/20
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M2007130107-01-R2.ZNF

FCC ID: ZNFK920AM

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-K920AM
Additional Model(s): LM-K920TM, LM-K920QM, LMK920AM, LMK920TM, LMK920QM, K920AM, K920TM, K920QM

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phantet (W/kg)
PCE	CDMA/EVDO BC10 (B20)	817.90 - 823.10 MHz	0.17	0.46	0.48	N/A
PCE	CDMA/EVDO BC10 (B20)	824.10 - 848.11 MHz	0.19	0.48	0.49	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.13	0.37	0.59	N/A
PCE	GSM/GPRS/EDGE B50	824.20 - 848.80 MHz	0.15	0.41	0.41	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1908.80 MHz	< 0.1	0.23	0.42	N/A
PCE	UMTS B50	824.40 - 846.60 MHz	0.19	0.34	0.34	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.15	0.47	0.67	N/A
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.13	0.42	0.66	N/A
PCE	LTE Band 71	695.5 - 695.5 MHz	0.15	0.35	0.42	N/A
PCE	LTE Band 12	695.7 - 715.3 MHz	0.17	0.38	0.38	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	715.5 - 784.5 MHz	0.21	0.36	0.39	N/A
PCE	LTE Band 14	785.5 - 795.5 MHz	0.15	0.32	0.35	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.19	0.42	0.42	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.19	0.44	0.44	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1775.3 MHz	0.80	0.50	0.54	N/A
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.11	0.36	0.55	N/A
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.62	0.19	0.24	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.46	0.57	0.57	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.13	0.25	0.40	N/A
PCE	NR Band n71	695.5 - 695.5 MHz	0.17	0.35	0.42	N/A
PCE	NR Band n5 (Cell)	825.5 - 846.5 MHz	0.14	0.42	0.42	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	1.13	0.25	0.36	1.47
PCE	NR Band n2 (PCS)	1852.5 - 1907.5 MHz	1.09	0.23	0.36	1.68
DTS	2.4 GHz WLAN	2412 - 2480 MHz	0.94	0.32	0.46	N/A
NI	U-NB-1	5180 - 5240 MHz	N/A	N/A	0.24	N/A
NI	U-NB-2A	5260 - 5320 MHz	0.19	0.26	N/A	1.46
NI	U-NB-2C	5500 - 5720 MHz	0.87	0.47	N/A	1.85
NI	U-NB-3	5745 - 5825 MHz	0.32	0.87	0.87	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.30	< 0.1	< 0.1	N/A
Simultaneous SAR per FCC 69783 D01v01r01			1.58	1.59	1.58	3.53

Note: This revised test report (S/N: 1M2007130107-01-R2.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 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



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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
CDMA/EVDO BC10 (\$90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (\$22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 14	Voice/Data	790.5 - 795.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n71	Data	665.5 - 695.5 MHz
NR Band n5 (Cell)	Data	826.5 - 846.5 MHz
NR Band n66 (AWS)	Data	1712.5 - 1777.5 MHz
NR Band n2 (PCS)	Data	1852.5 - 1907.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
WMC	Data	500 Hz - 5 kHz

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 uses an independent fixed level power reduction mechanism for WLAN/NR operations during voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

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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

CDMA BC10 (815 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	25.7	25.7	25.7
	Nominal	24.7	24.7	24.7
CDMA BC0 (835 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	25.7	25.7	25.7
	Nominal	24.7	24.7	24.7
CDMA BC1 (1900 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	25.0	25.0	25.0
	Nominal	24.0	24.0	24.0
Reduced	Max allowed power	24.0	24.0	24.0
	Nominal	23.0	23.0	23.0

GSM/GPRS/EDGE 850										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Max	Max allowed power	34.0	34.0	32.0	30.5	29.0	27.0	27.0	26.0	26.0
	Nominal	33.0	33.0	31.0	29.5	28.0	26.0	26.0	25.0	25.0
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	31.0	31.0	29.0	28.0	26.0	26.0	26.0	25.0	25.0
	Nominal	30.0	30.0	28.0	27.0	25.0	25.0	25.0	24.0	24.0

UMTS Band 5 (850 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
Max	Max allowed power	25.7	25.7	25.7
	Nominal	24.7	24.7	24.7
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
Max	Max allowed power	25.0	25.0	25.0
	Nominal	24.0	24.0	24.0
Reduced	Max allowed power	24.0	24.0	24.0
	Nominal	23.0	23.0	23.0
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
Max	Max allowed power	25.0	25.0	25.0
	Nominal	24.0	24.0	24.0
Reduced	Max allowed power	24.0	24.0	24.0
	Nominal	23.0	23.0	23.0

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Mode / Band		Modulated Average Output Power (in dBm)	
		Max	Hotspot Mode Active
LTE FDD Band 71	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 12	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 17	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 13	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 14	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 26	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 5	Max allowed	25.7	25.7
	Nominal	24.7	24.7
LTE FDD Band 66	Max allowed	25.0	24.0
	Nominal	24.0	23.0
LTE FDD Band 66 Antenna 7	Max allowed	22.0	22.0
	Nominal	21.0	21.0
LTE FDD Band 4	Max allowed	25.0	24.0
	Nominal	24.0	23.0
LTE FDD Band 25	Max allowed	25.0	24.0
	Nominal	24.0	23.0
LTE FDD Band 2	Max allowed	25.0	24.0
	Nominal	24.0	23.0
LTE FDD Band 2 Antenna 7	Max allowed	22.0	22.0
	Nominal	21.0	21.0
LTE FDD Band 30	Max allowed	25.0	25.0
	Nominal	24.0	24.0
LTE FDD Band 30 Antenna 7	Max allowed	22.0	22.0
	Nominal	21.0	21.0
LTE TDD Band 41	Max allowed	25.5	25.5
	Nominal	24.5	24.5

Mode / Band		Modulated Average Output Power (in dBm)	
		Max	Hotspot Mode, Proximity Sensor, and/or RCV Active
NR FDD Band n71	Max allowed	25.7	25.7
	Nominal	24.7	24.7
NR FDD Band n5	Max allowed	25.7	25.7
	Nominal	24.7	24.7
NR FDD Band n66	Max allowed	25.5	23.5
	Nominal	24.5	22.5
NR FDD Band n2	Max allowed	25.5	23.5
	Nominal	24.5	22.5

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1.3.2

2.4 GHz Maximum SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (in dBm)													
		SISO								MIMO					
		Antenna 1/2								g (CDD + STBC)		n		ac	
		b		g		n		ac		Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
2.4 GHz WiFi	2.45 GHz	20.0	21.0	19.0 ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	20.0 ch. 1: 18.0 ch. 2: 18.0 ch. 10: 18.0 ch. 11: 18.0	18.0 ch. 1: 16.0 ch. 2: 16.0 ch. 10: 16.0 ch. 11: 16.0	19.0 ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	18.0 ch. 1: 16.0 ch. 2: 16.0 ch. 10: 16.0 ch. 11: 16.0	19.0 ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	22.0 ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0	23.0 ch. 1: 21.0 ch. 2: 21.0 ch. 10: 21.0 ch. 11: 21.0	21.0 ch. 1: 19.0 ch. 2: 19.0 ch. 10: 19.0 ch. 11: 19.0	22.0 ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0	21.0 ch. 1: 19.0 ch. 2: 19.0 ch. 10: 19.0 ch. 11: 19.0	22.0 ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0

1.3.3

2.4 GHz Reduced WLAN Output Powers

The below table is applicable in the following conditions:

- RCV Active

Mode	Band	IEEE 802.11 (in dBm)													
		SISO								MIMO					
		Antenna 1/2								g (CDD + STBC)		n		ac	
		b		g		n		ac		Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
2.4 GHz WiFi	2.45 GHz	16.5	17.5	16.5	17.5	16.5 ch. 1: 16.0 ch. 2: 16.0 ch. 10: 16.0 ch. 11: 16.0	17.5 ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	16.5 ch. 1: 16.0 ch. 2: 16.0 ch. 10: 16.0 ch. 11: 16.0	17.5 ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	19.5	20.5	19.5 ch. 1: 19.0 ch. 2: 19.0 ch. 10: 19.0 ch. 11: 19.0	20.5 ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0	19.5 ch. 1: 19.0 ch. 2: 19.0 ch. 10: 19.0 ch. 11: 19.0	20.5 ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0

1.3.4

5 GHz Maximum SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (n dBm)																	
		SISO						SISO						MIMO					
		Antenna 1						Antenna 2											
		a		n		ac		a		n		ac		a (CDD + STBC)		n		ac	
Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5 GHz WiFi (20MHz BW)	5200 MHz	15.5 ch. 40: 17.5	16.5 ch. 40: 18.5	15.5 ch. 40: 17.5	16.5 ch. 40: 18.5	15.5 ch. 40: 17.5	16.5 ch. 40: 18.5	15.0 ch. 40: 17.0	16.0 ch. 40: 18.0	15.0 ch. 40: 17.0	16.0 ch. 40: 18.0	15.0 ch. 40: 17.0	16.0 ch. 40: 18.0	18.3 ch. 40: 20.3	19.3 ch. 40: 21.3	18.3 ch. 40: 20.3	19.3 ch. 40: 21.3	18.3 ch. 40: 20.3	19.3 ch. 40: 21.3
	5300 MHz	15.5 ch. 56: 17.5	16.5 ch. 56: 18.5	15.5 ch. 56: 17.5	16.5 ch. 56: 18.5	15.5 ch. 56: 17.5	16.5 ch. 56: 18.5	15.0 ch. 56: 17.0	16.0 ch. 56: 18.0	15.0 ch. 56: 17.0	16.0 ch. 56: 18.0	15.0 ch. 56: 17.0	16.0 ch. 56: 18.0	18.3 ch. 56: 20.3	19.3 ch. 56: 21.3	18.3 ch. 56: 20.3	19.3 ch. 56: 21.3	18.3 ch. 56: 20.3	19.3 ch. 56: 21.3
	5500 MHz	15.5	16.5	15.5	16.5	15.5	16.5	15.0	16.0	15.0	16.0	15.0	16.0	18.3	19.3	18.3	19.3	18.3	19.3
	5800 MHz	17.5 ch. 149: 15.5 ch. 153: 15.5	18.5 ch. 149: 16.5 ch. 153: 16.5	17.5 ch. 149: 15.5 ch. 153: 15.5	18.5 ch. 149: 16.5 ch. 153: 16.5	17.5 ch. 149: 15.5 ch. 153: 15.5	18.5 ch. 149: 16.5 ch. 153: 16.5	17.0 ch. 149: 15.0 ch. 153: 15.0	18.0 ch. 149: 16.0 ch. 153: 16.0	17.0 ch. 149: 15.0 ch. 153: 15.0	18.0 ch. 149: 16.0 ch. 153: 16.0	17.0 ch. 149: 15.0 ch. 153: 15.0	18.0 ch. 149: 16.0 ch. 153: 16.0	20.3 ch. 149: 18.3 ch. 153: 18.3	21.3 ch. 149: 19.3 ch. 153: 19.3	20.3 ch. 149: 18.3 ch. 153: 18.3	21.3 ch. 149: 19.3 ch. 153: 19.3	20.3 ch. 149: 18.3 ch. 153: 18.3	21.3 ch. 149: 19.3 ch. 153: 19.3
5 GHz WiFi (40MHz BW)	5200 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
	5300 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
	5500 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
	5800 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
5 GHz WiFi (80MHz BW)	5200 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5300 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5500 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5800 MHz					12.5	13.5					12.5	13.5					15.5	16.5

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1.3.5

5 GHz Reduced WLAN Output Powers

The below table is applicable in the following conditions:

- RCV Active

Mode	Band	IEEE 802.11 (in dBm)																	
		SISO						SISO						MIMO					
		Antenna 1						Antenna 2											
		a		n		ac		a		n		ac		a (COD + STBC)		n		ac	
		Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
5 GHz WiFi (20MHz BW)	5200 MHz	14.5	15.5	14.5	15.5	14.5	15.5	14.0	15.0	14.0	15.0	14.0	15.0	17.3	18.3	17.3	18.3	17.3	18.3
	5300 MHz	14.5	15.5	14.5	15.5	14.5	15.5	14.0	15.0	14.0	15.0	14.0	15.0	17.3	18.3	17.3	18.3	17.3	18.3
	5500 MHz	14.5	15.5	14.5	15.5	14.5	15.5	14.0	15.0	14.0	15.0	14.0	15.0	17.3	18.3	17.3	18.3	17.3	18.3
	5800 MHz	14.5	15.5	14.5	15.5	14.5	15.5	14.0	15.0	14.0	15.0	14.0	15.0	17.3	18.3	17.3	18.3	17.3	18.3
5 GHz WiFi (40MHz BW)	5200 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
	5300 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
	5500 MHz			ch. 62: 13.5	ch. 62: 14.5	ch. 62: 13.5	ch. 62: 14.5			ch. 62: 13.5	ch. 62: 14.5	ch. 62: 13.5	ch. 62: 14.5			ch. 62: 16.5	ch. 62: 17.5	ch. 62: 16.5	ch. 62: 17.5
	5800 MHz			14.5	15.5	14.5	15.5			14.5	15.5	14.5	15.5			17.5	18.5	17.5	18.5
5 GHz WiFi (80MHz BW)	5200 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5300 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5500 MHz					12.5	13.5					12.5	13.5					15.5	16.5
	5800 MHz					12.5	13.5					12.5	13.5					15.5	16.5

1.3.6

2.4 GHz Bluetooth Maximum Output Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth 1 Mbps (GFSK)	Maximum	12.5
	Nominal	11.5
Bluetooth 2 Mbps (DPSK)	Maximum	12.0
	Nominal	11.0
Bluetooth 3 Mbps (8DPSK)	Maximum	12.0
	Nominal	11.0
Bluetooth LE	Maximum	8.0
	Nominal	7.0

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1.4 DUT Antenna Locations

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

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
EVDO BC10 (\$90S)	Yes	Yes	No	Yes	No	Yes
EVDO BC0 (\$22H)	Yes	Yes	No	Yes	No	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	No
GPRS 850	Yes	Yes	No	Yes	No	Yes
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	No	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	No
UMTS 1900	Yes	Yes	No	Yes	Yes	No
LTE Band 71	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Yes	Yes	No	Yes	No	Yes
LTE Band 13	Yes	Yes	No	Yes	No	Yes
LTE Band 14	Yes	Yes	No	Yes	No	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	No	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	No	Yes
LTE Band 66 (AWS) Ant 2	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS) Ant 7	Yes	Yes	Yes	No	Yes	No
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	No
LTE Band 2 (PCS) Ant 7	Yes	Yes	Yes	No	Yes	No
LTE Band 30 Ant 1	Yes	Yes	No	Yes	No	Yes
LTE Band 30 Ant 7	Yes	Yes	Yes	No	Yes	No
LTE Band 41	Yes	Yes	No	Yes	Yes	No
NR Band n71	Yes	Yes	No	Yes	No	Yes
NR Band n5 (Cell)	Yes	Yes	No	Yes	No	Yes
NR Band n66 (AWS)	Yes	Yes	Yes	No	Yes	No
NR Band n2 (PCS)	Yes	Yes	Yes	No	Yes	No
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN MIMO	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN MIMO	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-2A and 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.

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1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
7	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
8	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	^a Bluetooth Tethering is considered
9	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
10	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
11	GSM voice + 2.4 GHz Bluetooth	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
12	GSM voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
13	GSM voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
14	GSM voice + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
15	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
16	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes	N/A	Yes	^a Bluetooth Tethering is considered
17	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
18	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
19	UMTS + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
20	UMTS + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
21	UMTS + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
22	UMTS + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
23	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
24	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
25	LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
26	LTE + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
27	LTE + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
28	LTE + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
29	LTE + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
30	LTE + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
31	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
32	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
33	LTE + 5G NR	Yes	Yes	N/A	Yes	
34	LTE + 5G NR + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
35	LTE + 5G NR + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
36	LTE + 5G NR + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
37	LTE + 5G NR + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
38	LTE + 5G NR + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
39	LTE + 5G NR + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
40	LTE + 5G NR + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
41	LTE + 5G NR + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes	Yes ^a	Yes	^a Bluetooth Tethering is considered
42	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
43	CDMA/EVDO data + 5 GHz Wi-Fi	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
44	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes ^a	Yes ^a	Yes ^a	Yes	^a Bluetooth Tethering is considered
45	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
46	CDMA/EVDO data + 5 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
47	CDMA/EVDO data + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
48	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
49	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
50	GPRS/EDGE + 2.4 GHz Wi-Fi	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
51	GPRS/EDGE + 5 GHz Wi-Fi	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
52	GPRS/EDGE + 2.4 GHz Bluetooth	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
53	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
54	GPRS/EDGE + 5 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes	Yes	^a Pre-installed VOIP applications are considered
55	GPRS/EDGE + 2.4 GHz Wi-Fi Ant 2 + 2.4 GHz Bluetooth	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
56	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered
57	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes ^a	Yes ^a	Yes ^a	Yes	^a Pre-installed VOIP applications are considered

- 2.4 GHz WLAN Ant 1 and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
- 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 share the same antenna path and cannot transmit simultaneously.
- All licensed modes share the same antenna path and cannot transmit simultaneously.
- 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)

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[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.

5. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
6. 5 GHz Wireless Router is only supported for U-NII-1 and U-NII-3 by S/W, therefore U-NII-2A and U-NII-2C were not evaluated for wireless router conditions.
7. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac. 802.11a/g/n/ac supports CDD and STBC and 802.11n/ac additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
8. This device supports VOLTE.
9. This device supports VOWIFI.
10. This device supports Bluetooth Tethering.
11. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands shown in the NR FR1 Checklist.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

This device supports IEEE 802.11ac with the following features:

- a) Up to 80 MHz Bandwidth only
- b) No aggregate channel configurations
- c) 2 Tx antenna output
- d) 256 QAM is supported
- e) TDWR and Band gap channels are supported

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

(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.

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

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

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

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

This device supports LTE Carrier Aggregation (CA) for LTE Band 41 and LTE Band 5 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

This device supports 64QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225 D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

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

NR implementation is limited to EN-DC operations only, with LTE Bands shown in the NR FR1 Checklist acting as anchor bands. Per FCC Guidance, SAR tests for NR Bands and LTE Anchor Bands were performed separately due to equipment limitations in SAR probe calibration factors. Please see Section 11 for more details.

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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)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)

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.

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2 LTE AND NR INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 14 (790.5 - 795.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 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 14: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Frequencies (MHz) and Channel Numbers	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 14: 5 MHz	790.5 (23305)		793 (23330)	795.5 (23355)	
LTE Band 14: 10 MHz	N/A		793 (23330)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A	N/A	2310 (27710)	N/A	N/A
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 18, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation and downlink MIMO features as shown in section 9 and Appendix F. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WiFi Offloading, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

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NR Information			
Form Factor	Portable Handset		
Frequency Range of each NR transmission band	NR Band n71 (665.5 - 695.5 MHz)		
	NR Band n5 (Cell) (826.5 - 846.5 MHz)		
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)		
	NR Band n2 (PCS) (1852.5 - 1907.5 MHz)		
Channel Bandwidths	NR Band n71: 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n5 (Cell): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	NR Band n2 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz		
Frequencies (MHz) and Channel Numbers	Low	Mid	High
NR Band n71: 5 MHz	665.5 (133100)	680.5 (136100)	695.5 (139100)
NR Band n71: 10 MHz	668 (133600)	680.5 (136100)	693 (138600)
NR Band n71: 15 MHz	670.5 (134100)	680.5 (136100)	690.5 (138100)
NR Band n71: 20 MHz	673 (134600)	680.5 (136100)	688 (137600)
NR Band n5 (Cell): 5 MHz	826.5 (165300)	836.5 (167300)	846.5 (169300)
NR Band n5 (Cell): 10 MHz	829 (165800)	836.5 (167300)	844 (168800)
NR Band n5 (Cell): 15 MHz	831.5 (166300)	836.5 (167300)	841.5 (168300)
NR Band n5 (Cell): 20 MHz	834 (166800)	836.5 (167300)	839 (167800)
NR Band n66 (AWS): 5 MHz	1712.5 (342500)	1745 (349000)	1777.5 (355500)
NR Band n66 (AWS): 10 MHz	1715 (343000)	1745 (349000)	1775 (355000)
NR Band n66 (AWS): 15 MHz	1717.5 (343500)	1745 (349000)	1772.5 (354500)
NR Band n66 (AWS): 20 MHz	1720 (344000)	1745 (349000)	1770 (354000)
NR Band n2 (PCS): 5 MHz	1852.5 (370500)	1880 (376000)	1907.5 (381500)
NR Band n2 (PCS): 10 MHz	1855 (371000)	1880 (376000)	1905 (381000)
NR Band n2 (PCS): 15 MHz	1857.5 (371500)	1880 (376000)	1902.5 (380500)
NR Band n2 (PCS): 20 MHz	1860 (372000)	1880 (376000)	1900 (380000)
SCS	15 kHz		
Modulations Supported in UL	DFT-s-OFDM: $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM		
NR MPR Permanently implemented per 3GPP TS 38.101	YES		
A-MPR (Additional MPR) disabled for SAR Testing?	YES		
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations		
LTE Anchor Bands for NR Band n71	LTE Band 2/66		
LTE Anchor Bands for NR Band n5 (Cell)	LTE Band 2/30/66		
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 2/5/12/14/30		
LTE Anchor Bands for NR Band n2 (PCS)	LTE Band 5/12/14/30/66		

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3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

- σ = conductivity of the tissue-simulating material (S/m)
- ρ = mass density of the tissue-simulating material (kg/m³)
- E = Total RMS electric field strength (V/m)

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

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4 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:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):
 - a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
 - b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
 - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

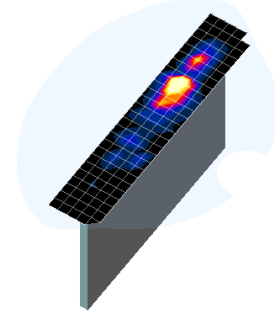


Figure 4-1
Sample SAR Area
Scan

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

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

*Also compliant to IEEE 1528-2013 Table 6

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5.1 EAR REFERENCE POINT

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

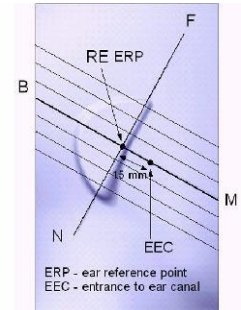


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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



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

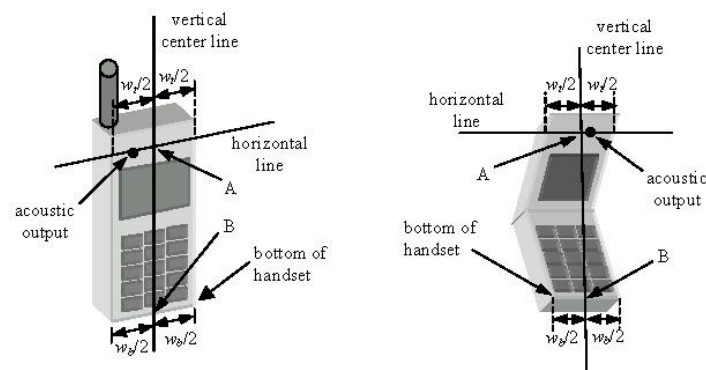


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

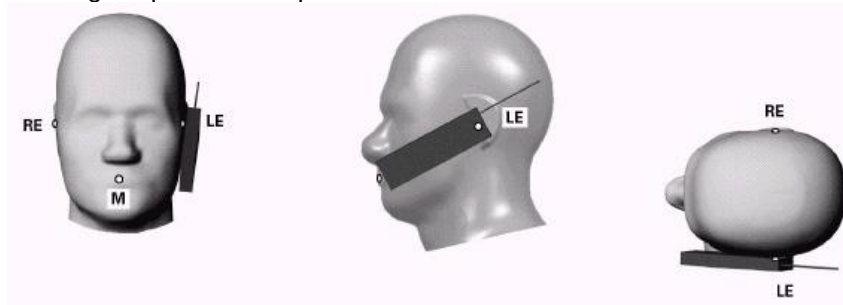


Figure 6-1 Front, Side and Top View of Cheek Position

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

6.3 Positioning for Ear / 15° Tilt

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

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

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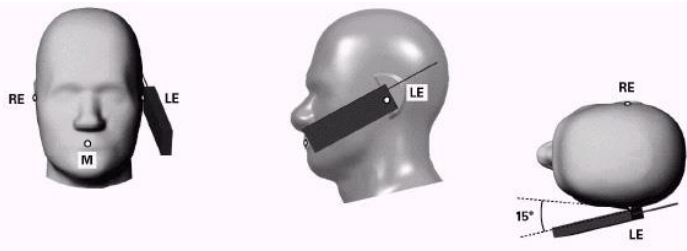


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

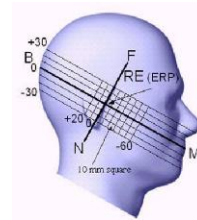


Figure 6-3 Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

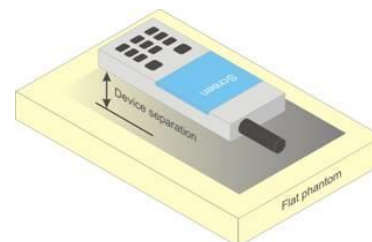


Figure 6-4 Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not

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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 ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

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

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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 non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

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

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7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

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8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 8-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH₀ and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH₀ data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 8-2 was applied.

Table 8-1
Parameters for Max. Power for RC1

Parameter	Units	Value
$\frac{I_{or}}{I_{or}}$	dBm/1.23 MHz	-104
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
$\frac{I_{or}}{I_{or}}$	dBm/1.23 MHz	-86
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

5. FCHs were configured at full rate for maximum SAR with “All Up” power control bits.

8.4.2 Head SAR Measurements

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

Head SAR is additionally evaluated using EVDO Rev. A to support compliance for VoIP operations. See Section 8.4.5 for EVDO Rev. A configuration parameters.

8.4.3 Body-worn SAR Measurements

SAR for body-worn exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH_n), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCH_n), with FCH at full rate and SCH₀ enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

8.4.4 Body-worn SAR Measurements for EVDO Devices

For handsets with EVDO capabilities, the 3G SAR test reduction procedure is applied to EVDO Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied to Rev. A, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode.

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in

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12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.

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- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
- c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11 g/n 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.

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8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

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

8.7.7 Initial Test Configuration Procedure

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

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

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

8.7.9 MIMO SAR considerations

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

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9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.35	25.35	25.36	25.36	25.36	25.36
Cellular	1013	22H	824.7	25.34	25.35	25.34	25.33	25.36	25.38
	384	22H	836.52	25.36	25.36	25.35	25.36	25.41	25.44
	777	22H	848.31	25.40	25.40	25.42	25.40	25.34	25.37
PCS	25	24E	1851.25	24.80	24.81	24.83	24.85	24.86	24.89
	600	24E	1880	24.84	24.84	24.86	24.87	24.89	24.95
	1175	24E	1908.75	24.95	24.95	24.95	24.94	24.95	25.00

Table 9-2
Reduced Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	23.78	23.81	23.79	23.80	23.88	23.87
	600	24E	1880	23.87	23.88	23.85	23.86	23.91	23.91
	1175	24E	1908.75	23.92	23.93	23.90	23.92	23.96	23.97

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



Figure 9-1
Power Measurement Setup

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9.2 GSM Conducted Powers

Table 9-3
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
Band	Channel	Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	33.03	32.84	31.62	29.84	28.64	26.46	26.31	25.85	25.74
	190	33.04	32.92	31.57	29.94	28.58	26.20	26.11	25.53	25.48
	251	33.05	32.93	31.50	29.97	28.61	26.23	26.28	25.72	25.60
GSM 1900	512	30.89	30.56	28.78	27.64	25.99	25.43	25.24	25.00	24.96
	661	30.78	30.68	28.97	28.00	26.00	25.32	25.15	24.87	24.79
	810	30.95	30.67	28.81	27.57	25.85	25.67	25.45	24.99	24.97

Calculated Maximum Frame-Averaged Output Power										
Band	Channel	Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		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	23.83	23.64	25.43	25.41	25.46	17.26	20.12	21.42	22.56
	190	23.84	23.72	25.38	25.51	25.40	17.00	19.92	21.10	22.30
	251	23.85	23.73	25.31	25.54	25.43	17.03	20.09	21.29	22.42
GSM 1900	512	21.69	21.36	22.59	23.21	22.81	16.23	19.05	20.57	21.78
	661	21.58	21.48	22.78	23.57	22.82	16.12	18.96	20.44	21.61
	810	21.75	21.47	22.62	23.14	22.67	16.47	19.26	20.56	21.79

GSM 850	Frame	23.80	23.80	24.81	25.07	24.82	16.80	19.81	20.57	21.82
GSM 1900	Avg.Targets:	20.80	20.80	21.81	22.57	21.82	15.80	18.81	19.57	20.82

Note:

- 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.
- 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.
- EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8-PSK modulation do not have an impact on output power.

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



Figure 9-2
Power Measurement Setup

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9.3 UMTS Conducted Powers

Table 9-4
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	25.69	25.67	25.62	24.97	24.99	24.95	24.97	24.60	25.00	-
99		12.2 kbps AMR	25.70	25.68	25.65	25.00	24.99	24.97	24.94	25.00	24.99	-
6	HSDPA	Subtest 1	24.59	24.59	24.55	24.10	24.15	24.11	24.04	24.19	24.21	0
6		Subtest 2	24.60	24.58	24.56	24.09	24.12	24.13	24.06	24.18	24.22	0
6		Subtest 3	24.13	24.10	24.06	23.56	23.60	23.62	23.55	23.68	23.74	0.5
6		Subtest 4	24.15	24.10	24.05	23.57	23.52	23.61	23.58	23.64	23.70	0.5
6	HSUPA	Subtest 1	24.60	24.57	24.54	24.07	24.13	24.13	24.05	24.20	24.21	0
6		Subtest 2	22.60	22.57	22.53	22.10	22.11	22.12	22.11	22.20	22.18	2
6		Subtest 3	23.60	23.60	23.55	23.07	23.10	23.13	23.21	23.19	23.22	1
6		Subtest 4	22.58	22.57	22.53	22.07	22.13	22.16	22.15	22.18	22.17	2
6		Subtest 5	24.61	24.60	24.54	24.15	24.14	24.12	24.22	24.20	24.19	0

Table 9-5
Reduced Conducted Power

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	23.96	23.70	23.95	24.00	23.87	24.00	-
99		12.2 kbps AMR	24.00	23.99	23.97	23.94	23.98	23.99	-
6	HSDPA	Subtest 1	23.10	23.13	23.14	23.06	23.15	23.18	0
6		Subtest 2	23.07	23.09	23.10	23.05	23.18	23.20	0
6		Subtest 3	22.56	22.60	22.62	22.65	22.67	22.71	0.5
6		Subtest 4	22.60	22.64	22.65	22.57	22.64	22.70	0.5
6	HSUPA	Subtest 1	23.05	23.13	23.15	23.14	23.19	23.21	0
6		Subtest 2	21.08	21.13	21.15	21.14	21.17	21.20	2
6		Subtest 3	22.10	22.12	22.16	22.08	22.15	22.17	1
6		Subtest 4	21.09	21.15	21.18	21.11	21.16	21.19	2
6		Subtest 5	23.15	23.17	23.19	23.14	23.17	23.20	0

This device does not support DC-HSDPA.

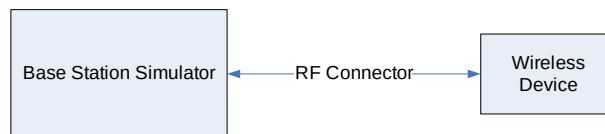


Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1

LTE Band 71

Table 9-6
LTE Band 71 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.84	0	0
	1	50	24.85		0
	1	99	24.82		0
	50	0	24.56	0-1	1
	50	25	24.60		1
	50	50	24.65		1
	100	0	24.53		1
16QAM	1	0	24.70	0-1	1
	1	50	24.65		1
	1	99	24.68		1
	50	0	23.64	0-2	2
	50	25	23.65		2
	50	50	23.56		2
	100	0	23.58		2
64QAM	1	0	23.70	0-2	2
	1	50	23.70		2
	1	99	23.61		2
	50	0	22.68	0-3	3
	50	25	22.65		3
	50	50	22.62		3
	100	0	22.57		3

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

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Table 9-7
LTE Band 71 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.04	0	0
	1	36	25.17		0
	1	74	25.07		0
	36	0	24.26	0-1	1
	36	18	24.25		1
	36	37	24.26		1
	75	0	24.17		1
16QAM	1	0	24.50	0-1	1
	1	36	24.51		1
	1	74	24.55		1
	36	0	23.28	0-2	2
	36	18	23.30		2
	36	37	23.30		2
	75	0	23.26		2
64QAM	1	0	23.16	0-2	2
	1	36	23.38		2
	1	74	23.28		2
	36	0	22.39	0-3	3
	36	18	22.41		3
	36	37	22.38		3
	75	0	22.19		3

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

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Table 9-8
LTE Band 71 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133172 (668.0 MHz)	133297 (680.5 MHz)	133422 (693.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.05	25.04	25.13	0	0
	1	25	24.95	25.03	25.04		0
	1	49	24.99	24.98	25.01		0
	25	0	24.18	24.21	24.14	0-1	1
	25	12	24.11	24.21	24.23		1
	25	25	24.05	24.20	24.18		1
	50	0	24.08	24.16	24.17		1
16QAM	1	0	24.26	24.42	24.50	0-1	1
	1	25	24.11	24.43	24.56		1
	1	49	24.17	24.31	24.68		1
	25	0	23.22	23.36	23.25	0-2	2
	25	12	23.17	23.36	23.32		2
	25	25	23.14	23.33	23.30		2
	50	0	23.03	23.14	23.17		2
64QAM	1	0	23.41	23.47	23.30	0-2	2
	1	25	23.19	23.50	23.41		2
	1	49	23.13	23.42	23.34		2
	25	0	22.28	22.31	22.20	0-3	3
	25	12	22.26	22.32	22.27		3
	25	25	22.17	22.30	22.22		3
	50	0	22.12	22.15	22.18		3

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Table 9-9
LTE Band 71 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133147 (665.5 MHz)	133297 (680.5 MHz)	133447 (695.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.17	24.95	24.77	0	0
	1	12	25.28	25.13	24.89		0
	1	24	25.13	25.10	24.90		0
	12	0	24.28	24.16	24.08	0-1	1
	12	6	24.27	24.22	24.16		1
	12	13	24.21	24.30	24.14		1
	25	0	24.21	24.20	24.13		1
16QAM	1	0	24.37	24.18	24.07	0-1	1
	1	12	24.67	24.45	24.26		1
	1	24	24.66	24.34	24.20		1
	12	0	23.50	23.17	23.06	0-2	2
	12	6	23.49	23.23	23.14		2
	12	13	23.41	23.26	23.16		2
	25	0	23.23	23.21	23.19		2
64QAM	1	0	23.01	23.35	23.12	0-2	2
	1	12	23.60	23.50	23.27		2
	1	24	23.65	23.48	23.22		2
	12	0	22.32	22.21	22.01	0-3	3
	12	6	22.36	22.29	22.09		3
	12	13	22.27	22.33	22.08		3
	25	0	22.33	22.23	22.12		3

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9.4.1

LTE Band 12

Table 9-10
LTE Band 12 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.79	0	0
	1	25	24.71		0
	1	49	24.80		0
	25	0	23.59	0-1	1
	25	12	23.65		1
	25	25	23.69		1
	50	0	23.57		1
16QAM	1	0	24.14	0-1	1
	1	25	24.18		1
	1	49	24.19		1
	25	0	22.49	0-2	2
	25	12	22.60		2
	25	25	22.61		2
	50	0	22.52		2
64QAM	1	0	22.60	0-2	2
	1	25	22.65		2
	1	49	22.67		2
	25	0	21.61	0-3	3
	25	12	21.67		3
	25	25	21.66		3
	50	0	21.63		3

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

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Table 9-11
LTE Band 12 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.77	24.78	24.64	0	0
	1	12	24.89	24.90	24.66		0
	1	24	24.79	24.78	24.62		0
	12	0	23.72	23.78	23.80	0-1	1
	12	6	23.72	23.70	23.81		1
	12	13	23.70	23.69	23.79		1
	25	0	23.71	23.65	23.79		1
16QAM	1	0	24.19	24.00	23.75	0-1	1
	1	12	24.13	24.10	23.82		1
	1	24	24.12	23.94	23.75		1
	12	0	22.89	22.68	22.62	0-2	2
	12	6	22.86	22.88	22.63		2
	12	13	22.82	22.87	22.63		2
	25	0	22.42	22.86	22.68		2
64QAM	1	0	22.79	22.78	22.37	0-2	2
	1	12	22.87	22.76	22.76		2
	1	24	22.81	22.78	22.73		2
	12	0	21.87	21.83	21.54	0-3	3
	12	6	21.76	21.84	21.55		3
	12	13	21.78	21.84	21.56		3
	25	0	21.70	21.84	21.63		3

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Table 9-12
LTE Band 12 Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.79	24.63	24.74	0	0
	1	7	24.67	24.66	24.65		0
	1	14	24.73	24.72	24.68		0
	8	0	23.85	23.84	23.81	0-1	1
	8	4	23.89	23.85	23.83		1
	8	7	23.84	23.86	23.79		1
	15	0	23.91	23.84	23.87		1
16QAM	1	0	23.69	23.83	24.12	0-1	1
	1	7	23.59	23.88	24.03		1
	1	14	23.63	23.84	24.05		1
	8	0	22.76	22.69	22.77	0-2	2
	8	4	22.77	22.73	22.76		2
	8	7	22.70	22.74	22.72		2
	15	0	22.70	22.75	22.70		2
64QAM	1	0	22.87	23.09	22.87	0-2	2
	1	7	22.71	23.00	22.74		2
	1	14	22.71	22.97	22.80		2
	8	0	21.74	21.70	21.71	0-3	3
	8	4	21.76	21.74	21.76		3
	8	7	21.67	21.76	21.70		3
	15	0	21.82	21.67	21.65		3

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Table 9-13
LTE Band 12 Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.77	24.59	24.51	0	0
	1	2	24.87	24.80	24.61		0
	1	5	24.77	24.65	24.52		0
	3	0	24.71	24.65	24.65		0
	3	2	24.75	24.73	24.73		0
	3	3	24.68	24.71	24.66		0
	6	0	23.81	23.76	23.74	0-1	1
16QAM	1	0	23.70	23.56	23.67	0-1	1
	1	2	23.72	23.69	23.75		1
	1	5	23.72	23.62	23.68		1
	3	0	23.81	23.65	23.55		1
	3	2	23.90	23.81	23.59		1
	3	3	23.86	23.73	23.51		1
	6	0	22.67	22.54	22.51	0-2	2
64QAM	1	0	22.92	22.55	22.82	0-2	2
	1	2	23.03	22.67	22.86		2
	1	5	22.92	22.56	22.79		2
	3	0	22.87	22.69	22.68		2
	3	2	22.88	22.79	22.79		2
	3	3	22.84	22.75	22.70		2
	6	0	21.57	21.57	21.58	0-3	3

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LTE Band 13

Table 9-14
LTE Band 13 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.88	0	0
	1	25	24.81		0
	1	49	24.89		0
	25	0	23.74	0-1	1
	25	12	23.70		1
	25	25	23.79		1
	50	0	23.66		1
16QAM	1	0	24.23	0-1	1
	1	25	24.45		1
	1	49	24.47		1
	25	0	22.70	0-2	2
	25	12	22.74		2
	25	25	22.80		2
	50	0	22.65		2
64QAM	1	0	23.00	0-2	2
	1	25	23.21		2
	1	49	23.24		2
	25	0	21.73	0-3	3
	25	12	21.68		3
	25	25	21.78		3
	50	0	21.70		3

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Table 9-15
LTE Band 13 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.96	0	0
	1	12	25.02		0
	1	24	25.03		0
	12	0	24.07	0-1	1
	12	6	24.12		1
	12	13	24.17		1
	25	0	24.12		1
16QAM	1	0	24.41	0-1	1
	1	12	24.42		1
	1	24	24.41		1
	12	0	22.91	0-2	2
	12	6	22.97		2
	12	13	23.01		2
	25	0	22.99		2
64QAM	1	0	23.04	0-2	2
	1	12	23.10		2
	1	24	23.14		2
	12	0	21.85	0-3	3
	12	6	21.88		3
	12	13	21.91		3
	25	0	21.94		3

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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LTE Band 14

Table 9-16
LTE Band 14 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 14 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.07	0	0
	1	25	25.16		0
	1	49	25.15		0
	25	0	23.63	0-1	1
	25	12	24.00		1
	25	25	23.64		1
	50	0	23.61		1
16QAM	1	0	23.91	0-1	1
	1	25	23.87		1
	1	49	23.85		1
	25	0	22.69	0-2	2
	25	12	22.68		2
	25	25	22.64		2
	50	0	22.60		2
64QAM	1	0	22.54	0-2	2
	1	25	22.60		2
	1	49	22.52		2
	25	0	21.69	0-3	3
	25	12	21.75		3
	25	25	21.66		3
	50	0	21.67		3

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Table 9-17
LTE Band 14 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 14 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.99	0	0
	1	12	25.11		0
	1	24	25.08		0
	12	0	23.88	0-1	1
	12	6	23.90		1
	12	13	23.84		1
	25	0	23.75		1
16QAM	1	0	23.88	0-1	1
	1	12	23.89		1
	1	24	23.75		1
	12	0	22.75	0-2	2
	12	6	22.88		2
	12	13	22.87		2
	25	0	22.69		2
64QAM	1	0	22.61	0-2	2
	1	12	22.65		2
	1	24	22.53		2
	12	0	21.70	0-3	3
	12	6	21.77		3
	12	13	21.61		3
	25	0	21.65		3

Note: LTE Band 14 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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LTE Band 26

Table 9-18
LTE Band 26 (Cell) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26865 (831.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.74	0	0
	1	36	24.76		0
	1	74	24.62		0
	36	0	23.35	0-1	1
	36	18	23.45		1
	36	37	23.48		1
	75	0	23.45		1
16QAM	1	0	23.70	0-1	1
	1	36	23.82		1
	1	74	23.70		1
	36	0	22.38	0-2	2
	36	18	22.45		2
	36	37	22.50		2
	75	0	22.44		2
64QAM	1	0	22.83	0-2	2
	1	36	22.91		2
	1	74	22.82		2
	36	0	21.43	0-3	3
	36	18	21.51		3
	36	37	21.52		3
	75	0	21.44		3

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.

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Table 9-19
LTE Band 26 (Cell) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26740 (819.0 MHz)	26865 (831.5 MHz)	26990 (844.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.95	25.06	24.85	0	0
	1	25	24.94	25.00	24.74		0
	1	49	24.92	25.00	24.70		0
	25	0	23.51	23.52	23.42	0-1	1
	25	12	23.59	23.62	23.52		1
	25	25	23.57	23.57	23.52		1
	50	0	23.54	23.52	23.49		1
16QAM	1	0	23.78	24.01	23.74	0-1	1
	1	25	23.65	24.26	23.68		1
	1	49	23.63	24.14	23.57		1
	25	0	22.56	22.57	22.56	0-2	2
	25	12	22.67	22.71	22.71		2
	25	25	22.57	22.65	22.71		2
	50	0	22.53	22.47	22.50		2
64QAM	1	0	22.76	22.73	22.73	0-2	2
	1	25	22.70	22.83	22.85		2
	1	49	22.69	22.74	22.42		2
	25	0	21.69	21.50	21.43	0-3	3
	25	12	21.73	21.64	21.60		3
	25	25	21.60	21.64	21.60		3
	50	0	21.59	21.54	21.48		3

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Table 9-20
LTE Band 26 (Cell) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26715 (816.5 MHz)	26865 (831.5 MHz)	27015 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.79	24.87	24.81	0	0
	1	12	24.83	24.89	24.81		0
	1	24	24.79	24.90	24.77		0
	12	0	23.63	23.56	23.50	0-1	1
	12	6	23.66	23.63	23.57		1
	12	13	23.58	23.67	23.48		1
	25	0	23.62	23.57	23.51		1
16QAM	1	0	23.71	23.71	24.16	0-1	1
	1	12	23.77	23.74	23.91		1
	1	24	23.73	23.73	24.04		1
	12	0	22.62	22.57	22.76	0-2	2
	12	6	22.68	22.62	22.79		2
	12	13	22.60	22.62	22.75		2
	25	0	22.68	22.59	22.56		2
64QAM	1	0	22.63	22.82	22.42	0-2	2
	1	12	22.68	22.87	23.19		2
	1	24	22.63	22.85	22.95		2
	12	0	21.52	21.60	21.61	0-3	3
	12	6	21.56	21.68	21.59		3
	12	13	21.51	21.69	21.58		3
	25	0	21.58	21.55	21.62		3

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Table 9-21
LTE Band 26 (Cell) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26705 (815.5 MHz)	26865 (831.5 MHz)	27025 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.94	24.82	24.98	0	0
	1	7	24.96	24.85	24.80		0
	1	14	24.94	24.92	24.98		0
	8	0	23.61	23.56	23.41	0-1	1
	8	4	23.64	23.65	23.52		1
	8	7	23.62	23.58	23.42		1
	15	0	23.65	23.55	23.52		1
16QAM	1	0	24.06	23.71	23.85	0-1	1
	1	7	24.02	23.75	23.70		1
	1	14	24.03	23.73	23.80		1
	8	0	22.75	22.65	22.57	0-2	2
	8	4	22.81	22.73	22.64		2
	8	7	22.76	22.68	22.62		2
	15	0	22.71	22.67	22.57		2
64QAM	1	0	22.74	23.04	22.86	0-2	2
	1	7	22.76	22.93	22.53		2
	1	14	22.79	22.96	22.50		2
	8	0	21.73	21.61	21.53	0-3	3
	8	4	21.81	21.73	21.60		3
	8	7	21.77	21.67	21.53		3
	15	0	21.65	21.59	21.53		3

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Table 9-22
LTE Band 26 (Cell) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26697 (814.7 MHz)	26865 (831.5 MHz)	27033 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.98	24.74	24.65	0	0
	1	2	25.08	24.95	24.81		0
	1	5	25.04	24.83	24.63		0
	3	0	24.48	24.37	24.31		0
	3	2	24.53	24.46	24.35		0
	3	3	24.49	24.45	24.33		0
	6	0	23.62	23.49	23.32	0-1	1
16QAM	1	0	23.67	23.43	23.25	0-1	1
	1	2	23.74	23.66	23.41		1
	1	5	23.71	23.56	23.31		1
	3	0	23.78	23.59	23.52		1
	3	2	23.86	23.73	23.61		1
	3	3	23.81	23.65	23.51		1
	6	0	22.67	22.54	22.49	0-2	2
64QAM	1	0	22.95	22.52	22.22	0-2	2
	1	2	23.08	22.67	22.23		2
	1	5	22.91	22.58	22.33		2
	3	0	22.86	22.60	22.27		2
	3	2	22.91	22.72	22.37		2
	3	3	22.80	22.70	22.40		2
	6	0	21.59	21.58	21.40	0-3	3

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LTE Band 5

Table 9-23
LTE Band 5 (Cell) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20525 (836.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.61	0	0
	1	25	24.63		0
	1	49	24.64		0
	25	0	23.79	0-1	1
	25	12	23.74		1
	25	25	23.80		1
	50	0	23.70		1
16QAM	1	0	24.00	0-1	1
	1	25	23.99		1
	1	49	23.91		1
	25	0	22.74	0-2	2
	25	12	22.73		2
	25	25	22.76		2
	50	0	22.56		2
64QAM	1	0	22.81	0-2	2
	1	25	22.91		2
	1	49	22.88		2
	25	0	21.73	0-3	3
	25	12	21.69		3
	25	25	21.75		3
	50	0	21.62		3

Note: LTE Band 5 at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-24
LTE Band 5 (Cell) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20425 (826.5 MHz)	20525 (836.5 MHz)	20625 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.93	24.88	24.75	0	0
	1	12	24.95	24.98	24.81		0
	1	24	24.93	24.96	24.82		0
	12	0	23.92	23.87	23.85	0-1	1
	12	6	23.96	23.95	23.83		1
	12	13	23.91	23.95	23.85		1
	25	0	23.93	23.86	23.84		1
16QAM	1	0	24.03	23.92	23.85	0-1	1
	1	12	24.01	24.00	23.86		1
	1	24	24.01	23.97	23.81		1
	12	0	22.88	22.88	22.80	0-2	2
	12	6	22.95	22.92	22.88		2
	12	13	22.91	22.91	22.91		2
	25	0	22.96	22.89	22.91		2
64QAM	1	0	22.94	23.00	22.81	0-2	2
	1	12	22.99	23.14	22.90		2
	1	24	22.94	23.08	22.88		2
	12	0	21.80	21.93	21.74	0-3	3
	12	6	21.83	21.98	21.75		3
	12	13	21.81	21.99	21.77		3
	25	0	21.91	21.88	21.84		3

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Table 9-25
LTE Band 5 (Cell) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.97	24.93	25.14	0	0
	1	7	24.90	24.97	24.93		0
	1	14	24.98	25.04	25.12		0
	8	0	23.85	23.79	23.73	0-1	1
	8	4	23.91	23.89	23.82		1
	8	7	23.85	23.82	23.73		1
	15	0	23.87	23.81	23.86		1
16QAM	1	0	24.05	23.79	24.12	0-1	1
	1	7	24.06	23.81	24.03		1
	1	14	23.99	23.84	24.15		1
	8	0	22.94	22.87	22.92	0-2	2
	8	4	22.98	22.97	22.98		2
	8	7	22.96	22.94	22.96		2
	15	0	22.95	22.84	22.90		2
64QAM	1	0	23.25	22.90	23.21	0-2	2
	1	7	23.21	22.91	22.75		2
	1	14	23.20	23.01	22.83		2
	8	0	21.93	21.85	21.90	0-3	3
	8	4	21.99	21.93	21.98		3
	8	7	21.95	21.88	21.84		3
	15	0	21.92	21.95	21.89		3

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Table 9-26
LTE Band 5 (Cell) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.85	24.96	24.77	0	0
	1	2	24.90	25.12	24.95		0
	1	5	24.83	25.07	24.83		0
	3	0	24.77	24.69	24.69		0
	3	2	24.83	24.81	24.74		0
	3	3	24.78	24.73	24.75		0
	6	0	23.86	23.86	23.74	0-1	1
16QAM	1	0	24.05	23.84	23.62	0-1	1
	1	2	24.10	23.98	23.84		1
	1	5	24.10	23.96	23.70		1
	3	0	23.87	24.01	23.93		1
	3	2	23.89	24.13	24.03		1
	3	3	23.80	24.09	23.95		1
	6	0	22.81	22.90	22.93	0-2	2
64QAM	1	0	23.14	23.13	22.53	0-2	2
	1	2	23.19	23.28	22.60		2
	1	5	23.15	23.15	22.65		2
	3	0	23.02	23.06	22.59		2
	3	2	23.10	23.15	22.74		2
	3	3	23.07	23.07	22.77		2
	6	0	21.92	21.78	21.74	0-3	3

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LTE Band 66

Table 9-27

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

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.52	24.56	24.88	0	0
	1	50	24.80	24.72	24.80		0
	1	99	24.51	24.62	24.86		0
	50	0	22.91	22.95	22.93	0-1	1
	50	25	23.00	23.01	22.97		1
	50	50	22.94	22.95	23.02		1
	100	0	22.97	22.91	22.89		1
16QAM	1	0	23.13	23.12	23.40	0-1	1
	1	50	23.38	23.44	23.30		1
	1	99	23.13	23.12	23.21		1
	50	0	21.91	21.94	21.97	0-2	2
	50	25	22.02	21.97	22.00		2
	50	50	21.92	21.96	21.94		2
	100	0	21.98	21.95	21.91		2
64QAM	1	0	22.10	22.14	22.47	0-2	2
	1	50	22.44	22.48	22.45		2
	1	99	22.16	22.24	22.34		2
	50	0	20.95	20.99	20.98	0-3	3
	50	25	21.07	21.03	21.01		3
	50	50	20.99	21.00	20.95		3
	100	0	21.03	20.95	20.92		3

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Table 9-28
LTE Band 66 (AWS) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.28	24.65	24.52	0	0
	1	36	24.45	24.61	24.66		0
	1	74	24.57	24.48	24.62		0
	36	0	22.70	22.77	22.75	0-1	1
	36	18	22.77	22.75	22.72		1
	36	37	22.75	22.79	22.78		1
	75	0	22.72	22.73	22.76		1
16QAM	1	0	22.94	23.18	23.24	0-1	1
	1	36	22.95	23.06	23.02		1
	1	74	22.90	22.96	23.15		1
	36	0	21.73	21.77	21.75	0-2	2
	36	18	21.79	21.80	21.81		2
	36	37	21.75	21.78	21.84		2
	75	0	21.76	21.76	21.76		2
64QAM	1	0	21.77	21.90	21.96	0-2	2
	1	36	21.85	22.02	21.98		2
	1	74	21.69	21.78	21.84		2
	36	0	20.73	20.77	20.82	0-3	3
	36	18	20.85	20.74	20.83		3
	36	37	20.76	20.82	20.78		3
	75	0	20.79	20.80	20.75		3

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Table 9-29
LTE Band 66 (AWS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.35	24.57	24.61	0	0
	1	25	24.73	24.81	24.77		0
	1	49	24.60	24.74	24.52		0
	25	0	22.88	22.82	22.82	0-1	1
	25	12	22.94	22.91	22.90		1
	25	25	22.83	22.84	22.83		1
	50	0	22.90	22.82	22.82		1
16QAM	1	0	22.84	22.97	22.99	0-1	1
	1	25	23.24	23.30	23.15		1
	1	49	22.97	23.01	23.05		1
	25	0	21.87	21.82	21.88	0-2	2
	25	12	21.95	21.93	21.94		2
	25	25	21.90	21.85	21.93		2
	50	0	21.87	21.81	21.82		2
64QAM	1	0	21.80	21.83	21.77	0-2	2
	1	25	22.02	22.04	22.09		2
	1	49	21.74	21.92	21.85		2
	25	0	20.83	20.83	20.86	0-3	3
	25	12	20.95	20.94	20.90		3
	25	25	20.87	20.90	20.88		3
	50	0	20.92	20.86	20.87		3

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Table 9-30
LTE Band 66 (AWS) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.85	24.81	24.88	0	0
	1	12	24.72	24.88	24.90		0
	1	24	24.69	24.72	24.87		0
	12	0	22.99	22.91	22.99	0-1	1
	12	6	23.01	22.91	23.02		1
	12	13	22.89	22.89	22.91		1
25	0	22.94	22.93	22.96		1	
16QAM	1	0	23.20	23.19	23.21	0-1	1
	1	12	23.23	23.28	23.21		1
	1	24	23.08	23.10	23.11		1
	12	0	22.03	22.02	22.03	0-2	2
	12	6	22.06	21.96	22.04		2
	12	13	21.90	21.95	21.93		2
25	0	21.94	21.89	21.98		2	
64QAM	1	0	22.07	22.06	22.13	0-2	2
	1	12	22.12	22.12	22.09		2
	1	24	21.97	22.08	22.01		2
	12	0	21.01	20.95	21.06	0-3	3
	12	6	21.04	21.07	21.05		3
	12	13	20.90	20.92	20.95		3
25	0	20.93	20.92	20.93		3	

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Table 9-31
LTE Band 66 (AWS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.82	24.84	24.86	0	0
	1	7	24.72	24.85	24.79		0
	1	14	24.75	24.88	24.74		0
	8	0	22.93	22.90	22.94	0-1	1
	8	4	22.94	22.99	23.00		1
	8	7	22.87	22.93	22.90		1
	15	0	22.93	22.91	22.92		1
16QAM	1	0	23.20	23.24	23.21	0-1	1
	1	7	23.14	23.28	23.15		1
	1	14	23.16	23.22	23.11		1
	8	0	22.08	22.04	22.05	0-2	2
	8	4	22.07	22.10	22.05		2
	8	7	21.98	22.04	22.01		2
	15	0	21.93	21.89	21.98		2
64QAM	1	0	22.08	22.05	22.10	0-2	2
	1	7	22.01	22.10	22.02		2
	1	14	22.08	22.02	22.00		2
	8	0	20.95	20.97	21.00	0-3	3
	8	4	20.90	21.03	21.05		3
	8	7	20.91	20.96	20.89		3
	15	0	21.04	20.99	21.05		3

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Table 9-32
LTE Band 66 (AWS) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.70	24.70	24.67	0	0
	1	2	24.60	24.76	24.70		0
	1	5	24.47	24.62	24.63		0
	3	0	24.75	24.72	24.68		0
	3	2	24.64	24.70	24.72		0
	3	3	24.61	24.70	24.66		0
	6	0	22.85	22.85	22.93	0-1	1
16QAM	1	0	23.11	23.12	23.14	0-1	1
	1	2	23.24	23.19	23.24		1
	1	5	23.05	23.04	23.06		1
	3	0	23.06	22.97	23.00		1
	3	2	23.02	23.04	22.99		1
	3	3	23.00	22.91	22.98		1
	6	0	21.97	21.95	21.89	0-2	2
64QAM	1	0	21.97	22.04	21.98	0-2	2
	1	2	22.04	22.15	22.06		2
	1	5	21.92	22.07	21.93		2
	3	0	21.96	21.96	21.89		2
	3	2	21.93	21.99	21.92		2
	3	3	21.90	21.88	21.89		2
	6	0	20.85	20.89	20.85	0-3	3

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Table 9-33

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	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	23.62	23.70	23.98	0	0
	1	50	23.93	23.93	23.96		0
	1	99	23.76	23.92	23.90		0
	50	0	23.80	23.83	23.76	0-1	0
	50	25	23.95	23.94	23.96		0
	50	50	23.87	23.84	23.81		0
	100	0	23.84	23.86	23.83		0
16QAM	1	0	23.85	23.99	24.00	0-1	0
	1	50	24.00	24.00	23.99		0
	1	99	23.97	23.98	24.00		0
	50	0	22.77	22.79	22.83	0-2	1
	50	25	22.94	22.95	22.94		1
	50	50	22.88	22.86	22.85		1
	100	0	22.87	22.84	22.84		1
64QAM	1	0	22.84	22.97	22.99	0-2	1
	1	50	23.00	22.99	23.00		1
	1	99	22.92	22.97	22.98		1
	50	0	21.82	21.81	21.80	0-3	2
	50	25	21.99	21.95	21.95		2
	50	50	21.90	21.85	21.85		2
	100	0	21.90	21.83	21.87		2

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Table 9-34

LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.69	23.59	24.13	0	0
	1	36	23.88	24.03	24.08		0
	1	74	23.68	23.94	24.01		0
	36	0	23.79	23.80	23.89	0-1	0
	36	18	23.93	23.92	23.92		0
	36	37	23.83	23.99	23.92		0
	75	0	23.84	23.82	23.87		0
16QAM	1	0	23.86	23.92	24.36	0-1	0
	1	36	24.00	24.30	24.41		0
	1	74	23.85	24.15	24.22		0
	36	0	22.82	22.93	23.03	0-2	1
	36	18	22.89	23.04	23.05		1
	36	37	22.82	23.10	23.04		1
	75	0	22.87	22.86	22.90		1
64QAM	1	0	23.00	22.87	23.00	0-2	1
	1	36	23.09	23.31	23.03		1
	1	74	23.12	23.27	22.88		1
	36	0	21.87	21.91	22.00	0-3	2
	36	18	22.01	22.05	22.04		2
	36	37	21.92	22.12	22.00		2
	75	0	21.89	21.91	21.89		2

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Table 9-35

LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.63	23.79	23.93	0	0
	1	25	23.92	24.04	24.15		0
	1	49	23.75	23.87	23.95		0
	25	0	23.95	23.93	23.98	0-1	0
	25	12	23.98	24.02	24.07		0
	25	25	23.90	23.96	24.03		0
	50	0	23.93	23.89	23.96		0
16QAM	1	0	24.04	24.00	23.87	0-1	0
	1	25	24.10	24.24	24.17		0
	1	49	23.99	24.02	23.95		0
	25	0	22.95	22.91	23.05	0-2	1
	25	12	23.00	23.01	23.11		1
	25	25	22.92	22.97	23.08		1
	50	0	22.96	22.95	23.05		1
64QAM	1	0	22.93	22.63	23.00	0-2	1
	1	25	22.99	22.95	22.88		1
	1	49	22.81	22.71	22.95		1
	25	0	21.93	22.00	21.94	0-3	2
	25	12	21.96	22.05	22.02		2
	25	25	21.85	22.00	21.98		2
	50	0	21.90	21.84	21.90		2

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Table 9-36

LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.93	24.08	23.99	0	0
	1	12	23.94	24.19	24.00		0
	1	24	23.86	24.20	23.91		0
	12	0	23.98	24.12	24.08	0-1	0
	12	6	24.00	24.20	24.09		0
	12	13	23.90	24.14	24.01		0
	25	0	23.98	23.92	24.07		0
16QAM	1	0	24.26	23.89	24.36	0-1	0
	1	12	24.20	24.30	24.31		0
	1	24	24.20	23.90	24.27		0
	12	0	23.09	23.01	23.25	0-2	1
	12	6	23.05	23.02	23.17		1
	12	13	22.93	22.99	23.18		1
	25	0	23.07	22.96	23.09		1
64QAM	1	0	23.40	22.84	23.25	0-2	1
	1	12	23.38	22.97	23.23		1
	1	24	23.48	22.85	23.15		1
	12	0	22.12	22.02	22.07	0-3	2
	12	6	22.13	22.00	22.06		2
	12	13	22.03	21.97	22.10		2
	25	0	21.94	22.05	21.99		2

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Table 9-37

LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.91	23.89	23.93	0	0
	1	7	23.92	23.96	23.90		0
	1	14	23.96	23.92	23.92		0
	8	0	23.16	23.15	23.12	0-1	0
	8	4	23.12	23.15	23.16		0
	8	7	23.11	23.16	23.14		0
	15	0	23.15	23.14	23.15		0
16QAM	1	0	23.29	23.25	23.30	0-1	0
	1	7	23.22	23.35	23.28		0
	1	14	23.20	23.11	23.21		0
	8	0	22.23	22.17	22.26	0-2	1
	8	4	22.18	22.22	22.25		1
	8	7	22.20	22.13	22.26		1
	15	0	22.13	22.12	22.19		1
64QAM	1	0	22.50	22.30	22.28	0-2	1
	1	7	22.31	22.49	22.31		1
	1	14	22.31	22.00	22.24		1
	8	0	21.23	21.18	21.24	0-3	2
	8	4	21.30	21.23	21.29		2
	8	7	21.25	21.21	21.22		2
	15	0	21.13	21.16	21.18		2

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Table 9-38
LTE Band 66 (AWS) Reduced Conducted Powers - Hotspot Mode Active - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.97	23.95	23.91	0	0
	1	2	23.89	24.00	23.97		0
	1	5	23.96	23.98	23.94		0
	3	0	24.00	24.00	23.92		0
	3	2	23.99	23.96	23.89		0
	3	3	23.95	23.99	23.95		0
	6	0	23.00	23.12	23.13	0-1	0
16QAM	1	0	23.14	23.30	23.40	0-1	0
	1	2	23.11	23.24	23.03		0
	1	5	23.25	23.10	23.28		0
	3	0	23.16	23.19	23.06		0
	3	2	23.35	23.22	23.21		0
	3	3	23.18	23.26	23.19		0
	6	0	22.11	22.18	22.20	0-2	1
64QAM	1	0	22.22	22.36	22.22	0-2	1
	1	2	22.16	22.27	21.98		1
	1	5	22.34	22.24	22.19		1
	3	0	22.29	22.04	22.12		1
	3	2	22.22	22.24	22.18		1
	3	3	22.21	22.27	22.15		1
	6	0	21.12	21.21	21.15	0-3	2

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Table 9-39

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 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	20.63	20.65	20.73	0	0
	1	50	20.84	20.88	20.79		0
	1	99	20.65	20.68	20.75		0
	50	0	19.95	19.96	19.84	0-1	1
	50	25	20.00	20.01	19.92		1
	50	50	19.87	19.84	19.84		1
	100	0	19.88	19.94	19.81		1
16QAM	1	0	19.66	19.65	19.80	0-1	1
	1	50	19.84	19.84	19.82		1
	1	99	19.70	19.66	19.87		1
	50	0	18.97	18.94	18.86	0-2	2
	50	25	19.02	19.06	18.95		2
	50	50	18.87	18.85	18.84		2
	100	0	18.80	18.88	18.74		2
64QAM	1	0	18.64	18.61	18.85	0-2	2
	1	50	18.90	18.94	18.81		2
	1	99	18.68	18.61	18.76		2
	50	0	17.97	17.92	17.84	0-3	3
	50	25	18.04	18.02	17.93		3
	50	50	17.92	17.89	17.88		3
	100	0	17.84	17.95	17.83		3

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Table 9-40

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.69	20.66	20.71	0	0
	1	36	20.82	20.77	20.76		0
	1	74	20.78	20.61	20.74		0
	36	0	19.95	19.90	19.92	0-1	1
	36	18	19.98	19.91	19.95		1
	36	37	19.90	19.77	19.88		1
	75	0	19.86	19.89	19.83		1
16QAM	1	0	19.50	19.85	19.92	0-1	1
	1	36	19.99	20.08	19.99		1
	1	74	20.01	19.90	19.89		1
	36	0	18.95	18.94	18.88	0-2	2
	36	18	19.00	18.93	18.87		2
	36	37	18.85	18.81	18.83		2
	75	0	18.86	18.90	18.83		2
64QAM	1	0	19.08	19.18	19.18	0-2	2
	1	36	19.34	19.24	19.22		2
	1	74	19.09	19.00	19.01		2
	36	0	17.91	17.92	17.87	0-3	3
	36	18	17.99	17.97	17.91		3
	36	37	17.87	17.83	17.83		3
	75	0	17.93	17.96	17.90		3

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Table 9-41

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.58	20.62	20.60	0	0
	1	25	20.97	20.83	20.78		0
	1	49	20.78	20.67	20.64		0
	25	0	19.98	19.95	19.89	0-1	1
	25	12	19.98	20.04	20.03		1
	25	25	19.94	19.87	19.90		1
	50	0	19.89	19.90	19.88		1
16QAM	1	0	20.00	19.84	19.88	0-1	1
	1	25	20.24	20.32	20.16		1
	1	49	20.09	19.98	19.87		1
	25	0	18.97	18.96	18.89	0-2	2
	25	12	18.96	19.01	18.98		2
	25	25	18.86	18.81	18.83		2
	50	0	18.90	18.97	18.87		2
64QAM	1	0	19.17	19.06	19.17	0-2	2
	1	25	19.48	19.51	19.42		2
	1	49	19.12	19.20	19.18		2
	25	0	18.02	17.95	17.93	0-3	3
	25	12	18.00	18.05	17.98		3
	25	25	17.88	17.89	17.87		3
	50	0	17.91	17.96	17.88		3

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Table 9-42

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.89	20.88	20.79	0	0
	1	12	20.91	20.96	20.80		0
	1	24	20.80	20.81	20.77		0
	12	0	19.95	20.05	19.95	0-1	1
	12	6	20.04	19.99	19.98		1
	12	13	19.98	19.93	19.99		1
	25	0	19.98	20.02	19.89		1
16QAM	1	0	20.13	20.20	20.11	0-1	1
	1	12	20.14	20.00	20.13		1
	1	24	20.03	20.04	19.99		1
	12	0	19.01	18.91	19.01	0-2	2
	12	6	19.04	18.98	19.07		2
	12	13	19.05	18.88	19.05		2
	25	0	18.98	18.92	18.91		2
64QAM	1	0	19.26	19.21	19.09	0-2	2
	1	12	19.23	19.24	19.25		2
	1	24	19.24	19.07	19.01		2
	12	0	18.11	18.09	18.02	0-3	3
	12	6	18.08	17.96	18.04		3
	12	13	18.02	17.95	17.93		3
	25	0	17.96	17.99	17.97		3

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Table 9-43

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.93	20.96	20.93	0	0
	1	7	20.88	20.89	20.83		0
	1	14	20.85	20.84	20.75		0
	8	0	20.00	20.03	19.90	0-1	1
	8	4	20.01	20.01	19.96		1
	8	7	19.95	20.04	19.91		1
	15	0	20.02	20.01	19.94		1
16QAM	1	0	20.25	20.20	20.11	0-1	1
	1	7	20.17	20.19	20.07		1
	1	14	20.09	20.15	20.04		1
	8	0	19.01	19.00	18.96	0-2	2
	8	4	19.08	19.06	18.95		2
	8	7	18.98	18.96	18.89		2
	15	0	19.10	19.11	19.03		2
64QAM	1	0	19.26	19.24	19.23	0-2	2
	1	7	19.21	19.21	19.10		2
	1	14	19.26	19.12	19.14		2
	8	0	17.99	18.00	17.93	0-3	3
	8	4	18.01	17.96	17.95		3
	8	7	17.94	17.93	17.94		3
	15	0	18.04	18.01	17.95		3

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Table 9-44

LTE Band 66 (AWS) Maximum Conducted Powers During Conditions with 5G NR - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.83	20.86	20.77	0	0
	1	2	20.99	20.97	20.85		0
	1	5	20.91	20.77	20.73		0
	3	0	20.97	20.86	20.83		0
	3	2	21.00	20.86	20.87		0
	3	3	20.90	20.87	20.81		0
	6	0	19.90	19.88	19.81		0-1
16QAM	1	0	20.17	19.87	19.88	0-1	1
	1	2	20.13	20.03	20.10		1
	1	5	20.05	20.07	20.00		1
	3	0	20.07	19.90	19.91		1
	3	2	20.11	20.02	20.01		1
	3	3	20.01	19.88	19.94		1
	6	0	18.93	18.91	18.87		0-2
64QAM	1	0	19.11	19.15	19.14	0-2	2
	1	2	19.49	19.20	19.08		2
	1	5	19.13	19.26	18.97		2
	3	0	18.99	18.92	18.89		2
	3	2	19.02	18.97	18.89		2
	3	3	18.96	18.83	18.84		2
	6	0	18.06	18.04	17.94		0-3

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LTE Band 25

Table 9-45

LTE Band 25 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth							
20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.78	24.85	24.84	0	0
	1	50	24.78	24.86	24.83		0
	1	99	24.79	24.87	24.86		0
	50	0	22.83	23.17	22.91	0-1	1
	50	25	22.84	22.95	22.90		1
	50	50	22.86	22.94	22.96		1
	100	0	22.79	22.88	22.90		1
16QAM	1	0	23.17	23.47	23.38	0-1	1
	1	50	23.18	23.46	23.49		1
	1	99	23.30	23.42	23.49		1
	50	0	21.80	21.88	21.91	0-2	2
	50	25	21.85	21.92	21.90		2
	50	50	21.85	21.91	21.95		2
	100	0	21.80	21.89	21.92		2
64QAM	1	0	21.88	21.96	21.90	0-2	2
	1	50	21.94	21.94	21.92		2
	1	99	22.07	21.96	21.90		2
	50	0	20.95	20.92	21.11	0-3	3
	50	25	20.94	21.00	20.96		3
	50	50	20.93	20.99	20.98		3
	100	0	20.88	20.93	20.90		3

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Table 9-46
LTE Band 25 (PCS) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.51	24.76	24.84	0	0
	1	36	24.87	24.83	24.96		0
	1	74	24.72	24.81	24.92		0
	36	0	22.92	22.92	22.97	0-1	1
	36	18	23.03	23.04	23.11		1
	36	37	23.00	23.07	23.19		1
	75	0	22.92	23.00	23.01		1
16QAM	1	0	23.00	23.59	23.17	0-1	1
	1	36	23.41	23.75	23.28		1
	1	74	23.27	23.70	23.26		1
	36	0	21.89	21.92	22.05	0-2	2
	36	18	22.09	22.05	22.12		2
	36	37	22.08	22.11	22.18		2
	75	0	21.95	22.06	22.06		2
64QAM	1	0	21.99	22.07	22.14	0-2	2
	1	36	22.44	22.18	22.30		2
	1	74	22.32	22.16	22.12		2
	36	0	20.88	20.97	21.10	0-3	3
	36	18	21.09	21.14	21.21		3
	36	37	21.01	21.18	21.31		3
	75	0	21.02	20.99	21.07		3

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Table 9-47
LTE Band 25 (PCS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.57	24.51	24.99	0	0
	1	25	24.76	24.79	24.97		0
	1	49	24.58	24.59	25.00		0
	25	0	23.01	23.01	23.07	0-1	1
	25	12	23.11	23.19	23.23		1
	25	25	23.09	23.12	23.24		1
	50	0	23.03	23.13	23.15		1
16QAM	1	0	22.87	23.09	23.75	0-1	1
	1	25	23.11	23.31	23.84		1
	1	49	22.91	23.07	23.78		1
	25	0	22.04	22.14	22.18	0-2	2
	25	12	22.13	22.32	22.34		2
	25	25	22.11	22.26	22.31		2
	50	0	22.03	22.11	22.13		2
64QAM	1	0	21.87	22.06	22.24	0-2	2
	1	25	22.16	22.32	22.40		2
	1	49	21.99	22.12	22.39		2
	25	0	21.14	21.05	21.06	0-3	3
	25	12	21.25	21.25	21.27		3
	25	25	21.19	21.21	21.30		3
	50	0	21.09	21.19	21.18		3

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Table 9-48
LTE Band 25 (PCS) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.65	24.79	24.89	0	0
	1	12	24.67	24.92	24.88		0
	1	24	24.72	24.96	24.97		0
	12	0	23.07	23.07	23.23	0-1	1
	12	6	23.10	23.17	23.26		1
	12	13	23.10	23.19	23.28		1
	25	0	23.11	23.11	23.26		1
16QAM	1	0	23.19	23.53	23.33	0-1	1
	1	12	23.21	23.62	23.31		1
	1	24	23.28	23.67	23.33		1
	12	0	22.07	22.26	22.22	0-2	2
	12	6	22.15	22.37	22.32		2
	12	13	22.14	22.43	22.31		2
	25	0	22.19	22.13	22.28		2
64QAM	1	0	22.13	22.12	22.15	0-2	2
	1	12	22.18	22.20	22.14		2
	1	24	22.26	22.26	22.20		2
	12	0	21.01	21.14	21.29	0-3	3
	12	6	21.03	21.23	21.35		3
	12	13	21.04	21.18	21.34		3
	25	0	21.13	21.27	21.27		3

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Table 9-49
LTE Band 25 (PCS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.76	24.76	24.96	0	0
	1	7	24.77	24.72	24.94		0
	1	14	24.80	24.89	24.85		0
	8	0	22.92	22.93	23.07	0-1	1
	8	4	22.96	23.07	23.14		1
	8	7	22.94	23.03	23.12		1
	15	0	22.95	23.03	23.18		1
16QAM	1	0	23.00	23.14	23.52	0-1	1
	1	7	22.96	23.19	23.48		1
	1	14	23.01	23.21	23.53		1
	8	0	22.00	22.04	22.20	0-2	2
	8	4	22.03	22.13	22.28		2
	8	7	22.02	22.13	22.27		2
	15	0	21.94	22.13	22.20		2
64QAM	1	0	21.92	22.37	22.38	0-2	2
	1	7	21.92	22.39	22.34		2
	1	14	22.05	22.45	22.35		2
	8	0	20.94	21.03	21.18	0-3	3
	8	4	21.01	21.15	21.28		3
	8	7	20.99	21.13	21.24		3
	15	0	21.06	21.08	21.16		3

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Table 9-50
LTE Band 25 (PCS) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.65	24.52	24.80	0	0
	1	2	24.72	24.71	24.85		0
	1	5	24.67	24.54	24.82		0
	3	0	23.94	23.82	23.98		0
	3	2	23.91	23.92	24.03		0
	3	3	23.95	23.87	23.99		0
	6	0	22.97	22.94	23.03	0-1	1
16QAM	1	0	22.96	22.95	23.21	0-1	1
	1	2	23.05	23.12	23.23		1
	1	5	23.03	22.98	23.24		1
	3	0	23.09	23.07	23.08		1
	3	2	23.13	23.14	23.15		1
	3	3	23.12	23.07	23.06		1
	6	0	21.99	21.92	21.99	0-2	2
64QAM	1	0	22.26	21.93	22.37	0-2	2
	1	2	22.35	22.03	22.33		2
	1	5	22.24	21.94	22.30		2
	3	0	22.17	22.12	22.21		2
	3	2	22.21	22.15	22.28		2
	3	3	22.14	22.10	22.24		2
	6	0	20.89	20.98	21.11	0-3	3

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Table 9-51

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	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.99	23.97	23.97	0	0
	1	50	23.98	23.98	23.99		0
	1	99	23.97	23.99	24.00		0
	50	0	23.81	23.82	23.89	0-1	0
	50	25	23.93	23.91	23.94		0
	50	50	23.89	23.94	24.00		0
	100	0	23.81	23.82	23.87		0
16QAM	1	0	24.00	24.00	24.00	0-1	0
	1	50	23.99	23.98	23.99		0
	1	99	23.98	24.00	24.00		0
	50	0	22.84	22.82	22.91	0-2	1
	50	25	22.96	22.94	22.96		1
	50	50	22.89	22.89	23.00		1
	100	0	22.82	22.83	22.84		1
64QAM	1	0	23.00	23.00	23.00	0-2	1
	1	50	22.99	22.99	22.99		1
	1	99	22.98	22.97	22.98		1
	50	0	21.85	21.81	21.94	0-3	2
	50	25	21.94	21.91	21.98		2
	50	50	21.88	21.91	22.00		2
	100	0	21.82	21.80	21.83		2

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Table 9-52

LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.82	22.96	22.97	0	0
	1	36	23.11	23.00	22.92		0
	1	74	23.00	22.99	22.97		0
	36	0	23.01	22.91	22.86	0-1	0
	36	18	23.12	23.04	23.02		0
	36	37	23.12	23.07	23.05		0
	75	0	23.05	23.04	22.89		0
16QAM	1	0	23.13	23.53	23.19	0-1	0
	1	36	23.37	23.58	23.28		0
	1	74	23.28	23.71	23.21		0
	36	0	22.05	21.94	21.83	0-2	1
	36	18	22.15	22.10	22.00		1
	36	37	22.16	22.10	22.06		1
	75	0	22.07	22.06	21.92		1
64QAM	1	0	22.28	22.02	21.88	0-2	1
	1	36	22.57	22.18	21.94		1
	1	74	22.50	22.27	22.00		1
	36	0	21.03	20.84	20.95	0-3	2
	36	18	21.15	21.14	21.22		2
	36	37	21.15	21.13	21.21		2
	75	0	21.06	21.08	20.97		2

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Table 9-53

LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.85	22.81	23.03	0	0
	1	25	23.05	23.02	23.04		0
	1	49	22.86	22.85	23.08		0
	25	0	23.17	23.01	22.95	0-1	0
	25	12	23.27	23.23	23.07		0
	25	25	23.26	23.13	23.11		0
	50	0	23.23	23.12	22.99		0
16QAM	1	0	23.28	23.43	23.26	0-1	0
	1	25	23.50	23.68	23.27		0
	1	49	23.29	23.45	23.30		0
	25	0	22.29	22.08	22.00	0-2	1
	25	12	22.37	22.23	22.10		1
	25	25	22.31	22.18	22.15		1
	50	0	22.21	22.13	22.00		1
64QAM	1	0	22.20	21.82	21.99	0-2	1
	1	25	22.41	22.20	22.04		1
	1	49	22.25	21.99	22.12		1
	25	0	21.23	21.00	21.08	0-3	2
	25	12	21.38	21.21	21.18		2
	25	25	21.30	21.20	21.22		2
	50	0	21.23	21.14	21.01		2

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Table 9-54

LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.21	23.00	23.10	0	0
	1	12	23.25	23.04	23.10		0
	1	24	23.26	23.05	23.15		0
	12	0	23.21	23.16	23.09	0-1	0
	12	6	23.29	23.19	23.17		0
	12	13	23.29	23.21	23.19		0
	25	0	23.25	23.15	23.13		0
16QAM	1	0	23.30	23.41	23.55	0-1	0
	1	12	23.32	23.41	23.59		0
	1	24	23.35	23.50	23.56		0
	12	0	22.24	22.15	22.27	0-2	1
	12	6	22.27	22.20	22.38		1
	12	13	22.27	22.21	22.35		1
	25	0	22.29	22.22	22.15		1
64QAM	1	0	22.29	22.14	22.27	0-2	1
	1	12	22.55	22.18	22.28		1
	1	24	22.54	22.26	22.29		1
	12	0	21.31	21.24	21.08	0-3	2
	12	6	21.36	21.25	21.14		2
	12	13	21.40	21.30	21.14		2
	25	0	21.33	21.19	21.19		2

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Table 9-55

LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.06	23.02	23.04	0	0
	1	7	23.08	23.04	23.03		0
	1	14	23.12	23.09	23.06		0
	8	0	23.16	23.09	23.06	0-1	0
	8	4	23.27	23.20	23.13		0
	8	7	23.27	23.19	23.15		0
	15	0	23.20	23.20	23.13		0
16QAM	1	0	22.53	23.62	23.25	0-1	0
	1	7	22.56	23.62	23.22		0
	1	14	22.63	23.66	23.31		0
	8	0	22.37	22.31	22.15	0-2	1
	8	4	22.42	22.34	22.23		1
	8	7	22.41	22.34	22.20		1
	15	0	22.35	22.27	22.16		1
64QAM	1	0	22.48	22.15	21.97	0-2	1
	1	7	22.48	22.18	22.02		1
	1	14	22.51	22.21	22.05		1
	8	0	21.27	21.20	21.18	0-3	2
	8	4	21.35	21.27	21.24		2
	8	7	21.33	21.23	21.25		2
	15	0	21.33	21.14	21.27		2

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Table 9-56

LTE Band 25 (PCS) Reduced Conducted Powers - Hotspot Mode Active - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.98	23.10	23.08	0	0
	1	2	23.12	23.17	23.18		0
	1	5	23.05	23.16	23.15		0
	3	0	23.11	22.95	23.93		0
	3	2	23.15	23.05	23.91		0
	3	3	23.12	23.06	23.94		0
	6	0	23.23	23.09	23.08	0-1	0
16QAM	1	0	22.50	23.18	23.29	0-1	0
	1	2	22.57	23.40	23.39		0
	1	5	22.53	23.32	23.34		0
	3	0	23.20	23.29	23.22		0
	3	2	23.23	23.34	23.32		0
	3	3	23.18	23.31	23.32		0
	6	0	22.30	22.27	22.28	0-2	1
64QAM	1	0	22.50	22.59	22.48	0-2	1
	1	2	22.48	22.66	22.58		1
	1	5	22.44	22.57	22.57		1
	3	0	22.24	22.27	22.18		1
	3	2	22.33	22.31	22.29		1
	3	3	22.30	22.29	22.26		1
	6	0	21.29	21.08	20.94	0-3	2

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LTE Band 2

Table 9-57

LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.09	20.93	20.81	0	0
	1	50	21.06	20.98	20.77		0
	1	99	21.02	20.95	20.82		0
	50	0	20.01	19.93	19.76	0-1	1
	50	25	20.16	20.02	19.90		1
	50	50	20.13	19.98	19.76		1
	100	0	20.07	19.90	19.79		1
16QAM	1	0	20.03	20.09	19.83	0-1	1
	1	50	20.01	19.96	19.68		1
	1	99	20.09	19.94	19.80		1
	50	0	19.04	18.93	18.76	0-2	2
	50	25	19.18	19.03	18.87		2
	50	50	19.19	18.99	18.79		2
	100	0	19.07	18.86	18.74		2
64QAM	1	0	18.92	18.89	18.76	0-2	2
	1	50	18.94	18.92	18.72		2
	1	99	19.05	18.83	18.73		2
	50	0	18.10	17.95	17.78	0-3	3
	50	25	18.21	18.03	17.92		3
	50	50	18.22	18.04	17.83		3
	100	0	18.13	18.00	17.83		3

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Table 9-58

LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.98	21.10	20.92	0	0
	1	36	21.16	21.08	20.90		0
	1	74	21.12	21.08	20.98		0
	36	0	20.13	19.80	19.88	0-1	1
	36	18	20.30	19.95	19.99		1
	36	37	20.31	19.91	19.87		1
	75	0	20.20	19.87	19.93		1
16QAM	1	0	20.04	20.03	20.02	0-1	1
	1	36	20.31	20.04	20.11		1
	1	74	20.19	20.00	20.06		1
	36	0	19.15	18.80	18.85	0-2	2
	36	18	19.28	19.08	18.98		2
	36	37	19.23	19.05	18.84		2
	75	0	19.25	19.01	18.94		2
64QAM	1	0	18.42	18.89	18.83	0-2	2
	1	36	18.88	18.88	18.72		2
	1	74	18.79	18.77	18.79		2
	36	0	18.10	17.96	17.84	0-3	3
	36	18	18.27	18.04	17.99		3
	36	37	18.30	18.10	17.89		3
	75	0	18.28	18.09	18.04		3

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Table 9-59

LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.09	21.04	21.12	0	0
	1	25	21.38	21.35	21.04		0
	1	49	21.23	21.14	21.13		0
	25	0	20.37	20.23	20.00	0-1	1
	25	12	20.49	20.34	20.13		1
	25	25	20.34	20.21	20.04		1
	50	0	20.36	20.26	20.01		1
16QAM	1	0	20.00	19.95	20.05	0-1	1
	1	25	20.46	20.39	20.08		1
	1	49	20.12	20.14	20.06		1
	25	0	19.25	19.12	18.92	0-2	2
	25	12	19.48	19.23	19.10		2
	25	25	19.31	19.05	18.97		2
	50	0	19.26	19.01	18.88		2
64QAM	1	0	18.79	18.71	18.82	0-2	2
	1	25	19.27	19.26	18.97		2
	1	49	18.91	18.78	19.00		2
	25	0	18.26	18.08	17.90	0-3	3
	25	12	18.42	18.23	18.03		3
	25	25	18.34	18.10	17.93		3
	50	0	18.35	18.14	17.94		3

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Table 9-60
LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.30	21.18	21.01	0	0
	1	12	21.36	21.23	21.07		0
	1	24	21.32	21.06	20.94		0
	12	0	20.47	20.32	20.08	0-1	1
	12	6	20.45	20.29	20.12		1
	12	13	20.36	20.18	20.07		1
	25	0	20.41	20.21	20.06		1
16QAM	1	0	20.43	20.33	20.10	0-1	1
	1	12	20.50	20.72	20.56		1
	1	24	20.44	20.25	20.01		1
	12	0	19.53	19.38	19.29	0-2	2
	12	6	19.62	19.40	19.21		2
	12	13	19.49	19.28	19.08		2
	25	0	19.43	19.25	18.99		2
64QAM	1	0	19.37	19.37	18.97	0-2	2
	1	12	19.43	19.34	19.18		2
	1	24	19.33	19.16	18.99		2
	12	0	18.35	18.40	18.00	0-3	3
	12	6	18.48	18.23	18.07		3
	12	13	18.34	18.19	18.02		3
	25	0	18.39	18.24	18.00		3

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Table 9-61

LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.32	21.27	21.04	0	0
	1	7	21.26	21.26	20.98		0
	1	14	21.27	21.11	20.88		0
	8	0	20.46	20.36	20.05	0-1	1
	8	4	20.44	20.27	20.10		1
	8	7	20.38	20.25	19.98		1
	15	0	20.40	20.27	20.05		1
16QAM	1	0	20.48	20.44	20.22	0-1	1
	1	7	20.42	20.68	20.49		1
	1	14	20.43	20.29	20.11		1
	8	0	19.36	19.33	19.04	0-2	2
	8	4	19.48	19.27	19.02		2
	8	7	19.37	19.16	19.00		2
	15	0	19.46	19.32	19.07		2
64QAM	1	0	19.45	19.28	19.12	0-2	2
	1	7	19.37	19.33	19.11		2
	1	14	19.36	19.18	18.86		2
	8	0	18.47	18.37	18.10	0-3	3
	8	4	18.41	18.25	18.07		3
	8	7	18.37	18.28	18.03		3
	15	0	18.31	18.14	17.91		3

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Table 9-62

LTE Band 2 (PCS) Maximum Conducted Powers During Conditions with 5G NR - 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.30	21.17	20.93	0	0
	1	2	21.25	21.20	21.03		0
	1	5	21.29	21.17	20.86		0
	3	0	21.30	21.16	20.92		0
	3	2	21.37	21.27	20.98		0
	3	3	21.24	21.13	20.85		0
	6	0	20.39	20.32	19.97		0-1
16QAM	1	0	20.52	20.39	20.15	0-1	1
	1	2	20.53	20.51	20.16		1
	1	5	20.45	20.37	20.07		1
	3	0	20.32	20.22	19.94		1
	3	2	20.31	20.21	19.89		1
	3	3	20.26	20.14	19.91		1
	6	0	19.25	19.21	18.90		0-2
64QAM	1	0	19.33	19.24	19.02	0-2	2
	1	2	19.33	19.27	19.00		2
	1	5	19.32	19.28	19.04		2
	3	0	19.09	19.10	18.79		2
	3	2	19.26	19.24	18.91		2
	3	3	19.08	19.09	18.84		2
	6	0	18.17	18.09	17.84		0-3

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LTE Band 30

Table 9-63
LTE Band 30 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.64	0	0
	1	25	24.66		0
	1	49	24.52		0
	25	0	23.76	0-1	1
	25	12	23.81		1
	25	25	23.67		1
	50	0	23.67		1
16QAM	1	0	24.00	0-1	1
	1	25	23.98		1
	1	49	23.89		1
	25	0	22.81	0-2	2
	25	12	22.90		2
	25	25	22.70		2
	50	0	22.75		2
64QAM	1	0	22.92	0-2	2
	1	25	22.95		2
	1	49	22.89		2
	25	0	21.85	0-3	3
	25	12	21.89		3
	25	25	21.70		3
	50	0	21.71		3

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Table 9-64
LTE Band 30 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.69	0	0
	1	12	24.75		0
	1	24	24.61		0
	12	0	23.79	0-1	1
	12	6	23.81		1
	12	13	23.72		1
	25	0	23.81		1
16QAM	1	0	23.80	0-1	1
	1	12	23.87		1
	1	24	23.76		1
	12	0	22.91	0-2	2
	12	6	22.97		2
	12	13	22.88		2
	25	0	22.85		2
64QAM	1	0	22.75	0-2	2
	1	12	22.89		2
	1	24	22.76		2
	12	0	21.86	0-3	3
	12	6	21.88		3
	12	13	21.86		3
	25	0	21.79		3

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

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Table 9-65
LTE Band 30 Maximum Conducted Powers During Conditions with 5G NR - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.74	0	0
	1	25	20.71		0
	1	49	20.70		0
	25	0	19.89	0-1	1
	25	12	19.99		1
	25	25	19.82		1
	50	0	19.79		1
16QAM	1	0	20.04	0-1	1
	1	25	19.89		1
	1	49	19.92		1
	25	0	18.77	0-2	2
	25	12	18.98		2
	25	25	18.76		2
	50	0	18.75		2
64QAM	1	0	19.01	0-2	2
	1	25	18.95		2
	1	49	18.85		2
	25	0	17.85	0-3	3
	25	12	17.98		3
	25	25	17.83		3
	50	0	17.80		3

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Table 9-66
LTE Band 30 Maximum Conducted Powers During Conditions with 5G NR - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.91	0	0
	1	12	20.76		0
	1	24	20.73		0
	12	0	19.89	0-1	1
	12	6	19.97		1
	12	13	19.90		1
	25	0	19.91		1
16QAM	1	0	20.06	0-1	1
	1	12	19.93		1
	1	24	19.89		1
	12	0	18.91	0-2	2
	12	6	18.92		2
	12	13	18.84		2
	25	0	18.90		2
64QAM	1	0	19.17	0-2	2
	1	12	19.30		2
	1	24	19.06		2
	12	0	17.95	0-3	3
	12	6	18.02		3
	12	13	17.87		3
	25	0	17.94		3

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

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LTE Band 41

Table 9-67
LTE Band 41 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	24.88	24.84	24.73	24.80	24.78	0	0
	1	50	25.05	24.84	25.13	25.18	25.14		0
	1	99	25.11	24.96	24.91	24.76	25.07		0
	50	0	24.17	23.87	24.14	24.27	24.14	0-1	1
	50	25	24.19	23.81	24.36	24.37	24.32		1
	50	50	24.24	23.82	24.23	24.21	24.27		1
16QAM	100	0	24.08	23.77	24.27	24.27	24.27	0-1	1
	1	0	23.95	23.99	23.93	23.89	23.89		1
	1	50	24.23	24.03	24.38	24.33	24.27		1
	1	99	24.16	24.11	24.15	24.03	24.16	0-2	1
	50	0	23.22	23.01	23.25	23.32	23.21		2
	50	25	23.24	23.01	23.37	23.31	23.28		2
64QAM	50	50	23.28	23.05	23.29	23.26	23.34	0-2	2
	100	0	23.14	22.91	23.32	23.34	23.33		2
	1	0	22.66	22.67	22.60	22.66	22.54		0-2
	1	50	22.88	22.72	23.01	23.04	23.02	2	
	1	99	22.89	22.70	22.71	22.59	22.89	2	
	64QAM	50	0	22.23	22.02	22.27	22.32	22.21	0-3
50		25	22.26	22.02	22.42	22.43	22.28	3	
50		50	22.28	22.05	22.30	22.27	22.34	3	
100		0	22.15	21.90	22.31	22.32	22.26	3	

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Table 9-68
LTE Band 41 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.99	24.90	24.99	24.95	25.04	0	0
	1	36	24.96	24.81	25.32	25.19	25.35		0
	1	74	25.07	25.14	25.15	24.96	25.24		0
	36	0	23.99	23.85	24.22	24.22	24.21	0-1	1
	36	18	24.06	23.93	24.28	24.31	24.34		1
	36	37	23.97	23.93	24.32	24.17	24.27		1
	75	0	24.06	23.90	24.22	24.22	24.26		1
16QAM	1	0	24.13	24.00	24.13	23.62	23.57	0-1	1
	1	36	24.05	23.89	24.45	23.88	23.95		1
	1	74	24.20	24.22	24.27	23.64	23.90		1
	36	0	23.03	22.81	23.28	23.26	23.25	0-2	2
	36	18	23.05	22.94	23.31	23.37	23.38		2
	36	37	22.96	22.95	23.33	23.20	23.31		2
	75	0	23.01	23.09	23.19	23.24	23.31		2
64QAM	1	0	23.22	22.90	22.83	22.96	22.92	0-2	2
	1	36	22.95	23.22	23.20	23.19	23.26		2
	1	74	23.20	23.18	22.99	22.87	23.12		2
	36	0	21.80	21.77	22.21	22.29	22.31	0-3	3
	36	18	21.87	21.87	22.30	22.36	22.43		3
	36	37	21.73	21.73	22.30	22.25	22.36		3
	75	0	21.95	21.86	22.20	22.28	22.36		3

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Table 9-69
LTE Band 41 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
			Conducted Power [dBm]							
QPSK	1	0	25.22	25.10	25.21	25.22	24.93	0	0	
	1	25	25.24	25.35	25.45	25.43	25.16		0	
	1	49	25.36	25.18	25.22	25.29	24.94		0	
	25	0	24.31	24.25	24.41	24.38	24.42	0-1	1	
	25	12	24.25	24.38	24.48	23.90	24.09		1	
	25	25	24.13	24.17	24.38	23.99	24.21		1	
16QAM	50	0	24.25	24.32	24.37	24.25	24.34	0-1	1	
	1	0	24.08	24.09	24.25	24.23	24.25		0-1	1
	1	25	24.22	24.33	24.33	24.13	24.40			1
	1	49	24.23	24.08	24.29	24.18	24.16	0-2		1
	25	0	23.28	23.33	23.47	23.33	23.32		2	
	25	12	23.28	22.86	23.47	23.44	23.47		2	
64QAM	25	25	23.26	23.32	23.40	23.35	23.32	0-2	2	
	50	0	23.28	23.31	23.40	23.42	23.45		0-2	2
	1	0	22.98	22.75	23.19	22.94	22.88			0-2
	1	25	22.96	22.99	23.39	23.32	23.16	0-3		
	1	49	22.95	22.79	23.18	22.88	22.85		0-3	
	25	0	22.31	22.26	22.40	22.33	22.38			0-3
25	12	22.33	22.44	22.44	22.49	22.31	0-3	3		
25	25	22.13	22.16	22.40	22.30	22.05		0-3	3	
50	0	22.31	21.89	22.38	22.08	22.41			0-3	3

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Table 9-70
LTE Band 41 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.17	25.01	25.27	25.40	25.00	0	0
	1	12	25.14	24.98	25.28	25.37	24.94		0
	1	24	25.14	24.94	25.20	25.33	24.86		0
	12	0	24.33	24.11	24.27	24.42	24.46	0-1	1
	12	6	24.29	24.13	24.31	24.44	24.48		1
	12	13	24.23	24.07	24.18	24.43	24.36		1
	25	0	24.28	24.14	24.23	24.42	24.44		1
16QAM	1	0	24.49	24.31	24.25	24.24	24.48	0-1	1
	1	12	24.43	24.29	24.18	24.34	24.35		1
	1	24	24.46	24.27	24.22	24.40	24.39		1
	12	0	23.31	23.16	23.27	23.46	23.49	0-2	2
	12	6	23.34	23.17	23.33	23.48	23.48		2
	12	13	23.25	23.11	23.23	23.43	23.44		2
	25	0	23.27	23.11	23.21	23.40	23.45		2
64QAM	1	0	23.39	23.17	23.23	23.24	23.45	0-2	2
	1	12	23.35	23.18	23.15	23.19	23.31		2
	1	24	23.35	23.12	23.18	23.19	23.35		2
	12	0	22.27	22.11	22.30	22.33	22.49	0-3	3
	12	6	22.33	22.12	22.31	22.34	22.50		3
	12	13	22.28	22.06	22.24	22.29	22.41		3
	25	0	22.28	22.09	22.18	22.46	22.45		3

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9.4.8

LTE Uplink Carrier Aggregation Conducted Powers

Table 9-71

LTE Uplink Carrier Aggregation Conducted Powers

PCC										SCC								Power		
Combination	PCC Band	PCC Bandwidth [MHz]	PCC UL Channel	PCC UL Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC UL Channel	SCC UL Frequency [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_5B	LTE B5	10	20525	836.5	2525	881.5	QPSK	1	49	LTE B5	5	20597	843.7	2597	888.7	QPSK	1	0	25.25	24.64

PCC										SCC						Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA_41C	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	25.50	24.80	

Notes:

1. This device supports uplink carrier aggregation for LTE CA_5B and LTE CA_41C with a maximum of two component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.



Figure 9-4
Power Measurement Setup

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9.5 NR Conducted Powers

9.5.1 NR Band n71

Table 9-72
NR Band n71 Conducted Powers - 20 MHz Bandwidth

NR Band n71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.34	0	0.0
	1	53	25.37		0.0
	1	104	25.46		0.0
	50	0	25.20	0-0.5	0.5
	50	28	25.37	0	0.0
	50	56	25.19	0-0.5	0.5
	100	0	25.17		0.5
DFT-s-OFDM QPSK	1	1	25.42	0	0.0
	1	53	25.39		0.0
	1	104	25.40		0.0
	50	0	24.68	0-1	1.0
	50	28	25.29	0	0.0
	50	56	24.67	0-1	1.0
	100	0	24.69		1.0
DFT-s-OFDM 16QAM	1	1	24.57	0-1	1.0
CP-OFDM QPSK	1	1	24.20	0-1.5	1.5

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

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Table 9-73
NR Band n71 Conducted Powers - 15 MHz Bandwidth
NR Band n71
15 MHz Bandwidth

NR Band n71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.06	0	0.0
	1	40	25.30		0.0
	1	77	24.97		0.0
	36	0	25.12	0-0.5	0.5
	36	22	25.18	0	0.0
	36	43	24.71	0-0.5	0.5
	75	0	24.96		0.5
DFT-s-OFDM QPSK	1	1	24.97	0	0.0
	1	40	25.14		0.0
	1	77	24.83		0.0
	36	0	24.68	0-1	1.0
	36	22	25.06	0	0.0
	36	43	24.15	0-1	1.0
	75	0	24.41		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	24.33	0-1	1.0
	1	1	23.95	0-1.5	1.5

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

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Table 9-74
NR Band n71 Conducted Powers - 10 MHz Bandwidth

NR Band n71 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133600 (668 MHz)	136100 (680.5 MHz)	138600 (693 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.11	25.27	25.02	0	0.0
	1	26	24.88	25.30	25.44		0.0
	1	50	24.41	24.48	24.45		0.0
	25	0	25.20	25.20	25.12	0-0.5	0.5
	25	14	24.94	25.14	25.33	0	0.0
	25	27	24.42	24.63	25.11	0-0.5	0.5
	50	0	24.73	24.79	25.04		0.5
DFT-s-OFDM QPSK	1	1	24.92	25.07	24.85	0	0.0
	1	26	24.81	25.06	25.40		0.0
	1	50	24.32	24.30	24.47		0.0
	25	0	24.62	24.68	24.50	0-1	1.0
	25	14	24.87	25.03	25.23	0	0.0
	25	27	23.86	24.10	24.60	0-1	1.0
	50	0	24.19	24.23	24.53		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	24.56	24.42	24.02	0-1	1.0
	1	1	23.87	23.77	23.59	0-1.5	1.5

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Table 9-75
NR Band n71 Conducted Powers - 5 MHz Bandwidth

NR Band n71 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133100 (665.5 MHz)	136100 (680.5 MHz)	139100 (695.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.01	25.58	25.55	0	0.0
	1	13	25.66	25.14	25.22		0.0
	1	23	24.91	24.92	24.86		0.0
	12	0	25.20	25.19	25.20	0-0.5	0.5
	12	7	25.56	25.11	25.16	0	0.0
	12	13	25.17	24.79	24.62	0-0.5	0.5
	25	0	25.19	25.05	25.05		0.5
DFT-s-OFDM QPSK	1	1	24.73	25.34	25.70	0	0.0
	1	13	25.48	24.95	25.38		0.0
	1	23	24.86	24.81	24.74		0.0
	12	0	24.70	24.69	24.70	0-1	1.0
	12	7	25.46	24.99	25.16	0	0.0
	12	13	24.65	24.21	24.20	0-1	1.0
	25	0	24.65	24.50	24.61		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	24.21	24.56	24.70	0-1	1.0
	1	1	23.72	24.04	24.19	0-1.5	1.5

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9.5.2

NR Band n5 (Cell)

Table 9-76
NR Band n5 Conducted Powers - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.68	0	0.0
	1	53	25.36		0.0
	1	104	25.57		0.0
	50	0	25.20	0-0.5	0.5
	50	28	25.36	0	0.0
	50	56	25.16	0-0.5	0.5
	100	0	25.19		0.5
DFT-s-OFDM QPSK	1	1	25.69	0	0.0
	1	53	25.43		0.0
	1	104	25.54		0.0
	50	0	24.69	0-1	1.0
	50	28	25.32	0	0.0
	50	56	24.64	0-1	1.0
	100	0	24.70		1.0
DFT-s-OFDM 16QAM	1	1	24.68	0-1	1.0
CP-OFDM QPSK	1	1	24.20	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.

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Table 9-77
NR Band n5 Conducted Powers - 15 MHz Bandwidth
NR Band n5
15 MHz Bandwidth

NR Band n5 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.63	0	0.0
	1	40	25.27		0.0
	1	77	25.38		0.0
	36	0	25.20	0-0.5	0.5
	36	22	25.29	0	0.0
	36	43	25.19	0-0.5	0.5
	75	0	25.20		0.5
DFT-s-OFDM QPSK	1	1	25.38	0	0.0
	1	40	25.12		0.0
	1	77	25.15		0.0
	36	0	24.62	0-1	1.0
	36	22	25.15	0	0.0
	36	43	24.61	0-1	1.0
	75	0	24.69		1.0
DFT-s-OFDM 16QAM	1	1	24.67	0-1	1.0
CP-OFDM QPSK	1	1	24.09	0-1.5	1.5

Note: NR Band n5 at 15 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-78
NR Band n5 Conducted Powers - 10 MHz Bandwidth
NR Band n5
10 MHz Bandwidth

NR Band n5 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.43	0	0.0
	1	26	25.29		0.0
	1	50	25.24		0.0
	25	0	25.16	0-0.5	0.5
	25	14	25.27	0	0.0
	25	27	25.15	0-0.5	0.5
	50	0	25.20		0.5
DFT-s-OFDM QPSK	1	1	25.17	0	0.0
	1	26	25.04		0.0
	1	50	25.12		0.0
	25	0	24.59	0-1	1.0
	25	14	25.12	0	0.0
	25	27	24.52	0-1	1.0
	50	0	24.63		1.0
DFT-s-OFDM 16QAM	1	1	24.44	0-1	1.0
CP-OFDM QPSK	1	1	23.81	0-1.5	1.5

Note: NR Band n5 at 10 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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Table 9-79
NR Band n5 Conducted Powers - 5 MHz Bandwidth

NR Band n5 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	165300 (826.5 MHz)	167300 (836.5 MHz)	169300 (846.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.70	25.56	25.41	0	0.0
	1	13	25.69	25.19	25.08		0.0
	1	23	25.66	25.28	24.95		0.0
	12	0	25.20	25.16	24.97	0-0.5	0.5
	12	7	25.67	25.32	25.11	0	0.0
	12	13	25.20	25.19	24.50	0-0.5	0.5
	25	0	25.19	25.02	24.74		0.5
DFT-s-OFDM QPSK	1	1	25.68	25.23	25.12	0	0.0
	1	13	25.66	24.99	24.93		0.0
	1	23	25.49	25.18	24.78		0.0
	12	0	24.70	24.51	24.42	0-1	1.0
	12	7	25.65	25.12	24.93	0	0.0
	12	13	24.68	24.59	23.88	0-1	1.0
	25	0	24.69	24.42	24.17		1.0
DFT-s-OFDM 16QAM	1	1	24.70	24.59	24.29	0-1	1.0
CP-OFDM QPSK	1	1	24.18	23.91	23.62	0-1.5	1.5

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NR Band n66 (AWS)

Table 9-80
NR Band n66 (AWS) 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 $\pi/2$ BPSK	1	1	24.65	24.68	24.35	0	0.0
	1	53	24.41	24.50	24.09		0.0
	1	104	24.39	24.15	23.78		0.0
	50	0	24.17	24.07	23.72	0-0.5	0.5
	50	28	24.53	24.02	23.74	0	0.0
	50	56	24.12	23.89	23.51	0-0.5	0.5
	100	0	24.15	23.90	23.50		0.5
DFT-s-OFDM QPSK	1	1	24.66	24.55	24.35	0	0.0
	1	53	24.43	24.29	24.01		0.0
	1	104	24.47	23.97	23.73		0.0
	50	0	23.62	23.56	23.40	0-1	1.0
	50	28	24.39	24.01	24.00	0	0.0
	50	56	23.54	23.25	22.85	0-1	1.0
	100	0	23.77	23.67	23.28		1.0
DFT-s-OFDM 16QAM	1	1	23.70	23.71	23.42	0-1	1.0
CP-OFDM QPSK	1	1	23.08	23.19	22.99	0-1.5	1.5

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Table 9-81
NR Band n66 (AWS) Maximum Conducted Powers - 15 MHz Bandwidth

NR Band n66 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343500 (1717.5 MHz)	349000 (1745 MHz)	354500 (1772.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.64	24.63	24.50	0	0.0
	1	40	24.36	24.22	24.16		0.0
	1	77	24.48	24.08	23.84		0.0
	36	0	23.84	23.76	23.89	0-0.5	0.5
	36	22	24.15	23.74	23.68	0	0.0
	36	43	24.02	23.66	23.46	0-0.5	0.5
	75	0	23.90	23.47	23.51		0.5
DFT-s-OFDM QPSK	1	1	24.25	24.21	24.27	0	0.0
	1	40	23.98	23.97	23.83		0.0
	1	77	24.11	23.94	23.76		0.0
	36	0	23.12	23.18	23.22	0-1	1.0
	36	22	24.02	23.90	23.73	0	0.0
	36	43	23.31	22.88	23.00	0-1	1.0
	75	0	23.54	23.21	23.27		1.0
DFT-s-OFDM 16QAM	1	1	23.38	23.55	23.22	0-1	1.0
CP-OFDM QPSK	1	1	22.91	22.97	22.57	0-1.5	1.5

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Table 9-82
NR Band n66 (AWS) Maximum Conducted Powers - 10 MHz Bandwidth

NR Band n66 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343000 (1715 MHz)	349000 (1745 MHz)	355000 (1775 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.67	24.85	24.48	0	0.0
	1	26	24.58	24.47	23.96		0.0
	1	50	24.49	24.33	23.81		0.0
	25	0	24.06	24.07	23.68	0-0.5	0.5
	25	14	24.41	24.20	23.88	0	0.0
	25	27	24.16	23.86	23.65	0-0.5	0.5
	50	0	23.97	23.81	23.70		0.5
DFT-s-OFDM QPSK	1	1	24.48	24.43	24.43	0	0.0
	1	26	24.31	24.11	23.96		0.0
	1	50	24.35	24.08	23.91		0.0
	25	0	23.41	23.40	23.25	0-1	1.0
	25	14	24.18	24.07	23.88	0	0.0
	25	27	23.34	23.23	23.10	0-1	1.0
	50	0	23.79	23.54	23.47		1.0
DFT-s-OFDM 16QAM	1	1	23.61	23.68	23.55	0-1	1.0
CP-OFDM QPSK	1	1	23.13	23.04	23.04	0-1.5	1.5

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Table 9-83
NR Band n66 (AWS) Maximum Conducted Powers - 5 MHz Bandwidth

NR Band n66 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	342500 (1712.5 MHz)	349000 (1745 MHz)	355500 (1777.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.60	24.68	24.13	0	0.0
	1	13	24.56	24.41	23.74		0.0
	1	23	24.47	24.48	23.64		0.0
	12	0	24.14	24.16	23.65	0-0.5	0.5
	12	7	24.41	24.07	23.82	0	0.0
	12	13	24.10	24.10	23.58	0-0.5	0.5
	25	0	23.64	23.53	23.47		0.5
DFT-s-OFDM QPSK	1	1	23.99	24.11	23.95	0	0.0
	1	13	23.91	23.91	23.62		0.0
	1	23	23.84	23.93	23.63		0.0
	12	0	23.27	23.28	23.13	0-1	1.0
	12	7	24.13	23.98	23.81	0	0.0
	12	13	23.35	23.29	22.95	0-1	1.0
	25	0	23.63	23.55	23.15		1.0
DFT-s-OFDM 16QAM	1	1	23.49	23.02	23.14	0-1	1.0
CP-OFDM QPSK	1	1	22.56	22.61	22.27	0-1.5	1.5

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Table 9-84
NR Band n66 (AWS) Reduced 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 $\pi/2$ BPSK	1	1	23.27	23.24	22.93	0	0.0
	1	53	22.99	22.94	22.53		0.0
	1	104	23.01	22.63	22.36		0.0
	50	0	23.22	23.06	22.95	0-0.5	0.0
	50	28	23.12	22.56	22.35	0	0.0
	50	56	23.21	22.84	22.40	0-0.5	0.0
	100	0	23.21	22.91	22.53		0.0
DFT-s-OFDM QPSK	1	1	23.17	23.05	22.72	0	0.0
	1	53	22.88	22.67	22.38		0.0
	1	104	23.02	22.50	22.30		0.0
	50	0	23.12	22.97	22.67	0-1	0.0
	50	28	22.98	22.60	22.41	0	0.0
	50	56	23.06	22.77	22.43	0-1	0.0
	100	0	23.09	23.04	22.80		0.0
DFT-s-OFDM 16QAM	1	1	23.46	23.50	23.14	0-1	0.0
CP-OFDM QPSK	1	1	22.94	22.92	22.68	0-1.5	0.0

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Table 9-85
NR Band n66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth

NR Band n66 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343500 (1717.5 MHz)	349000 (1745 MHz)	354500 (1772.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.28	23.49	23.21	0	0.0
	1	40	23.17	23.08	22.72		0.0
	1	77	23.29	22.80	22.41		0.0
	36	0	23.40	23.39	22.95	0-0.5	0.0
	36	22	23.18	22.77	22.29	0	0.0
	36	43	23.20	22.96	22.68	0-0.5	0.0
	75	0	23.31	23.04	22.55		0.0
DFT-s-OFDM QPSK	1	1	23.31	23.22	22.89	0	0.0
	1	40	23.04	22.80	22.49		0.0
	1	77	23.22	22.64	22.23		0.0
	36	0	23.18	22.99	22.76	0-1	0.0
	36	22	23.00	22.72	22.31	0	0.0
	36	43	23.10	22.75	22.55	0-1	0.0
	75	0	23.36	23.04	22.80		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.05	23.19	23.09	0-1	0.0
	1	1	22.98	23.02	23.02	0-1.5	0.0

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Table 9-86
NR Band n66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth

NR Band n66 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343000 (1715 MHz)	349000 (1745 MHz)	355000 (1775 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.32	23.40	23.02	0	0.0
	1	26	23.14	22.97	22.52		0.0
	1	50	23.13	22.88	22.43		0.0
	25	0	23.11	23.02	22.79	0-0.5	0.0
	25	14	22.96	22.74	22.55	0	0.0
	25	27	23.19	22.91	22.70	0-0.5	0.0
	50	0	23.18	22.93	22.67		0.0
DFT-s-OFDM QPSK	1	1	23.12	23.02	22.87	0	0.0
	1	26	22.91	22.63	22.41		0.0
	1	50	23.00	22.61	22.35		0.0
	25	0	23.02	22.88	22.72	0-1	0.0
	25	14	22.93	22.57	22.41	0	0.0
	25	27	23.01	22.73	22.59	0-1	0.0
	50	0	23.33	23.10	22.99		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	22.92	23.02	22.80	0-1	0.0
	1	1	22.85	22.90	22.77	0-1.5	0.0

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Table 9-87
NR Band n66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth

NR Band n66 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	342500 (1712.5 MHz)	349000 (1745 MHz)	355500 (1777.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	23.06	23.04	22.73	0	0.0
	1	13	23.00	22.82	22.34		0.0
	1	23	23.04	22.84	22.26		0.0
	12	0	23.10	22.90	22.77	0-0.5	0.0
	12	7	22.96	22.59	22.52	0	0.0
	12	13	23.22	22.94	22.61	0-0.5	0.0
	25	0	22.65	22.58	22.60		0.0
DFT-s-OFDM QPSK	1	1	22.52	22.51	22.64	0	0.0
	1	13	22.50	22.29	22.35		0.0
	1	23	22.54	22.30	22.32		0.0
	12	0	22.94	22.81	22.68	0-1	0.0
	12	7	22.87	22.59	22.36	0	0.0
	12	13	23.01	22.66	22.44	0-1	0.0
	25	0	23.10	22.92	22.73		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	22.66	22.65	22.44	0-1	0.0
	1	1	22.76	22.85	22.39	0-1.5	0.0

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NR Band n2 (PCS)

Table 9-88

NR Band n2 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth

NR Band n2 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376000 (1880 MHz)	380000 (1900 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.18	25.03	24.94	0	0.0
	1	53	24.62	24.61	25.25		0.0
	1	104	25.29	24.62	25.30		0.0
	50	0	23.00	24.02	23.86	0-0.5	0.5
	50	28	23.53	23.63	24.55	0	0.0
	50	56	24.06	23.33	24.26	0-0.5	0.5
	100	0	23.57	23.43	24.93		0.5
DFT-s-OFDM QPSK	1	1	24.17	25.04	24.93	0	0.0
	1	53	24.56	24.55	25.24		0.0
	1	104	25.22	24.73	24.95		0.0
	50	0	22.72	23.32	23.30	0-1	1.0
	50	28	23.86	23.88	24.22	0	0.0
	50	56	23.42	22.92	23.15	0-1	1.0
	100	0	22.96	23.00	23.29		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.17	23.23	23.73	0-1	1.0
	1	1	22.35	22.31	22.40	0-1.5	1.5

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Table 9-89
NR Band n2 (PCS) Maximum Conducted Powers - 15 MHz Bandwidth

NR Band n2 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376000 (1880 MHz)	380500 (1902.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.41	25.21	25.39	0	0.0
	1	40	24.43	24.74	25.26		0.0
	1	77	25.25	24.80	25.16		0.0
	36	0	23.22	24.28	24.12	0-0.5	0.5
	36	22	23.54	23.77	24.43	0	0.0
	36	43	23.57	23.22	24.22	0-0.5	0.5
	75	0	23.21	23.68	24.44		0.5
DFT-s-OFDM QPSK	1	1	24.31	25.11	24.57	0	0.0
	1	40	24.30	24.57	24.34		0.0
	1	77	25.17	24.71	24.36		0.0
	36	0	22.83	23.62	23.54	0-1	1.0
	36	22	23.63	24.07	24.21	0	0.0
	36	43	23.22	22.97	23.17	0-1	1.0
	75	0	23.01	23.53	23.67		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.24	24.15	23.58	0-1	1.0
	1	1	22.26	22.85	22.36	0-1.5	1.5

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Table 9-90
NR Band n2 (PCS) Maximum Conducted Powers - 10 MHz Bandwidth

NR Band n2 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376000 (1880 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.40	25.32	25.32	0	0.0
	1	26	24.19	24.81	25.17		0.0
	1	50	24.65	24.48	25.11		0.0
	25	0	23.43	24.13	24.12	0-0.5	0.5
	25	14	23.57	24.01	23.92	0	0.0
	25	27	23.41	23.72	23.67	0-0.5	0.5
	50	0	23.51	24.00	24.40		0.5
DFT-s-OFDM QPSK	1	1	24.25	25.05	24.71	0	0.0
	1	26	24.07	24.59	24.16		0.0
	1	50	24.52	24.36	24.52		0.0
	25	0	22.83	23.37	23.53	0-1	1.0
	25	14	23.59	24.05	24.14	0	0.0
	25	27	22.81	23.22	23.24	0-1	1.0
	50	0	23.06	23.32	23.74		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.36	24.13	23.80	0-1	1.0
	1	1	22.26	22.82	22.41	0-1.5	1.5

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Table 9-91
NR Band n2 (PCS) Maximum Conducted Powers - 5 MHz Bandwidth

NR Band n2 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376000 (1880 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.38	24.99	25.13	0	0.0
	1	13	24.07	24.77	25.08		0.0
	1	23	24.16	24.72	25.12		0.0
	12	0	23.47	24.30	24.03	0-0.5	0.5
	12	7	23.56	24.14	23.99	0	0.0
	12	13	23.61	24.16	24.26	0-0.5	0.5
	25	0	23.02	23.71	24.12		0.5
DFT-s-OFDM QPSK	1	1	24.21	24.80	24.95	0	0.0
	1	13	23.95	24.61	25.06		0.0
	1	23	24.04	24.72	25.03		0.0
	12	0	22.59	23.11	23.01	0-1	1.0
	12	7	23.50	23.82	23.76	0	0.0
	12	13	22.52	22.91	22.98	0-1	1.0
	25	0	23.15	23.28	23.66		1.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.26	23.36	24.10	0-1	1.0
	1	1	22.07	22.24	22.80	0-1.5	1.5

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Table 9-92
NR Band n2 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth

NR Band n2 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376000 (1880 MHz)	380000 (1900 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.57	23.28	23.50	0	0.0
	1	53	22.86	22.72	23.29		0.0
	1	104	23.50	22.88	23.49		0.0
	50	0	22.25	23.23	23.10	0-0.5	0.0
	50	28	22.35	22.93	23.00	0	0.0
	50	56	23.06	22.69	22.75	0-0.5	0.0
	100	0	22.57	22.94	22.88		0.0
DFT-s-OFDM QPSK	1	1	22.46	23.32	23.40	0	0.0
	1	53	22.72	22.94	23.21		0.0
	1	104	23.39	23.07	23.39		0.0
	50	0	22.13	22.95	23.07	0-1	0.0
	50	28	22.43	22.61	23.03	0	0.0
	50	56	23.01	22.60	22.74	0-1	0.0
	100	0	22.44	22.78	22.88		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	23.32	23.50	23.26	0-1	0.0
	1	1	23.13	23.22	23.08	0-1.5	0.0

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Table 9-93
NR Band n2 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth

NR Band n2 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376000 (1880 MHz)	380500 (1902.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.73	23.49	23.50	0	0.0
	1	40	22.61	22.96	23.48		0.0
	1	77	23.49	23.06	23.42		0.0
	36	0	22.37	23.16	23.13	0-0.5	0.0
	36	22	22.09	22.59	22.88	0	0.0
	36	43	22.66	22.50	22.67	0-0.5	0.0
	75	0	22.35	22.63	22.91		0.0
DFT-s-OFDM QPSK	1	1	22.51	23.30	23.41	0	0.0
	1	40	22.48	22.90	23.33		0.0
	1	77	22.82	22.93	23.28		0.0
	36	0	22.12	23.02	22.87	0-1	0.0
	36	22	22.20	22.59	22.68	0	0.0
	36	43	22.60	22.50	22.69	0-1	0.0
	75	0	22.67	22.82	23.01		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	22.84	23.34	23.28	0-1	0.0
	1	1	22.33	22.94	22.76	0-1.5	0.0

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Table 9-94
NR Band n2 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth

NR Band n2 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376000 (1880 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.62	23.49	23.50	0	0.0
	1	26	22.43	23.06	23.38		0.0
	1	50	22.81	22.74	23.33		0.0
	25	0	22.17	22.93	23.26	0-0.5	0.0
	25	14	21.94	22.58	22.72	0	0.0
	25	27	22.21	22.56	22.63	0-0.5	0.0
	50	0	22.31	22.88	22.88		0.0
DFT-s-OFDM QPSK	1	1	22.33	23.24	23.46	0	0.0
	1	26	21.91	22.98	23.27		0.0
	1	50	22.62	22.70	23.23		0.0
	25	0	22.03	23.01	23.11	0-1	0.0
	25	14	21.94	22.74	22.92	0	0.0
	25	27	22.26	22.87	22.76	0-1	0.0
	50	0	22.47	22.98	22.99		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	22.45	23.50	23.29	0-1	0.0
	1	1	22.23	22.94	23.08	0-1.5	0.0

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Table 9-95
NR Band n2 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth

NR Band n2 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376000 (1880 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.43	23.19	23.18	0	0.0
	1	13	22.15	22.91	23.06		0.0
	1	23	22.20	22.96	23.19		0.0
	12	0	22.19	23.09	22.88	0-0.5	0.0
	12	7	22.02	22.80	22.43	0	0.0
	12	13	22.17	23.04	22.75	0-0.5	0.0
	25	0	21.96	22.76	22.51		0.0
DFT-s-OFDM QPSK	1	1	22.16	23.19	22.98	0	0.0
	1	13	22.00	22.99	22.83		0.0
	1	23	22.01	23.00	23.08		0.0
	12	0	21.94	22.60	22.45	0-1	0.0
	12	7	21.65	22.54	22.28	0	0.0
	12	13	21.76	22.51	22.32	0-1	0.0
	25	0	22.21	22.84	22.66		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	22.21	22.72	23.08	0-1	0.0
	1	1	22.07	22.59	22.77	0-1.5	0.0

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9.6 WLAN Conducted Powers

Table 9-96
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	20.39	17.41	16.33	16.30
2422	3	N/A	19.45	18.25	18.23
2437	6	20.29	19.36	18.15	18.16
2452	9	N/A	19.55	18.31	18.27
2462	11	20.35	17.48	16.39	16.36

Table 9-97
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	20.10	17.68	16.69	16.75
2422	3	N/A	18.55	17.81	17.80
2437	6	20.79	19.25	18.39	18.37
2452	9	N/A	18.50	17.91	17.85
2462	11	20.15	17.22	16.46	16.44

Table 9-98
2.4 GHz WLAN Maximum Average RF Power – MIMO

2.4GHz 802.11g Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	17.41	17.68	20.56
2422	3	19.45	18.55	22.03
2437	6	19.36	19.25	22.32
2452	9	19.55	18.50	22.07
2462	11	17.48	17.22	20.36

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Table 9-99
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	15.96	15.81	15.86
5200	40	17.92	17.90	17.90
5220	44	15.96	15.83	15.83
5240	48	15.97	15.92	15.92
5260	52	15.96	15.98	15.96
5280	56	18.23	17.95	17.99
5300	60	16.12	15.96	15.96
5320	64	15.96	15.93	15.85
5500	100	16.19	15.93	15.94
5600	120	16.15	15.97	15.96
5620	124	16.18	15.91	15.94
5720	144	16.14	15.97	15.97
5745	149	16.21	15.98	15.98
5785	157	18.23	17.98	17.98
5805	161	18.25	17.94	17.93
5825	165	18.23	17.97	17.95

Table 9-100
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	15.53	15.42	15.48
5200	40	17.49	17.32	17.50
5220	44	15.61	15.44	15.56
5240	48	15.45	15.31	15.40
5260	52	15.55	15.43	15.55
5280	56	17.53	17.41	17.49
5300	60	15.51	15.43	15.47
5320	64	15.38	15.21	15.27
5500	100	15.41	15.27	15.42
5600	120	15.23	15.08	15.12
5620	124	15.10	15.03	15.03
5720	144	15.19	15.08	15.07
5745	149	15.02	15.04	15.03
5785	157	17.07	17.03	17.05
5805	161	17.06	17.03	17.03
5825	165	17.02	17.01	17.02

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Table 9-101
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	15.81	15.42	18.63
5200	40	17.90	17.32	20.63
5220	44	15.83	15.44	18.65
5240	48	15.92	15.31	18.64
5260	52	15.98	15.43	18.72
5280	56	17.95	17.41	20.70
5300	60	15.96	15.43	18.71
5320	64	15.93	15.21	18.60
5500	100	15.93	15.27	18.62
5600	120	15.97	15.08	18.56
5620	124	15.91	15.03	18.50
5720	144	15.97	15.08	18.56
5745	149	15.98	15.04	18.55
5785	157	17.98	17.03	20.54
5805	161	17.94	17.03	20.52
5825	165	17.97	17.01	20.53

Table 9-102
2.4 GHz WLAN Reduced Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	16.81	16.84	16.33	16.30
2422	3	N/A	N/A	16.57	16.62
2437	6	16.53	16.57	16.85	16.88
2452	9	N/A	N/A	16.83	16.82
2462	11	16.64	16.68	16.39	16.36

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Table 9-103
2.4 GHz WLAN Reduced Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	16.90	17.11	16.69	16.75
2422	3	N/A	N/A	17.01	17.08
2437	6	17.26	17.37	17.22	17.14
2452	9	N/A	N/A	17.18	17.10
2462	11	16.89	16.90	16.46	16.44

Table 9-104
2.4 GHz WLAN Reduced Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	16.33	16.69	19.52
2422	3	16.57	17.01	19.81
2437	6	16.85	17.22	20.05
2452	9	16.83	17.18	20.02
2462	11	16.39	16.46	19.44

Table 9-105
5 GHz WLAN Reduced Average RF Power – Ant 1

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	14.96	14.97
5230	46	14.80	14.83
5270	54	15.29	15.34
5310	62	14.22	14.23
5510	102	13.46	13.44
5550	110	14.97	14.97
5590	118	14.96	14.96
5630	126	15.23	15.27
5710	142	15.24	15.21
5755	151	15.29	15.32
5795	159	14.94	14.96

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Table 9-106
5 GHz WLAN Reduced Average RF Power – Ant 2

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	15.41	15.46
5230	46	15.24	15.28
5270	54	15.43	14.84
5310	62	14.30	14.35
5510	102	13.74	13.76
5550	110	15.23	15.26
5590	118	15.12	15.07
5630	126	15.11	15.16
5710	142	15.18	15.09
5755	151	15.20	15.18
5795	159	15.49	15.48

Table 9-107
5 GHz WLAN Reduced Average RF Power – MIMO

5GHz (40MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5190	38	14.96	15.41	18.20
5230	46	14.80	15.24	18.04
5270	54	15.29	15.43	18.37
5310	62	14.22	14.30	17.27
5510	102	13.46	13.74	16.61
5550	110	14.97	15.23	18.11
5590	118	14.96	15.12	18.05
5630	126	15.23	15.11	18.18
5710	142	15.24	15.18	18.22
5755	151	15.29	15.20	18.26
5795	159	14.94	15.49	18.23

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

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

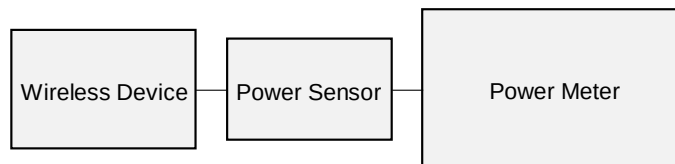


Figure 9-5
Power Measurement Setup

9.7 Bluetooth Conducted Powers

Table 9-108
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	10.51	11.246
2441	1.0	39	12.24	16.749
2480	1.0	78	10.39	10.940
2402	2.0	0	9.86	9.683
2441	2.0	39	11.58	14.388
2480	2.0	78	9.78	9.506
2402	3.0	0	9.92	9.817
2441	3.0	39	11.64	14.588
2480	3.0	78	9.79	9.528

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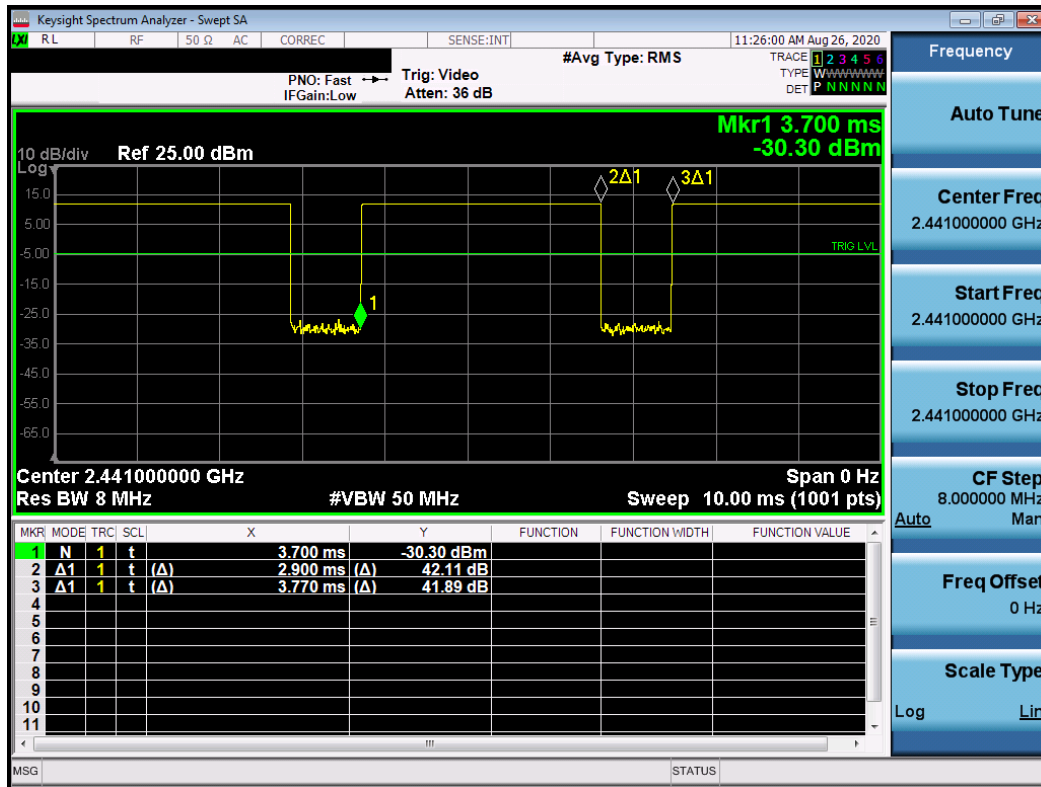


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.90\text{ms}}{3.77\text{ms}} * 100\% = 76.9\%$$

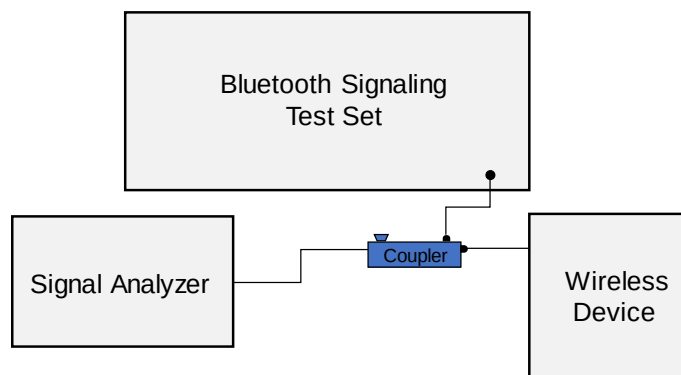


Figure 9-7
Power Measurement Setup

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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
07/26/2020	750 Head	24.0	680	0.865	42.692	0.888	42.305	-2.59%	0.91%
			695	0.870	42.654	0.889	42.227	-2.14%	1.01%
			700	0.872	42.641	0.889	42.201	-1.91%	1.04%
			710	0.875	42.615	0.890	42.149	-1.69%	1.11%
			725	0.880	42.568	0.891	42.071	-1.23%	1.18%
			750	0.886	42.472	0.894	41.942	-0.89%	1.26%
			770	0.893	42.391	0.895	41.838	-0.22%	1.32%
			785	0.898	42.340	0.896	41.760	0.22%	1.39%
08/14/2020	750 Head	23.7	800	0.904	42.304	0.897	41.682	0.78%	1.49%
			680	0.845	43.948	0.888	42.305	-4.84%	3.88%
			695	0.850	43.909	0.889	42.227	-4.39%	3.98%
			700	0.852	43.898	0.889	42.201	-4.16%	4.02%
			710	0.855	43.876	0.890	42.149	-3.93%	4.10%
			725	0.860	43.842	0.891	42.071	-3.48%	4.21%
			750	0.868	43.769	0.894	41.942	-2.91%	4.36%
			770	0.875	43.702	0.895	41.838	-2.23%	4.46%
09/17/2020	750 Head	21.9	785	0.880	43.655	0.896	41.760	-1.79%	4.54%
			800	0.886	43.616	0.897	41.682	-1.23%	4.64%
			680	0.877	42.924	0.888	42.305	-1.24%	1.46%
			695	0.882	42.881	0.889	42.227	-0.79%	1.55%
			700	0.884	42.868	0.889	42.201	-0.56%	1.58%
			710	0.887	42.845	0.890	42.149	-0.34%	1.65%
			725	0.892	42.808	0.891	42.071	0.11%	1.75%
			750	0.902	42.740	0.894	41.942	0.89%	1.90%
08/07/2020	835 Head	21.9	770	0.909	42.680	0.895	41.838	1.56%	2.01%
			785	0.915	42.634	0.896	41.760	2.12%	2.09%
			800	0.921	42.590	0.897	41.682	2.68%	2.18%
			820	0.860	43.153	0.899	41.578	-4.34%	3.79%
			835	0.866	43.116	0.900	41.500	-3.78%	3.89%
			850	0.871	43.077	0.916	41.500	-4.91%	3.80%
			820	0.900	43.062	0.899	41.578	0.11%	3.57%
			835	0.904	43.019	0.900	41.500	0.44%	3.66%
08/18/2020	835 Head	24.0	850	0.908	42.986	0.916	41.500	-0.87%	3.58%
			1710	1.321	39.432	1.348	40.142	-2.00%	-1.77%
			1720	1.331	39.385	1.354	40.126	-1.70%	-1.85%
			1745	1.358	39.265	1.368	40.087	-0.73%	-2.05%
			1750	1.363	39.253	1.371	40.079	-0.58%	-2.06%
			1770	1.384	39.174	1.383	40.047	0.07%	-2.18%
			1790	1.405	39.087	1.394	40.016	0.79%	-2.32%
			1710	1.360	39.041	1.348	40.142	0.89%	-2.74%
09/02/2020	1750 Head	22.1	1720	1.370	38.975	1.354	40.126	1.18%	-2.87%
			1745	1.399	38.844	1.368	40.087	2.27%	-3.10%
			1750	1.403	38.831	1.371	40.079	2.33%	-3.11%
			1770	1.423	38.739	1.383	40.047	2.89%	-3.27%
			1790	1.444	38.621	1.394	40.016	3.59%	-3.49%
			1850	1.345	41.531	1.400	40.000	-3.93%	3.83%
			1860	1.350	41.515	1.400	40.000	-3.57%	3.79%
			1880	1.362	41.487	1.400	40.000	-2.71%	3.72%
08/05/2020	1900 Head	21.8	1900	1.373	41.464	1.400	40.000	-1.93%	3.66%
			1905	1.376	41.459	1.400	40.000	-1.71%	3.65%
			1910	1.379	41.455	1.400	40.000	-1.50%	3.64%
			1850	1.402	38.964	1.400	40.000	0.14%	-2.59%
			1860	1.412	38.920	1.400	40.000	0.86%	-2.70%
			1880	1.432	38.838	1.400	40.000	2.29%	-2.91%
			1900	1.452	38.755	1.400	40.000	3.71%	-3.11%
			1905	1.457	38.734	1.400	40.000	4.07%	-3.17%
08/31/2020	1900 Head	21.8	1910	1.463	38.714	1.400	40.000	4.50%	-3.22%
			1850	1.383	40.111	1.400	40.000	-1.21%	0.28%
			1860	1.393	40.070	1.400	40.000	-0.50%	0.18%
			1880	1.413	39.994	1.400	40.000	0.93%	-0.02%
			1900	1.433	39.920	1.400	40.000	2.36%	-0.20%
			1905	1.438	39.902	1.400	40.000	2.71%	-0.24%
			1910	1.444	39.883	1.400	40.000	3.14%	-0.29%
			1850	1.383	40.111	1.400	40.000	-1.21%	0.28%

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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
09/01/2020	2450 Head	24.0	2300	1.691	39.199	1.670	39.500	1.26%	-0.76%
			2310	1.704	39.190	1.679	39.480	1.49%	-0.73%
			2320	1.714	39.151	1.687	39.460	1.60%	-0.78%
			2400	1.806	38.827	1.756	39.289	2.85%	-1.18%
08/06/2020	2450 Head	24.0	2400	1.824	38.464	1.756	39.289	3.87%	-2.10%
			2450	1.881	38.253	1.800	39.200	4.50%	-2.42%
			2480	1.916	38.122	1.833	39.162	4.53%	-2.66%
			2500	1.939	38.046	1.855	39.136	4.53%	-2.79%
8/20/2020	2450 Head	21.6	2400	1.828	38.238	1.756	39.289	4.10%	-2.68%
			2450	1.882	38.056	1.800	39.200	4.56%	-2.92%
			2480	1.913	37.949	1.833	39.162	4.36%	-3.10%
			2500	1.935	37.872	1.855	39.136	4.31%	-3.23%
09/10/2020	2450 Head	23.0	2500	1.896	40.383	1.855	39.136	2.21%	3.19%
			2510	1.904	40.366	1.866	39.123	2.04%	3.18%
			2535	1.925	40.325	1.893	39.092	1.69%	3.15%
			2550	1.938	40.308	1.909	39.073	1.52%	3.16%
			2560	1.946	40.301	1.920	39.060	1.35%	3.18%
			2600	1.975	40.252	1.964	39.009	0.56%	3.19%
			2650	2.018	40.143	2.018	38.945	0.00%	3.08%
			2680	2.043	40.116	2.051	38.907	-0.39%	3.11%
			2700	2.057	40.093	2.073	38.882	-0.77%	3.11%
08/19/2020	5200-5800 Head	22.2	5240	4.496	36.240	4.696	35.940	-4.26%	0.83%
			5250	4.508	36.249	4.706	35.929	-4.21%	0.89%
			5260	4.519	36.247	4.717	35.917	-4.20%	0.92%
			5270	4.525	36.246	4.727	35.906	-4.27%	0.95%
			5280	4.530	36.239	4.737	35.894	-4.37%	0.96%
			5290	4.535	36.208	4.748	35.883	-4.49%	0.91%
			5300	4.541	36.166	4.758	35.871	-4.56%	0.82%
			5310	4.548	36.132	4.768	35.860	-4.61%	0.76%
			5320	4.557	36.117	4.778	35.849	-4.63%	0.75%
			5500	4.735	35.936	4.963	35.643	-4.59%	0.82%
			5510	4.742	35.913	4.973	35.632	-4.65%	0.79%
			5520	4.751	35.888	4.983	35.620	-4.66%	0.75%
			5530	4.761	35.856	4.994	35.609	-4.67%	0.69%
			5540	4.772	35.818	5.004	35.597	-4.64%	0.62%
			5550	4.786	35.793	5.014	35.586	-4.55%	0.58%
			5560	4.801	35.781	5.024	35.574	-4.44%	0.58%
			5580	4.826	35.802	5.045	35.551	-4.34%	0.71%
			5600	4.845	35.799	5.065	35.529	-4.34%	0.76%
			5610	4.853	35.777	5.076	35.518	-4.39%	0.73%
			5620	4.860	35.758	5.086	35.506	-4.44%	0.71%
			5640	4.876	35.714	5.106	35.483	-4.50%	0.65%
			5660	4.900	35.667	5.127	35.460	-4.43%	0.58%
			5670	4.915	35.658	5.137	35.449	-4.32%	0.59%
			5680	4.931	35.656	5.147	35.437	-4.20%	0.62%
			5690	4.945	35.659	5.158	35.426	-4.13%	0.66%
			5700	4.955	35.671	5.168	35.414	-4.12%	0.73%
			5710	4.959	35.672	5.178	35.403	-4.23%	0.76%
			5720	4.964	35.652	5.188	35.391	-4.32%	0.74%
			5745	4.982	35.568	5.214	35.363	-4.45%	0.58%
			5750	4.986	35.553	5.219	35.357	-4.46%	0.55%
			5755	4.993	35.537	5.224	35.351	-4.42%	0.53%
			5765	5.005	35.512	5.234	35.340	-4.38%	0.49%
			5775	5.020	35.499	5.245	35.329	-4.29%	0.48%
			5785	5.035	35.503	5.255	35.317	-4.19%	0.53%
			5795	5.049	35.510	5.265	35.305	-4.10%	0.58%
			5800	5.056	35.516	5.270	35.300	-4.06%	0.61%
			5805	5.060	35.517	5.275	35.294	-4.08%	0.63%
			5825	5.072	35.490	5.296	35.271	-4.23%	0.62%

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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
08/14/2020	750 Body	21.9	725	0.923	57.324	0.961	55.629	-3.95%	3.05%
			750	0.947	57.061	0.964	55.531	-1.76%	2.76%
			770	0.966	56.861	0.965	55.453	0.10%	2.54%
			785	0.981	56.755	0.966	55.395	1.55%	2.46%
			800	0.996	56.606	0.967	55.336	3.00%	2.30%
			680	0.942	53.868	0.958	55.804	-1.67%	-3.47%
08/17/2020	750 Body	22.3	695	0.947	53.836	0.959	55.745	-1.25%	-3.42%
			700	0.949	53.824	0.959	55.726	-1.04%	-3.41%
			710	0.952	53.801	0.960	55.687	-0.83%	-3.39%
			725	0.958	53.766	0.961	55.629	-0.31%	-3.35%
			750	0.968	53.702	0.964	55.531	0.41%	-3.29%
			770	0.975	53.645	0.965	55.453	1.04%	-3.26%
			785	0.982	53.606	0.966	55.395	1.66%	-3.23%
			800	0.988	53.572	0.967	55.336	2.17%	-3.19%
			820	0.950	54.011	0.969	55.258	-1.96%	-2.26%
			835	0.967	53.850	0.970	55.200	-0.31%	-2.45%
08/16/2020	835 Body	21.3	850	0.983	53.686	0.988	55.154	-0.51%	-2.66%
			820	0.938	55.091	0.969	55.258	-3.20%	-0.30%
			835	0.954	54.941	0.970	55.200	-1.65%	-0.47%
08/20/2020	835 Body	21.6	850	0.969	54.785	0.988	55.154	-1.92%	-0.67%
			820	0.938	54.559	0.969	55.258	-3.20%	-1.26%
			835	0.954	54.414	0.970	55.200	-1.65%	-1.42%
08/24/2020	835 Body	21.3	850	0.969	54.267	0.988	55.154	-1.92%	-1.61%
			820	0.942	54.243	0.969	55.258	-2.79%	-1.84%
			835	0.957	54.090	0.970	55.200	-1.34%	-2.01%
08/26/2020	835 Body	21.9	850	0.973	53.929	0.988	55.154	-1.52%	-2.22%
			1710	1.429	51.680	1.463	53.537	-2.32%	-3.47%
			1720	1.442	51.661	1.469	53.511	-1.84%	-3.46%
			1745	1.470	51.580	1.485	53.445	-1.01%	-3.49%
			1750	1.475	51.563	1.488	53.432	-0.87%	-3.50%
			1770	1.495	51.468	1.501	53.379	-0.40%	-3.58%
07/29/2020	1750 Body	22.6	1790	1.514	51.382	1.514	53.326	0.00%	-3.65%
			1710	1.453	51.849	1.463	53.537	-0.68%	-3.15%
			1720	1.464	51.802	1.469	53.511	-0.34%	-3.19%
			1745	1.491	51.699	1.485	53.445	0.40%	-3.27%
			1750	1.496	51.679	1.488	53.432	0.54%	-3.28%
			1770	1.516	51.597	1.501	53.379	1.00%	-3.34%
08/03/2020	1750 Body	22.0	1790	1.536	51.519	1.514	53.326	1.45%	-3.39%
			1710	1.467	51.666	1.463	53.537	0.27%	-3.49%
			1720	1.478	51.620	1.469	53.511	0.61%	-3.53%
			1745	1.505	51.517	1.485	53.445	1.35%	-3.61%
			1750	1.511	51.496	1.488	53.432	1.55%	-3.62%
			1770	1.531	51.412	1.501	53.379	2.00%	-3.68%
08/10/2020	1750 Body	22.0	1790	1.552	51.329	1.514	53.326	2.51%	-3.74%
			1710	1.460	51.410	1.463	53.537	-0.21%	-3.97%
			1720	1.472	51.371	1.469	53.511	0.20%	-4.00%
			1745	1.501	51.274	1.485	53.445	1.08%	-4.06%
			1750	1.506	51.254	1.488	53.432	1.21%	-4.08%
			1770	1.528	51.177	1.501	53.379	1.80%	-4.13%
08/26/2020	1750 Body	22.3	1790	1.549	51.091	1.514	53.326	2.31%	-4.19%
			1710	1.492	52.719	1.463	53.537	1.98%	-1.53%
			1720	1.504	52.678	1.469	53.511	2.38%	-1.56%
			1745	1.532	52.588	1.485	53.445	3.16%	-1.60%
			1750	1.537	52.571	1.488	53.432	3.29%	-1.61%
			1770	1.558	52.494	1.501	53.379	3.80%	-1.66%
09/05/2020	1750 Body	21.9	1790	1.579	52.409	1.514	53.326	4.29%	-1.72%
			1850	1.514	51.232	1.520	53.300	-0.39%	-3.88%
			1860	1.525	51.204	1.520	53.300	0.33%	-3.93%
			1880	1.546	51.136	1.520	53.300	1.71%	-4.06%
			1900	1.567	51.061	1.520	53.300	3.09%	-4.20%
			1905	1.573	51.044	1.520	53.300	3.49%	-4.23%
08/24/2020	1900 Body	24.2	1910	1.578	51.025	1.520	53.300	3.82%	-4.27%
			1850	1.521	51.391	1.520	53.300	0.07%	-3.58%
			1860	1.531	51.349	1.520	53.300	0.72%	-3.66%
			1880	1.554	51.274	1.520	53.300	2.24%	-3.80%
			1900	1.580	51.207	1.520	53.300	3.95%	-3.93%
			1905	1.586	51.190	1.520	53.300	4.34%	-3.96%
08/31/2020	1900 Body	22.4	1910	1.592	51.173	1.520	53.300	4.74%	-3.99%
			1850	1.526	51.376	1.520	53.300	0.39%	-3.61%
			1860	1.537	51.339	1.520	53.300	1.12%	-3.68%
			1880	1.558	51.270	1.520	53.300	2.50%	-3.81%
			1900	1.582	51.209	1.520	53.300	4.08%	-3.92%
			1905	1.588	51.195	1.520	53.300	4.47%	-3.95%
09/02/2020	1900 Body	23.9	1910	1.593	51.180	1.520	53.300	4.80%	-3.98%
			1850	1.515	52.006	1.520	53.300	-0.33%	-2.43%
			1860	1.526	51.978	1.520	53.300	0.39%	-2.48%
			1880	1.547	51.920	1.520	53.300	1.78%	-2.59%
			1900	1.571	51.863	1.520	53.300	3.36%	-2.70%
			1905	1.577	51.849	1.520	53.300	3.75%	-2.72%
09/08/2020	1900 Body	23.0	1910	1.583	51.834	1.520	53.300	4.14%	-2.75%

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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
08/24/2020	2450 Body	23.8	2300	1.869	52.650	1.809	52.900	3.32%	-0.47%
			2310	1.880	52.623	1.816	52.887	3.52%	-0.50%
			2320	1.891	52.597	1.826	52.873	3.56%	-0.52%
08/24/2020	2450 Body	22.0	2400	1.979	52.662	1.902	52.767	4.05%	-0.20%
			2450	2.039	52.526	1.950	52.700	4.56%	-0.33%
			2480	2.072	52.424	1.993	52.662	3.96%	-0.45%
			2500	2.095	52.355	2.021	52.636	3.66%	-0.53%
08/24/2020	2450 Body	23.4	2400	1.972	51.267	1.902	52.767	3.68%	-2.84%
			2450	2.041	51.071	1.950	52.700	4.67%	-3.09%
			2480	2.083	50.965	1.993	52.662	4.52%	-3.24%
			2500	2.111	50.877	2.021	52.636	4.45%	-3.34%
09/02/2020	2450 Body	22.3	2500	2.071	50.600	2.021	52.636	2.47%	-3.87%
			2510	2.086	50.568	2.035	52.623	2.51%	-3.91%
			2535	2.121	50.494	2.071	52.592	2.41%	-3.99%
			2550	2.141	50.416	2.092	52.573	2.34%	-4.10%
			2560	2.154	50.392	2.106	52.560	2.28%	-4.12%
			2600	2.213	50.213	2.163	52.509	2.31%	-4.37%
			2650	2.284	50.013	2.234	52.445	2.24%	-4.64%
			2680	2.324	49.908	2.277	52.407	2.06%	-4.77%
			2700	2.351	49.835	2.305	52.382	2.00%	-4.86%
09/16/2020	2450 Body	21.3	2400	1.984	51.061	1.902	52.767	4.31%	-3.23%
			2450	2.043	50.932	1.950	52.700	4.77%	-3.35%
			2480	2.075	50.856	1.993	52.662	4.11%	-3.43%
			2500	2.098	50.791	2.021	52.636	3.81%	-3.51%
08/10/2020	5200-5800 Body	22.5	5180	5.428	48.342	5.276	49.041	2.88%	-1.43%
			5190	5.445	48.339	5.288	49.028	2.97%	-1.41%
			5200	5.463	48.322	5.299	49.014	3.09%	-1.41%
			5210	5.476	48.315	5.311	49.001	3.11%	-1.40%
			5220	5.487	48.304	5.323	48.987	3.08%	-1.39%
			5240	5.506	48.261	5.346	48.960	2.99%	-1.43%
			5250	5.517	48.233	5.358	48.947	2.97%	-1.46%
			5260	5.529	48.210	5.369	48.933	2.98%	-1.48%
			5270	5.548	48.193	5.381	48.919	3.10%	-1.48%
			5280	5.566	48.181	5.393	48.906	3.21%	-1.48%
			5290	5.579	48.179	5.404	48.892	3.24%	-1.46%
			5300	5.588	48.188	5.416	48.879	3.18%	-1.41%
			5310	5.598	48.195	5.428	48.865	3.13%	-1.37%
			5320	5.613	48.193	5.439	48.851	3.20%	-1.35%
			5500	5.851	47.800	5.650	48.607	3.56%	-1.66%
			5510	5.868	47.778	5.661	48.594	3.66%	-1.68%
			5520	5.884	47.761	5.673	48.580	3.72%	-1.69%
			5530	5.896	47.744	5.685	48.566	3.71%	-1.69%
			5540	5.909	47.734	5.696	48.553	3.74%	-1.69%
			5550	5.925	47.715	5.708	48.539	3.80%	-1.70%
			5560	5.941	47.688	5.720	48.526	3.86%	-1.73%
			5590	5.972	47.643	5.743	48.499	3.99%	-1.76%
			5600	6.002	47.626	5.766	48.471	4.09%	-1.74%
			5610	6.014	47.618	5.778	48.458	4.08%	-1.73%
			5620	6.027	47.607	5.790	48.444	4.09%	-1.73%
			5640	6.059	47.575	5.813	48.417	4.23%	-1.74%
			5660	6.090	47.531	5.837	48.390	4.33%	-1.78%
			5670	6.104	47.520	5.848	48.376	4.38%	-1.77%
			5680	6.117	47.509	5.860	48.363	4.39%	-1.77%
			5690	6.127	47.489	5.872	48.349	4.34%	-1.78%
			5700	6.139	47.471	5.883	48.336	4.35%	-1.79%
			5710	6.155	47.468	5.895	48.322	4.41%	-1.77%
			5720	6.174	47.456	5.907	48.309	4.52%	-1.77%
			5745	6.209	47.413	5.936	48.275	4.60%	-1.79%
			5750	6.214	47.412	5.942	48.268	4.58%	-1.77%
			5755	6.221	47.414	5.947	48.261	4.61%	-1.76%
			5765	6.233	47.401	5.959	48.248	4.60%	-1.76%
			5775	6.244	47.374	5.971	48.234	4.57%	-1.78%
			5785	6.252	47.348	5.982	48.220	4.51%	-1.81%
			5795	6.263	47.334	5.994	48.207	4.49%	-1.81%
			5800	6.270	47.329	6.000	48.200	4.50%	-1.81%
			5805	6.279	47.326	6.006	48.193	4.55%	-1.80%
			5825	6.312	47.283	6.029	48.166	4.69%	-1.83%

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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
08/13/2020	5200-5800 Body	22.0	5180	5.427	47.355	5.276	49.041	2.86%	-3.44%
			5190	5.441	47.318	5.288	49.028	2.89%	-3.49%
			5200	5.459	47.295	5.299	49.014	3.02%	-3.51%
			5210	5.476	47.286	5.311	49.001	3.11%	-3.50%
			5220	5.494	47.280	5.323	48.987	3.21%	-3.48%
			5240	5.521	47.260	5.346	48.960	3.27%	-3.47%
			5250	5.530	47.248	5.358	48.947	3.21%	-3.47%
			5260	5.540	47.224	5.369	48.933	3.18%	-3.49%
			5270	5.548	47.194	5.381	48.919	3.10%	-3.53%
			5280	5.555	47.158	5.393	48.906	3.00%	-3.57%
			5290	5.569	47.110	5.404	48.892	3.05%	-3.64%
			5300	5.585	47.054	5.416	48.879	3.12%	-3.73%
			5310	5.599	47.023	5.428	48.865	3.15%	-3.77%
			5320	5.613	47.017	5.439	48.851	3.20%	-3.75%
			5500	5.836	46.804	5.650	48.607	3.29%	-3.71%
			5510	5.847	46.774	5.661	48.594	3.29%	-3.75%
			5520	5.864	46.747	5.673	48.580	3.37%	-3.77%
			5530	5.885	46.724	5.685	48.566	3.52%	-3.79%
			5540	5.904	46.712	5.696	48.553	3.65%	-3.79%
			5550	5.921	46.714	5.708	48.539	3.73%	-3.76%
			5560	5.934	46.725	5.720	48.526	3.74%	-3.71%
			5580	5.952	46.724	5.743	48.499	3.64%	-3.66%
			5600	5.972	46.678	5.766	48.471	3.57%	-3.70%
			5610	5.985	46.649	5.778	48.458	3.58%	-3.73%
			5620	5.999	46.619	5.790	48.444	3.61%	-3.77%
			5640	6.029	46.563	5.813	48.417	3.72%	-3.83%
			5660	6.063	46.560	5.837	48.390	3.87%	-3.78%
			5670	6.077	46.563	5.848	48.376	3.92%	-3.75%
			5680	6.088	46.552	5.860	48.363	3.89%	-3.74%
			5690	6.099	46.542	5.872	48.349	3.87%	-3.74%
			5700	6.111	46.520	5.883	48.336	3.88%	-3.76%
08/27/2020	5200-5800 Body	21.5	5670	6.065	46.448	5.848	48.376	3.71%	-3.99%
			5680	6.082	46.431	5.860	48.363	3.79%	-3.99%
			5690	6.099	46.429	5.872	48.349	3.87%	-3.97%
			5700	6.117	46.430	5.883	48.336	3.98%	-3.94%
			5710	6.133	46.412	5.895	48.322	4.04%	-3.95%
			5720	6.141	46.399	5.907	48.309	3.96%	-3.95%
			5745	6.160	46.381	5.936	48.275	3.77%	-3.92%
			5750	6.169	46.379	5.942	48.268	3.82%	-3.91%
			5755	6.176	46.365	5.947	48.261	3.85%	-3.93%
			5765	6.193	46.331	5.959	48.248	3.93%	-3.97%
			5775	6.206	46.295	5.971	48.234	3.94%	-4.02%
			5785	6.221	46.270	5.982	48.220	4.00%	-4.04%
			5795	6.236	46.264	5.994	48.207	4.04%	-4.03%
			5800	6.242	46.261	6.000	48.200	4.03%	-4.02%
			5805	6.252	46.263	6.006	48.193	4.10%	-4.00%
09/16/2020	5200-5800 Body	22.8	5825	6.282	46.253	6.029	48.166	4.20%	-3.97%
			5670	6.076	46.869	5.848	48.376	3.90%	-3.12%
			5680	6.096	46.847	5.860	48.363	4.03%	-3.13%
			5690	6.116	46.831	5.872	48.349	4.16%	-3.14%
			5700	6.130	46.813	5.883	48.336	4.20%	-3.15%
			5710	6.142	46.809	5.895	48.322	4.19%	-3.13%
			5720	6.156	46.812	5.907	48.309	4.22%	-3.10%
			5745	6.188	46.767	5.936	48.275	4.25%	-3.12%
			5750	6.193	46.758	5.942	48.268	4.22%	-3.13%
			5755	6.198	46.748	5.947	48.261	4.22%	-3.14%
			5765	6.210	46.734	5.959	48.248	4.21%	-3.14%
			5775	6.222	46.721	5.971	48.234	4.20%	-3.14%
			5785	6.237	46.693	5.982	48.220	4.26%	-3.17%
			5795	6.252	46.667	5.994	48.207	4.30%	-3.19%
			5800	6.260	46.655	6.000	48.200	4.33%	-3.21%
			5805	6.268	46.643	6.006	48.193	4.36%	-3.22%
			5825	6.302	46.621	6.029	48.166	4.53%	-3.21%

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

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10.2 Test System Verification

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

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 SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
E	750	HEAD	07/26/2020	23.0	22.1	0.200	1161	3589	1.650	8.030	8.250	2.74%
L	750	HEAD	08/14/2020	24.1	22.8	0.200	1054	7406	1.670	8.630	8.350	-3.24%
E	750	HEAD	09/17/2020	22.7	21.9	0.200	1161	3589	1.630	8.030	8.150	1.49%
L	835	HEAD	08/07/2020	23.9	21.9	0.200	4d132	7406	1.780	9.650	8.900	-7.77%
P	835	HEAD	08/18/2020	24.0	22.4	0.200	4d132	7551	2.000	9.650	10.000	3.63%
E	1750	HEAD	07/28/2020	23.2	22.8	0.100	1008	3589	3.900	36.200	39.000	7.73%
L	1750	HEAD	09/02/2020	24.3	22.2	0.100	1008	7406	3.920	36.200	39.200	8.29%
L	1900	HEAD	08/05/2020	24.6	22.1	0.100	5d148	7406	4.230	39.100	42.300	8.18%
L	1900	HEAD	08/31/2020	22.7	21.9	0.100	5d148	7406	4.280	39.100	42.800	9.46%
L	1900	HEAD	09/14/2020	24.1	21.7	0.100	5d149	7406	4.170	39.300	41.700	6.11%
E	2300	HEAD	09/01/2020	22.6	23.0	0.100	1073	3589	4.690	49.200	46.900	-4.67%
E	2450	HEAD	08/06/2020	22.8	22.1	0.100	719	3589	5.330	53.100	53.300	0.38%
K2	2450	HEAD	08/20/2020	21.3	21.6	0.100	882	7402	5.370	52.900	53.700	1.51%
E	2600	HEAD	09/10/2020	24.1	23.0	0.100	1064	3589	5.740	58.100	57.400	-1.20%
K2	5250	HEAD	08/19/2020	21.5	22.2	0.050	1120	7402	3.910	80.300	78.200	-2.62%
K2	5600	HEAD	08/19/2020	21.5	22.2	0.050	1120	7402	3.990	83.600	79.800	-4.55%
K2	5750	HEAD	08/19/2020	21.5	22.2	0.050	1120	7402	3.800	80.400	76.000	-5.47%
E	750	BODY	08/14/2020	22.3	21.9	0.200	1054	3589	1.790	8.530	8.950	4.92%
E	750	BODY	08/17/2020	23.8	21.7	0.200	1054	3589	1.840	8.530	9.200	7.85%
D	835	BODY	08/16/2020	22.1	21.3	0.200	4d133	7488	1.950	9.750	9.750	0.00%
P	835	BODY	08/20/2020	22.4	21.6	0.200	4d132	7551	1.950	9.960	9.750	-2.11%
P	835	BODY	08/24/2020	21.9	21.2	0.200	4d047	7551	2.000	9.470	10.000	5.60%
P	835	BODY	08/26/2020	22.9	21.9	0.200	4d132	7551	2.090	9.960	10.450	4.92%
I	1750	BODY	07/29/2020	23.4	22.6	0.100	1008	7570	3.820	37.400	38.200	2.14%
I	1750	BODY	08/03/2020	22.3	22.0	0.100	1008	7570	3.920	37.400	39.200	4.81%
I	1750	BODY	08/10/2020	22.2	22.0	0.100	1148	7570	3.780	36.300	37.800	4.13%
I	1750	BODY	08/26/2020	23.5	22.3	0.100	1148	7570	3.790	36.300	37.900	4.41%
H	1900	BODY	08/24/2020	24.0	22.8	0.100	5d080	7357	4.170	39.200	41.700	6.38%
H	1900	BODY	08/31/2020	24.4	22.4	0.100	5d080	7357	4.100	39.200	41.000	4.59%
H	1900	BODY	09/02/2020	24.2	22.5	0.100	5d149	7357	4.260	39.400	42.600	8.12%
H	1900	BODY	09/08/2020	21.3	21.8	0.100	5d149	7357	4.060	39.400	40.600	3.05%
K	2300	BODY	08/24/2020	22.6	23.0	0.100	1073	7409	5.080	47.700	50.800	6.50%
O	2450	BODY	08/24/2020	23.1	23.4	0.100	797	7552	5.560	51.100	55.600	8.81%
K2	2450	BODY	08/24/2020	21.7	22.0	0.100	882	7402	5.300	51.500	53.000	2.91%
K	2450	BODY	09/16/2020	22.9	21.3	0.100	981	7409	5.130	50.900	51.300	0.79%
O	2600	BODY	09/02/2020	22.6	22.3	0.100	1004	7552	5.850	54.800	58.500	6.75%
K2	5250	BODY	08/10/2020	22.5	22.0	0.050	1120	7402	3.680	74.800	73.600	-1.60%
K2	5600	BODY	08/13/2020	22.0	21.5	0.050	1120	7402	4.070	78.000	81.400	4.36%
K2	5750	BODY	08/27/2020	21.5	21.5	0.050	1120	7402	3.790	75.000	75.800	1.07%
G	5750	BODY	09/16/2020	21.9	22.3	0.050	1237	7538	3.790	75.900	75.800	-0.13%

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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 SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
I	1750	BODY	09/05/2020	22.1	21.9	0.100	1008	7570	2.060	19.900	20.600	3.52%
H	1900	BODY	09/02/2020	24.2	22.5	0.100	5d149	7357	2.210	20.700	22.100	6.76%
K2	5250	BODY	08/10/2020	22.5	22.0	0.050	1120	7402	1.030	20.900	20.600	-1.44%
K2	5600	BODY	08/13/2020	22.0	21.5	0.050	1120	7402	1.130	21.600	22.600	4.63%
K2	5750	BODY	08/27/2020	21.5	21.5	0.050	1120	7402	1.060	20.900	21.200	1.44%

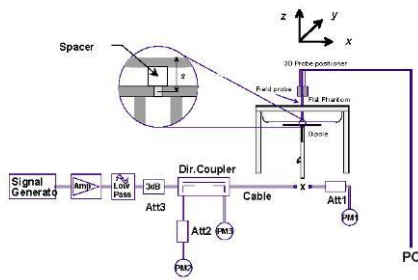


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

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11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (S90S)	RC3 / SO55	25.7	25.35	0.02	Right	Cheek	08584	1:1	0.147	1.084	0.159	
820.10	564	CDMA BC10 (S90S)	RC3 / SO55	25.7	25.35	0.05	Right	Tilt	08584	1:1	0.085	1.084	0.092	
820.10	564	CDMA BC10 (S90S)	RC3 / SO55	25.7	25.35	-0.05	Left	Cheek	08584	1:1	0.152	1.084	0.165	A1
820.10	564	CDMA BC10 (S90S)	RC3 / SO55	25.7	25.35	0.00	Left	Tilt	08584	1:1	0.093	1.084	0.101	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. A	25.7	25.36	0.16	Right	Cheek	08584	1:1	0.143	1.081	0.155	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. A	25.7	25.36	0.10	Right	Tilt	08584	1:1	0.080	1.081	0.086	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. A	25.7	25.36	0.18	Left	Cheek	08584	1:1	0.136	1.081	0.147	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. A	25.7	25.36	-0.02	Left	Tilt	08584	1:1	0.087	1.081	0.094	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-2
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	25.7	25.36	0.00	Right	Cheek	08584	1:1	0.162	1.081	0.175	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	25.7	25.36	-0.02	Right	Tilt	08584	1:1	0.081	1.081	0.088	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	25.7	25.36	0.01	Left	Cheek	08584	1:1	0.158	1.081	0.171	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	25.7	25.36	0.07	Left	Tilt	08584	1:1	0.083	1.081	0.090	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. A	25.7	25.44	-0.06	Right	Cheek	08584	1:1	0.167	1.062	0.177	A2
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. A	25.7	25.44	-0.02	Right	Tilt	08584	1:1	0.082	1.062	0.087	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. A	25.7	25.44	-0.04	Left	Cheek	08584	1:1	0.144	1.062	0.153	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. A	25.7	25.44	0.07	Left	Tilt	08584	1:1	0.086	1.062	0.091	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-3
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.84	0.21	Right	Cheek	08568	1:1	0.117	1.038	0.121	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.84	0.14	Right	Tilt	08568	1:1	0.091	1.038	0.094	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.84	0.13	Left	Cheek	08568	1:1	0.124	1.038	0.129	A3
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.84	-0.02	Left	Tilt	08568	1:1	0.068	1.038	0.071	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.95	0.05	Right	Cheek	08568	1:1	0.121	1.012	0.122	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.95	0.08	Right	Tilt	08568	1:1	0.095	1.012	0.096	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.95	0.12	Left	Cheek	08568	1:1	0.124	1.012	0.125	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.95	0.16	Left	Tilt	08568	1:1	0.069	1.012	0.070	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	34.0	33.04	-0.01	Right	Cheek	08568	1	1:8.3	0.117	1.247	0.146	
836.60	190	GSM 850	GSM	34.0	33.04	0.10	Right	Tilt	08568	1	1:8.3	0.051	1.247	0.064	
836.60	190	GSM 850	GSM	34.0	33.04	-0.21	Left	Cheek	08568	1	1:8.3	0.098	1.247	0.122	
836.60	190	GSM 850	GSM	34.0	33.04	0.12	Left	Tilt	08568	1	1:8.3	0.050	1.247	0.062	
836.60	190	GSM 850	GPRS	30.5	29.94	0.12	Right	Cheek	08568	3	1:2.76	0.135	1.138	0.154	A4
836.60	190	GSM 850	GPRS	30.5	29.94	0.06	Right	Tilt	08568	3	1:2.76	0.065	1.138	0.074	
836.60	190	GSM 850	GPRS	30.5	29.94	0.00	Left	Cheek	08568	3	1:2.76	0.121	1.138	0.138	
836.60	190	GSM 850	GPRS	30.5	29.94	-0.04	Left	Tilt	08568	3	1:2.76	0.064	1.138	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

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**Table 11-5
GSM 1900 Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	31.0	30.78	0.06	Right	Cheek	08568	1	1:8.3	0.043	1.052	0.045	
1880.00	661	GSM 1900	GSM	31.0	30.78	0.15	Right	Tilt	08568	1	1:8.3	0.041	1.052	0.043	
1880.00	661	GSM 1900	GSM	31.0	30.78	0.13	Left	Cheek	08568	1	1:8.3	0.045	1.052	0.047	
1880.00	661	GSM 1900	GSM	31.0	30.78	0.17	Left	Tilt	08568	1	1:8.3	0.028	1.052	0.029	
1880.00	661	GSM 1900	GPRS	28.0	28.00	0.01	Right	Cheek	08568	3	1:2.76	0.067	1.000	0.067	
1880.00	661	GSM 1900	GPRS	28.0	28.00	0.02	Right	Tilt	08568	3	1:2.76	0.053	1.000	0.053	
1880.00	661	GSM 1900	GPRS	28.0	28.00	0.01	Left	Cheek	08568	3	1:2.76	0.072	1.000	0.072	A5
1880.00	661	GSM 1900	GPRS	28.0	28.00	-0.09	Left	Tilt	08568	3	1:2.76	0.044	1.000	0.044	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

**Table 11-6
UMTS 850 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.20	Right	Cheek	08568	1:1	0.184	1.007	0.185	A6
836.60	4183	UMTS 850	RMC	25.7	25.67	0.07	Right	Tilt	08568	1:1	0.088	1.007	0.089	
836.60	4183	UMTS 850	RMC	25.7	25.67	0.06	Left	Cheek	08568	1:1	0.149	1.007	0.150	
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.04	Left	Tilt	08568	1:1	0.083	1.007	0.084	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

**Table 11-7
UMTS 1750 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.0	24.99	0.05	Right	Cheek	08667	1:1	0.138	1.002	0.138	
1732.40	1412	UMTS 1750	RMC	25.0	24.99	0.04	Right	Tilt	08667	1:1	0.115	1.002	0.115	
1732.40	1412	UMTS 1750	RMC	25.0	24.99	-0.05	Left	Cheek	08667	1:1	0.153	1.002	0.153	A7
1732.40	1412	UMTS 1750	RMC	25.0	24.99	0.05	Left	Tilt	08667	1:1	0.099	1.002	0.099	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-8
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.0	24.60	0.15	Right	Cheek	08568	1:1	0.118	1.096	0.129	
1880.00	9400	UMTS 1900	RMC	25.0	24.60	0.02	Right	Tilt	08568	1:1	0.091	1.096	0.100	
1880.00	9400	UMTS 1900	RMC	25.0	24.60	0.14	Left	Cheek	08568	1:1	0.121	1.096	0.133	A8
1880.00	9400	UMTS 1900	RMC	25.0	24.60	0.12	Left	Tilt	08568	1:1	0.076	1.096	0.083	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.03	0	Right	Cheek	QPSK	1	50	08667	1:1	0.125	1.216	0.152	A9
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.01	1	Right	Cheek	QPSK	50	50	08667	1:1	0.113	1.012	0.114	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.01	0	Right	Tilt	QPSK	1	50	08667	1:1	0.068	1.216	0.083	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.07	1	Right	Tilt	QPSK	50	50	08667	1:1	0.061	1.012	0.062	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	-0.09	0	Left	Cheek	QPSK	1	50	08667	1:1	0.117	1.216	0.142	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.11	1	Left	Cheek	QPSK	50	50	08667	1:1	0.104	1.012	0.105	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.02	0	Left	Tilt	QPSK	1	50	08667	1:1	0.063	1.216	0.077	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	-0.03	1	Left	Tilt	QPSK	50	50	08667	1:1	0.056	1.012	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.07	0	Right	Cheek	QPSK	1	49	08667	1:1	0.141	1.230	0.173	A10
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.05	1	Right	Cheek	QPSK	25	25	08667	1:1	0.130	1.262	0.164	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.11	0	Right	Tilt	QPSK	1	49	08667	1:1	0.064	1.230	0.079	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.02	1	Right	Tilt	QPSK	25	25	08667	1:1	0.059	1.262	0.074	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.06	0	Left	Cheek	QPSK	1	49	08667	1:1	0.125	1.230	0.154	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.08	1	Left	Cheek	QPSK	25	25	08667	1:1	0.113	1.262	0.143	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.18	0	Left	Tilt	QPSK	1	49	08667	1:1	0.068	1.230	0.084	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.16	1	Left	Tilt	QPSK	25	25	08667	1:1	0.058	1.262	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.07	0	Right	Cheek	QPSK	1	49	08667	1:1	0.172	1.205	0.207	A11
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.04	1	Right	Cheek	QPSK	25	25	08667	1:1	0.156	1.233	0.192	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.08	0	Right	Tilt	QPSK	1	49	08667	1:1	0.084	1.205	0.101	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.09	1	Right	Tilt	QPSK	25	25	08667	1:1	0.081	1.233	0.100	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	-0.03	0	Left	Cheek	QPSK	1	49	08667	1:1	0.140	1.205	0.169	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.05	1	Left	Cheek	QPSK	25	25	08667	1:1	0.133	1.233	0.164	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.10	0	Left	Tilt	QPSK	1	49	08667	1:1	0.087	1.205	0.105	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.06	1	Left	Tilt	QPSK	25	25	08667	1:1	0.083	1.233	0.102	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-12
LTE Band 14 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.04	0	Right	Cheek	QPSK	1	25	08584	1.1	0.132	1.132	0.149	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	-0.01	1	Right	Cheek	QPSK	25	12	08584	1.1	0.109	1.175	0.128	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	0.12	0	Right	Tilt	QPSK	1	25	08584	1.1	0.067	1.132	0.076	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.14	1	Right	Tilt	QPSK	25	12	08584	1.1	0.063	1.175	0.074	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.14	0	Left	Cheek	QPSK	1	25	08584	1.1	0.136	1.132	0.154	A12
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.06	1	Left	Cheek	QPSK	25	12	08584	1.1	0.123	1.175	0.145	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.08	0	Left	Tilt	QPSK	1	25	08584	1.1	0.081	1.132	0.092	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.06	1	Left	Tilt	QPSK	25	12	08584	1.1	0.075	1.175	0.088	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-13
LTE Band 26 (Cell) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	0.09	0	Right	Cheek	QPSK	1	36	08584	1:1	0.149	1.242	0.185	A13
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.07	1	Right	Cheek	QPSK	36	37	08584	1:1	0.110	1.324	0.146	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	0.15	0	Right	Tilt	QPSK	1	36	08584	1:1	0.080	1.242	0.099	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.08	1	Right	Tilt	QPSK	36	37	08584	1:1	0.062	1.324	0.082	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	-0.12	0	Left	Cheek	QPSK	1	36	08584	1:1	0.132	1.242	0.164	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.01	1	Left	Cheek	QPSK	36	37	08584	1:1	0.099	1.324	0.131	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	0.03	0	Left	Tilt	QPSK	1	36	08584	1:1	0.084	1.242	0.104	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.06	1	Left	Tilt	QPSK	36	37	08584	1:1	0.060	1.324	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										

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Table 11-14
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	-0.19	0	Right	Cheek	QPSK	1	49	08584	1:1	0.147	1.276	0.188	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.08	1	Right	Cheek	QPSK	25	25	08584	1:1	0.129	1.230	0.159	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	25.25	0.11	0	Right	Cheek	QPSK	1	49	08584	1:1	0.156	1.109	0.173	A14
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5								1	0						
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	-0.02	0	Right	Tilt	QPSK	1	49	08584	1:1	0.079	1.276	0.101	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.13	1	Right	Tilt	QPSK	25	25	08584	1:1	0.058	1.230	0.071	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	0.09	0	Left	Cheek	QPSK	1	49	08584	1:1	0.139	1.276	0.177	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.14	1	Left	Cheek	QPSK	25	25	08584	1:1	0.103	1.230	0.127	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	0.00	0	Left	Tilt	QPSK	1	49	08584	1:1	0.088	1.276	0.112	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.11	1	Left	Tilt	QPSK	25	25	08584	1:1	0.056	1.230	0.069	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-15
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maxim um Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.88	0.06	0	Right	Cheek	2	QPSK	1	0	08667	1:1	0.130	1.028	0.134	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.02	-0.02	1	Right	Cheek	2	QPSK	50	50	08667	1:1	0.104	1.253	0.130	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.88	-0.01	0	Right	Tilt	2	QPSK	1	0	08667	1:1	0.107	1.028	0.110	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.02	0.12	1	Right	Tilt	2	QPSK	50	50	08667	1:1	0.079	1.253	0.099	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.88	0.01	0	Left	Cheek	2	QPSK	1	0	08667	1:1	0.171	1.028	0.176	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.02	0.06	1	Left	Cheek	2	QPSK	50	50	08667	1:1	0.128	1.253	0.160	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.88	0.12	0	Left	Tilt	2	QPSK	1	0	08667	1:1	0.105	1.028	0.108	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.02	0.07	1	Left	Tilt	2	QPSK	50	50	08667	1:1	0.073	1.253	0.091	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.03	0	Right	Cheek	7	QPSK	1	50	08634	1:1	0.241	1.294	0.312	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.04	1	Right	Cheek	7	QPSK	50	25	08634	1:1	0.152	1.256	0.191	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.10	0	Right	Tilt	7	QPSK	1	50	08634	1:1	0.228	1.294	0.295	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.03	1	Right	Tilt	7	QPSK	50	25	08634	1:1	0.149	1.256	0.187	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	20.84	-0.01	0	Left	Cheek	7	QPSK	1	50	08634	1:1	0.614	1.306	0.802	A15
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.02	0	Left	Cheek	7	QPSK	1	50	08634	1:1	0.577	1.294	0.747	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	20.79	0.03	0	Left	Cheek	7	QPSK	1	50	08634	1:1	0.594	1.321	0.785	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.01	1	Left	Cheek	7	QPSK	50	25	08634	1:1	0.386	1.256	0.485	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	19.94	-0.05	1	Left	Cheek	7	QPSK	100	0	08634	1:1	0.390	1.276	0.498	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.06	0	Left	Tilt	7	QPSK	1	50	08634	1:1	0.181	1.294	0.234	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	-0.01	1	Left	Tilt	7	QPSK	50	25	08634	1:1	0.115	1.256	0.144	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-16
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.87	0.11	0	Right	Cheek	QPSK	1	99	08592	1:1	0.080	1.030	0.082	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.17	0.16	1	Right	Cheek	QPSK	50	0	08592	1:1	0.050	1.211	0.061	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.87	0.04	0	Right	Tilt	QPSK	1	99	08592	1:1	0.084	1.030	0.087	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.17	0.17	1	Right	Tilt	QPSK	50	0	08592	1:1	0.053	1.211	0.064	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.87	0.04	0	Left	Cheek	QPSK	1	99	08592	1:1	0.110	1.030	0.113	A16
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.17	-0.07	1	Left	Cheek	QPSK	50	0	08592	1:1	0.070	1.211	0.085	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.87	0.18	0	Left	Tilt	QPSK	1	99	08592	1:1	0.074	1.030	0.076	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.17	0.04	1	Left	Tilt	QPSK	50	0	08592	1:1	0.038	1.211	0.046	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-17
LTE Band 2 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																		(W/kg)	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.10	0	Right	Cheek	7	QPSK	1	0	08626	1:1	0.187	1.233	0.231	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	0.10	1	Right	Cheek	7	QPSK	50	25	08626	1:1	0.120	1.213	0.146	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.14	0	Right	Tilt	7	QPSK	1	0	08626	1:1	0.130	1.233	0.160	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	0.15	1	Right	Tilt	7	QPSK	50	25	08626	1:1	0.081	1.213	0.098	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	-0.03	0	Left	Cheek	7	QPSK	1	0	08626	1:1	0.611	1.233	0.753	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	20.98	0.06	0	Left	Cheek	7	QPSK	1	50	08626	1:1	0.646	1.265	0.817	A17
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	20.82	0.00	0	Left	Cheek	7	QPSK	1	99	08626	1:1	0.604	1.312	0.792	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	-0.04	1	Left	Cheek	7	QPSK	50	25	08626	1:1	0.384	1.213	0.466	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.07	-0.13	1	Left	Cheek	7	QPSK	100	0	08626	1:1	0.377	1.239	0.467	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.05	0	Left	Tilt	7	QPSK	1	0	08626	1:1	0.213	1.233	0.263	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	0.06	1	Left	Tilt	7	QPSK	50	25	08626	1:1	0.139	1.213	0.169	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-18
LTE Band 30 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.10	0	Right	Cheek	1	QPSK	1	25	08667	1:1	0.028	1.081	0.030	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.12	1	Right	Cheek	1	QPSK	25	12	08667	1:1	0.020	1.045	0.021	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.14	0	Right	Tilt	1	QPSK	1	25	08667	1:1	0.027	1.081	0.029	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.21	1	Right	Tilt	1	QPSK	25	12	08667	1:1	0.025	1.045	0.026	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.17	0	Left	Cheek	1	QPSK	1	25	08667	1:1	0.054	1.081	0.058	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.18	1	Left	Cheek	1	QPSK	25	12	08667	1:1	0.042	1.045	0.044	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.12	0	Left	Tilt	1	QPSK	1	25	08667	1:1	0.017	1.081	0.018	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.20	1	Left	Tilt	1	QPSK	25	12	08667	1:1	0.013	1.045	0.014	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.05	0	Right	Cheek	7	QPSK	1	0	08626	1:1	0.122	1.337	0.163	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.13	1	Right	Cheek	7	QPSK	25	12	08626	1:1	0.082	1.262	0.103	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.14	0	Right	Tilt	7	QPSK	1	0	08626	1:1	0.105	1.337	0.140	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.03	1	Right	Tilt	7	QPSK	25	12	08626	1:1	0.067	1.262	0.085	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.06	0	Left	Cheek	7	QPSK	1	0	08626	1:1	0.347	1.337	0.464	A18
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.09	1	Left	Cheek	7	QPSK	25	12	08626	1:1	0.221	1.262	0.279	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.04	0	Left	Tilt	7	QPSK	1	0	08626	1:1	0.225	1.337	0.301	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	-0.14	1	Left	Tilt	7	QPSK	25	12	08626	1:1	0.134	1.262	0.169	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-19
LTE Band 41 Head SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	24.80	-0.20	0	Right	Cheek	QPSK	1	0	08658	1:1.58	0.106	1.175	0.125	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	-0.17	0	Right	Cheek	QPSK	1	50	08658	1:1.58	0.116	1.076	0.125	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.19	1	Right	Cheek	QPSK	50	25	08658	1:1.58	0.076	1.030	0.078	
2 CC Uplink	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.50	-0.20	0	Right	Cheek	QPSK	1	0	08658	1:1.58	0.130	1.000	0.130	A19
	SCC	2616.70	40857	Mid-High	LTE Band 41	20								1	99						
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	0.17	0	Right	Tilt	QPSK	1	50	08658	1:1.58	0.057	1.076	0.061	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.17	1	Right	Tilt	QPSK	50	25	08658	1:1.58	0.052	1.030	0.054	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	0.16	0	Left	Cheek	QPSK	1	50	08658	1:1.58	0.103	1.076	0.111	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.16	1	Left	Cheek	QPSK	50	25	08658	1:1.58	0.091	1.030	0.094	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	0.06	0	Left	Tilt	QPSK	1	50	08658	1:1.58	0.077	1.076	0.083	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.13	1	Left	Tilt	QPSK	50	25	08658	1:1.58	0.071	1.030	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT															Head						
Spatial Peak															1.6 W/kg (mW/g)						
Uncontrolled Exposure/General Population															averaged over 1 gram						

Table 11-20
NR Band n71 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.16	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	08626	1:1	0.138	1.067	0.147	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	0.13	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	08626	1:1	0.149	1.099	0.164	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.04	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	08626	1:1	0.067	1.067	0.071	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	0.15	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	08626	1:1	0.067	1.099	0.074	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.03	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08626	1:1	0.157	1.067	0.168	A20
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.02	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	08626	1:1	0.151	1.099	0.166	
680.50	136100	Mid	NR Band n71	20	24.2	24.20	0.21	1.5	Left	Cheek	CP-OFDM QPSK	1	1	08626	1:1	0.126	1.000	0.126	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.00	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	08626	1:1	0.076	1.067	0.081	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.17	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	08626	1:1	0.076	1.099	0.084	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: ZNFK920AM	 Proud to be part of element	SAR ENGINEERING REPORT		Approved by: Quality Manager
Document S/N: 1M2007130107-01-R2.ZNF	Test Dates: 07/26/20 - 09/17/20	DUT Type: Portable Handset		Page 144 of 220

Table 11-21
NR Band n5 (Cell) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.05	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.109	1.002	0.109	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.07	0	Right	Cheek	DFT-S-OFDM QPSK	50	28	08634	1:1	0.130	1.091	0.142	A21
836.50	167300	Mid	NR Band n5 (Cell)	20	24.2	24.20	0.04	1.5	Right	Cheek	CP-OFDM QPSK	1	1	08634	1:1	0.080	1.000	0.080	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	-0.19	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	08634	1:1	0.059	1.002	0.059	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	-0.06	0	Right	Tilt	DFT-S-OFDM QPSK	50	28	08634	1:1	0.070	1.091	0.076	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.07	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.117	1.002	0.117	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.01	0	Left	Cheek	DFT-S-OFDM QPSK	50	28	08634	1:1	0.121	1.091	0.132	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	-0.13	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	08634	1:1	0.089	1.002	0.089	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.05	0	Left	Tilt	DFT-S-OFDM QPSK	50	28	08634	1:1	0.083	1.091	0.091	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-22
NR Band n66 (AWS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.04	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.389	1.079	0.420	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.00	0	Right	Cheek	DFT-S-OFDM QPSK	50	0	08634	1:1	0.383	1.091	0.418	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.07	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	08634	1:1	0.370	1.079	0.399	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.01	0	Right	Tilt	DFT-S-OFDM QPSK	50	0	08634	1:1	0.371	1.091	0.405	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	-0.16	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	1.010	1.079	1.090	A22
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.05	-0.15	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.969	1.109	1.075	
1770.00	354000	High	NR Band n66 (AWS)	20	23.5	22.72	-0.18	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.929	1.197	1.112	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	-0.17	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	08634	1:1	0.945	1.091	1.031	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.97	-0.07	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	08634	1:1	0.942	1.130	1.064	
1770.00	354000	High	NR Band n66 (AWS)	20	23.5	22.67	-0.12	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	08634	1:1	0.935	1.211	1.132	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.09	-0.14	0	Left	Cheek	DFT-S-OFDM QPSK	100	0	08634	1:1	0.946	1.099	1.040	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	22.94	-0.11	0	Left	Cheek	CP-OFDM QPSK	1	1	08634	1:1	0.941	1.138	1.071	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.10	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	08634	1:1	0.278	1.079	0.300	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.08	0	Left	Tilt	DFT-S-OFDM QPSK	50	0	08634	1:1	0.280	1.091	0.305	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.00	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08634	1:1	0.992	1.079	1.070	
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: Blue entry represents variability measurement.

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Table 11-23
NR Band n2 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	-0.07	0	Right	Cheek	DFT-S-OFDM QPSK	1	1	08626	1.1	0.266	1.023	0.272	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.12	0	Right	Cheek	DFT-S-OFDM QPSK	50	0	08626	1.1	0.254	1.104	0.280	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.08	0	Right	Tilt	DFT-S-OFDM QPSK	1	1	08626	1.1	0.234	1.023	0.239	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	0.03	0	Right	Tilt	DFT-S-OFDM QPSK	50	0	08626	1.1	0.234	1.104	0.258	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.5	23.39	-0.08	0	Left	Cheek	DFT-S-OFDM QPSK	1	104	08626	1.1	0.980	1.026	1.005	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	23.32	-0.20	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08626	1.1	0.931	1.042	0.970	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	-0.19	0	Left	Cheek	DFT-S-OFDM QPSK	1	1	08626	1.1	0.923	1.023	0.944	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.5	23.01	0.14	0	Left	Cheek	DFT-S-OFDM QPSK	50	56	08626	1.1	0.935	1.119	1.046	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.95	-0.20	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	08626	1.1	0.948	1.135	1.076	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.20	0	Left	Cheek	DFT-S-OFDM QPSK	50	0	08626	1.1	0.894	1.104	0.987	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	22.88	-0.12	0	Left	Cheek	DFT-S-OFDM QPSK	100	0	08626	1.1	0.865	1.153	0.997	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	23.22	-0.18	0	Left	Cheek	CP-OFDM QPSK	1	1	08626	1.1	0.984	1.067	1.050	A23
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.14	0	Left	Tilt	DFT-S-OFDM QPSK	1	1	08626	1.1	0.304	1.023	0.311	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.07	0	Left	Tilt	DFT-S-OFDM QPSK	50	0	08626	1.1	0.300	1.104	0.331	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	23.22	-0.18	0	Left	Cheek	CP-OFDM QPSK	1	1	08626	1.1	0.979	1.067	1.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Blue entry represents variability measurement.

Table 11-24
DTS Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	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	17.5	16.81	-0.10	Right	Cheek	1	08618	1	99.0	0.701	0.463	1.172	1.010	0.548	
2412	1	802.11b	DSSS	22	17.5	16.81	0.09	Right	Tilt	1	08618	1	99.0	0.142	0.112	1.172	1.010	0.133	
2412	1	802.11b	DSSS	22	17.5	16.81	0.10	Left	Cheek	1	08618	1	99.0	0.189	0.119	1.172	1.010	0.141	
2412	1	802.11b	DSSS	22	17.5	16.81	0.09	Left	Tilt	1	08618	1	99.0	0.074	0.057	1.172	1.010	0.067	
2412	1	802.11b	DSSS	22	17.5	16.90	0.02	Right	Cheek	2	08618	1	99.1	1.088	0.729	1.148	1.009	0.844	A24
2437	6	802.11b	DSSS	22	17.5	17.26	0.05	Right	Cheek	2	08618	1	99.1	0.941	0.616	1.057	1.009	0.657	
2462	11	802.11b	DSSS	22	17.5	16.89	0.02	Right	Cheek	2	08618	1	99.1	1.063	0.690	1.151	1.009	0.801	
2437	6	802.11b	DSSS	22	17.5	17.26	-0.08	Right	Tilt	2	08618	1	99.1	0.735	0.460	1.057	1.009	0.491	
2437	6	802.11b	DSSS	22	17.5	17.26	0.15	Left	Cheek	2	08618	1	99.1	0.222	0.165	1.057	1.009	0.176	
2437	6	802.11b	DSSS	22	17.5	17.26	0.18	Left	Tilt	2	08618	1	99.1	0.239	0.178	1.057	1.009	0.190	
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 11-25
DTS MIMO Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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)	(Duty Cycle)	(W/kg)		
2422	3	802.11n	OFDM	20	17.5	16.57	17.5	17.01	0.12	Right	Cheek	MIMO	08691	13	97.9	0.760	0.560	1.239	1.021	0.708	
2437	6	802.11n	OFDM	20	17.5	16.85	17.5	17.22	0.15	Right	Cheek	MIMO	08691	13	97.9	0.645	0.465	1.161	1.021	0.551	
2452	9	802.11n	OFDM	20	17.5	16.83	17.5	17.18	0.19	Right	Cheek	MIMO	08691	13	97.9	0.725	0.524	1.167	1.021	0.624	
2437	6	802.11n	OFDM	20	17.5	16.85	17.5	17.22	0.15	Right	Tilt	MIMO	08691	13	97.9	0.539	0.411	1.161	1.021	0.487	
2437	6	802.11n	OFDM	20	17.5	16.85	17.5	17.22	0.21	Left	Cheek	MIMO	08691	13	97.9	0.211	0.159	1.161	1.021	0.188	
2437	6	802.11n	OFDM	20	17.5	16.85	17.5	17.22	0.20	Left	Tilt	MIMO	08691	13	97.9	0.196	0.129	1.161	1.021	0.153	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Head										
Spatial Peak											1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population											averaged over 1 gram										

To achieve the 20.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.5 dBm.

FCC ID: ZNFK920AM	 Proud to be part of element	SAR ENGINEERING REPORT		Approved by: Quality Manager
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Table 11-26
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.													W/kg	(W/kg)				
5270	54	802.11n	OFDM	40	15.5	15.29	0.20	Right	Cheek	1	08618	13.5	97.3	0.128	-	1.050	1.028	-	
5270	54	802.11n	OFDM	40	15.5	15.29	0.15	Right	Tilt	1	08618	13.5	97.3	0.273	0.177	1.050	1.028	0.191	
5270	54	802.11n	OFDM	40	15.5	15.29	0.05	Left	Cheek	1	08618	13.5	97.3	0.170	0.127	1.050	1.028	0.137	
5270	54	802.11n	OFDM	40	15.5	15.29	0.14	Left	Tilt	1	08618	13.5	97.3	0.145	-	1.050	1.028	-	
5270	54	802.11n	OFDM	40	15.5	15.43	0.17	Right	Cheek	2	08618	13.5	97.2	0.213	0.095	1.016	1.029	0.099	
5270	54	802.11n	OFDM	40	15.5	15.43	0.14	Right	Tilt	2	08618	13.5	97.2	0.124	-	1.016	1.029	-	
5270	54	802.11n	OFDM	40	15.5	15.43	0.18	Left	Cheek	2	08618	13.5	97.2	0.111	0.097	1.016	1.029	0.101	
5270	54	802.11n	OFDM	40	15.5	15.43	0.19	Left	Tilt	2	08618	13.5	97.2	0.144	-	1.016	1.029	-	
5710	142	802.11n	OFDM	40	15.5	15.24	0.12	Right	Cheek	1	08618	13.5	97.3	0.090	-	1.062	1.028	-	
5710	142	802.11n	OFDM	40	15.5	15.24	0.16	Right	Tilt	1	08618	13.5	97.3	0.246	0.162	1.062	1.028	0.177	
5710	142	802.11n	OFDM	40	15.5	15.24	0.13	Left	Cheek	1	08618	13.5	97.3	0.145	0.117	1.062	1.028	0.128	
5710	142	802.11n	OFDM	40	15.5	15.24	-0.20	Left	Tilt	1	08618	13.5	97.3	0.131	-	1.062	1.028	-	
5550	110	802.11n	OFDM	40	15.5	15.23	0.01	Right	Cheek	2	08618	13.5	97.2	0.650	0.340	1.064	1.029	0.372	A25
5550	110	802.11n	OFDM	40	15.5	15.23	0.17	Right	Tilt	2	08618	13.5	97.2	0.334	-	1.064	1.029	-	
5550	110	802.11n	OFDM	40	15.5	15.23	0.18	Left	Cheek	2	08618	13.5	97.2	0.294	0.184	1.064	1.029	0.201	
5550	110	802.11n	OFDM	40	15.5	15.23	0.19	Left	Tilt	2	08618	13.5	97.2	0.209	-	1.064	1.029	-	
5755	151	802.11n	OFDM	40	15.5	15.29	0.19	Right	Cheek	1	08618	13.5	97.3	0.052	-	1.050	1.028	-	
5755	151	802.11n	OFDM	40	15.5	15.29	0.12	Right	Tilt	1	08618	13.5	97.3	0.202	0.144	1.050	1.028	0.155	
5755	151	802.11n	OFDM	40	15.5	15.29	0.14	Left	Cheek	1	08618	13.5	97.3	0.128	0.109	1.050	1.028	0.118	
5755	151	802.11n	OFDM	40	15.5	15.29	0.14	Left	Tilt	1	08618	13.5	97.3	0.100	-	1.050	1.028	-	
5795	159	802.11n	OFDM	40	15.5	15.49	0.21	Right	Cheek	2	08618	13.5	97.2	0.708	0.309	1.002	1.029	0.319	
5795	159	802.11n	OFDM	40	15.5	15.49	0.15	Right	Tilt	2	08618	13.5	97.2	0.291	-	1.002	1.029	-	
5795	159	802.11n	OFDM	40	15.5	15.49	0.08	Left	Cheek	2	08618	13.5	97.2	0.294	0.178	1.002	1.029	0.184	
5795	159	802.11n	OFDM	40	15.5	15.49	0.20	Left	Tilt	2	08618	13.5	97.2	0.186	-	1.002	1.029	-	
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 11-27
NII MIMO Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.5	15.29	15.5	15.43	0.19	Right	Cheek	MIMO	08618	27	98.4	0.241	0.121	1.050	1.016	0.129	
5270	54	802.11n	OFDM	40	15.5	15.29	15.5	15.43	0.17	Right	Tilt	MIMO	08618	27	98.4	0.208	-	1.050	1.016	-	
5270	54	802.11n	OFDM	40	15.5	15.29	15.5	15.43	0.03	Left	Cheek	MIMO	08618	27	98.4	0.189	0.127	1.050	1.016	0.135	
5270	54	802.11n	OFDM	40	15.5	15.29	15.5	15.43	0.20	Left	Tilt	MIMO	08618	27	98.4	0.188	-	1.050	1.016	-	
5710	142	802.11n	OFDM	40	15.5	15.24	15.5	15.18	0.21	Right	Cheek	MIMO	08618	27	98.4	0.568	0.322	1.076	1.016	0.352	
5710	142	802.11n	OFDM	40	15.5	15.24	15.5	15.18	0.15	Right	Tilt	MIMO	08618	27	98.4	0.291	-	1.076	1.016	-	
5710	142	802.11n	OFDM	40	15.5	15.24	15.5	15.18	-0.14	Left	Cheek	MIMO	08618	27	98.4	0.279	0.171	1.076	1.016	0.187	
5710	142	802.11n	OFDM	40	15.5	15.24	15.5	15.18	0.16	Left	Tilt	MIMO	08618	27	98.4	0.271	-	1.076	1.016	-	
5755	151	802.11n	OFDM	40	15.5	15.29	15.5	15.20	0.18	Right	Cheek	MIMO	08618	27	98.4	0.637	0.335	1.072	1.016	0.365	
5755	151	802.11n	OFDM	40	15.5	15.29	15.5	15.20	0.12	Right	Tilt	MIMO	08618	27	98.4	0.283	-	1.072	1.016	-	
5755	151	802.11n	OFDM	40	15.5	15.29	15.5	15.20	0.01	Left	Cheek	MIMO	08618	27	98.4	0.275	0.158	1.072	1.016	0.172	
5755	151	802.11n	OFDM	40	15.5	15.29	15.5	15.20	0.19	Left	Tilt	MIMO	08618	27	98.4	0.202	-	1.072	1.016	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

To achieve the 18.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.5 dBm.

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Document S/N: 1M2007130107-01-R2.ZNF	Test Dates: 07/26/20 - 09/17/20	DUT Type: Portable Handset		Page 147 of 220

**Table 11-28
DSS Head SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	12.5	12.24	0.11	Right	Cheek	08600	1	76.9	0.072	1.062	1.300	0.099	A26
2441.00	39	Bluetooth	FHSS	12.5	12.24	0.17	Right	Tilt	08600	1	76.9	0.016	1.062	1.300	0.022	
2441.00	39	Bluetooth	FHSS	12.5	12.24	0.17	Left	Cheek	08600	1	76.9	0.019	1.062	1.300	0.026	
2441.00	39	Bluetooth	FHSS	12.5	12.24	0.13	Left	Tilt	08600	1	76.9	0.005	1.062	1.300	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								

FCC ID: ZNFK920AM	 PCTEST Proud to be part of element	SAR ENGINEERING REPORT	 LG	Approved by: Quality Manager
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11.2 Standalone Body-Worn SAR Data

Table 11-29
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (\$90S)	TDSO / SO32	25.7	25.36	0.01	10 mm	08576	N/A	1:1	back	0.421	1.081	0.455	A27
836.52	384	CDMA BC0 (\$22H)	TDSO / SO32	25.7	25.36	0.00	10 mm	08576	N/A	1:1	back	0.440	1.081	0.476	A29
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.87	-0.04	10 mm	08568	N/A	1:1	back	0.354	1.030	0.365	A31
836.60	190	GSM 850	GSM	34.0	33.04	-0.04	10 mm	08576	1	1:8.3	back	0.303	1.247	0.378	
836.60	190	GSM 850	GPRS	30.5	29.94	-0.14	10 mm	08576	3	1:2.76	back	0.362	1.138	0.412	A33
1880.00	661	GSM 1900	GSM	31.0	30.78	-0.07	10 mm	08568	1	1:8.3	back	0.167	1.052	0.176	
1880.00	661	GSM 1900	GPRS	28.0	28.00	-0.07	10 mm	08568	3	1:2.76	back	0.233	1.000	0.233	A34
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.01	10 mm	08576	N/A	1:1	back	0.336	1.007	0.338	A36
1732.40	1412	UMTS 1750	RMC	25.0	24.99	-0.04	10 mm	08568	N/A	1:1	back	0.464	1.002	0.465	A37
1880.00	9400	UMTS 1900	RMC	25.0	24.60	-0.08	10 mm	08667	N/A	1:1	back	0.387	1.096	0.424	A39
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-30
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maxium Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.03	0	1	08584	QPSK	1	50	10 mm	back	1:1	0.287	1.216	0.349	A41
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.03	1	1	08584	QPSK	50	50	10 mm	back	1:1	0.269	1.012	0.272	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.00	0	1	08584	QPSK	1	49	10 mm	back	1:1	0.309	1.230	0.380	A43
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.04	1	1	08584	QPSK	25	25	10 mm	back	1:1	0.291	1.262	0.367	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.00	0	1	08584	QPSK	1	49	10 mm	back	1:1	0.295	1.205	0.355	A44
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	-0.01	1	1	08584	QPSK	25	25	10 mm	back	1:1	0.271	1.233	0.334	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.03	0	1	08584	QPSK	1	25	10 mm	back	1:1	0.281	1.132	0.318	A46
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.00	1	1	08584	QPSK	25	12	10 mm	back	1:1	0.266	1.175	0.313	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	-0.01	0	1	08584	QPSK	1	36	10 mm	back	1:1	0.341	1.242	0.424	A48
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.00	1	1	08584	QPSK	36	37	10 mm	back	1:1	0.277	1.324	0.367	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.88	-0.03	0	2	08584	QPSK	1	0	10 mm	back	1:1	0.488	1.028	0.502	A50
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.02	0.04	1	2	08584	QPSK	50	50	10 mm	back	1:1	0.391	1.253	0.490	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.03	0	7	08634	QPSK	1	50	10 mm	back	1:1	0.074	1.294	0.096	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.03	1	7	08634	QPSK	50	25	10 mm	back	1:1	0.047	1.256	0.059	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.87	-0.11	0	2	08568	QPSK	1	99	10 mm	back	1:1	0.348	1.030	0.358	A52
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.17	-0.10	1	2	08568	QPSK	50	0	10 mm	back	1:1	0.215	1.211	0.260	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.13	0	7	08626	QPSK	1	0	10 mm	back	1:1	0.079	1.233	0.097	A54
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	0.14	1	7	08626	QPSK	50	25	10 mm	back	1:1	0.050	1.213	0.061	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.11	0	1	08592	QPSK	1	25	10 mm	back	1:1	0.531	1.081	0.574	A56
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.14	1	1	08592	QPSK	25	12	10 mm	back	1:1	0.342	1.045	0.357	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.13	0	7	08626	QPSK	1	0	10 mm	back	1:1	0.109	1.337	0.146	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.21	1	7	08626	QPSK	25	12	10 mm	back	1:1	0.085	1.262	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak										Body 1.6 W/kg (mW/g) averaged over 1 gram										
Uncontrolled Exposure/General Population																				

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Table 11-31
LTE Band 5 (Cell) Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	0.01	0	08584	QPSK	1	49	10 mm	back	1:1	0.342	1.276	0.436	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.01	1	08584	QPSK	25	25	10 mm	back	1:1	0.294	1.230	0.362	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	25.25	-0.06	0	08584	QPSK	1	49	10 mm	back	1:1	0.375	1.109	0.416	A49
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5								0	10 mm						
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak											Body 1.6 W/kg (mW/g) averaged over 1 gram										
Uncontrolled Exposure/General Population																					

Table 11-32
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	24.80	-0.02	0	08568	QPSK	1	0	10 mm	back	1:1.58	0.213	1.175	0.250	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	-0.01	0	08568	QPSK	1	50	10 mm	back	1:1.58	0.199	1.076	0.214	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.12	1	08568	QPSK	50	25	10 mm	back	1:1.58	0.176	1.030	0.181	
2 CC Uplink	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.50	0.00	0	08568	QPSK	1	0	10 mm	back	1:1.58	0.254	1.000	0.254	A57
	SCC	2616.70	40857	Mid-High	LTE Band 41	20							1	99							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak												Body 1.6 W/kg (mW/g) averaged over 1 gram									
Uncontrolled Exposure/General Population																					

Table 11-33
NR Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.02	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.308	1.067	0.329	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.07	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.322	1.099	0.354	A59
680.50	136100	Mid	NR Band n71	20	24.2	24.20	0.02	1.5	08626	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.228	1.000	0.228	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.03	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.376	1.002	0.377	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.00	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.381	1.091	0.416	A61
836.50	167300	Mid	NR Band n5 (Cell)	20	24.2	24.20	0.00	1.5	08626	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.292	1.000	0.292	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.66	0.07	0	08634	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.190	1.213	0.230	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.39	0.03	0	08634	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.196	1.291	0.253	A62
1745.00	349000	Mid	NR Band n66 (AWS)	20	24.0	23.19	-0.02	1.5	08634	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.147	1.205	0.177	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	25.24	0.19	0	08626	DFT-S-OFDM QPSK	1	53	10 mm	back	1:1	0.215	1.062	0.228	A64
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	24.22	0.21	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.150	1.343	0.201	
1900.00	380000	High	NR Band n2 (PCS)	20	24.0	22.40	0.04	1.5	08626	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.158	1.445	0.228	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-34
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.39	-0.04	10 mm	1	08618	1	back	99.0	0.418	0.267	1.151	1.010	0.310	A66
2437	6	802.11b	DSSS	22	21.0	20.79	0.02	10 mm	2	08618	1	back	99.1	0.270	0.177	1.050	1.009	0.188	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-35
DTS MIMO Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2437	6	802.11g	OFDM	20	20.0	19.36	20.0	19.25	0.16	10 mm	MIMO	08618	6	back	98.1	0.263	0.177	1.189	1.019	0.214	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

To achieve the 23 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 20 dBm.

Table 11-36
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.5	18.23	0.10	10 mm	1	08618	6	back	98.3	0.560	0.241	1.064	1.017	0.261	
5280	56	802.11a	OFDM	20	18.0	17.53	-0.14	10 mm	2	08618	6	back	98.3	0.457	0.209	1.114	1.017	0.237	
5500	100	802.11a	OFDM	20	16.5	16.19	-0.04	10 mm	1	08618	6	back	98.3	0.452	0.179	1.074	1.017	0.196	
5500	100	802.11a	OFDM	20	16.0	15.41	0.09	10 mm	2	08618	6	back	98.3	0.912	0.407	1.146	1.017	0.474	
5805	161	802.11a	OFDM	20	18.5	18.25	0.21	10 mm	1	08618	6	back	98.3	0.316	0.121	1.059	1.017	0.130	
5785	157	802.11a	OFDM	20	18.0	17.07	-0.08	10 mm	2	08618	6	back	98.3	1.401	0.634	1.239	1.017	0.799	
5805	161	802.11a	OFDM	20	18.0	17.06	-0.04	10 mm	2	08618	6	back	98.3	1.480	0.669	1.242	1.017	0.845	
5825	165	802.11a	OFDM	20	18.0	17.02	0.01	10 mm	2	08618	6	back	98.3	1.510	0.683	1.253	1.017	0.870	A68
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-37
NII MIMO Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (Duty Cycle)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5280	56	802.11n	OFDM	20	18.5	17.95	18.0	17.41	0.18	10 mm	MIMO	08618	13	back	97.9	0.775	0.354	1.146	1.021	0.414	
5500	100	802.11n	OFDM	20	16.5	15.93	16.0	15.27	0.01	10 mm	MIMO	08618	13	back	97.9	1.125	0.531	1.183	1.021	0.641	
5785	157	802.11n	OFDM	20	18.5	17.98	18.0	17.03	0.13	10 mm	MIMO	08618	13	back	97.9	1.300	0.602	1.250	1.021	0.768	
5805	161	802.11n	OFDM	20	18.5	17.94	18.0	17.03	0.05	10 mm	MIMO	08618	13	back	97.9	1.343	0.609	1.250	1.021	0.777	
5825	165	802.11n	OFDM	20	18.5	17.97	18.0	17.01	-0.09	10 mm	MIMO	08618	13	back	97.9	1.412	0.613	1.256	1.021	0.786	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Body											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Notes:

- To achieve the 21.3 dBm maximum allowed MIMO power shown in the documentation for channels 56, 157, 161, and 165, antenna 1 transmits at a maximum allowed power of 18.5 dBm, and antenna 2 transmits at a maximum allowed power of 18.0 dBm.
- To achieve the 19.3 dBm maximum allowed MIMO power shown in the documentation for channels 100, antenna 1 transmits at a maximum allowed power of 16.5 dBm, and antenna 2 transmits at a maximum allowed power of 16.0 dBm.

Table 11-38
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.											(W/kg)				
2441	39	Bluetooth	FHSS	12.5	12.24	-0.11	10 mm	08600	1	back	76.9	0.022	1.062	1.300	0.030	A69
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram						

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11.3 Standalone Hotspot SAR Data

Table 11-39
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.7	25.36	0.05	10 mm	08576	N/A	1:1	back	0.444	1.081	0.480	A28
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.7	25.36	-0.05	10 mm	08576	N/A	1:1	front	0.407	1.081	0.440	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.7	25.36	0.19	10 mm	08576	N/A	1:1	bottom	0.245	1.081	0.265	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.7	25.36	0.01	10 mm	08576	N/A	1:1	left	0.130	1.081	0.141	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.7	25.41	0.01	10 mm	08576	N/A	1:1	back	0.462	1.069	0.494	A30
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.7	25.41	0.01	10 mm	08576	N/A	1:1	front	0.407	1.069	0.435	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.7	25.41	0.02	10 mm	08576	N/A	1:1	bottom	0.249	1.069	0.266	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.7	25.41	-0.04	10 mm	08576	N/A	1:1	left	0.159	1.069	0.170	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.0	23.91	-0.21	10 mm	08592	N/A	1:1	back	0.311	1.021	0.318	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.0	23.91	-0.01	10 mm	08592	N/A	1:1	front	0.408	1.021	0.417	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.0	23.91	-0.01	10 mm	08592	N/A	1:1	bottom	0.581	1.021	0.593	A32
1880.00	600	PCS CDMA	EVDO Rev. 0	24.0	23.91	0.00	10 mm	08592	N/A	1:1	right	0.154	1.021	0.157	
836.60	190	GSM 850	GPRS	30.5	29.94	-0.14	10 mm	08576	3	1:2.76	back	0.362	1.138	0.412	A33
836.60	190	GSM 850	GPRS	30.5	29.94	-0.11	10 mm	08576	3	1:2.76	front	0.352	1.138	0.401	
836.60	190	GSM 850	GPRS	30.5	29.94	-0.03	10 mm	08576	3	1:2.76	bottom	0.223	1.138	0.254	
836.60	190	GSM 850	GPRS	30.5	29.94	0.00	10 mm	08576	3	1:2.76	left	0.145	1.138	0.165	
1880.00	661	GSM 1900	GPRS	28.0	28.00	-0.07	10 mm	08568	3	1:2.76	back	0.233	1.000	0.233	
1880.00	661	GSM 1900	GPRS	28.0	28.00	0.01	10 mm	08568	3	1:2.76	front	0.327	1.000	0.327	
1880.00	661	GSM 1900	GPRS	28.0	28.00	-0.02	10 mm	08568	3	1:2.76	bottom	0.415	1.000	0.415	A35
1880.00	661	GSM 1900	GPRS	28.0	28.00	-0.02	10 mm	08568	3	1:2.76	right	0.105	1.000	0.105	
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.01	10 mm	08576	N/A	1:1	back	0.336	1.007	0.338	A36
836.60	4183	UMTS 850	RMC	25.7	25.67	0.01	10 mm	08576	N/A	1:1	front	0.335	1.007	0.337	
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.02	10 mm	08576	N/A	1:1	bottom	0.240	1.007	0.242	
836.60	4183	UMTS 850	RMC	25.7	25.67	-0.08	10 mm	08576	N/A	1:1	left	0.140	1.007	0.141	
1732.40	1412	UMTS 1750	RMC	24.0	23.70	-0.02	10 mm	08568	N/A	1:1	back	0.363	1.072	0.389	
1732.40	1412	UMTS 1750	RMC	24.0	23.70	0.01	10 mm	08568	N/A	1:1	front	0.480	1.072	0.515	
1712.40	1312	UMTS 1750	RMC	24.0	23.96	0.00	10 mm	08568	N/A	1:1	bottom	0.549	1.009	0.554	
1732.40	1412	UMTS 1750	RMC	24.0	23.70	-0.02	10 mm	08568	N/A	1:1	bottom	0.624	1.072	0.669	
1752.60	1513	UMTS 1750	RMC	24.0	23.95	-0.05	10 mm	08568	N/A	1:1	bottom	0.659	1.012	0.667	A38
1732.40	1412	UMTS 1750	RMC	24.0	23.70	-0.03	10 mm	08568	N/A	1:1	right	0.185	1.072	0.198	
1880.00	9400	UMTS 1900	RMC	24.0	23.87	-0.07	10 mm	08667	N/A	1:1	back	0.304	1.030	0.313	
1880.00	9400	UMTS 1900	RMC	24.0	23.87	-0.01	10 mm	08667	N/A	1:1	front	0.395	1.030	0.407	
1852.40	9262	UMTS 1900	RMC	24.0	24.00	-0.03	10 mm	08667	N/A	1:1	bottom	0.655	1.000	0.655	A40
1880.00	9400	UMTS 1900	RMC	24.0	23.87	0.01	10 mm	08667	N/A	1:1	bottom	0.597	1.030	0.615	
1907.60	9538	UMTS 1900	RMC	24.0	24.00	-0.01	10 mm	08667	N/A	1:1	bottom	0.523	1.000	0.523	
1880.00	9400	UMTS 1900	RMC	24.0	23.87	0.03	10 mm	08667	N/A	1:1	right	0.147	1.030	0.151	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-40
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.03	0	08584	QPSK	1	50	10 mm	back	1:1	0.287	1.216	0.349	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.03	1	08584	QPSK	50	50	10 mm	back	1:1	0.269	1.012	0.272	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	-0.04	0	08584	QPSK	1	50	10 mm	front	1:1	0.283	1.216	0.344	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	-0.11	1	08584	QPSK	50	50	10 mm	front	1:1	0.264	1.012	0.267	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.04	0	08584	QPSK	1	50	10 mm	bottom	1:1	0.121	1.216	0.147	
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.01	1	08584	QPSK	50	50	10 mm	bottom	1:1	0.112	1.012	0.113	
680.50	133297	Mid	LTE Band 71	20	25.7	24.85	0.04	0	08584	QPSK	1	50	10 mm	left	1:1	0.357	1.216	0.434	A42
680.50	133297	Mid	LTE Band 71	20	24.7	24.65	0.00	1	08584	QPSK	50	50	10 mm	left	1:1	0.339	1.012	0.343	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-41
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.00	0	08584	QPSK	1	49	10 mm	back	1:1	0.309	1.230	0.380	A43
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.04	1	08584	QPSK	25	25	10 mm	back	1:1	0.291	1.262	0.367	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	-0.06	0	08584	QPSK	1	49	10 mm	front	1:1	0.293	1.230	0.360	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	-0.04	1	08584	QPSK	25	25	10 mm	front	1:1	0.280	1.262	0.353	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	-0.02	0	08584	QPSK	1	49	10 mm	bottom	1:1	0.159	1.230	0.196	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	-0.04	1	08584	QPSK	25	25	10 mm	bottom	1:1	0.149	1.262	0.188	
707.50	23095	Mid	LTE Band 12	10	25.7	24.80	0.01	0	08584	QPSK	1	49	10 mm	left	1:1	0.304	1.230	0.374	
707.50	23095	Mid	LTE Band 12	10	24.7	23.69	0.00	1	08584	QPSK	25	25	10 mm	left	1:1	0.285	1.262	0.360	
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 11-42
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.00	0	08584	QPSK	1	49	10 mm	back	1:1	0.295	1.205	0.355	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	-0.01	1	08584	QPSK	25	25	10 mm	back	1:1	0.271	1.233	0.334	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	-0.01	0	08584	QPSK	1	49	10 mm	front	1:1	0.327	1.205	0.394	A45
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.00	1	08584	QPSK	25	25	10 mm	front	1:1	0.307	1.233	0.379	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	-0.02	0	08584	QPSK	1	49	10 mm	bottom	1:1	0.175	1.205	0.211	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.00	1	08584	QPSK	25	25	10 mm	bottom	1:1	0.162	1.233	0.200	
782.00	23230	Mid	LTE Band 13	10	25.7	24.89	0.01	0	08584	QPSK	1	49	10 mm	left	1:1	0.162	1.205	0.195	
782.00	23230	Mid	LTE Band 13	10	24.7	23.79	0.06	1	08584	QPSK	25	25	10 mm	left	1:1	0.146	1.233	0.180	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-43
LTE Band 14 Hotspot SAR

FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.03	0	08584	QPSK	1	25	10 mm	back	1:1	0.281	1.132	0.318	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.00	1	08584	QPSK	25	12	10 mm	back	1:1	0.266	1.175	0.313	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.02	0	08584	QPSK	1	25	10 mm	front	1:1	0.306	1.132	0.346	A47
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	0.00	1	08584	QPSK	25	12	10 mm	front	1:1	0.293	1.175	0.344	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	0.03	0	08584	QPSK	1	25	10 mm	bottom	1:1	0.164	1.132	0.186	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	-0.05	1	08584	QPSK	25	12	10 mm	bottom	1:1	0.153	1.175	0.180	
793.00	23330	Mid	LTE Band 14	10	25.7	25.16	-0.09	0	08584	QPSK	1	25	10 mm	left	1:1	0.095	1.132	0.108	
793.00	23330	Mid	LTE Band 14	10	24.7	24.00	-0.09	1	08584	QPSK	25	12	10 mm	left	1:1	0.090	1.175	0.106	
								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-44
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	-0.01	0	08584	QPSK	1	36	10 mm	back	1:1	0.341	1.242	0.424	A48
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.00	1	08584	QPSK	36	37	10 mm	back	1:1	0.277	1.324	0.367	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	0.05	0	08584	QPSK	1	36	10 mm	front	1:1	0.329	1.242	0.409	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	0.02	1	08584	QPSK	36	37	10 mm	front	1:1	0.265	1.324	0.351	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	0.02	0	08584	QPSK	1	36	10 mm	bottom	1:1	0.197	1.242	0.245	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	-0.01	1	08584	QPSK	36	37	10 mm	bottom	1:1	0.156	1.324	0.207	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.7	24.76	-0.02	0	08584	QPSK	1	36	10 mm	left	1:1	0.149	1.242	0.185	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.7	23.48	-0.02	1	08584	QPSK	36	37	10 mm	left	1:1	0.113	1.324	0.150	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-45
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	0.01	0	08584	QPSK	1	49	10 mm	back	1:1	0.342	1.276	0.436	A49
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.01	1	08584	QPSK	25	25	10 mm	back	1:1	0.294	1.230	0.362	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	25.25	-0.06	0	08584	QPSK	1	49	10 mm	back	1:1	0.375	1.109	0.416	
	SCC	843.70	20597	Mid	LTE Band 5 (Cell)	5							1	0							
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	0.03	0	08584	QPSK	1	49	10 mm	front	1:1	0.316	1.276	0.403	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	-0.02	1	08584	QPSK	25	25	10 mm	front	1:1	0.266	1.230	0.327	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	-0.04	0	08584	QPSK	1	49	10 mm	bottom	1:1	0.197	1.276	0.251	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.00	1	08584	QPSK	25	25	10 mm	bottom	1:1	0.161	1.230	0.198	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.7	24.64	-0.03	0	08584	QPSK	1	49	10 mm	left	1:1	0.142	1.276	0.181	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.7	23.80	0.02	1	08584	QPSK	25	25	10 mm	left	1:1	0.118	1.230	0.145	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-46
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.98	0.02	0	2	08568	QPSK	1	0	10 mm	back	1:1	1.036	1.005	0.338	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.96	0.01	0	2	08568	QPSK	50	25	10 mm	back	1:1	1.345	1.009	0.348	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.98	0.04	0	2	08568	QPSK	1	0	10 mm	front	1:1	1.463	1.005	0.465	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.96	0.08	0	2	08568	QPSK	50	25	10 mm	front	1:1	1.467	1.009	0.471	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.98	0.02	0	2	08568	QPSK	1	0	10 mm	bottom	1:1	1.617	1.005	0.620	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.95	0.00	0	2	08568	QPSK	50	25	10 mm	bottom	1:1	1.567	1.012	0.574	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.94	0.01	0	2	08568	QPSK	50	25	10 mm	bottom	1:1	1.602	1.014	0.610	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.96	-0.01	0	2	08568	QPSK	50	25	10 mm	bottom	1:1	1.635	1.009	0.641	A51
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.98	0.03	0	2	08568	QPSK	1	0	10 mm	right	1:1	1.199	1.005	0.200	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.96	0.02	0	2	08568	QPSK	50	25	10 mm	right	1:1	1.200	1.009	0.202	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.03	0	7	08634	QPSK	1	50	10 mm	back	1:1	1.074	1.294	0.096	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.03	1	7	08634	QPSK	50	25	10 mm	back	1:1	1.047	1.256	0.059	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.01	0	7	08634	QPSK	1	50	10 mm	front	1:1	1.089	1.294	0.115	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	0.12	1	7	08634	QPSK	50	25	10 mm	front	1:1	1.058	1.256	0.073	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.05	0	7	08634	QPSK	1	50	10 mm	top	1:1	1.033	1.294	0.043	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	-0.05	1	7	08634	QPSK	50	25	10 mm	top	1:1	1.020	1.256	0.025	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	20.88	0.02	0	7	08634	QPSK	1	50	10 mm	right	1:1	1.185	1.294	0.239	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.01	-0.04	1	7	08634	QPSK	50	25	10 mm	right	1:1	1.118	1.256	0.148	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

Table 11-47
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	-0.07	0	2	08576	QPSK	1	99	10 mm	back	1:1	0.285	1.000	0.285	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	-0.08	0	2	08576	QPSK	50	50	10 mm	back	1:1	0.275	1.000	0.275	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	0.06	0	2	08576	QPSK	1	99	10 mm	front	1:1	0.399	1.000	0.399	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	0.04	0	2	08576	QPSK	50	50	10 mm	front	1:1	0.389	1.000	0.389	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	-0.02	0	2	08576	QPSK	1	99	10 mm	bottom	1:1	0.553	1.000	0.553	A53
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	-0.02	0	2	08576	QPSK	50	50	10 mm	bottom	1:1	0.533	1.000	0.533	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	-0.02	0	2	08576	QPSK	1	99	10 mm	right	1:1	0.129	1.000	0.129	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.0	24.00	0.01	0	2	08576	QPSK	50	50	10 mm	right	1:1	0.130	1.000	0.130	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

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Table 11-48
LTE Band 2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)		Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)	Scaling Factor			(W/kg)
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.13	0	7	08626	QPSK	1	0	10 mm	back	1:1	0.079	1.233	0.097	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.16	0.14	1	7	08626	QPSK	50	25	10 mm	back	1:1	0.050	1.213	0.061	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.13	0	7	08626	QPSK	1	0	10 mm	front	1:1	0.087	1.233	0.107	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	0.19	1	7	08626	QPSK	50	25	10 mm	front	1:1	0.056	1.213	0.068	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	0.12	0	7	08626	QPSK	1	0	10 mm	top	1:1	0.032	1.233	0.039	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	-0.18	1	7	08626	QPSK	50	25	10 mm	top	1:1	0.019	1.213	0.023	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.09	-0.07	0	7	08626	QPSK	1	0	10 mm	right	1:1	0.191	1.233	0.236	A55
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.0	20.16	-0.01	1	7	08626	QPSK	50	25	10 mm	right	1:1	0.118	1.213	0.143	
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 11-49
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)															(W/kg)			
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.11	0	1	08592	QPSK	1	25	10 mm	back	1:1	0.531	1.081	0.574	A56
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.14	1	1	08592	QPSK	25	12	10 mm	back	1:1	0.342	1.045	0.357	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.06	0	1	08592	QPSK	1	25	10 mm	front	1:1	0.188	1.081	0.203	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.06	1	1	08592	QPSK	25	12	10 mm	front	1:1	0.117	1.045	0.122	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	0.01	0	1	08592	QPSK	1	25	10 mm	bottom	1:1	0.398	1.081	0.430	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	-0.01	1	1	08592	QPSK	25	12	10 mm	bottom	1:1	0.258	1.045	0.270	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.66	-0.03	0	1	08592	QPSK	1	25	10 mm	left	1:1	0.113	1.081	0.122	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.81	0.06	1	1	08592	QPSK	25	12	10 mm	left	1:1	0.082	1.045	0.086	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.13	0	7	08626	QPSK	1	0	10 mm	back	1:1	0.109	1.337	0.146	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.21	1	7	08626	QPSK	25	12	10 mm	back	1:1	0.085	1.262	0.107	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.18	0	7	08626	QPSK	1	0	10 mm	front	1:1	0.087	1.337	0.116	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.17	1	7	08626	QPSK	25	12	10 mm	front	1:1	0.057	1.262	0.072	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	-0.09	0	7	08626	QPSK	1	0	10 mm	top	1:1	0.027	1.337	0.036	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	-0.16	1	7	08626	QPSK	25	12	10 mm	top	1:1	0.019	1.262	0.024	
2310.00	27710	Mid	LTE Band 30	10	22.0	20.74	0.04	0	7	08626	QPSK	1	0	10 mm	right	1:1	0.121	1.337	0.162	
2310.00	27710	Mid	LTE Band 30	10	21.0	19.99	0.15	1	7	08626	QPSK	25	12	10 mm	right	1:1	0.095	1.262	0.120	
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 11-50
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	-0.01	0	08568	QPSK	1	50	10 mm	back	1:1.58	0.199	1.076	0.214	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.12	1	08568	QPSK	50	25	10 mm	back	1:1.58	0.176	1.030	0.181	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	24.80	0.17	0	08568	QPSK	1	0	10 mm	front	1:1.58	0.251	1.175	0.295	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	0.04	0	08568	QPSK	1	50	10 mm	front	1:1.58	0.370	1.076	0.398	A58
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.01	1	08568	QPSK	50	25	10 mm	front	1:1.58	0.306	1.030	0.315	
2 CC Uplink	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.50	0.06	0	08568	QPSK	1	0	10 mm	front	1:1.58	0.305	1.000	0.305	
	SCC	2616.70	40857	Mid-High	LTE Band 41	20							1	99	10 mm	front	1:1.58				
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	-0.04	0	08568	QPSK	1	50	10 mm	bottom	1:1.58	0.367	1.076	0.395	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	-0.04	1	08568	QPSK	50	25	10 mm	bottom	1:1.58	0.307	1.030	0.316	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.5	25.18	-0.13	0	08568	QPSK	1	50	10 mm	right	1:1.58	0.128	1.076	0.138	
1 CC Uplink	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.37	0.07	1	08568	QPSK	50	25	10 mm	right	1:1.58	0.097	1.030	0.100	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Body											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

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Table 11-51
NR Band n71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.02	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.308	1.067	0.329	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.07	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.322	1.099	0.354	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	-0.05	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.321	1.067	0.343	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.06	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.304	1.099	0.334	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.03	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	bottom	1:1	0.138	1.067	0.147	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	-0.02	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.140	1.099	0.154	
680.50	136100	Mid	NR Band n71	20	25.7	25.42	0.14	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	left	1:1	0.365	1.067	0.389	
680.50	136100	Mid	NR Band n71	20	25.7	25.29	0.05	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	left	1:1	0.386	1.099	0.424	A60
680.50	136100	Mid	NR Band n71	20	24.2	24.20	-0.02	1.5	08626	CP-OFDM QPSK	1	1	10 mm	left	1:1	0.280	1.000	0.280	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-52
NR Band n5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.03	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.376	1.002	0.377	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.00	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	back	1:1	0.381	1.091	0.416	A61
836.50	167300	Mid	NR Band n5 (Cell)	20	24.2	24.20	0.00	1.5	08626	CP-OFDM QPSK	1	1	10 mm	back	1:1	0.292	1.000	0.292	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.02	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.330	1.002	0.331	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	-0.05	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	front	1:1	0.320	1.091	0.349	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	0.07	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	bottom	1:1	0.198	1.002	0.198	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	0.01	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	bottom	1:1	0.200	1.091	0.218	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.69	-0.11	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	left	1:1	0.129	1.002	0.129	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.7	25.32	-0.05	0	08626	DFT-S-OFDM QPSK	50	28	10 mm	left	1:1	0.125	1.091	0.136	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body 1.6 W/kg (mW/g) averaged over 1 gram											
Spatial Peak Uncontrolled Exposure/General Population																			

Table 11-53
NR Band n66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR[dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.01	0	08634	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.145	1.079	0.156	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.12	-0.01	0	08634	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.143	1.091	0.156	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.01	0	08634	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.181	1.079	0.195	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.05	0	08634	DFT-S-OFDM QPSK	50	0	10 mm	front	1:1	0.178	1.091	0.194	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.00	0	08634	DFT-S-OFDM QPSK	1	1	10 mm	top	1:1	0.081	1.079	0.087	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.03	0	08634	DFT-S-OFDM QPSK	50	0	10 mm	top	1:1	0.087	1.091	0.095	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.17	-0.04	0	08634	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.329	1.079	0.355	
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.03	0	08634	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.332	1.091	0.362	A63
1720.00	3440000	Low	NR Band n66 (AWS)	20	23.5	22.94	-0.01	0	08634	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.312	1.138	0.355	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

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Table 11-54
NR Band n2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.06	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	back	1:1	0.182	1.023	0.186	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.05	0	08626	DFT-S-OFDM QPSK	50	0	10 mm	back	1:1	0.164	1.104	0.181	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	-0.12	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	front	1:1	0.167	1.023	0.171	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	0.17	0	08626	DFT-S-OFDM QPSK	50	0	10 mm	front	1:1	0.149	1.104	0.164	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.05	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	top	1:1	0.061	1.023	0.062	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	0.16	0	08626	DFT-S-OFDM QPSK	50	0	10 mm	top	1:1	0.059	1.104	0.065	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.18	0	08626	DFT-S-OFDM QPSK	1	1	10 mm	right	1:1	0.340	1.023	0.348	A65
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	0.12	0	08626	DFT-S-OFDM QPSK	50	0	10 mm	right	1:1	0.328	1.104	0.362	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	23.22	-0.06	0	08626	CP-OFDM QPSK	1	1	10 mm	right	1:1	0.262	1.067	0.280	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak								Body 1.6 W/kg (mW/g) averaged over 1 gram											
Uncontrolled Exposure/General Population																			

Table 11-55
WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.39	-0.04	10 mm	1	08618	1	back	99.0	0.418	0.267	1.151	1.010	0.310	
2412	1	802.11b	DSSS	22	21.0	20.39	0.05	10 mm	1	08618	1	front	99.0	0.304	0.215	1.151	1.010	0.250	
2412	1	802.11b	DSSS	22	21.0	20.39	0.20	10 mm	1	08618	1	top	99.0	0.049	-	1.151	1.010	-	
2412	1	802.11b	DSSS	22	21.0	20.39	0.05	10 mm	1	08618	1	left	99.0	0.654	0.394	1.151	1.010	0.458	A67
2437	6	802.11b	DSSS	22	21.0	20.79	0.02	10 mm	2	08618	1	back	99.1	0.270	0.177	1.050	1.009	0.188	
2437	6	802.11b	DSSS	22	21.0	20.79	0.11	10 mm	2	08618	1	front	99.1	0.254	0.173	1.050	1.009	0.183	
2437	6	802.11b	DSSS	22	21.0	20.79	0.05	10 mm	2	08618	1	top	99.1	0.125	-	1.050	1.009	-	
2437	6	802.11b	DSSS	22	21.0	20.79	-0.16	10 mm	2	08618	1	left	99.1	0.165	-	1.050	1.009	-	
5200	40	802.11a	OFDM	20	18.5	17.92	0.14	10 mm	1	08618	6	back	98.3	0.403	0.210	1.143	1.017	0.244	
5200	40	802.11a	OFDM	20	18.5	17.92	0.18	10 mm	1	08618	6	front	98.3	0.050	0.018	1.143	1.017	0.021	
5200	40	802.11a	OFDM	20	18.5	17.92	0.12	10 mm	1	08618	6	top	98.3	0.244	-	1.143	1.017	-	
5200	40	802.11a	OFDM	20	18.5	17.92	0.00	10 mm	1	08618	6	left	98.3	0.072	-	1.143	1.017	-	
5200	40	802.11a	OFDM	20	18.0	17.49	0.03	10 mm	2	08618	6	back	98.3	0.395	0.184	1.125	1.017	0.211	
5200	40	802.11a	OFDM	20	18.0	17.49	-0.05	10 mm	2	08618	6	front	98.3	0.066	0.031	1.125	1.017	0.035	
5200	40	802.11a	OFDM	20	18.0	17.49	0.14	10 mm	2	08618	6	top	98.3	0.109	-	1.125	1.017	-	
5200	40	802.11a	OFDM	20	18.0	17.49	0.12	10 mm	2	08618	6	left	98.3	0.278	-	1.125	1.017	-	
5805	161	802.11a	OFDM	20	18.5	18.25	0.21	10 mm	1	08618	6	back	98.3	0.316	0.121	1.059	1.017	0.130	
5805	161	802.11a	OFDM	20	18.5	18.25	-0.04	10 mm	1	08618	6	front	98.3	0.011	0.002	1.059	1.017	0.002	
5805	161	802.11a	OFDM	20	18.5	18.25	0.17	10 mm	1	08618	6	top	98.3	0.176	-	1.059	1.017	-	
5805	161	802.11a	OFDM	20	18.5	18.25	-0.19	10 mm	1	08618	6	left	98.3	0.035	-	1.059	1.017	-	
5785	157	802.11a	OFDM	20	18.0	17.07	-0.08	10 mm	2	08618	6	back	98.3	1.401	0.634	1.239	1.017	0.799	
5805	161	802.11a	OFDM	20	18.0	17.06	-0.04	10 mm	2	08618	6	back	98.3	1.480	0.669	1.242	1.017	0.845	
5825	165	802.11a	OFDM	20	18.0	17.02	0.01	10 mm	2	08618	6	back	98.3	1.510	0.683	1.253	1.017	0.870	A68
5785	157	802.11a	OFDM	20	18.0	17.07	0.04	10 mm	2	08618	6	front	98.3	0.227	0.107	1.239	1.017	0.135	
5785	157	802.11a	OFDM	20	18.0	17.07	0.14	10 mm	2	08618	6	top	98.3	0.353	-	1.239	1.017	-	
5785	157	802.11a	OFDM	20	18.0	17.07	0.16	10 mm	2	08618	6	left	98.3	0.888	0.377	1.239	1.017	0.475	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

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Table 11-56
WLAN MIMO Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR(1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2437	6	802.11g	OFDM	20	20.0	19.36	20.0	19.25	0.16	10 mm	MIMO	08618	6	back	98.1	0.263	0.177	1.189	1.019	0.214	
2437	6	802.11g	OFDM	20	20.0	19.36	20.0	19.25	0.05	10 mm	MIMO	08618	6	front	98.1	0.243	0.151	1.189	1.019	0.183	
2437	6	802.11g	OFDM	20	20.0	19.36	20.0	19.25	0.03	10 mm	MIMO	08618	6	top	98.1	0.077	-	1.189	1.019	-	
2437	6	802.11g	OFDM	20	20.0	19.36	20.0	19.25	0.03	10 mm	MIMO	08618	6	left	98.1	0.414	0.264	1.189	1.019	0.320	
5200	40	802.11n	OFDM	20	18.5	17.90	18.0	17.32	0.13	10 mm	MIMO	08618	13	back	97.9	0.623	0.331	1.169	1.021	0.395	
5200	40	802.11n	OFDM	20	18.5	17.90	18.0	17.32	0.00	10 mm	MIMO	08618	13	front	97.9	0.078	0.007	1.169	1.021	0.008	
5200	40	802.11n	OFDM	20	18.5	17.90	18.0	17.32	0.16	10 mm	MIMO	08618	13	top	97.9	0.308	-	1.169	1.021	-	
5200	40	802.11n	OFDM	20	18.5	17.90	18.0	17.32	-0.20	10 mm	MIMO	08618	13	left	97.9	0.315	-	1.169	1.021	-	
5785	157	802.11n	OFDM	20	18.5	17.98	18.0	17.03	0.13	10 mm	MIMO	08618	13	back	97.9	1.300	0.602	1.250	1.021	0.768	
5805	161	802.11n	OFDM	20	18.5	17.94	18.0	17.03	0.05	10 mm	MIMO	08618	13	back	97.9	1.359	0.616	1.250	1.021	0.786	
5825	165	802.11n	OFDM	20	18.5	17.97	18.0	17.01	-0.09	10 mm	MIMO	08618	13	back	97.9	1.412	0.613	1.256	1.021	0.786	
5785	157	802.11n	OFDM	20	18.5	17.98	18.0	17.03	0.04	10 mm	MIMO	08618	13	front	97.9	0.227	0.092	1.250	1.021	0.117	
5785	157	802.11n	OFDM	20	18.5	17.98	18.0	17.03	0.14	10 mm	MIMO	08618	13	top	97.9	0.479	-	1.250	1.021	-	
5785	157	802.11n	OFDM	20	18.5	17.98	18.0	17.03	0.20	10 mm	MIMO	08618	13	left	97.9	0.905	0.389	1.250	1.021	0.496	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Body											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Notes:

- To achieve the 23 dBm maximum allowed MIMO power shown in the documentation for channel 6, each antenna transmits at a maximum allowed power of 20 dBm.
- To achieve the 21.3 dBm maximum allowed 5GHz WLAN MIMO power shown in the documentation for channels 40, 157, 161, and 165, antenna 1 transmits at a maximum allowed power of 18.5 dBm, and antenna 2 transmits at a maximum allowed power of 18.0 dBm.

Table 11-57
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.5	12.24	-0.11	10 mm	08600	1	back	76.9	0.022	1.062	1.300	0.030	
2441	39	Bluetooth	FHSS	12.5	12.24	0.11	10 mm	08600	1	front	76.9	0.018	1.062	1.300	0.025	
2441	39	Bluetooth	FHSS	12.5	12.24	0.16	10 mm	08600	1	top	76.9	0.002	1.062	1.300	0.003	
2441	39	Bluetooth	FHSS	12.5	12.24	-0.03	10 mm	08600	1	left	76.9	0.025	1.062	1.300	0.035	A70
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Body									
Spatial Peak							1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population							averaged over 1 gram									

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11.4 Standalone Phablet SAR Data

Table 11-58
NR Band n66 (AWS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.66	-0.02	0	08634	DFT-S-OFDM QPSK	1	1	5 mm	back	1:1	0.302	1.213	0.366	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.39	0.01	0	08634	DFT-S-OFDM QPSK	50	28	5 mm	back	1:1	0.369	1.291	0.476	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.66	0.01	0	08634	DFT-S-OFDM QPSK	1	1	4 mm	front	1:1	0.657	1.213	0.797	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.39	-0.20	0	08634	DFT-S-OFDM QPSK	50	28	4 mm	front	1:1	0.668	1.291	0.862	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.66	-0.01	0	08634	DFT-S-OFDM QPSK	1	1	6 mm	top	1:1	0.098	1.213	0.119	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.39	-0.03	0	08634	DFT-S-OFDM QPSK	50	28	6 mm	top	1:1	0.099	1.291	0.128	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.66	-0.05	0	08634	DFT-S-OFDM QPSK	1	1	2 mm	right	1:1	1.050	1.213	1.274	
1720.00	344000	Low	NR Band n66 (AWS)	20	25.5	24.39	-0.08	0	08634	DFT-S-OFDM QPSK	50	28	2 mm	right	1:1	1.090	1.291	1.407	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	-0.04	0	08634	DFT-S-OFDM QPSK	1	1	0 mm	back	1:1	0.739	1.079	0.797	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	-0.14	0	08634	DFT-S-OFDM QPSK	50	0	0 mm	back	1:1	0.695	1.091	0.758	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	0.01	0	08634	DFT-S-OFDM QPSK	1	1	0 mm	front	1:1	0.818	1.079	0.883	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.01	0	08634	DFT-S-OFDM QPSK	50	0	0 mm	front	1:1	0.819	1.091	0.894	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	-0.15	0	08634	DFT-S-OFDM QPSK	1	1	0 mm	top	1:1	0.159	1.079	0.172	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	-0.08	0	08634	DFT-S-OFDM QPSK	50	0	0 mm	top	1:1	0.145	1.091	0.158	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.17	-0.06	0	08634	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	1.360	1.079	1.467	A71
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	23.12	0.08	0	08634	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	1.340	1.091	1.462	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	22.94	-0.18	0	08634	CP-OFDM QPSK	1	1	0 mm	right	1:1	1.290	1.138	1.468	
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 11-59
NR Band n2 (PCS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maxum 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)			
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	25.24	0.09	0	08364	DFT-S-OFDM QPSK	1	53	5 mm	back	1:1	0.299	1.062	0.318	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	24.22	-0.05	0	08364	DFT-S-OFDM QPSK	50	28	5 mm	back	1:1	0.263	1.343	0.353	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	25.24	0.06	0	08364	DFT-S-OFDM QPSK	1	53	4 mm	front	1:1	0.366	1.062	0.389	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	24.22	-0.01	0	08364	DFT-S-OFDM QPSK	50	28	4 mm	front	1:1	0.342	1.343	0.459	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	25.24	0.15	0	08364	DFT-S-OFDM QPSK	1	53	6 mm	top	1:1	0.145	1.062	0.154	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	24.22	-0.11	0	08364	DFT-S-OFDM QPSK	50	28	6 mm	top	1:1	0.139	1.343	0.187	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	25.24	-0.13	0	08364	DFT-S-OFDM QPSK	1	53	2 mm	right	1:1	0.833	1.062	0.885	
1900.00	380000	High	NR Band n2 (PCS)	20	25.5	24.22	-0.13	0	08364	DFT-S-OFDM QPSK	50	28	2 mm	right	1:1	0.723	1.343	0.971	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.17	0	08626	DFT-S-OFDM QPSK	1	1	0 mm	back	1:1	0.952	1.023	0.974	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.16	0	08626	DFT-S-OFDM QPSK	50	0	0 mm	back	1:1	0.967	1.104	1.068	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.01	0	08626	DFT-S-OFDM QPSK	1	1	0 mm	front	1:1	0.864	1.023	0.884	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.09	0	08626	DFT-S-OFDM QPSK	50	0	0 mm	front	1:1	0.978	1.104	1.080	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	0.20	0	08626	DFT-S-OFDM QPSK	1	1	0 mm	top	1:1	0.177	1.023	0.181	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	-0.01	0	08626	DFT-S-OFDM QPSK	50	0	0 mm	top	1:1	0.155	1.104	0.171	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.40	-0.01	0	08626	DFT-S-OFDM QPSK	1	1	0 mm	right	1:1	1.330	1.023	1.361	
1860.00	372000	Low	NR Band n2 (PCS)	20	23.5	23.01	0.10	0	08626	DFT-S-OFDM QPSK	50	56	0 mm	right	1:1	1.490	1.119	1.667	
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	22.95	0.10	0	08626	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	1.450	1.135	1.646	
1900.00	380000	High	NR Band n2 (PCS)	20	23.5	23.07	0.13	0	08626	DFT-S-OFDM QPSK	50	0	0 mm	right	1:1	1.520	1.104	1.678	A72
1880.00	376000	Mid	NR Band n2 (PCS)	20	23.5	23.22	0.01	0	08626	CP-OFDM QPSK	1	1	0 mm	right	1:1	1.490	1.067	1.590	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

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Table 11-60
WLAN SISO Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.5	18.23	0.14	0 mm	1	08618	6	back	98.3	23.111	1.030	1.064	1.017	1.115	
5280	56	802.11a	OFDM	20	18.5	18.23	0.19	0 mm	1	08618	6	front	98.3	0.390	-	1.064	1.017	-	
5280	56	802.11a	OFDM	20	18.5	18.23	-0.15	0 mm	1	08618	6	top	98.3	3.850	0.367	1.064	1.017	0.397	
5280	56	802.11a	OFDM	20	18.5	18.23	-0.19	0 mm	1	08618	6	left	98.3	0.477	-	1.064	1.017	-	
5280	56	802.11a	OFDM	20	18.0	17.53	-0.12	0 mm	2	08618	6	back	98.3	9.210	1.290	1.114	1.017	1.461	
5280	56	802.11a	OFDM	20	18.0	17.53	0.14	0 mm	2	08618	6	front	98.3	0.768	-	1.114	1.017	-	
5280	56	802.11a	OFDM	20	18.0	17.53	0.18	0 mm	2	08618	6	top	98.3	0.558	-	1.114	1.017	-	
5280	56	802.11a	OFDM	20	18.0	17.53	-0.20	0 mm	2	08618	6	left	98.3	5.030	0.456	1.114	1.017	0.517	
5500	100	802.11a	OFDM	20	16.5	16.19	-0.04	0 mm	1	08618	6	back	98.3	5.138	0.309	1.074	1.017	0.338	
5500	100	802.11a	OFDM	20	16.5	16.19	0.19	0 mm	1	08618	6	front	98.3	0.227	-	1.074	1.017	-	
5500	100	802.11a	OFDM	20	16.5	16.19	0.21	0 mm	1	08618	6	top	98.3	2.448	-	1.074	1.017	-	
5500	100	802.11a	OFDM	20	16.5	16.19	0.10	0 mm	1	08618	6	left	98.3	0.299	-	1.074	1.017	-	
5500	100	802.11a	OFDM	20	16.0	15.41	-0.10	0 mm	2	08618	6	back	98.3	11.954	1.590	1.146	1.017	1.853	A73
5600	120	802.11a	OFDM	20	16.0	15.23	-0.10	0 mm	2	08618	6	back	98.3	10.103	1.430	1.194	1.017	1.736	
5720	144	802.11a	OFDM	20	16.0	15.19	-0.06	0 mm	2	08618	6	back	98.3	9.128	1.380	1.205	1.017	1.691	
5500	100	802.11a	OFDM	20	16.0	15.41	0.14	0 mm	2	08618	6	front	98.3	1.690	-	1.146	1.017	-	
5500	100	802.11a	OFDM	20	16.0	15.41	0.21	0 mm	2	08618	6	top	98.3	1.135	-	1.146	1.017	-	
5500	100	802.11a	OFDM	20	16.0	15.41	0.19	0 mm	2	08618	6	left	98.3	8.465	0.818	1.146	1.017	0.953	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Table 11-61
WLAN MIMO Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5260	52	802.11n	OFDM	20	16.5	15.98	16.0	15.43	-0.01	0 mm	MIMO	08618	13	back	97.9	4.389	0.447	1.140	1.021	0.520	
5280	56	802.11n	OFDM	20	18.5	17.95	18.0	17.41	-0.12	0 mm	MIMO	08618	13	back	97.9	13.767	1.320	1.146	1.021	1.544	
5300	60	802.11n	OFDM	20	16.5	15.96	16.0	15.43	-0.12	0 mm	MIMO	08618	13	back	97.9	8.052	0.491	1.140	1.021	0.571	
5280	56	802.11n	OFDM	20	18.5	17.95	18.0	17.41	0.19	0 mm	MIMO	08618	13	front	97.9	1.133	-	1.146	1.021	-	
5280	56	802.11n	OFDM	20	18.5	17.95	18.0	17.41	0.18	0 mm	MIMO	08618	13	top	97.9	4.348	-	1.146	1.021	-	
5280	56	802.11n	OFDM	20	18.5	17.95	18.0	17.41	-0.12	0 mm	MIMO	08618	13	left	97.9	4.594	0.521	1.146	1.021	0.610	
5500	100	802.11n	OFDM	20	16.5	15.93	16.0	15.27	-0.06	0 mm	MIMO	08618	13	back	97.9	10.152	1.180	1.183	1.021	1.425	
5500	100	802.11n	OFDM	20	16.5	15.93	16.0	15.27	0.19	0 mm	MIMO	08618	13	front	97.9	2.311	-	1.183	1.021	-	
5500	100	802.11n	OFDM	20	16.5	15.93	16.0	15.27	0.15	0 mm	MIMO	08618	13	top	97.9	3.199	-	1.183	1.021	-	
5500	100	802.11n	OFDM	20	16.5	15.93	16.0	15.27	0.17	0 mm	MIMO	08618	13	left	97.9	7.691	0.816	1.183	1.021	0.986	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Phablet										
Spatial Peak											4.0 W/kg (mW/g)										
Uncontrolled Exposure/General Population											averaged over 10 grams										

Notes:

- To achieve the 21.3 dBm maximum allowed MIMO power shown in the documentation for channel 56, antenna 1 transmits at a maximum allowed power of 18.5 dBm, and antenna 2 transmits at a maximum allowed power of 18.0 dBm.
- To achieve the 19.3 dBm maximum allowed MIMO power shown in the documentation for channels 52, 60, and 100, antenna 1 transmits at a maximum allowed power of 16.5 dBm, and antenna 2 transmits at a maximum allowed power of 16.0 dBm.

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11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.
11. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
12. The orange highlights throughout the report represents the highest SAR per FCC Equipment Class reflected on the FCC Grant.

GSM Test Notes:

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

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CDMA Notes:

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

UMTS Notes:

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

LTE Notes:

1. LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. For LTE Band 5, LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

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NR Notes:

1. NR implementation is limited to EN-DC operations only. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
3. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
4. Per FCC Guidance, NR modulations and RB Sizes/Offsets were selected for testing such that configurations with the highest output power were evaluated for SAR tests.

WLAN Notes:

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

Bluetooth Notes

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

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

LTE B25 SAR additionally represents LTE B2 Ant 2 since their transmission frequency ranges are overlapped and they share the same transmission path and signal characteristics.

12.2 Simultaneous Transmission Procedures

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

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

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

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12.3 Head SAR Simultaneous Transmission Analysis

Table 12-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN SISO (Held to Ear) [1 of 2]

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	
Head SAR	CDMA BC10 (§90S)	0.165	0.548	0.844	0.713	1.009	
	CDMA BC0 (§22H)	0.177	0.548	0.844	0.725	1.021	
	PCS CDMA	0.129	0.548	0.844	0.677	0.973	
	GSM/GPRS 850	0.154	0.548	0.844	0.702	0.998	
	GSM/GPRS 1900	0.072	0.548	0.844	0.620	0.916	
	UMTS 850	0.185	0.548	0.844	0.733	1.029	
	UMTS 1750	0.153	0.548	0.844	0.701	0.997	
	UMTS 1900	0.133	0.548	0.844	0.681	0.977	
	LTE Band 71	0.152	0.548	0.844	0.700	0.996	
	LTE Band 12	0.173	0.548	0.844	0.721	1.017	
	LTE Band 13	0.207	0.548	0.844	0.755	1.051	
	LTE Band 14	0.154	0.548	0.844	0.702	0.998	
	LTE Band 26 (Cell)	0.185	0.548	0.844	0.733	1.029	
	LTE Band 5 (Cell)	0.188	0.548	0.844	0.736	1.032	
	LTE Band 66 (AWS)	0.176	0.548	0.844	0.724	1.020	
	LTE Band 25 (PCS)	0.113	0.548	0.844	0.661	0.957	
	LTE Band 30	0.058	0.548	0.844	0.606	0.902	
	LTE Band 41	0.130	0.548	0.844	0.678	0.974	
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.168	0.548	0.844	1.518	See Table Below
	LTE Band 2 (PCS) Ant 7	0.817	0.168	0.548	0.844	1.533	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.142	0.548	0.844	1.492	See Table Below
	LTE Band 2 (PCS) Ant 7	0.817	0.142	0.548	0.844	1.507	See Table Below
	LTE Band 30 Ant 7	0.464	0.142	0.548	0.844	1.154	1.450

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Table 12-2
Simultaneous Transmission Scenario with 2.4 GHz WLAN SISO (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n71 SAR (W/kg)	LTE Band 66 (AWS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 66 (AWS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.164	0.312	0.548	0.844	1.024	1.320	Head SAR	Right Cheek	0.142	0.312	0.548	0.844	1.002	1.298
	Right Tilt	0.074	0.295	0.133	0.491	0.502	0.860		Right Tilt	0.076	0.295	0.133	0.491	0.504	0.862
	Left Cheek	0.168	0.802	0.141	0.176	1.111	1.146		Left Cheek	0.132	0.802	0.141	0.176	1.075	1.110
	Left Tilt	0.084	0.234	0.067	0.190	0.385	0.508		Left Tilt	0.091	0.234	0.067	0.190	0.392	0.515
Simult Tx	Configuration	NR Band n71 SAR (W/kg)	LTE Band 2 (PCS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 2 (PCS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.164	0.231	0.548	0.844	0.943	1.239	Head SAR	Right Cheek	0.142	0.231	0.548	0.844	0.921	1.217
	Right Tilt	0.074	0.160	0.133	0.491	0.367	0.725		Right Tilt	0.076	0.160	0.133	0.491	0.369	0.727
	Left Cheek	0.168	0.817	0.141	0.176	1.126	1.161		Left Cheek	0.132	0.817	0.141	0.176	1.090	1.125
	Left Tilt	0.084	0.263	0.067	0.190	0.414	0.537		Left Tilt	0.091	0.263	0.067	0.190	0.421	0.544
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.420	0.173	0.548	0.844	1.141	1.437	Head SAR	Right Cheek	0.280	0.173	0.548	0.844	1.001	1.297
	Right Tilt	0.405	0.079	0.133	0.491	0.617	0.975		Right Tilt	0.258	0.079	0.133	0.491	0.470	0.828
	Left Cheek	1.132	0.154	0.141	0.176	1.427	1.462		Left Cheek	1.076	0.154	0.141	0.176	1.371	1.406
	Left Tilt	0.305	0.084	0.067	0.190	0.456	0.579		Left Tilt	0.331	0.084	0.067	0.190	0.482	0.605
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.420	0.149	0.548	0.844	1.117	1.413	Head SAR	Right Cheek	0.280	0.149	0.548	0.844	0.977	1.273
	Right Tilt	0.405	0.076	0.133	0.491	0.614	0.972		Right Tilt	0.258	0.076	0.133	0.491	0.467	0.825
	Left Cheek	1.132	0.154	0.141	0.176	1.427	1.462		Left Cheek	1.076	0.154	0.141	0.176	1.371	1.406
	Left Tilt	0.305	0.092	0.067	0.190	0.464	0.587		Left Tilt	0.331	0.092	0.067	0.190	0.490	0.613
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.420	0.188	0.548	0.844	1.156	1.452	Head SAR	Right Cheek	0.280	0.188	0.548	0.844	1.016	1.312
	Right Tilt	0.405	0.101	0.133	0.491	0.639	0.997		Right Tilt	0.258	0.101	0.133	0.491	0.492	0.850
	Left Cheek	1.132	0.177	0.141	0.176	1.450	1.485		Left Cheek	1.076	0.177	0.141	0.176	1.394	1.429
	Left Tilt	0.305	0.112	0.067	0.190	0.484	0.607		Left Tilt	0.331	0.112	0.067	0.190	0.510	0.633
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.420	0.082	0.548	0.844	1.050	1.346	Head SAR	Right Cheek	0.280	0.134	0.548	0.844	0.962	1.258
	Right Tilt	0.405	0.087	0.133	0.491	0.625	0.983		Right Tilt	0.258	0.110	0.133	0.491	0.501	0.859
	Left Cheek	1.132	0.113	0.141	0.176	1.386	1.421		Left Cheek	1.076	0.176	0.141	0.176	1.393	1.428
	Left Tilt	0.305	0.076	0.067	0.190	0.448	0.571		Left Tilt	0.331	0.108	0.067	0.190	0.506	0.629
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4			1	2	3	4	1+2+3	1+2+4
Head SAR	Right Cheek	0.420	0.030	0.548	0.844	0.998	1.294	Head SAR	Right Cheek	0.280	0.030	0.548	0.844	0.858	1.154
	Right Tilt	0.405	0.029	0.133	0.491	0.567	0.925		Right Tilt	0.258	0.029	0.133	0.491	0.420	0.778
	Left Cheek	1.132	0.058	0.141	0.176	1.331	1.366		Left Cheek	1.076	0.058	0.141	0.176	1.275	1.310
	Left Tilt	0.305	0.018	0.067	0.190	0.390	0.513		Left Tilt	0.331	0.018	0.067	0.190	0.416	0.539

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Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Held to Ear) [1 of 2]

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	CDMA BC10 (\$90S)	0.165	0.708	0.873
	CDMA BC0 (\$22H)	0.177	0.708	0.885
	PCS CDMA	0.129	0.708	0.837
	GSM/GPRS 850	0.154	0.708	0.862
	GSM/GPRS 1900	0.072	0.708	0.780
	UMTS 850	0.185	0.708	0.893
	UMTS 1750	0.153	0.708	0.861
	UMTS 1900	0.133	0.708	0.841
	LTE Band 71	0.152	0.708	0.860
	LTE Band 12	0.173	0.708	0.881
	LTE Band 13	0.207	0.708	0.915
	LTE Band 14	0.154	0.708	0.862
	LTE Band 26 (Cell)	0.185	0.708	0.893
	LTE Band 5 (Cell)	0.188	0.708	0.896
	LTE Band 66 (AWS)	0.176	0.708	0.884
	LTE Band 25 (PCS)	0.113	0.708	0.821
	LTE Band 30	0.058	0.708	0.766
	LTE Band 41	0.130	0.708	0.838

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 66 (AWS) Ant 7 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.142	0.312	0.708	1.162
	Right Tilt	0.076	0.295	0.487	0.858
	Left Cheek	0.132	0.802	0.188	1.122
	Left Tilt	0.091	0.234	0.153	0.478
Simult Tx	Configuration	NR Band n71 SAR (W/kg)	LTE Band 66 (AWS) Ant 7 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.164	0.312	0.708	1.184
	Right Tilt	0.074	0.295	0.487	0.856
	Left Cheek	0.168	0.802	0.188	1.158
	Left Tilt	0.084	0.234	0.153	0.471
Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 2 (PCS) Ant 7 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.142	0.231	0.708	1.081
	Right Tilt	0.076	0.160	0.487	0.723
	Left Cheek	0.132	0.817	0.188	1.137
	Left Tilt	0.091	0.263	0.153	0.507
Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 30 Ant 7 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.142	0.163	0.708	1.013
	Right Tilt	0.076	0.140	0.487	0.703
	Left Cheek	0.132	0.464	0.188	0.784
	Left Tilt	0.091	0.301	0.153	0.545

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Table 12-4
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.173	0.708	1.301	Head SAR	Right Cheek	0.280	0.173	0.708	1.161
	Right Tilt	0.405	0.079	0.487	0.971		Right Tilt	0.258	0.079	0.487	0.824
	Left Cheek	1.132	0.154	0.188	1.474		Left Cheek	1.076	0.154	0.188	1.418
	Left Tilt	0.305	0.084	0.153	0.542		Left Tilt	0.331	0.084	0.153	0.568
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.149	0.708	1.277	Head SAR	Right Cheek	0.280	0.149	0.708	1.137
	Right Tilt	0.405	0.076	0.487	0.968		Right Tilt	0.258	0.076	0.487	0.821
	Left Cheek	1.132	0.154	0.188	1.474		Left Cheek	1.076	0.154	0.188	1.418
	Left Tilt	0.305	0.092	0.153	0.550		Left Tilt	0.331	0.092	0.153	0.576
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.188	0.708	1.316	Head SAR	Right Cheek	0.280	0.188	0.708	1.176
	Right Tilt	0.405	0.101	0.487	0.993		Right Tilt	0.258	0.101	0.487	0.846
	Left Cheek	1.132	0.177	0.188	1.497		Left Cheek	1.076	0.177	0.188	1.441
	Left Tilt	0.305	0.112	0.153	0.570		Left Tilt	0.331	0.112	0.153	0.596
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.082	0.708	1.210	Head SAR	Right Cheek	0.280	0.134	0.708	1.122
	Right Tilt	0.405	0.087	0.487	0.979		Right Tilt	0.258	0.110	0.487	0.855
	Left Cheek	1.132	0.113	0.188	1.433		Left Cheek	1.076	0.176	0.188	1.440
	Left Tilt	0.305	0.076	0.153	0.534		Left Tilt	0.331	0.108	0.153	0.592
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	1	2	1+2+3
Head SAR	Right Cheek	0.420	0.030	0.708	1.158	Head SAR	Right Cheek	0.280	0.030	0.708	1.018
	Right Tilt	0.405	0.029	0.487	0.921		Right Tilt	0.258	0.029	0.487	0.774
	Left Cheek	1.132	0.058	0.188	1.378		Left Cheek	1.076	0.058	0.188	1.322
	Left Tilt	0.305	0.018	0.153	0.476		Left Tilt	0.331	0.018	0.153	0.502

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Table 12-5
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Held to Ear) [1 of 2]

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	
Head SAR	CDMA BC10 (§90S)	0.165	0.191	0.372	0.356	0.537	
	CDMA BC0 (§22H)	0.177	0.191	0.372	0.368	0.549	
	PCS CDMA	0.129	0.191	0.372	0.320	0.501	
	GSM/GPRS 850	0.154	0.191	0.372	0.345	0.526	
	GSM/GPRS 1900	0.072	0.191	0.372	0.263	0.444	
	UMTS 850	0.185	0.191	0.372	0.376	0.557	
	UMTS 1750	0.153	0.191	0.372	0.344	0.525	
	UMTS 1900	0.133	0.191	0.372	0.324	0.505	
	LTE Band 71	0.152	0.191	0.372	0.343	0.524	
	LTE Band 12	0.173	0.191	0.372	0.364	0.545	
	LTE Band 13	0.207	0.191	0.372	0.398	0.579	
	LTE Band 14	0.154	0.191	0.372	0.345	0.526	
	LTE Band 26 (Cell)	0.185	0.191	0.372	0.376	0.557	
	LTE Band 5 (Cell)	0.188	0.191	0.372	0.379	0.560	
	LTE Band 66 (AWS)	0.176	0.191	0.372	0.367	0.548	
	LTE Band 25 (PCS)	0.113	0.191	0.372	0.304	0.485	
LTE Band 30	0.058	0.191	0.372	0.249	0.430		
LTE Band 41	0.130	0.191	0.372	0.321	0.502		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.168	0.191	0.372	1.161	1.342
	LTE Band 2 (PCS) Ant 7	0.817	0.168	0.191	0.372	1.176	1.357
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.142	0.191	0.372	1.135	1.316
	LTE Band 2 (PCS) Ant 7	0.817	0.142	0.191	0.372	1.150	1.331
	LTE Band 30 Ant 7	0.464	0.142	0.191	0.372	0.797	0.978
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 12	0.173	1.132	0.191	0.372	1.496	See Table Below
	LTE Band 14	0.154	1.132	0.191	0.372	1.477	See Table Below
	LTE Band 5 (Cell)	0.188	1.132	0.191	0.372	1.511	See Table Below
	LTE Band 2 (PCS)	0.113	1.132	0.191	0.372	1.436	See Table Below
	LTE Band 30	0.058	1.132	0.191	0.372	1.381	1.562
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Head SAR	LTE Band 12	0.173	1.076	0.191	0.372	1.440	See Table Below
	LTE Band 14	0.154	1.076	0.191	0.372	1.421	See Table Below
	LTE Band 5 (Cell)	0.188	1.076	0.191	0.372	1.455	See Table Below
	LTE Band 66 (AWS)	0.176	1.076	0.191	0.372	1.443	See Table Below
	LTE Band 30	0.058	1.076	0.191	0.372	1.325	1.506

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Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.173	0.372	0.965	Head SAR	Right Cheek	0.280	0.173	0.372	0.825
	Right Tilt	0.405	0.079	0.372*	0.856		Right Tilt	0.258	0.079	0.372*	0.709
	Left Cheek	1.132	0.154	0.201	1.487		Left Cheek	1.076	0.154	0.201	1.431
	Left Tilt	0.305	0.084	0.372*	0.761		Left Tilt	0.331	0.084	0.372*	0.787
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.149	0.372	0.941	Head SAR	Right Cheek	0.280	0.149	0.372	0.801
	Right Tilt	0.405	0.076	0.372*	0.853		Right Tilt	0.258	0.076	0.372*	0.706
	Left Cheek	1.132	0.154	0.201	1.487		Left Cheek	1.076	0.154	0.201	1.431
	Left Tilt	0.305	0.092	0.372*	0.769		Left Tilt	0.331	0.092	0.372*	0.795
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.188	0.372	0.980	Head SAR	Right Cheek	0.280	0.188	0.372	0.840
	Right Tilt	0.405	0.101	0.372*	0.878		Right Tilt	0.258	0.101	0.372*	0.731
	Left Cheek	1.132	0.177	0.201	1.510		Left Cheek	1.076	0.177	0.201	1.454
	Left Tilt	0.305	0.112	0.372*	0.789		Left Tilt	0.331	0.112	0.372*	0.815
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.082	0.372	0.874	Head SAR	Right Cheek	0.280	0.134	0.372	0.786
	Right Tilt	0.405	0.087	0.372*	0.864		Right Tilt	0.258	0.110	0.372*	0.740
	Left Cheek	1.132	0.113	0.201	1.446		Left Cheek	1.076	0.176	0.201	1.453
	Left Tilt	0.305	0.076	0.372*	0.753		Left Tilt	0.331	0.108	0.372*	0.811

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Table 12-7
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Held to Ear) [1 of 2]

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	CDMA BC10 (\$90S)	0.165	0.365	0.530	
	CDMA BC0 (\$22H)	0.177	0.365	0.542	
	PCS CDMA	0.129	0.365	0.494	
	GSM/GPRS 850	0.154	0.365	0.519	
	GSM/GPRS 1900	0.072	0.365	0.437	
	UMTS 850	0.185	0.365	0.550	
	UMTS 1750	0.153	0.365	0.518	
	UMTS 1900	0.133	0.365	0.498	
	LTE Band 71	0.152	0.365	0.517	
	LTE Band 12	0.173	0.365	0.538	
	LTE Band 13	0.207	0.365	0.572	
	LTE Band 14	0.154	0.365	0.519	
	LTE Band 26 (Cell)	0.185	0.365	0.550	
	LTE Band 5 (Cell)	0.188	0.365	0.553	
	LTE Band 66 (AWS)	0.176	0.365	0.541	
	LTE Band 25 (PCS)	0.113	0.365	0.478	
LTE Band 30	0.058	0.365	0.423		
LTE Band 41	0.130	0.365	0.495		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.168	0.365	1.335
	LTE Band 2 (PCS) Ant 7	0.817	0.168	0.365	1.350
Configuration	Mode	Anchor Band 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 66 (AWS) Ant 7	0.802	0.142	0.365	1.309
	LTE Band 2 (PCS) Ant 7	0.817	0.142	0.365	1.324
	LTE Band 30 Ant 7	0.464	0.142	0.365	0.971
Configuration	Mode	Anchor Band 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 12	0.173	1.132	0.365	See Table Below
	LTE Band 14	0.154	1.132	0.365	See Table Below
	LTE Band 5 (Cell)	0.188	1.132	0.365	See Table Below
	LTE Band 2 (PCS)	0.113	1.132	0.365	See Table Below
	LTE Band 30	0.058	1.132	0.365	1.555
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	LTE Band 12	0.173	1.076	0.365	See Table Below
	LTE Band 14	0.154	1.076	0.365	See Table Below
	LTE Band 5 (Cell)	0.188	1.076	0.365	See Table Below
	LTE Band 66 (AWS)	0.176	1.076	0.365	See Table Below
	LTE Band 30	0.058	1.076	0.365	1.499

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Table 12-8
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.173	0.365	0.958	Head SAR	Right Cheek	0.280	0.173	0.365	0.818
	Right Tilt	0.405	0.079	0.365*	0.849		Right Tilt	0.258	0.079	0.365*	0.702
	Left Cheek	1.132	0.154	0.187	1.473		Left Cheek	1.076	0.154	0.187	1.417
	Left Tilt	0.305	0.084	0.365*	0.754		Left Tilt	0.331	0.084	0.365*	0.780
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.149	0.365	0.934	Head SAR	Right Cheek	0.280	0.149	0.365	0.794
	Right Tilt	0.405	0.076	0.365*	0.846		Right Tilt	0.258	0.076	0.365*	0.699
	Left Cheek	1.132	0.154	0.187	1.473		Left Cheek	1.076	0.154	0.187	1.417
	Left Tilt	0.305	0.092	0.365*	0.762		Left Tilt	0.331	0.092	0.365*	0.788
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.188	0.365	0.973	Head SAR	Right Cheek	0.280	0.188	0.365	0.833
	Right Tilt	0.405	0.101	0.365*	0.871		Right Tilt	0.258	0.101	0.365*	0.724
	Left Cheek	1.132	0.177	0.187	1.496		Left Cheek	1.076	0.177	0.187	1.440
	Left Tilt	0.305	0.112	0.365*	0.782		Left Tilt	0.331	0.112	0.365*	0.808
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Head SAR	Right Cheek	0.420	0.082	0.365	0.867	Head SAR	Right Cheek	0.280	0.134	0.365	0.779
	Right Tilt	0.405	0.087	0.365*	0.857		Right Tilt	0.258	0.110	0.365*	0.733
	Left Cheek	1.132	0.113	0.187	1.432		Left Cheek	1.076	0.176	0.187	1.439
	Left Tilt	0.305	0.076	0.365*	0.746		Left Tilt	0.331	0.108	0.365*	0.804

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Table 12-9
Simultaneous Transmission Scenario with Bluetooth (Held to Ear)

Configuration	Mode		2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	
			1	2	1+2	
Head SAR	CDMA BC10 (\$90S)		0.165	0.099	0.264	
	CDMA BC0 (\$22H)		0.177	0.099	0.276	
	PCS CDMA		0.129	0.099	0.228	
	GSM/GPRS 850		0.154	0.099	0.253	
	GSM/GPRS 1900		0.072	0.099	0.171	
	UMTS 850		0.185	0.099	0.284	
	UMTS 1750		0.153	0.099	0.252	
	UMTS 1900		0.133	0.099	0.232	
	LTE Band 71		0.152	0.099	0.251	
	LTE Band 12		0.173	0.099	0.272	
	LTE Band 13		0.207	0.099	0.306	
	LTE Band 14		0.154	0.099	0.253	
	LTE Band 26 (Cell)		0.185	0.099	0.284	
	LTE Band 5 (Cell)		0.188	0.099	0.287	
	LTE Band 66 (AWS)		0.176	0.099	0.275	
	LTE Band 25 (PCS)		0.113	0.099	0.212	
	LTE Band 30		0.058	0.099	0.157	
LTE Band 41		0.130	0.099	0.229		
Configuration	Mode		Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
			1	2	3	1+2+3
Head SAR	LTE Band 66 (AWS) Ant 7		0.802	0.168	0.099	1.069
	LTE Band 2 (PCS) Ant 7		0.817	0.168	0.099	1.084
Configuration	Mode		Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
			1	2	3	1+2+3
Head SAR	LTE Band 66 (AWS) Ant 7		0.802	0.142	0.099	1.043
	LTE Band 2 (PCS) Ant 7		0.817	0.142	0.099	1.058
	LTE Band 30 Ant 7		0.464	0.142	0.099	0.705
Configuration	Mode		Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
			1	2	3	1+2+3
Head SAR	LTE Band 12		0.173	1.132	0.099	1.404
	LTE Band 14		0.154	1.132	0.099	1.385
	LTE Band 5 (Cell)		0.188	1.132	0.099	1.419
	LTE Band 2 (PCS)		0.113	1.132	0.099	1.344
	LTE Band 30		0.058	1.132	0.099	1.289
Configuration	Mode		Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
			1	2	3	1+2+3
Head SAR	LTE Band 12		0.173	1.076	0.099	1.348
	LTE Band 14		0.154	1.076	0.099	1.329
	LTE Band 5 (Cell)		0.188	1.076	0.099	1.363
	LTE Band 66 (AWS)		0.176	1.076	0.099	1.351
	LTE Band 30		0.058	1.076	0.099	1.233

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	CDMA BC10 (\$90S)	0.165	0.844	0.099	1.108
	CDMA BC0 (\$22H)	0.177	0.844	0.099	1.120
	PCS CDMA	0.129	0.844	0.099	1.072
	GSM/GPRS 850	0.154	0.844	0.099	1.097
	GSM/GPRS 1900	0.072	0.844	0.099	1.015
	UMTS 850	0.185	0.844	0.099	1.128
	UMTS 1750	0.153	0.844	0.099	1.096
	UMTS 1900	0.133	0.844	0.099	1.076
	LTE Band 71	0.152	0.844	0.099	1.095
	LTE Band 12	0.173	0.844	0.099	1.116
	LTE Band 13	0.207	0.844	0.099	1.150
	LTE Band 14	0.154	0.844	0.099	1.097
	LTE Band 26 (Cell)	0.185	0.844	0.099	1.128
	LTE Band 5 (Cell)	0.188	0.844	0.099	1.131
	LTE Band 66 (AWS)	0.176	0.844	0.099	1.119
	LTE Band 25 (PCS)	0.113	0.844	0.099	1.056
	LTE Band 30	0.058	0.844	0.099	1.001
	LTE Band 41	0.130	0.844	0.099	1.073

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 66 (AWS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.142	0.312	0.844	0.099	1.397
	Right Tilt	0.076	0.295	0.491	0.022	0.884
	Left Cheek	0.132	0.802	0.176	0.026	1.136
	Left Tilt	0.091	0.234	0.190	0.007	0.522
Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 2 (PCS) Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.164	0.312	0.844	0.099	1.419
	Right Tilt	0.074	0.295	0.491	0.022	0.882
	Left Cheek	0.168	0.802	0.176	0.026	1.172
	Left Tilt	0.084	0.234	0.190	0.007	0.515
Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	LTE Band 30 Ant 7 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.142	0.163	0.844	0.099	1.248
	Right Tilt	0.076	0.140	0.491	0.022	0.729
	Left Cheek	0.132	0.464	0.176	0.026	0.798
	Left Tilt	0.091	0.301	0.190	0.007	0.589

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Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.173	0.844	0.099	1.536	Head SAR	Right Cheek	0.280	0.173	0.844	0.099	1.396
	Right Tilt	0.405	0.079	0.491	0.022	0.997		Right Tilt	0.258	0.079	0.491	0.022	0.850
	Left Cheek	1.132	0.154	0.176	0.026	1.488		Left Cheek	1.076	0.154	0.176	0.026	1.432
	Left Tilt	0.305	0.084	0.190	0.007	0.586		Left Tilt	0.331	0.084	0.190	0.007	0.612
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.149	0.844	0.099	1.512	Head SAR	Right Cheek	0.280	0.149	0.844	0.099	1.372
	Right Tilt	0.405	0.076	0.491	0.022	0.994		Right Tilt	0.258	0.076	0.491	0.022	0.847
	Left Cheek	1.132	0.154	0.176	0.026	1.488		Left Cheek	1.076	0.154	0.176	0.026	1.432
	Left Tilt	0.305	0.092	0.190	0.007	0.594		Left Tilt	0.331	0.092	0.190	0.007	0.620
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.188	0.844	0.099	1.551	Head SAR	Right Cheek	0.280	0.188	0.844	0.099	1.411
	Right Tilt	0.405	0.101	0.491	0.022	1.019		Right Tilt	0.258	0.101	0.491	0.022	0.872
	Left Cheek	1.132	0.177	0.176	0.026	1.511		Left Cheek	1.076	0.177	0.176	0.026	1.455
	Left Tilt	0.305	0.112	0.190	0.007	0.614		Left Tilt	0.331	0.112	0.190	0.007	0.640
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.082	0.844	0.099	1.445	Head SAR	Right Cheek	0.280	0.134	0.844	0.099	1.357
	Right Tilt	0.405	0.087	0.491	0.022	1.005		Right Tilt	0.258	0.110	0.491	0.022	0.881
	Left Cheek	1.132	0.113	0.176	0.026	1.447		Left Cheek	1.076	0.176	0.176	0.026	1.454
	Left Tilt	0.305	0.076	0.190	0.007	0.578		Left Tilt	0.331	0.108	0.190	0.007	0.636
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	1	2	3	1+2+3+4
Head SAR	Right Cheek	0.420	0.030	0.844	0.099	1.393	Head SAR	Right Cheek	0.280	0.030	0.844	0.099	1.253
	Right Tilt	0.405	0.029	0.491	0.022	0.947		Right Tilt	0.258	0.029	0.491	0.022	0.800
	Left Cheek	1.132	0.058	0.176	0.026	1.392		Left Cheek	1.076	0.058	0.176	0.026	1.336
	Left Tilt	0.305	0.018	0.190	0.007	0.520		Left Tilt	0.331	0.018	0.190	0.007	0.546

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Table 12-12
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Held to Ear) [1 of 3]

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3	1+2+4	
Head SAR	CDMA BC10 (\$90S)	0.165	0.099	0.191	0.372	0.455	0.636	
	CDMA BC0 (\$22H)	0.177	0.099	0.191	0.372	0.467	0.648	
	PCS CDMA	0.129	0.099	0.191	0.372	0.419	0.600	
	GSM/GPRS 850	0.154	0.099	0.191	0.372	0.444	0.625	
	GSM/GPRS 1900	0.072	0.099	0.191	0.372	0.362	0.543	
	UMTS 850	0.185	0.099	0.191	0.372	0.475	0.656	
	UMTS 1750	0.153	0.099	0.191	0.372	0.443	0.624	
	UMTS 1900	0.133	0.099	0.191	0.372	0.423	0.604	
	LTE Band 71	0.152	0.099	0.191	0.372	0.442	0.623	
	LTE Band 12	0.173	0.099	0.191	0.372	0.463	0.644	
	LTE Band 13	0.207	0.099	0.191	0.372	0.497	0.678	
	LTE Band 14	0.154	0.099	0.191	0.372	0.444	0.625	
	LTE Band 26 (Cell)	0.185	0.099	0.191	0.372	0.475	0.656	
	LTE Band 5 (Cell)	0.188	0.099	0.191	0.372	0.478	0.659	
	LTE Band 66 (AWS)	0.176	0.099	0.191	0.372	0.466	0.647	
	LTE Band 25 (PCS)	0.113	0.099	0.191	0.372	0.403	0.584	
LTE Band 30	0.058	0.099	0.191	0.372	0.348	0.529		
LTE Band 41	0.130	0.099	0.191	0.372	0.420	0.601		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.168	0.099	0.191	0.372	1.260	1.441
	LTE Band 2 (PCS) Ant 7	0.817	0.168	0.099	0.191	0.372	1.275	1.456
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	LTE Band 66 (AWS) Ant 7	0.802	0.142	0.099	0.191	0.372	1.234	1.415
	LTE Band 2 (PCS) Ant 7	0.817	0.142	0.099	0.191	0.372	1.249	1.430
	LTE Band 30 Ant 7	0.464	0.142	0.099	0.191	0.372	0.896	1.077
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	LTE Band 12	0.173	1.132	0.099	0.191	0.372	See Table Below	See Table Below
	LTE Band 14	0.154	1.132	0.099	0.191	0.372	1.576	See Table Below
	LTE Band 5 (Cell)	0.188	1.132	0.099	0.191	0.372	See Table Below	See Table Below
	LTE Band 2 (PCS)	0.113	1.132	0.099	0.191	0.372	1.535	See Table Below
	LTE Band 30	0.058	1.132	0.099	0.191	0.372	1.480	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	LTE Band 12	0.173	1.076	0.099	0.191	0.372	1.539	See Table Below
	LTE Band 14	0.154	1.076	0.099	0.191	0.372	1.520	See Table Below
	LTE Band 5 (Cell)	0.188	1.076	0.099	0.191	0.372	1.554	See Table Below
	LTE Band 66 (AWS)	0.176	1.076	0.099	0.191	0.372	1.542	See Table Below
	LTE Band 30	0.058	1.076	0.099	0.191	0.372	1.424	See Table Below

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Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Held to Ear) [2 of 3]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	Right Cheek	0.420	0.173	0.099	0.191*	0.372	0.883	1.064
	Right Tilt	0.405	0.079	0.022	0.191	0.372*	0.697	0.878
	Left Cheek	1.132	0.154	0.026	0.137	0.201	1.449	1.513
	Left Tilt	0.305	0.084	0.007	0.191*	0.372*	0.587	0.768
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3+4		
Head SAR	Right Cheek	0.420	0.149	0.099	0.372	1.040		
	Right Tilt	0.405	0.076	0.022	0.372*	0.875		
	Left Cheek	1.132	0.154	0.026	0.201	1.513		
	Left Tilt	0.305	0.092	0.007	0.372*	0.776		
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Head SAR	Right Cheek	0.420	0.188	0.099	0.191*	0.372	0.898	1.079
	Right Tilt	0.405	0.101	0.022	0.191	0.372*	0.719	0.900
	Left Cheek	1.132	0.177	0.026	0.137	0.201	1.472	1.536
	Left Tilt	0.305	0.112	0.007	0.191*	0.372*	0.615	0.796
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3+4		
Head SAR	Right Cheek	0.420	0.082	0.099	0.372	0.973		
	Right Tilt	0.405	0.087	0.022	0.372*	0.886		
	Left Cheek	1.132	0.113	0.026	0.201	1.472		
	Left Tilt	0.305	0.076	0.007	0.372*	0.760		
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3+4		
Head SAR	Right Cheek	0.420	0.030	0.099	0.372	0.921		
	Right Tilt	0.405	0.029	0.022	0.372*	0.828		
	Left Cheek	1.132	0.058	0.026	0.201	1.417		
	Left Tilt	0.305	0.018	0.007	0.372*	0.702		

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Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Held to Ear) [3 of 3]

Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.280	0.173	0.099	0.372	0.924
	Right Tilt	0.258	0.079	0.022	0.372*	0.731
	Left Cheek	1.076	0.154	0.026	0.201	1.457
	Left Tilt	0.331	0.084	0.007	0.372*	0.794
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.280	0.149	0.099	0.372	0.900
	Right Tilt	0.258	0.076	0.022	0.372*	0.728
	Left Cheek	1.076	0.154	0.026	0.201	1.457
	Left Tilt	0.331	0.092	0.007	0.372*	0.802
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.280	0.188	0.099	0.372	0.939
	Right Tilt	0.258	0.101	0.022	0.372*	0.753
	Left Cheek	1.076	0.177	0.026	0.201	1.480
	Left Tilt	0.331	0.112	0.007	0.372*	0.822
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.280	0.134	0.099	0.372	0.885
	Right Tilt	0.258	0.110	0.022	0.372*	0.762
	Left Cheek	1.076	0.176	0.026	0.201	1.479
	Left Tilt	0.331	0.108	0.007	0.372*	0.818
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	1	2	4	1+2+3+4
Head SAR	Right Cheek	0.280	0.030	0.099	0.372	0.781
	Right Tilt	0.258	0.029	0.022	0.372*	0.681
	Left Cheek	1.076	0.058	0.026	0.201	1.361
	Left Tilt	0.331	0.018	0.007	0.372*	0.728

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Table 12-15
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (Held to Ear) [1 of 2]

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2+3	
Head SAR	CDMA BC10 (\$90S)	0.165	0.099	0.365	0.629	
	CDMA BC0 (\$22H)	0.177	0.099	0.365	0.641	
	PCS CDMA	0.129	0.099	0.365	0.593	
	GSM/GPRS 850	0.154	0.099	0.365	0.618	
	GSM/GPRS 1900	0.072	0.099	0.365	0.536	
	UMTS 850	0.185	0.099	0.365	0.649	
	UMTS 1750	0.153	0.099	0.365	0.617	
	UMTS 1900	0.133	0.099	0.365	0.597	
	LTE Band 71	0.152	0.099	0.365	0.616	
	LTE Band 12	0.173	0.099	0.365	0.637	
	LTE Band 13	0.207	0.099	0.365	0.671	
	LTE Band 14	0.154	0.099	0.365	0.618	
	LTE Band 26 (Cell)	0.185	0.099	0.365	0.649	
	LTE Band 5 (Cell)	0.188	0.099	0.365	0.652	
	LTE Band 66 (AWS)	0.176	0.099	0.365	0.640	
	LTE Band 25 (PCS)	0.113	0.099	0.365	0.577	
	LTE Band 30	0.058	0.099	0.365	0.522	
	LTE Band 41	0.130	0.099	0.365	0.594	
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth 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 66 (AWS) Ant 7	0.802	0.168	0.099	0.365	1.434
	LTE Band 2 (PCS) Ant 7	0.817	0.168	0.099	0.365	1.449
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth 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 66 (AWS) Ant 7	0.802	0.142	0.099	0.365	1.408
	LTE Band 2 (PCS) Ant 7	0.817	0.142	0.099	0.365	1.423
	LTE Band 30 Ant 7	0.464	0.142	0.099	0.365	1.070

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Table 12-16
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (Held to Ear) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.173	0.099	0.365	1.057	Head SAR	Right Cheek	0.280	0.173	0.099	0.365	0.917
	Right Tilt	0.405	0.079	0.022	0.365*	0.871		Right Tilt	0.258	0.079	0.022	0.365*	0.724
	Left Cheek	1.132	0.154	0.026	0.187	1.499		Left Cheek	1.076	0.154	0.026	0.187	1.443
	Left Tilt	0.305	0.084	0.007	0.365*	0.761		Left Tilt	0.331	0.084	0.007	0.365*	0.787
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.149	0.099	0.365	1.033	Head SAR	Right Cheek	0.280	0.149	0.099	0.365	0.893
	Right Tilt	0.405	0.076	0.022	0.365*	0.868		Right Tilt	0.258	0.076	0.022	0.365*	0.721
	Left Cheek	1.132	0.154	0.026	0.187	1.499		Left Cheek	1.076	0.154	0.026	0.187	1.443
	Left Tilt	0.305	0.092	0.007	0.365*	0.769		Left Tilt	0.331	0.092	0.007	0.365*	0.795
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.188	0.099	0.365	1.072	Head SAR	Right Cheek	0.280	0.188	0.099	0.365	0.932
	Right Tilt	0.405	0.101	0.022	0.365*	0.893		Right Tilt	0.258	0.101	0.022	0.365*	0.746
	Left Cheek	1.132	0.177	0.026	0.187	1.522		Left Cheek	1.076	0.177	0.026	0.187	1.466
	Left Tilt	0.305	0.112	0.007	0.365*	0.789		Left Tilt	0.331	0.112	0.007	0.365*	0.815
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Head SAR	Right Cheek	0.420	0.082	0.099	0.365	0.966	Head SAR	Right Cheek	0.280	0.134	0.099	0.365	0.878
	Right Tilt	0.405	0.087	0.022	0.365*	0.879		Right Tilt	0.258	0.110	0.022	0.365*	0.755
	Left Cheek	1.132	0.113	0.026	0.187	1.458		Left Cheek	1.076	0.176	0.026	0.187	1.465
	Left Tilt	0.305	0.076	0.007	0.365*	0.753		Left Tilt	0.331	0.108	0.007	0.365*	0.811

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12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-17
Simultaneous Transmission Scenario with 2.4 GHz WLAN SISO (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	
Body - Worn SAR	CDMA BC10 (\$90S)	0.455	0.310	0.188	0.765	0.643	
	CDMA BC0 (\$22H)	0.476	0.310	0.188	0.786	0.664	
	PCS CDMA	0.365	0.310	0.188	0.675	0.553	
	GSM/GPRS 850	0.412	0.310	0.188	0.722	0.600	
	GSM/GPRS 1900	0.233	0.310	0.188	0.543	0.421	
	UMTS 850	0.338	0.310	0.188	0.648	0.526	
	UMTS 1750	0.465	0.310	0.188	0.775	0.653	
	UMTS 1900	0.424	0.310	0.188	0.734	0.612	
	LTE Band 71	0.349	0.310	0.188	0.659	0.537	
	LTE Band 12	0.380	0.310	0.188	0.690	0.568	
	LTE Band 13	0.355	0.310	0.188	0.665	0.543	
	LTE Band 14	0.318	0.310	0.188	0.628	0.506	
	LTE Band 26 (Cell)	0.424	0.310	0.188	0.734	0.612	
	LTE Band 5 (Cell)	0.436	0.310	0.188	0.746	0.624	
	LTE Band 66 (AWS)	0.502	0.310	0.188	0.812	0.690	
	LTE Band 25 (PCS)	0.358	0.310	0.188	0.668	0.546	
LTE Band 30	0.574	0.310	0.188	0.884	0.762		
LTE Band 41	0.254	0.310	0.188	0.564	0.442		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.354	0.310	0.188	0.760	0.638
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.310	0.188	0.761	0.639
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.416	0.310	0.188	0.822	0.700
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.310	0.188	0.823	0.701
	LTE Band 30 Ant 7	0.146	0.416	0.310	0.188	0.872	0.750
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 12	0.380	0.253	0.310	0.188	0.943	0.821
	LTE Band 14	0.318	0.253	0.310	0.188	0.881	0.759
	LTE Band 5 (Cell)	0.436	0.253	0.310	0.188	0.999	0.877
	LTE Band 2 (PCS)	0.358	0.253	0.310	0.188	0.921	0.799
	LTE Band 30	0.574	0.253	0.310	0.188	1.137	1.015
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 12	0.380	0.228	0.310	0.188	0.918	0.796
	LTE Band 14	0.318	0.228	0.310	0.188	0.856	0.734
	LTE Band 5 (Cell)	0.436	0.228	0.310	0.188	0.974	0.852
	LTE Band 66 (AWS)	0.502	0.228	0.310	0.188	1.040	0.918
	LTE Band 30	0.574	0.228	0.310	0.188	1.112	0.990

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Table 12-18
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Body-Worn at 1.0 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	CDMA BC10 (S90S)	0.455	0.214	0.669	
	CDMA BC0 (S22H)	0.476	0.214	0.690	
	PCS CDMA	0.365	0.214	0.579	
	GSM/GPRS 850	0.412	0.214	0.626	
	GSM/GPRS 1900	0.233	0.214	0.447	
	UMTS 850	0.338	0.214	0.552	
	UMTS 1750	0.465	0.214	0.679	
	UMTS 1900	0.424	0.214	0.638	
	LTE Band 71	0.349	0.214	0.563	
	LTE Band 12	0.380	0.214	0.594	
	LTE Band 13	0.355	0.214	0.569	
	LTE Band 14	0.318	0.214	0.532	
	LTE Band 26 (Cell)	0.424	0.214	0.638	
	LTE Band 5 (Cell)	0.436	0.214	0.650	
	LTE Band 66 (AWS)	0.502	0.214	0.716	
	LTE Band 25 (PCS)	0.358	0.214	0.572	
	LTE Band 30	0.574	0.214	0.788	
LTE Band 41	0.254	0.214	0.468		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 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) Ant 7	0.096	0.354	0.214	0.664
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.214	0.665
Configuration	Mode	Anchor Band 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) Ant 7	0.096	0.416	0.214	0.726
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.214	0.727
	LTE Band 30 Ant 7	0.146	0.416	0.214	0.776
Configuration	Mode	Anchor Band 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 12	0.380	0.253	0.214	0.847
	LTE Band 14	0.318	0.253	0.214	0.785
	LTE Band 5 (Cell)	0.436	0.253	0.214	0.903
	LTE Band 2 (PCS)	0.358	0.253	0.214	0.825
	LTE Band 30	0.574	0.253	0.214	1.041
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) 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 12	0.380	0.228	0.214	0.822
	LTE Band 14	0.318	0.228	0.214	0.760
	LTE Band 5 (Cell)	0.436	0.228	0.214	0.878
	LTE Band 66 (AWS)	0.502	0.228	0.214	0.944
	LTE Band 30	0.574	0.228	0.214	1.016

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Table 12-19
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Body - Worn SAR	CDMA BC10 (\$90S)	0.455	0.261	0.870	0.716	1.325
	CDMA BC0 (\$22H)	0.476	0.261	0.870	0.737	1.346
	PCS CDMA	0.365	0.261	0.870	0.626	1.235
	GSM/GPRS 850	0.412	0.261	0.870	0.673	1.282
	GSM/GPRS 1900	0.233	0.261	0.870	0.494	1.103
	UMTS 850	0.338	0.261	0.870	0.599	1.208
	UMTS 1750	0.465	0.261	0.870	0.726	1.335
	UMTS 1900	0.424	0.261	0.870	0.685	1.294
	LTE Band 71	0.349	0.261	0.870	0.610	1.219
	LTE Band 12	0.380	0.261	0.870	0.641	1.250
	LTE Band 13	0.355	0.261	0.870	0.616	1.225
	LTE Band 14	0.318	0.261	0.870	0.579	1.188
	LTE Band 26 (Cell)	0.424	0.261	0.870	0.685	1.294
	LTE Band 5 (Cell)	0.436	0.261	0.870	0.697	1.306
	LTE Band 66 (AWS)	0.502	0.261	0.870	0.763	1.372
	LTE Band 25 (PCS)	0.358	0.261	0.870	0.619	1.228
	LTE Band 30	0.574	0.261	0.870	0.835	1.444
	LTE Band 41	0.254	0.261	0.870	0.515	1.124

Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.354	0.261	0.870	0.711	1.320
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.261	0.870	0.712	1.321

Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.416	0.261	0.870	0.773	1.382
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.261	0.870	0.774	1.383
	LTE Band 30 Ant 7	0.146	0.416	0.261	0.870	0.823	1.432

Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR		
		1	2	3	4	1+2+3	1+2+4	1+2	1+4	2+4
Body - Worn SAR	LTE Band 12	0.380	0.253	0.261	0.870	0.894	1.503	N/A	N/A	N/A
	LTE Band 14	0.318	0.253	0.261	0.870	0.832	1.441	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.436	0.253	0.261	0.870	0.950	1.559	N/A	N/A	N/A
	LTE Band 2 (PCS)	0.358	0.253	0.261	0.870	0.872	1.481	N/A	N/A	N/A
	LTE Band 30	0.574	0.253	0.261	0.870	1.088	See Note 1	0.00	0.01	0.02

Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR		
		1	2	3	4	1+2+3	1+2+4	1+2	1+4	2+4
Body - Worn SAR	LTE Band 12	0.380	0.228	0.261	0.870	0.869	1.478	N/A	N/A	N/A
	LTE Band 14	0.318	0.228	0.261	0.870	0.807	1.416	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.436	0.228	0.261	0.870	0.925	1.534	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.502	0.228	0.261	0.870	0.991	See Note 1	0.00	0.01	0.02
	LTE Band 30	0.574	0.228	0.261	0.870	1.063	See Note 1	0.00	0.01	0.02

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Table 12-20
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Body-Worn at 1.0 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	CDMA BC10 (§90S)	0.455	0.786	1.241				
	CDMA BC0 (§22H)	0.476	0.786	1.262				
	PCS CDMA	0.365	0.786	1.151				
	GSM/GPRS 850	0.412	0.786	1.198				
	GSM/GPRS 1900	0.233	0.786	1.019				
	UMTS 850	0.338	0.786	1.124				
	UMTS 1750	0.465	0.786	1.251				
	UMTS 1900	0.424	0.786	1.210				
	LTE Band 71	0.349	0.786	1.135				
	LTE Band 12	0.380	0.786	1.166				
	LTE Band 13	0.355	0.786	1.141				
	LTE Band 14	0.318	0.786	1.104				
	LTE Band 26 (Cell)	0.424	0.786	1.210				
	LTE Band 5 (Cell)	0.436	0.786	1.222				
	LTE Band 66 (AWS)	0.502	0.786	1.288				
	LTE Band 25 (PCS)	0.358	0.786	1.144				
	LTE Band 30	0.574	0.786	1.360				
LTE Band 41	0.254	0.786	1.040					
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 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) Ant 7	0.096	0.354	0.786	1.236			
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.786	1.237			
Configuration	Mode	Anchor Band 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) Ant 7	0.096	0.416	0.786	1.298			
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.786	1.299			
	LTE Band 30 Ant 7	0.146	0.416	0.786	1.348			
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Body - Worn SAR	LTE Band 12	0.380	0.253	0.786	1.419	N/A	N/A	N/A
	LTE Band 14	0.318	0.253	0.786	1.357	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.436	0.253	0.786	1.475	N/A	N/A	N/A
	LTE Band 2 (PCS)	0.358	0.253	0.786	1.397	N/A	N/A	N/A
	LTE Band 30	0.574	0.253	0.786	See Note 1	0.00	0.01	0.02
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) 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 12	0.380	0.228	0.786	1.394			
	LTE Band 14	0.318	0.228	0.786	1.332			
	LTE Band 5 (Cell)	0.436	0.228	0.786	1.450			
	LTE Band 66 (AWS)	0.502	0.228	0.786	1.516			
	LTE Band 30	0.574	0.228	0.786	1.588			

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Table 12-21
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	
		1	2	1+2	
Body - Worn SAR	CDMA BC10 (§90S)	0.455	0.030	0.485	
	CDMA BC0 (§22H)	0.476	0.030	0.506	
	PCS CDMA	0.365	0.030	0.395	
	GSM/GPRS 850	0.412	0.030	0.442	
	GSM/GPRS 1900	0.233	0.030	0.263	
	UMTS 850	0.338	0.030	0.368	
	UMTS 1750	0.465	0.030	0.495	
	UMTS 1900	0.424	0.030	0.454	
	LTE Band 71	0.349	0.030	0.379	
	LTE Band 12	0.380	0.030	0.410	
	LTE Band 13	0.355	0.030	0.385	
	LTE Band 14	0.318	0.030	0.348	
	LTE Band 26 (Cell)	0.424	0.030	0.454	
	LTE Band 5 (Cell)	0.436	0.030	0.466	
	LTE Band 66 (AWS)	0.502	0.030	0.532	
	LTE Band 25 (PCS)	0.358	0.030	0.388	
	LTE Band 30	0.574	0.030	0.604	
LTE Band 41	0.254	0.030	0.284		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.354	0.030	0.480
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.030	0.481
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.416	0.030	0.542
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.030	0.543
	LTE Band 30 Ant 7	0.146	0.416	0.030	0.592
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 12	0.380	0.253	0.030	0.663
	LTE Band 14	0.318	0.253	0.030	0.601
	LTE Band 5 (Cell)	0.436	0.253	0.030	0.719
	LTE Band 2 (PCS)	0.358	0.253	0.030	0.641
	LTE Band 30	0.574	0.253	0.030	0.857
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body - Worn SAR	LTE Band 12	0.380	0.228	0.030	0.638
	LTE Band 14	0.318	0.228	0.030	0.576
	LTE Band 5 (Cell)	0.436	0.228	0.030	0.694
	LTE Band 66 (AWS)	0.502	0.228	0.030	0.760
	LTE Band 30	0.574	0.228	0.030	0.832

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Table 12-22

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2+3	
Body - Worn SAR	CDMA BC10 (\$90S)	0.455	0.188	0.030	0.673	
	CDMA BC0 (\$22H)	0.476	0.188	0.030	0.694	
	PCS CDMA	0.365	0.188	0.030	0.583	
	GSM/GPRS 850	0.412	0.188	0.030	0.630	
	GSM/GPRS 1900	0.233	0.188	0.030	0.451	
	UMTS 850	0.338	0.188	0.030	0.556	
	UMTS 1750	0.465	0.188	0.030	0.683	
	UMTS 1900	0.424	0.188	0.030	0.642	
	LTE Band 71	0.349	0.188	0.030	0.567	
	LTE Band 12	0.380	0.188	0.030	0.598	
	LTE Band 13	0.355	0.188	0.030	0.573	
	LTE Band 14	0.318	0.188	0.030	0.536	
	LTE Band 26 (Cell)	0.424	0.188	0.030	0.642	
	LTE Band 5 (Cell)	0.436	0.188	0.030	0.654	
	LTE Band 66 (AWS)	0.502	0.188	0.030	0.720	
	LTE Band 25 (PCS)	0.358	0.188	0.030	0.576	
LTE Band 30	0.574	0.188	0.030	0.792		
LTE Band 41	0.254	0.188	0.030	0.472		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.354	0.188	0.030	0.668
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.188	0.030	0.669
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.416	0.188	0.030	0.730
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.188	0.030	0.731
	LTE Band 30 Ant 7	0.146	0.416	0.188	0.030	0.780
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 12	0.380	0.253	0.188	0.030	0.851
	LTE Band 14	0.318	0.253	0.188	0.030	0.789
	LTE Band 5 (Cell)	0.436	0.253	0.188	0.030	0.907
	LTE Band 2 (PCS)	0.358	0.253	0.188	0.030	0.829
	LTE Band 30	0.574	0.253	0.188	0.030	1.045
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body - Worn SAR	LTE Band 12	0.380	0.228	0.188	0.030	0.826
	LTE Band 14	0.318	0.228	0.188	0.030	0.764
	LTE Band 5 (Cell)	0.436	0.228	0.188	0.030	0.882
	LTE Band 66 (AWS)	0.502	0.228	0.188	0.030	0.948
	LTE Band 30	0.574	0.228	0.188	0.030	1.020

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Table 12-23
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3	1+2+4	
Body - Worn SAR	CDMA BC10 (\$90S)	0.455	0.030	0.261	0.870	0.746	1.355	
	CDMA BC0 (\$22H)	0.476	0.030	0.261	0.870	0.767	1.376	
	PCS CDMA	0.365	0.030	0.261	0.870	0.656	1.265	
	GSM/GPRS 850	0.412	0.030	0.261	0.870	0.703	1.312	
	GSM/GPRS 1900	0.233	0.030	0.261	0.870	0.524	1.133	
	UMTS 850	0.338	0.030	0.261	0.870	0.629	1.238	
	UMTS 1750	0.465	0.030	0.261	0.870	0.756	1.365	
	UMTS 1900	0.424	0.030	0.261	0.870	0.715	1.324	
	LTE Band 71	0.349	0.030	0.261	0.870	0.640	1.249	
	LTE Band 12	0.380	0.030	0.261	0.870	0.671	1.280	
	LTE Band 13	0.355	0.030	0.261	0.870	0.646	1.255	
	LTE Band 14	0.318	0.030	0.261	0.870	0.609	1.218	
	LTE Band 26 (Cell)	0.424	0.030	0.261	0.870	0.715	1.324	
	LTE Band 5 (Cell)	0.436	0.030	0.261	0.870	0.727	1.336	
	LTE Band 66 (AWS)	0.502	0.030	0.261	0.870	0.793	1.402	
	LTE Band 25 (PCS)	0.358	0.030	0.261	0.870	0.649	1.258	
	LTE Band 30	0.574	0.030	0.261	0.870	0.865	1.474	
LTE Band 41	0.254	0.030	0.261	0.870	0.545	1.154		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.354	0.030	0.261	0.870	0.741	1.350
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.030	0.261	0.870	0.742	1.351
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Body - Worn SAR	LTE Band 66 (AWS) Ant 7	0.096	0.416	0.030	0.261	0.870	0.803	1.412
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.030	0.261	0.870	0.804	1.413
	LTE Band 30 Ant 7	0.146	0.416	0.030	0.261	0.870	0.853	1.462
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Body - Worn SAR	LTE Band 12	0.380	0.253	0.030	0.261	0.870	0.924	1.533
	LTE Band 14	0.318	0.253	0.030	0.261	0.870	0.862	1.471
	LTE Band 5 (Cell)	0.436	0.253	0.030	0.261	0.870	0.980	1.589
	LTE Band 2 (PCS)	0.358	0.253	0.030	0.261	0.870	0.902	1.511
	LTE Band 30	0.574	0.253	0.030	0.261	0.870	1.118	See Note 2
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Body - Worn SAR	LTE Band 12	0.380	0.228	0.030	0.261	0.870	0.899	1.508
	LTE Band 14	0.318	0.228	0.030	0.261	0.870	0.837	1.446
	LTE Band 5 (Cell)	0.436	0.228	0.030	0.261	0.870	0.955	1.564
	LTE Band 66 (AWS)	0.502	0.228	0.030	0.261	0.870	1.021	See Note 2
	LTE Band 30	0.574	0.228	0.030	0.261	0.870	1.093	See Note 2

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Table 12-24
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2+3	
Body - Worn SAR	CDMA BC10 (S90S)	0.455	0.030	0.786	1.271	
	CDMA BC0 (S22H)	0.476	0.030	0.786	1.292	
	PCS CDMA	0.365	0.030	0.786	1.181	
	GSM/GPRS 850	0.412	0.030	0.786	1.228	
	GSM/GPRS 1900	0.233	0.030	0.786	1.049	
	UMTS 850	0.338	0.030	0.786	1.154	
	UMTS 1750	0.465	0.030	0.786	1.281	
	UMTS 1900	0.424	0.030	0.786	1.240	
	LTE Band 71	0.349	0.030	0.786	1.165	
	LTE Band 12	0.380	0.030	0.786	1.196	
	LTE Band 13	0.355	0.030	0.786	1.171	
	LTE Band 14	0.318	0.030	0.786	1.134	
	LTE Band 26 (Cell)	0.424	0.030	0.786	1.240	
	LTE Band 5 (Cell)	0.436	0.030	0.786	1.252	
	LTE Band 66 (AWS)	0.502	0.030	0.786	1.318	
	LTE Band 25 (PCS)	0.358	0.030	0.786	1.174	
LTE Band 30	0.574	0.030	0.786	1.390		
LTE Band 41	0.254	0.030	0.786	1.070		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth 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) Ant 7	0.096	0.354	0.030	0.786	1.266
	LTE Band 2 (PCS) Ant 7	0.097	0.354	0.030	0.786	1.267
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth 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) Ant 7	0.096	0.416	0.030	0.786	1.328
	LTE Band 2 (PCS) Ant 7	0.097	0.416	0.030	0.786	1.329
	LTE Band 30 Ant 7	0.146	0.416	0.030	0.786	1.378
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth 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 12	0.380	0.253	0.030	0.786	1.449
	LTE Band 14	0.318	0.253	0.030	0.786	1.387
	LTE Band 5 (Cell)	0.436	0.253	0.030	0.786	1.505
	LTE Band 2 (PCS)	0.358	0.253	0.030	0.786	1.427
	LTE Band 30	0.574	0.253	0.030	0.786	See Note 2
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth 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 12	0.380	0.228	0.030	0.786	1.424
	LTE Band 14	0.318	0.228	0.030	0.786	1.362
	LTE Band 5 (Cell)	0.436	0.228	0.030	0.786	1.480
	LTE Band 66 (AWS)	0.502	0.228	0.030	0.786	1.546
	LTE Band 30	0.574	0.228	0.030	0.786	See Note 2

Notes:

1. No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.
2. Please see section 12.8 for detailed simultaneous transmission analysis.

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12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-25
Simultaneous Transmission Scenario with 2.4 GHz WLAN SISO (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	
Hotspot	EVDO BC10 (\$90S)	0.480	0.458	0.188	0.938	0.668	
	EVDO BC0 (\$22H)	0.494	0.458	0.188	0.952	0.682	
	PCS EVDO	0.593	0.458	0.188	1.051	0.781	
	GPRS/GPRS 850	0.412	0.458	0.188	0.870	0.600	
	GPRS/GPRS 1900	0.415	0.458	0.188	0.873	0.603	
	UMTS 850	0.338	0.458	0.188	0.796	0.526	
	UMTS 1750	0.669	0.458	0.188	1.127	0.857	
	UMTS 1900	0.655	0.458	0.188	1.113	0.843	
	LTE Band 71	0.434	0.458	0.188	0.892	0.622	
	LTE Band 12	0.380	0.458	0.188	0.838	0.568	
	LTE Band 13	0.394	0.458	0.188	0.852	0.582	
	LTE Band 14	0.346	0.458	0.188	0.804	0.534	
	LTE Band 26 (Cell)	0.424	0.458	0.188	0.882	0.612	
	LTE Band 5 (Cell)	0.436	0.458	0.188	0.894	0.624	
	LTE Band 66 (AWS)	0.641	0.458	0.188	1.099	0.829	
	LTE Band 25 (PCS)	0.553	0.458	0.188	1.011	0.741	
LTE Band 30	0.574	0.458	0.188	1.032	0.762		
LTE Band 41	0.398	0.458	0.188	0.856	0.586		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.458	0.188	1.121	0.851
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.458	0.188	1.118	0.848
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.458	0.188	1.113	0.843
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.458	0.188	1.110	0.840
	LTE Band 30 Ant 7	0.162	0.416	0.458	0.188	1.036	0.766
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 12	0.380	0.362	0.458	0.188	1.200	0.930
	LTE Band 14	0.346	0.362	0.458	0.188	1.166	0.896
	LTE Band 5 (Cell)	0.436	0.362	0.458	0.188	1.256	0.986
	LTE Band 2 (PCS)	0.553	0.362	0.458	0.188	1.373	1.103
	LTE Band 30	0.574	0.362	0.458	0.188	1.394	1.124
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 12	0.380	0.362	0.458	0.188	1.200	0.930
	LTE Band 14	0.346	0.362	0.458	0.188	1.166	0.896
	LTE Band 5 (Cell)	0.436	0.362	0.458	0.188	1.256	0.986
	LTE Band 66 (AWS)	0.641	0.362	0.458	0.188	1.461	1.191
	LTE Band 30	0.574	0.362	0.458	0.188	1.394	1.124

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Table 12-26
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Hotspot at 1.0 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	
Hotspot SAR	EVDO BC10 (\$90S)	0.480	0.320	0.800	
	EVDO BC0 (\$22H)	0.494	0.320	0.814	
	PCS EVDO	0.593	0.320	0.913	
	GPRS/GPRS 850	0.412	0.320	0.732	
	GPRS/GPRS 1900	0.415	0.320	0.735	
	UMTS 850	0.338	0.320	0.658	
	UMTS 1750	0.669	0.320	0.989	
	UMTS 1900	0.655	0.320	0.975	
	LTE Band 71	0.434	0.320	0.754	
	LTE Band 12	0.380	0.320	0.700	
	LTE Band 13	0.394	0.320	0.714	
	LTE Band 14	0.346	0.320	0.666	
	LTE Band 26 (Cell)	0.424	0.320	0.744	
	LTE Band 5 (Cell)	0.436	0.320	0.756	
	LTE Band 66 (AWS)	0.641	0.320	0.961	
	LTE Band 25 (PCS)	0.553	0.320	0.873	
LTE Band 30	0.574	0.320	0.894		
LTE Band 41	0.398	0.320	0.718		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.320	0.983
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.320	0.980
Configuration	Mode	Anchor Band 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
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.320	0.975
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.320	0.972
	LTE Band 30 Ant 7	0.162	0.416	0.320	0.898
Configuration	Mode	Anchor Band 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
Hotspot	LTE Band 12	0.380	0.362	0.320	1.062
	LTE Band 14	0.346	0.362	0.320	1.028
	LTE Band 5 (Cell)	0.436	0.362	0.320	1.118
	LTE Band 2 (PCS)	0.553	0.362	0.320	1.235
	LTE Band 30	0.574	0.362	0.320	1.256
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 12	0.380	0.362	0.320	1.062
	LTE Band 14	0.346	0.362	0.320	1.028
	LTE Band 5 (Cell)	0.436	0.362	0.320	1.118
	LTE Band 66 (AWS)	0.641	0.362	0.320	1.323
	LTE Band 30	0.574	0.362	0.320	1.256

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Table 12-27
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Hotspot at 1.0 cm) [1 of 3]

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	
Hotspot	EVDO BC10 (§90S)	0.480	0.244	0.870	0.724	1.350	
	EVDO BC0 (§22H)	0.494	0.244	0.870	0.738	1.364	
	PCS EVDO	0.593	0.244	0.870	0.837	1.463	
	GPRS/GPRS 850	0.412	0.244	0.870	0.656	1.282	
	GPRS/GPRS 1900	0.415	0.244	0.870	0.659	1.285	
	UMTS 850	0.338	0.244	0.870	0.582	1.208	
	UMTS 1750	0.669	0.244	0.870	0.913	1.539	
	UMTS 1900	0.655	0.244	0.870	0.899	1.525	
	LTE Band 71	0.434	0.244	0.870	0.678	1.304	
	LTE Band 12	0.380	0.244	0.870	0.624	1.250	
	LTE Band 13	0.394	0.244	0.870	0.638	1.264	
	LTE Band 14	0.346	0.244	0.870	0.590	1.216	
	LTE Band 26 (Cell)	0.424	0.244	0.870	0.668	1.294	
	LTE Band 5 (Cell)	0.436	0.244	0.870	0.680	1.306	
	LTE Band 66 (AWS)	0.641	0.244	0.870	0.885	1.511	
	LTE Band 25 (PCS)	0.553	0.244	0.870	0.797	1.423	
	LTE Band 30	0.574	0.244	0.870	0.818	1.444	
	LTE Band 41	0.398	0.244	0.870	0.642	1.268	
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.244	0.870	0.907	1.533
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.244	0.870	0.904	1.530
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.244	0.870	0.899	1.525
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.244	0.870	0.896	1.522
	LTE Band 30 Ant 7	0.162	0.416	0.244	0.870	0.822	1.448
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 12	0.380	0.362	0.244	0.870	0.986	See Table Below
	LTE Band 14	0.346	0.362	0.244	0.870	0.952	1.578
	LTE Band 5 (Cell)	0.436	0.362	0.244	0.870	1.042	See Table Below
	LTE Band 2 (PCS)	0.553	0.362	0.244	0.870	1.159	See Table Below
	LTE Band 30	0.574	0.362	0.244	0.870	1.180	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	1+2+3	1+2+4
Hotspot	LTE Band 12	0.380	0.362	0.244	0.870	0.986	See Table Below
	LTE Band 14	0.346	0.362	0.244	0.870	0.952	1.578
	LTE Band 5 (Cell)	0.436	0.362	0.244	0.870	1.042	See Table Below
	LTE Band 66 (AWS)	0.641	0.362	0.244	0.870	1.247	See Table Below
	LTE Band 30	0.574	0.362	0.244	0.870	1.180	See Table Below

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Table 12-28
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Hotspot at 1.0 cm) [2 of 3]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.156	0.380	0.870	1.406
	Front	0.195	0.360	0.135	0.690
	Top	0.095	-	0.870*	0.965
	Bottom	-	0.196	-	0.196
	Right	0.362	-	-	0.362
	Left	-	0.374	0.475	0.849
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.156	0.436	0.870	1.462
	Front	0.195	0.403	0.135	0.733
	Top	0.095	-	0.870*	0.965
	Bottom	-	0.251	-	0.251
	Right	0.362	-	-	0.362
	Left	-	0.181	0.475	0.656
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.156	0.285	0.870	1.311
	Front	0.195	0.399	0.135	0.729
	Top	0.095	-	0.870*	0.965
	Bottom	-	0.553	-	0.553
	Right	0.362	0.130	-	0.492
	Left	-	-	0.475	0.475

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	0.156	0.574	0.870	See Note 1	0.00	0.02	0.01
	Front	0.195	0.203	0.135	0.533	N/A	N/A	N/A
	Top	0.095	-	0.870*	0.965	N/A	N/A	N/A
	Bottom	-	0.430	-	0.430	N/A	N/A	N/A
	Right	0.362	-	-	0.362	N/A	N/A	N/A
	Left	-	0.122	0.475	0.597	N/A	N/A	N/A

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Table 12-29
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Hotspot at 1.0 cm) [2 of 3]

Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.186	0.380	0.870	1.436
	Front	0.171	0.360	0.135	0.666
	Top	0.065	-	0.870*	0.935
	Bottom	-	0.196	-	0.196
	Right	0.362	-	-	0.362
	Left	-	0.374	0.475	0.849
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.186	0.436	0.870	1.492
	Front	0.171	0.403	0.135	0.709
	Top	0.065	-	0.870*	0.935
	Bottom	-	0.251	-	0.251
	Right	0.362	-	-	0.362
	Left	-	0.181	0.475	0.656
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.186	0.348	0.870	1.404
	Front	0.171	0.471	0.135	0.777
	Top	0.065	-	0.870*	0.935
	Bottom	-	0.641	-	0.641
	Right	0.362	0.202	-	0.564
	Left	-	-	0.475	0.475

Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	0.186	0.574	0.870	See Note 1	0.00	0.01	0.01
	Front	0.171	0.203	0.135	0.509	N/A	N/A	N/A
	Top	0.065	-	0.870*	0.935	N/A	N/A	N/A
	Bottom	-	0.430	-	0.430	N/A	N/A	N/A
	Right	0.362	-	-	0.362	N/A	N/A	N/A
	Left	-	0.122	0.475	0.597	N/A	N/A	N/A

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Table 12-30
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Hotspot at 1.0 cm) [1 of 2]

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	
		1	2	1+2	
Hotspot SAR	EVDO BC10 (§90S)	0.480	0.786	1.266	
	EVDO BC0 (§22H)	0.494	0.786	1.280	
	PCS EVDO	0.593	0.786	1.379	
	GPRS/GPRS 850	0.412	0.786	1.198	
	GPRS/GPRS 1900	0.415	0.786	1.201	
	UMTS 850	0.338	0.786	1.124	
	UMTS 1750	0.669	0.786	1.455	
	UMTS 1900	0.655	0.786	1.441	
	LTE Band 71	0.434	0.786	1.220	
	LTE Band 12	0.380	0.786	1.166	
	LTE Band 13	0.394	0.786	1.180	
	LTE Band 14	0.346	0.786	1.132	
	LTE Band 26 (Cell)	0.424	0.786	1.210	
	LTE Band 5 (Cell)	0.436	0.786	1.222	
	LTE Band 66 (AWS)	0.641	0.786	1.427	
	LTE Band 25 (PCS)	0.553	0.786	1.339	
LTE Band 30	0.574	0.786	1.360		
LTE Band 41	0.398	0.786	1.184		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.786	1.449
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.786	1.446
Configuration	Mode	Anchor Band 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
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.786	1.441
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.786	1.438
	LTE Band 30 Ant 7	0.162	0.416	0.786	1.364
Configuration	Mode	Anchor Band 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
Hotspot	LTE Band 12	0.380	0.362	0.786	1.528
	LTE Band 14	0.346	0.362	0.786	1.494
	LTE Band 5 (Cell)	0.436	0.362	0.786	1.584
	LTE Band 2 (PCS)	0.553	0.362	0.786	See Table Below
	LTE Band 30	0.574	0.362	0.786	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 12	0.380	0.362	0.786	1.528
	LTE Band 14	0.346	0.362	0.786	1.494
	LTE Band 5 (Cell)	0.436	0.362	0.786	1.584
	LTE Band 66 (AWS)	0.641	0.362	0.786	See Table Below
	LTE Band 30	0.574	0.362	0.786	See Table Below

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Table 12-31
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Hotspot at 1.0 cm) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.156	0.285	0.786	1.227
	Front	0.195	0.399	0.117	0.711
	Top	0.095	-	0.786*	0.881
	Bottom	-	0.553	-	0.553
	Right	0.362	0.130	-	0.492
	Left	-	-	0.496	0.496
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.156	0.574	0.786	1.516
	Front	0.195	0.203	0.117	0.515
	Top	0.095	-	0.786*	0.881
	Bottom	-	0.430	-	0.430
	Right	0.362	-	-	0.362
	Left	-	0.122	0.496	0.618
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	1	2	1+2+3
Hotspot SAR	Back	0.186	0.348	0.786	1.320
	Front	0.171	0.471	0.117	0.759
	Top	0.065	-	0.786*	0.851
	Bottom	-	0.641	-	0.641
	Right	0.362	0.202	-	0.564
	Left	-	-	0.496	0.496
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.186	0.574	0.786	1.546
	Front	0.171	0.203	0.117	0.491
	Top	0.065	-	0.786*	0.851
	Bottom	-	0.430	-	0.430
	Right	0.362	-	-	0.362
	Left	-	0.122	0.496	0.618

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Table 12-32
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	
		1	2	1+2	
Hotspot SAR	EVDO BC10 (\$90S)	0.480	0.035	0.515	
	EVDO BC0 (\$22H)	0.494	0.035	0.529	
	PCS EVDO	0.593	0.035	0.628	
	GPRS/GPRS 850	0.412	0.035	0.447	
	GPRS/GPRS 1900	0.415	0.035	0.450	
	UMTS 850	0.338	0.035	0.373	
	UMTS 1750	0.669	0.035	0.704	
	UMTS 1900	0.655	0.035	0.690	
	LTE Band 71	0.434	0.035	0.469	
	LTE Band 12	0.380	0.035	0.415	
	LTE Band 13	0.394	0.035	0.429	
	LTE Band 14	0.346	0.035	0.381	
	LTE Band 26 (Cell)	0.424	0.035	0.459	
	LTE Band 5 (Cell)	0.436	0.035	0.471	
	LTE Band 66 (AWS)	0.641	0.035	0.676	
LTE Band 25 (PCS)	0.553	0.035	0.588		
LTE Band 30	0.574	0.035	0.609		
LTE Band 41	0.398	0.035	0.433		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.035	0.698
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.035	0.695
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.035	0.690
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.035	0.687
	LTE Band 30 Ant 7	0.162	0.416	0.035	0.613
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 12	0.380	0.362	0.035	0.777
	LTE Band 14	0.346	0.362	0.035	0.743
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.833
	LTE Band 2 (PCS)	0.553	0.362	0.035	0.950
	LTE Band 30	0.574	0.362	0.035	0.971
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	LTE Band 12	0.380	0.362	0.035	0.777
	LTE Band 14	0.346	0.362	0.035	0.743
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.833
	LTE Band 66 (AWS)	0.641	0.362	0.035	1.038
	LTE Band 30	0.574	0.362	0.035	0.971

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Table 12-33
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2+3	
Hotspot	EVDO BC10 (\$90S)	0.480	0.188	0.035	0.703	
	EVDO BC0 (\$22H)	0.494	0.188	0.035	0.717	
	PCS EVDO	0.593	0.188	0.035	0.816	
	GPRS/GPRS 850	0.412	0.188	0.035	0.635	
	GPRS/GPRS 1900	0.415	0.188	0.035	0.638	
	UMTS 850	0.338	0.188	0.035	0.561	
	UMTS 1750	0.669	0.188	0.035	0.892	
	UMTS 1900	0.655	0.188	0.035	0.878	
	LTE Band 71	0.434	0.188	0.035	0.657	
	LTE Band 12	0.380	0.188	0.035	0.603	
	LTE Band 13	0.394	0.188	0.035	0.617	
	LTE Band 14	0.346	0.188	0.035	0.569	
	LTE Band 26 (Cell)	0.424	0.188	0.035	0.647	
	LTE Band 5 (Cell)	0.436	0.188	0.035	0.659	
	LTE Band 66 (AWS)	0.641	0.188	0.035	0.864	
	LTE Band 25 (PCS)	0.553	0.188	0.035	0.776	
	LTE Band 30	0.574	0.188	0.035	0.797	
LTE Band 41	0.398	0.188	0.035	0.621		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.188	0.035	0.886
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.188	0.035	0.883
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.188	0.035	0.878
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.188	0.035	0.875
	LTE Band 30 Ant 7	0.162	0.416	0.188	0.035	0.801
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 12	0.380	0.362	0.188	0.035	0.965
	LTE Band 14	0.346	0.362	0.188	0.035	0.931
	LTE Band 5 (Cell)	0.436	0.362	0.188	0.035	1.021
	LTE Band 2 (PCS)	0.553	0.362	0.188	0.035	1.138
	LTE Band 30	0.574	0.362	0.188	0.035	1.159
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 12	0.380	0.362	0.188	0.035	0.965
	LTE Band 14	0.346	0.362	0.188	0.035	0.931
	LTE Band 5 (Cell)	0.436	0.362	0.188	0.035	1.021
	LTE Band 66 (AWS)	0.641	0.362	0.188	0.035	1.226
	LTE Band 30	0.574	0.362	0.188	0.035	1.159

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Table 12-34
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Hotspot at 1.0 cm) [1 of 3]

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3	1+2+4	
Hotspot SAR	EVDO BC10 (\$90S)	0.480	0.035	0.244	0.870	0.759	1.385	
	EVDO BC0 (\$22H)	0.494	0.035	0.244	0.870	0.773	1.399	
	PCS EVDO	0.593	0.035	0.244	0.870	0.872	1.498	
	GPRS/GPRS 850	0.412	0.035	0.244	0.870	0.691	1.317	
	GPRS/GPRS 1900	0.415	0.035	0.244	0.870	0.694	1.320	
	UMTS 850	0.338	0.035	0.244	0.870	0.617	1.243	
	UMTS 1750	0.669	0.035	0.244	0.870	0.948	1.574	
	UMTS 1900	0.655	0.035	0.244	0.870	0.934	1.560	
	LTE Band 71	0.434	0.035	0.244	0.870	0.713	1.339	
	LTE Band 12	0.380	0.035	0.244	0.870	0.659	1.285	
	LTE Band 13	0.394	0.035	0.244	0.870	0.673	1.299	
	LTE Band 14	0.346	0.035	0.244	0.870	0.625	1.251	
	LTE Band 26 (Cell)	0.424	0.035	0.244	0.870	0.703	1.329	
	LTE Band 5 (Cell)	0.436	0.035	0.244	0.870	0.715	1.341	
	LTE Band 66 (AWS)	0.641	0.035	0.244	0.870	0.920	1.546	
LTE Band 25 (PCS)	0.553	0.035	0.244	0.870	0.832	1.458		
LTE Band 30	0.574	0.035	0.244	0.870	0.853	1.479		
LTE Band 41	0.398	0.035	0.244	0.870	0.677	1.303		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.035	0.244	0.870	0.942	1.568
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.035	0.244	0.870	0.939	1.565
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.035	0.244	0.870	0.934	1.560
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.035	0.244	0.870	0.931	1.557
	LTE Band 30 Ant 7	0.162	0.416	0.035	0.244	0.870	0.857	1.483
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Hotspot	LTE Band 12	0.380	0.362	0.035	0.244	0.870	1.021	See Table Below
	LTE Band 14	0.346	0.362	0.035	0.244	0.870	0.987	See Table Below
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.244	0.870	1.077	See Table Below
	LTE Band 2 (PCS)	0.553	0.362	0.035	0.244	0.870	1.194	See Table Below
	LTE Band 30	0.574	0.362	0.035	0.244	0.870	1.215	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	4	5	1+2+3+4	1+2+3+5
Hotspot	LTE Band 12	0.380	0.362	0.035	0.244	0.870	1.021	See Table Below
	LTE Band 14	0.346	0.362	0.035	0.244	0.870	0.987	See Table Below
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.244	0.870	1.077	See Table Below
	LTE Band 66 (AWS)	0.641	0.362	0.035	0.244	0.870	1.282	See Table Below
	LTE Band 30	0.574	0.362	0.035	0.244	0.870	1.215	See Table Below

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Table 12-35
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Hotspot at 1.0 cm) [2 of 3]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.380	0.030	0.870	1.436
	Front	0.195	0.360	0.025	0.135	0.715
	Top	0.095	-	0.003	0.870*	0.968
	Bottom	-	0.196	-	-	0.196
	Right	0.362	-	-	-	0.362
	Left	-	0.374	0.035	0.475	0.884
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.318	0.030	0.870	1.374
	Front	0.195	0.346	0.025	0.135	0.701
	Top	0.095	-	0.003	0.870*	0.968
	Bottom	-	0.186	-	-	0.186
	Right	0.362	-	-	-	0.362
	Left	-	0.108	0.035	0.475	0.618
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.436	0.030	0.870	1.492
	Front	0.195	0.403	0.025	0.135	0.758
	Top	0.095	-	0.003	0.870*	0.968
	Bottom	-	0.251	-	-	0.251
	Right	0.362	-	-	-	0.362
	Left	-	0.181	0.035	0.475	0.691
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.285	0.030	0.870	1.341
	Front	0.195	0.399	0.025	0.135	0.754
	Top	0.095	-	0.003	0.870*	0.968
	Bottom	-	0.553	-	-	0.553
	Right	0.362	0.130	-	-	0.492
	Left	-	-	0.035	0.475	0.510
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.574	0.030	0.870	See Note 2
	Front	0.195	0.203	0.025	0.135	0.558
	Top	0.095	-	0.003	0.870*	0.968
	Bottom	-	0.430	-	-	0.430
	Right	0.362	-	-	-	0.362
	Left	-	0.122	0.035	0.475	0.632

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Table 12-36
Simultaneous Transmission Scenario with 5 GHz WLAN SISO and Bluetooth (Hotspot at 1.0 cm) [3 of 3]

Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 12 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.186	0.380	0.030	0.870	1.466
	Front	0.171	0.360	0.025	0.135	0.691
	Top	0.065	-	0.003	0.870*	0.938
	Bottom	-	0.196	-	-	0.196
	Right	0.362	-	-	-	0.362
	Left	-	0.374	0.035	0.475	0.884
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 14 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.186	0.318	0.030	0.870	1.404
	Front	0.171	0.346	0.025	0.135	0.677
	Top	0.065	-	0.003	0.870*	0.938
	Bottom	-	0.186	-	-	0.186
	Right	0.362	-	-	-	0.362
	Left	-	0.108	0.035	0.475	0.618
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.186	0.436	0.030	0.870	1.522
	Front	0.171	0.403	0.025	0.135	0.734
	Top	0.065	-	0.003	0.870*	0.938
	Bottom	-	0.251	-	-	0.251
	Right	0.362	-	-	-	0.362
	Left	-	0.181	0.035	0.475	0.691
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.186	0.348	0.030	0.870	1.434
	Front	0.171	0.471	0.025	0.135	0.802
	Top	0.065	-	0.003	0.870*	0.938
	Bottom	-	0.641	-	-	0.641
	Right	0.362	0.202	-	-	0.564
	Left	-	-	0.035	0.475	0.510
Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.186	0.574	0.030	0.870	See Note 2
	Front	0.171	0.203	0.025	0.135	0.534
	Top	0.065	-	0.003	0.870*	0.938
	Bottom	-	0.430	-	-	0.430
	Right	0.362	-	-	-	0.362
	Left	-	0.122	0.035	0.475	0.632

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Table 12-37

Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (Hotspot at 1.0 cm) [1 of 2]

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2+3	
Hotspot	EVDO BC10 (§90S)	0.480	0.035	0.786	1.301	
	EVDO BC0 (§22H)	0.494	0.035	0.786	1.315	
	PCS EVDO	0.593	0.035	0.786	1.414	
	GPRS/GPRS 850	0.412	0.035	0.786	1.233	
	GPRS/GPRS 1900	0.415	0.035	0.786	1.236	
	UMTS 850	0.338	0.035	0.786	1.159	
	UMTS 1750	0.669	0.035	0.786	1.490	
	UMTS 1900	0.655	0.035	0.786	1.476	
	LTE Band 71	0.434	0.035	0.786	1.255	
	LTE Band 12	0.380	0.035	0.786	1.201	
	LTE Band 13	0.394	0.035	0.786	1.215	
	LTE Band 14	0.346	0.035	0.786	1.167	
	LTE Band 26 (Cell)	0.424	0.035	0.786	1.245	
	LTE Band 5 (Cell)	0.436	0.035	0.786	1.257	
	LTE Band 66 (AWS)	0.641	0.035	0.786	1.462	
	LTE Band 25 (PCS)	0.553	0.035	0.786	1.374	
	LTE Band 30	0.574	0.035	0.786	1.395	
LTE Band 41	0.398	0.035	0.786	1.219		
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n71 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.424	0.035	0.786	1.484
	LTE Band 2 (PCS) Ant 7	0.236	0.424	0.035	0.786	1.481
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 66 (AWS) Ant 7	0.239	0.416	0.035	0.786	1.476
	LTE Band 2 (PCS) Ant 7	0.236	0.416	0.035	0.786	1.473
	LTE Band 30 Ant 7	0.162	0.416	0.035	0.786	1.399
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 12	0.380	0.362	0.035	0.786	1.563
	LTE Band 14	0.346	0.362	0.035	0.786	1.529
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.786	See Table Below
	LTE Band 2 (PCS)	0.553	0.362	0.035	0.786	See Table Below
	LTE Band 30	0.574	0.362	0.035	0.786	See Table Below
Configuration	Mode	Anchor Band SAR (W/kg)	NR Band n2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot	LTE Band 12	0.380	0.362	0.035	0.786	1.563
	LTE Band 14	0.346	0.362	0.035	0.786	1.529
	LTE Band 5 (Cell)	0.436	0.362	0.035	0.786	See Table Below
	LTE Band 66 (AWS)	0.641	0.362	0.035	0.786	See Table Below
	LTE Band 30	0.574	0.362	0.035	0.786	See Table Below

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Table 12-38
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (Hotspot at 1.0 cm) [2 of 2]

Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 5 (Cell) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.436	0.030	0.786	1.408	Hotspot SAR	Back	0.186	0.436	0.030	0.786	1.438
	Front	0.195	0.403	0.025	0.117	0.740		Front	0.171	0.403	0.025	0.117	0.716
	Top	0.095	-	0.003	0.786*	0.884		Top	0.065	-	0.003	0.786*	0.854
	Bottom	-	0.251	-	-	0.251		Bottom	-	0.251	-	-	0.251
	Right	0.362	-	-	-	0.362		Right	0.362	-	-	-	0.362
	Left	-	0.181	0.035	0.496	0.712		Left	-	0.181	0.035	0.496	0.712
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.285	0.030	0.786	1.257	Hotspot SAR	Back	0.186	0.348	0.030	0.786	1.350
	Front	0.195	0.399	0.025	0.117	0.736		Front	0.171	0.471	0.025	0.117	0.784
	Top	0.095	-	0.003	0.786*	0.884		Top	0.065	-	0.003	0.786*	0.854
	Bottom	-	0.553	-	-	0.553		Bottom	-	0.641	-	-	0.641
	Right	0.362	0.130	-	-	0.492		Right	0.362	0.202	-	-	0.564
	Left	-	-	0.035	0.496	0.531		Left	-	-	0.035	0.496	0.531
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)		Simult Tx	Configuration	NR Band n2 (PCS) SAR (W/kg)	LTE Band 30 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	
		1	2	3	4	1+2+3+4			1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.156	0.574	0.030	0.786	1.546	Hotspot SAR	Back	0.186	0.574	0.030	0.786	1.576
	Front	0.195	0.203	0.025	0.117	0.540		Front	0.171	0.203	0.025	0.117	0.516
	Top	0.095	-	0.003	0.786*	0.884		Top	0.065	-	0.003	0.786*	0.854
	Bottom	-	0.430	-	-	0.430		Bottom	-	0.430	-	-	0.430
	Right	0.362	-	-	-	0.362		Right	0.362	-	-	-	0.362
	Left	-	0.122	0.035	0.496	0.653		Left	-	0.122	0.035	0.496	0.653

Notes:

1. No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.
2. Please see section 12.8 for detailed simultaneous transmission analysis.

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12.6 Phablet Simultaneous Transmission Analysis

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

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

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

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

Table 12-39
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Phablet)

Configuration	Mode	5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	NR Band n66 (AWS)	1.468	1.115	1.853	2.583	3.321
	NR Band n2 (PCS)	1.678	1.115	1.853	2.793	3.531

Table 12-40
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Phablet)

Configuration	Mode	5G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	NR Band n66 (AWS)	1.468	1.544	3.012
	NR Band n2 (PCS)	1.678	1.544	3.222

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12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 1.6 W/kg for 1g, 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, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

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

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

12.7.1 Body-Worn Back Side SPLSR Evaluation and Analysis

Table 12-41
Peak SAR Locations for Body-Worn Back Side

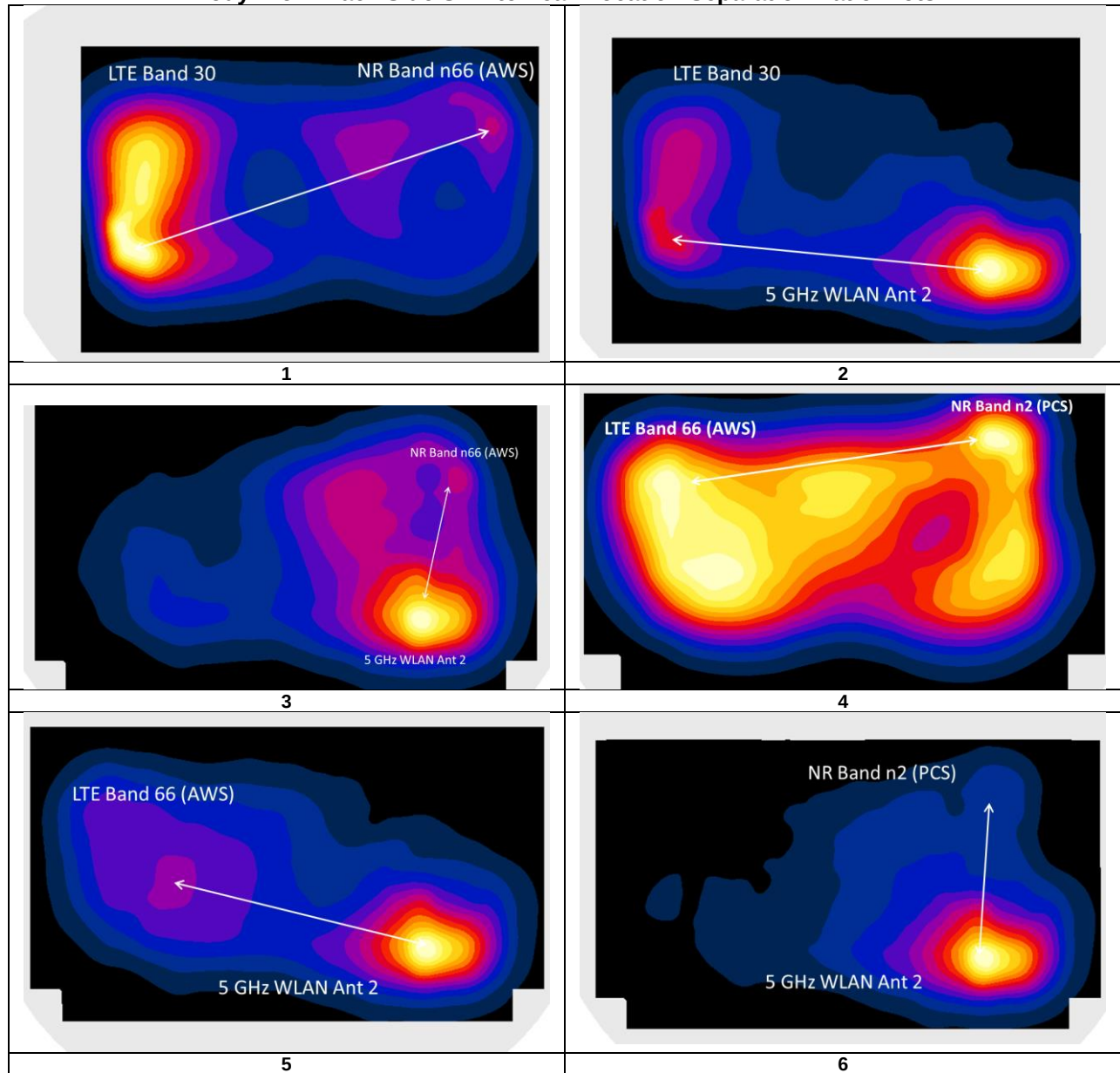
Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 2	6.00	57.00
5 GHz WLAN MIMO	6.00	56.00
Bluetooth	14.60	54.00
LTE Band 66 (AWS)	-50.50	-80.00
LTE Band 30	-5.80	-72.00
NR Band n66 (AWS)	-53.50	72.00
NR Band n2 (PCS)	-67.00	68.00

Table 12-42
Body-Worn Back Side SAR to Peak Location Separation Ratio Calculations

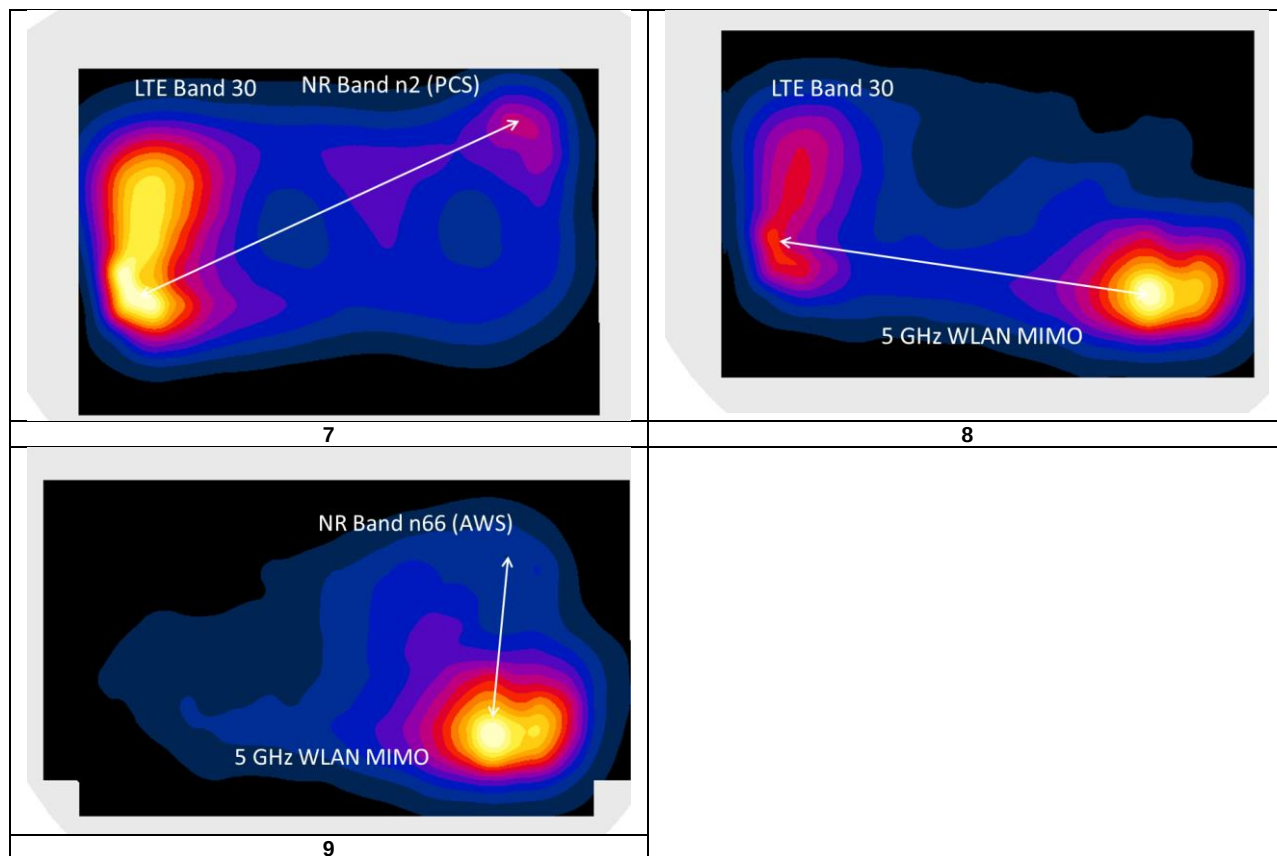
Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D _{a-b}	(a+b) ^{1.5} /D _{a-b}	
LTE Band 30	NR Band n66 (AWS)	0.574	0.253	0.827	151.69	0.00	1
LTE Band 30	5 GHz WLAN Ant 2	0.574	0.870	1.444	129.54	0.01	2
NR Band n66 (AWS)	5 GHz WLAN Ant 2	0.253	0.870	1.123	61.36	0.02	3
LTE Band 66 (AWS)	NR Band n2 (PCS)	0.502	0.228	0.73	148.92	0.00	4
LTE Band 66 (AWS)	5 GHz WLAN Ant 2	0.502	0.870	1.372	148.19	0.01	5
NR Band n2 (PCS)	5 GHz WLAN Ant 2	0.228	0.870	1.098	73.82	0.02	6
LTE Band 30	NR Band n2 (PCS)	0.574	0.228	0.802	152.79	0.00	7
LTE Band 30	5 GHz WLAN MIMO	0.574	0.786	1.36	128.54	0.01	8
NR Band n66 (AWS)	5 GHz WLAN MIMO	0.253	0.786	1.039	61.61	0.02	9

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Table 12-43
Body-Worn Back Side SAR to Peak Location Separation Ratio Plots



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12.7.2 Hotspot Back Side SPLSR Evaluation and Analysis

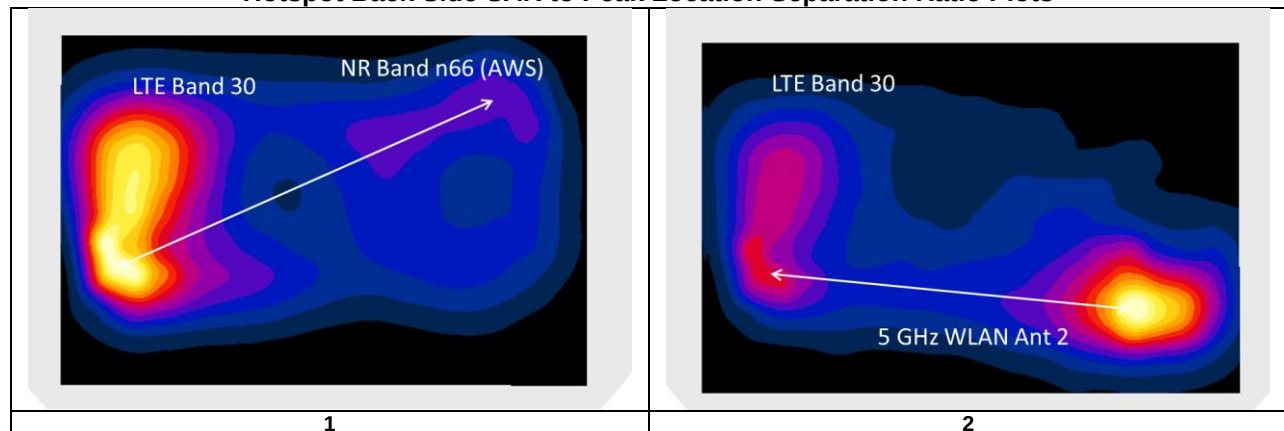
Table 12-44
Peak SAR Locations for Hotspot Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 2	6.00	57.00
Bluetooth	14.60	54.00
LTE Band 30	-5.80	-72.00
NR Band n66 (AWS)	-57.50	66.50
NR Band n2 (PCS)	-67.00	58.50

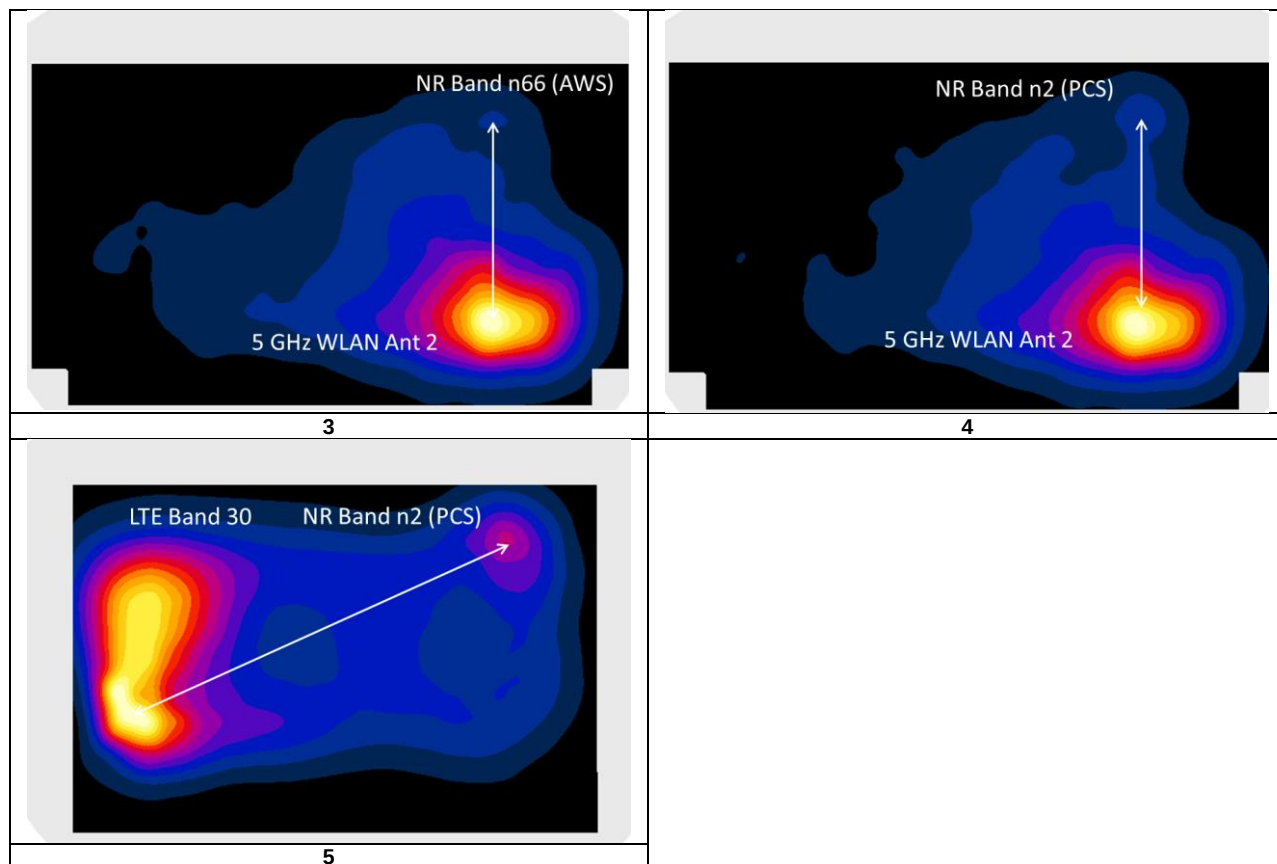
Table 12-45
Hotspot Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D _{a-b}	$(a+b)^{1.5}/D_{a-b}$	
LTE Band 30	NR Band n66 (AWS)	0.574	0.156	0.73	147.83	0.00	1
LTE Band 30	5 GHz WLAN Ant 2	0.574	0.870	1.444	129.54	0.01	2
NR Band n66 (AWS)	5 GHz WLAN Ant 2	0.156	0.870	1.026	64.21	0.02	3
NR Band n2 (PCS)	5 GHz WLAN Ant 2	0.186	0.870	1.056	73.02	0.01	4
LTE Band 30	NR Band n2 (PCS)	0.574	0.186	0.76	144.14	0.00	5

Table 12-46
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



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12.8 Additional Simultaneous SAR Evaluation and Analysis for Main Band, Bluetooth, and 5 GHz WLAN Operations

Per KDB Publication 865664, when the sum of the transmitters potentially operating simultaneously is greater than the 1.6 W/kg and the sum to peak SAR location separation ratio between any pair of transmitters is more than 0.04 for 1g, SAR tests are required for simultaneous transmission to determine the aggregate 1g SAR. When required, each transmitter is tested for simultaneous transmission in the configuration, channel and operating mode that resulted in the highest SAR during the stand-alone evaluation.

The Bluetooth and 5 GHz WLAN transmitters are co-located antennas and spatially separated from 2G/3G/4G/5G antennas. Per November 2019 TCB Workshop Notes, enlarged volumetric scans on co-located antenna pairs were performed for Bluetooth and 5 GHz WLAN. The SPLSR procedure for the spatially separated 2G/3G/4G/5G antenna and aggregated SAR distribution of the co-located Bluetooth/5GHz WLAN antenna pair was applied according to KDB Publication 447498.

12.8.1

Back Side Volumetric SAR Evaluation and Analysis for Bluetooth and 5GHz WLAN Simultaneous Transmission

Table 12-47
Simultaneous Transmission SAR Analysis

Band/ Mode	Configuration	Frequency [MHz]	Measured Standalone 1g SAR [W/kg]	Maximum Allowed Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 1) [dBm]	Conducted Power (Ant 2) [dBm]	Duty Cycle (%)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Volumetric 1g SAR [W/kg]	Scaled Volumetric 1g SAR [W/kg]	Volumetric SAR Plot Number
Bluetooth	Back Side, Ch. 39, 1 Mbps	2441	0.022	12.5	N/A	12.24	N/A	76.9	1.062	1.3	0.017	0.023	A74
5 GHz WLAN Ant 2	Back Side, 802.11a, 20 MHz, Ch. 165, 6 Mbps	5825	0.683	N/A	18.0	N/A	17.02	98.3	1.253	1.017	0.691	0.881	A75
5 GHz WLAN MIMO	Back Side, 802.11n, 20 MHz, Ch. 165, 13 Mbps	5805	0.613	18.5	18.0	17.97	17.01	97.9	1.256	1.021	0.569	0.730	A76

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot Number
5 GHz WLAN Ant 2	Bluetooth	0.877	A77
5 GHz WLAN MIMO	Bluetooth	0.729	A78

Note:

1. All volumetric zoom scans were performed with DASY52 SAR system version 52.10. Post processor SEMCAD X Versions 14.6.14 (7483) multiband combiner requires enlarged zoom scans to overlap but does not require measurement point resolutions within the volumes to be identical for interpolation and superposition.
2. Each antenna was evaluated independently using the channel/configuration that produced the highest measured SAR when the standalone SAR was tested.
3. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05. The simultaneous transmission SAR results of the individual transmitters were scaled using SEMCAD X during processing.
4. The Bluetooth and 5 GHz WIFI SAR values above represent the aggregate distributions from the simultaneous transmission (volumetric) SAR evaluation.

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12.8.2

Body-Worn Back Side SPLSR Evaluation and Analysis for Main Band, Bluetooth, 2.4GHz WLAN, and 5GHz WLAN Simultaneous Transmission

Table 12-48
Peak SAR Locations for Body-Worn Back Side

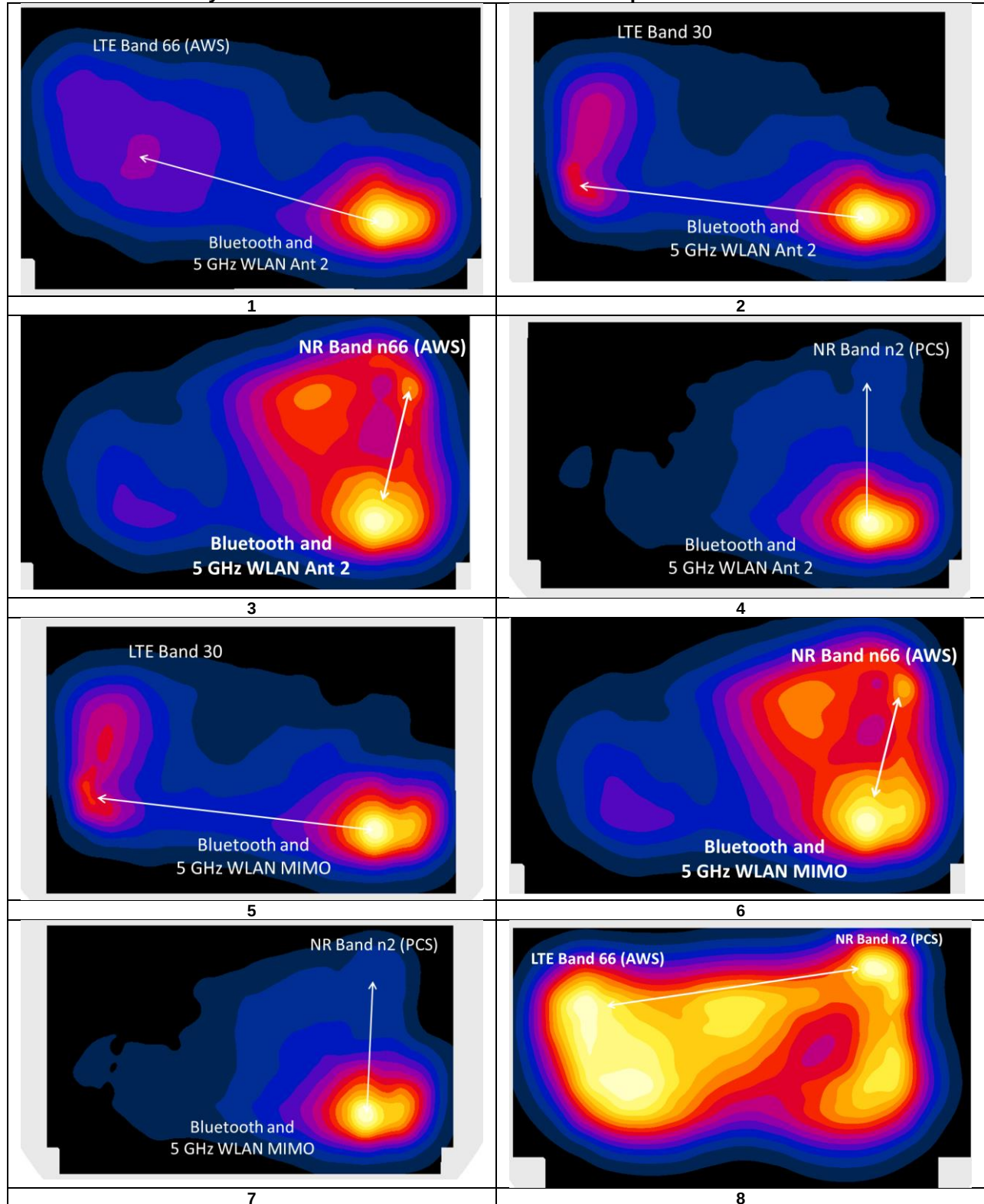
Mode/Band	x (mm)	y (mm)
Bluetooth and 5 GHz WLAN Ant 2	1.00	58.00
Bluetooth and 5 GHz WLAN MIMO	5.00	58.00
LTE Band 66 (AWS)	-50.50	-80.00
LTE Band 30	-5.80	-72.00
NR Band n66 (AWS)	-53.50	72.00
NR Band n2 (PCS)	-67.00	68.00

Table 12-49
Body-Worn 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}	$(a+b)^{1.5}/D_{a-b}$	
Bluetooth and 5 GHz WLAN Ant 2	LTE Band 66 (AWS)	0.877	0.502	1.379	147.30	0.01	1
Bluetooth and 5 GHz WLAN Ant 2	LTE Band 30	0.877	0.574	1.451	130.18	0.01	2
Bluetooth and 5 GHz WLAN Ant 2	NR Band n66 (AWS)	0.877	0.253	1.13	56.27	0.02	3
Bluetooth and 5 GHz WLAN Ant 2	NR Band n2 (PCS)	0.877	0.228	1.105	68.73	0.02	4
Bluetooth and 5 GHz WLAN MIMO	LTE Band 30	0.729	0.574	1.303	130.45	0.01	5
Bluetooth and 5 GHz WLAN MIMO	NR Band n66 (AWS)	0.729	0.253	0.982	60.15	0.02	6
Bluetooth and 5 GHz WLAN MIMO	NR Band n2 (PCS)	0.729	0.228	0.957	72.69	0.01	7
LTE Band 66 (AWS)	NR Band n2 (PCS)	0.502	0.228	0.73	148.92	0.00	8
LTE Band 30	NR Band n66 (AWS)	0.574	0.253	0.827	151.69	0.00	9
LTE Band 30	NR Band n2 (PCS)	0.574	0.228	0.802	152.79	0.00	10

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Table 12-50
Body-Worn Back Side SAR to Peak Location Separation Ratio Plots



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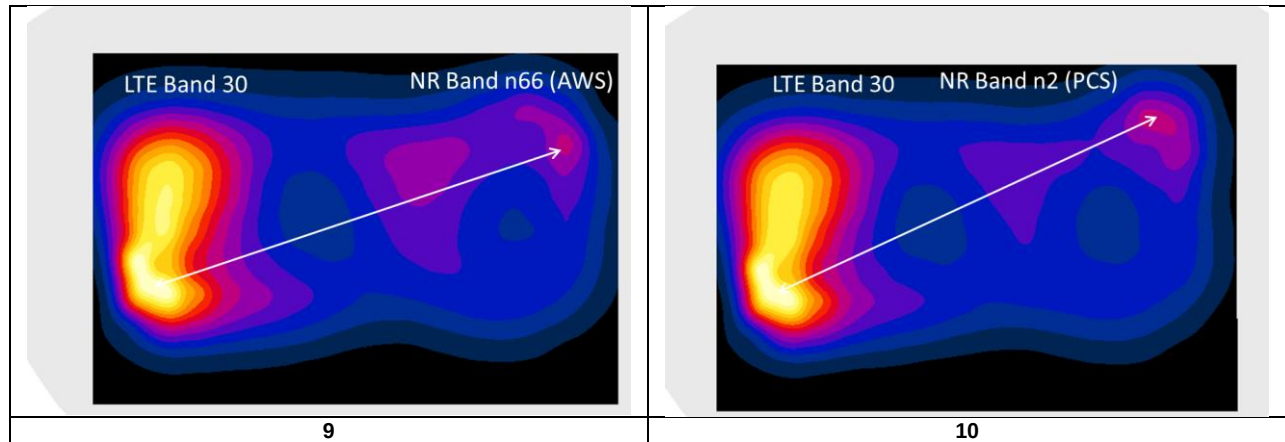
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12.8.1 Hotspot Back Side SPLSR Evaluation and Analysis for Main Band, Bluetooth, 2.4GHz WLAN, and 5GHz WLAN Simultaneous Transmission

Table 12-51
Peak SAR Locations for Hotspot Back Side

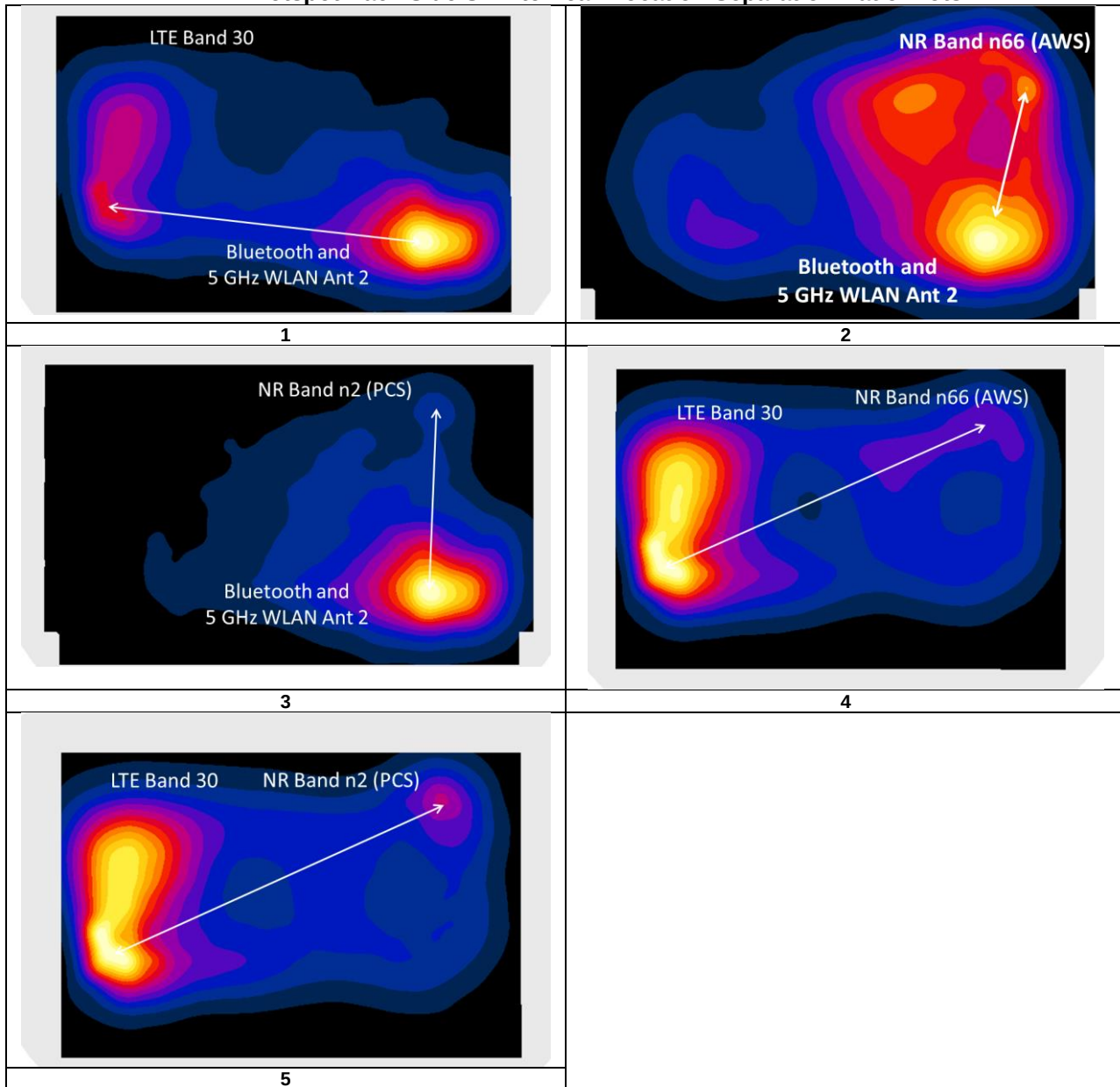
Mode/Band	x (mm)	y (mm)
Bluetooth and 5 GHz WLAN Ant 2	1.00	58.00
LTE Band 30	-5.80	-72.00
NR Band n66 (AWS)	-57.50	66.50
NR Band n2 (PCS)	-67.00	58.50

Table 12-52
Hotspot Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
Bluetooth and 5 GHz WLAN Ant 2	LTE Band 30	0.877	0.574	1.451	130.18	0.01	1
Bluetooth and 5 GHz WLAN Ant 2	NR Band n66 (AWS)	0.877	0.156	1.033	59.11	0.02	2
Bluetooth and 5 GHz WLAN Ant 2	NR Band n2 (PCS)	0.877	0.186	1.063	68.00	0.02	3
LTE Band 30	NR Band n66 (AWS)	0.574	0.156	0.73	147.83	0.00	4
LTE Band 30	NR Band n2 (PCS)	0.574	0.186	0.76	144.14	0.00	5

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Table 12-53
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



12.9 Simultaneous Transmission Conclusion

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

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13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

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

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Test Position	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1720.00	344000	NR Band n66 (AWS), 20 MHz Bandwidth	DFT-S-OFDM QPSK, 1 RB, 1 RB Offset	Left	Cheek	1.010	0.992	1.02	N/A	N/A	N/A	N/A
1900	1880.00	376000	NR Band n2 (PCS), 20 MHz Bandwidth	CP-OFDM QPSK, 1 RB, 1 RB Offset	Left	Cheek	0.984	0.979	1.01	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram							

13.2 Measurement Uncertainty

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

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14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85033E	3 mm Standard Calibration Kit	6/6/2020	Annual	6/6/2021	MY53402352
Agilent	8594A	[9kHz-2.9GHz] Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753ES	Network Analyzer	3/5/2020	Annual	3/5/2021	MY40001472
Agilent	8753ES	S-Parameter Network Analyzer	12/31/2019	Annual	12/31/2020	US39170172
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	E4438C	ESG Vector Signal Generator	12/13/2019	Annual	12/13/2020	MY42082659
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	2/20/2020	Annual	2/20/2021	GB4220325
Agilent	E5515C	Wireless Communications Test Set	2/26/2020	Annual	2/26/2021	GB44400860
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Agilent	N5182A	MMG Vector Signal Generator	2/19/2020	Annual	2/19/2021	MY47420651
Agilent	N9030A	PKA Signal Analyzer (44GHz)	8/17/2020	Annual	8/17/2021	MY52350166
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	MA2410EA	USB Power Sensor	10/10/2019	Annual	10/10/2020	1344545
Anritsu	MA2410EA	USB Power Sensor	10/10/2019	Annual	10/10/2020	1344559
Anritsu	MA2411B	Pulse Power Sensor	12/4/2019	Annual	12/4/2020	1126066
Anritsu	MA2411B	Pulse Power Sensor	1/21/2020	Annual	1/21/2021	1207470
Anritsu	ML2495A	Power Meter	11/15/2019	Annual	11/15/2020	1039008
Anritsu	ML2495A	Power Meter	12/17/2019	Annual	12/17/2020	941001
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	620901190
Anritsu	MT8821C	Radio Communication Analyzer	4/14/2020	Annual	4/14/2021	630181794
Anritsu	MT8821C	Radio Communication Analyzer	2/22/2020	Annual	2/22/2021	6261895213
Anritsu	MT8821C	Radio Communication Analyzer	11/22/2019	Annual	11/22/2020	6262044715
Control Company	4040	Therm./ Clock/ Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113269
Control Company	4040	Therm./ Clock/ Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113274
Control Company	4040	Therm./ Clock/ Humidity Monitor	3/6/2020	Biennial	3/6/2022	200170313
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192382744
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192382750
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766816
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766817
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
KEYSIGHT	E4438C	VECTOR SIGNAL GENERATOR	6/22/2020	Annual	6/22/2021	MY45092078
Keysight Technologies	AT/N6705B	DC Power Supply	N/A	N/A	N/A	MY53001315
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53004059
Keysight Technologies	U1040A	Digital Multimeter	3/14/2020	Biennial	3/14/2022	MY47501470
Isolve	1108-150	Digital Calliper	3/17/2020	Biennial	3/17/2022	409193536
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
MiniCircuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
MiniCircuits	NLP-1200+	Low Pass Filter DC to 1200 MHz	CBT	N/A	CBT	N/A
MiniCircuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Nanda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Nanda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Nanda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	N/A
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	1445
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	10/4/2019	Annual	10/4/2020	166462
Rohde & Schwarz	CMW500	Radio Communication Tester	10/15/2019	Annual	10/15/2020	109366
Rohde & Schwarz	CMW500	Radio Communication Tester	3/27/2020	Annual	3/27/2021	128633
Rohde & Schwarz	CMW500	Radio Communication Tester	5/21/2020	Annual	5/21/2021	128635
Rohde & Schwarz	ZNL66	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
SPEAG	DAE-11	Dielectric Assessment Kit (10MHz - 3GHz)	11/17/2019	Annual	11/17/2020	1091
SPEAG	DAE-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D750V3	750 MHz Dipole	3/11/2020	Annual	3/11/2021	1054
SPEAG	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	46132
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Triennial	5/23/2021	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Biennial	2/21/2021	56148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	56149
SPEAG	D2300V2	2300 MHz SAR Dipole	8/13/2018	Triennial	8/13/2021	1073
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Triennial	4/11/2021	1004
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2450V2	2450 MHz SAR Dipole	2/10/2020	Annual	2/10/2021	882
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Biennial	6/14/2021	1064
SPEAG	D5GHV2	5 GHz SAR Dipole	2/18/2020	Annual	2/18/2021	1120
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	4243
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Biennial	3/13/2021	4247
SPEAG	D1750V2	1750 MHz SAR Dipole	5/12/2020	Annual	5/12/2021	1148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	56080
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Triennial	8/16/2021	981
SPEAG	D5GHV2	5 GHz SAR Dipole	8/10/2018	Triennial	8/10/2021	1227
SPEAG	EX30V4	SAR Probe	2/21/2020	Annual	1/21/2021	5589
SPEAG	EX30V4	SAR Probe	6/23/2020	Annual	6/23/2021	7406
SPEAG	EX30V4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX30V4	SAR Probe	4/21/2020	Annual	4/21/2021	7402
SPEAG	EX30V4	SAR Probe	1/21/2020	Annual	1/21/2021	7488
SPEAG	EX30V4	SAR Probe	12/11/2019	Annual	12/11/2020	7570
SPEAG	EX30V4	SAR Probe	4/21/2020	Annual	4/21/2021	7357
SPEAG	EX30V4	SAR Probe	6/23/2020	Annual	6/23/2021	7509
SPEAG	EX30V4	SAR Probe	9/19/2019	Annual	9/19/2020	7552
SPEAG	EX30V4	SAR Probe	5/18/2020	Annual	5/18/2021	7538
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/14/2020	Annual	5/14/2021	1583
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Data Acquisition Electronics	4/15/2020	Annual	4/15/2021	1502
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1468
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/15/2020	Annual	4/15/2021	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2020	Annual	6/18/2021	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/12/2019	Annual	9/12/2020	1449
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/20/2020	Annual	5/20/2021	728

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

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15 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Uncertainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)	RSS					11.5	11.3	60
Expanded Uncertainty (95% CONFIDENCE LEVEL)	k=2					23.0	22.6	

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16 CONCLUSION

16.1 Measurement Conclusion

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

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

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