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SAR EVALUATION REPORT

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

Date of Testing:
07/23/18 - 08/06/18
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1808070153-01-R2.ZNF

FCC ID: **ZNFV405UA**

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

DUT Type: Portable Handset
Application Type: Class II Permissive Change
FCC Rule Part(s): CFR §2.1093
Model: LM-V405UA
Additional Model(s): LMV405UA, LM-V405TA, LMV405TA, LM-V405MA, LMV405MA, LM-V405QA, LMV405QA, LM-V405QA5, LMV405QA5, LM-V405QA6, LMV405QA6, LM-V405UAB, LMV405UAB, LM-V405UAL, LMV405UAL
Permissive Change(s): See FCC Change Document

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.14	0.77	0.84	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.14	1.01	1.04	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.14	0.58	1.12	2.88
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.12	0.92	0.86	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.10	0.37	0.44	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.15	0.98	0.98	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.10	0.55	0.83	2.63
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.13	0.65	1.03	2.55
PCE	LTE Band 71	665.5 - 695.5 MHz	0.10	0.49	0.49	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.11	0.51	0.51	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.13	0.64	0.64	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	0.15	0.70	0.70	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.12	0.83	0.83	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.11	0.82	0.82	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.14	0.95	1.28	2.98
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	0.15	0.78	1.23	3.00
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.48	0.48	0.79	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.34	0.50	0.69	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.68	0.64	0.83	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.48	0.81	0.81	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.28	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.69	0.34	N/A	1.74
NII	U-NII-2C	5500 - 5720 MHz	0.74	0.79	N/A	2.76
NII	U-NII-3	5745 - 5825 MHz	1.27	0.80	0.80	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.21	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.57	1.59	1.59	3.85

Note: This revised Test Report (S/N: 1M1808070153-01-R2.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.

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

Randy Ortanez
President

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

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
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 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 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 - 4 KHz

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1.2 Power Reduction for SAR

This device uses a power reduction mechanism for SAR compliance. The power reduction mechanism is activated when the device is used in close proximity to the user's body. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device. 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 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.

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 Maximum PCE Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (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*
GSM/GPRS/EDGE 850	Maximum	**34.2**	**34.2**	**30.0**	**28.0**	**27.0**	**27.0**	**27.0**	**26.0**	**25.0**
	Nominal	**33.7**	**33.7**	**29.5**	**27.5**	**26.5**	**26.5**	**26.5**	**25.5**	**24.5**
GSM/GPRS/EDGE 1900	Maximum	**31.7**	**31.7**	**27.5**	**26.5**	**25.5**	**26.0**	**26.0**	**25.5**	**24.5**
	Nominal	**31.2**	**31.2**	**27.0**	**26.0**	**25.0**	**25.5**	**25.5**	**25.0**	**24.0**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 5 (850 MHz)	Maximum	**25.5**	**25.5**	**25.5**	**25.5**
	Nominal	**25.0**	**25.0**	**25.0**	**25.0**
UMTS Band 4 (1750 MHz)	Maximum	**25.2**	**25.2**	**25.2**	**25.2**
	Nominal	**24.7**	**24.7**	**24.7**	**24.7**
UMTS Band 2 (1900 MHz)	Maximum	**25.2**	**25.2**	**25.2**	**25.2**
	Nominal	**24.7**	**24.7**	**24.7**	**24.7**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.5**
	Nominal	**25.0**
CDMA/EVDO BC0 (§22H)	Maximum	**25.5**
	Nominal	**25.0**
PCS CDMA/EVDO	Maximum	**25.2**
	Nominal	**24.7**

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Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 12	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 17	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 13	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 14	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 26 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 5 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 66 (AWS)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 4 (AWS)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 25 (PCS)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 2 (PCS)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 30	Maximum	**23.7**
	Nominal	**23.2**
LTE Band 7	Maximum	**23.7**
	Nominal	**23.2**
LTE Band 41 (PC3)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 41 (PC2)	Maximum	**27.7**
	Nominal	**27.2**

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1.3.2 Reduced PCE Power

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 4 (1750 MHz)	Maximum	**24.2**	**24.2**	**24.2**	**24.2**
	Nominal	**23.7**	**23.7**	**23.7**	**23.7**
UMTS Band 2 (1900 MHz)	Maximum	**24.2**	**24.2**	**24.2**	**24.2**
	Nominal	**23.7**	**23.7**	**23.7**	**23.7**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**24.2**
	Nominal	**23.7**

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 4 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 25 (PCS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 2 (PCS)	Maximum	**24.2**
	Nominal	**23.7**

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1.3.3 Maximum WLAN and Bluetooth Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**20.5**		
	Nominal	**19.5**		
IEEE 802.11g (2.4 GHz)	Maximum	**18.5**	**19.0**	**17.0**
	Nominal	**17.5**	**18.0**	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.5**	**18.0**	**16.5**
	Nominal	**16.5**	**17.0**	**15.5**
IEEE 802.11ac (2.4 GHz)	Maximum	**17.5**	**18.0**	**16.5**
	Nominal	**16.5**	**17.0**	**15.5**

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	**13.0**
	Nominal	**12.0**
Bluetooth LE	Maximum	**7.0**
	Nominal	**6.0**

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Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	23.5		
	Nominal	22.5		
IEEE 802.11g (2.4 GHz)	Maximum	21.5	22.0	20.0
	Nominal	20.5	21.0	19.0
IEEE 802.11n (2.4 GHz)	Maximum	20.5	21.0	19.5
	Nominal	19.5	20.0	18.5
IEEE 802.11ac (2.4 GHz)	Maximum	20.5	21.0	19.5
	Nominal	19.5	20.0	18.5

Mode / Band		Modulated Average - Single Tx Chain (dBm)						
		20 MHz Bandwidth	40 MHz Bandwidth			80 MHz Bandwidth		
		Ch. 36-165	Ch. 38	Ch. 62, 102	Ch. 46-54, 110-159	Ch. 42	Ch. 58	Ch. 106-155
IEEE 802.11a (5 GHz)	Maximum	18.0						
	Nominal	17.0						
IEEE 802.11n (5 GHz)	Maximum	17.0	13.0	12.5	16.0			
	Nominal	16.0	12.0	11.5	15.0			
IEEE 802.11ac (5 GHz)	Maximum	17.0	13.0	12.5	16.0	13.5	10.5	13.5
	Nominal	16.0	12.0	11.5	15.0	12.5	9.5	12.5

Mode / Band		Modulated Average - MIMO (dBm)						
		20 MHz Bandwidth	40 MHz Bandwidth			80 MHz Bandwidth		
		Ch. 36-165	Ch. 38	Ch. 62, 102	Ch. 46-54, 110-159	Ch. 42	Ch. 58	Ch. 106-155
IEEE 802.11a (5 GHz)	Maximum	21.0						
	Nominal	20.0						
IEEE 802.11n (5 GHz)	Maximum	20.0	16.0	15.5	19.0			
	Nominal	19.0	15.0	14.5	18.0			
IEEE 802.11ac (5 GHz)	Maximum	20.0	16.0	15.5	19.0	16.5	13.5	16.5
	Nominal	19.0	15.0	14.5	18.0	15.5	12.5	15.5

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1.3.4 Reduced WLAN Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**17.0**		
	Nominal	**16.0**		
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**		
	Nominal	**16.0**		
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**		**16.5**
	Nominal	**16.0**		**15.5**
IEEE 802.11ac (2.4 GHz)	Maximum	**17.0**		**16.5**
	Nominal	**16.0**		**15.5**

Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**20.0**		
	Nominal	**19.0**		
IEEE 802.11g (2.4 GHz)	Maximum	**20.0**		
	Nominal	**19.0**		
IEEE 802.11n (2.4 GHz)	Maximum	**20.0**		**19.5**
	Nominal	**19.0**		**18.5**
IEEE 802.11ac (2.4 GHz)	Maximum	**20.0**		**19.5**
	Nominal	**19.0**		**18.5**

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Mode / Band		Modulated Average - Single Tx Chain (dBm)						
		20 MHz Bandwidth	40 MHz Bandwidth			80 MHz Bandwidth		
		Ch. 36-165	Ch. 38	Ch. 62, 102	Ch. 46-54, 110-159	Ch. 42	Ch. 58	Ch. 106-155
IEEE 802.11a (5 GHz)	Maximum	**15.0**						
	Nominal	**14.0**						
IEEE 802.11n (5 GHz)	Maximum	**15.0**	**13.0**	**12.5**	**15.0**			
	Nominal	**14.0**	**12.0**	**11.5**	**14.0**			
IEEE 802.11ac (5 GHz)	Maximum	**15.0**	**13.0**	**12.5**	**15.0**	**13.5**	**10.5**	**13.5**
	Nominal	**14.0**	**12.0**	**11.5**	**14.0**	**12.5**	**9.5**	**12.5**

Mode / Band		Modulated Average - MIMO (dBm)						
		20 MHz Bandwidth	40 MHz Bandwidth			80 MHz Bandwidth		
		Ch. 36-165	Ch. 38	Ch. 62, 102	Ch. 46-54, 110-159	Ch. 42	Ch. 58	Ch. 106-155
IEEE 802.11a (5 GHz)	Maximum	**18.0**						
	Nominal	**17.0**						
IEEE 802.11n (5 GHz)	Maximum	**18.0**	**16.0**	**15.5**	**18.0**			
	Nominal	**17.0**	**15.0**	**14.5**	**17.0**			
IEEE 802.11ac (5 GHz)	Maximum	**18.0**	**16.0**	**15.5**	**18.0**	**16.5**	**13.5**	**16.5**
	Nominal	**17.0**	**15.0**	**14.5**	**17.0**	**15.5**	**12.5**	**15.5**

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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 F. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a "phablet."

Table 1-1
Device Edges/Sides for SAR Testing

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

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

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1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	N/A	Yes	
7	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
8	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
9	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered
10	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
11	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
12	GSM voice + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	N/A	Yes	
13	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
14	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
15	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
16	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
17	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
18	UMTS + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
19	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
20	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
21	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
22	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
23	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
24	LTE + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
25	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
26	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
27	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^Bluetooth Tethering is considered
28	CDMA/EVDO data + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
29	CDMA/EVDO data + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
30	CDMA/EVDO data + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
31	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
32	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
33	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^Bluetooth Tethering is considered
34	GPRS/EDGE + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
35	GPRS/EDGE + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
36	GPRS/EDGE + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered

1. Bluetooth cannot transmit simultaneously with WLAN.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, the simultaneous transmission scenarios involving WIFI are listed in the above table.
5. 5 GHz Wireless Router is only supported for the U-NII-1 and U-NII-3 by S/W, therefore U-NII2A and U-NII2C were not evaluated for wireless router conditions.

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6. This device supports 2x2 MIMO Tx for WLAN. 802.11a/g/n/ac modes support CDD, 802.11b mode supports TDD operations only, and 802.11n/ac modes additionally support SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports BT Tethering.
8. This device supports VOLTE.
9. This device supports VoWIFI.

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 Bluetooth, 2.4 GHz, U-NII-1, 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.

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

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

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC guidance, downlink CA conducted power measurements were not required

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for this C2PC filing when the combination was addressed in the original filing. Please refer to RF Exposure Technical Report S/N 1M1806200130-01.ZNF for original LTE downlink CA conducted power measurements. Additional combinations were measured. Please see Appendix H for new measurements.

This device supports 64QAM on the uplink for LTE Operations. Conducted powers for 64QAM 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 64 QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leq$ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

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

This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive.

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

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

This device supports LTE Carrier Aggregation (CA) in the uplink 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.

Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)

1.8 Guidance Applied

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

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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 INFORMATION

LTE Information					
FCC ID	**ZNFV405UA**				
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 7 (2502.5 - 2567.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 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 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 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		2310 (27710)	N/A	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 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 (QPSK, 16 QAM, 64 QAM), UL UE Cat 13 (QPSK, 16 QAM, 64 QAM)				
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 12. It supports uplink carrier aggregation for LTE CA_41C with a maximum of two 20MHz component carriers and LTE CA_5B with a maximum of two 10MHz component carriers. All other uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 12 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SCFDMA.				

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3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

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4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

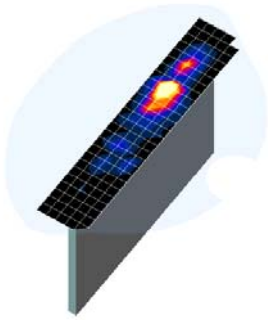

Figure 4-1
Sample SAR Area Scan

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

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

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

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

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

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

*Also compliant to IEEE 1528-2013 Table 6

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5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

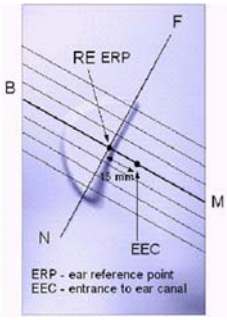

Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

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

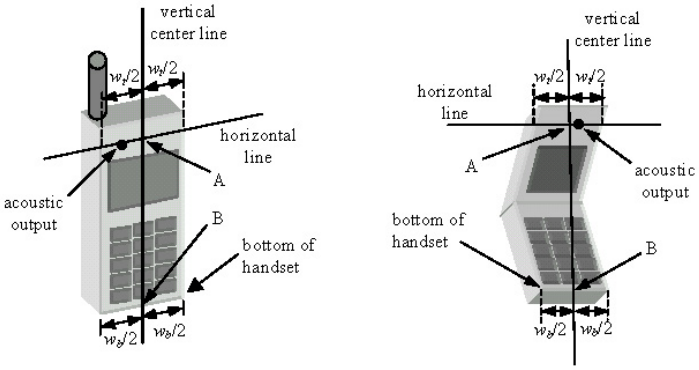

Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

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

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

6.3 Positioning for Ear / 15º Tilt

With the test device aligned in the "Cheek Position":

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

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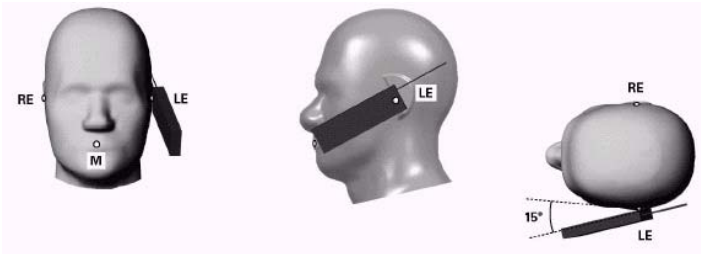

Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

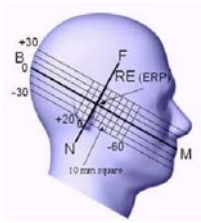

Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

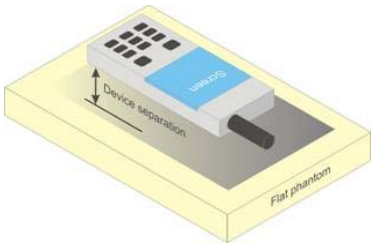

Figure 6-4
Sample Body-Worn Diagram

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

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

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

6.8 Phablet Configurations

For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that

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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 Additional Test Positions due to Proximity Considerations

This device uses a sensor to reduce voice and data powers in extremity (hand-held) use conditions.

When the sensor detects a user is touching the device on or near to the antenna the device reduces the maximum allowed output power However, the proximity sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, an additional exposure condition 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.

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

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7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

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8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 8-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH_0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 8-2 was applied.

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.4.6 CDMA2000 1x Advanced

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the

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primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

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8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
   i. The required channel and offset combination with the highest maximum output power is required for SAR.
   ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
   iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

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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.

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.

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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

				Loopback			Data			
Band	**Channel**	**Rule Part**	**Frequency**	**SO55 [dBm]**	**SO55 [dBm]**	**SO75 [dBm]**	**TDSO SO32 [dBm]**	**TDSO SO32 [dBm]**	**1x EvDO Rev. 0 [dBm]**	**1x EvDO Rev. A [dBm]**
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.14	25.19	25.41	25.14	25.35	25.16	25.29
Cellular	1013	22H	824.7	25.28	25.26	25.48	25.46	25.28	25.25	25.42
	384	22H	836.52	25.28	25.21	25.32	25.28	25.23	25.15	25.29
	777	22H	848.31	25.34	25.18	25.20	25.33	25.26	25.37	25.24
PCS	25	24E	1851.25	24.95	24.96	24.98	25.20	24.99	25.14	25.13
	600	24E	1880	25.04	25.08	24.97	25.05	25.04	25.01	24.95
	1175	24E	1908.75	24.84	24.94	25.01	24.99	25.04	24.98	24.91

Table 9-2
Reduced Conducted Power

				Loopback			Data			
Band	**Channel**	**Rule Part**	**Frequency**	**SO55 [dBm]**	**SO55 [dBm]**	**SO75 [dBm]**	**TDSO SO32 [dBm]**	**TDSO SO32 [dBm]**	**1x EvDO Rev. 0 [dBm]**	**1x EvDO Rev. A [dBm]**
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	23.84	23.97	24.04	23.98	24.17	24.00	24.01
	600	24E	1880	24.16	23.92	23.92	23.92	23.97	24.06	24.05
	1175	24E	1908.75	23.94	23.87	24.10	24.14	23.91	23.90	24.10

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										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	34.04	**34.19**	29.94	27.91	26.91	26.72	26.85	25.82	24.87
	190	34.17	**34.15**	29.99	27.80	26.80	26.81	26.73	25.92	24.80
	251	34.10	**34.14**	29.79	27.82	26.91	26.80	26.84	25.82	24.98
GSM 1900	512	31.52	31.62	27.36	26.34	**25.36**	25.82	25.70	25.16	24.33
	661	31.57	31.62	27.24	26.25	**25.26**	25.53	25.70	25.08	24.44
	810	31.60	31.60	27.46	26.31	**25.44**	25.99	25.80	25.41	24.44

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	25.01	**25.16**	23.92	23.65	23.90	17.69	20.83	21.56	21.86
	190	25.14	**25.12**	23.97	23.54	23.79	17.78	20.71	21.66	21.79
	251	25.07	**25.11**	23.77	23.56	23.90	17.77	20.82	21.56	21.97
GSM 1900	512	22.49	22.59	21.34	22.08	**22.35**	16.79	19.68	20.90	21.32
	661	22.54	22.59	21.22	21.99	**22.25**	16.50	19.68	20.82	21.43
	810	22.57	22.57	21.44	22.05	**22.43**	16.96	19.78	21.15	21.43

GSM 850	**Frame Avg.Targets:**	24.67	**24.67**	23.48	23.24	23.49	17.47	20.48	21.24	21.49
GSM 1900		22.17	22.17	20.98	21.74	**21.99**	16.47	19.48	20.74	20.99

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Note:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. GPRS/EDGE (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
3. EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK 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	25.26	25.24	25.46	25.10	25.05	25.10	24.91	24.94	25.09	-
99		12.2 kbps AMR	25.32	25.25	25.31	25.19	25.03	25.05	25.00	25.12	25.02	-
6	HSDPA	Subtest 1	25.31	25.49	25.13	25.16	25.15	24.98	25.12	25.00	25.18	0
6		Subtest 2	25.42	25.46	25.33	25.04	25.11	24.98	25.15	24.88	25.14	0
6		Subtest 3	24.63	24.70	24.47	24.60	24.51	24.51	24.66	24.58	24.66	0.5
6		Subtest 4	24.65	24.73	24.76	24.46	24.43	24.70	24.61	24.64	24.55	0.5
6	HSUPA	Subtest 1	25.40	25.26	25.34	24.40	24.50	24.63	24.41	24.57	24.68	0
6		Subtest 2	23.23	23.32	23.32	22.82	23.07	23.02	22.80	22.93	22.93	2
6		Subtest 3	24.36	24.08	24.33	23.99	24.07	24.19	23.76	23.85	24.14	1
6		Subtest 4	23.33	23.08	23.23	23.02	23.19	23.11	23.12	23.11	23.14	2
6		Subtest 5	25.23	25.22	25.35	24.40	24.51	24.59	24.14	24.61	24.63	0
8	DC-HSDPA	Subtest 1	25.37	25.13	25.41	25.12	25.16	24.96	25.07	25.07	25.11	0
8		Subtest 2	25.29	25.40	25.31	24.96	24.99	25.12	25.13	24.80	24.95	0
8		Subtest 3	24.57	24.82	24.46	24.57	24.53	24.46	24.56	24.65	24.55	0.5
8		Subtest 4	24.76	24.87	24.68	24.53	24.43	24.45	24.68	24.61	24.56	0.5

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	24.13	24.00	24.17	24.05	23.76	24.16	-
99		12.2 kbps AMR	24.14	24.16	24.19	24.18	24.04	24.14	-
6	HSDPA	Subtest 1	24.07	24.11	24.06	24.06	23.96	24.17	0
6		Subtest 2	23.91	23.97	24.08	24.13	24.12	24.20	0
6		Subtest 3	23.60	23.65	23.45	23.56	23.49	23.50	0.5
6		Subtest 4	23.60	23.51	23.60	23.65	23.70	23.52	0.5
6	HSUPA	Subtest 1	23.50	23.57	23.67	23.47	23.68	23.68	0
6		Subtest 2	21.77	22.15	22.05	21.95	21.82	21.90	2
6		Subtest 3	22.93	23.11	23.15	22.93	22.86	23.16	1
6		Subtest 4	21.96	21.90	22.16	22.04	22.17	21.94	2
6		Subtest 5	23.42	23.53	23.67	23.39	23.35	23.54	0
8	DC-HSDPA	Subtest 1	24.10	24.13	24.11	24.14	23.97	23.93	0
8		Subtest 2	24.19	23.94	24.12	24.06	23.96	24.14	0
8		Subtest 3	23.61	23.57	23.55	23.43	23.70	23.38	0.5
8		Subtest 4	23.25	23.52	23.49	23.59	23.53	23.49	0.5

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DC-HSDPA considerations

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

Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1 LTE Band 71

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

LTE Band 71 20 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.43	0	0
	1	50	**25.48**		0
	1	99	25.39		0
	50	0	24.41	0-1	1
	50	25	**24.46**		1
	50	50	24.24		1
	100	0	24.40		1
16QAM	1	0	24.30	0-1	1
	1	50	24.31		1
	1	99	24.36		1
	50	0	23.48	0-2	2
	50	25	23.20		2
	50	50	23.38		2
	100	0	23.34		2
64QAM	1	0	23.40	0-2	2
	1	50	23.33		2
	1	99	23.25		2
	50	0	22.37	0-3	3
	50	25	22.30		3
	50	50	22.19		3
	100	0	22.35		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 Conducted Powers - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **133297** **(680.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.34	0	0
	1	36	25.38		0
	1	74	25.26		0
	36	0	24.45	0-1	1
	36	18	24.35		1
	36	37	24.38		1
	75	0	24.49		1
16QAM	1	0	24.40	0-1	1
	1	36	24.45		1
	1	74	24.33		1
	36	0	23.34	0-2	2
	36	18	23.35		2
	36	37	23.40		2
	75	0	23.10		2
64QAM	1	0	23.43	0-2	2
	1	36	23.40		2
	1	74	23.32		2
	36	0	22.33	0-3	3
	36	18	22.43		3
	36	37	22.34		3
	75	0	22.40		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 Conducted Powers - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.00	25.29	25.24	0	0
	1	25	25.23	25.30	25.25		0
	1	49	25.30	25.20	25.13		0
	25	0	24.37	24.36	24.28	0-1	1
	25	12	24.40	24.44	24.50		1
	25	25	24.42	24.42	24.43		1
	50	0	24.30	24.45	24.21		1
16QAM	1	0	24.41	24.30	24.30	0-1	1
	1	25	24.40	24.28	24.39		1
	1	49	24.32	24.32	24.24		1
	25	0	23.45	23.25	23.44	0-2	2
	25	12	23.44	23.44	23.25		2
	25	25	23.45	23.47	23.43		2
	50	0	23.47	23.40	23.48		2
64QAM	1	0	23.44	23.45	23.33	0-2	2
	1	25	23.13	23.21	23.36		2
	1	49	23.34	23.40	23.23		2
	25	0	22.37	22.26	22.29	0-3	3
	25	12	22.36	22.49	22.45		3
	25	25	22.29	22.31	22.40		3
	50	0	22.47	22.24	22.43		3

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.12	25.30	25.35	0	0
	1	12	25.04	25.46	25.44		0
	1	24	25.29	25.39	25.34		0
	12	0	24.23	24.42	24.36	0-1	1
	12	6	24.27	24.42	24.32		1
	12	13	24.28	24.30	24.27		1
	25	0	24.28	24.45	24.15		1
16QAM	1	0	24.16	24.44	24.29	0-1	1
	1	12	24.22	24.44	24.44		1
	1	24	24.31	24.41	24.45		1
	12	0	23.26	23.48	23.30	0-2	2
	12	6	23.39	23.41	23.31		2
	12	13	23.29	23.40	23.20		2
	25	0	23.39	23.34	23.22		2
64QAM	1	0	23.31	23.34	23.30	0-2	2
	1	12	23.20	23.25	23.35		2
	1	24	23.42	23.40	23.38		2
	12	0	22.22	22.28	22.43	0-3	3
	12	6	22.37	22.45	22.49		3
	12	13	22.40	22.47	22.46		3
	25	0	22.27	22.45	22.45		3

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9.4.2 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	**25.41**	0	0
	1	25	25.36		0
	1	49	25.14		0
	25	0	**24.46**	0-1	1
	25	12	24.37		1
	25	25	24.40		1
	50	0	24.43		1
16QAM	1	0	24.03	0-1	1
	1	25	23.94		1
	1	49	24.11		1
	25	0	23.20	0-2	2
	25	12	23.46		2
	25	25	23.47		2
	50	0	23.42		2
64QAM	1	0	23.00	0-2	2
	1	25	22.98		2
	1	49	22.95		2
	25	0	22.35	0-3	3
	25	12	22.46		3
	25	25	22.40		3
	50	0	22.42		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 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.49	25.38	25.26	0	0
	1	12	25.43	25.46	25.44		0
	1	24	25.32	25.40	25.03		0
	12	0	24.47	24.36	24.29	0-1	1
	12	6	24.44	24.35	24.35		1
	12	13	24.30	24.21	24.15		1
	25	0	24.31	24.15	24.29		1
16QAM	1	0	24.37	24.44	24.24	0-1	1
	1	12	24.38	24.27	24.19		1
	1	24	24.17	24.21	24.48		1
	12	0	23.42	23.38	23.48	0-2	2
	12	6	23.42	23.47	23.50		2
	12	13	23.39	23.36	23.22		2
	25	0	23.36	23.22	23.32		2
64QAM	1	0	23.30	23.16	23.09	0-2	2
	1	12	23.17	23.10	23.17		2
	1	24	23.27	23.20	23.49		2
	12	0	22.30	22.30	22.50	0-3	3
	12	6	22.36	22.30	22.41		3
	12	13	22.30	22.36	22.26		3
	25	0	22.28	22.43	22.23		3

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.36	25.35	25.48	0	0
	1	7	25.40	25.30	25.39		0
	1	14	25.36	25.29	24.69		0
	8	0	24.44	24.33	24.45	0-1	1
	8	4	24.36	24.38	24.32		1
	8	7	24.29	24.16	24.12		1
	15	0	24.42	24.41	24.29		1
16QAM	1	0	24.20	23.95	23.94	0-1	1
	1	7	24.46	24.01	24.27		1
	1	14	24.02	24.27	24.28		1
	8	0	23.27	23.41	23.43	0-2	2
	8	4	23.37	23.38	23.15		2
	8	7	23.25	23.41	23.41		2
	15	0	23.38	23.36	23.39		2
64QAM	1	0	23.15	23.09	22.87	0-2	2
	1	7	23.49	23.00	23.03		2
	1	14	22.84	23.13	23.29		2
	8	0	22.26	22.26	22.33	0-3	3
	8	4	22.33	22.26	22.33		3
	8	7	22.35	22.43	22.44		3
	15	0	22.43	22.38	22.42		3

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REV 20.11 M
06/19/2018

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.18	25.15	25.16	0	0
	1	2	25.40	25.33	24.91		0
	1	5	25.39	25.22	25.03		0
	3	0	25.33	25.19	25.18		0
	3	2	25.35	25.26	25.23		0
	3	3	25.43	25.19	25.00		0
	6	0	24.30	24.09	24.29	0-1	1
16QAM	1	0	23.90	24.27	24.22	0-1	1
	1	2	24.16	24.40	24.08		1
	1	5	24.38	24.41	24.16		1
	3	0	24.22	24.08	24.12		1
	3	2	24.41	24.34	24.09		1
	3	3	24.37	24.11	24.04		1
	6	0	23.40	23.11	23.10	0-2	2
64QAM	1	0	23.04	23.12	23.26	0-2	2
	1	2	23.06	23.31	23.11		2
	1	5	23.41	23.28	23.17		2
	3	0	23.08	23.12	23.19		2
	3	2	23.41	23.37	23.01		2
	3	3	23.19	23.15	22.99		2
	6	0	22.33	22.24	21.97	0-3	3

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9.4.3 LTE Band 13

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

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.44	0	0
	1	25	25.35		0
	1	49	**25.46**		0
	25	0	24.33	0-1	1
	25	12	**24.42**		1
	25	25	24.35		1
	50	0	24.29		1
16QAM	1	0	24.19	0-1	1
	1	25	24.13		1
	1	49	24.32		1
	25	0	23.35	0-2	2
	25	12	23.44		2
	25	25	23.41		2
	50	0	23.28		2
64QAM	1	0	23.24	0-2	2
	1	25	23.28		2
	1	49	23.14		2
	25	0	22.17	0-3	3
	25	12	22.00		3
	25	25	22.20		3
	50	0	22.32		3

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

LTE Band 13 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23230** **(782.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.30	0	0
	1	12	25.34		0
	1	24	25.46		0
	12	0	24.49	0-1	1
	12	6	24.36		1
	12	13	24.35		1
	25	0	24.30		1
16QAM	1	0	24.38	0-1	1
	1	12	24.40		1
	1	24	24.49		1
	12	0	23.40	0-2	2
	12	6	23.45		2
	12	13	23.40		2
	25	0	23.39		2
64QAM	1	0	23.28	0-2	2
	1	12	23.25		2
	1	24	23.33		2
	12	0	22.40	0-3	3
	12	6	22.34		3
	12	13	22.24		3
	25	0	22.11		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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9.4.4 LTE Band 14

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

LTE Band 14 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23330 (793.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.23	0	0
	1	25	**25.40**		0
	1	49	25.16		0
	25	0	**24.39**	0-1	1
	25	12	24.25		1
	25	25	24.18		1
	50	0	24.25		1
16QAM	1	0	24.31	0-1	1
	1	25	24.29		1
	1	49	23.93		1
	25	0	23.30	0-2	2
	25	12	23.33		2
	25	25	23.39		2
	50	0	23.38		2
64QAM	1	0	23.30	0-2	2
	1	25	23.25		2
	1	49	23.03		2
	25	0	22.02	0-3	3
	25	12	22.22		3
	25	25	21.89		3
	50	0	22.12		3

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

LTE Band 14 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23330** **(793.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.44	0	0
	1	12	25.44		0
	1	24	25.45		0
	12	0	24.41	0-1	1
	12	6	24.34		1
	12	13	24.37		1
	25	0	24.32		1
16QAM	1	0	24.11	0-1	1
	1	12	24.04		1
	1	24	24.01		1
	12	0	23.43	0-2	2
	12	6	23.41		2
	12	13	23.34		2
	25	0	23.37		2
64QAM	1	0	23.28	0-2	2
	1	12	23.19		2
	1	24	23.20		2
	12	0	22.12	0-3	3
	12	6	22.14		3
	12	13	22.23		3
	25	0	22.04		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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9.4.5 LTE Band 26 (Cell)

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

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.21	0	0
	1	36	**25.28**		0
	1	74	24.97		0
	36	0	24.36	0-1	1
	36	18	24.31		1
	36	37	**24.38**		1
	75	0	24.28		1
16QAM	1	0	24.30	0-1	1
	1	36	24.38		1
	1	74	24.27		1
	36	0	23.26	0-2	2
	36	18	23.42		2
	36	37	23.26		2
	75	0	23.24		2
64QAM	1	0	23.40	0-2	2
	1	36	23.36		2
	1	74	23.23		2
	36	0	22.31	0-3	3
	36	18	22.19		3
	36	37	22.20		3
	75	0	22.26		3

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

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

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.33	25.34	25.36	0	0
	1	25	25.34	25.35	25.14		0
	1	49	25.15	25.26	25.05		0
	25	0	24.42	24.22	23.97	0-1	1
	25	12	24.44	24.22	24.17		1
	25	25	24.43	24.11	24.21		1
	50	0	24.33	24.28	24.04		1
16QAM	1	0	24.35	24.37	24.33	0-1	1
	1	25	24.41	24.35	24.12		1
	1	49	24.33	24.28	24.04		1
	25	0	23.47	23.36	23.14	0-2	2
	25	12	23.32	23.37	23.13		2
	25	25	23.42	23.33	23.04		2
	50	0	23.36	23.25	23.01		2
64QAM	1	0	23.40	23.42	23.29	0-2	2
	1	25	23.38	23.21	23.14		2
	1	49	23.26	23.23	22.98		2
	25	0	22.41	22.49	22.28	0-3	3
	25	12	22.43	22.23	22.22		3
	25	25	22.44	22.23	22.21		3
	50	0	22.45	22.14	22.20		3

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

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.45	25.36	25.17	0	0
	1	12	25.41	25.14	25.07		0
	1	24	25.10	25.19	25.12		0
	12	0	24.33	24.25	24.14	0-1	1
	12	6	24.37	24.19	24.16		1
	12	13	24.25	24.20	24.10		1
	25	0	24.30	24.17	24.19		1
16QAM	1	0	24.24	24.25	24.32	0-1	1
	1	12	24.38	24.32	24.36		1
	1	24	24.47	24.29	24.18		1
	12	0	23.42	23.36	23.03	0-2	2
	12	6	23.36	23.38	23.21		2
	12	13	23.37	23.11	23.10		2
	25	0	23.40	23.08	23.01		2
64QAM	1	0	23.42	23.46	23.32	0-2	2
	1	12	23.25	23.30	23.32		2
	1	24	23.33	23.05	23.22		2
	12	0	22.37	22.13	22.14	0-3	3
	12	6	22.37	22.23	22.28		3
	12	13	22.34	22.19	21.98		3
	25	0	22.41	22.15	21.96		3

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

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.20	25.25	25.31	0	0
	1	7	25.42	25.38	25.28		0
	1	14	25.37	25.04	25.17		0
	8	0	24.28	24.33	24.22	0-1	1
	8	4	24.29	24.35	24.37		1
	8	7	24.33	24.23	24.20		1
	15	0	24.43	24.29	24.29		1
16QAM	1	0	24.37	24.27	24.48	0-1	1
	1	7	24.30	24.44	24.28		1
	1	14	24.26	24.09	24.12		1
	8	0	23.30	23.32	23.18	0-2	2
	8	4	23.20	23.25	23.22		2
	8	7	23.28	23.29	23.07		2
	15	0	23.27	23.16	23.26		2
64QAM	1	0	23.39	23.46	23.44	0-2	2
	1	7	23.36	23.23	23.23		2
	1	14	23.38	22.99	23.15		2
	8	0	22.14	22.25	22.18	0-3	3
	8	4	22.15	22.12	22.30		3
	8	7	22.40	22.10	22.06		3
	15	0	22.47	22.35	22.18		3

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

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.32	25.18	25.16	0	0
	1	2	25.39	25.22	25.14		0
	1	5	25.43	25.26	25.10		0
	3	0	25.38	25.32	25.09		0
	3	2	25.34	25.35	25.21		0
	3	3	25.29	25.32	25.17		0
	6	0	24.30	24.14	24.17	0-1	1
16QAM	1	0	24.30	24.18	24.23	0-1	1
	1	2	24.40	24.43	24.13		1
	1	5	24.41	24.14	24.12		1
	3	0	24.15	24.16	24.06		1
	3	2	24.11	24.24	24.14		1
	3	3	24.16	23.92	24.02		1
	6	0	23.23	23.50	23.18	0-2	2
64QAM	1	0	23.40	23.30	22.97	0-2	2
	1	2	23.49	23.47	23.02		2
	1	5	23.12	23.25	23.07		2
	3	0	23.22	23.04	22.90		2
	3	2	23.06	23.15	22.99		2
	3	3	22.87	23.11	23.05		2
	6	0	22.33	22.34	22.13	0-3	3

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9.4.6 LTE Band 5 (Cell)

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

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**25.38**	0	0
	1	25	25.13		0
	1	49	25.06		0
	25	0	**24.47**	0-1	1
	25	12	24.39		1
	25	25	24.06		1
	50	0	24.11		1
16QAM	1	0	24.34	0-1	1
	1	25	24.18		1
	1	49	24.35		1
	25	0	23.37	0-2	2
	25	12	23.20		2
	25	25	23.47		2
	50	0	23.30		2
64QAM	1	0	23.40	0-2	2
	1	25	23.32		2
	1	49	23.23		2
	25	0	22.30	0-3	3
	25	12	22.46		3
	25	25	22.18		3
	50	0	22.19		3

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

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

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.43	25.43	25.25	0	0
	1	12	25.26	25.31	25.21		0
	1	24	25.46	25.08	25.12		0
	12	0	24.30	24.28	24.23	0-1	1
	12	6	24.23	24.35	24.26		1
	12	13	24.31	24.10	24.01		1
	25	0	24.30	24.28	24.16		1
16QAM	1	0	24.45	24.50	24.33	0-1	1
	1	12	24.22	24.39	24.41		1
	1	24	24.25	24.38	24.08		1
	12	0	23.43	23.34	23.14	0-2	2
	12	6	23.34	23.34	23.19		2
	12	13	23.34	23.15	23.23		2
	25	0	23.44	23.13	23.19		2
64QAM	1	0	23.27	23.48	23.20	0-2	2
	1	12	23.35	23.45	23.30		2
	1	24	23.25	22.93	23.28		2
	12	0	22.28	22.09	21.98	0-3	3
	12	6	22.33	22.23	22.19		3
	12	13	22.36	22.17	22.02		3
	25	0	22.25	22.22	21.97		3

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

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.45	25.12	25.28	0	0
	1	7	25.35	25.33	25.18		0
	1	14	25.31	25.06	25.14		0
	8	0	24.38	24.28	24.27	0-1	1
	8	4	24.41	24.34	24.21		1
	8	7	24.32	24.20	24.08		1
	15	0	24.47	24.48	24.31		1
16QAM	1	0	24.27	24.30	24.36	0-1	1
	1	7	24.30	24.36	24.43		1
	1	14	24.38	24.21	24.19		1
	8	0	23.37	23.28	23.30	0-2	2
	8	4	23.23	23.25	23.23		2
	8	7	23.28	23.26	23.04		2
	15	0	23.42	23.32	23.24		2
64QAM	1	0	23.20	23.49	23.37	0-2	2
	1	7	23.36	23.06	23.27		2
	1	14	23.25	22.95	23.20		2
	8	0	22.36	22.32	21.93	0-3	3
	8	4	21.90	22.37	22.37		3
	8	7	22.35	22.32	22.11		3
	15	0	22.34	22.17	22.37		3

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

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.46	25.34	25.19	0	0
	1	2	25.47	25.16	25.19		0
	1	5	25.23	25.13	25.19		0
	3	0	25.27	25.28	25.22		0
	3	2	25.32	25.29	25.11		0
	3	3	25.33	25.32	25.27		0
	6	0	24.35	24.23	24.15	0-1	1
16QAM	1	0	24.24	24.14	24.16	0-1	1
	1	2	24.42	24.49	24.10		1
	1	5	24.23	24.28	24.36		1
	3	0	24.31	24.16	24.04		1
	3	2	24.09	24.34	23.91		1
	3	3	24.12	24.15	24.19		1
	6	0	23.23	23.40	23.41	0-2	2
64QAM	1	0	23.33	23.33	23.15	0-2	2
	1	2	23.42	23.35	22.97		2
	1	5	23.32	23.33	23.11		2
	3	0	23.10	23.11	22.94		2
	3	2	23.11	23.09	22.98		2
	3	3	22.81	23.05	23.09		2
	6	0	22.34	22.36	22.12	0-3	3

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9.4.7 LTE Band 66 (AWS)

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 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.13	25.15	25.06	0	0
	1	50	25.10	**25.17**	24.75		0
	1	99	24.87	24.98	24.82		0
	50	0	24.09	**24.20**	24.04	0-1	1
	50	25	24.10	24.15	23.87		1
	50	50	24.08	23.97	23.73		1
	100	0	23.95	24.10	23.77		1
16QAM	1	0	24.11	24.08	24.14	0-1	1
	1	50	24.18	24.14	23.83		1
	1	99	24.07	24.07	23.78		1
	50	0	23.08	23.12	23.03	0-2	2
	50	25	23.13	23.10	22.92		2
	50	50	23.11	23.08	22.81		2
	100	0	23.12	23.20	22.91		2
64QAM	1	0	23.01	23.03	23.03	0-2	2
	1	50	23.12	23.03	22.72		2
	1	99	23.00	23.01	22.58		2
	50	0	22.06	22.03	22.10	0-3	3
	50	25	22.11	22.18	21.70		3
	50	50	22.12	22.05	21.95		3
	100	0	22.04	22.09	22.14		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 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.98	25.08	25.20	0	0
	1	36	25.12	24.94	24.90		0
	1	74	24.82	24.91	24.89		0
	36	0	23.87	24.05	24.07	0-1	1
	36	18	23.97	24.05	24.07		1
	36	37	24.03	24.12	23.83		1
	75	0	23.98	24.00	24.13		1
16QAM	1	0	24.06	24.14	24.16	0-1	1
	1	36	24.16	23.77	24.15		1
	1	74	23.90	24.03	24.08		1
	36	0	23.15	23.10	23.11	0-2	2
	36	18	23.04	22.99	22.91		2
	36	37	23.07	23.01	22.95		2
	75	0	22.96	23.12	23.11		2
64QAM	1	0	22.90	23.10	23.05	0-2	2
	1	36	23.09	22.71	23.02		2
	1	74	22.83	22.86	23.16		2
	36	0	22.15	22.15	21.97	0-3	3
	36	18	22.14	22.01	21.95		3
	36	37	22.10	22.07	22.09		3
	75	0	22.02	22.12	21.96		3

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 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.11	24.96	24.98	0	0
	1	25	24.84	25.00	24.94		0
	1	49	25.13	24.92	24.72		0
	25	0	24.05	24.01	23.82	0-1	1
	25	12	24.05	24.10	24.04		1
	25	25	24.12	24.02	23.92		1
	50	0	24.06	24.13	23.93		1
16QAM	1	0	23.78	23.72	23.86	0-1	1
	1	25	23.96	23.70	23.76		1
	1	49	23.80	23.77	23.96		1
	25	0	23.10	23.02	23.13	0-2	2
	25	12	22.95	23.00	23.03		2
	25	25	22.99	23.06	23.15		2
	50	0	23.13	23.13	23.09		2
64QAM	1	0	22.66	22.79	22.65	0-2	2
	1	25	23.07	22.64	22.58		2
	1	49	22.73	22.71	22.83		2
	25	0	21.99	21.94	22.17	0-3	3
	25	12	22.02	22.18	22.05		3
	25	25	21.91	22.04	21.96		3
	50	0	21.83	21.92	21.95		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 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.89	25.08	24.98	0	0
	1	12	24.94	25.00	25.00		0
	1	24	25.01	24.96	24.94		0
	12	0	23.95	23.99	23.90	0-1	1
	12	6	23.83	24.08	23.93		1
	12	13	24.00	23.90	23.83		1
	25	0	23.91	24.16	23.93		1
16QAM	1	0	24.15	23.97	23.97	0-1	1
	1	12	23.98	23.86	24.07		1
	1	24	23.79	23.89	23.98		1
	12	0	23.14	23.06	23.03	0-2	2
	12	6	23.10	23.00	23.16		2
	12	13	23.02	23.08	23.07		2
	25	0	23.14	23.02	23.00		2
64QAM	1	0	22.98	22.94	22.81	0-2	2
	1	12	22.88	22.82	23.00		2
	1	24	22.65	23.05	22.87		2
	12	0	22.18	21.92	22.15	0-3	3
	12	6	22.11	21.95	22.05		3
	12	13	22.07	22.16	22.04		3
	25	0	22.14	22.15	21.93		3

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 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.87	24.95	24.99	0	0
	1	7	24.84	24.99	24.97		0
	1	14	24.85	24.90	24.90		0
	8	0	24.00	23.91	23.96	0-1	1
	8	4	23.80	24.02	24.03		1
	8	7	23.89	23.72	23.86		1
	15	0	24.08	23.92	23.74		1
16QAM	1	0	23.89	23.75	23.69	0-1	1
	1	7	24.02	23.78	23.74		1
	1	14	23.86	23.79	24.16		1
	8	0	23.10	23.14	23.11	0-2	2
	8	4	23.10	23.13	23.03		2
	8	7	23.13	23.16	23.11		2
	15	0	22.89	22.96	22.93		2
64QAM	1	0	22.85	22.57	22.89	0-2	2
	1	7	22.90	22.90	22.90		2
	1	14	22.92	22.79	23.05		2
	8	0	21.94	22.01	22.04	0-3	3
	8	4	22.13	22.05	21.98		3
	8	7	22.01	21.83	21.90		3
	15	0	21.96	22.01	22.15		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 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.90	24.87	24.69	0	0
	1	2	25.02	24.92	24.80		0
	1	5	24.72	24.91	24.79		0
	3	0	24.93	24.85	24.87		0
	3	2	24.97	25.04	24.91		0
	3	3	24.81	24.73	24.83		0
	6	0	23.79	23.84	23.81	0-1	1
16QAM	1	0	23.86	24.20	23.98	0-1	1
	1	2	23.84	24.10	23.91		1
	1	5	24.00	24.06	23.78		1
	3	0	23.75	23.85	23.75		1
	3	2	24.10	24.10	23.61		1
	3	3	23.86	23.94	23.89		1
	6	0	23.13	22.90	22.92	0-2	2
64QAM	1	0	22.70	23.08	23.11	0-2	2
	1	2	22.79	23.04	22.87		2
	1	5	23.10	22.98	22.61		2
	3	0	22.63	22.80	22.79		2
	3	2	23.04	22.85	22.70		2
	3	3	22.76	22.91	22.89		2
	6	0	22.16	21.89	21.70	0-3	3

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Table 9-33
LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**24.19**	23.95	24.01	0	0
	1	50	23.98	23.98	23.93		0
	1	99	24.14	23.83	24.16		0
	50	0	24.04	24.11	23.91	0-1	0
	50	25	**24.13**	23.97	23.96		0
	50	50	24.00	24.04	23.97		0
	100	0	24.02	23.85	24.10		0
16QAM	1	0	24.19	24.10	24.16	0-1	0
	1	50	23.97	23.94	23.90		0
	1	99	23.93	24.00	24.10		0
	50	0	22.91	22.92	22.92	0-2	1
	50	25	23.08	23.16	22.98		1
	50	50	23.00	22.85	23.20		1
	100	0	23.17	23.11	23.04		1
64QAM	1	0	22.97	23.08	22.95	0-2	1
	1	50	23.19	22.93	23.05		1
	1	99	22.98	23.06	22.99		1
	50	0	21.95	21.83	21.97	0-3	2
	50	25	21.90	22.16	21.95		2
	50	50	21.81	21.91	21.92		2
	100	0	21.92	21.89	22.04		2

Table 9-34
LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.13	24.11	23.86	0	0
	1	36	24.03	24.09	24.02		0
	1	74	24.13	23.86	23.97		0
	36	0	24.00	24.01	23.76	0-1	0
	36	18	24.10	23.95	23.85		0
	36	37	23.87	23.91	24.00		0
	75	0	24.15	24.04	24.16		0
16QAM	1	0	24.20	24.01	23.93	0-1	0
	1	36	24.01	23.92	23.93		0
	1	74	24.00	24.03	24.04		0
	36	0	22.90	22.77	23.08	0-2	1
	36	18	22.98	22.93	23.03		1
	36	37	23.12	22.93	22.87		1
	75	0	23.01	22.83	22.82		1
64QAM	1	0	22.89	23.06	22.94	0-2	1
	1	36	23.09	23.16	22.92		1
	1	74	23.09	22.84	23.07		1
	36	0	21.88	22.04	21.86	0-3	2
	36	18	22.11	22.13	21.99		2
	36	37	22.17	21.94	22.08		2
	75	0	21.78	22.11	22.07		2

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Table 9-35
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.08	24.16	23.73	0	0
	1	25	23.90	23.99	24.15		0
	1	49	24.03	24.06	24.12		0
	25	0	24.07	24.16	24.00	0-1	0
	25	12	24.05	24.11	23.94		0
	25	25	24.10	23.79	23.92		0
	50	0	23.92	23.96	24.06		0
16QAM	1	0	24.13	24.16	24.03	0-1	0
	1	25	24.19	23.97	23.78		0
	1	49	24.18	24.08	24.07		0
	25	0	22.93	23.02	22.98	0-2	1
	25	12	23.05	23.10	23.06		1
	25	25	22.95	23.01	22.83		1
	50	0	22.89	23.06	22.85		1
64QAM	1	0	22.97	23.04	23.17	0-2	1
	1	25	22.88	23.06	23.00		1
	1	49	23.13	23.01	22.93		1
	25	0	21.93	21.99	22.05	0-3	2
	25	12	22.00	21.83	21.94		2
	25	25	22.11	22.08	22.14		2
	50	0	21.85	22.04	22.00		2

Table 9-36
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.09	23.91	24.07	0	0
	1	12	23.92	24.14	24.04		0
	1	24	24.08	24.13	23.86		0
	12	0	23.85	24.11	23.86	0-1	0
	12	6	24.05	24.06	23.89		0
	12	13	24.14	24.17	24.00		0
	25	0	23.99	23.90	24.07		0
16QAM	1	0	24.20	24.02	24.17	0-1	0
	1	12	23.85	24.03	24.15		0
	1	24	23.99	24.01	24.08		0
	12	0	23.13	23.07	22.94	0-2	1
	12	6	22.92	23.04	22.99		1
	12	13	23.00	22.92	23.01		1
	25	0	23.11	23.07	23.11		1
64QAM	1	0	23.13	23.05	22.94	0-2	1
	1	12	22.94	22.99	22.89		1
	1	24	22.99	22.81	22.98		1
	12	0	21.88	21.90	21.99	0-3	2
	12	6	21.99	21.78	22.07		2
	12	13	22.16	21.97	21.94		2
	25	0	21.83	21.84	21.99		2

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Table 9-37
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.09	24.09	23.92	0	0
	1	7	24.14	24.06	23.93		0
	1	14	24.05	24.04	24.07		0
	8	0	23.98	24.12	23.83	0-1	0
	8	4	24.08	23.98	23.89		0
	8	7	24.00	24.01	23.86		0
	15	0	24.12	24.16	23.87		0
16QAM	1	0	24.18	24.17	23.95	0-1	0
	1	7	24.20	23.96	23.91		0
	1	14	24.01	24.03	24.08		0
	8	0	23.14	23.15	22.84	0-2	1
	8	4	22.94	23.09	23.03		1
	8	7	22.94	23.06	23.02		1
	15	0	23.17	23.11	23.00		1
64QAM	1	0	23.03	23.00	23.18	0-2	1
	1	7	22.90	22.86	22.99		1
	1	14	22.76	23.07	23.03		1
	8	0	21.95	21.98	22.18	0-3	2
	8	4	22.12	22.12	22.09		2
	8	7	21.99	22.00	22.04		2
	15	0	21.87	21.86	22.07		2

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.08	24.15	24.17	0	0
	1	2	23.90	24.14	23.82		0
	1	5	23.93	23.90	24.04		0
	3	0	24.03	24.10	23.97		0
	3	2	23.97	23.99	24.18		0
	3	3	23.96	23.96	23.99		0
	6	0	24.10	23.91	24.01	0-1	0
16QAM	1	0	24.15	23.82	23.83	0-1	0
	1	2	23.89	24.03	23.93		0
	1	5	24.06	24.07	23.99		0
	3	0	24.13	23.82	23.83		0
	3	2	23.98	23.89	23.96		0
	3	3	23.98	23.92	23.95		0
	6	0	23.06	23.01	22.89	0-2	1
64QAM	1	0	22.89	23.08	22.84	0-2	1
	1	2	22.90	23.11	23.05		1
	1	5	22.95	23.03	23.12		1
	3	0	22.85	22.91	23.03		1
	3	2	23.09	23.02	23.11		1
	3	3	23.04	23.00	23.09		1
	6	0	21.86	21.77	21.96	0-3	2

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9.4.8 LTE Band 25 (PCS)

Table 9-39
LTE Band 25 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.07	24.92	**25.09**	0	0
	1	50	24.89	24.94	24.85		0
	1	99	24.69	24.67	24.95		0
	50	0	24.11	24.06	**24.18**	0-1	1
	50	25	23.81	23.89	24.02		1
	50	50	23.87	23.73	24.06		1
	100	0	23.95	23.82	24.05		1
16QAM	1	0	23.92	24.15	24.19	0-1	1
	1	50	23.83	24.12	23.95		1
	1	99	23.76	23.74	23.81		1
	50	0	23.05	23.15	23.12	0-2	2
	50	25	23.09	23.05	23.12		2
	50	50	22.89	22.87	22.89		2
	100	0	23.09	23.04	23.06		2
64QAM	1	0	23.09	22.87	23.09	0-2	2
	1	50	22.67	22.94	22.94		2
	1	99	22.59	22.82	23.01		2
	50	0	22.08	21.99	21.98	0-3	3
	50	25	22.10	22.05	21.99		3
	50	50	22.03	21.85	22.07		3
	100	0	21.99	22.10	22.05		3

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Table 9-40
LTE Band 25 (PCS) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.03	25.09	25.15	0	0
	1	36	24.85	24.79	24.87		0
	1	74	24.84	24.67	24.96		0
	36	0	23.87	23.90	24.11	0-1	1
	36	18	23.91	23.90	23.92		1
	36	37	23.71	23.83	24.06		1
	75	0	23.81	23.92	23.97		1
16QAM	1	0	24.02	23.67	24.15	0-1	1
	1	36	23.84	23.62	23.82		1
	1	74	23.76	23.65	23.89		1
	36	0	23.09	23.08	23.05	0-2	2
	36	18	22.95	22.92	22.88		2
	36	37	22.91	23.05	22.90		2
	75	0	22.94	22.99	23.07		2
64QAM	1	0	22.90	22.98	23.20	0-2	2
	1	36	22.61	22.67	22.59		2
	1	74	22.83	22.54	22.87		2
	36	0	21.88	22.03	22.01	0-3	3
	36	18	22.18	21.92	22.16		3
	36	37	21.90	22.07	21.95		3
	75	0	21.82	22.08	21.81		3

Table 9-41
LTE Band 25 (PCS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.95	24.92	24.97	0	0
	1	25	24.73	24.72	24.84		0
	1	49	24.69	24.72	24.87		0
	25	0	23.82	23.93	23.97	0-1	1
	25	12	23.93	23.76	23.87		1
	25	25	23.83	23.78	23.90		1
	50	0	23.80	23.89	23.88		1
16QAM	1	0	23.82	23.77	24.11	0-1	1
	1	25	23.83	23.81	23.76		1
	1	49	23.87	23.71	23.80		1
	25	0	23.17	22.96	23.14	0-2	2
	25	12	23.01	22.87	23.13		2
	25	25	22.94	22.92	23.16		2
	50	0	22.92	22.90	23.11		2
64QAM	1	0	22.83	22.86	22.96	0-2	2
	1	25	22.97	22.68	22.92		2
	1	49	22.92	22.75	22.81		2
	25	0	21.87	21.90	22.10	0-3	3
	25	12	21.80	21.93	21.91		3
	25	25	21.84	21.86	22.06		3
	50	0	22.04	21.84	22.02		3

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Table 9-42
LTE Band 25 (PCS) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.92	24.89	24.99	0	0
	1	12	24.86	24.82	24.89		0
	1	24	24.73	24.89	24.88		0
	12	0	23.93	23.73	23.90	0-1	1
	12	6	23.74	23.82	23.95		1
	12	13	23.77	23.75	24.00		1
	25	0	23.86	23.78	23.87		1
16QAM	1	0	23.95	23.92	24.02	0-1	1
	1	12	24.02	23.70	23.82		1
	1	24	23.76	23.82	24.18		1
	12	0	22.85	23.01	23.00	0-2	2
	12	6	23.07	23.05	23.10		2
	12	13	23.01	22.84	23.09		2
	25	0	22.95	22.82	22.99		2
64QAM	1	0	22.75	22.83	23.05	0-2	2
	1	12	22.92	22.85	22.95		2
	1	24	22.78	22.81	23.00		2
	12	0	21.82	21.85	22.07	0-3	3
	12	6	21.91	22.05	21.91		3
	12	13	21.95	21.92	21.89		3
	25	0	21.85	21.83	21.85		3

Table 9-43
LTE Band 25 (PCS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.89	24.78	24.86	0	0
	1	7	24.84	24.89	25.08		0
	1	14	24.91	24.77	24.81		0
	8	0	23.72	23.91	23.72	0-1	1
	8	4	23.93	23.68	24.08		1
	8	7	23.89	23.80	24.09		1
	15	0	23.74	23.73	24.04		1
16QAM	1	0	23.83	23.72	23.72	0-1	1
	1	7	24.15	23.78	23.96		1
	1	14	23.58	23.62	24.09		1
	8	0	22.97	23.00	23.12	0-2	2
	8	4	22.87	22.90	23.13		2
	8	7	23.08	22.87	23.20		2
	15	0	22.77	22.85	22.97		2
64QAM	1	0	22.74	22.74	22.88	0-2	2
	1	7	23.07	22.70	22.93		2
	1	14	22.44	22.62	22.90		2
	8	0	21.91	22.00	22.15	0-3	3
	8	4	21.89	22.18	22.09		3
	8	7	22.03	21.89	22.14		3
	15	0	21.99	21.79	21.78		3

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Table 9-44
LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.03	24.97	24.91	0	0
	1	2	24.85	25.00	24.91		0
	1	5	24.85	25.00	24.80		0
	3	0	24.70	24.93	24.91		0
	3	2	24.87	25.04	24.86		0
	3	3	24.85	24.91	24.84		0
	6	0	23.81	23.90	23.98	0-1	1
16QAM	1	0	23.96	23.76	23.81	0-1	1
	1	2	24.10	23.86	23.73		1
	1	5	23.65	23.86	24.03		1
	3	0	23.63	23.81	23.73		1
	3	2	23.94	23.93	23.93		1
	3	3	23.74	23.82	24.07		1
	6	0	22.91	23.03	23.13	0-2	2
64QAM	1	0	22.80	23.01	22.80	0-2	2
	1	2	23.02	22.62	22.85		2
	1	5	22.56	22.95	23.10		2
	3	0	22.89	22.69	22.67		2
	3	2	22.85	22.72	22.93		2
	3	3	22.58	22.69	22.92		2
	6	0	22.13	21.89	22.00	0-3	3

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Table 9-45
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.94	24.08	23.87	0	0
	1	50	23.85	**24.10**	24.02		0
	1	99	23.84	24.08	23.94		0
	50	0	24.01	24.03	23.87	0-1	0
	50	25	24.17	**24.18**	23.78		0
	50	50	24.13	24.08	24.14		0
	100	0	24.09	24.06	24.07		0
16QAM	1	0	23.88	23.94	24.01	0-1	0
	1	50	24.11	24.15	23.88		0
	1	99	23.84	24.01	23.85		0
	50	0	22.98	23.19	22.96	0-2	1
	50	25	22.92	23.11	23.00		1
	50	50	23.13	23.03	22.93		1
	100	0	23.07	22.80	22.88		1
64QAM	1	0	23.15	23.01	23.14	0-2	1
	1	50	22.93	23.11	23.11		1
	1	99	23.12	23.14	23.06		1
	50	0	21.91	21.85	21.79	0-3	2
	50	25	22.10	22.03	22.14		2
	50	50	22.06	22.13	21.87		2
	100	0	21.98	22.01	22.14		2

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

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.02	24.06	24.08	0	0
	1	36	24.03	23.96	24.05		0
	1	74	23.92	24.05	24.06		0
	36	0	24.09	24.03	23.96	0-1	0
	36	18	23.84	23.76	24.03		0
	36	37	24.14	24.05	23.96		0
	75	0	24.13	24.09	23.93		0
16QAM	1	0	24.05	24.07	23.84	0-1	0
	1	36	23.83	24.18	24.01		0
	1	74	24.13	24.05	23.99		0
	36	0	23.06	23.15	22.90	0-2	1
	36	18	22.96	23.04	23.08		1
	36	37	23.01	22.83	23.03		1
	75	0	22.85	22.95	23.10		1
64QAM	1	0	23.18	23.01	23.14	0-2	1
	1	36	22.91	22.93	23.00		1
	1	74	22.99	22.80	23.20		1
	36	0	21.95	22.01	22.02	0-3	2
	36	18	21.92	22.00	21.93		2
	36	37	22.14	21.98	22.04		2
	75	0	22.20	21.96	22.06		2

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

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.08	24.02	23.95	0	0
	1	25	24.11	24.01	24.20		0
	1	49	24.04	23.82	23.81		0
	25	0	24.18	24.11	23.87	0-1	0
	25	12	24.09	23.86	24.01		0
	25	25	23.85	24.05	24.13		0
	50	0	24.04	23.80	23.97		0
16QAM	1	0	24.10	24.15	24.03	0-1	0
	1	25	24.04	23.95	24.07		0
	1	49	24.18	24.05	24.12		0
	25	0	22.98	23.11	23.02	0-2	1
	25	12	22.90	23.16	23.19		1
	25	25	23.02	22.82	23.16		1
	50	0	23.08	23.12	23.02		1
64QAM	1	0	22.93	23.18	23.17	0-2	1
	1	25	22.96	23.08	23.06		1
	1	49	23.12	23.08	23.10		1
	25	0	21.96	22.14	21.95	0-3	2
	25	12	22.04	21.95	21.81		2
	25	25	21.89	21.80	21.91		2
	50	0	22.02	21.92	21.95		2

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

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.00	24.07	24.00	0	0
	1	12	24.01	23.80	23.98		0
	1	24	23.90	24.06	23.92		0
	12	0	23.88	24.12	24.06	0-1	0
	12	6	23.97	24.01	24.11		0
	12	13	24.13	24.17	24.12		0
	25	0	23.85	23.94	23.97		0
16QAM	1	0	23.98	23.80	24.01	0-1	0
	1	12	24.03	24.20	24.00		0
	1	24	24.07	23.85	23.91		0
	12	0	23.08	23.16	23.09	0-2	1
	12	6	22.71	23.15	23.11		1
	12	13	23.03	22.93	22.91		1
	25	0	22.81	23.15	23.07		1
64QAM	1	0	22.95	23.09	22.99	0-2	1
	1	12	22.92	23.14	22.77		1
	1	24	22.90	22.90	23.11		1
	12	0	21.91	21.94	22.00	0-3	2
	12	6	22.05	21.84	22.02		2
	12	13	22.05	22.01	22.08		2
	25	0	22.07	22.03	22.20		2

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

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.00	24.03	24.10	0	0
	1	7	23.98	24.11	23.87		0
	1	14	23.85	24.05	24.05		0
	8	0	24.06	23.92	24.13	0-1	0
	8	4	23.92	23.78	24.19		0
	8	7	23.96	23.89	24.15		0
	15	0	23.96	24.12	23.97		0
16QAM	1	0	24.00	23.88	24.06	0-1	0
	1	7	24.03	23.98	24.01		0
	1	14	24.07	24.02	23.96		0
	8	0	22.98	22.92	22.82	0-2	1
	8	4	22.84	22.88	22.97		1
	8	7	22.99	22.89	22.94		1
	15	0	23.17	23.19	23.18		1
64QAM	1	0	22.93	23.01	23.00	0-2	1
	1	7	22.83	23.08	22.87		1
	1	14	22.97	22.89	23.05		1
	8	0	21.86	21.97	21.95	0-3	2
	8	4	21.87	21.89	22.14		2
	8	7	21.93	21.79	22.08		2
	15	0	22.17	21.94	22.09		2

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

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.93	24.11	23.91	0	0
	1	2	23.84	24.08	24.00		0
	1	5	24.11	23.94	23.89		0
	3	0	24.18	24.11	23.94		0
	3	2	23.94	24.05	24.05		0
	3	3	24.05	23.95	23.98		0
	6	0	23.86	23.87	23.82	0-1	0
16QAM	1	0	24.01	24.05	24.07	0-1	0
	1	2	23.98	24.03	24.04		0
	1	5	24.12	24.00	23.86		0
	3	0	23.94	23.72	23.99		0
	3	2	23.94	24.05	23.92		0
	3	3	24.19	24.01	24.14		0
	6	0	23.15	23.18	22.94	0-2	1
64QAM	1	0	22.88	22.74	23.11	0-2	1
	1	2	23.20	22.92	22.86		1
	1	5	23.05	23.04	23.10		1
	3	0	23.06	22.76	23.03		1
	3	2	23.03	22.96	23.12		1
	3	3	22.97	23.10	23.05		1
	6	0	22.11	21.81	21.94	0-3	2

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9.4.9 LTE Band 30

Table 9-51
LTE Band 30 Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**23.59**	0	0
	1	25	23.58		0
	1	49	23.46		0
	25	0	**22.63**	0-1	1
	25	12	22.57		1
	25	25	22.60		1
	50	0	22.55		1
16QAM	1	0	22.56	0-1	1
	1	25	22.38		1
	1	49	22.60		1
	25	0	21.61	0-2	2
	25	12	21.65		2
	25	25	21.60		2
	50	0	21.55		2
64QAM	1	0	21.49	0-2	2
	1	25	21.24		2
	1	49	21.27		2
	25	0	20.24	0-3	3
	25	12	20.25		3
	25	25	20.49		3
	50	0	20.28		3

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Table 9-52
LTE Band 30 Conducted Powers - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **27710** **(2310.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	23.53	0	0
	1	12	23.55		0
	1	24	23.45		0
	12	0	22.50	0-1	1
	12	6	22.40		1
	12	13	22.51		1
	25	0	22.54		1
16QAM	1	0	22.58	0-1	1
	1	12	22.65		1
	1	24	22.63		1
	12	0	21.64	0-2	2
	12	6	21.30		2
	12	13	21.36		2
	25	0	21.53		2
64QAM	1	0	21.31	0-2	2
	1	12	21.36		2
	1	24	21.34		2
	12	0	20.33	0-3	3
	12	6	20.29		3
	12	13	20.41		3
	25	0	20.28		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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9.4.10 LTE Band 7

Table 9-53
LTE Band 7 Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.33	23.59	**23.65**	0	0
	1	50	23.51	23.38	23.58		0
	1	99	23.43	23.44	23.43		0
	50	0	22.41	**22.61**	22.55	0-1	1
	50	25	22.32	22.43	22.59		1
	50	50	22.45	22.36	22.41		1
	100	0	22.50	22.38	22.53		1
16QAM	1	0	22.69	22.17	22.37	0-1	1
	1	50	22.41	22.23	22.58		1
	1	99	22.22	22.28	22.45		1
	50	0	21.70	21.58	21.67	0-2	2
	50	25	21.50	21.60	21.55		2
	50	50	21.59	21.45	21.54		2
	100	0	21.57	21.43	21.69		2
64QAM	1	0	21.60	21.20	21.29	0-2	2
	1	50	21.62	21.28	21.56		2
	1	99	21.42	21.14	21.54		2
	50	0	20.59	20.50	20.53	0-3	3
	50	25	20.48	20.41	20.45		3
	50	50	20.51	20.42	20.42		3
	100	0	20.44	20.33	20.53		3

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Table 9-54
LTE Band 7 Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.66	23.63	23.49	0	0
	1	36	23.37	23.41	23.54		0
	1	74	23.43	23.39	23.31		0
	36	0	22.46	22.53	22.49	0-1	1
	36	18	22.55	22.62	22.51		1
	36	37	22.33	22.57	22.46		1
	75	0	22.60	22.43	22.37		1
16QAM	1	0	22.49	22.34	22.27	0-1	1
	1	36	22.48	22.43	22.18		1
	1	74	22.41	22.29	22.46		1
	36	0	21.67	21.59	21.61	0-2	2
	36	18	21.59	21.60	21.50		2
	36	37	21.48	21.55	21.60		2
	75	0	21.54	21.63	21.46		2
64QAM	1	0	21.50	21.38	21.41	0-2	2
	1	36	21.57	21.34	21.30		2
	1	74	21.28	21.16	21.57		2
	36	0	20.60	20.50	20.41	0-3	3
	36	18	20.55	20.59	20.54		3
	36	37	20.62	20.48	20.57		3
	75	0	20.33	20.49	20.43		3

Table 9-55
LTE Band 7 Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.44	23.55	23.58	0	0
	1	25	23.45	23.45	23.46		0
	1	49	23.56	23.47	23.40		0
	25	0	22.43	22.56	22.59	0-1	1
	25	12	22.46	22.44	22.50		1
	25	25	22.38	22.42	22.54		1
	50	0	22.40	22.61	22.46		1
16QAM	1	0	22.55	22.27	22.29	0-1	1
	1	25	22.55	22.23	22.19		1
	1	49	22.28	22.23	22.59		1
	25	0	21.65	21.61	21.60	0-2	2
	25	12	21.70	21.61	21.59		2
	25	25	21.44	21.52	21.58		2
	50	0	21.65	21.53	21.68		2
64QAM	1	0	21.43	21.20	21.20	0-2	2
	1	25	21.56	21.40	21.28		2
	1	49	21.36	21.03	21.47		2
	25	0	20.65	20.56	20.60	0-3	3
	25	12	20.50	20.63	20.54		3
	25	25	20.56	20.51	20.58		3
	50	0	20.46	20.56	20.44		3

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Table 9-56
LTE Band 7 Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.70	23.58	23.55	0	0
	1	12	23.44	23.45	23.31		0
	1	24	23.49	23.55	23.60		0
	12	0	22.59	22.47	22.40	0-1	1
	12	6	22.47	22.51	22.52		1
	12	13	22.38	22.56	22.43		1
	25	0	22.64	22.55	22.53		1
16QAM	1	0	22.61	22.62	22.44	0-1	1
	1	12	22.33	22.59	22.38		1
	1	24	22.61	22.59	22.22		1
	12	0	21.52	21.61	21.70	0-2	2
	12	6	21.58	21.55	21.60		2
	12	13	21.62	21.56	21.52		2
	25	0	21.55	21.52	21.63		2
64QAM	1	0	21.35	21.53	21.54	0-2	2
	1	12	21.19	21.50	21.20		2
	1	24	21.51	21.58	21.49		2
	12	0	20.56	20.54	20.54	0-3	3
	12	6	20.54	20.54	20.47		3
	12	13	20.60	20.57	20.45		3
	25	0	20.53	20.48	20.33		3

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9.4.11 LTE Band 41

Table 9-57
LTE Band 41 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	25.00	25.14	25.13	24.96	**25.15**	0	0
	1	50	24.80	24.92	24.83	24.70	25.01		0
	1	99	24.79	24.73	24.75	24.72	24.82		0
	50	0	24.06	23.85	23.93	23.89	**24.16**	0-1	1
	50	25	23.91	23.93	23.88	23.70	23.85		1
	50	50	23.86	23.73	23.82	23.70	23.87		1
	100	0	23.96	23.77	23.95	23.99	23.97		1
16QAM	1	0	24.10	24.00	24.14	24.11	24.15	0-1	1
	1	50	24.03	24.05	24.00	24.05	24.11		1
	1	99	23.77	23.74	23.97	23.80	23.82		1
	50	0	23.15	22.94	22.99	23.00	23.04	0-2	2
	50	25	23.04	23.05	23.03	22.90	23.07		2
	50	50	22.84	22.85	22.89	22.80	22.87		2
	100	0	22.82	22.84	22.93	22.95	23.06		2
64QAM	1	0	23.16	23.16	23.19	22.94	23.15	0-2	2
	1	50	22.95	23.18	23.13	23.04	22.95		2
	1	99	22.64	22.87	22.92	22.87	22.81		2
	50	0	21.97	21.93	22.04	21.90	22.06	0-3	3
	50	25	22.19	22.02	21.84	21.97	21.82		3
	50	50	21.86	21.81	21.94	21.73	21.84		3
	100	0	21.75	21.95	22.08	21.93	21.81		3

Table 9-58
LTE Band 41 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	24.74	25.11	25.14	25.00	24.97	0	0
	1	36	24.83	24.86	24.76	24.93	24.96		0
	1	74	24.89	24.98	24.78	24.83	24.73		0
	36	0	23.95	23.84	23.87	23.82	23.78	0-1	1
	36	18	23.77	24.03	23.74	23.68	23.90		1
	36	37	23.81	23.80	23.85	23.70	23.82		1
	75	0	23.75	23.82	23.72	23.79	23.95		1
16QAM	1	0	24.04	24.14	24.10	24.10	24.12	0-1	1
	1	36	24.09	24.00	24.11	23.99	24.04		1
	1	74	23.99	24.13	24.07	23.97	23.99		1
	36	0	22.99	23.02	22.94	22.91	23.12	0-2	2
	36	18	22.90	22.95	22.97	23.01	23.17		2
	36	37	22.95	22.97	22.89	22.88	22.81		2
	75	0	22.94	23.02	22.93	22.91	22.89		2
64QAM	1	0	23.03	23.14	23.14	23.13	23.10	0-2	2
	1	36	23.12	23.05	23.09	23.10	23.04		2
	1	74	22.87	23.11	23.18	23.08	22.99		2
	36	0	22.11	22.05	21.97	21.89	21.86	0-3	3
	36	18	21.95	22.04	21.93	21.96	21.97		3
	36	37	21.83	21.82	21.88	21.72	21.89		3
	75	0	21.86	21.95	21.96	22.06	21.90		3

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Table 9-59
LTE Band 41 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	25.03	25.00	24.92	24.71	24.82	0	0
	1	25	24.95	24.69	24.95	24.75	24.94		0
	1	49	24.82	24.72	24.80	24.72	24.87		0
	25	0	24.05	23.81	23.80	23.83	24.01	0-1	1
	25	12	24.12	24.01	23.88	23.71	23.92		1
	25	25	23.86	23.92	23.72	23.90	23.73		1
	50	0	23.92	23.75	23.74	23.81	23.85		1
16QAM	1	0	23.99	23.77	23.90	23.84	23.92	0-1	1
	1	25	23.85	23.75	23.82	23.70	23.80		1
	1	49	23.68	23.83	23.59	23.80	23.93		1
	25	0	23.19	22.93	22.98	22.93	23.06	0-2	2
	25	12	23.07	23.03	22.97	22.98	23.09		2
	25	25	22.90	22.89	22.91	23.01	22.95		2
	50	0	22.95	22.88	23.00	22.84	22.93		2
64QAM	1	0	22.84	22.52	22.84	22.87	22.78	0-2	2
	1	25	22.77	22.94	22.79	22.86	22.67		2
	1	49	22.85	22.73	22.70	22.81	22.82		2
	25	0	22.02	21.77	21.99	21.87	22.09	0-3	3
	25	12	21.90	21.91	22.15	21.77	22.00		3
	25	25	22.07	21.99	21.85	21.90	21.81		3
	50	0	21.97	21.71	21.93	21.76	21.99		3

Table 9-60
LTE Band 41 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	24.95	24.82	24.74	24.76	24.81	0	0
	1	12	24.80	24.89	24.78	24.69	24.82		0
	1	24	24.96	25.03	24.74	24.76	24.77		0
	12	0	24.00	24.05	23.84	23.79	23.94	0-1	1
	12	6	23.95	23.99	23.82	23.89	23.84		1
	12	13	23.92	24.03	23.93	23.72	23.78		1
	25	0	24.07	23.92	23.83	23.90	23.87		1
16QAM	1	0	24.04	24.11	24.05	24.15	23.87	0-1	1
	1	12	24.07	23.96	24.06	23.71	24.14		1
	1	24	23.90	24.20	24.01	23.75	23.98		1
	12	0	23.07	23.12	23.00	22.98	23.08	0-2	2
	12	6	23.14	23.10	22.95	22.71	23.01		2
	12	13	23.03	23.06	22.95	23.00	22.94		2
	25	0	23.00	22.97	22.83	22.82	23.09		2
64QAM	1	0	22.93	23.13	22.93	22.88	22.91	0-2	2
	1	12	22.95	22.91	23.12	22.80	22.92		2
	1	24	22.79	22.93	22.85	22.70	22.77		2
	12	0	22.12	22.10	21.83	22.00	22.13	0-3	3
	12	6	22.01	22.10	22.06	21.66	22.00		3
	12	13	21.76	21.96	21.78	21.90	21.69		3
	25	0	22.01	21.97	22.09	21.74	22.01		3

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9.4.12 LTE Band 41 PC2

Table 9-61
LTE Band 41 PC2 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	27.46	**27.70**	27.53	27.42	27.49	0	0
	1	50	27.33	27.34	27.48	27.31	27.44		0
	1	99	27.39	27.39	27.36	27.41	27.19		0
	50	0	26.44	26.41	26.33	26.50	**26.55**	0-1	1
	50	25	26.25	26.54	26.41	26.23	26.39		1
	50	50	26.35	26.48	26.32	26.14	26.16		1
	100	0	26.42	26.26	26.36	26.28	26.27		1
16QAM	1	0	26.59	26.54	26.48	26.44	26.07	0-1	1
	1	50	26.30	26.60	26.13	26.40	26.25		1
	1	99	26.38	26.14	26.33	26.39	26.13		1
	50	0	25.61	25.44	25.50	25.35	25.43	0-2	2
	50	25	25.68	25.67	25.42	25.39	25.57		2
	50	50	25.32	25.59	25.27	25.24	25.24		2
	100	0	25.51	25.37	25.44	25.46	25.22		2
64QAM	1	0	25.49	25.61	25.44	25.24	25.06	0-2	2
	1	50	25.29	25.64	25.27	25.36	25.10		2
	1	99	25.49	25.19	25.37	25.13	25.14		2
	50	0	24.60	24.49	24.47	24.30	24.62	0-3	3
	50	25	24.48	24.53	24.36	24.37	24.40		3
	50	50	24.25	24.26	24.20	24.25	24.22		3
	100	0	24.56	24.33	24.30	24.43	24.31		3

Table 9-62
LTE Band 41 PC2 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	27.23	27.58	27.40	27.40	27.36	0	0
	1	36	27.32	27.41	27.43	27.32	27.36		0
	1	74	27.14	27.28	27.18	27.25	27.17		0
	36	0	26.41	26.45	26.40	26.40	26.25	0-1	1
	36	18	26.41	26.42	26.37	26.29	26.32		1
	36	37	26.21	26.47	26.16	26.19	26.05		1
	75	0	26.25	26.28	26.36	26.34	26.20		1
16QAM	1	0	26.60	26.47	26.62	26.69	26.53	0-1	1
	1	36	26.48	26.50	26.40	26.23	26.35		1
	1	74	26.34	26.63	26.43	26.19	26.27		1
	36	0	25.55	25.55	25.54	25.52	25.60	0-2	2
	36	18	25.46	25.63	25.46	25.44	25.42		2
	36	37	25.38	25.37	25.43	25.35	25.39		2
	75	0	25.44	25.58	25.45	25.44	25.18		2
64QAM	1	0	25.62	25.58	25.47	25.58	25.58	0-2	2
	1	36	25.49	25.53	25.42	25.17	25.27		2
	1	74	25.24	25.52	25.41	25.32	25.29		2
	36	0	24.60	24.47	24.37	24.42	24.52	0-3	3
	36	18	24.32	24.50	24.50	24.44	24.31		3
	36	37	24.09	24.51	24.65	24.59	24.17		3
	75	0	24.40	24.35	24.26	24.29	24.16		3

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Table 9-63
LTE Band 41 PC2 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	27.50	27.49	27.52	27.28	27.29	0	0
	1	25	27.56	27.44	27.35	27.40	27.39		0
	1	49	27.27	27.29	27.28	27.15	27.24		0
	25	0	26.29	26.50	26.44	26.32	26.20	0-1	1
	25	12	26.60	26.59	26.26	26.40	26.26		1
	25	25	26.19	26.34	26.38	26.16	26.22		1
	50	0	26.19	26.45	26.26	26.27	26.29		1
16QAM	1	0	26.56	26.37	26.43	26.38	26.44	0-1	1
	1	25	26.22	26.51	26.37	26.29	26.43		1
	1	49	26.24	26.40	26.27	26.21	26.16		1
	25	0	25.55	25.48	25.52	25.45	25.58	0-2	2
	25	12	25.26	25.61	25.47	25.33	25.58		2
	25	25	25.43	25.55	25.42	25.40	25.36		2
	50	0	25.58	25.40	25.57	25.49	25.21		2
64QAM	1	0	25.53	25.32	25.37	25.30	25.33	0-2	2
	1	25	25.09	25.47	25.38	25.28	25.33		2
	1	49	25.28	25.46	25.08	25.30	25.16		2
	25	0	24.65	24.35	24.30	24.48	24.37	0-3	3
	25	12	24.49	24.61	24.46	24.50	24.27		3
	25	25	24.42	24.38	24.35	24.28	24.25		3
	50	0	24.50	24.37	24.35	24.55	24.19		3

Table 9-64
LTE Band 41 PC2 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	27.39	27.40	27.46	27.23	27.25	0	0
	1	12	27.49	27.51	27.25	27.14	27.11		0
	1	24	27.44	27.43	27.36	27.05	27.27		0
	12	0	26.53	26.60	26.45	26.20	26.03	0-1	1
	12	6	26.58	26.55	26.43	26.48	26.18		1
	12	13	26.60	26.39	26.41	26.15	26.21		1
	25	0	26.41	26.62	26.38	26.35	26.08		1
16QAM	1	0	26.53	26.52	26.42	26.35	26.49	0-1	1
	1	12	26.35	26.56	26.52	26.19	26.25		1
	1	24	26.32	26.34	26.40	26.54	26.29		1
	12	0	25.56	25.68	25.48	25.29	25.41	0-2	2
	12	6	25.69	25.51	25.46	25.37	25.37		2
	12	13	25.54	25.49	25.53	25.43	25.48		2
	25	0	25.64	25.42	25.40	25.38	25.41		2
64QAM	1	0	25.36	25.35	25.40	25.19	25.49	0-2	2
	1	12	25.55	25.70	25.29	25.34	25.30		2
	1	24	25.44	25.50	25.24	25.33	25.17		2
	12	0	24.50	24.50	24.58	24.13	24.24	0-3	3
	12	6	24.54	24.51	24.61	24.41	24.32		3
	12	13	24.59	24.61	24.36	24.32	24.48		3
	25	0	24.42	24.45	24.62	24.27	24.14		3

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9.4.13 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-65
LTE Band 5 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	0	LTE B5	5	20453	829.3	2453	874.3	QPSK	1	24	24.96	25.38

Table 9-66
LTE Band 41 Uplink Carrier Aggregation Conducted Powers

	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 (1)	LTE B41	20	41490	2680.0	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	25.16	25.15

Notes:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of two 20 MHz component carriers and LTE CA_5B with a maximum of two 10 MHz component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
3. Uplink carrier aggregation is only possible when the device is operating with Power Class 3 for LTE Band 41.

Figure 9-4
Power Measurement Setup

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9.5 WLAN Conducted Powers

Table 9-67
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11b
2412	1	19.83
2437	6	19.75
2462	11	**19.88**

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11g	802.11n	802.11ac
2422	3	18.25	17.21	17.16
2437	6	18.13	17.06	17.09
2452	9	18.35	17.10	17.12

Table 9-68
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11b
2412	1	**20.16**
2437	6	20.00
2462	11	19.98

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11g	802.11n	802.11ac
2422	3	18.38	17.10	17.13
2437	6	18.27	17.07	17.02
2452	9	18.24	17.16	17.19

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Table 9-69
2.4 GHz WLAN Maximum Average RF Power – MIMO

2.4GHz 802.11g Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2422	3	**18.25**	**18.38**	**21.33**
2437	6	18.13	18.27	21.21
2452	9	18.35	18.24	21.31

Table 9-70
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
5180	36	17.02	15.72	15.81
5200	40	17.94	15.81	15.80
5220	44	**17.96**	15.70	15.71
5240	48	17.91	15.93	15.83
5260	52	17.05	15.79	15.82
5280	56	17.10	15.83	15.78
5300	60	**17.98**	15.87	15.83
5320	64	17.14	15.85	15.81
5500	100	17.10	15.03	15.90
5600	120	**17.16**	15.17	15.18
5620	124	17.12	15.02	15.02
5720	144	17.12	15.13	15.05
5745	149	17.13	15.06	15.97
5785	157	17.25	15.19	15.14
5825	165	**17.37**	15.26	15.19

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Table 9-71
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
5180	36	17.26	15.02	15.17
5200	40	17.25	15.23	15.19
5220	44	17.32	15.34	15.26
5240	48	**17.41**	15.34	15.30
5260	52	17.27	15.21	15.25
5280	56	17.30	15.17	15.19
5300	60	17.27	15.19	15.17
5320	64	**17.34**	15.22	15.26
5500	100	17.35	15.29	15.31
5600	120	17.01	15.01	15.02
5620	124	17.16	15.07	15.06
5720	144	**17.53**	15.55	15.58
5745	149	17.47	15.42	15.45
5785	157	**17.48**	15.56	15.53
5825	165	17.43	15.45	15.50

Table 9-72
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11a Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	17.02	17.26	20.15
5200	40	17.94	17.25	20.62
5220	44	17.96	17.32	20.66
5240	48	17.91	17.41	20.68
5260	52	17.05	17.27	20.17
5280	56	17.10	17.30	20.21
5300	60	**17.98**	**17.27**	**20.65**
5320	64	17.14	17.34	20.25
5500	100	17.10	17.35	20.24
5600	120	17.16	17.01	20.10
5620	124	17.12	17.16	20.15
5720	144	**17.12**	**17.53**	**20.34**
5745	149	17.13	17.47	20.31
5785	157	17.25	17.48	20.38
5825	165	17.37	17.43	20.41

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Table 9-73
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
2412	1	16.52	16.29	16.10	16.06
2437	6	16.39	16.12	16.01	16.01
2462	11	**16.62**	16.25	15.07	15.06

Table 9-74
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
2412	1	**16.74**	16.48	16.28	16.29
2437	6	16.41	16.24	16.04	16.04
2462	11	16.48	16.12	15.10	15.11

Table 9-75
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	12.35	12.38
5230	46	14.30	14.31
5270	**54**	14.42	14.41
5310	62	11.92	11.95
5510	102	11.93	11.87
5590	**118**	14.79	14.77
5630	126	14.72	14.76
5710	142	14.51	14.55
5755	151	14.56	14.57
5795	**159**	14.69	14.68

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Table 9-76
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	12.64	12.66
5230	46	14.42	14.71
5270	**54**	14.46	14.69
5310	62	12.15	12.10
5510	102	12.12	12.25
5590	118	14.79	14.90
5630	**126**	14.85	14.84
5710	142	14.71	14.70
5755	**151**	14.68	14.71
5795	159	14.57	14.66

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

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

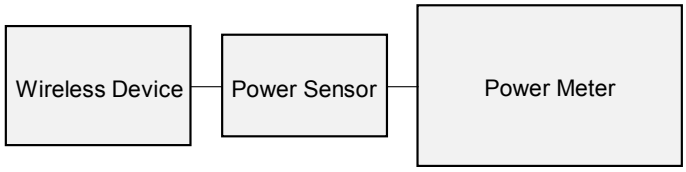

Figure 9-5
Power Measurement Setup

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9.6 Bluetooth Conducted Powers

Table 9-77
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	11.40	13.808
2441	1.0	39	9.99	9.970
2480	1.0	78	**12.19**	16.568
2402	2.0	0	10.74	11.853
2441	2.0	39	9.37	8.657
2480	2.0	78	11.60	14.469
2402	3.0	0	10.80	12.009
2441	3.0	39	9.43	8.764
2480	3.0	78	11.62	14.534

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

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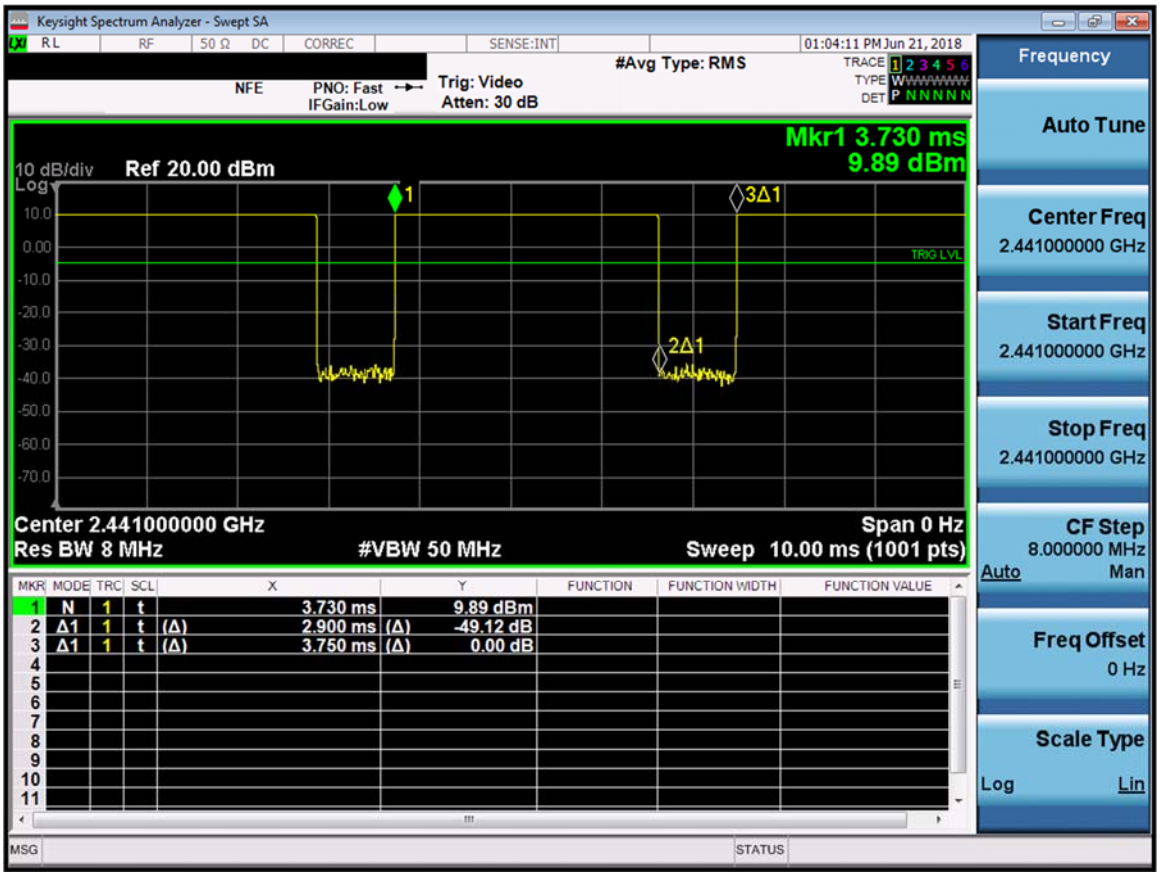

Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{2.900}\boldsymbol{ms}}{\mathbf{3.750}\boldsymbol{ms}} * \mathbf{100\%} = \mathbf{77.3\%}$$

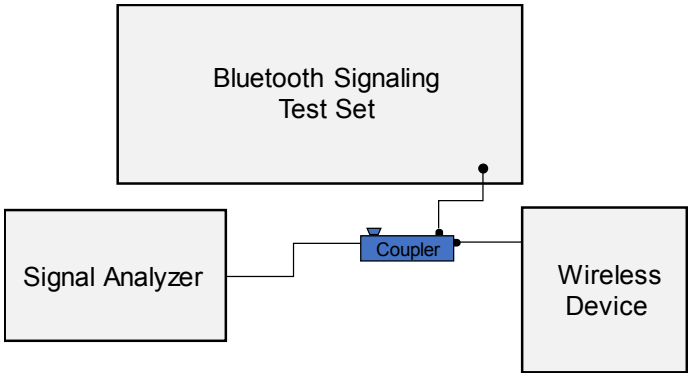

Figure 9-7
Power Measurement Setup

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10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
7/31/2018	750H	21.5	680	0.866	41.428	0.888	42.305	-2.48%	-2.07%
			695	0.871	41.385	0.889	42.227	-2.02%	-1.99%
			700	0.873	41.374	0.889	42.201	-1.80%	-1.96%
			710	0.876	41.350	0.890	42.149	-1.57%	-1.90%
			740	0.887	41.292	0.893	41.994	-0.67%	-1.67%
			755	0.892	41.251	0.894	41.916	-0.22%	-1.59%
			770	0.897	41.186	0.895	41.838	0.22%	-1.56%
			785	0.902	41.136	0.896	41.760	0.67%	-1.49%
			800	0.908	41.094	0.897	41.682	1.23%	-1.41%
8/1/2018	835H	21.6	820	0.928	41.161	0.899	41.578	3.23%	-1.00%
			835	0.933	41.123	0.900	41.500	3.67%	-0.91%
			850	0.939	41.082	0.916	41.500	2.51%	-1.01%
8/1/2018	1750H	21.3	1710	1.327	40.130	1.348	40.142	-1.56%	-0.03%
			1750	1.350	40.064	1.371	40.079	-1.53%	-0.04%
			1790	1.375	40.007	1.394	40.016	-1.36%	-0.02%
8/1/2018	1900H	22.0	1850	1.373	39.267	1.400	40.000	-1.93%	-1.83%
			1880	1.406	39.154	1.400	40.000	0.43%	-2.11%
			1910	1.437	39.048	1.400	40.000	2.64%	-2.38%
7/25/2018	2450H	22.0	2300	1.676	39.861	1.670	39.500	0.36%	0.91%
			2310	1.688	39.841	1.679	39.480	0.54%	0.91%
			2320	1.708	39.793	1.687	39.460	1.24%	0.84%
			2400	1.791	39.563	1.756	39.289	1.99%	0.70%
			2450	1.849	39.279	1.800	39.200	2.72%	0.20%
			2500	1.899	39.153	1.855	39.136	2.37%	0.04%
			2550	1.967	38.943	1.909	39.073	3.04%	-0.33%
			2600	2.015	38.757	1.964	39.009	2.60%	-0.65%
			2650	2.076	38.512	2.018	38.945	2.87%	-1.11%
			2700	2.136	38.342	2.073	38.882	3.04%	-1.39%
7/29/2018	2450H	21.5	2400	1.829	38.944	1.756	39.289	4.16%	-0.88%
			2450	1.882	38.756	1.800	39.200	4.56%	-1.13%
			2500	1.938	38.570	1.855	39.136	4.47%	-1.45%
			2550	1.995	38.391	1.909	39.073	4.50%	-1.75%
			2600	2.054	38.182	1.964	39.009	4.58%	-2.12%
			2650	2.111	38.001	2.018	38.945	4.61%	-2.42%
			2700	2.167	37.796	2.073	38.882	4.53%	-2.79%
07/30/2018	5200H-5800H	20.8	5240	4.569	35.406	4.696	35.940	-2.70%	-1.49%
			5260	4.605	35.336	4.717	35.917	-2.37%	-1.62%
			5280	4.609	35.341	4.737	35.894	-2.70%	-1.54%
			5300	4.633	35.303	4.758	35.871	-2.63%	-1.58%
			5320	4.662	35.240	4.778	35.849	-2.43%	-1.70%
			5500	4.854	34.951	4.963	35.643	-2.20%	-1.94%
			5520	4.876	34.908	4.983	35.620	-2.15%	-2.00%
			5540	4.896	34.871	5.004	35.597	-2.16%	-2.04%
			5560	4.929	34.840	5.024	35.574	-1.89%	-2.06%
			5580	4.952	34.781	5.045	35.551	-1.84%	-2.17%
			5600	4.972	34.730	5.065	35.529	-1.84%	-2.25%
			5620	4.990	34.714	5.086	35.506	-1.89%	-2.23%
			5640	5.028	34.671	5.106	35.483	-1.53%	-2.29%
			5660	5.032	34.646	5.127	35.460	-1.85%	-2.30%
			5680	5.060	34.590	5.147	35.437	-1.69%	-2.39%
			5700	5.093	34.568	5.168	35.414	-1.45%	-2.39%
			5745	5.138	34.498	5.214	35.363	-1.46%	-2.45%
			5765	5.162	34.460	5.234	35.340	-1.38%	-2.49%
			5785	5.188	34.420	5.255	35.317	-1.27%	-2.54%
			5800	5.202	34.399	5.270	35.300	-1.29%	-2.55%

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Table 10-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
7/30/2018	750B	20.4	680	0.922	54.011	0.958	55.804	-3.76%	-3.21%
			695	0.928	53.971	0.959	55.745	-3.23%	-3.18%
			700	0.930	53.960	0.959	55.726	-3.02%	-3.17%
			710	0.933	53.944	0.960	55.687	-2.81%	-3.13%
			740	0.944	53.868	0.963	55.570	-1.97%	-3.06%
			755	0.950	53.834	0.964	55.512	-1.45%	-3.02%
			770	0.956	53.786	0.965	55.453	-0.93%	-3.01%
			785	0.962	53.739	0.966	55.395	-0.41%	-2.99%
			800	0.968	53.709	0.967	55.336	0.10%	-2.94%
8/3/2018	750B	21.0	700	0.934	54.233	0.959	55.726	-2.61%	-2.68%
			710	0.938	54.210	0.960	55.687	-2.29%	-2.65%
			740	0.950	54.175	0.963	55.570	-1.35%	-2.51%
			755	0.955	54.139	0.964	55.512	-0.93%	-2.47%
			770	0.961	54.089	0.965	55.453	-0.41%	-2.46%
			785	0.966	54.044	0.966	55.395	0.00%	-2.44%
7/31/2018	835B	20.8	820	0.998	53.404	0.969	55.258	2.99%	-3.36%
			835	1.004	53.364	0.970	55.200	3.51%	-3.33%
			850	1.010	53.328	0.988	55.154	2.23%	-3.31%
8/3/2018	835B	20.8	820	1.005	52.681	0.969	55.258	3.72%	-4.66%
			835	1.011	52.650	0.970	55.200	4.23%	-4.62%
			850	1.017	52.615	0.988	55.154	2.94%	-4.60%
7/30/2018	1750B	20.9	1710	1.474	52.842	1.463	53.537	0.75%	-1.30%
			1750	1.518	52.691	1.488	53.432	2.02%	-1.39%
			1790	1.561	52.544	1.514	53.326	3.10%	-1.47%
8/6/2018	1750B	22.2	1710	1.441	51.492	1.463	53.537	-1.50%	-3.82%
			1750	1.484	51.338	1.488	53.432	-0.27%	-3.92%
			1790	1.528	51.191	1.514	53.326	0.92%	-4.00%
7/23/2018	1900B	22.8	1850	1.507	52.393	1.520	53.300	-0.86%	-1.70%
			1880	1.542	52.278	1.520	53.300	1.45%	-1.92%
			1910	1.575	52.171	1.520	53.300	3.62%	-2.12%
7/26/2018	1900B	21.5	1850	1.521	51.806	1.520	53.300	0.07%	-2.80%
			1880	1.550	51.704	1.520	53.300	1.97%	-2.99%
			1910	1.587	51.631	1.520	53.300	4.41%	-3.13%
8/1/2018	1900B	22.2	1850	1.500	52.254	1.520	53.300	-1.32%	-1.96%
			1880	1.534	52.173	1.520	53.300	0.92%	-2.11%
			1910	1.567	52.080	1.520	53.300	3.09%	-2.29%
7/25/2018	2450B	23.0	2300	1.852	51.716	1.809	52.900	2.38%	-2.24%
			2310	1.863	51.685	1.816	52.887	2.59%	-2.27%
			2320	1.874	51.656	1.826	52.873	2.63%	-2.30%
			2400	1.967	51.451	1.902	52.767	3.42%	-2.49%
			2450	2.022	51.312	1.950	52.700	3.69%	-2.63%
			2500	2.081	51.147	2.021	52.636	2.97%	-2.83%
			2550	2.139	51.012	2.092	52.573	2.25%	-2.97%
			2600	2.200	50.852	2.163	52.509	1.71%	-3.16%
			2650	2.259	50.728	2.234	52.445	1.12%	-3.27%
			2700	2.321	50.550	2.305	52.382	0.69%	-3.50%
7/30/2018	2450B	22.7	2400	1.977	51.205	1.902	52.767	3.94%	-2.96%
			2450	2.034	51.069	1.950	52.700	4.31%	-3.09%
			2500	2.096	50.922	2.021	52.636	3.71%	-3.26%
			2550	2.155	50.783	2.092	52.573	3.01%	-3.40%
			2600	2.216	50.615	2.163	52.509	2.45%	-3.61%
			2650	2.279	50.455	2.234	52.445	2.01%	-3.79%
			2700	2.337	50.287	2.305	52.382	1.39%	-4.00%
07/30/2018	5200B-5800B	21.9	5220	5.441	47.882	5.323	48.987	2.22%	-2.26%
			5240	5.466	47.812	5.346	48.960	2.24%	-2.34%
			5260	5.486	47.785	5.369	48.933	2.18%	-2.35%
			5280	5.513	47.765	5.393	48.906	2.23%	-2.33%
			5300	5.543	47.691	5.416	48.879	2.34%	-2.43%
			5320	5.568	47.681	5.439	48.851	2.37%	-2.40%
			5500	5.801	47.352	5.650	48.607	2.67%	-2.58%
			5520	5.835	47.314	5.673	48.580	2.86%	-2.61%
			5540	5.871	47.311	5.696	48.553	3.07%	-2.56%
			5560	5.891	47.278	5.720	48.526	2.99%	-2.57%
			5580	5.924	47.220	5.743	48.499	3.15%	-2.64%
			5600	5.937	47.187	5.766	48.471	2.97%	-2.65%
			5620	5.980	47.132	5.790	48.444	3.28%	-2.71%
			5640	6.001	47.133	5.813	48.417	3.23%	-2.65%
			5660	6.020	47.076	5.837	48.390	3.14%	-2.72%
			5680	6.061	47.055	5.860	48.363	3.43%	-2.70%
			5700	6.090	47.075	5.883	48.336	3.52%	-2.61%
			5745	6.154	46.972	5.936	48.275	3.67%	-2.70%
			5765	6.176	46.939	5.959	48.248	3.64%	-2.71%
			5785	6.192	46.874	5.982	48.220	3.51%	-2.79%
			5800	6.207	46.865	6.000	48.200	3.45%	-2.77%
08/06/2018	5200B-5800B	21.9	5220	5.462	47.893	5.323	48.987	2.61%	-2.23%
			5240	5.488	47.872	5.346	48.960	2.66%	-2.22%
			5260	5.510	47.839	5.369	48.933	2.63%	-2.24%
			5280	5.528	47.803	5.393	48.906	2.50%	-2.26%
			5300	5.564	47.764	5.416	48.879	2.73%	-2.28%
			5320	5.588	47.763	5.439	48.851	2.74%	-2.23%
			5500	5.830	47.425	5.650	48.607	3.19%	-2.43%
			5520	5.846	47.433	5.673	48.580	3.05%	-2.36%
			5540	5.887	47.371	5.696	48.553	3.35%	-2.43%
			5560	5.911	47.322	5.720	48.526	3.34%	-2.48%
			5580	5.949	47.287	5.743	48.499	3.59%	-2.50%
			5600	5.965	47.257	5.766	48.471	3.45%	-2.50%
			5620	5.985	47.240	5.790	48.444	3.37%	-2.49%
			5640	6.034	47.211	5.813	48.417	3.80%	-2.49%
			5660	6.059	47.166	5.837	48.390	3.80%	-2.53%
			5680	6.091	47.103	5.860	48.363	3.94%	-2.61%
			5700	6.106	47.100	5.883	48.336	3.79%	-2.56%
			5745	6.184	47.021	5.936	48.275	4.18%	-2.60%
			5765	6.214	46.956	5.959	48.248	4.28%	-2.68%
			5785	6.240	46.944	5.982	48.220	4.31%	-2.65%
			5800	6.250	46.921	6.000	48.200	4.17%	-2.65%

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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.

Test System Verification

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

Table 10-3
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	07/31/2018	20.7	21.5	0.200	1161	3213	1.550	8.170	7.750	-5.14%
E	835	HEAD	08/01/2018	24.1	21.6	0.200	4d133	3213	2.030	9.520	10.150	6.62%
H	1750	HEAD	08/01/2018	21.9	21.3	0.100	1148	7409	3.520	36.400	35.200	-3.30%
G	1900	HEAD	08/01/2018	21.9	22.0	0.100	5d149	3332	3.940	39.600	39.400	-0.51%
G	2300	HEAD	07/25/2018	21.9	22.0	0.100	1073	3332	4.660	48.600	46.600	-4.12%
G	2450	HEAD	07/25/2018	21.9	22.0	0.100	719	3332	5.420	51.900	54.200	4.43%
G	2450	HEAD	07/29/2018	21.9	21.5	0.100	797	3332	5.350	52.700	53.500	1.52%
G	2600	HEAD	07/25/2018	21.9	22.0	0.100	1071	3332	5.280	56.300	52.800	-6.22%
G	2600	HEAD	07/29/2018	21.9	21.5	0.100	1071	3332	5.710	56.300	57.100	1.42%
H	5250	HEAD	07/30/2018	20.7	20.8	0.050	1191	7409	3.750	78.900	75.000	-4.94%
H	5600	HEAD	07/30/2018	20.7	20.8	0.050	1191	7409	3.970	83.600	79.400	-5.02%
H	5750	HEAD	07/30/2018	20.7	20.8	0.050	1191	7409	3.690	79.100	73.800	-6.70%
J	750	BODY	07/30/2018	20.5	20.4	0.200	1054	3347	1.720	8.610	8.600	-0.12%
J	750	BODY	08/03/2018	20.3	21.0	0.200	1054	3347	1.730	8.610	8.650	0.46%
J	835	BODY	07/31/2018	21.0	20.8	0.200	4d132	3347	2.040	9.710	10.200	5.05%
J	835	BODY	08/03/2018	20.3	20.8	0.200	4d132	3347	2.060	9.710	10.300	6.08%
I	1750	BODY	07/30/2018	21.1	20.9	0.100	1148	7406	3.570	37.000	35.700	-3.51%
I	1750	BODY	08/06/2018	20.9	22.2	0.100	1148	7406	3.760	37.000	37.600	1.62%
I	1900	BODY	07/23/2018	21.8	22.0	0.100	5d141	7406	4.140	40.000	41.400	3.50%
I	1900	BODY	08/01/2018	21.6	21.8	0.100	5d080	7406	4.220	39.100	42.200	7.93%
K	2300	BODY	07/25/2018	22.8	22.5	0.100	1073	3319	4.990	48.100	49.900	3.74%
K	2450	BODY	07/25/2018	22.8	22.5	0.100	719	3319	5.330	50.100	53.300	6.39%
K	2450	BODY	07/30/2018	21.9	22.0	0.100	797	3319	5.140	51.100	51.400	0.59%
K	2600	BODY	07/25/2018	22.8	22.5	0.100	1071	3319	5.350	54.200	53.500	-1.29%
K	2600	BODY	07/30/2018	21.9	22.0	0.100	1071	3319	5.250	54.200	52.500	-3.14%
D	5250	BODY	07/30/2018	22.3	21.3	0.050	1237	7357	3.570	76.900	71.400	-7.15%
D	5600	BODY	07/30/2018	22.3	21.3	0.050	1237	7357	3.960	78.500	79.200	0.89%
D	5600	BODY	08/06/2018	22.1	21.4	0.050	1237	7357	4.130	78.500	82.600	5.22%
D	5750	BODY	07/30/2018	22.3	21.3	0.050	1237	7357	3.830	77.100	76.600	-0.65%

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Table 10-4
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	07/30/2018	21.1	20.9	0.100	1148	7406	1.880	19.800	18.800	-5.05%
I	1750	BODY	08/06/2018	20.9	22.2	0.100	1148	7406	1.970	19.800	19.700	-0.51%
I	1900	BODY	07/23/2018	21.8	22.0	0.100	5d141	7406	2.120	21.200	21.200	0.00%
I	1900	BODY	07/26/2018	23.8	21.9	0.100	5d080	7406	2.160	20.700	21.600	4.35%
I	1900	BODY	08/01/2018	21.6	21.8	0.100	5d080	7406	2.160	20.700	21.600	4.35%
D	5250	BODY	08/06/2018	22.1	21.4	0.050	1237	7357	1.000	21.500	20.000	-6.98%
D	5600	BODY	08/06/2018	22.1	21.4	0.050	1237	7357	1.140	22.100	22.800	3.17%
D	5750	BODY	08/06/2018	22.1	21.4	0.050	1237	7357	1.060	21.400	21.200	-0.93%

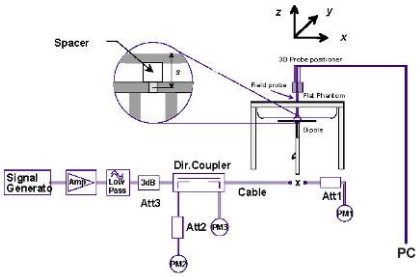

Figure 10-1
System Verification Setup Diagram

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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.19	0.03	Right	Cheek	06499	1:1	0.117	1.074	0.126	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.19	-0.01	Right	Tilt	06499	1:1	0.079	1.074	0.085	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.19	0.00	Left	Cheek	06499	1:1	0.133	1.074	0.143	A1
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.19	0.01	Left	Tilt	06499	1:1	0.062	1.074	0.067	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.29	-0.07	Right	Cheek	06499	1:1	0.106	1.050	0.111	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.29	0.04	Right	Tilt	06499	1:1	0.060	1.050	0.063	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.29	0.02	Left	Cheek	06499	1:1	0.125	1.050	0.131	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.29	-0.02	Left	Tilt	06499	1:1	0.061	1.050	0.064	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-2
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.02	Right	Cheek	06499	1:1	0.113	1.069	0.121	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.03	Right	Tilt	06499	1:1	0.072	1.069	0.077	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.01	Left	Cheek	06499	1:1	0.130	1.069	0.139	A2
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.00	Left	Tilt	06499	1:1	0.065	1.069	0.069	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.29	-0.02	Right	Cheek	06499	1:1	0.100	1.050	0.105	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.29	0.06	Right	Tilt	06499	1:1	0.062	1.050	0.065	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.29	-0.03	Left	Cheek	06499	1:1	0.124	1.050	0.130	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.29	0.02	Left	Tilt	06499	1:1	0.063	1.050	0.066	
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.08	0.03	Right	Cheek	06473	1:1	0.134	1.028	0.138	A3
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.08	0.18	Right	Tilt	06473	1:1	0.069	1.028	0.071	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.08	0.12	Left	Cheek	06473	1:1	0.126	1.028	0.130	
1880.00	600	PCS CDMA	RC3 / SO55	25.2	25.08	-0.12	Left	Tilt	06473	1:1	0.066	1.028	0.068	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.95	0.00	Right	Cheek	06473	1:1	0.131	1.059	0.139	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.95	0.10	Right	Tilt	06473	1:1	0.063	1.059	0.067	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.95	0.19	Left	Cheek	06473	1:1	0.126	1.059	0.133	
1880.00	600	PCS CDMA	EVDO Rev. A	25.2	24.95	0.06	Left	Tilt	06473	1:1	0.068	1.059	0.072	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	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	34.2	34.17	0.04	Right	Cheek	06481	1	1:8.3	0.101	1.007	0.102	
836.60	190	GSM 850	GSM	34.2	34.17	0.08	Right	Tilt	06481	1	1:8.3	0.080	1.007	0.081	
836.60	190	GSM 850	GSM	34.2	34.17	0.03	Left	Cheek	06481	1	1:8.3	0.123	1.007	0.124	A4
836.60	190	GSM 850	GSM	34.2	34.17	-0.02	Left	Tilt	06481	1	1:8.3	0.059	1.007	0.059	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.01	Right	Cheek	06481	1	1:8.3	0.073	1.012	0.074	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.08	Right	Tilt	06481	1	1:8.3	0.056	1.012	0.057	
836.60	190	GSM 850	GPRS	34.2	34.15	0.05	Left	Cheek	06481	1	1:8.3	0.101	1.012	0.102	
836.60	190	GSM 850	GPRS	34.2	34.15	0.01	Left	Tilt	06481	1	1:8.3	0.052	1.012	0.053	
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/Band	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	31.7	31.57	0.06	Right	Cheek	06481	1	1:8.3	0.092	1.030	0.095	A5
1880.00	661	GSM 1900	GSM	31.7	31.57	0.16	Right	Tilt	06481	1	1:8.3	0.040	1.030	0.041	
1880.00	661	GSM 1900	GSM	31.7	31.57	-0.01	Left	Cheek	06481	1	1:8.3	0.073	1.030	0.075	
1880.00	661	GSM 1900	GSM	31.7	31.57	0.06	Left	Tilt	06481	1	1:8.3	0.043	1.030	0.044	
1880.00	661	GSM 1900	GPRS	25.5	25.26	0.17	Right	Cheek	06481	4	1:2.076	0.068	1.057	0.072	
1880.00	661	GSM 1900	GPRS	25.5	25.26	-0.09	Right	Tilt	06481	4	1:2.076	0.029	1.057	0.031	
1880.00	661	GSM 1900	GPRS	25.5	25.26	0.12	Left	Cheek	06481	4	1:2.076	0.051	1.057	0.054	
1880.00	661	GSM 1900	GPRS	25.5	25.26	0.19	Left	Tilt	06481	4	1:2.076	0.028	1.057	0.030	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-6
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.										(W/kg)		(W/kg)		
836.60	4183	UMTS 850	RMC	25.5	25.24	0.02	Right	Cheek	06481	1:1	0.116	1.062	0.123		
836.60	4183	UMTS 850	RMC	25.5	25.24	0.05	Right	Tilt	06481	1:1	0.083	1.062	0.088		
836.60	4183	UMTS 850	RMC	25.5	25.24	0.00	Left	Cheek	06481	1:1	0.138	1.062	0.147	A6	
836.60	4183	UMTS 850	RMC	25.5	25.24	0.03	Left	Tilt	06481	1:1	0.068	1.062	0.072		
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-7
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.										(W/kg)		(W/kg)		
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.11	Right	Cheek	06481	1:1	0.081	1.035	0.084		
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.07	Right	Tilt	06481	1:1	0.066	1.035	0.068		
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.19	Left	Cheek	06481	1:1	0.099	1.035	0.102	A7	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.19	Left	Tilt	06481	1:1	0.058	1.035	0.060		
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	-0.01	Right	Cheek	06481	1:1	0.124	1.062	0.132	A8
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	Right	Tilt	06481	1:1	0.061	1.062	0.065	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	Left	Cheek	06481	1:1	0.115	1.062	0.122	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	-0.01	Left	Tilt	06481	1:1	0.065	1.062	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 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	-0.11	0	Right	Cheek	QPSK	1	50	06465	1:1	0.100	1.005	0.101	A9
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.00	1	Right	Cheek	QPSK	50	25	06465	1:1	0.085	1.009	0.086	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	0.13	0	Right	Tilt	QPSK	1	50	06465	1:1	0.059	1.005	0.059	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.05	1	Right	Tilt	QPSK	50	25	06465	1:1	0.049	1.009	0.049	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	-0.04	0	Left	Cheek	QPSK	1	50	06465	1:1	0.092	1.005	0.092	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.02	1	Left	Cheek	QPSK	50	25	06465	1:1	0.078	1.009	0.079	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	-0.15	0	Left	Tilt	QPSK	1	50	06465	1:1	0.044	1.005	0.044	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	-0.14	1	Left	Tilt	QPSK	50	25	06465	1:1	0.034	1.009	0.034	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	0.04	0	Right	Cheek	QPSK	1	0	06465	1:1	0.097	1.021	0.099	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.04	1	Right	Cheek	QPSK	25	0	06465	1:1	0.072	1.009	0.073	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	0.17	0	Right	Tilt	QPSK	1	0	06465	1:1	0.041	1.021	0.042	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.09	1	Right	Tilt	QPSK	25	0	06465	1:1	0.030	1.009	0.030	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	0.04	0	Left	Cheek	QPSK	1	0	06465	1:1	0.104	1.021	0.106	A10
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.06	1	Left	Cheek	QPSK	25	0	06465	1:1	0.078	1.009	0.079	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	0.03	0	Left	Tilt	QPSK	1	0	06465	1:1	0.039	1.021	0.040	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.10	1	Left	Tilt	QPSK	25	0	06465	1:1	0.031	1.009	0.031	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.01	0	Right	Cheek	QPSK	1	49	06473	1:1	0.110	1.009	0.111	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	0.02	1	Right	Cheek	QPSK	25	12	06473	1:1	0.078	1.019	0.079	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.09	0	Right	Tilt	QPSK	1	49	06473	1:1	0.066	1.009	0.067	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	-0.02	1	Right	Tilt	QPSK	25	12	06473	1:1	0.044	1.019	0.045	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.05	0	Left	Cheek	QPSK	1	49	06473	1:1	0.125	1.009	0.126	A11
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	0.03	1	Left	Cheek	QPSK	25	12	06473	1:1	0.088	1.019	0.090	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.05	0	Left	Tilt	QPSK	1	49	06473	1:1	0.052	1.009	0.052	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	0.12	1	Left	Tilt	QPSK	25	12	06473	1:1	0.035	1.019	0.036	
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	25.5	25.40	0.02	0	Right	Cheek	QPSK	1	25	06473	1:1	0.110	1.023	0.113	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.04	1	Right	Cheek	QPSK	25	0	06473	1:1	0.084	1.026	0.086	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.04	0	Right	Tilt	QPSK	1	25	06473	1:1	0.076	1.023	0.078	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.07	1	Right	Tilt	QPSK	25	0	06473	1:1	0.056	1.026	0.057	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.08	0	Left	Cheek	QPSK	1	25	06473	1:1	0.146	1.023	0.149	A12
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.00	1	Left	Cheek	QPSK	25	0	06473	1:1	0.095	1.026	0.097	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.09	0	Left	Tilt	QPSK	1	25	06473	1:1	0.064	1.023	0.065	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.05	1	Left	Tilt	QPSK	25	0	06473	1:1	0.044	1.026	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-13
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	25.5	25.28	0.09	0	Right	Cheek	QPSK	1	36	06440	1:1	0.082	1.052	0.086	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	0.04	1	Right	Cheek	QPSK	36	37	06440	1:1	0.061	1.028	0.063	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.02	0	Right	Tilt	QPSK	1	36	06440	1:1	0.057	1.052	0.060	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	0.03	1	Right	Tilt	QPSK	36	37	06440	1:1	0.041	1.028	0.042	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.00	0	Left	Cheek	QPSK	1	36	06440	1:1	0.114	1.052	0.120	A13
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	-0.02	1	Left	Cheek	QPSK	36	37	06440	1:1	0.075	1.028	0.077	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.07	0	Left	Tilt	QPSK	1	36	06440	1:1	0.056	1.052	0.059	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	0.06	1	Left	Tilt	QPSK	36	37	06440	1:1	0.036	1.028	0.037	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY MHz	FREQUENCY Ch.		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	-0.01	0	Right	Cheek	QPSK	1	0	06440	1:1	0.093	1.028	0.096	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.08	1	Right	Cheek	QPSK	25	0	06440	1:1	0.061	1.007	0.061	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.00	0	Right	Tilt	QPSK	1	0	06440	1:1	0.060	1.028	0.062	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.09	1	Right	Tilt	QPSK	25	0	06440	1:1	0.043	1.007	0.043	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.06	0	Left	Cheek	QPSK	1	0	06440	1:1	0.111	1.028	0.114	A14
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.96	-0.03	0	Left	Cheek	QPSK	1	0	06440	1:1	0.096	1.132	0.109	
2 CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5								1	24						
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.07	1	Left	Cheek	QPSK	25	0	06440	1:1	0.074	1.007	0.075	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.03	0	Left	Tilt	QPSK	1	0	06440	1:1	0.056	1.028	0.058	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.05	1	Left	Tilt	QPSK	25	0	06440	1:1	0.038	1.007	0.038	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																				
FREQUENCY MHz	FREQUENCY Ch.		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.08	0	Right	Cheek	QPSK	1	50	06440	1:1	0.099	1.007	0.100	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.14	1	Right	Cheek	QPSK	50	0	06440	1:1	0.082	1.000	0.082	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.05	0	Right	Tilt	QPSK	1	50	06440	1:1	0.099	1.007	0.100	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.08	1	Right	Tilt	QPSK	50	0	06440	1:1	0.088	1.000	0.088	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.08	0	Left	Cheek	QPSK	1	50	06440	1:1	0.136	1.007	0.137	A15
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.14	1	Left	Cheek	QPSK	50	0	06440	1:1	0.103	1.000	0.103	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	-0.01	0	Left	Tilt	QPSK	1	50	06440	1:1	0.109	1.007	0.110	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.09	1	Left	Tilt	QPSK	50	0	06440	1:1	0.078	1.000	0.078	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																				
FREQUENCY MHz	FREQUENCY Ch.		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.07	0	Right	Cheek	QPSK	1	0	06473	1:1	0.148	1.026	0.152	A16
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.10	1	Right	Cheek	QPSK	50	0	06473	1:1	0.126	1.005	0.127	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.19	0	Right	Tilt	QPSK	1	0	06473	1:1	0.097	1.026	0.100	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.14	1	Right	Tilt	QPSK	50	0	06473	1:1	0.069	1.005	0.069	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.15	0	Left	Cheek	QPSK	1	0	06473	1:1	0.147	1.026	0.151	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.04	1	Left	Cheek	QPSK	50	0	06473	1:1	0.113	1.005	0.114	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.06	0	Left	Tilt	QPSK	1	0	06473	1:1	0.069	1.026	0.071	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.08	1	Left	Tilt	QPSK	50	0	06473	1:1	0.053	1.005	0.053	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-17
LTE Band 30 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	0.03	0	Right	Cheek	QPSK	1	0	06440	1:1	0.471	1.026	0.483	A17
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	0.07	1	Right	Cheek	QPSK	25	0	06440	1:1	0.362	1.016	0.368	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.09	0	Right	Tilt	QPSK	1	0	06440	1:1	0.095	1.026	0.097	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	0.04	1	Right	Tilt	QPSK	25	0	06440	1:1	0.079	1.016	0.080	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	0.13	0	Left	Cheek	QPSK	1	0	06440	1:1	0.220	1.026	0.226	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	-0.05	1	Left	Cheek	QPSK	25	0	06440	1:1	0.180	1.016	0.183	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.02	0	Left	Tilt	QPSK	1	0	06440	1:1	0.160	1.026	0.164	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	0.09	1	Left	Tilt	QPSK	25	0	06440	1:1	0.117	1.016	0.119	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-18
LTE Band 7 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	-0.07	0	Right	Cheek	QPSK	1	0	06440	1:1	0.332	1.012	0.336	A18
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	-0.06	1	Right	Cheek	QPSK	50	0	06440	1:1	0.214	1.021	0.218	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	0.07	0	Right	Tilt	QPSK	1	0	06440	1:1	0.056	1.012	0.057	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.15	1	Right	Tilt	QPSK	50	0	06440	1:1	0.037	1.021	0.038	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	0.02	0	Left	Cheek	QPSK	1	0	06440	1:1	0.138	1.012	0.140	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.10	1	Left	Cheek	QPSK	50	0	06440	1:1	0.089	1.021	0.091	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	0.14	0	Left	Tilt	QPSK	1	0	06440	1:1	0.085	1.012	0.086	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.02	1	Left	Tilt	QPSK	50	0	06440	1:1	0.063	1.021	0.064	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-19
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 - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	-0.10	0	Right	Cheek	QPSK	1	0	06465	1:1.58	0.506	1.012	0.512	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.04	1	Right	Cheek	QPSK	50	0	06465	1:1.58	0.294	1.009	0.297	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.7	27.49	0.06	0	Right	Cheek	QPSK	1	0	06465	1:2.31	0.644	1.050	0.676	A19
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.2	25.16	0.11	0	Right	Cheek	QPSK	1	0	06465	1:1.58	0.503	1.009	0.508	
2 CC Uplink - Power Class 3	SCC	2660.20	41292	High	LTE Band 41	20								1	99						
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.02	0	Right	Tilt	QPSK	1	0	06465	1:1.58	0.116	1.012	0.117	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	-0.01	1	Right	Tilt	QPSK	50	0	06465	1:1.58	0.093	1.009	0.094	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.13	0	Left	Cheek	QPSK	1	0	06465	1:1.58	0.272	1.012	0.275	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.07	1	Left	Cheek	QPSK	50	0	06465	1:1.58	0.204	1.009	0.206	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	-0.06	0	Left	Tilt	QPSK	1	0	06465	1:1.58	0.198	1.012	0.200	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	-0.01	1	Left	Tilt	QPSK	50	0	06465	1:1.58	0.153	1.009	0.154	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-20
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)	
2462	11	802.11b	DSSS	22	17.0	16.62	-0.12	Right	Cheek	1	06648	1	99.1	0.495	0.439	1.091	1.009	**0.483**	A20
2462	11	802.11b	DSSS	22	17.0	16.62	-0.13	Right	Tilt	1	06648	1	99.1	0.464	0.420	1.091	1.009	0.462	
2462	11	802.11b	DSSS	22	17.0	16.62	0.10	Left	Cheek	1	06648	1	99.1	0.206	-	1.091	1.009	-	
2462	11	802.11b	DSSS	22	17.0	16.62	0.16	Left	Tilt	1	06648	1	99.1	0.229	-	1.091	1.009	-	
2412	1	802.11b	DSSS	22	17.0	16.74	0.21	Right	Cheek	2	06648	1	99.2	0.108	0.091	1.062	1.008	0.097	
2412	1	802.11b	DSSS	22	17.0	16.74	0.16	Right	Tilt	2	06648	1	99.2	0.046	-	1.062	1.008	-	
2412	1	802.11b	DSSS	22	17.0	16.74	0.15	Left	Cheek	2	06648	1	99.2	0.034	-	1.062	1.008	-	
2412	1	802.11b	DSSS	22	17.0	16.74	0.15	Left	Tilt	2	06648	1	99.2	0.027	-	1.062	1.008	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-21
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.42	-0.10	Right	Cheek	1	06630	13.5	97.3	1.378	0.527	1.143	1.028	0.619	
5270	54	802.11n	OFDM	40	15.0	14.42	0.17	Right	Tilt	1	06630	13.5	97.3	1.475	0.589	1.143	1.028	0.692	
5270	54	802.11n	OFDM	40	15.0	14.42	-0.12	Left	Cheek	1	06630	13.5	97.3	0.307	-	1.143	1.028	-	
5270	54	802.11n	OFDM	40	15.0	14.42	0.20	Left	Tilt	1	06630	13.5	97.3	0.355	-	1.143	1.028	-	
5270	54	802.11n	OFDM	40	15.0	14.46	0.18	Right	Cheek	2	06630	13.5	97.2	0.040	0.014	1.132	1.029	0.016	
5270	54	802.11n	OFDM	40	15.0	14.46	0.19	Right	Tilt	2	06630	13.5	97.2	0.036	-	1.132	1.029	-	
5270	54	802.11n	OFDM	40	15.0	14.46	-0.13	Left	Cheek	2	06630	13.5	97.2	0.014	-	1.132	1.029	-	
5270	54	802.11n	OFDM	40	15.0	14.46	0.19	Left	Tilt	2	06630	13.5	97.2	0.017	-	1.132	1.029	-	
5590	118	802.11n	OFDM	40	15.0	14.79	-0.20	Right	Cheek	1	06630	13.5	97.3	1.793	0.669	1.050	1.028	0.722	
5590	118	802.11n	OFDM	40	15.0	14.79	0.14	Right	Tilt	1	06630	13.5	97.3	1.849	0.688	1.050	1.028	0.743	
5590	118	802.11n	OFDM	40	15.0	14.79	-0.16	Left	Cheek	1	06630	13.5	97.3	0.458	-	1.050	1.028	-	
5590	118	802.11n	OFDM	40	15.0	14.79	0.17	Left	Tilt	1	06630	13.5	97.3	0.470	-	1.050	1.028	-	
5630	126	802.11n	OFDM	40	15.0	14.85	0.21	Right	Cheek	2	06630	13.5	97.2	0.062	0.021	1.035	1.029	0.022	
5630	126	802.11n	OFDM	40	15.0	14.85	0.17	Right	Tilt	2	06630	13.5	97.2	0.031	-	1.035	1.029	-	
5630	126	802.11n	OFDM	40	15.0	14.85	0.19	Left	Cheek	2	06630	13.5	97.2	0.040	-	1.035	1.029	-	
5630	126	802.11n	OFDM	40	15.0	14.85	0.00	Left	Tilt	2	06630	13.5	97.2	0.049	-	1.035	1.029	-	
5755	151	802.11n	OFDM	40	15.0	14.56	0.21	Right	Cheek	1	06630	13.5	97.3	2.241	0.965	1.107	1.028	1.098	
5795	159	802.11n	OFDM	40	15.0	14.69	0.15	Right	Cheek	1	06630	13.5	97.3	2.048	1.020	1.074	1.028	1.126	
5755	151	802.11n	OFDM	40	15.0	14.56	0.13	Right	Tilt	1	06630	13.5	97.3	2.604	1.080	1.107	1.028	1.229	
5795	159	802.11n	OFDM	40	15.0	14.69	0.08	Right	Tilt	1	06630	13.5	97.3	3.322	1.150	1.074	1.028	**1.270**	A21
5795	159	802.11n	OFDM	40	15.0	14.69	-0.14	Left	Cheek	1	06630	13.5	97.3	0.682	-	1.074	1.028	-	
5795	159	802.11n	OFDM	40	15.0	14.69	0.08	Left	Tilt	1	06630	13.5	97.3	0.811	0.454	1.074	1.028	0.501	
5755	151	802.11n	OFDM	40	15.0	14.68	-0.15	Right	Cheek	2	06630	13.5	97.2	0.053	0.017	1.076	1.029	0.019	
5755	151	802.11n	OFDM	40	15.0	14.68	0.15	Right	Tilt	2	06630	13.5	97.2	0.023	-	1.076	1.029	-	
5755	151	802.11n	OFDM	40	15.0	14.68	0.19	Left	Cheek	2	06630	13.5	97.2	0.041	-	1.076	1.029	-	
5755	151	802.11n	OFDM	40	15.0	14.68	0.00	Left	Tilt	2	06630	13.5	97.2	0.042	-	1.076	1.029	-	
5795	159	802.11n	OFDM	40	15.0	14.69	0.19	Right	Tilt	1	06630	13.5	97.3	2.107	1.070	1.074	1.028	1.181	
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 entries represent variability measurements.

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Table 11-22
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)	
2480.00	78	Bluetooth	FHSS	13.0	12.19	0.12	Right	Cheek	06630	1	77.3	0.134	1.205	1.294	**0.209**	A22
2480.00	78	Bluetooth	FHSS	13.0	12.19	0.01	Right	Tilt	06630	1	77.3	0.124	1.205	1.294	0.193	
2480.00	78	Bluetooth	FHSS	13.0	12.19	0.14	Left	Cheek	06630	1	77.3	0.034	1.205	1.294	0.053	
2480.00	78	Bluetooth	FHSS	13.0	12.19	0.14	Left	Tilt	06630	1	77.3	0.039	1.205	1.294	0.061	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							**Head 1.6 W/kg (mW/g) averaged over 1 gram**									

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11.2 Standalone Body-Worn SAR Data

Table 11-23
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.5	25.35	0.04	10 mm	06499	N/A	1:1	back	0.746	1.035	0.772	A23
824.70	1013	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.28	0.02	10 mm	06499	N/A	1:1	back	0.772	1.052	0.812	
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.23	0.00	10 mm	06499	N/A	1:1	back	0.880	1.064	0.936	
848.31	777	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.26	0.03	10 mm	06499	N/A	1:1	back	0.958	1.057	**1.013**	A25
1880.00	600	PCS CDMA	TDSO / SO32	25.2	25.04	-0.04	10 mm	06499	N/A	1:1	back	0.555	1.038	0.576	A27
824.20	128	GSM 850	GSM	34.2	34.04	0.02	10 mm	06481	1	1:8.3	back	0.888	1.038	0.922	
836.60	190	GSM 850	GSM	34.2	34.17	0.04	10 mm	06481	1	1:8.3	back	0.893	1.007	0.899	A29
848.80	251	GSM 850	GSM	34.2	34.10	0.05	10 mm	06481	1	1:8.3	back	0.888	1.023	0.908	
824.20	128	GSM 850	GPRS	34.2	34.19	0.09	10 mm	06481	1	1:8.3	back	0.834	1.002	0.836	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.07	10 mm	06481	1	1:8.3	back	0.854	1.012	0.864	
848.80	251	GSM 850	GPRS	34.2	34.14	-0.07	10 mm	06481	1	1:8.3	back	0.837	1.014	0.849	
1880.00	661	GSM 1900	GSM	31.7	31.57	0.06	10 mm	06481	1	1:8.3	back	0.358	1.030	0.369	A31
1880.00	661	GSM 1900	GPRS	25.5	25.26	-0.02	10 mm	06481	4	1:2.076	back	0.241	1.057	0.255	
826.40	4132	UMTS 850	RMC	25.5	25.26	0.04	10 mm	06481	N/A	1:1	back	0.831	1.057	0.878	
836.60	4183	UMTS 850	RMC	25.5	25.24	0.04	10 mm	06481	N/A	1:1	back	0.924	1.062	0.981	
846.60	4233	UMTS 850	RMC	25.5	25.46	0.03	10 mm	06481	N/A	1:1	back	0.968	1.009	0.977	A33
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.01	10 mm	06481	N/A	1:1	back	0.528	1.035	0.546	A34
1852.40	9262	UMTS 1900	RMC	25.2	24.91	0.00	10 mm	06481	N/A	1:1	back	0.561	1.069	0.600	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	10 mm	06481	N/A	1:1	back	0.616	1.062	0.654	A36
1907.60	9538	UMTS 1900	RMC	25.2	25.09	-0.01	10 mm	06481	N/A	1:1	back	0.551	1.026	0.565	
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 11-24
LTE 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	133297	Mid	LTE Band 71	20	25.5	25.48	0.04	0	06465	QPSK	1	50	10 mm	back	1:1	0.485	1.005	0.487	A38
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.01	1	06465	QPSK	50	25	10 mm	back	1:1	0.387	1.009	0.390	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	-0.03	0	06457	QPSK	1	0	10 mm	back	1:1	0.501	1.021	0.512	A39
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	-0.03	1	06457	QPSK	25	0	10 mm	back	1:1	0.341	1.009	0.344	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.00	0	06457	QPSK	1	49	10 mm	back	1:1	0.635	1.009	0.641	A40
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	-0.05	1	06457	QPSK	25	12	10 mm	back	1:1	0.426	1.019	0.434	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.04	0	06465	QPSK	1	25	10 mm	back	1:1	0.684	1.023	0.700	A41
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.02	1	06465	QPSK	25	0	10 mm	back	1:1	0.492	1.026	0.505	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.00	0	06473	QPSK	1	36	10 mm	back	1:1	0.792	1.052	0.833	A42
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	-0.02	1	06473	QPSK	36	37	10 mm	back	1:1	0.548	1.028	0.563	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.28	0.00	1	06473	QPSK	75	0	10 mm	back	1:1	0.544	1.052	0.572	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	25.13	-0.02	0	06457	QPSK	1	0	10 mm	back	1:1	0.745	1.016	0.757	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.01	0	06457	QPSK	1	50	10 mm	back	1:1	0.790	1.007	0.796	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.03	0	06457	QPSK	1	0	10 mm	back	1:1	0.918	1.033	0.948	A44
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	-0.01	1	06457	QPSK	50	0	10 mm	back	1:1	0.635	1.000	0.635	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.10	0.00	1	06457	QPSK	100	0	10 mm	back	1:1	0.694	1.023	0.710	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.07	-0.01	0	06457	QPSK	1	0	10 mm	back	1:1	0.749	1.030	0.771	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.94	0.00	0	06457	QPSK	1	50	10 mm	back	1:1	0.669	1.062	0.710	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.00	0	06457	QPSK	1	0	10 mm	back	1:1	0.755	1.026	0.775	A46
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.00	1	06457	QPSK	50	0	10 mm	back	1:1	0.587	1.005	0.590	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.01	0	06440	QPSK	1	0	10 mm	back	1:1	0.469	1.026	0.481	A48
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	-0.01	1	06440	QPSK	25	0	10 mm	back	1:1	0.356	1.016	0.362	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	-0.03	0	06440	QPSK	1	0	10 mm	back	1:1	0.498	1.012	0.504	A50
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.02	1	06440	QPSK	50	0	10 mm	back	1:1	0.414	1.021	0.423	
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 11-25
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)	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.00	0	06473	QPSK	1	0	10 mm	back	1:1	0.796	1.028	0.818	A43
2CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.96	0.04	0	06473	QPSK	1	0	10 mm	back	1:1	0.715	1.132	0.809	
2CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5							1	24							
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.00	1	06473	QPSK	25	0	10 mm	back	1:1	0.572	1.007	0.576	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.11	0.01	1	06473	QPSK	50	0	10 mm	back	1:1	0.566	1.094	0.619	
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 11-26
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY MHz	FREQUENCY Ch.		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.00	0	06440	QPSK	1	0	10 mm	back	1:1.58	0.517	1.012	0.523	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.00	1	06440	QPSK	50	0	10 mm	back	1:1.58	0.395	1.009	0.399	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.7	27.49	0.13	0	06440	QPSK	1	0	10 mm	back	1:2.31	0.611	1.050	0.642	A52
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.2	25.16	-0.12	0	06440	QPSK	1	0	10 mm	back	1:1.58	0.526	1.009	0.531	
2 CC Uplink - Power Class 3	SCC	2660.20	41292	High	LTE Band 41	20							1	99							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-27
DTS SISO Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY MHz	FREQUENCY Ch.	Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
2462	11	802.11b	DSSS	22	20.5	19.88	-0.08	10 mm	1	06630	1	back	99.1	0.200	0.274	1.153	1.009	0.319	
2412	1	802.11b	DSSS	22	20.5	20.16	0.00	10 mm	2	06630	1	back	99.2	0.727	0.626	1.081	1.008	0.682	
2437	6	802.11b	DSSS	22	20.5	20.00	-0.01	10 mm	2	06630	1	back	99.2	0.694	0.715	1.122	1.008	0.809	A54
2462	11	802.11b	DSSS	22	20.5	19.98	-0.01	10 mm	2	06630	1	back	99.2	0.805	0.689	1.127	1.008	0.783	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-28
DTS MIMO Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY MHz	FREQUENCY Ch.	Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
2422	3	802.11g	OFDM	20	19.0	18.25	19.0	18.38	0.01	10 mm	MIMO	00041	6	back	98.2	0.434	0.415	1.189	1.018	0.502	
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 2.4GHz WLAN 22.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 19.0 dBm.

Table 11-29
NII SISO Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY MHz	FREQUENCY Ch.	Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
5300	60	802.11a	OFDM	20	18.0	17.98	0.15	10 mm	1	06648	6	back	98.2	0.187	0.088	1.005	1.018	0.090	
5320	64	802.11a	OFDM	20	18.0	17.34	0.07	10 mm	2	06648	6	back	98.3	0.535	0.287	1.164	1.017	0.340	
5600	120	802.11a	OFDM	20	18.0	17.16	0.17	10 mm	1	06648	6	back	98.2	0.447	0.182	1.213	1.018	0.225	
5500	100	802.11a	OFDM	20	18.0	17.35	0.00	10 mm	2	06648	6	back	98.3	1.090	0.464	1.161	1.017	0.548	
5620	124	802.11a	OFDM	20	18.0	17.16	0.10	10 mm	2	06648	6	back	98.3	1.362	0.643	1.213	1.017	0.793	
5720	144	802.11a	OFDM	20	18.0	17.53	0.02	10 mm	2	06648	6	back	98.3	1.495	0.685	1.114	1.017	0.776	
5825	165	802.11a	OFDM	20	18.0	17.37	0.17	10 mm	1	06648	6	back	98.2	0.634	0.266	1.156	1.018	0.313	
5745	149	802.11a	OFDM	20	18.0	17.47	-0.02	10 mm	2	06648	6	back	98.3	1.624	0.697	1.130	1.017	0.801	
5785	157	802.11a	OFDM	20	18.0	17.48	0.08	10 mm	2	06648	6	back	98.3	1.421	0.669	1.127	1.017	0.767	
5825	165	802.11a	OFDM	20	18.0	17.43	-0.04	10 mm	2	06648	6	back	98.3	1.071	0.560	1.140	1.017	0.649	
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 11-30
NII MIMO Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
5300	60	802.11a	OFDM	20	18.0	17.98	18.0	17.27	0.12	10 mm	MIMO	06648	6	back	98.1	0.644	0.319	1.183	1.019	0.385	
5500	100	802.11a	OFDM	20	18.0	17.10	18.0	17.35	0.13	10 mm	MIMO	06648	6	back	98.1	1.065	0.540	1.230	1.019	0.677	
5620	124	802.11a	OFDM	20	18.0	17.12	18.0	17.16	0.15	10 mm	MIMO	06648	6	back	98.1	1.697	0.748	1.225	1.019	0.934	A55
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	-0.08	10 mm	MIMO	06648	6	back	98.1	1.201	0.738	1.225	1.019	0.921	
5745	149	802.11a	OFDM	20	18.0	17.13	18.0	17.47	0.05	10 mm	MIMO	06648	6	back	98.1	1.259	0.737	1.222	1.019	0.918	
5785	157	802.11a	OFDM	20	18.0	17.25	18.0	17.48	0.04	10 mm	MIMO	06648	6	back	98.1	1.329	0.675	1.189	1.019	0.818	
5825	165	802.11a	OFDM	20	18.0	17.37	18.0	17.43	-0.15	10 mm	MIMO	06648	6	back	98.1	1.103	0.615	1.156	1.019	0.724	
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 5GHz WLAN 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm.

Table 11-31
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) (W/kg)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.															
2480	78	Bluetooth	FHSS	13.0	12.19	0.01	10 mm	06630	1	back	77.3	0.028	1.205	1.294	**0.044**	A57
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 11-32
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 GPRS 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	25.5	25.16	-0.02	10 mm	06499	N/A	1:1	back	0.778	1.081	0.841	A24
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.16	-0.03	10 mm	06499	N/A	1:1	front	0.550	1.081	0.595	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.16	0.05	10 mm	06499	N/A	1:1	bottom	0.173	1.081	0.187	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.16	0.02	10 mm	06499	N/A	1:1	right	0.321	1.081	0.347	
824.70	1013	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.25	-0.01	10 mm	06499	N/A	1:1	back	0.805	1.059	0.852	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.15	0.00	10 mm	06499	N/A	1:1	back	0.913	1.084	0.990	
848.31	777	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.37	-0.01	10 mm	06499	N/A	1:1	back	1.010	1.030	1.040	A26
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.15	0.02	10 mm	06499	N/A	1:1	front	0.610	1.084	0.661	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.15	-0.04	10 mm	06499	N/A	1:1	bottom	0.266	1.084	0.288	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.15	-0.02	10 mm	06499	N/A	1:1	right	0.413	1.084	0.448	
848.31	777	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.37	0.00	10 mm	06499	N/A	1:1	back	1.010	1.030	1.040	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	0.00	10 mm	06499	N/A	1:1	back	0.595	1.045	0.622	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	-0.03	10 mm	06499	N/A	1:1	front	0.490	1.045	0.512	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.2	25.14	-0.06	10 mm	06499	N/A	1:1	bottom	0.824	1.014	0.836	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	-0.06	10 mm	06499	N/A	1:1	bottom	0.871	1.045	0.910	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.2	24.98	-0.03	10 mm	06499	N/A	1:1	bottom	1.060	1.052	1.115	A28
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	0.01	10 mm	06499	N/A	1:1	left	0.259	1.045	0.271	
824.20	128	GSM 850	GPRS	34.2	34.19	0.09	10 mm	06481	1	1:8.3	back	0.834	1.002	0.836	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.07	10 mm	06481	1	1:8.3	back	0.854	1.012	0.864	A30
848.80	251	GSM 850	GPRS	34.2	34.14	-0.07	10 mm	06481	1	1:8.3	back	0.837	1.014	0.849	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.12	10 mm	06481	1	1:8.3	front	0.536	1.012	0.542	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.06	10 mm	06481	1	1:8.3	bottom	0.211	1.012	0.214	
836.60	190	GSM 850	GPRS	34.2	34.15	-0.19	10 mm	06481	1	1:8.3	right	0.278	1.012	0.281	
1880.00	661	GSM 1900	GPRS	25.5	25.26	-0.02	10 mm	06481	4	1:2.076	back	0.241	1.057	0.255	
1880.00	661	GSM 1900	GPRS	25.5	25.26	0.03	10 mm	06481	4	1:2.076	front	0.223	1.057	0.236	
1880.00	661	GSM 1900	GPRS	25.5	25.26	0.01	10 mm	06481	4	1:2.076	bottom	0.413	1.057	0.437	A32
1880.00	661	GSM 1900	GPRS	25.5	25.26	-0.08	10 mm	06481	4	1:2.076	left	0.119	1.057	0.126	
826.40	4132	UMTS 850	RMC	25.5	25.26	0.04	10 mm	06481	N/A	1:1	back	0.831	1.057	0.878	
836.60	4183	UMTS 850	RMC	25.5	25.24	0.04	10 mm	06481	N/A	1:1	back	0.924	1.062	0.981	
846.60	4233	UMTS 850	RMC	25.5	25.46	0.03	10 mm	06481	N/A	1:1	back	0.968	1.009	0.977	A33
836.60	4183	UMTS 850	RMC	25.5	25.24	-0.02	10 mm	06481	N/A	1:1	front	0.634	1.062	0.673	
836.60	4183	UMTS 850	RMC	25.5	25.24	-0.10	10 mm	06481	N/A	1:1	bottom	0.279	1.062	0.296	
836.60	4183	UMTS 850	RMC	25.5	25.24	-0.13	10 mm	06481	N/A	1:1	right	0.323	1.062	0.343	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.01	10 mm	06481	N/A	1:1	back	0.528	1.035	0.546	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.00	10 mm	06481	N/A	1:1	front	0.457	1.035	0.473	
1712.40	1312	UMTS 1750	RMC	25.2	25.10	-0.02	10 mm	06481	N/A	1:1	bottom	0.648	1.023	0.663	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.01	10 mm	06481	N/A	1:1	bottom	0.707	1.035	0.732	
1752.60	1513	UMTS 1750	RMC	25.2	25.10	-0.04	10 mm	06481	N/A	1:1	bottom	0.812	1.023	0.831	A35
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.01	10 mm	06481	N/A	1:1	left	0.273	1.035	0.283	
1852.40	9262	UMTS 1900	RMC	25.2	24.91	0.00	10 mm	06481	N/A	1:1	back	0.561	1.069	0.600	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	10 mm	06481	N/A	1:1	back	0.616	1.062	0.654	
1907.60	9538	UMTS 1900	RMC	25.2	25.09	-0.01	10 mm	06481	N/A	1:1	back	0.551	1.026	0.565	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	10 mm	06481	N/A	1:1	front	0.508	1.062	0.539	
1852.40	9262	UMTS 1900	RMC	25.2	24.91	-0.02	10 mm	06481	N/A	1:1	bottom	0.772	1.069	0.825	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	-0.03	10 mm	06481	N/A	1:1	bottom	0.834	1.062	0.886	
1907.60	9538	UMTS 1900	RMC	25.2	25.09	-0.01	10 mm	06481	N/A	1:1	bottom	1.000	1.026	1.026	A37
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.01	10 mm	06481	N/A	1:1	left	0.256	1.062	0.272	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Blue entries represent variability measurements.

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Table 11-33
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	0.04	0	06465	QPSK	1	50	10 mm	back	1:1	0.485	1.005	0.487	A38
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.01	1	06465	QPSK	50	25	10 mm	back	1:1	0.387	1.009	0.390	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	0.00	0	06465	QPSK	1	50	10 mm	front	1:1	0.345	1.005	0.347	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	-0.01	1	06465	QPSK	50	25	10 mm	front	1:1	0.279	1.009	0.282	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	0.01	0	06465	QPSK	1	50	10 mm	bottom	1:1	0.095	1.005	0.095	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	0.07	1	06465	QPSK	50	25	10 mm	bottom	1:1	0.078	1.009	0.079	
680.50	133297	Mid	LTE Band 71	20	25.5	25.48	-0.04	0	06465	QPSK	1	50	10 mm	right	1:1	0.295	1.005	0.296	
680.50	133297	Mid	LTE Band 71	20	24.5	24.46	-0.03	1	06465	QPSK	50	25	10 mm	right	1:1	0.215	1.009	0.217	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-34
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	-0.03	0	06457	QPSK	1	0	10 mm	back	1:1	0.501	1.021	0.512	A39
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	-0.03	1	06457	QPSK	25	0	10 mm	back	1:1	0.341	1.009	0.344	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	-0.02	0	06457	QPSK	1	0	10 mm	front	1:1	0.361	1.021	0.369	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.00	1	06457	QPSK	25	0	10 mm	front	1:1	0.247	1.009	0.249	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	0.02	0	06457	QPSK	1	0	10 mm	bottom	1:1	0.126	1.021	0.129	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	0.02	1	06457	QPSK	25	0	10 mm	bottom	1:1	0.085	1.009	0.086	
707.50	23095	Mid	LTE Band 12	10	25.5	25.41	-0.05	0	06457	QPSK	1	0	10 mm	right	1:1	0.200	1.021	0.204	
707.50	23095	Mid	LTE Band 12	10	24.5	24.46	-0.08	1	06457	QPSK	25	0	10 mm	right	1:1	0.135	1.009	0.136	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-35
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.00	0	06457	QPSK	1	49	10 mm	back	1:1	0.635	1.009	0.641	A40
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	-0.05	1	06457	QPSK	25	12	10 mm	back	1:1	0.426	1.019	0.434	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	-0.01	0	06457	QPSK	1	49	10 mm	front	1:1	0.455	1.009	0.459	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	0.01	1	06457	QPSK	25	12	10 mm	front	1:1	0.309	1.019	0.315	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	0.01	0	06457	QPSK	1	49	10 mm	bottom	1:1	0.166	1.009	0.167	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	-0.01	1	06457	QPSK	25	12	10 mm	bottom	1:1	0.113	1.019	0.115	
782.00	23230	Mid	LTE Band 13	10	25.5	25.46	-0.03	0	06457	QPSK	1	49	10 mm	right	1:1	0.192	1.009	0.194	
782.00	23230	Mid	LTE Band 13	10	24.5	24.42	-0.01	1	06457	QPSK	25	12	10 mm	right	1:1	0.133	1.019	0.136	
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 11-36
LTE Band 14 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.04	0	06465	QPSK	1	25	10 mm	back	1:1	0.684	1.023	0.700	A41
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.02	1	06465	QPSK	25	0	10 mm	back	1:1	0.492	1.026	0.505	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	0.02	0	06465	QPSK	1	25	10 mm	front	1:1	0.528	1.023	0.540	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	-0.02	1	06465	QPSK	25	0	10 mm	front	1:1	0.370	1.026	0.380	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	0.00	0	06465	QPSK	1	25	10 mm	bottom	1:1	0.162	1.023	0.166	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	0.02	1	06465	QPSK	25	0	10 mm	bottom	1:1	0.118	1.026	0.121	
793.00	23330	Mid	LTE Band 14	10	25.5	25.40	-0.17	0	06465	QPSK	1	25	10 mm	right	1:1	0.196	1.023	0.201	
793.00	23330	Mid	LTE Band 14	10	24.5	24.39	-0.11	1	06465	QPSK	25	0	10 mm	right	1:1	0.146	1.026	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 11-37
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.00	0	06473	QPSK	1	36	10 mm	back	1:1	0.792	1.052	0.833	A42
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	-0.02	1	06473	QPSK	36	37	10 mm	back	1:1	0.548	1.028	0.563	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.28	0.00	1	06473	QPSK	75	0	10 mm	back	1:1	0.544	1.052	0.572	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	0.02	0	06473	QPSK	1	36	10 mm	front	1:1	0.476	1.052	0.501	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	0.01	1	06473	QPSK	36	37	10 mm	front	1:1	0.326	1.028	0.335	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	-0.04	0	06473	QPSK	1	36	10 mm	bottom	1:1	0.221	1.052	0.232	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	-0.04	1	06473	QPSK	36	37	10 mm	bottom	1:1	0.156	1.028	0.160	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.28	-0.06	0	06473	QPSK	1	36	10 mm	right	1:1	0.289	1.052	0.304	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.38	-0.07	1	06473	QPSK	36	37	10 mm	right	1:1	0.205	1.028	0.211	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-38
LTE Band 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)	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.00	0	06473	QPSK	1	0	10 mm	back	1:1	0.796	1.028	0.818	A43
2CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.96	0.04	0	06473	QPSK	1	0	10 mm	back	1:1	0.715	1.132	0.809	
2CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5						QPSK	1	24							
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.00	1	06473	QPSK	25	0	10 mm	back	1:1	0.572	1.007	0.576	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.11	0.01	1	06473	QPSK	50	0	10 mm	back	1:1	0.566	1.094	0.619	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	0.00	0	06473	QPSK	1	0	10 mm	front	1:1	0.483	1.028	0.497	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	0.01	1	06473	QPSK	25	0	10 mm	front	1:1	0.339	1.007	0.341	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	-0.02	0	06473	QPSK	1	0	10 mm	bottom	1:1	0.225	1.028	0.231	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	-0.01	1	06473	QPSK	25	0	10 mm	bottom	1:1	0.161	1.007	0.162	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.38	-0.06	0	06473	QPSK	1	0	10 mm	right	1:1	0.294	1.028	0.302	
1CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.47	-0.09	1	06473	QPSK	25	0	10 mm	right	1:1	0.212	1.007	0.213	
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 11-39
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	25.13	-0.02	0	06457	QPSK	1	0	10 mm	back	1:1	0.745	1.016	0.757	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.01	0	06457	QPSK	1	50	10 mm	back	1:1	0.790	1.007	0.796	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.03	0	06457	QPSK	1	0	10 mm	back	1:1	0.918	1.033	0.948	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	-0.01	1	06457	QPSK	50	0	10 mm	back	1:1	0.635	1.000	0.635	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.10	0.00	1	06457	QPSK	100	0	10 mm	back	1:1	0.694	1.023	0.710	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.03	0	06457	QPSK	1	50	10 mm	front	1:1	0.693	1.007	0.698	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.02	1	06457	QPSK	50	0	10 mm	front	1:1	0.574	1.000	0.574	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	25.13	-0.05	0	06457	QPSK	1	0	10 mm	bottom	1:1	0.957	1.016	0.972	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.05	0	06457	QPSK	1	50	10 mm	bottom	1:1	1.100	1.007	1.108	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.03	0	06457	QPSK	1	0	10 mm	bottom	1:1	1.240	1.033	**1.281**	A45
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.10	-0.02	1	06457	QPSK	50	25	10 mm	bottom	1:1	0.801	1.023	0.819	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	-0.08	1	06457	QPSK	50	0	10 mm	bottom	1:1	0.901	1.000	0.901	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.04	1	06457	QPSK	50	0	10 mm	bottom	1:1	0.973	1.038	1.010	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.10	0.02	1	06457	QPSK	100	0	10 mm	bottom	1:1	0.896	1.023	0.917	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.01	0	06457	QPSK	1	50	10 mm	left	1:1	0.431	1.007	0.434	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.00	1	06457	QPSK	50	0	10 mm	left	1:1	0.356	1.000	0.356	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.01	0	06457	QPSK	1	0	10 mm	bottom	1:1	1.220	1.033	1.260	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Blue entries represent variability measurements.

Table 11-40
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.07	-0.01	0	06457	QPSK	1	0	10 mm	back	1:1	0.749	1.030	0.771	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.94	0.00	0	06457	QPSK	1	50	10 mm	back	1:1	0.669	1.062	0.710	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.00	0	06457	QPSK	1	0	10 mm	back	1:1	0.755	1.026	0.775	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.00	1	06457	QPSK	50	0	10 mm	back	1:1	0.587	1.005	0.590	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.02	0	06457	QPSK	1	0	10 mm	front	1:1	0.602	1.026	0.618	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.00	1	06457	QPSK	50	0	10 mm	front	1:1	0.476	1.005	0.478	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.07	-0.01	0	06457	QPSK	1	0	10 mm	bottom	1:1	1.040	1.030	1.071	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.94	0.01	0	06457	QPSK	1	50	10 mm	bottom	1:1	1.050	1.062	1.115	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.02	0	06457	QPSK	1	0	10 mm	bottom	1:1	1.200	1.026	1.231	A47
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.11	-0.03	1	06457	QPSK	50	0	10 mm	bottom	1:1	0.866	1.021	0.884	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.06	-0.05	1	06457	QPSK	50	0	10 mm	bottom	1:1	0.855	1.033	0.883	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	-0.01	1	06457	QPSK	50	0	10 mm	bottom	1:1	0.958	1.005	0.963	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.05	0.02	1	06457	QPSK	100	0	10 mm	bottom	1:1	0.990	1.035	1.025	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.01	0	06457	QPSK	1	0	10 mm	left	1:1	0.287	1.026	0.294	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.00	1	06457	QPSK	50	0	10 mm	left	1:1	0.228	1.005	0.229	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.02	0	06457	QPSK	1	0	10 mm	bottom	1:1	1.150	1.026	1.180	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Blue entries represent variability measurements.

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Table 11-41
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.01	0	06440	QPSK	1	0	10 mm	back	1:1	0.469	1.026	0.481	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	-0.01	1	06440	QPSK	25	0	10 mm	back	1:1	0.356	1.016	0.362	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.02	0	06440	QPSK	1	0	10 mm	front	1:1	0.509	1.026	0.522	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	-0.01	1	06440	QPSK	25	0	10 mm	front	1:1	0.396	1.016	0.402	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.11	0	06440	QPSK	1	0	10 mm	bottom	1:1	0.068	1.026	0.070	
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	-0.07	1	06440	QPSK	25	0	10 mm	bottom	1:1	0.052	1.016	0.053	
2310.00	27710	Mid	LTE Band 30	10	23.7	23.59	-0.02	0	06440	QPSK	1	0	10 mm	right	1:1	0.767	1.026	0.787	A49
2310.00	27710	Mid	LTE Band 30	10	22.7	22.63	0.00	1	06440	QPSK	25	0	10 mm	right	1:1	0.593	1.016	0.602	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-42
LTE Band 7 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	-0.03	0	06440	QPSK	1	0	10 mm	back	1:1	0.498	1.012	0.504	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.02	1	06440	QPSK	50	0	10 mm	back	1:1	0.414	1.021	0.423	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	-0.06	0	06440	QPSK	1	0	10 mm	front	1:1	0.453	1.012	0.458	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	-0.06	1	06440	QPSK	50	0	10 mm	front	1:1	0.395	1.021	0.403	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	0.07	0	06440	QPSK	1	0	10 mm	bottom	1:1	0.106	1.012	0.107	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	-0.01	1	06440	QPSK	50	0	10 mm	bottom	1:1	0.074	1.021	0.076	
2510.00	20850	Low	LTE Band 7	20	23.7	23.51	-0.02	0	06440	QPSK	1	50	10 mm	right	1:1	0.661	1.045	0.691	A51
2535.00	21100	Mid	LTE Band 7	20	23.7	23.59	-0.02	0	06440	QPSK	1	0	10 mm	right	1:1	0.658	1.026	0.675	
2560.00	21350	High	LTE Band 7	20	23.7	23.65	-0.08	0	06440	QPSK	1	0	10 mm	right	1:1	0.606	1.012	0.613	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.61	0.00	1	06440	QPSK	50	0	10 mm	right	1:1	0.531	1.021	0.542	
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 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 (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.00	0	06440	QPSK	1	0	10 mm	back	1:1.58	0.517	1.012	0.523	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.00	1	06440	QPSK	50	0	10 mm	back	1:1.58	0.395	1.009	0.399	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.7	27.49	0.13	0	06440	QPSK	1	0	10 mm	back	1:2.31	0.611	1.050	0.642	
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.2	25.16	-0.12	0	06440	QPSK	1	0	10 mm	back	1:1.58	0.526	1.009	0.531	
2 CC Uplink - Power Class 3	SCC	2660.20	41292	High	LTE Band 41	20							1	99							
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.02	0	06440	QPSK	1	0	10 mm	front	1:1.58	0.343	1.012	0.347	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.01	1	06440	QPSK	50	0	10 mm	front	1:1.58	0.264	1.009	0.266	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	-0.04	0	06440	QPSK	1	0	10 mm	bottom	1:1.58	0.130	1.012	0.132	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	0.03	1	06440	QPSK	50	0	10 mm	bottom	1:1.58	0.093	1.009	0.094	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.00	0.01	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.580	1.047	0.607	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	25.2	25.14	-0.20	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.546	1.014	0.554	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.2	25.13	0.06	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.619	1.016	0.629	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.96	0.06	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.621	1.057	0.656	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	25.15	0.00	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.668	1.012	0.676	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	24.16	-0.05	1	06440	QPSK	50	0	10 mm	right	1:1.58	0.513	1.009	0.518	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	23.99	-0.03	1	06440	QPSK	100	0	10 mm	right	1:1.58	0.489	1.050	0.513	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.7	27.49	0.01	0	06440	QPSK	1	0	10 mm	right	1:2.31	0.788	1.050	0.827	A53
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.2	25.16	0.01	0	06440	QPSK	1	0	10 mm	right	1:1.58	0.663	1.009	0.669	
2 CC Uplink - Power Class 3	SCC	2660.20	41292	High	LTE Band 41	20							1	99							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram								

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Table 11-44
WLAN SISO Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	19.88	-0.08	10 mm	1	06630	1	back	99.1	0.200	0.274	1.153	1.009	0.319	
2462	11	802.11b	DSSS	22	20.5	19.88	-0.17	10 mm	1	06630	1	front	99.1	0.111	-	1.153	1.009	-	
2462	11	802.11b	DSSS	22	20.5	19.88	-0.19	10 mm	1	06630	1	top	99.1	0.235	0.298	1.153	1.009	0.347	
2462	11	802.11b	DSSS	22	20.5	19.88	0.12	10 mm	1	06630	1	left	99.1	0.179	-	1.153	1.009	-	
2412	1	802.11b	DSSS	22	20.5	20.16	0.00	10 mm	2	06630	1	back	99.2	0.727	0.626	1.081	1.008	0.682	
2437	6	802.11b	DSSS	22	20.5	20.00	-0.01	10 mm	2	06630	1	back	99.2	0.694	0.715	1.122	1.008	**0.809**	A54
2462	11	802.11b	DSSS	22	20.5	19.98	-0.01	10 mm	2	06630	1	back	99.2	0.805	0.689	1.127	1.008	0.783	
2412	1	802.11b	DSSS	22	20.5	20.16	0.15	10 mm	2	06630	1	front	99.2	0.052	-	1.081	1.008	-	
2412	1	802.11b	DSSS	22	20.5	20.16	0.19	10 mm	2	06630	1	top	99.2	0.038	-	1.081	1.008	-	
2412	1	802.11b	DSSS	22	20.5	20.16	0.15	10 mm	2	06630	1	left	99.2	0.235	0.201	1.081	1.008	0.219	
5220	44	802.11a	OFDM	20	18.0	17.96	0.16	10 mm	1	06648	6	back	98.2	0.248	0.104	1.009	1.018	0.107	
5220	44	802.11a	OFDM	20	18.0	17.96	0.18	10 mm	1	06648	6	front	98.2	0.139	-	1.009	1.018	-	
5220	44	802.11a	OFDM	20	18.0	17.96	0.15	10 mm	1	06648	6	top	98.2	0.185	-	1.009	1.018	-	
5220	44	802.11a	OFDM	20	18.0	17.96	0.13	10 mm	1	06648	6	left	98.2	0.104	-	1.009	1.018	-	
5240	48	802.11a	OFDM	20	18.0	17.41	0.16	10 mm	2	06648	6	back	98.3	0.523	0.237	1.146	1.017	0.276	
5240	48	802.11a	OFDM	20	18.0	17.41	0.19	10 mm	2	06648	6	front	98.3	0.010	0.001	1.146	1.017	0.001	
5240	48	802.11a	OFDM	20	18.0	17.41	0.19	10 mm	2	06648	6	top	98.3	0.041	-	1.146	1.017	-	
5240	48	802.11a	OFDM	20	18.0	17.41	0.15	10 mm	2	06648	6	left	98.3	0.158	-	1.146	1.017	-	
5825	165	802.11a	OFDM	20	18.0	17.37	0.17	10 mm	1	06648	6	back	98.2	0.634	0.266	1.156	1.018	0.313	
5825	165	802.11a	OFDM	20	18.0	17.37	0.14	10 mm	1	06648	6	front	98.2	0.237	-	1.156	1.018	-	
5825	165	802.11a	OFDM	20	18.0	17.37	-0.13	10 mm	1	06648	6	top	98.2	0.717	0.301	1.156	1.018	0.354	
5825	165	802.11a	OFDM	20	18.0	17.37	0.13	10 mm	1	06648	6	left	98.2	0.365	-	1.156	1.018	-	
5745	149	802.11a	OFDM	20	18.0	17.47	-0.02	10 mm	2	06648	6	back	98.3	1.624	0.697	1.130	1.017	**0.801**	
5785	157	802.11a	OFDM	20	18.0	17.48	0.08	10 mm	2	06648	6	back	98.3	1.421	0.669	1.127	1.017	0.767	
5825	165	802.11a	OFDM	20	18.0	17.43	-0.04	10 mm	2	06648	6	back	98.3	1.071	0.560	1.140	1.017	0.649	
5785	157	802.11a	OFDM	20	18.0	17.48	0.19	10 mm	2	06648	6	front	98.3	0.024	0.000	1.127	1.017	0.000	
5785	157	802.11a	OFDM	20	18.0	17.48	0.16	10 mm	2	06648	6	top	98.3	0.081	-	1.127	1.017	-	
5785	157	802.11a	OFDM	20	18.0	17.48	0.14	10 mm	2	06648	6	left	98.3	0.451	0.193	1.127	1.017	0.221	
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 11-45
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)	
2422	3	802.11g	OFDM	20	19.0	18.25	19.0	18.38	0.01	10 mm	MIMO	00041	6	back	98.2	0.434	0.415	1.189	1.018	0.502	
2422	3	802.11g	OFDM	20	19.0	18.25	19.0	18.38	0.17	10 mm	MIMO	00041	6	front	98.2	0.106	0.085	1.189	1.018	0.103	
2422	3	802.11g	OFDM	20	19.0	18.25	19.0	18.38	0.13	10 mm	MIMO	00041	6	top	98.2	0.293	0.239	1.189	1.018	0.289	
2422	3	802.11g	OFDM	20	19.0	18.25	19.0	18.38	0.16	10 mm	MIMO	00041	6	left	98.2	0.252	-	1.189	1.018	-	
5240	48	802.11a	OFDM	20	18.0	17.91	18.0	17.41	0.17	10 mm	MIMO	06648	6	back	98.1	0.586	0.319	1.146	1.019	0.373	
5240	48	802.11a	OFDM	20	18.0	17.91	18.0	17.41	0.19	10 mm	MIMO	06648	6	front	98.1	0.138	0.068	1.146	1.019	0.079	
5240	48	802.11a	OFDM	20	18.0	17.91	18.0	17.41	0.14	10 mm	MIMO	06648	6	top	98.1	0.214	-	1.146	1.019	-	
5240	48	802.11a	OFDM	20	18.0	17.91	18.0	17.41	0.21	10 mm	MIMO	06648	6	left	98.1	0.237	-	1.146	1.019	-	
5745	149	802.11a	OFDM	20	18.0	17.13	18.0	17.47	0.05	10 mm	MIMO	06648	6	back	98.1	1.259	0.737	1.222	1.019	0.918	A56
5785	157	802.11a	OFDM	20	18.0	17.25	18.0	17.48	0.04	10 mm	MIMO	06648	6	back	98.1	1.329	0.675	1.189	1.019	0.818	
5825	165	802.11a	OFDM	20	18.0	17.37	18.0	17.43	-0.15	10 mm	MIMO	06648	6	back	98.1	1.103	0.615	1.156	1.019	0.724	
5825	165	802.11a	OFDM	20	18.0	17.37	18.0	17.43	0.21	10 mm	MIMO	06648	6	front	98.1	0.210	0.086	1.156	1.019	0.101	
5825	165	802.11a	OFDM	20	18.0	17.37	18.0	17.43	0.20	10 mm	MIMO	06648	6	top	98.1	0.654	0.270	1.156	1.019	0.318	
5825	165	802.11a	OFDM	20	18.0	17.37	18.0	17.43	0.14	10 mm	MIMO	06648	6	left	98.1	0.382	-	1.156	1.019	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Note:

1. To achieve the 2.4GHz WLAN 22.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 19.0 dBm.
2. To achieve the 5GHz WLAN 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm.

Table 11-46
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)	
2480	78	Bluetooth	FHSS	13.0	12.19	0.01	10 mm	06630	1	back	77.3	0.028	1.205	1.294	0.044	
2480	78	Bluetooth	FHSS	13.0	12.19	0.19	10 mm	06630	1	front	77.3	0.012	1.205	1.294	0.019	
2480	78	Bluetooth	FHSS	13.0	12.19	0.16	10 mm	06630	1	top	77.3	0.030	1.205	1.294	**0.047**	A58
2480	78	Bluetooth	FHSS	13.0	12.19	0.19	10 mm	06630	1	left	77.3	0.019	1.205	1.294	0.030	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

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11.4 Standalone Phablet SAR Data

Table 11-47
UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	-0.01	2 mm	06499	1:1	back	1.100	1.045	1.150	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	0.01	0 mm	06499	1:1	front	1.830	1.045	1.912	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	-0.04	3 mm	06499	1:1	bottom	1.540	1.045	1.609	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.2	25.01	0.01	0 mm	06499	1:1	left	0.703	1.045	0.735	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.2	24.06	0.00	0 mm	06499	1:1	back	1.530	1.033	1.580	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.2	24.00	-0.07	0 mm	06499	1:1	bottom	2.360	1.047	2.471	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.2	24.06	-0.04	0 mm	06499	1:1	bottom	2.530	1.033	2.613	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.2	23.90	-0.12	0 mm	06499	1:1	bottom	2.690	1.072	2.884	A59
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.01	2 mm	06481	1:1	back	1.040	1.035	1.076	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.02	0 mm	06481	1:1	front	1.610	1.035	1.666	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	-0.01	3 mm	06481	1:1	bottom	1.200	1.035	1.242	
1732.40	1412	UMTS 1750	RMC	25.2	25.05	0.00	0 mm	06481	1:1	left	0.620	1.035	0.642	
1732.40	1412	UMTS 1750	RMC	24.2	24.00	-0.01	0 mm	06481	1:1	back	1.660	1.047	1.738	
1712.40	1312	UMTS 1750	RMC	24.2	24.13	-0.03	0 mm	06481	1:1	bottom	2.370	1.016	2.408	
1732.40	1412	UMTS 1750	RMC	24.2	24.00	-0.05	0 mm	06481	1:1	bottom	2.460	1.047	2.576	
1752.60	1513	UMTS 1750	RMC	24.2	24.17	-0.05	0 mm	06481	1:1	bottom	2.610	1.007	2.628	A60
1880.00	9400	UMTS 1900	RMC	25.2	24.94	-0.01	2 mm	06481	1:1	back	1.080	1.062	1.147	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.02	0 mm	06481	1:1	front	1.540	1.062	1.635	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	0.00	3 mm	06481	1:1	bottom	1.650	1.062	1.752	
1880.00	9400	UMTS 1900	RMC	25.2	24.94	-0.01	0 mm	06481	1:1	left	0.744	1.062	0.790	
1880.00	9400	UMTS 1900	RMC	24.2	23.76	0.00	0 mm	06481	1:1	back	1.720	1.107	1.904	
1852.40	9262	UMTS 1900	RMC	24.2	24.05	0.00	0 mm	06481	1:1	bottom	2.050	1.035	2.122	
1880.00	9400	UMTS 1900	RMC	24.2	23.76	0.02	0 mm	06481	1:1	bottom	2.170	1.107	2.402	
1907.60	9538	UMTS 1900	RMC	24.2	24.16	0.01	0 mm	06481	1:1	bottom	2.530	1.009	2.553	A61
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

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Table 11-48
LTE Phablet 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 (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.02	0	06457	QPSK	1	50	2 mm	back	1:1	1.250	1.007	1.259	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.03	1	06457	QPSK	50	0	2 mm	back	1:1	1.040	1.000	1.040	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.2	25.13	0.00	0	06457	QPSK	1	0	0 mm	front	1:1	2.460	1.016	2.499	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	-0.02	0	06457	QPSK	1	50	0 mm	front	1:1	2.700	1.007	2.719	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	-0.01	0	06457	QPSK	1	0	0 mm	front	1:1	2.880	1.033	2.975	A62
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.10	0.02	1	06457	QPSK	50	25	0 mm	front	1:1	1.990	1.023	2.036	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	0.01	1	06457	QPSK	50	0	0 mm	front	1:1	2.180	1.000	2.180	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.03	1	06457	QPSK	50	0	0 mm	front	1:1	2.310	1.038	2.398	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.10	0.02	1	06457	QPSK	100	0	0 mm	front	1:1	2.190	1.023	2.240	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	-0.02	0	06457	QPSK	1	50	3 mm	bottom	1:1	1.760	1.007	1.772	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	-0.01	1	06457	QPSK	50	0	3 mm	bottom	1:1	1.420	1.000	1.420	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.2	25.17	0.01	0	06457	QPSK	1	50	0 mm	left	1:1	0.907	1.007	0.913	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.20	-0.01	1	06457	QPSK	50	0	0 mm	left	1:1	0.745	1.000	0.745	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.19	0.16	0	06457	QPSK	1	0	0 mm	back	1:1	1.800	1.002	1.804	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.03	0	06457	QPSK	50	25	0 mm	back	1:1	1.830	1.016	1.859	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.19	0.01	0	06457	QPSK	1	0	0 mm	bottom	1:1	2.630	1.002	2.635	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.98	-0.03	0	06457	QPSK	1	50	0 mm	bottom	1:1	2.710	1.052	2.851	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.16	0.02	0	06457	QPSK	1	99	0 mm	bottom	1:1	2.790	1.009	2.815	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.04	0	06457	QPSK	50	25	0 mm	bottom	1:1	2.680	1.016	2.723	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.11	-0.02	0	06457	QPSK	50	0	0 mm	bottom	1:1	2.880	1.021	2.940	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.97	-0.01	0	06457	QPSK	50	50	0 mm	bottom	1:1	2.820	1.054	2.972	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.10	0.00	0	06457	QPSK	100	0	0 mm	bottom	1:1	2.850	1.023	2.916	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.2	25.06	0.00	0	06457	QPSK	1	0	0 mm	front	1:1	2.680	1.033	2.768	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.02	0	06457	QPSK	1	0	2 mm	back	1:1	1.460	1.026	1.498	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.03	1	06457	QPSK	50	0	2 mm	back	1:1	1.150	1.005	1.156	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.07	0.03	0	06457	QPSK	1	0	0 mm	front	1:1	2.750	1.030	2.833	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.94	0.00	0	06457	QPSK	1	50	0 mm	front	1:1	2.560	1.062	2.719	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.01	0	06457	QPSK	1	0	0 mm	front	1:1	2.850	1.026	2.924	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.11	0.01	1	06457	QPSK	50	0	0 mm	front	1:1	2.180	1.021	2.226	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.06	0.02	1	06457	QPSK	50	0	0 mm	front	1:1	2.120	1.033	2.190	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.03	1	06457	QPSK	50	0	0 mm	front	1:1	2.220	1.005	2.231	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.05	0.03	1	06457	QPSK	100	0	0 mm	front	1:1	2.190	1.035	2.267	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	25.07	-0.09	0	06457	QPSK	1	0	3 mm	bottom	1:1	1.760	1.030	1.813	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.94	-0.03	0	06457	QPSK	1	50	3 mm	bottom	1:1	1.710	1.062	1.816	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	-0.05	0	06457	QPSK	1	0	3 mm	bottom	1:1	1.960	1.026	2.011	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	-0.04	1	06457	QPSK	50	0	3 mm	bottom	1:1	1.570	1.005	1.578	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.05	-0.06	1	06457	QPSK	100	0	3 mm	bottom	1:1	1.640	1.035	1.697	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	25.09	0.02	0	06457	QPSK	1	0	0 mm	left	1:1	0.919	1.026	0.943	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.18	0.02	1	06457	QPSK	50	0	0 mm	left	1:1	0.698	1.005	0.701	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	23.94	-0.01	0	06457	QPSK	1	0	0 mm	back	1:1	2.200	1.062	2.336	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.10	0.03	0	06457	QPSK	1	50	0 mm	back	1:1	2.090	1.023	2.138	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.02	-0.02	0	06457	QPSK	1	50	0 mm	back	1:1	2.230	1.042	2.324	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.17	-0.06	0	06457	QPSK	50	25	0 mm	back	1:1	2.110	1.007	2.125	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.18	0.01	0	06457	QPSK	50	25	0 mm	back	1:1	2.150	1.005	2.161	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.14	-0.03	0	06457	QPSK	50	50	0 mm	back	1:1	2.220	1.014	2.251	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.09	-0.01	0	06457	QPSK	100	0	0 mm	back	1:1	2.150	1.026	2.206	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	23.94	-0.04	0	06457	QPSK	1	0	0 mm	bottom	1:1	2.400	1.062	2.549	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.10	-0.04	0	06457	QPSK	1	50	0 mm	bottom	1:1	2.310	1.023	2.363	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.02	-0.05	0	06457	QPSK	1	50	0 mm	bottom	1:1	2.830	1.042	2.949	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.17	-0.04	0	06457	QPSK	50	25	0 mm	bottom	1:1	2.300	1.007	2.316	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.18	-0.05	0	06457	QPSK	50	25	0 mm	bottom	1:1	2.380	1.005	2.392	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.14	-0.08	0	06457	QPSK	50	50	0 mm	bottom	1:1	2.960	1.014	3.001	A63
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.09	-0.04	0	06457	QPSK	100	0	0 mm	bottom	1:1	2.370	1.026	2.432	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.14	-0.02	0	06457	QPSK	50	50	0 mm	bottom	1:1	2.900	1.014	2.941	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams									

Note: Blue entries represent variability measurements.

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REV 20.11 M
06/19/2018

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Table 11-49
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)	
5300	60	802.11a	OFDM	20	18.0	17.98	-0.15	0 mm	1	06648	6	back	98.2	2.407	0.276	1.005	1.018	0.282	
5300	60	802.11a	OFDM	20	18.0	17.98	0.14	0 mm	1	06648	6	front	98.2	4.542	0.434	1.005	1.018	0.444	
5300	60	802.11a	OFDM	20	18.0	17.98	0.14	0 mm	1	06648	6	top	98.2	6.622	0.686	1.005	1.018	0.702	
5300	60	802.11a	OFDM	20	18.0	17.98	0.05	0 mm	1	06648	6	left	98.2	2.265	-	1.005	1.018	-	
5320	64	802.11a	OFDM	20	18.0	17.34	-0.11	0 mm	2	06648	6	back	98.3	15.547	1.470	1.164	1.017	1.740	
5320	64	802.11a	OFDM	20	18.0	17.34	0.19	0 mm	2	06648	6	front	98.3	0.080	0.004	1.164	1.017	0.005	
5320	64	802.11a	OFDM	20	18.0	17.34	0.17	0 mm	2	06648	6	top	98.3	0.186	-	1.164	1.017	-	
5320	64	802.11a	OFDM	20	18.0	17.34	0.18	0 mm	2	06648	6	left	98.3	1.057	0.120	1.164	1.017	0.142	
5600	120	802.11a	OFDM	20	18.0	17.16	0.05	0 mm	1	06648	6	back	98.2	4.904	0.529	1.213	1.018	0.653	
5600	120	802.11a	OFDM	20	18.0	17.16	0.14	0 mm	1	06648	6	front	98.2	6.687	0.634	1.213	1.018	0.783	
5600	120	802.11a	OFDM	20	18.0	17.16	0.14	0 mm	1	06648	6	top	98.2	13.026	1.150	1.213	1.018	1.420	
5600	120	802.11a	OFDM	20	18.0	17.16	0.16	0 mm	1	06648	6	left	98.2	3.150	-	1.213	1.018	-	
5500	100	802.11a	OFDM	20	18.0	17.35	-0.07	0 mm	2	06648	6	back	98.3	29.061	2.040	1.161	1.017	2.409	
5620	124	802.11a	OFDM	20	18.0	17.16	0.07	0 mm	2	06648	6	back	98.3	19.723	2.240	1.213	1.017	2.763	
5720	144	802.11a	OFDM	20	18.0	17.53	0.02	0 mm	2	06648	6	back	98.3	12.909	1.870	1.114	1.017	2.119	
5720	144	802.11a	OFDM	20	18.0	17.53	0.21	0 mm	2	06648	6	front	98.3	0.091	0.015	1.114	1.017	0.017	
5720	144	802.11a	OFDM	20	18.0	17.53	0.15	0 mm	2	06648	6	top	98.3	0.231	-	1.114	1.017	-	
5720	144	802.11a	OFDM	20	18.0	17.53	0.17	0 mm	2	06648	6	left	98.3	2.751	0.224	1.114	1.017	0.254	
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 11-50
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)	
5300	60	802.11a	OFDM	20	18.0	17.98	18.0	17.27	0.18	0 mm	MIMO	06648	6	back	98.1	18.045	1.380	1.183	1.019	1.664	
5300	60	802.11a	OFDM	20	18.0	17.98	18.0	17.27	0.13	0 mm	MIMO	06648	6	front	98.1	3.776	0.443	1.183	1.019	0.534	
5300	60	802.11a	OFDM	20	18.0	17.98	18.0	17.27	0.13	0 mm	MIMO	06648	6	top	98.1	8.750	0.769	1.183	1.019	0.927	
5300	60	802.11a	OFDM	20	18.0	17.98	18.0	17.27	0.00	0 mm	MIMO	06648	6	left	98.1	2.428	-	1.183	1.019	-	
5500	100	802.11a	OFDM	20	18.0	17.10	18.0	17.35	-0.01	0 mm	MIMO	06648	6	back	98.1	18.916	2.160	1.230	1.019	2.707	
5620	124	802.11a	OFDM	20	18.0	17.12	18.0	17.16	0.10	0 mm	MIMO	06648	6	back	98.1	14.803	2.330	1.225	1.019	2.908	A64
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	0.05	0 mm	MIMO	06648	6	back	98.1	25.213	2.120	1.225	1.019	2.646	
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	0.20	0 mm	MIMO	06648	6	front	98.1	4.220	0.570	1.225	1.019	0.712	
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	0.09	0 mm	MIMO	06648	6	top	98.1	16.421	1.340	1.225	1.019	1.673	
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	0.00	0 mm	MIMO	06648	6	left	98.1	4.022	-	1.225	1.019	-	
5620	124	802.11a	OFDM	20	18.0	17.12	18.0	17.16	0.04	0 mm	MIMO	06648	6	back	98.1	12.293	2.310	1.225	1.019	2.884	
5720	144	802.11a	OFDM	20	18.0	17.12	18.0	17.53	0.05	0 mm	MIMO	06648	6	back	98.1	10.715	2.100	1.225	1.019	2.621	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams											

Note:

1. Blue entries represent variability measurements.
2. To achieve the 5GHz WLAN 21.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18.0 dBm.

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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. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
13. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.
4. GPRS was additionally evaluated for head and body-worn exposure conditions to address possible VoIP scenarios.

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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 > ½ dB, instead of the middle channel, the highest output power channel was used.
6. CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

UMTS Notes:

1. UMTS mode in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

1. LTE Considerations: 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 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 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.

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7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.
8. For LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

WLAN Notes:

1. For held-to-ear and hotspot 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.
7. When 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Bluetooth Notes

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

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

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12.3 Head SAR Simultaneous Transmission Analysis

(*) 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 applicable exposure conditions was used for simultaneous transmission analysis.

Table 12-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Exposure Condition	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	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.143	0.483	0.097	0.626	0.240	0.723
	CDMA/EVDO BC0 (§22H)	0.139	0.483	0.097	0.622	0.236	0.719
	PCS CDMA/EVDO	0.139	0.483	0.097	0.622	0.236	0.719
	GSM/GPRS 850	0.124	0.483	0.097	0.607	0.221	0.704
	GSM/GPRS 1900	0.095	0.483	0.097	0.578	0.192	0.675
	UMTS 850	0.147	0.483	0.097	0.630	0.244	0.727
	UMTS 1750	0.102	0.483	0.097	0.585	0.199	0.682
	UMTS 1900	0.132	0.483	0.097	0.615	0.229	0.712
	LTE Band 71	0.101	0.483	0.097	0.584	0.198	0.681
	LTE Band 12	0.106	0.483	0.097	0.589	0.203	0.686
	LTE Band 13	0.126	0.483	0.097	0.609	0.223	0.706
	LTE Band 14	0.149	0.483	0.097	0.632	0.246	0.729
	LTE Band 26 (Cell)	0.120	0.483	0.097	0.603	0.217	0.700
	LTE Band 5 (Cell)	0.114	0.483	0.097	0.597	0.211	0.694
	LTE Band 66 (AWS)	0.137	0.483	0.097	0.620	0.234	0.717
	LTE Band 25 (PCS)	0.152	0.483	0.097	0.635	0.249	0.732
	LTE Band 30	0.483	0.483	0.097	0.966	0.580	1.063
	LTE Band 7	0.336	0.483	0.097	0.819	0.433	0.916
	LTE Band 41	0.676	0.483	0.097	1.159	0.773	**1.256**

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

Exposure Condition	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	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.143	1.270	0.022	1.413	0.165	1.435
	CDMA/EVDO BC0 (§22H)	0.139	1.270	0.022	1.409	0.161	1.431
	PCS CDMA/EVDO	0.139	1.270	0.022	1.409	0.161	1.431
	GSM/GPRS 850	0.124	1.270	0.022	1.394	0.146	1.416
	GSM/GPRS 1900	0.095	1.270	0.022	1.365	0.117	1.387
	UMTS 850	0.147	1.270	0.022	1.417	0.169	1.439
	UMTS 1750	0.102	1.270	0.022	1.372	0.124	1.394
	UMTS 1900	0.132	1.270	0.022	1.402	0.154	1.424
	LTE Band 71	0.101	1.270	0.022	1.371	0.123	1.393
	LTE Band 12	0.106	1.270	0.022	1.376	0.128	1.398
	LTE Band 13	0.126	1.270	0.022	1.396	0.148	1.418
	LTE Band 14	0.149	1.270	0.022	1.419	0.171	1.441
	LTE Band 26 (Cell)	0.120	1.270	0.022	1.390	0.142	1.412
	LTE Band 5 (Cell)	0.114	1.270	0.022	1.384	0.136	1.406
	LTE Band 66 (AWS)	0.137	1.270	0.022	1.407	0.159	1.429
	LTE Band 25 (PCS)	0.152	1.270	0.022	1.422	0.174	**1.444**
	LTE Band 30	0.483	1.270	0.022	See Table Below	0.505	See Table Below
	LTE Band 7	0.336	1.270	0.022	See Table Below	0.358	See Table Below
	LTE Band 41	0.676	1.270	0.022	See Table Below	0.698	See Table Below

Simult Tx	Configuration	LTE Band 30 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	1+2	1+3	1+2+3	1+2	1+3	2+3
Head SAR	Right Cheek	0.483	1.126	0.022	See Note 1	0.505	See Note 1	0.02	0.00	0.04
	Right Tilt	0.097	1.270	0.022*	1.367	0.119	1.389	N/A	N/A	N/A
	Left Cheek	0.226	1.270*	0.022*	1.496	0.248	**1.518**	N/A	N/A	N/A
	Left Tilt	0.164	0.501	0.022*	0.665	0.186	0.687	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	Right Cheek	0.336	1.126	0.022	1.462	0.358	**1.484**
	Right Tilt	0.057	1.270	0.022*	1.327	0.079	1.349
	Left Cheek	0.140	1.270*	0.022*	1.410	0.162	1.432
	Left Tilt	0.086	0.501	0.022*	0.587	0.108	0.609

Simult Tx	Configuration	LTE Band 41 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	1+2	1+3	1+2+3	1+2	1+3	2+3
Head SAR	Right Cheek	0.676	1.126	0.022	See Note 1	0.698	See Note 1	0.02	0.01	0.04
	Right Tilt	0.117	1.270	0.022*	1.387	0.139	1.409	N/A	N/A	N/A
	Left Cheek	0.275	1.270*	0.022*	1.545	0.297	**1.567**	N/A	N/A	N/A
	Left Tilt	0.200	0.501	0.022*	0.701	0.222	0.723	N/A	N/A	N/A

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REV 20.11 M
06/19/2018

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Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.143	0.483	0.022	0.648
	CDMA/EVDO BC0 (§22H)	0.139	0.483	0.022	0.644
	PCS CDMA/EVDO	0.139	0.483	0.022	0.644
	GSM/GPRS 850	0.124	0.483	0.022	0.629
	GSM/GPRS 1900	0.095	0.483	0.022	0.600
	UMTS 850	0.147	0.483	0.022	0.652
	UMTS 1750	0.102	0.483	0.022	0.607
	UMTS 1900	0.132	0.483	0.022	0.637
	LTE Band 71	0.101	0.483	0.022	0.606
	LTE Band 12	0.106	0.483	0.022	0.611
	LTE Band 13	0.126	0.483	0.022	0.631
	LTE Band 14	0.149	0.483	0.022	0.654
	LTE Band 26 (Cell)	0.120	0.483	0.022	0.625
	LTE Band 5 (Cell)	0.114	0.483	0.022	0.619
	LTE Band 66 (AWS)	0.137	0.483	0.022	0.642
	LTE Band 25 (PCS)	0.152	0.483	0.022	0.657
	LTE Band 30	0.483	0.483	0.022	0.988
	LTE Band 7	0.336	0.483	0.022	0.841
	LTE Band 41	0.676	0.483	0.022	**1.181**

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	CDMA/EVDO BC10 (§90S)	0.143	0.209	0.352
	CDMA/EVDO BC0 (§22H)	0.139	0.209	0.348
	PCS CDMA/EVDO	0.139	0.209	0.348
	GSM/GPRS 850	0.124	0.209	0.333
	GSM/GPRS 1900	0.095	0.209	0.304
	UMTS 850	0.147	0.209	0.356
	UMTS 1750	0.102	0.209	0.311
	UMTS 1900	0.132	0.209	0.341
	LTE Band 71	0.101	0.209	0.310
	LTE Band 12	0.106	0.209	0.315
	LTE Band 13	0.126	0.209	0.335
	LTE Band 14	0.149	0.209	0.358
	LTE Band 26 (Cell)	0.120	0.209	0.329
	LTE Band 5 (Cell)	0.114	0.209	0.323
	LTE Band 66 (AWS)	0.137	0.209	0.346
	LTE Band 25 (PCS)	0.152	0.209	0.361
	LTE Band 30	0.483	0.209	0.692
	LTE Band 7	0.336	0.209	0.545
	LTE Band 41	0.676	0.209	**0.885**

Notes:

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

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12.4 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	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)		SPLSR
		1	2	3	1+2	1+3	1+3
Body-Worn	CDMA BC10 (§90S)	0.772	0.319	0.809	1.091	1.581	N/A
	CDMA BC0 (§22H)	1.013	0.319	0.809	1.332	See Note 1	0.02
	PCS CDMA	0.576	0.319	0.809	0.895	1.385	N/A
	GSM/GPRS 850	0.922	0.319	0.809	1.241	See Note 1	0.02
	GSM/GPRS 1900	0.369	0.319	0.809	0.688	1.178	N/A
	UMTS 850	0.981	0.319	0.809	1.300	See Note 1	0.02
	UMTS 1750	0.546	0.319	0.809	0.865	1.355	N/A
	UMTS 1900	0.654	0.319	0.809	0.973	1.463	N/A
	LTE Band 71	0.487	0.319	0.809	0.806	1.296	N/A
	LTE Band 12	0.512	0.319	0.809	0.831	1.321	N/A
	LTE Band 13	0.641	0.319	0.809	0.960	1.450	N/A
	LTE Band 14	0.700	0.319	0.809	1.019	1.509	N/A
	LTE Band 26 (Cell)	0.833	0.319	0.809	1.152	See Note 1	0.02
	LTE Band 5 (Cell)	0.818	0.319	0.809	1.137	See Note 1	0.02
	LTE Band 66 (AWS)	0.948	0.319	0.809	1.267	See Note 1	0.02
	LTE Band 25 (PCS)	0.775	0.319	0.809	1.094	**1.584**	N/A
	LTE Band 30	0.481	0.319	0.809	0.800	1.290	N/A
	LTE Band 7	0.504	0.319	0.809	0.823	1.313	N/A
	LTE Band 41	0.642	0.319	0.809	0.961	1.451	N/A

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Table 12-6
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Body-Worn at 1.0 cm)

Exposure Condition	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	CDMA BC10 (§90S)	0.772	0.502	1.274
	CDMA BC0 (§22H)	1.013	0.502	**1.515**
	PCS CDMA	0.576	0.502	1.078
	GSM/GPRS 850	0.922	0.502	1.424
	GSM/GPRS 1900	0.369	0.502	0.871
	UMTS 850	0.981	0.502	1.483
	UMTS 1750	0.546	0.502	1.048
	UMTS 1900	0.654	0.502	1.156
	LTE Band 71	0.487	0.502	0.989
	LTE Band 12	0.512	0.502	1.014
	LTE Band 13	0.641	0.502	1.143
	LTE Band 14	0.700	0.502	1.202
	LTE Band 26 (Cell)	0.833	0.502	1.335
	LTE Band 5 (Cell)	0.818	0.502	1.320
	LTE Band 66 (AWS)	0.948	0.502	1.450
	LTE Band 25 (PCS)	0.775	0.502	1.277
	LTE Band 30	0.481	0.502	0.983
	LTE Band 7	0.504	0.502	1.006
	LTE Band 41	0.642	0.502	1.144

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Table 12-7
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	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)		SPLSR
		1	2	3	1+2	1+3	1+3
Body-Worn	CDMA BC10 (§90S)	0.772	0.313	0.801	1.085	1.573	N/A
	CDMA BC0 (§22H)	1.013	0.313	0.801	1.326	See Note 1	0.02
	PCS CDMA	0.576	0.313	0.801	0.889	1.377	N/A
	GSM/GPRS 850	0.922	0.313	0.801	1.235	See Note 1	0.02
	GSM/GPRS 1900	0.369	0.313	0.801	0.682	1.170	N/A
	UMTS 850	0.981	0.313	0.801	1.294	See Note 1	0.02
	UMTS 1750	0.546	0.313	0.801	0.859	1.347	N/A
	UMTS 1900	0.654	0.313	0.801	0.967	1.455	N/A
	LTE Band 71	0.487	0.313	0.801	0.800	1.288	N/A
	LTE Band 12	0.512	0.313	0.801	0.825	1.313	N/A
	LTE Band 13	0.641	0.313	0.801	0.954	1.442	N/A
	LTE Band 14	0.700	0.313	0.801	1.013	1.501	N/A
	LTE Band 26 (Cell)	0.833	0.313	0.801	1.146	See Note 1	0.02
	LTE Band 5 (Cell)	0.818	0.313	0.801	1.131	See Note 1	0.02
	LTE Band 66 (AWS)	0.948	0.313	0.801	1.261	See Note 1	0.02
	LTE Band 25 (PCS)	0.775	0.313	0.801	1.088	**1.576**	N/A
	LTE Band 30	0.481	0.313	0.801	0.794	1.282	N/A
	LTE Band 7	0.504	0.313	0.801	0.817	1.305	N/A
	LTE Band 41	0.642	0.313	0.801	0.955	1.443	N/A

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Body-Worn	CDMA BC10 (§90S)	0.772	0.934	See Note 1	0.02
	CDMA BC0 (§22H)	1.013	0.934	See Note 1	0.02
	PCS CDMA	0.576	0.934	1.510	N/A
	GSM/GPRS 850	0.922	0.934	See Note 1	0.02
	GSM/GPRS 1900	0.369	0.934	1.303	N/A
	UMTS 850	0.981	0.934	See Note 1	0.02
	UMTS 1750	0.546	0.934	1.480	N/A
	UMTS 1900	0.654	0.934	**1.588**	N/A
	LTE Band 71	0.487	0.934	1.421	N/A
	LTE Band 12	0.512	0.934	1.446	N/A
	LTE Band 13	0.641	0.934	1.575	N/A
	LTE Band 14	0.700	0.934	See Note 1	0.02
	LTE Band 26 (Cell)	0.833	0.934	See Note 1	0.02
	LTE Band 5 (Cell)	0.818	0.934	See Note 1	0.02
	LTE Band 66 (AWS)	0.948	0.934	See Note 1	0.02
	LTE Band 25 (PCS)	0.775	0.934	See Note 1	0.02
	LTE Band 30	0.481	0.934	1.415	N/A
	LTE Band 7	0.504	0.934	1.438	N/A
	LTE Band 41	0.642	0.934	1.576	N/A

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Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 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
Body-Worn	CDMA BC10 (§90S)	0.772	0.319	0.801	See Note 1	0.01	0.02	0.02
	CDMA BC0 (§22H)	1.013	0.319	0.801	See Note 1	0.01	0.02	0.02
	PCS CDMA	0.576	0.319	0.801	See Note 1	0.01	0.01	0.02
	GSM/GPRS 850	0.922	0.319	0.801	See Note 1	0.01	0.02	0.02
	GSM/GPRS 1900	0.369	0.319	0.801	**1.489**	N/A	N/A	N/A
	UMTS 850	0.981	0.319	0.801	See Note 1	0.01	0.02	0.02
	UMTS 1750	0.546	0.319	0.801	See Note 1	0.01	0.01	0.02
	UMTS 1900	0.654	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 71	0.487	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 12	0.512	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 13	0.641	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 14	0.700	0.319	0.801	See Note 1	0.01	0.02	0.02
	LTE Band 26 (Cell)	0.833	0.319	0.801	See Note 1	0.01	0.02	0.02
	LTE Band 5 (Cell)	0.818	0.319	0.801	See Note 1	0.01	0.02	0.02
	LTE Band 66 (AWS)	0.948	0.319	0.801	See Note 1	0.01	0.02	0.02
	LTE Band 25 (PCS)	0.775	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 30	0.481	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 7	0.504	0.319	0.801	See Note 1	0.01	0.01	0.02
	LTE Band 41	0.642	0.319	0.801	See Note 1	0.01	0.01	0.02

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	CDMA BC10 (§90S)	0.772	0.044	0.816
	CDMA BC0 (§22H)	1.013	0.044	**1.057**
	PCS CDMA	0.576	0.044	0.620
	GSM/GPRS 850	0.922	0.044	0.966
	GSM/GPRS 1900	0.369	0.044	0.413
	UMTS 850	0.981	0.044	1.025
	UMTS 1750	0.546	0.044	0.590
	UMTS 1900	0.654	0.044	0.698
	LTE Band 71	0.487	0.044	0.531
	LTE Band 12	0.512	0.044	0.556
	LTE Band 13	0.641	0.044	0.685
	LTE Band 14	0.700	0.044	0.744
	LTE Band 26 (Cell)	0.833	0.044	0.877
	LTE Band 5 (Cell)	0.818	0.044	0.862
	LTE Band 66 (AWS)	0.948	0.044	0.992
	LTE Band 25 (PCS)	0.775	0.044	0.819
	LTE Band 30	0.481	0.044	0.525
	LTE Band 7	0.504	0.044	0.548
	LTE Band 41	0.642	0.044	0.686

Notes:

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

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12.5 Hotspot SAR Simultaneous Transmission Analysis

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

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

Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	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 SAR	EVDO BC10 (§90S)	0.841	0.347	0.809	1.188	See Table Below
	EVDO BC0 (§22H)	1.040	0.347	0.809	1.387	See Table Below
	PCS EVDO	1.115	0.347	0.809	1.462	See Table Below
	GPRS 850	0.864	0.347	0.809	1.211	See Table Below
	GPRS 1900	0.437	0.347	0.809	0.784	1.246
	UMTS 850	0.981	0.347	0.809	1.328	See Table Below
	UMTS 1750	0.831	0.347	0.809	1.178	See Table Below
	UMTS 1900	1.026	0.347	0.809	1.373	See Table Below
	LTE Band 71	0.487	0.347	0.809	0.834	1.296
	LTE Band 12	0.512	0.347	0.809	0.859	1.321
	LTE Band 13	0.641	0.347	0.809	0.988	1.450
	LTE Band 14	0.700	0.347	0.809	1.047	1.509
	LTE Band 26 (Cell)	0.833	0.347	0.809	1.180	See Table Below
	LTE Band 5 (Cell)	0.818	0.347	0.809	1.165	See Table Below
	LTE Band 66 (AWS)	1.281	0.347	0.809	See Table Below	See Table Below
	LTE Band 25 (PCS)	1.231	0.347	0.809	**1.578**	See Table Below
	LTE Band 30	0.787	0.347	0.809	1.134	See Table Below
	LTE Band 7	0.691	0.347	0.809	1.038	1.500
	LTE Band 41	0.827	0.347	0.809	1.174	See Table Below

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Simult Tx	Configuration	EVDO BC10 (§90S) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.841	0.809	See Note 1	0.02
	Front	0.595	0.809*	**1.404**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.187	-	0.187	N/A
	Right	0.347	-	0.347	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.040	0.809	See Note 1	0.02
	Front	0.661	0.809*	**1.470**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.288	-	0.288	N/A
	Right	0.448	-	0.448	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.622	0.809	**1.431**
	Front	0.512	0.809*	1.321
	Top	-	0.809*	0.809
	Bottom	1.115	-	1.115
	Right	-	-	0.000
	Left	0.271	0.219	0.490

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.864	0.809	See Note 1	0.02
	Front	0.542	0.809*	**1.351**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.214	-	0.214	N/A
	Right	0.281	-	0.281	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.981	0.809	See Note 1	0.02
	Front	0.673	0.809*	**1.482**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.296	-	0.296	N/A
	Right	0.343	-	0.343	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.546	0.809	**1.355**
	Front	0.473	0.809*	1.282
	Top	-	0.809*	0.809
	Bottom	0.831	-	0.831
	Right	-	-	0.000
	Left	0.283	0.219	0.502

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.654	0.809	**1.463**
	Front	0.539	0.809*	1.348
	Top	-	0.809*	0.809
	Bottom	1.026	-	1.026
	Right	-	-	0.000
	Left	0.272	0.219	0.491

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.833	0.809	See Note 1	0.02
	Front	0.501	0.809*	**1.310**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.232	-	0.232	N/A
	Right	0.304	-	0.304	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.818	0.809	See Note 1	0.02
	Front	0.497	0.809*	**1.306**	N/A
	Top	-	0.809*	0.809	N/A
	Bottom	0.231	-	0.231	N/A
	Right	0.302	-	0.302	N/A
	Left	-	0.219	0.219	N/A

Simult Tx	Configuration	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)		SPLSR
		1	2	3	1+2	1+3	1+3
Hotspot SAR	Back	0.948	0.319	0.809	1.267	See Note 1	0.02
	Front	0.698	0.347*	0.809*	1.045	**1.507**	N/A
	Top	-	0.347	0.809*	0.347	0.809	N/A
	Bottom	1.281	-	-	1.281	1.281	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.434	0.347*	0.219	0.781	0.653	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.775	0.809	**1.584**
	Front	0.618	0.809*	1.427
	Top	-	0.809*	0.809
	Bottom	1.231	-	1.231
	Right	-	-	0.000
	Left	0.294	0.219	0.513

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.481	0.809	1.290
	Front	0.522	0.809*	**1.331**
	Top	-	0.809*	0.809
	Bottom	0.070	-	0.070
	Right	0.787	-	0.787
	Left	-	0.219	0.219

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.642	0.809	**1.451**
	Front	0.347	0.809*	1.156
	Top	-	0.809*	0.809
	Bottom	0.132	-	0.132
	Right	0.827	-	0.827
	Left	-	0.219	0.219

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

Exposure Condition	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)	0.841	0.502	1.343
	EVDO BC0 (§22H)	1.040	0.502	**1.542**
	PCS EVDO	1.115	0.502	See Table Below
	GPRS 850	0.864	0.502	1.366
	GPRS 1900	0.437	0.502	0.939
	UMTS 850	0.981	0.502	1.483
	UMTS 1750	0.831	0.502	1.333
	UMTS 1900	1.026	0.502	1.528
	LTE Band 71	0.487	0.502	0.989
	LTE Band 12	0.512	0.502	1.014
	LTE Band 13	0.641	0.502	1.143
	LTE Band 14	0.700	0.502	1.202
	LTE Band 26 (Cell)	0.833	0.502	1.335
	LTE Band 5 (Cell)	0.818	0.502	1.320
	LTE Band 66 (AWS)	1.281	0.502	See Table Below
	LTE Band 25 (PCS)	1.231	0.502	See Table Below
	LTE Band 30	0.787	0.502	1.289
	LTE Band 7	0.691	0.502	1.193
	LTE Band 41	0.827	0.502	1.329

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.622	0.502	**1.124**
	Front	0.512	0.103	0.615
	Top	-	0.289	0.289
	Bottom	1.115	-	1.115
	Right	-	-	0.000
	Left	0.271	0.502*	0.773

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.948	0.502	**1.450**
	Front	0.698	0.103	0.801
	Top	-	0.289	0.289
	Bottom	1.281	-	1.281
	Right	-	-	0.000
	Left	0.434	0.502*	0.936

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.775	0.502	**1.277**
	Front	0.618	0.103	0.721
	Top	-	0.289	0.289
	Bottom	1.231	-	1.231
	Right	-	-	0.000
	Left	0.294	0.502*	0.796

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Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	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 SAR	EVDO BC10 (§90S)	0.841	0.354	0.801	1.195	See Table Below
	EVDO BC0 (§22H)	1.040	0.354	0.801	1.394	See Table Below
	PCS EVDO	1.115	0.354	0.801	1.469	See Table Below
	GPRS 850	0.864	0.354	0.801	1.218	See Table Below
	GPRS 1900	0.437	0.354	0.801	0.791	1.238
	UMTS 850	0.981	0.354	0.801	1.335	See Table Below
	UMTS 1750	0.831	0.354	0.801	1.185	See Table Below
	UMTS 1900	1.026	0.354	0.801	1.380	See Table Below
	LTE Band 71	0.487	0.354	0.801	0.841	1.288
	LTE Band 12	0.512	0.354	0.801	0.866	1.313
	LTE Band 13	0.641	0.354	0.801	0.995	1.442
	LTE Band 14	0.700	0.354	0.801	1.054	1.501
	LTE Band 26 (Cell)	0.833	0.354	0.801	1.187	See Table Below
	LTE Band 5 (Cell)	0.818	0.354	0.801	1.172	See Table Below
	LTE Band 66 (AWS)	1.281	0.354	0.801	See Table Below	See Table Below
	LTE Band 25 (PCS)	1.231	0.354	0.801	**1.585**	See Table Below
	LTE Band 30	0.787	0.354	0.801	1.141	**1.588**
	LTE Band 7	0.691	0.354	0.801	1.045	1.492
	LTE Band 41	0.827	0.354	0.801	1.181	See Table Below

Simult Tx	Configuration	EVDO BC10 (§90S) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.841	0.801	See Note 1	0.02
	Front	0.595	0.001	0.596	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.187	-	0.187	N/A
	Right	0.347	-	0.347	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.040	0.801	See Note 1	0.02
	Front	0.661	0.001	0.662	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.288	-	0.288	N/A
	Right	0.448	-	0.448	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.622	0.801	**1.423**
	Front	0.512	0.001	0.513
	Top	-	0.801*	0.801
	Bottom	1.115	-	1.115
	Right	-	-	0.000
	Left	0.271	0.221	0.492

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.864	0.801	See Note 1	0.02
	Front	0.542	0.001	0.543	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.214	-	0.214	N/A
	Right	0.281	-	0.281	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.981	0.801	See Note 1	0.02
	Front	0.673	0.001	0.674	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.296	-	0.296	N/A
	Right	0.343	-	0.343	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.546	0.801	**1.347**
	Front	0.473	0.001	0.474
	Top	-	0.801*	0.801
	Bottom	0.831	-	0.831
	Right	-	-	0.000
	Left	0.283	0.221	0.504

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REV 20.11 M
06/19/2018

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Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.654	0.801	**1.455**
	Front	0.539	0.001	0.540
	Top	-	0.801*	0.801
	Bottom	1.026	-	1.026
	Right	-	-	0.000
	Left	0.272	0.221	0.493

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.833	0.801	See Note 1	0.02
	Front	0.501	0.001	0.502	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.232	-	0.232	N/A
	Right	0.304	-	0.304	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.818	0.801	See Note 1	0.02
	Front	0.497	0.001	0.498	N/A
	Top	-	0.801*	**0.801**	N/A
	Bottom	0.231	-	0.231	N/A
	Right	0.302	-	0.302	N/A
	Left	-	0.221	0.221	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Hotspot SAR	Back	0.948	0.313	0.801	1.261	See Note 1	0.02
	Front	0.698	0.354*	0.001	1.052	0.699	N/A
	Top	-	0.354	0.801*	0.354	0.801	N/A
	Bottom	1.281	-	-	**1.281**	**1.281**	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.434	0.354*	0.221	0.788	0.655	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.775	0.801	**1.576**
	Front	0.618	0.001	0.619
	Top	-	0.801*	0.801
	Bottom	1.231	-	1.231
	Right	-	-	0.000
	Left	0.294	0.221	0.515

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.642	0.801	**1.443**
	Front	0.347	0.001	0.348
	Top	-	0.801*	0.801
	Bottom	0.132	-	0.132
	Right	0.827	-	0.827
	Left	-	0.221	0.221

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

Exposure Condition	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)	0.841	0.918	See Table Below
	EVDO BC0 (§22H)	1.040	0.918	See Table Below
	PCS EVDO	1.115	0.918	See Table Below
	GPRS 850	0.864	0.918	See Table Below
	GPRS 1900	0.437	0.918	1.355
	UMTS 850	0.981	0.918	See Table Below
	UMTS 1750	0.831	0.918	See Table Below
	UMTS 1900	1.026	0.918	See Table Below
	LTE Band 71	0.487	0.918	1.405
	LTE Band 12	0.512	0.918	1.430
	LTE Band 13	0.641	0.918	**1.559**
	LTE Band 14	0.700	0.918	See Table Below
	LTE Band 26 (Cell)	0.833	0.918	See Table Below
	LTE Band 5 (Cell)	0.818	0.918	See Table Below
	LTE Band 66 (AWS)	1.281	0.918	See Table Below
	LTE Band 25 (PCS)	1.231	0.918	See Table Below
	LTE Band 30	0.787	0.918	See Table Below
	LTE Band 7	0.691	0.918	See Table Below
	LTE Band 41	0.827	0.918	See Table Below

Simult Tx	Configuration	EVDO BC10 (§90S) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.841	0.918	See Note 1	0.02
	Front	0.595	0.101	0.696	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.187	-	0.187	N/A
	Right	0.347	-	0.347	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.040	0.918	See Note 1	0.02
	Front	0.661	0.101	0.762	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.288	-	0.288	N/A
	Right	0.448	-	0.448	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.622	0.918	**1.540**
	Front	0.512	0.101	0.613
	Top	-	0.318	0.318
	Bottom	1.115	-	1.115
	Right	-	-	0.000
	Left	0.271	0.918*	1.189

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.864	0.918	See Note 1	0.02
	Front	0.542	0.101	0.643	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.214	-	0.214	N/A
	Right	0.281	-	0.281	N/A
	Left	-	0.918*	**0.918**	N/A

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Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.981	0.918	See Note 1	0.02
	Front	0.673	0.101	0.774	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.296	-	0.296	N/A
	Right	0.343	-	0.343	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.546	0.918	**1.464**
	Front	0.473	0.101	0.574
	Top	-	0.318	0.318
	Bottom	0.831	-	0.831
	Right	-	-	0.000
	Left	0.283	0.918*	1.201

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.654	0.918	**1.572**
	Front	0.539	0.101	0.640
	Top	-	0.318	0.318
	Bottom	1.026	-	1.026
	Right	-	-	0.000
	Left	0.272	0.918*	1.190

Simult Tx	Configuration	LTE Band 14 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.700	0.918	See Note 1	0.02
	Front	0.540	0.101	0.641	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.166	-	0.166	N/A
	Right	0.201	-	0.201	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.833	0.918	See Note 1	0.02
	Front	0.501	0.101	0.602	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.232	-	0.232	N/A
	Right	0.304	-	0.304	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.818	0.918	See Note 1	0.02
	Front	0.497	0.101	0.598	N/A
	Top	-	0.318	0.318	N/A
	Bottom	0.231	-	0.231	N/A
	Right	0.302	-	0.302	N/A
	Left	-	0.918*	**0.918**	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.948	0.918	See Note 1	0.02
	Front	0.698	0.101	0.799	N/A
	Top	-	0.318	0.318	N/A
	Bottom	1.281	-	1.281	N/A
	Right	-	-	0.000	N/A
	Left	0.434	0.918*	**1.352**	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.775	0.918	See Note 1	0.02
	Front	0.618	0.101	0.719	N/A
	Top	-	0.318	0.318	N/A
	Bottom	1.231	-	**1.231**	N/A
	Right	-	-	0.000	N/A
	Left	0.294	0.918*	1.212	N/A

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.481	0.918	**1.399**
	Front	0.522	0.101	0.623
	Top	-	0.318	0.318
	Bottom	0.070	-	0.070
	Right	0.787	-	0.787
	Left	-	0.918*	0.918

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.504	0.918	**1.422**
	Front	0.458	0.101	0.559
	Top	-	0.318	0.318
	Bottom	0.107	-	0.107
	Right	0.691	-	0.691
	Left	-	0.918*	0.918

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.642	0.918	**1.560**
	Front	0.347	0.101	0.448
	Top	-	0.318	0.318
	Bottom	0.132	-	0.132
	Right	0.827	-	0.827
	Left	-	0.918*	0.918

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Table 12-15
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Hotspot at 1.0 cm)

Simult Tx	Configuration	EVDO BC10 (§90S) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.841	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.595	0.347*	0.001	0.943	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.187	-	-	0.187	N/A	N/A	N/A
	Right	0.347	-	-	0.347	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	1.040	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.661	0.347*	0.001	1.009	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.288	-	-	0.288	N/A	N/A	N/A
	Right	0.448	-	-	0.448	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.622	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.512	0.347*	0.001	0.860	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	1.115	-	-	1.115	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.271	0.347*	0.221	0.839	N/A	N/A	N/A

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.864	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.542	0.347*	0.001	0.890	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.214	-	-	0.214	N/A	N/A	N/A
	Right	0.281	-	-	0.281	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.255	0.319	0.801	**1.375**
	Front	0.236	0.347*	0.001	0.584
	Top	-	0.347	0.801*	1.148
	Bottom	0.437	-	-	0.437
	Right	-	-	-	0.000
	Left	0.126	0.347*	0.221	0.694

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.981	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.673	0.347*	0.001	1.021	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.296	-	-	0.296	N/A	N/A	N/A
	Right	0.343	-	-	0.343	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

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REV 20.11 M
06/19/2018

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Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.546	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.473	0.347*	0.001	0.821	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.831	-	-	0.831	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.283	0.347*	0.221	0.851	N/A	N/A	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.654	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.539	0.347*	0.001	0.887	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	1.026	-	-	1.026	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.272	0.347*	0.221	0.840	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 71 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.487	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.347	0.347*	0.001	0.695	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.095	-	-	0.095	N/A	N/A	N/A
	Right	0.296	-	-	0.296	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.512	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.369	0.347*	0.001	0.717	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.129	-	-	0.129	N/A	N/A	N/A
	Right	0.204	-	-	0.204	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.641	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.459	0.347*	0.001	0.807	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.167	-	-	0.167	N/A	N/A	N/A
	Right	0.194	-	-	0.194	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 14 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.700	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.540	0.347*	0.001	0.888	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.166	-	-	0.166	N/A	N/A	N/A
	Right	0.201	-	-	0.201	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.833	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.501	0.347*	0.001	0.849	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.232	-	-	0.232	N/A	N/A	N/A
	Right	0.304	-	-	0.304	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

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Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.818	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.497	0.347*	0.001	0.845	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.231	-	-	0.231	N/A	N/A	N/A
	Right	0.302	-	-	0.302	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.948	0.319	0.801	See Note 1	0.01	0.02	0.02
	Front	0.698	0.347*	0.001	1.046	N/A	N/A	N/A
	Top	-	0.347	0.801*	1.148	N/A	N/A	N/A
	Bottom	1.281	-	-	**1.281**	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.434	0.347*	0.221	1.002	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.775	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.618	0.347*	0.001	0.966	N/A	N/A	N/A
	Top	-	0.347	0.801*	1.148	N/A	N/A	N/A
	Bottom	1.231	-	-	**1.231**	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.294	0.347*	0.221	0.862	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.481	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.522	0.347*	0.001	0.870	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.070	-	-	0.070	N/A	N/A	N/A
	Right	0.787	-	-	0.787	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.504	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.458	0.347*	0.001	0.806	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.107	-	-	0.107	N/A	N/A	N/A
	Right	0.691	-	-	0.691	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 1 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	0.642	0.319	0.801	See Note 1	0.01	0.01	0.02
	Front	0.347	0.347*	0.001	0.695	N/A	N/A	N/A
	Top	-	0.347	0.801*	**1.148**	N/A	N/A	N/A
	Bottom	0.132	-	-	0.132	N/A	N/A	N/A
	Right	0.827	-	-	0.827	N/A	N/A	N/A
	Left	-	0.347*	0.221	0.568	N/A	N/A	N/A

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REV 20.11 M
06/19/2018

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	EVDO BC10 (§90S)	0.841	0.047	0.888
	EVDO BC0 (§22H)	1.040	0.047	1.087
	PCS EVDO	1.115	0.047	1.162
	GPRS 850	0.864	0.047	0.911
	GPRS 1900	0.437	0.047	0.484
	UMTS 850	0.981	0.047	1.028
	UMTS 1750	0.831	0.047	0.878
	UMTS 1900	1.026	0.047	1.073
	LTE Band 71	0.487	0.047	0.534
	LTE Band 12	0.512	0.047	0.559
	LTE Band 13	0.641	0.047	0.688
	LTE Band 14	0.700	0.047	0.747
	LTE Band 26 (Cell)	0.833	0.047	0.880
	LTE Band 5 (Cell)	0.818	0.047	0.865
	LTE Band 66 (AWS)	1.281	0.047	**1.328**
	LTE Band 25 (PCS)	1.231	0.047	1.278
	LTE Band 30	0.787	0.047	0.834
	LTE Band 7	0.691	0.047	0.738
	LTE Band 41	0.827	0.047	0.874

Notes:

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

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12.6 Phablet Simultaneous Transmission Analysis

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

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB publication 248227, the worst case WLAN SAR result for 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 12-17
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Phablet SAR	Back	1.580	0.653	2.763	2.233	See Note 1	0.07
	Front	1.912	0.783	0.017	2.695	1.929	N/A
	Top	-	1.420	2.763*	1.420	2.763	N/A
	Bottom	2.884	-	-	**2.884**	**2.884**	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.735	1.420*	0.254	2.155	0.989	N/A
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Phablet SAR	Back	1.738	0.653	2.763	2.391	See Note 1	0.08
	Front	1.666	0.783	0.017	2.449	1.683	N/A
	Top	-	1.420	2.763*	1.420	**2.763**	N/A
	Bottom	2.628	-	-	2.628	2.628	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.642	1.420*	0.254	2.062	0.896	N/A
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Phablet SAR	Back	1.904	0.653	2.763	2.557	See Note 1	0.08
	Front	1.635	0.783	0.017	2.418	1.652	N/A
	Top	-	1.420	2.763*	1.420	**2.763**	N/A
	Bottom	2.553	-	-	2.553	2.553	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.790	1.420*	0.254	2.210	1.044	N/A

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Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Phablet SAR	Back	1.859	0.653	2.763	2.512	See Note 1	0.08
	Front	2.975	0.783	0.017	**3.758**	2.992	N/A
	Top	-	1.420	2.763*	1.420	2.763	N/A
	Bottom	2.972	-	-	2.972	2.972	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.913	1.420*	0.254	2.333	1.167	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Phablet SAR	Back	2.336	0.653	2.763	2.989	See Note 1	0.09
	Front	2.924	0.783	0.017	**3.707**	2.941	N/A
	Top	-	1.420	2.763*	1.420	2.763	N/A
	Bottom	3.001	-	-	3.001	3.001	N/A
	Right	-	-	-	0.000	0.000	N/A
	Left	0.943	1.420*	0.254	2.363	1.197	N/A

Table 12-18
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.580	2.908	See Note 1	0.08
	Front	1.912	0.712	2.624	N/A
	Top	-	1.673	1.673	N/A
	Bottom	2.884	-	2.884	N/A
	Right	-	-	0.000	N/A
	Left	0.735	2.908*	**3.643**	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.738	2.908	See Note 1	0.08
	Front	1.666	0.712	2.378	N/A
	Top	-	1.673	1.673	N/A
	Bottom	2.628	-	2.628	N/A
	Right	-	-	0.000	N/A
	Left	0.642	2.908*	**3.550**	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.904	2.908	See Note 1	0.08
	Front	1.635	0.712	2.347	N/A
	Top	-	1.673	1.673	N/A
	Bottom	2.553	-	2.553	N/A
	Right	-	-	0.000	N/A
	Left	0.790	2.908*	**3.698**	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.859	2.908	See Note 1	0.08
	Front	2.975	0.712	3.687	N/A
	Top	-	1.673	1.673	N/A
	Bottom	2.972	-	2.972	N/A
	Right	-	-	0.000	N/A
	Left	0.913	2.908*	**3.821**	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.336	2.908	See Note 1	0.09
	Front	2.924	0.712	3.636	N/A
	Top	-	1.673	1.673	N/A
	Bottom	3.001	-	3.001	N/A
	Right	-	-	0.000	N/A
	Left	0.943	2.908*	**3.851**	N/A

Notes:

1. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

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12.7 SPLSR Evaluation and Analysis

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

$$\text{Distance}_{Tx1-Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2} \text{ (Head)}$$

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

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

12.7.1 Right Cheek SPLSR Evaluation and Analysis

Table 12-19
Peak SAR Locations for Right Cheek

Mode/Band	x (mm)	y (mm)	z (mm)
5 GHz WLAN Ant 1	9.32	-333.47	-173.47
5 GHz WLAN Ant 2	36.32	-338.90	-171.84
LTE Band 30	51.09	-242.65	-169.53
LTE Band 41	43.60	-239.90	-170.27

Table 12-20
Right Cheek 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}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN Ant 1	5 GHz WLAN Ant 2	1.126	0.022	1.148	27.59	0.04	1
5 GHz WLAN Ant 1	LTE Band 30	1.126	0.483	1.609	100.04	0.02	2
5 GHz WLAN Ant 1	LTE Band 41	1.126	0.676	1.802	99.70	0.02	3
5 GHz WLAN Ant 2	LTE Band 30	0.022	0.483	0.505	97.40	0.00	4
5 GHz WLAN Ant 2	LTE Band 41	0.022	0.676	0.698	99.28	0.01	5

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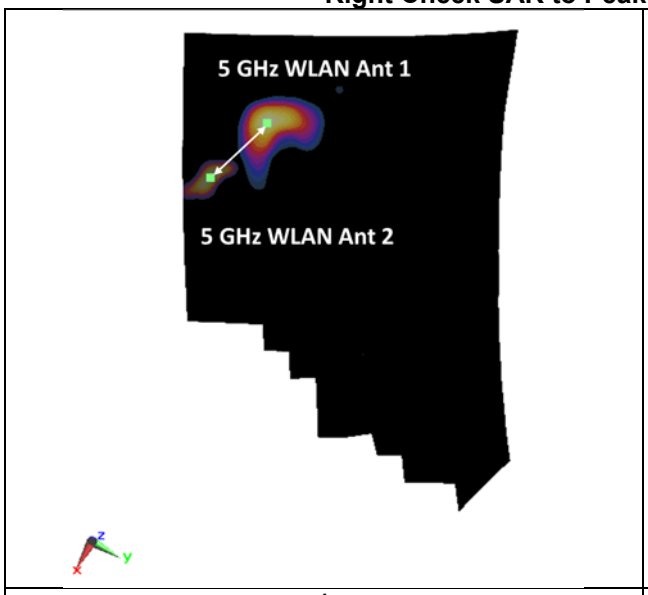
Table 12-21
Right Cheek SAR to Peak Location Separation Ratio Plots



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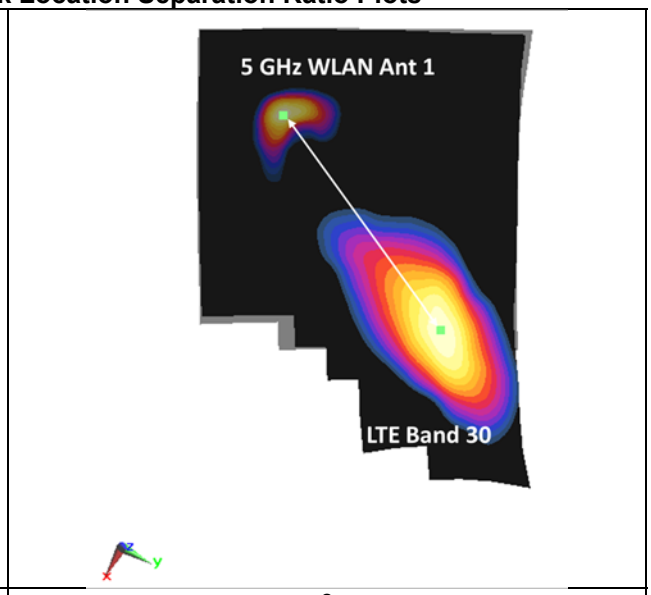

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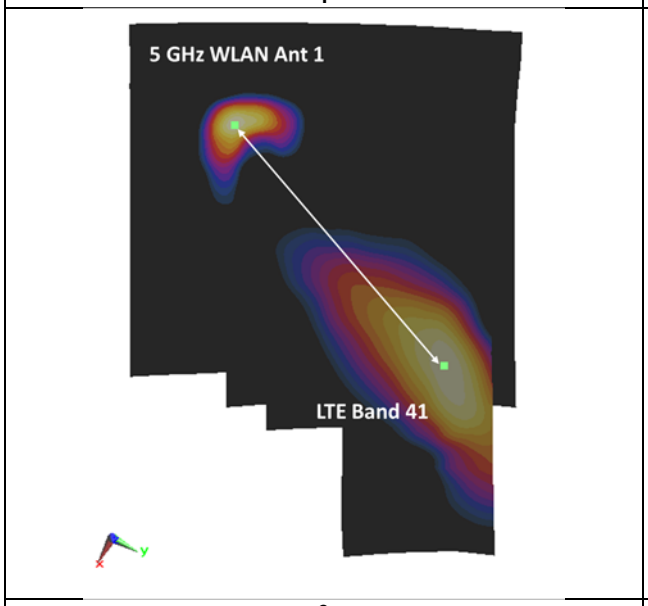

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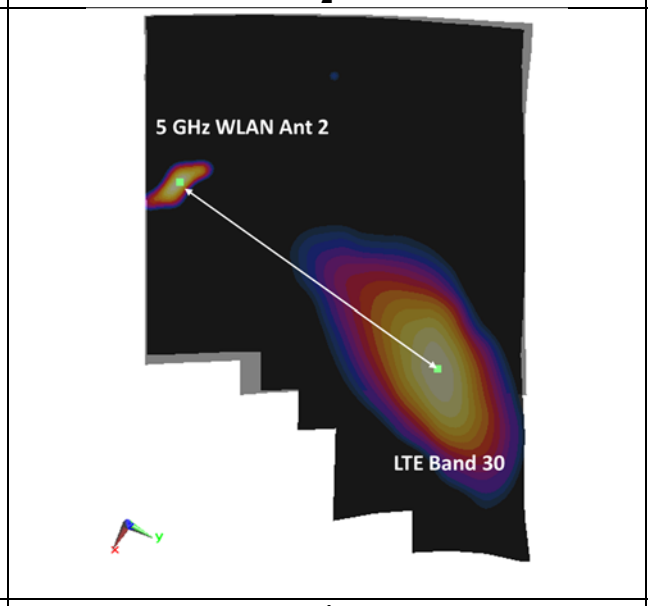

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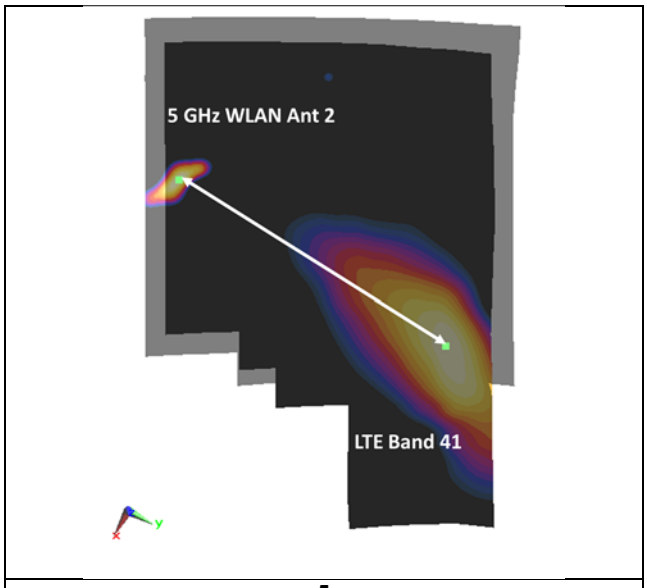

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12.7.2 Body-Worn Back Side SPLSR Evaluation and Analysis

Table 12-22
Peak SAR Locations for Body-Worn Back Side

Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-43.00	63.60
2.4 GHz WLAN Ant 2	7.40	64.00
5 GHz WLAN Ant 2	16.00	52.00
5 GHz WLAN MIMO	15.00	51.00
CDMA BC10	-55.00	-45.00
CDMA BC0	-55.00	-45.00
PCS CDMA	-6.00	-85.50
GSM 850	-55.00	-45.00
UMTS 850	-61.50	-45.00
UMTS 1750	-10.00	-85.50
UMTS 1900	-9.00	-81.50
LTE Band 71	-52.00	-40.50
LTE Band 12	-52.00	-43.50
LTE Band 13	-53.50	-46.50
LTE Band 14	-52.00	-48.00
LTE Band 26 (Cell)	-63.00	-54.50
LTE Band 5 (Cell)	-55.00	-46.50
LTE Band 66 (AWS)	-7.50	-80.00
LTE Band 25 (PCS)	-7.50	-80.00
LTE Band 30	-63.40	-20.40
LTE Band 7	-58.60	-47.40
LTE Band 41	-62.50	-39.20

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Table 12-23
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}	$(a+b)^{1.5}/D_{a-b}$	
2.4 GHz WLAN Ant 2	CDMA BC0	0.809	1.013	1.822	125.60	0.02	1
2.4 GHz WLAN Ant 2	GSM 850	0.809	0.922	1.731	125.60	0.02	2
2.4 GHz WLAN Ant 2	UMTS 850	0.809	0.981	1.790	128.95	0.02	3
2.4 GHz WLAN Ant 2	LTE Band 26 (Cell)	0.809	0.833	1.642	137.83	0.02	4
2.4 GHz WLAN Ant 2	LTE Band 5 (Cell)	0.809	0.818	1.627	126.90	0.02	5
2.4 GHz WLAN Ant 2	LTE Band 66 (AWS)	0.809	0.948	1.757	144.77	0.02	6
5 GHz WLAN Ant 2	CDMA BC0	0.801	1.013	1.814	120.21	0.02	7
5 GHz WLAN Ant 2	GSM 850	0.801	0.922	1.723	120.21	0.02	8
5 GHz WLAN Ant 2	UMTS 850	0.801	0.981	1.782	124.16	0.02	9
5 GHz WLAN Ant 2	LTE Band 26 (Cell)	0.801	0.833	1.634	132.60	0.02	10
5 GHz WLAN Ant 2	LTE Band 5 (Cell)	0.801	0.818	1.619	121.42	0.02	11
5 GHz WLAN Ant 2	LTE Band 66 (AWS)	0.801	0.948	1.749	134.08	0.02	12
5 GHz WLAN MIMO	CDMA BC10	0.934	0.772	1.706	118.81	0.02	13
5 GHz WLAN MIMO	CDMA BC0	0.934	1.013	1.947	118.81	0.02	14
5 GHz WLAN MIMO	GSM 850	0.934	0.922	1.856	118.81	0.02	15
5 GHz WLAN MIMO	UMTS 850	0.934	0.981	1.915	122.75	0.02	16
5 GHz WLAN MIMO	LTE Band 14	0.934	0.7	1.634	119.54	0.02	17
5 GHz WLAN MIMO	LTE Band 26 (Cell)	0.934	0.833	1.767	131.20	0.02	18
5 GHz WLAN MIMO	LTE Band 5 (Cell)	0.934	0.818	1.752	120.03	0.02	19
5 GHz WLAN MIMO	LTE Band 66 (AWS)	0.934	0.948	1.882	132.92	0.02	20
5 GHz WLAN MIMO	LTE Band 25 (PCS)	0.934	0.775	1.709	132.92	0.02	21
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2	0.319	0.801	1.120	60.13	0.02	22
2.4 GHz WLAN Ant 1	CDMA BC10	0.319	0.772	1.091	109.26	0.01	23
2.4 GHz WLAN Ant 1	CDMA BC0	0.319	1.013	1.332	109.26	0.01	24
2.4 GHz WLAN Ant 1	PCS CDMA	0.319	0.576	0.895	153.62	0.01	25
2.4 GHz WLAN Ant 1	GSM 850	0.319	0.922	1.241	109.26	0.01	26
2.4 GHz WLAN Ant 1	UMTS 850	0.319	0.981	1.300	110.16	0.01	27
2.4 GHz WLAN Ant 1	UMTS 1750	0.319	0.546	0.865	152.71	0.01	28
2.4 GHz WLAN Ant 1	UMTS 1900	0.319	0.654	0.973	149.03	0.01	29
2.4 GHz WLAN Ant 1	LTE Band 71	0.319	0.487	0.806	104.49	0.01	30
2.4 GHz WLAN Ant 1	LTE Band 12	0.319	0.512	0.831	107.48	0.01	31
2.4 GHz WLAN Ant 1	LTE Band 13	0.319	0.641	0.960	110.60	0.01	32
2.4 GHz WLAN Ant 1	LTE Band 14	0.319	0.7	1.019	111.96	0.01	33
2.4 GHz WLAN Ant 1	LTE Band 26 (Cell)	0.319	0.833	1.152	119.78	0.01	34
2.4 GHz WLAN Ant 1	LTE Band 5 (Cell)	0.319	0.818	1.137	110.75	0.01	35
2.4 GHz WLAN Ant 1	LTE Band 66 (AWS)	0.319	0.948	1.267	147.92	0.01	36
2.4 GHz WLAN Ant 1	LTE Band 25 (PCS)	0.319	0.775	1.094	147.92	0.01	37
2.4 GHz WLAN Ant 1	LTE Band 30	0.319	0.481	0.800	86.44	0.01	38
2.4 GHz WLAN Ant 1	LTE Band 7	0.319	0.504	0.823	112.09	0.01	39
2.4 GHz WLAN Ant 1	LTE Band 41	0.319	0.642	0.961	104.63	0.01	40
5 GHz WLAN Ant 2	CDMA BC10	0.801	0.772	1.573	120.21	0.02	41
5 GHz WLAN Ant 2	PCS CDMA	0.801	0.576	1.377	139.25	0.01	42
5 GHz WLAN Ant 2	UMTS 1750	0.801	0.546	1.347	139.94	0.01	43
5 GHz WLAN Ant 2	UMTS 1900	0.801	0.654	1.455	135.82	0.01	44
5 GHz WLAN Ant 2	LTE Band 71	0.801	0.487	1.288	114.81	0.01	45
5 GHz WLAN Ant 2	LTE Band 12	0.801	0.512	1.313	117.24	0.01	46
5 GHz WLAN Ant 2	LTE Band 14	0.801	0.7	1.501	120.93	0.02	47
5 GHz WLAN Ant 2	LTE Band 13	0.801	0.641	1.442	120.55	0.01	48
5 GHz WLAN Ant 2	LTE Band 25 (PCS)	0.801	0.775	1.576	134.08	0.01	49
5 GHz WLAN Ant 2	LTE Band 30	0.801	0.481	1.282	107.45	0.01	50
5 GHz WLAN Ant 2	LTE Band 7	0.801	0.504	1.305	124.28	0.01	51
5 GHz WLAN Ant 2	LTE Band 41	0.801	0.642	1.443	120.33	0.01	52

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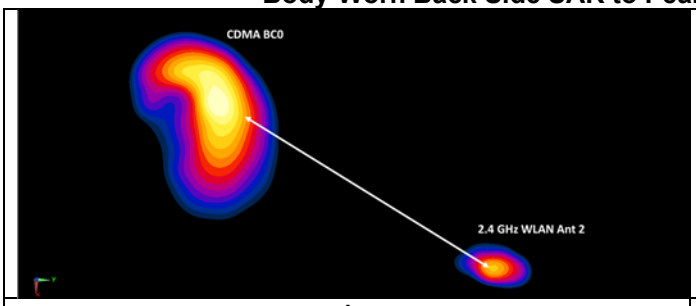
Table 12-24
Body-Worn Back Side SAR to Peak Location Separation Ratio Plots



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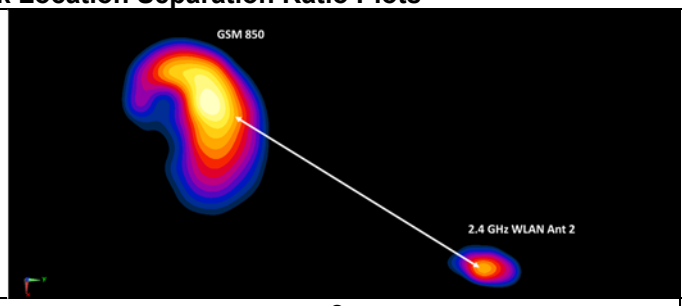

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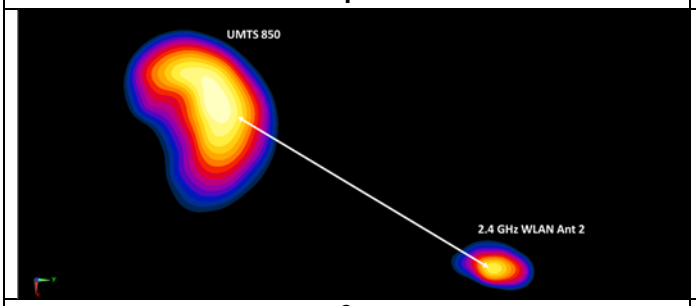

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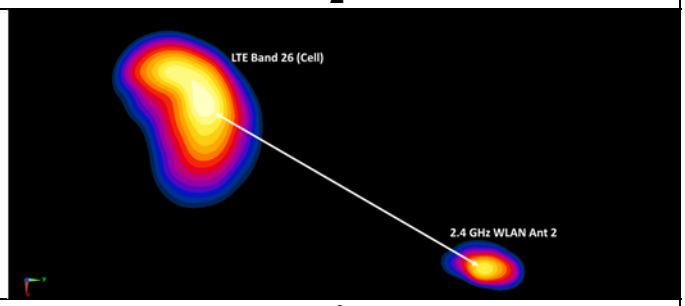

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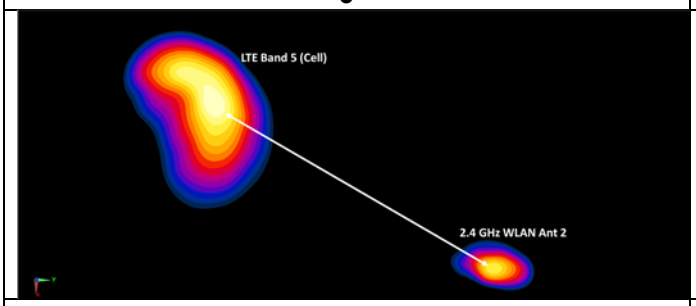

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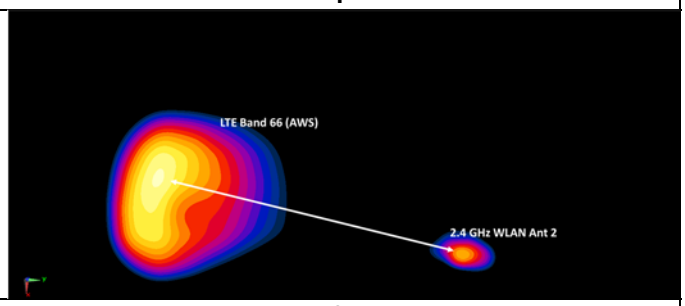

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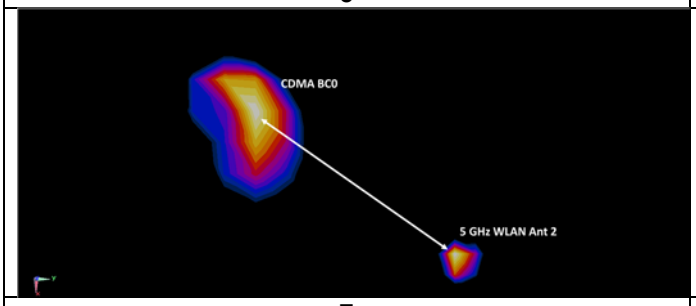

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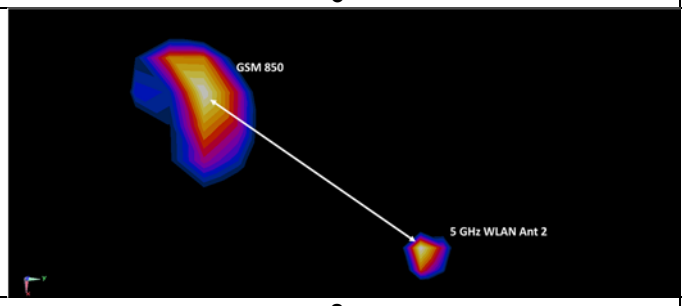

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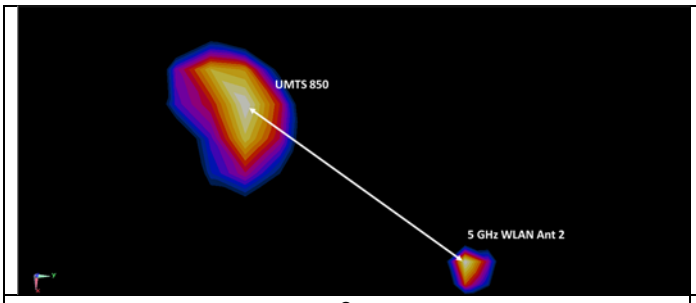

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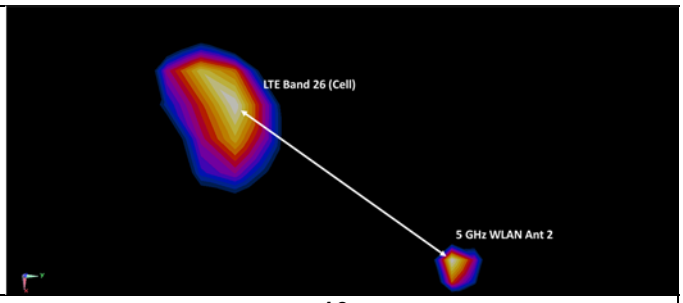

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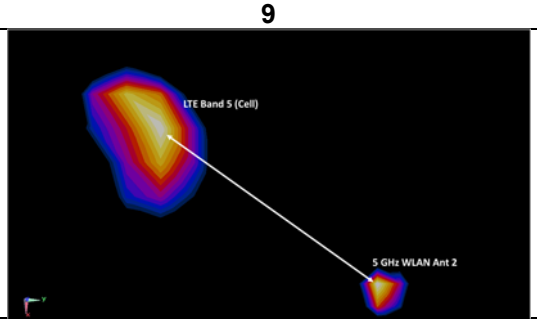

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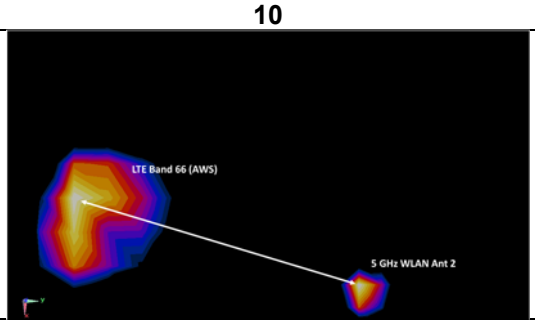

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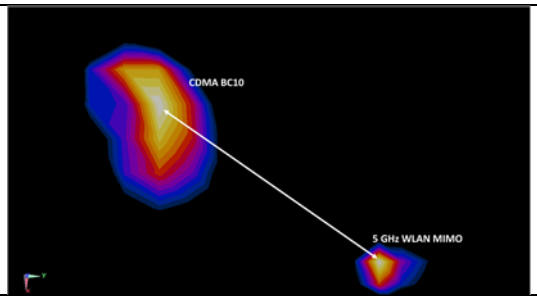

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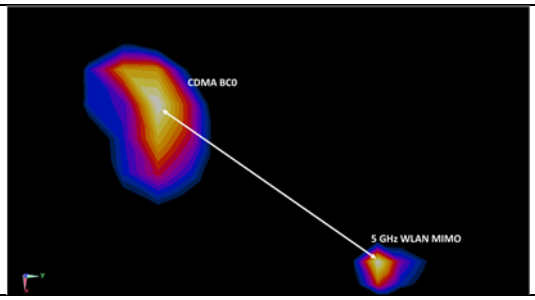

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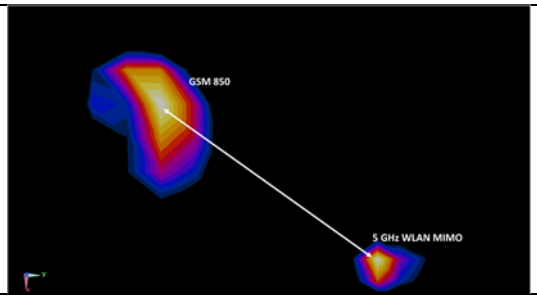

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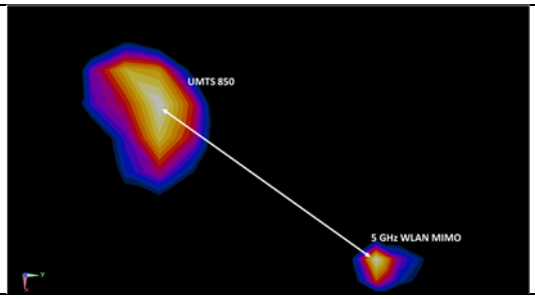

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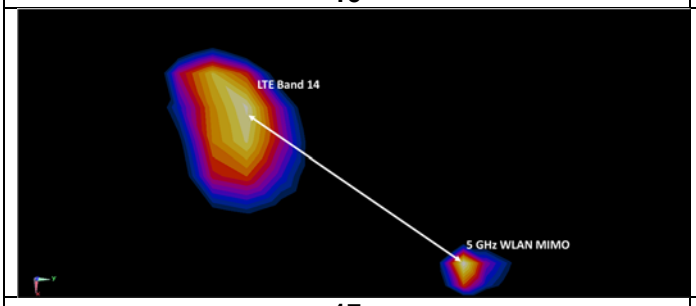

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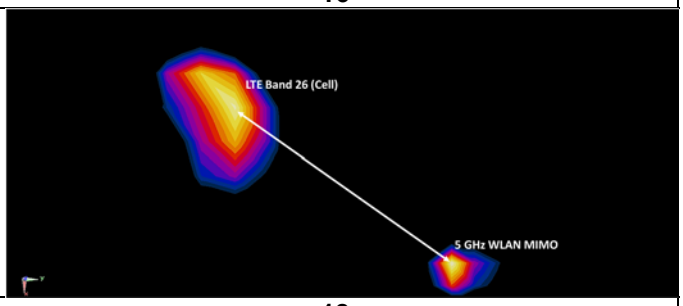

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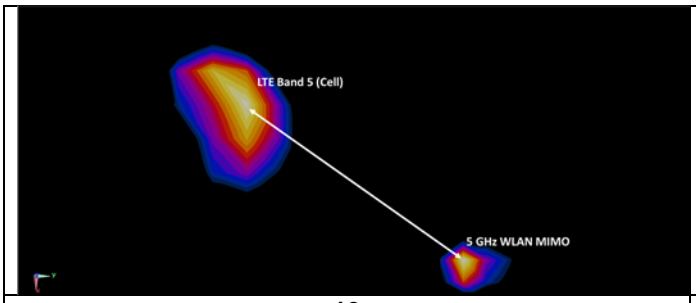

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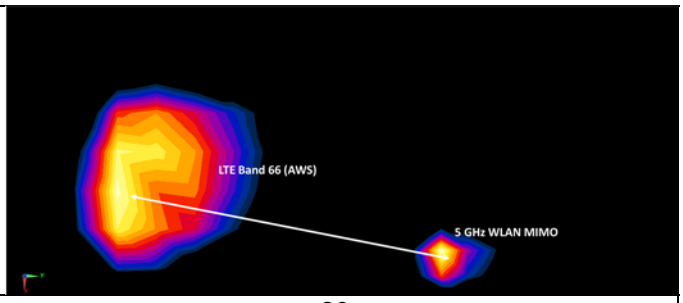

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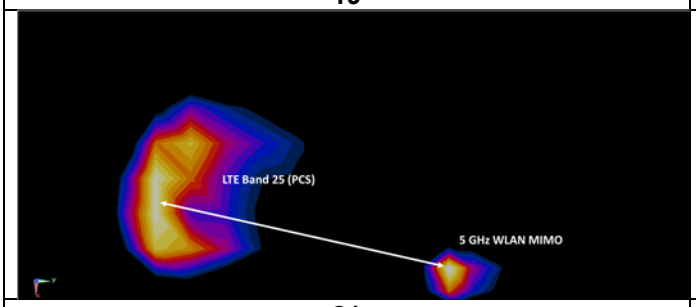

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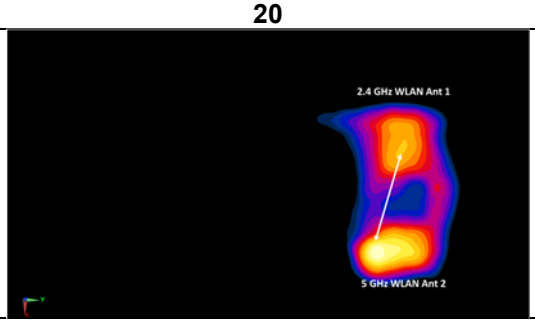

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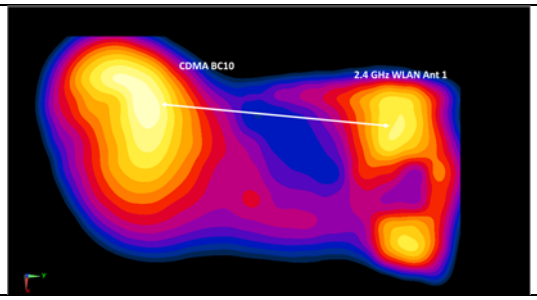

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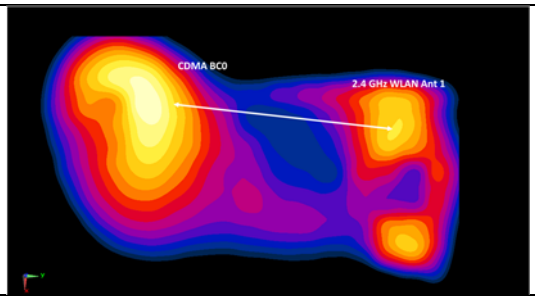

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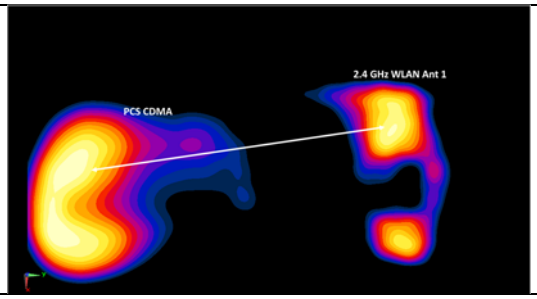

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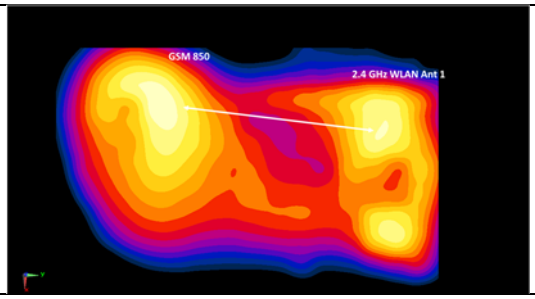

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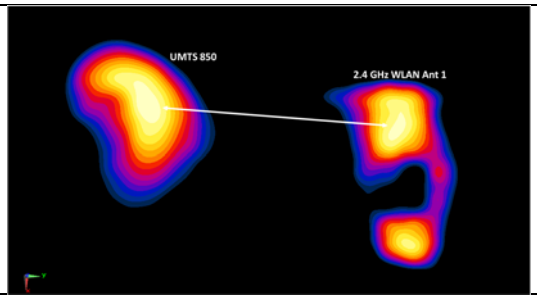

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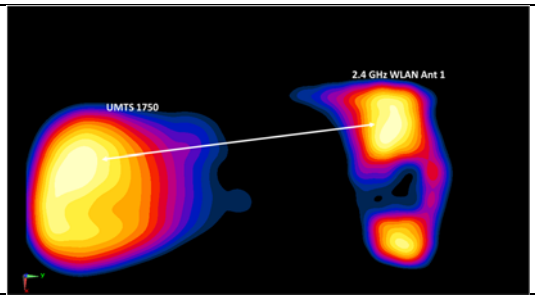

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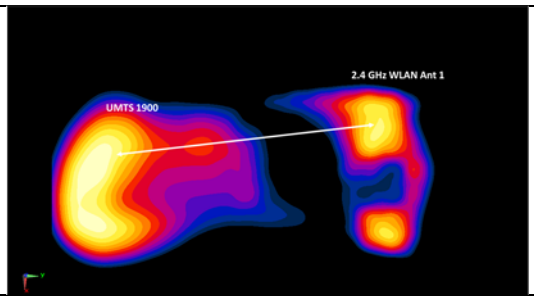

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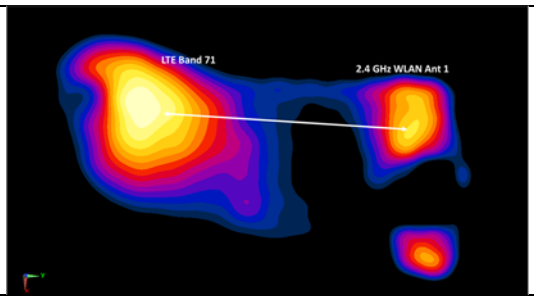

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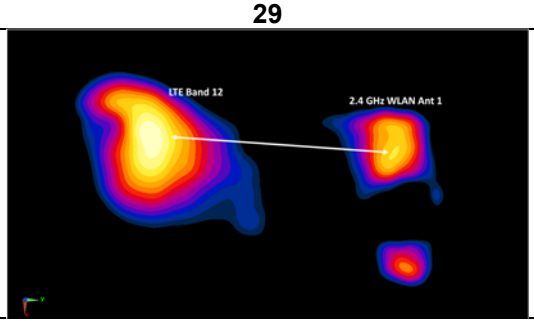

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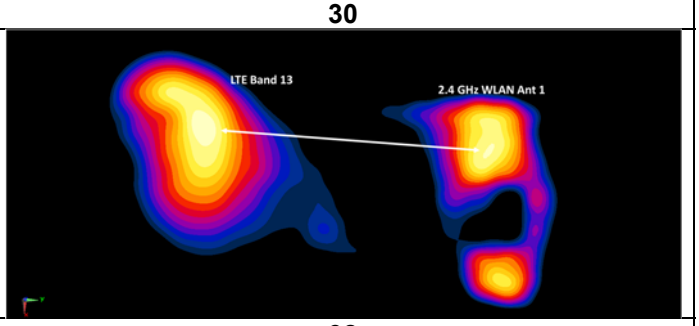

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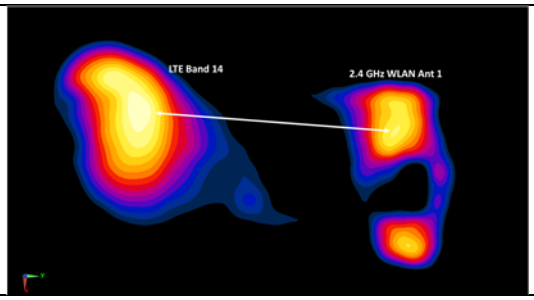

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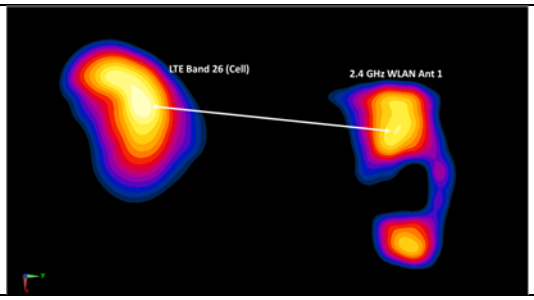

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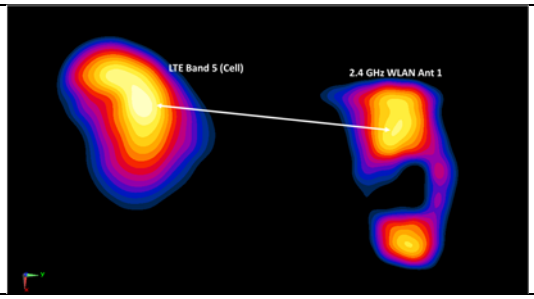

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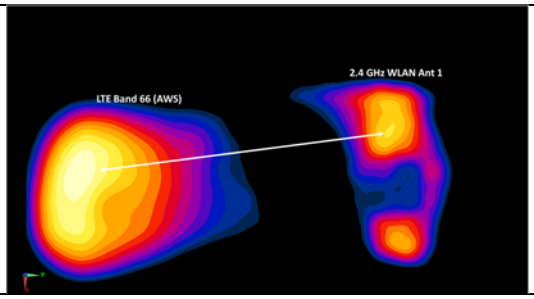

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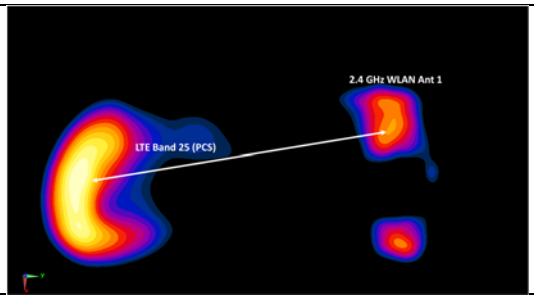

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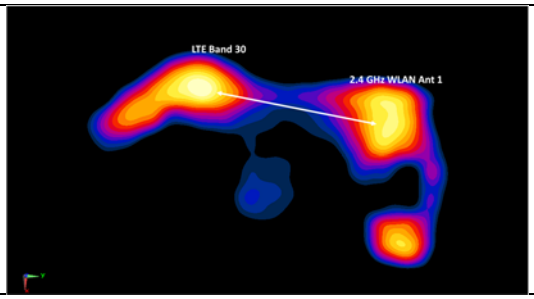

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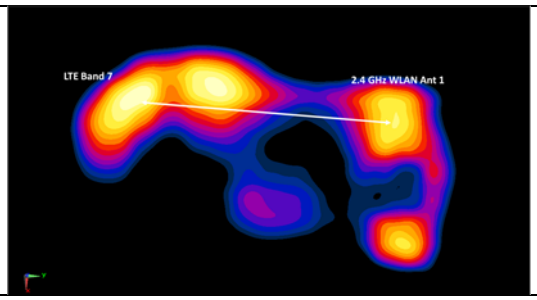

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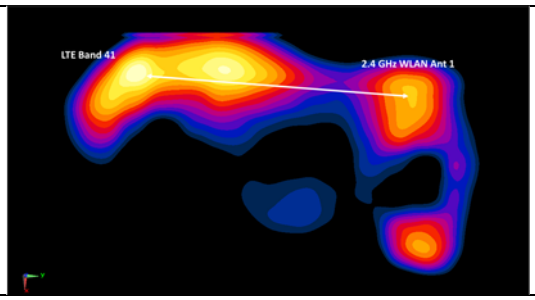

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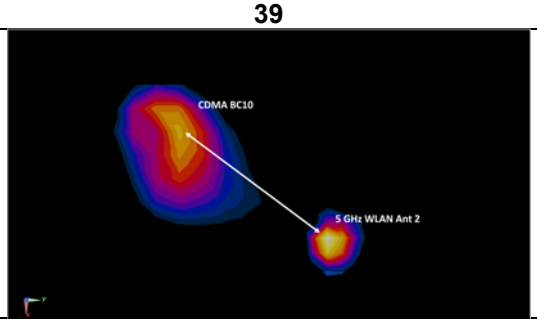

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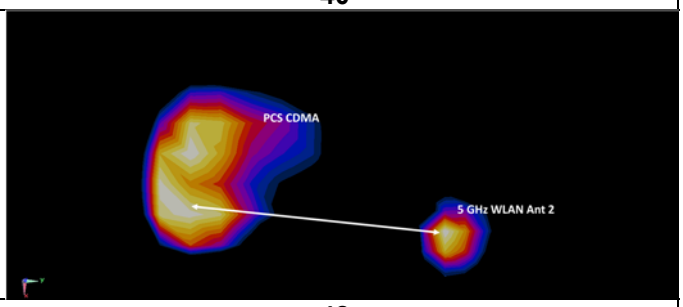

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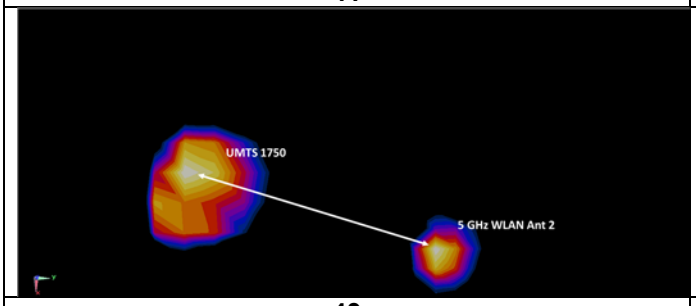

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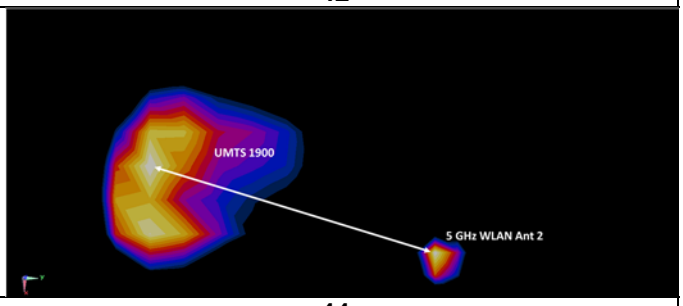

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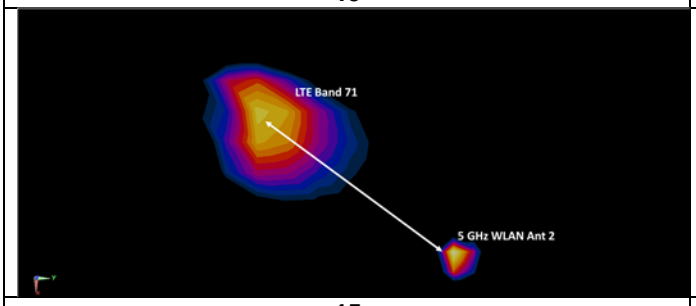

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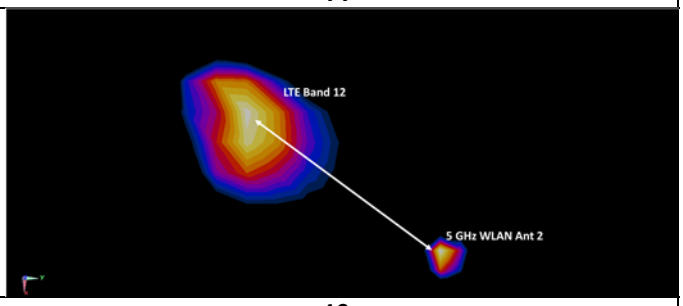

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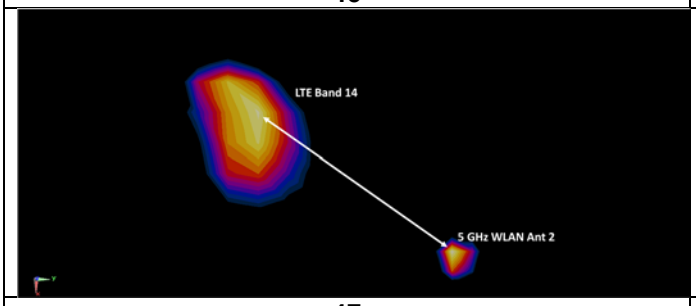

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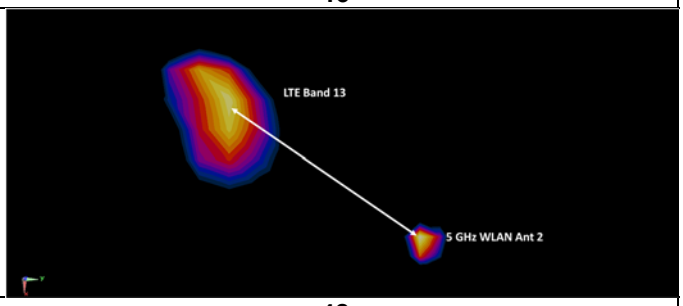

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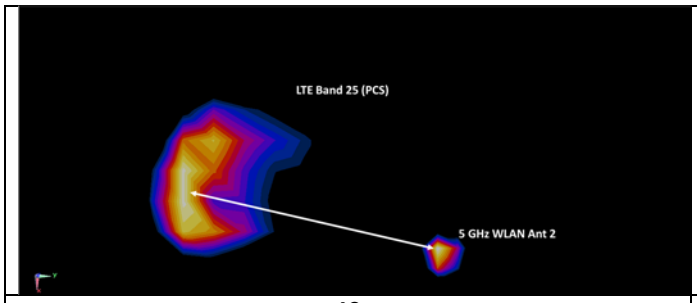

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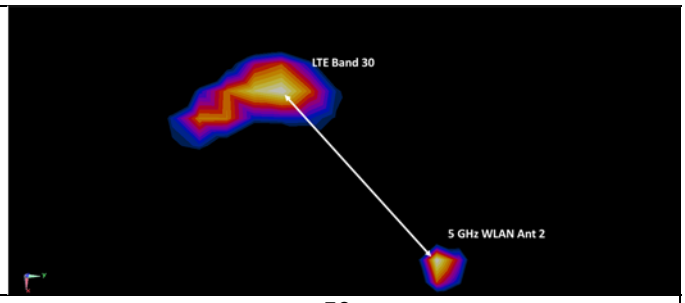

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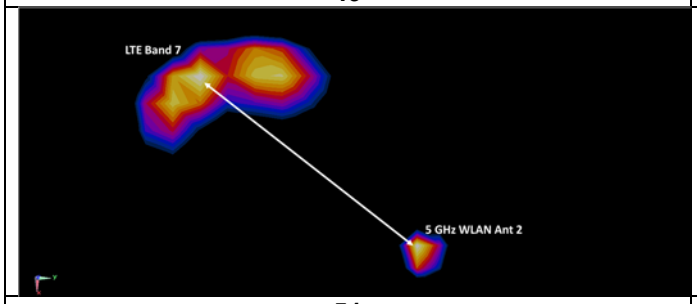

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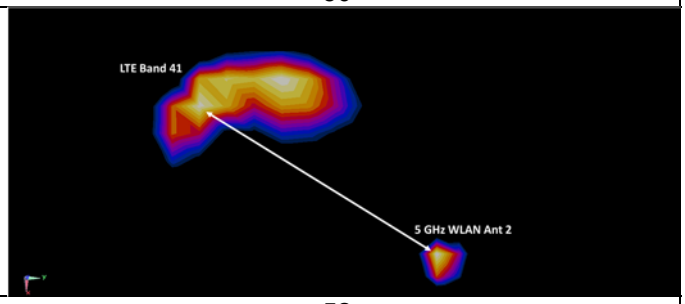

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12.7.3 Hotspot Back Side SPLSR Evaluation and Analysis

Table 12-25
Peak SAR Locations for Hotspot Back Side

Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-43.00	63.60
2.4 GHz WLAN Ant 2	7.40	64.00
5 GHz WLAN Ant 2	16.00	52.00
5 GHz WLAN MIMO	16.00	44.00
EVDO BC10	-53.50	-46.50
EVDO BC0	-55.00	-46.50
PCS EVDO	-7.50	-84.00
GPRS 850	-56.00	-45.00
UMTS 850	-61.50	-45.00
UMTS 1750	-10.00	-85.50
UMTS 1900	-9.00	-81.50
LTE Band 71	-52.00	-40.50
LTE Band 12	-52.00	-43.50
LTE Band 13	-53.50	-46.50
LTE Band 14	-52.00	-48.00
LTE Band 26 (Cell)	-63.00	-54.50
LTE Band 5 (Cell)	-55.00	-46.50
LTE Band 66 (AWS)	-7.50	-80.00
LTE Band 25 (PCS)	-7.50	-80.00
LTE Band 30	-63.40	-20.40
LTE Band 7	-58.60	-47.40
LTE Band 41	-62.50	-39.20

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Table 12-26
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}	$(a+b)^{1.5}/D_{a-b}$	
2.4 GHz WLAN Ant 2	EVDO BC10	0.809	0.841	1.650	126.17	0.02	1
2.4 GHz WLAN Ant 2	EVDO BC0	0.809	1.04	1.849	126.90	0.02	2
2.4 GHz WLAN Ant 2	GPRS 850	0.809	0.864	1.673	126.10	0.02	3
2.4 GHz WLAN Ant 2	UMTS 850	0.809	0.981	1.790	128.95	0.02	4
2.4 GHz WLAN Ant 2	LTE Band 26 (Cell)	0.809	0.833	1.642	137.83	0.02	5
2.4 GHz WLAN Ant 2	LTE Band 5 (Cell)	0.809	0.818	1.627	126.90	0.02	6
2.4 GHz WLAN Ant 2	LTE Band 66 (AWS)	0.809	0.948	1.757	144.77	0.02	7
5 GHz WLAN Ant 2	EVDO BC10	0.801	0.841	1.642	120.55	0.02	8
5 GHz WLAN Ant 2	EVDO BC0	0.801	1.04	1.841	121.42	0.02	9
5 GHz WLAN Ant 2	GPRS 850	0.801	0.864	1.665	120.80	0.02	10
5 GHz WLAN Ant 2	UMTS 850	0.801	0.981	1.782	124.16	0.02	11
5 GHz WLAN Ant 2	LTE Band 26 (Cell)	0.801	0.833	1.634	132.60	0.02	12
5 GHz WLAN Ant 2	LTE Band 5 (Cell)	0.801	0.818	1.619	121.42	0.02	13
5 GHz WLAN Ant 2	LTE Band 66 (AWS)	0.801	0.948	1.749	134.08	0.02	14
5 GHz WLAN MIMO	EVDO BC10	0.918	0.841	1.759	114.11	0.02	15
5 GHz WLAN MIMO	EVDO BC0	0.918	1.04	1.958	115.03	0.02	16
5 GHz WLAN MIMO	GPRS 850	0.918	0.864	1.782	114.48	0.02	17
5 GHz WLAN MIMO	UMTS 850	0.918	0.981	1.899	118.01	0.02	18
5 GHz WLAN MIMO	LTE Band 14	0.918	0.7	1.618	114.40	0.02	19
5 GHz WLAN MIMO	LTE Band 26 (Cell)	0.918	0.833	1.751	126.27	0.02	20
5 GHz WLAN MIMO	LTE Band 5 (Cell)	0.918	0.818	1.736	115.03	0.02	21
5 GHz WLAN MIMO	LTE Band 66 (AWS)	0.918	0.948	1.866	126.21	0.02	22
5 GHz WLAN MIMO	LTE Band 25 (PCS)	0.918	0.775	1.693	126.21	0.02	23
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2	0.319	0.801	1.120	60.13	0.02	24
2.4 GHz WLAN Ant 1	EVDO BC10	0.319	0.841	1.160	110.60	0.01	25
2.4 GHz WLAN Ant 1	EVDO BC0	0.319	1.04	1.359	110.75	0.01	26
2.4 GHz WLAN Ant 1	PCS EVDO	0.319	0.622	0.941	151.81	0.01	27
2.4 GHz WLAN Ant 1	GPRS 850	0.319	0.864	1.183	109.38	0.01	28
2.4 GHz WLAN Ant 1	UMTS 850	0.319	0.981	1.300	110.16	0.01	29
2.4 GHz WLAN Ant 1	UMTS 1750	0.319	0.546	0.865	152.71	0.01	30
2.4 GHz WLAN Ant 1	UMTS 1900	0.319	0.654	0.973	149.03	0.01	31
2.4 GHz WLAN Ant 1	LTE Band 71	0.319	0.487	0.806	104.49	0.01	32
2.4 GHz WLAN Ant 1	LTE Band 12	0.319	0.512	0.831	107.48	0.01	33
2.4 GHz WLAN Ant 1	LTE Band 13	0.319	0.641	0.960	110.60	0.01	34
2.4 GHz WLAN Ant 1	LTE Band 14	0.319	0.7	1.019	111.96	0.01	35
2.4 GHz WLAN Ant 1	LTE Band 26 (Cell)	0.319	0.833	1.152	119.78	0.01	36
2.4 GHz WLAN Ant 1	LTE Band 5 (Cell)	0.319	0.818	1.137	110.75	0.01	37
2.4 GHz WLAN Ant 1	LTE Band 66 (AWS)	0.319	0.948	1.267	147.92	0.01	38
2.4 GHz WLAN Ant 1	LTE Band 25 (PCS)	0.319	0.775	1.094	147.92	0.01	39
2.4 GHz WLAN Ant 1	LTE Band 30	0.319	0.481	0.800	86.44	0.01	40
2.4 GHz WLAN Ant 1	LTE Band 7	0.319	0.504	0.823	112.09	0.01	41
2.4 GHz WLAN Ant 1	LTE Band 41	0.319	0.642	0.961	104.63	0.01	42
5 GHz WLAN Ant 2	PCS EVDO	0.801	0.622	1.423	138.02	0.01	43
5 GHz WLAN Ant 2	UMTS 1750	0.801	0.546	1.347	139.94	0.01	44
5 GHz WLAN Ant 2	UMTS 1900	0.801	0.654	1.455	135.82	0.01	45
5 GHz WLAN Ant 2	LTE Band 71	0.801	0.487	1.288	114.81	0.01	46
5 GHz WLAN Ant 2	LTE Band 12	0.801	0.512	1.313	117.24	0.01	47
5 GHz WLAN Ant 2	LTE Band 13	0.801	0.641	1.442	120.55	0.01	48
5 GHz WLAN Ant 2	LTE Band 14	0.801	0.7	1.501	120.93	0.02	49
5 GHz WLAN Ant 2	LTE Band 25 (PCS)	0.801	0.775	1.576	134.08	0.01	50
5 GHz WLAN Ant 2	LTE Band 30	0.801	0.481	1.282	107.45	0.01	51
5 GHz WLAN Ant 2	LTE Band 7	0.801	0.504	1.305	124.28	0.01	52
5 GHz WLAN Ant 2	LTE Band 41	0.801	0.642	1.443	120.33	0.01	53

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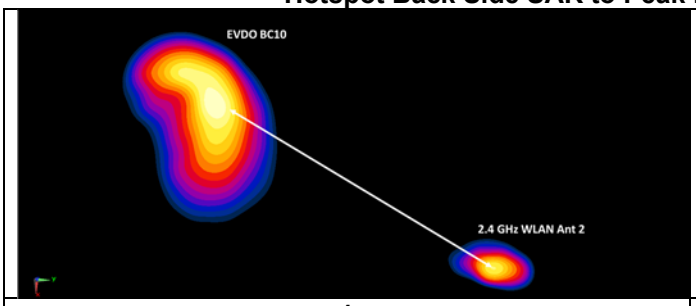
Table 12-27
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



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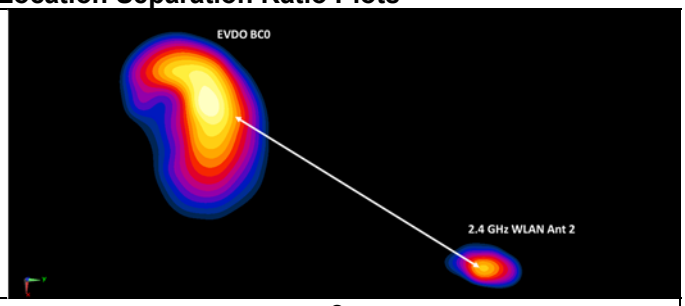

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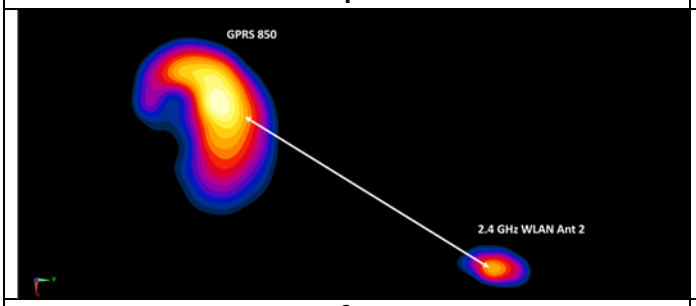

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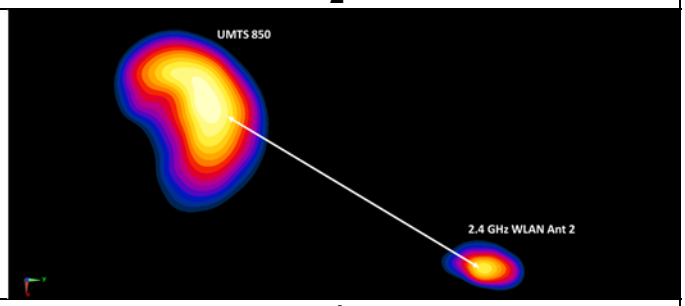

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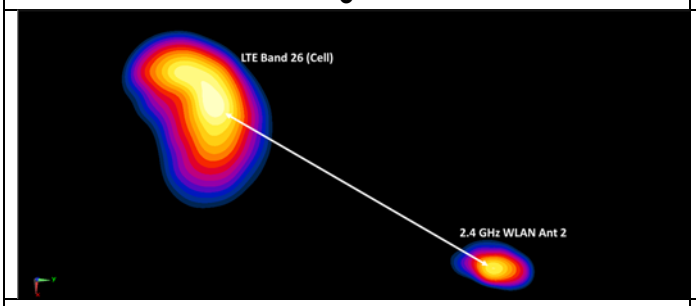

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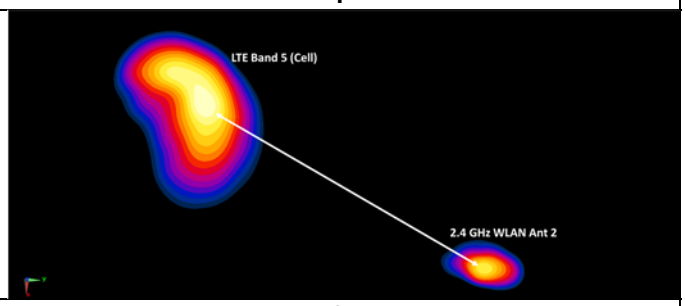

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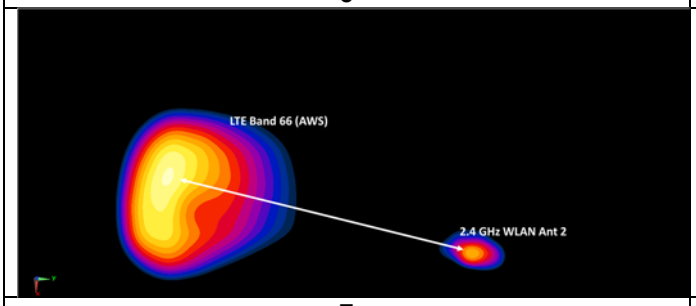

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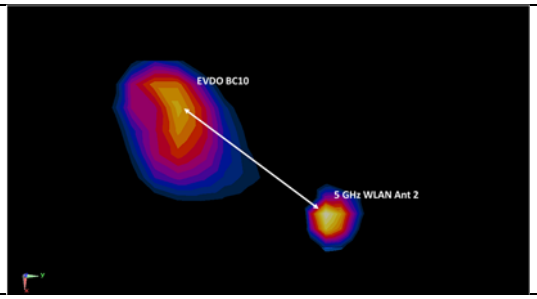

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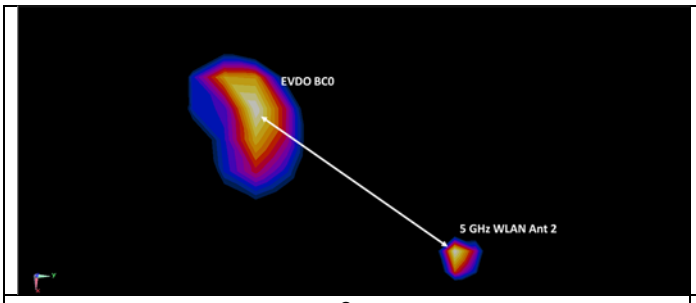

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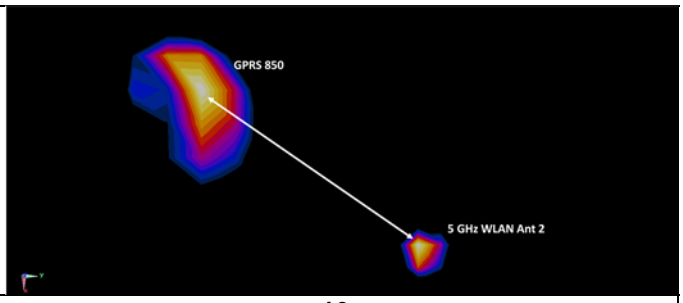

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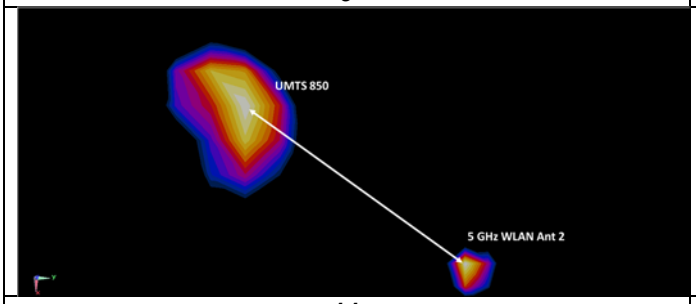

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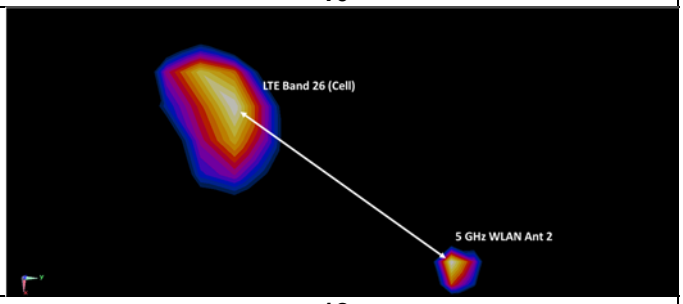

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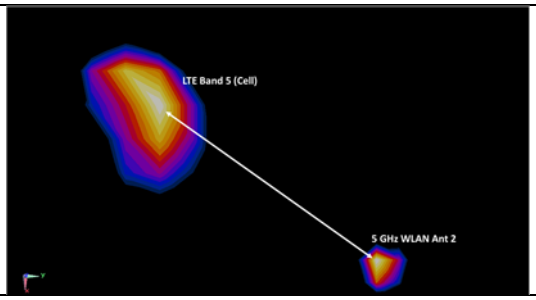

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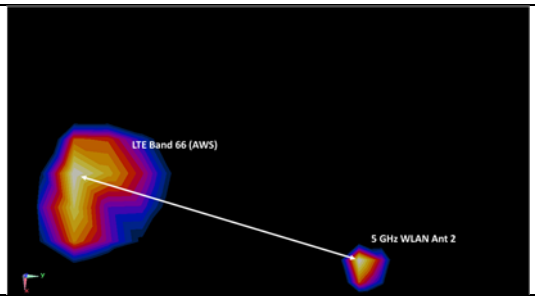

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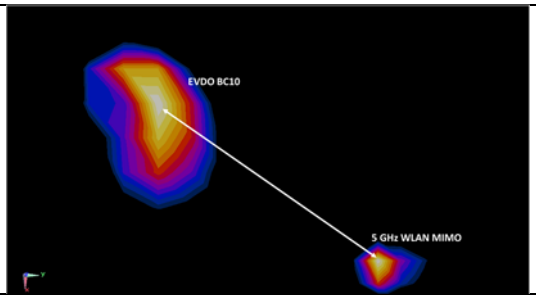

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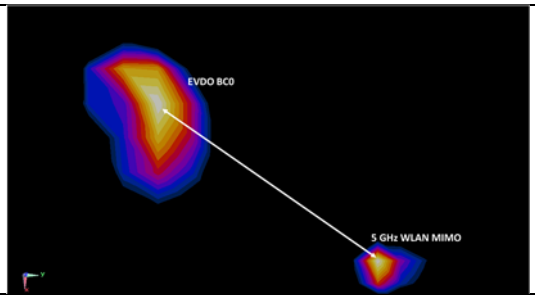

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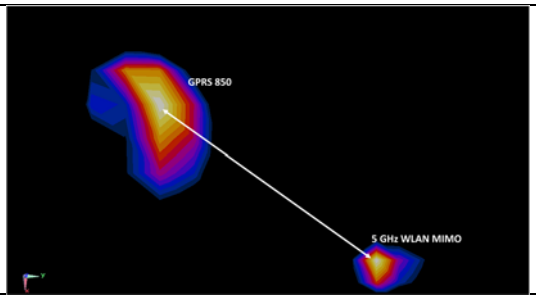

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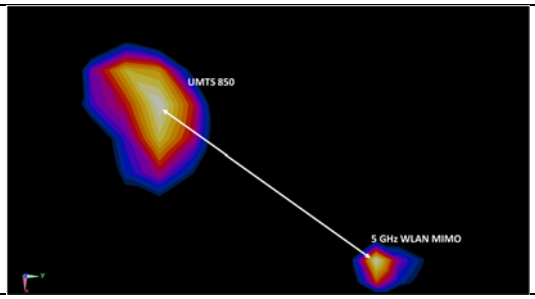

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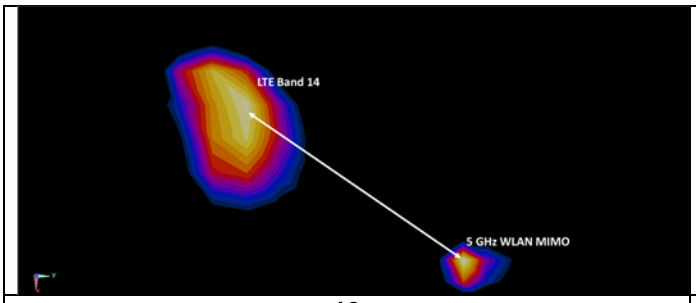

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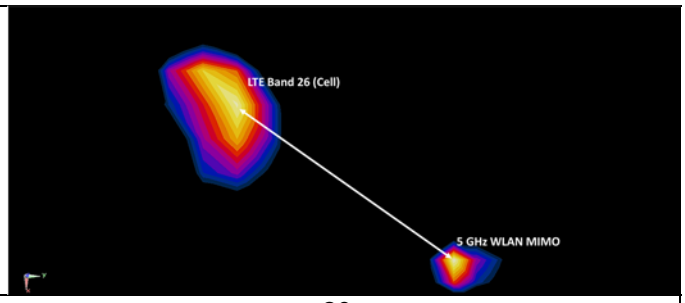

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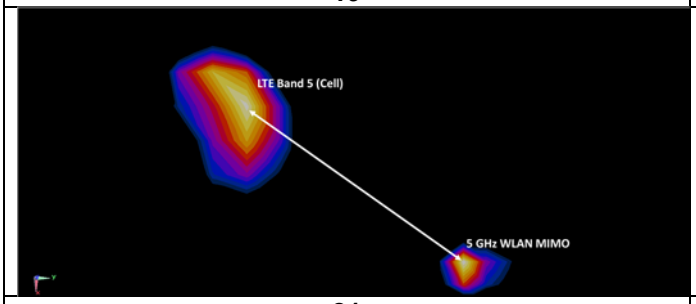

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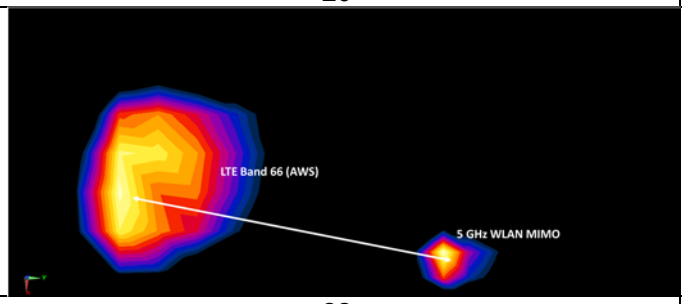

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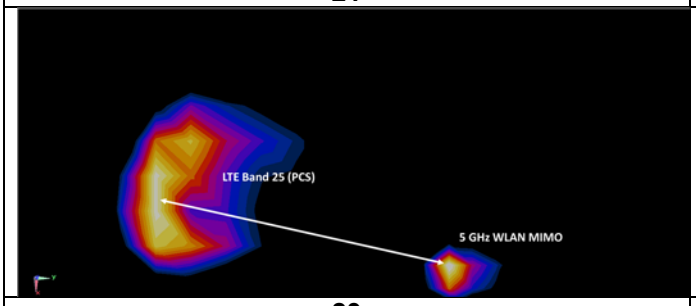

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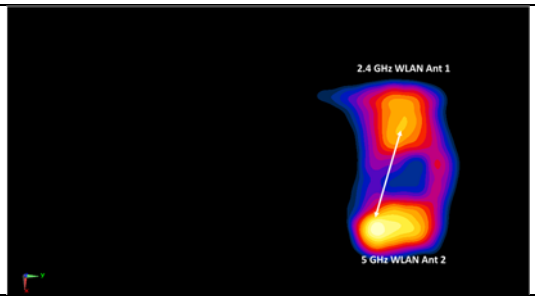

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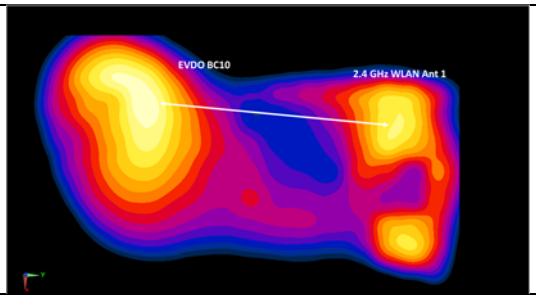

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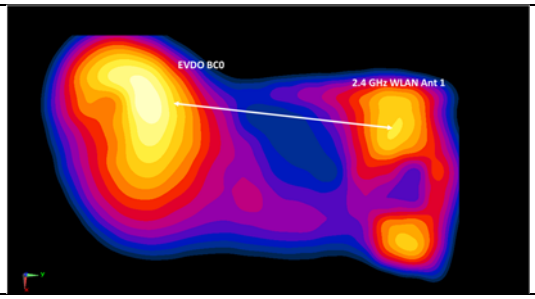

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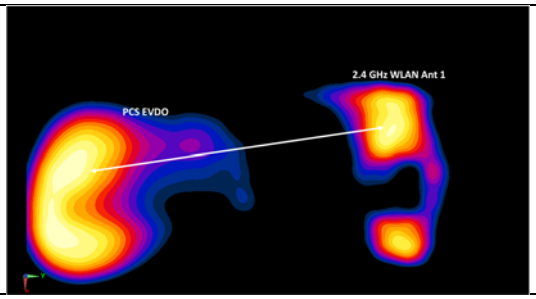

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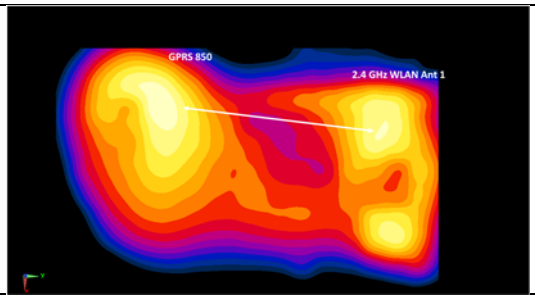

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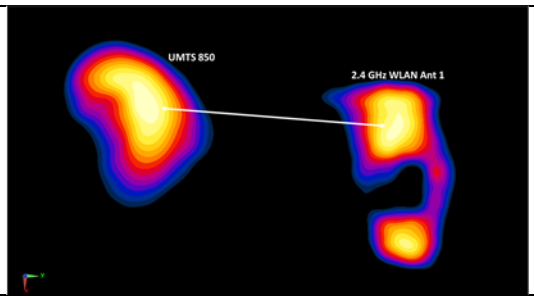

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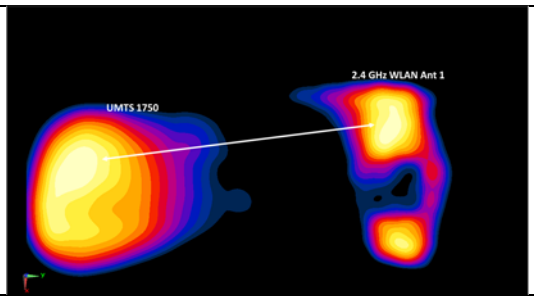

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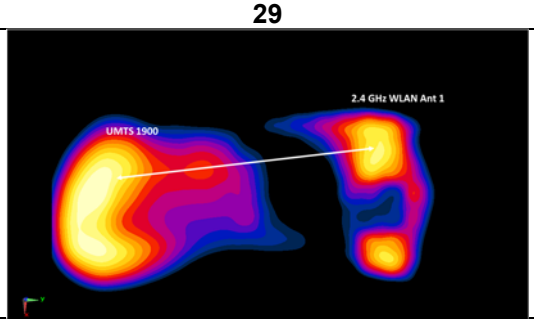

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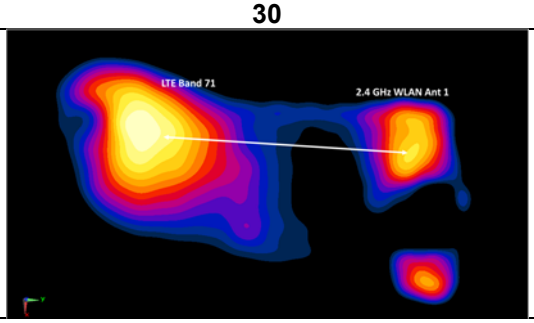

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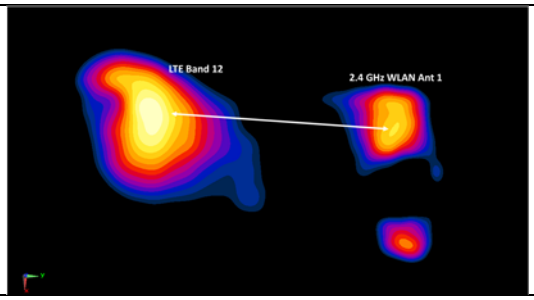

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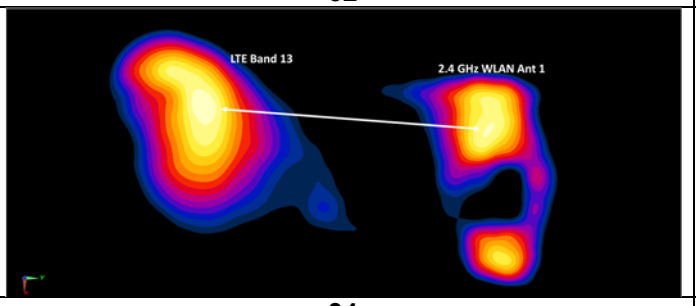

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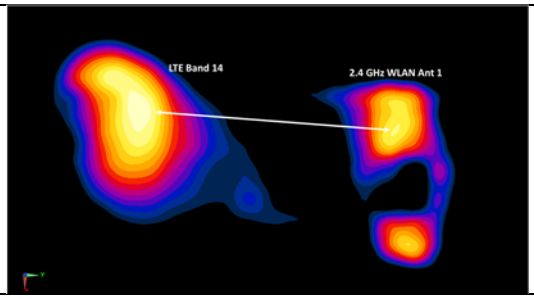

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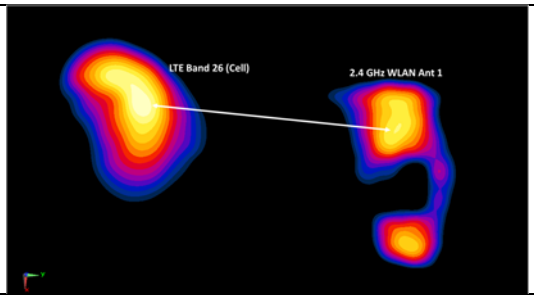

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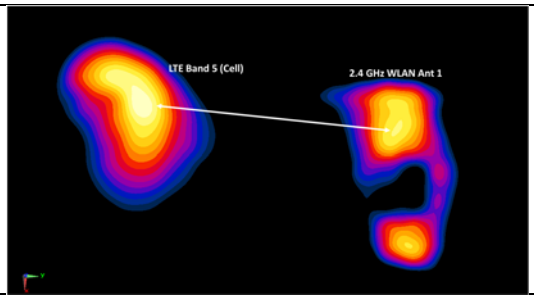

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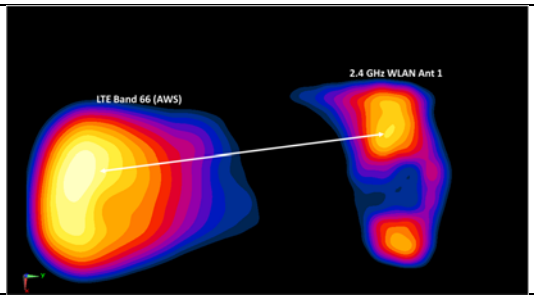

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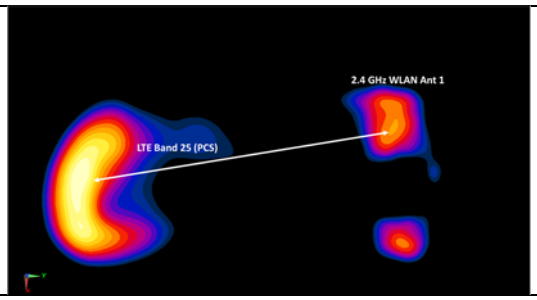

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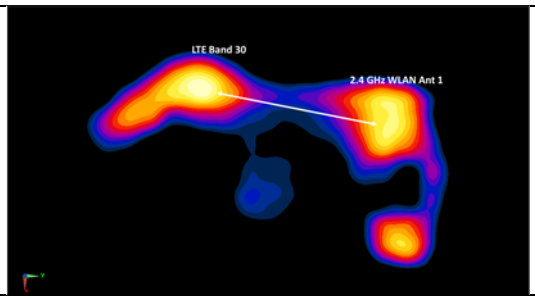

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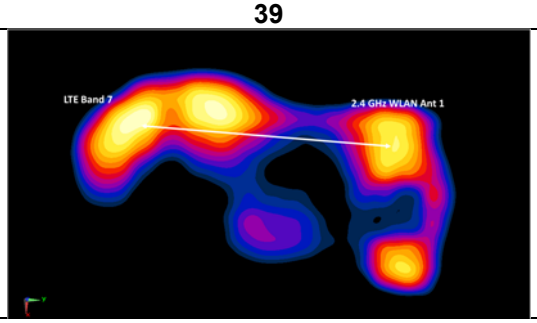

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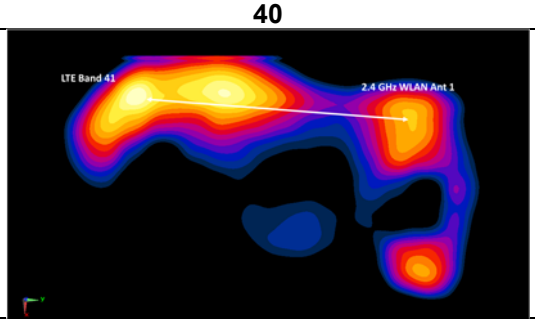

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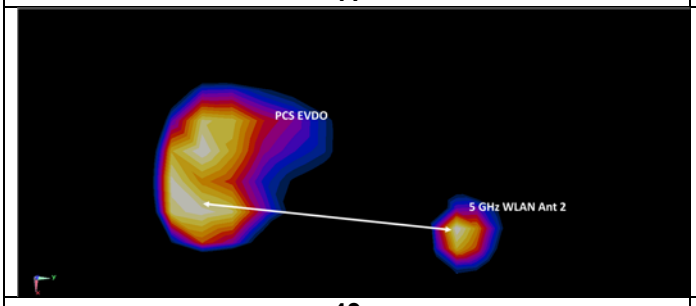

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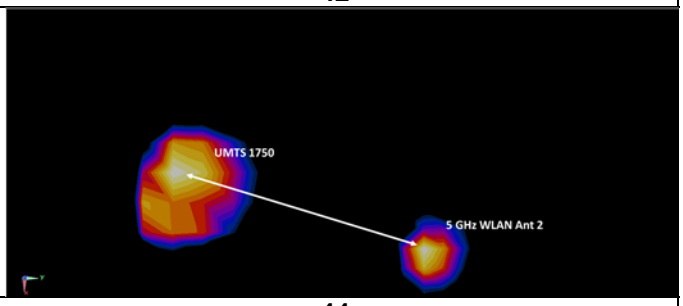

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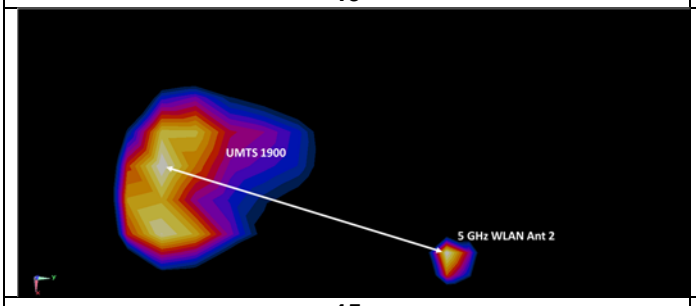

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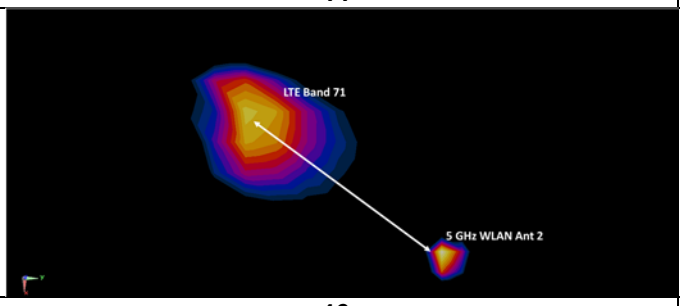

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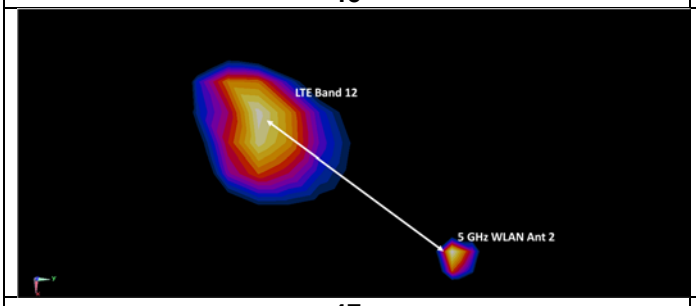

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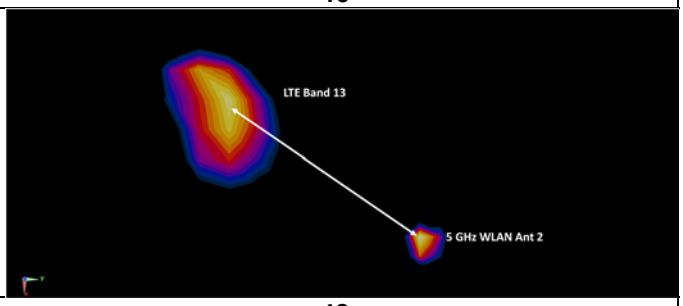

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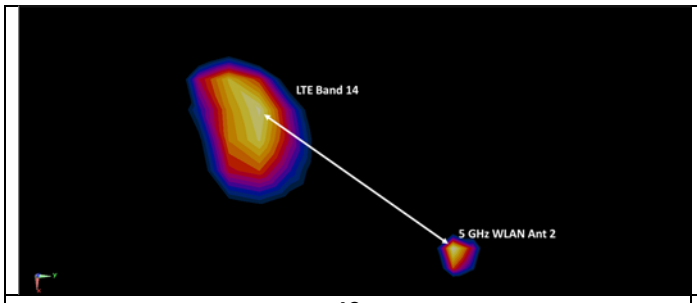

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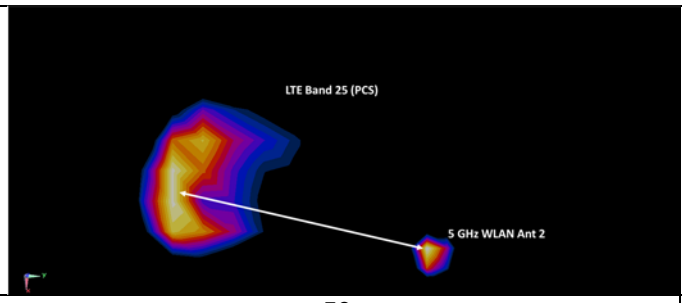

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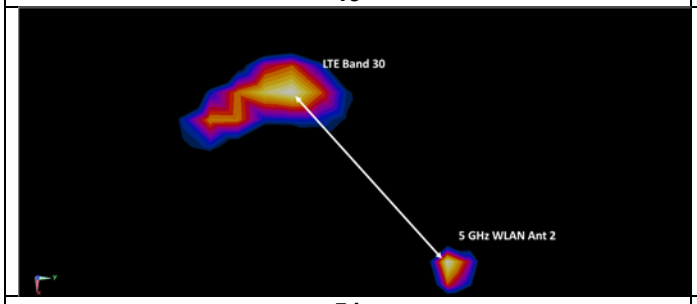

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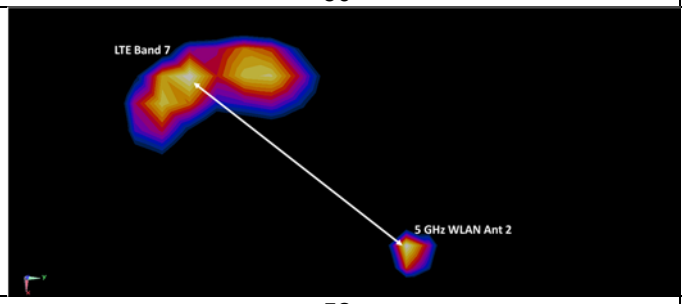

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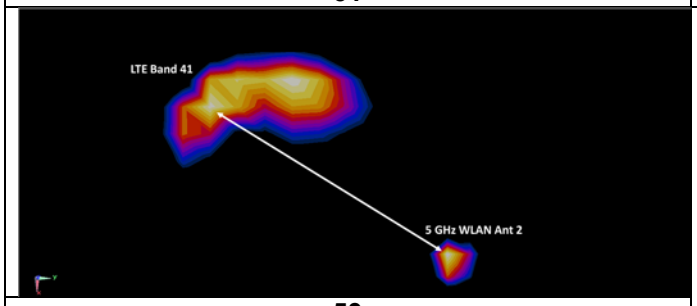

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12.7.4 Phablet Back Side SPLSR Evaluation and Analysis

Table 12-28
Peak SAR Locations for Phablet Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 2	15.00	44.00
5 GHz WLAN MIMO	16.00	44.00
PCS EVDO	-7.50	-77.00
UMTS 1750	-1.00	-80.00
UMTS 1900	-1.00	-80.00
LTE Band 66 (AWS)	-6.00	-80.00
LTE Band 25 (PCS)	-1.00	-81.50

Table 12-29
Phablet Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN Ant 2	PCS EVDO	2.763	1.58	4.343	123.07	0.07	1
5 GHz WLAN Ant 2	UMTS 1750	2.763	1.738	4.501	125.03	0.08	2
5 GHz WLAN Ant 2	UMTS 1900	2.763	1.904	4.667	125.03	0.08	3
5 GHz WLAN Ant 2	LTE Band 66 (AWS)	2.763	1.859	4.622	125.77	0.08	4
5 GHz WLAN Ant 2	LTE Band 25 (PCS)	2.763	2.336	5.099	126.52	0.09	5
5 GHz WLAN MIMO	PCS EVDO	2.908	1.58	4.488	123.26	0.08	6
5 GHz WLAN MIMO	UMTS 1750	2.908	1.738	4.646	125.16	0.08	7
5 GHz WLAN MIMO	UMTS 1900	2.908	1.904	4.812	125.16	0.08	8
5 GHz WLAN MIMO	LTE Band 66 (AWS)	2.908	1.859	4.767	125.94	0.08	9
5 GHz WLAN MIMO	LTE Band 25 (PCS)	2.908	2.336	5.244	126.65	0.09	10

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