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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:
02/24/20 – 03/19/20
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M2002170022-01-R1.ZNF

FCC ID: **ZNFQ730TM**

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-Q730TM
Additional Model(s): LM-Q730MM, LMQ730TM, LMQ730MM, Q730TM, Q730MM
Permissive Change(s): See FCC Change Document
Date of Original Certification: 03/13/2020

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.29	0.51	0.51	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.41	0.79	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.20	0.41	0.41	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.13	0.63	0.86	2.87
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.12	0.66	0.78	2.67
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.18	0.33	0.25	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.20	0.43	0.28	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.13	0.78	0.59	2.06
PCE	LTE Band 71	665.5 - 695.5 MHz	0.16	0.29	0.56	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.20	0.32	0.67	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.16	0.32	0.35	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.18	0.40	0.40	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.11	0.55	0.95	2.76
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.21	0.79	0.75	2.76
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.16	0.61	0.51	3.04
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.13	0.46	0.89	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.68	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.44	0.58	N/A	2.05
NII	U-NII-2C	5500 - 5720 MHz	0.50	0.55	N/A	1.83
NII	U-NII-3	5745 - 5825 MHz	0.77	0.88	1.11	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.17	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.42	1.57	1.58	3.04

Note: This revised Test Report (1M2002170022-01-R1.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

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
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
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
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
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

1.2 Power Reduction for SAR

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

This device uses an independent fixed level power reduction mechanism for WLAN 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 2G/3G/4G Output Power

GSM/GPRS/EDGE 850										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Max	Max allowed power	33.7	33.7	32.7	30.7	28.7	26.2	25.7	25.2	24.7
	Nominal	33.2	33.2	32.2	30.2	28.2	25.7	25.2	24.7	24.2

GSM/GPRS/EDGE 1900										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Max	Max allowed power	30.7	30.7	29.7	27.7	25.7	25.7	25.2	25.2	24.7
	Nominal	30.2	30.2	29.2	27.2	25.2	25.2	24.7	24.7	24.2

Band/Mode		Modulated Average Output Power (in dBm)	
		Max	
UMTS Band 5 (850 MHz)		Nominal	Max allowed power
3GPP WCDMA Rel 99		24.7	25.2
3GPP HSDPA Rel 5	Subtest 1	24.7	25.2
	Subtest 2	24.7	25.2
	Subtest 3	24.2	24.7
	Subtest 4	24.2	24.7
3GPP HSUPA Rel 6	Subtest 1	22.7	23.2
	Subtest 2	22.7	23.2
	Subtest 3	23.7	24.2
	Subtest 4	22.2	22.7
	Subtest 5	23.7	24.2

Band/Mode		Modulated Average Output Power (in dBm)			
		Max		Hotspot Mode or Grip Sensor Active	
UMTS Band 4 (1750 MHz)		Nominal	Max allowed power	Nominal	Max allowed power
3GPP WCDMA Rel 99		24.2	24.7	22.7	23.2
3GPP HSDPA Rel 5	Subtest 1	24.2	24.7	22.7	23.2
	Subtest 2	24.2	24.7	22.7	23.2
	Subtest 3	23.7	24.2	22.2	22.7
	Subtest 4	23.7	24.2	22.2	22.7
3GPP HSUPA Rel 6	Subtest 1	22.2	22.7	20.7	21.2
	Subtest 2	22.2	22.7	20.7	21.2
	Subtest 3	23.2	23.7	21.7	22.2
	Subtest 4	21.7	22.2	20.2	20.7
	Subtest 5	23.2	23.7	21.7	22.2

Band/Mode		Modulated Average Output Power (in dBm)			
		Max		Hotspot Mode or Grip Sensor Active	
UMTS Band 2 (1900 MHz)		Nominal	Max allowed power	Nominal	Max allowed power
3GPP WCDMA Rel 99		24.2	24.7	22.7	23.2
3GPP HSDPA Rel 5	Subtest 1	24.2	24.7	22.7	23.2
	Subtest 2	24.2	24.7	22.7	23.2
	Subtest 3	23.7	24.2	22.2	22.7
	Subtest 4	23.7	24.2	22.2	22.7
3GPP HSUPA Rel 6	Subtest 1	22.2	22.7	20.7	21.2
	Subtest 2	22.2	22.7	20.7	21.2
	Subtest 3	23.2	23.7	21.7	22.2
	Subtest 4	21.7	22.2	20.2	20.7
	Subtest 5	23.2	23.7	21.7	22.2

CDMA BC10 (815 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7

CDMA BC0 (835 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	25.2	25.2	25.2
	Nominal	24.7	24.7	24.7

CDMA BC1 (1900 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Max	Max allowed power	24.7	24.7	24.7
	Nominal	24.2	24.2	24.2
Hotspot Mode or Grip Sensor Active	Max allowed power	23.2	23.2	23.2
	Nominal	22.7	22.7	22.7

Mode / Band		Modulated Average Output Power (in dBm)	
		Max	Hotspot Mode or Grip Sensor Active
LTE FDD Band 71	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE FDD Band 12	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE FDD Band 13	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE FDD Band 5	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE FDD Band 26	Max allowed power	25.2	25.2
	Nominal	24.7	24.7
LTE FDD Band 4	Max allowed power	24.7	23.2
	Nominal	24.2	22.7
LTE FDD Band 66	Max allowed power	24.7	23.2
	Nominal	24.2	22.7
LTE FDD Band 2	Max allowed power	24.7	23.2
	Nominal	24.2	22.7
LTE FDD Band 25	Max allowed power	24.7	23.2
	Nominal	24.2	22.7
LTE TDD Band 41 (PC3)	Max allowed power	25.2	23.7
	Nominal	24.7	23.2
LTE TDD Band 41 (PC2)	Max allowed power	27.2	25.7
	Nominal	26.7	25.2

1.3.2 Maximum WLAN and Bluetooth Output Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b (2.4 GHz)	Maximum	**21.5**	**21.5**	**21.5**
	Nominal	**20.5**	**20.5**	**20.5**
IEEE 802.11g (2.4 GHz)	Maximum	**17.5**	**19.5**	**17.5**
	Nominal	**16.5**	**18.5**	**16.5**
IEEE 802.11n (2.4 GHz)	Maximum	**16.5**	**18.5**	**16.5**
	Nominal	**15.5**	**17.5**	**15.5**

Mode / Band		Modulated Average - Single Tx Chain (dBm)																												
		20 MHz Bandwidth														40 MHz Bandwidth													80 MHz Bandwidth	
	Channel	36	40	44-48	52	56	60	64	100	104-140	144	149-153	157	161	165	38	46	54	62	102	110	118	126	134	142	151	159	42-155	
IEEE 802.11a (5 GHz)	Maximum	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**	**19.0**															
	Nominal	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**															
IEEE 802.11n (5 GHz)	Maximum	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**16.5**	**18.5**	**18.5**	**16.5**	**16.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**			
	Nominal	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**15.5**	**17.5**	**17.5**	**15.5**	**15.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**			
IEEE 802.11ac (5 GHz)	Maximum	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**16.5**	**18.5**	**18.5**	**16.5**	**16.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**18.5**	**15.5**		
	Nominal	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**15.5**	**17.5**	**17.5**	**15.5**	**15.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**14.5**		

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	**9.0**
	Nominal	**8.0**
Bluetooth LE	Maximum	**5.5**
	Nominal	**4.5**

1.3.3 Reduced WLAN Output Power

Mode / Band		Modulated Average (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b (2.4 GHz)	Maximum	**18.0**	**18.0**	**18.0**
	Nominal	**17.0**	**17.0**	**17.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.5**	**18.0**	**17.5**
	Nominal	**16.5**	**17.0**	**16.5**
IEEE 802.11n (2.4 GHz)	Maximum	**16.5**	**18.0**	**16.5**
	Nominal	**15.5**	**17.0**	**15.5**

Mode / Band		Modulated Average - Single Tx Chain (dBm)																												
		20 MHz Bandwidth														40 MHz Bandwidth												80 MHz Bandwidth
	Channel	36	40	44-48	52	56	60	64	100	104-140	144	149-153	157	161	165	38	46	54	62	102	110	118	126	134	142	151	159	42-155
IEEE 802.11a (5 GHz)	Maximum	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0													
	Nominal	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0													
IEEE 802.11n (5 GHz)	Maximum	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
	Nominal	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
IEEE 802.11ac (5 GHz)	Maximum	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.5
	Nominal	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.5

1.4 DUT Antenna Locations

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

Table 1-1
Device Edges/Sides for SAR Testing

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

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

1.5 Near Field Communications (NFC) Antenna

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

1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
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 Bluetooth + 5 GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
5	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
6	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
7	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	GSM voice + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
9	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
10	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
11	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
12	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
13	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
14	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
15	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
16	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
17	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
18	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
19	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
20	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
21	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
22	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
23	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
24	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered

1. 2.4 GHz WLAN and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.

5. 5 GHz Wireless Router is only supported for the U-NII-1 and U-NII-3 by S/W, therefore U-NII-2A, and U-NII-2C were not evaluated for wireless router conditions.
6. This device supports VOLTE.
7. This device supports VOWIFI.
8. This device supports Bluetooth Tethering.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

When 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 for applicable exposure condition(s) 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-NII1 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) 1 Tx antenna output
d) 256 QAM is supported
e) TDWR and Band gap channels are supported

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

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive. LTE Downlink Carrier Aggregation was fully addressed in the original filing. Per FCC Guidance, no additional measurements were required since there were no changes to the downlink CA implementation for this C2PC.

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

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

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

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

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)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)
- May 2017 TCB Workshop Notes (LTE Band 41 Power Class 2/3)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)

1.9 Device Serial Numbers

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

2 LTE INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 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 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
0	0		0	0	
0	0		0	0	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 7, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 11. It supports carrier aggregation features as shown in Section 9 All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 11 Features are not supported: WIFI Offloading, Relay, HetNet, Enhanced MIMO, eICIC, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

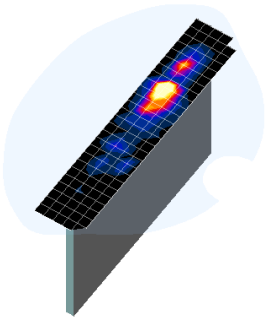


Figure 4-1
Sample SAR Area Scan

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

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

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

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

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

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

*Also compliant to IEEE 1528-2013 Table 6

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

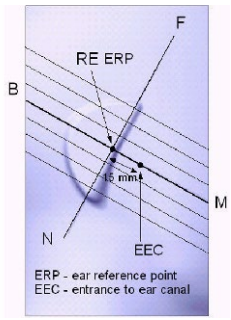


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

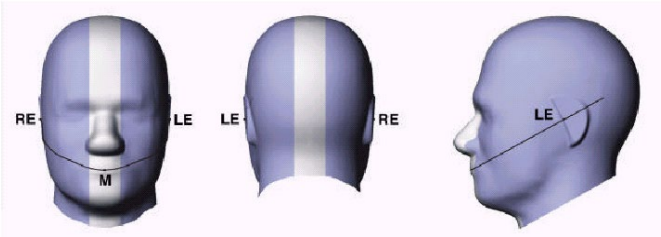


Figure 5-2
Front, back and side view of SAM Twin Phantom

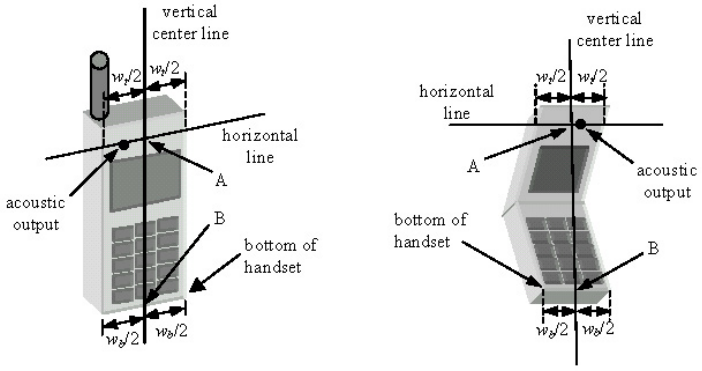


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

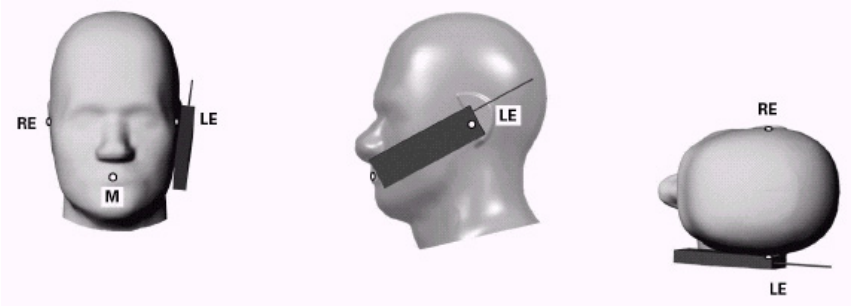


Figure 6-1 Front, Side and Top View of Cheek Position

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

6.3 PLTE ositioning for Ear / 15º Tilt

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

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

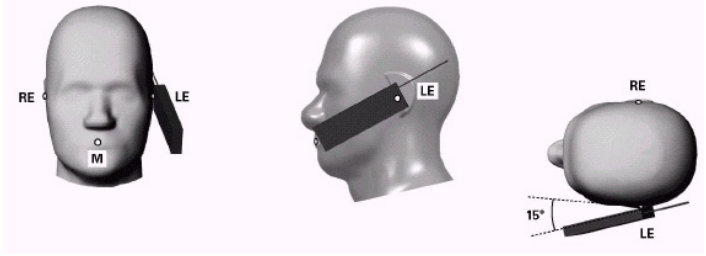


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

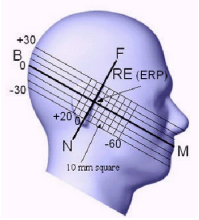


Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

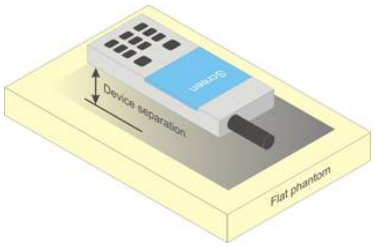


Figure 6-4
Sample Body-Worn Diagram

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

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

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

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

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

6.8 Phablet Configurations

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

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

6.9 Proximity Sensor Considerations

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

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

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for 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.

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.

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

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.

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
    i. The required channel and offset combination with the highest maximum output power is required for SAR.
    ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
    iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB

and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.

d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel

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

8.7.7 Initial Test Configuration Procedure

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

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

8.7.8 Subsequent Test Configuration Procedures

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.10	25.12	24.97	25.13	25.20	25.17
Cellular	1013	22H	824.7	25.09	25.11	25.02	25.12	25.14	25.11
	384	22H	836.52	24.97	24.98	24.98	25.02	25.10	25.10
	777	22H	848.31	25.04	25.07	24.95	25.03	25.09	25.08
PCS	25	24E	1851.25	24.56	24.57	24.41	24.62	24.57	24.68
	600	24E	1880	24.51	24.51	24.35	24.65	24.66	24.69
	1175	24E	1908.75	24.64	24.63	24.44	24.62	24.64	24.70

Table 9-2
Reduced Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.91	22.96	22.84	22.92	22.91	22.96
	600	24E	1880	22.85	22.90	22.79	22.86	22.74	22.76
	1175	24E	1908.75	22.92	22.97	22.95	22.94	22.95	22.98

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

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	33.68	33.68	32.70	**30.48**	28.50	26.19	25.70	25.20	24.50
	190	33.61	33.60	32.66	**30.40**	28.32	26.20	25.67	25.16	24.46
	251	33.56	33.56	32.58	**30.29**	28.23	26.16	25.69	25.12	24.38
GSM 1900	512	30.68	30.61	29.58	**27.70**	25.70	25.58	24.89	24.94	24.18
	661	30.54	30.56	29.46	**27.69**	25.68	25.48	24.84	24.75	24.38
	810	30.70	30.69	29.64	**27.69**	25.67	25.60	24.97	24.92	24.41

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	24.48	24.48	26.51	**26.05**	25.32	16.99	19.51	20.77	21.32
	190	24.41	24.40	26.47	**25.97**	25.14	17.00	19.48	20.73	21.28
	251	24.36	24.36	26.39	**25.86**	25.05	16.96	19.50	20.69	21.20
GSM 1900	512	21.48	21.41	23.39	**23.27**	22.52	16.38	18.70	20.51	21.00
	661	21.34	21.36	23.27	**23.26**	22.50	16.28	18.65	20.32	21.20
	810	21.50	21.49	23.45	**23.26**	22.49	16.40	18.78	20.49	21.23
GSM 850	**Frame Avg.Targets:**	24.00	24.00	26.01	**25.77**	25.02	16.50	19.01	20.27	21.02
GSM 1900		21.00	21.00	23.01	**22.77**	22.02	16.00	18.51	20.27	21.02

Note:

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

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

Figure 9-2
Power Measurement Setup

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]		
			4132	4183	4233	1312	1412	1513	9262	9400	9538
99	WCDMA	12.2 kbps RMC	25.13	25.15	25.18	24.68	24.65	24.70	24.70	24.60	24.68
99		12.2 kbps AMR	25.16	25.15	25.20	24.67	24.68	24.67	24.68	24.61	24.64
6	HSDPA	Subtest 1	25.14	25.02	25.05	24.70	24.68	24.67	24.70	24.66	24.69
6		Subtest 2	25.07	24.99	25.02	24.69	24.67	24.66	24.69	24.65	24.62
6		Subtest 3	24.61	24.52	24.55	24.19	24.17	24.19	24.12	24.08	24.00
6		Subtest 4	24.65	24.53	24.54	24.20	24.11	24.19	24.20	24.04	24.18
6	HSUPA	Subtest 1	23.19	23.03	23.08	22.69	22.69	22.70	22.70	22.62	22.68
6		Subtest 2	23.20	23.10	23.17	22.70	22.68	22.64	22.70	22.64	22.69
6		Subtest 3	24.14	24.17	24.01	23.68	23.69	23.70	23.68	23.58	23.70
6		Subtest 4	22.63	22.55	22.58	22.20	22.14	22.18	22.20	22.15	22.19
6		Subtest 5	24.09	24.20	24.09	23.70	23.70	23.67	23.66	23.60	23.67

Table 9-5
Reduced Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]		
			1312	1412	1513	9262	9400	9538
99	WCDMA	12.2 kbps RMC	22.98	22.94	23.04	23.03	23.00	23.04
99		12.2 kbps AMR	22.96	22.95	23.00	23.00	22.97	22.99
6	HSDPA	Subtest 1	23.20	23.19	23.18	23.20	23.10	23.18
6		Subtest 2	23.19	23.16	23.17	23.19	23.06	23.15
6		Subtest 3	22.68	22.70	22.69	22.69	22.64	22.70
6		Subtest 4	22.67	22.66	22.68	22.68	22.55	22.63
6	HSUPA	Subtest 1	21.19	21.20	21.15	21.20	21.18	21.17
6		Subtest 2	21.20	21.19	21.17	21.20	21.08	21.15
6		Subtest 3	22.10	22.03	22.13	22.08	21.95	22.00
6		Subtest 4	20.69	20.66	20.70	20.69	20.56	20.65
6		Subtest 5	22.20	22.15	22.14	22.19	22.01	22.19

This device does not support DC-HSDPA.

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 71

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

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.92	0	0
	1	50	**25.08**		0
	1	99	24.79		0
	50	0	24.07	0-1	1
	50	25	**24.11**		1
	50	50	24.05		1
	100	0	24.06		1
16QAM	1	0	24.18	0-1	1
	1	50	24.20		1
	1	99	24.09		1
	50	0	23.12	0-2	2
	50	25	23.16		2
	50	50	23.07		2
	100	0	23.12		2
64QAM	1	0	23.16	0-2	2
	1	50	23.20		2
	1	99	23.07		2
	50	0	22.16	0-3	3
	50	25	22.20		3
	50	50	22.12		3
	100	0	22.16		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.

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

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.89	0	0
	1	36	24.92		0
	1	74	24.79		0
	36	0	24.00	0-1	1
	36	18	23.97		1
	36	37	23.92		1
	75	0	23.94		1
16QAM	1	0	23.97	0-1	1
	1	36	23.96		1
	1	74	24.01		1
	36	0	23.04	0-2	2
	36	18	23.08		2
	36	37	22.99		2
	75	0	23.04		2
64QAM	1	0	23.18	0-2	2
	1	36	23.11		2
	1	74	22.99		2
	36	0	22.08	0-3	3
	36	18	22.12		3
	36	37	22.04		3
	75	0	22.08		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.

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

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	24.90	24.86	24.77	0	0
	1	25	25.00	24.88	24.79		0
	1	49	25.02	24.77	24.68		0
	25	0	24.00	23.99	23.92	0-1	1
	25	12	24.12	23.94	23.99		1
	25	25	24.17	23.84	23.89		1
	50	0	24.00	23.92	23.95		1
16QAM	1	0	23.99	23.84	23.78	0-1	1
	1	25	24.12	23.99	23.88		1
	1	49	24.00	23.89	23.92		1
	25	0	23.12	23.01	23.00	0-2	2
	25	12	23.14	23.00	22.99		2
	25	25	23.10	23.00	22.98		2
	50	0	23.08	23.01	22.91		2
64QAM	1	0	23.10	23.15	23.10	0-2	2
	1	25	23.08	23.08	22.98		2
	1	49	23.10	22.96	22.95		2
	25	0	22.07	22.05	21.93	0-3	3
	25	12	22.06	22.09	22.02		3
	25	25	22.05	22.01	22.00		3
	50	0	22.00	22.05	22.04		3

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	24.87	24.82	24.78	0	0
	1	12	24.97	24.93	24.98		0
	1	24	24.99	24.79	24.90		0
	12	0	23.90	23.87	23.88	0-1	1
	12	6	24.08	24.00	24.00		1
	12	13	24.14	23.94	24.02		1
	25	0	23.97	23.93	23.90		1
16QAM	1	0	23.96	24.17	24.02	0-1	1
	1	12	24.08	24.20	24.00		1
	1	24	23.97	23.99	23.89		1
	12	0	23.09	23.02	23.01	0-2	2
	12	6	23.01	23.07	23.02		2
	12	13	23.07	22.96	22.98		2
	25	0	23.05	23.00	23.00		2
64QAM	1	0	23.07	23.16	22.99	0-2	2
	1	12	22.92	23.17	22.91		2
	1	24	22.97	22.88	22.92		2
	12	0	22.04	22.06	21.88	0-3	3
	12	6	22.03	22.10	21.84		3
	12	13	22.02	22.02	21.93		3
	25	0	21.97	22.06	21.88		3

9.4.2 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23095** **(707.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.85	0	0
	1	25	**24.95**		0
	1	49	24.82		0
	25	0	24.04	0-1	1
	25	12	**24.06**		1
	25	25	24.05		1
	50	0	24.05		1
16QAM	1	0	24.14	0-1	1
	1	25	24.20		1
	1	49	24.16		1
	25	0	23.01	0-2	2
	25	12	23.03		2
	25	25	23.03		2
	50	0	23.02		2
64QAM	1	0	23.10	0-2	2
	1	25	23.17		2
	1	49	23.08		2
	25	0	21.99	0-3	3
	25	12	22.03		3
	25	25	22.01		3
	50	0	22.02		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.

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

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.79	24.85	24.81	0	0
	1	12	24.97	25.02	25.10		0
	1	24	24.70	24.86	24.75		0
	12	0	23.89	24.05	23.95	0-1	1
	12	6	23.95	24.05	23.97		1
	12	13	23.92	24.00	23.89		1
	25	0	23.93	24.03	23.94		1
16QAM	1	0	23.92	24.04	24.06	0-1	1
	1	12	24.15	24.20	24.18		1
	1	24	23.93	24.09	24.01		1
	12	0	22.83	22.96	22.94	0-2	2
	12	6	22.93	22.98	22.96		2
	12	13	22.89	22.95	22.86		2
	25	0	22.91	22.98	22.95		2
64QAM	1	0	22.92	23.00	22.95	0-2	2
	1	12	23.12	23.20	23.13		2
	1	24	22.90	23.02	22.91		2
	12	0	21.91	22.02	21.99	0-3	3
	12	6	22.00	22.04	22.03		3
	12	13	21.98	21.99	21.97		3
	25	0	21.94	21.99	21.98		3

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	24.83	24.84	24.86	0	0
	1	7	25.00	25.02	25.00		0
	1	14	24.79	24.85	24.83		0
	8	0	23.90	23.88	23.91	0-1	1
	8	4	23.92	23.92	23.96		1
	8	7	23.88	23.88	23.90		1
	15	0	23.92	23.93	23.88		1
16QAM	1	0	24.02	23.96	24.15	0-1	1
	1	7	24.17	24.17	24.20		1
	1	14	24.00	24.04	24.13		1
	8	0	22.93	22.91	22.99	0-2	2
	8	4	22.97	22.96	23.03		2
	8	7	22.95	22.92	22.94		2
	15	0	22.89	22.89	22.91		2
64QAM	1	0	22.93	22.94	23.04	0-2	2
	1	7	23.14	23.11	23.20		2
	1	14	22.99	23.03	23.01		2
	8	0	21.98	21.95	22.03	0-3	3
	8	4	21.99	21.99	22.05		3
	8	7	21.96	21.97	22.02		3
	15	0	21.92	21.94	21.94		3

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.77	24.77	24.79	0	0
	1	2	24.93	24.92	24.95		0
	1	5	24.82	24.76	24.81		0
	3	0	24.87	24.89	24.90		0
	3	2	24.92	24.91	24.92		0
	3	3	24.87	24.88	24.90		0
	6	0	23.94	23.92	23.95	0-1	1
16QAM	1	0	23.96	23.99	24.01	0-1	1
	1	2	24.14	24.08	24.18		1
	1	5	24.01	23.98	24.12		1
	3	0	23.81	23.83	23.89		1
	3	2	23.85	23.82	23.90		1
	3	3	23.81	23.76	23.88		1
	6	0	22.99	22.98	23.03	0-2	2
64QAM	1	0	22.93	22.91	23.01	0-2	2
	1	2	23.07	23.07	23.16		2
	1	5	23.02	22.95	23.04		2
	3	0	22.94	22.95	23.03		2
	3	2	23.01	22.99	23.05		2
	3	3	23.01	22.95	23.00		2
	6	0	21.95	21.93	21.97	0-3	3

9.4.3 LTE Band 13

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

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.88	0	0
	1	25	**24.93**		0
	1	49	24.72		0
	25	0	24.01	0-1	1
	25	12	**24.02**		1
	25	25	23.94		1
	50	0	23.99		1
16QAM	1	0	24.18	0-1	1
	1	25	24.10		1
	1	49	24.02		1
	25	0	22.93	0-2	2
	25	12	22.92		2
	25	25	22.84		2
	50	0	22.88		2
64QAM	1	0	23.12	0-2	2
	1	25	23.11		2
	1	49	22.94		2
	25	0	21.92	0-3	3
	25	12	21.92		3
	25	25	21.84		3
	50	0	21.91		3

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

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.72	0	0
	1	12	24.92		0
	1	24	24.62		0
	12	0	23.90	0-1	1
	12	6	23.93		1
	12	13	23.84		1
	25	0	23.91		1
16QAM	1	0	24.03	0-1	1
	1	12	24.20		1
	1	24	23.84		1
	12	0	22.88	0-2	2
	12	6	22.92		2
	12	13	22.82		2
	25	0	22.88		2
64QAM	1	0	22.99	0-2	2
	1	12	23.12		2
	1	24	22.82		2
	12	0	21.90	0-3	3
	12	6	21.94		3
	12	13	21.86		3
	25	0	21.90		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.

9.4.4 LTE Band 26 (Cell)

Table 9-16
LTE Band 26 (Cell) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.85	0	0
	1	36	**24.92**		0
	1	74	24.75		0
	36	0	23.96	0-1	1
	36	18	**23.99**		1
	36	37	23.90		1
	75	0	23.92		1
16QAM	1	0	24.18	0-1	1
	1	36	24.19		1
	1	74	23.96		1
	36	0	22.97	0-2	2
	36	18	22.98		2
	36	37	22.89		2
	75	0	22.93		2
64QAM	1	0	23.11	0-2	2
	1	36	23.15		2
	1	74	22.95		2
	36	0	21.96	0-3	3
	36	18	21.98		3
	36	37	21.88		3
	75	0	21.91		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.

Table 9-17
LTE Band 26 (Cell) Maximum 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	24.96	24.77	24.81	0	0
	1	25	24.93	24.95	24.96		0
	1	49	24.83	24.80	24.84		0
	25	0	23.95	23.93	23.95	0-1	1
	25	12	23.95	23.95	23.92		1
	25	25	23.90	23.94	23.82		1
	50	0	24.00	23.94	23.89		1
16QAM	1	0	24.00	24.10	23.98	0-1	1
	1	25	24.03	24.09	24.10		1
	1	49	24.08	24.00	24.01		1
	25	0	22.98	23.03	22.98	0-2	2
	25	12	22.99	23.01	22.94		2
	25	25	23.01	22.90	22.84		2
	50	0	23.00	22.95	22.93		2
64QAM	1	0	23.07	23.10	22.98	0-2	2
	1	25	23.10	22.98	23.02		2
	1	49	23.10	23.02	23.03		2
	25	0	21.95	21.96	22.00	0-3	3
	25	12	21.97	21.98	21.95		3
	25	25	21.97	21.92	21.87		3
	50	0	22.06	21.92	21.92		3

Table 9-18
LTE Band 26 (Cell) Maximum 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	24.80	24.70	24.67	0	0
	1	12	25.00	24.87	24.96		0
	1	24	24.73	24.62	24.70		0
	12	0	23.97	23.78	23.85	0-1	1
	12	6	23.93	23.83	23.89		1
	12	13	23.86	23.76	23.79		1
	25	0	23.89	23.79	23.82		1
16QAM	1	0	24.00	23.87	23.94	0-1	1
	1	12	24.10	24.06	24.17		1
	1	24	23.99	23.82	23.93		1
	12	0	22.98	22.80	22.91	0-2	2
	12	6	22.98	22.84	22.94		2
	12	13	22.87	22.78	22.79		2
	25	0	22.84	22.82	22.89		2
64QAM	1	0	23.03	22.84	22.90	0-2	2
	1	12	23.20	23.05	23.20		2
	1	24	22.97	22.83	22.93		2
	12	0	21.98	21.79	21.95	0-3	3
	12	6	21.87	21.85	21.97		3
	12	13	21.89	21.78	21.83		3
	25	0	21.90	21.79	21.89		3

Table 9-19
LTE Band 26 (Cell) Maximum 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	24.89	24.74	24.84	0	0
	1	7	25.00	24.85	24.97		0
	1	14	24.83	24.73	24.82		0
	8	0	23.91	23.76	23.87	0-1	1
	8	4	23.91	23.83	23.93		1
	8	7	23.87	23.78	23.87		1
	15	0	23.92	23.81	23.90		1
16QAM	1	0	24.16	24.15	23.99	0-1	1
	1	7	24.20	23.96	24.10		1
	1	14	24.11	23.89	24.07		1
	8	0	23.02	22.89	22.95	0-2	2
	8	4	23.08	22.85	22.99		2
	8	7	23.00	22.84	22.94		2
	15	0	22.96	22.93	22.93		2
64QAM	1	0	23.14	22.92	23.06	0-2	2
	1	7	23.20	23.06	23.17		2
	1	14	23.08	22.98	23.08		2
	8	0	21.99	21.81	21.95	0-3	3
	8	4	22.17	21.95	22.02		3
	8	7	21.93	21.83	21.96		3
	15	0	21.90	21.75	21.93		3

Table 9-20
LTE Band 26 (Cell) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	24.81	24.70	24.77	0	0
	1	2	24.94	24.80	24.95		0
	1	5	24.79	24.71	24.78		0
	3	0	24.86	24.78	24.89		0
	3	2	24.93	24.80	24.89		0
	3	3	24.90	24.78	24.88		0
	6	0	23.94	23.81	23.91	0-1	1
16QAM	1	0	24.10	23.91	23.97	0-1	1
	1	2	24.20	24.00	24.06		1
	1	5	24.08	23.90	23.93		1
	3	0	23.92	23.74	23.81		1
	3	2	23.95	23.73	23.79		1
	3	3	23.91	23.71	23.77		1
	6	0	23.09	23.03	23.03	0-2	2
64QAM	1	0	23.13	22.91	22.93	0-2	2
	1	2	23.20	23.02	23.10		2
	1	5	23.13	22.86	23.00		2
	3	0	23.10	22.88	23.03		2
	3	2	23.12	22.92	23.02		2
	3	3	23.06	22.89	22.99		2
	6	0	21.98	21.78	21.98	0-3	3

9.4.5 LTE Band 66 (AWS)

Table 9-21
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	24.28	24.20	24.50	0	0
	1	50	24.46	**24.56**	24.48		0
	1	99	24.23	24.35	24.27		0
	50	0	23.47	23.46	23.44	0-1	1
	50	25	23.52	**23.58**	23.53		1
	50	50	23.46	23.52	23.42		1
	100	0	23.45	23.47	23.43		1
16QAM	1	0	23.55	23.51	23.68	0-1	1
	1	50	23.69	23.70	23.70		1
	1	99	23.57	23.68	23.59		1
	50	0	22.43	22.44	22.49	0-2	2
	50	25	22.50	22.57	22.56		2
	50	50	22.42	22.51	22.43		2
	100	0	22.40	22.44	22.42		2
64QAM	1	0	22.48	22.46	22.59	0-2	2
	1	50	22.65	22.67	22.70		2
	1	99	22.49	22.56	22.60		2
	50	0	21.43	21.48	21.47	0-3	3
	50	25	21.49	21.60	21.55		3
	50	50	21.45	21.49	21.44		3
	100	0	21.42	21.44	21.43		3

Table 9-22
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	24.39	24.29	24.32	0	0
	1	36	24.52	24.45	24.42		0
	1	74	24.33	24.29	24.20		0
	36	0	23.54	23.54	23.62	0-1	1
	36	18	23.60	23.64	23.60		1
	36	37	23.51	23.62	23.54		1
	75	0	23.52	23.61	23.57		1
16QAM	1	0	23.24	23.61	23.33	0-1	1
	1	36	23.47	23.59	23.46		1
	1	74	23.49	23.65	23.41		1
	36	0	22.46	22.53	22.57	0-2	2
	36	18	22.53	22.59	22.60		2
	36	37	22.41	22.62	22.53		2
	75	0	22.45	22.57	22.52		2
64QAM	1	0	22.56	22.43	22.68	0-2	2
	1	36	22.63	22.34	22.70		2
	1	74	22.50	22.51	22.55		2
	36	0	21.51	21.57	21.62	0-3	3
	36	18	21.53	21.62	21.63		3
	36	37	21.47	21.63	21.58		3
	75	0	21.51	21.62	21.49		3

Table 9-23
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	24.32	24.39	24.38	0	0
	1	25	24.47	24.57	24.46		0
	1	49	24.27	24.43	24.28		0
	25	0	23.43	23.52	23.57	0-1	1
	25	12	23.45	23.50	23.50		1
	25	25	23.44	23.53	23.49		1
	50	0	23.44	23.55	23.53		1
16QAM	1	0	23.47	23.67	23.43	0-1	1
	1	25	23.28	23.62	23.52		1
	1	49	23.33	23.65	23.32		1
	25	0	22.53	22.59	22.68	0-2	2
	25	12	22.52	22.58	22.67		2
	25	25	22.52	22.60	22.61		2
	50	0	22.48	22.63	22.63		2
64QAM	1	0	22.51	22.30	22.68	0-2	2
	1	25	22.52	22.49	22.60		2
	1	49	22.47	22.36	22.70		2
	25	0	21.55	21.62	21.65	0-3	3
	25	12	21.55	21.65	21.64		3
	25	25	21.54	21.62	21.58		3
	50	0	21.50	21.64	21.61		3

Table 9-24
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	24.30	24.36	24.18	0	0
	1	12	24.57	24.66	24.46		0
	1	24	24.27	24.40	24.16		0
	12	0	23.39	23.51	23.48	0-1	1
	12	6	23.51	23.50	23.47		1
	12	13	23.41	23.48	23.49		1
	25	0	23.40	23.46	23.45		1
16QAM	1	0	23.24	23.65	23.37	0-1	1
	1	12	23.50	23.67	23.66		1
	1	24	23.22	23.70	23.34		1
	12	0	22.43	22.52	22.54	0-2	2
	12	6	22.54	22.63	22.59		2
	12	13	22.46	22.58	22.53		2
	25	0	22.44	22.60	22.53		2
64QAM	1	0	22.68	22.56	22.51	0-2	2
	1	12	22.61	22.63	22.70		2
	1	24	22.66	22.59	22.53		2
	12	0	21.46	21.47	21.50	0-3	3
	12	6	21.55	21.50	21.55		3
	12	13	21.46	21.51	21.52		3
	25	0	21.44	21.52	21.49		3

Table 9-25
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	24.35	24.40	24.36	0	0
	1	7	24.47	24.55	24.49		0
	1	14	24.27	24.35	24.32		0
	8	0	23.46	23.47	23.47	0-1	1
	8	4	23.53	23.54	23.52		1
	8	7	23.47	23.50	23.47		1
	15	0	23.43	23.45	23.45		1
16QAM	1	0	23.41	23.53	23.38	0-1	1
	1	7	23.28	23.59	23.49		1
	1	14	23.32	23.70	23.28		1
	8	0	22.38	22.60	22.53	0-2	2
	8	4	22.44	22.61	22.58		2
	8	7	22.38	22.58	22.46		2
	15	0	22.37	22.52	22.56		2
64QAM	1	0	22.56	22.23	22.70	0-2	2
	1	7	22.68	22.54	22.59		2
	1	14	22.44	22.37	22.68		2
	8	0	21.43	21.56	21.53	0-3	3
	8	4	21.47	21.61	21.56		3
	8	7	21.41	21.56	21.50		3
	15	0	21.45	21.55	21.53		3

Table 9-26
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	24.28	24.33	24.44	0	0
	1	2	24.37	24.43	24.54		0
	1	5	24.25	24.35	24.42		0
	3	0	24.42	24.47	24.50		0
	3	2	24.50	24.54	24.54		0
	3	3	24.42	24.52	24.48		0
	6	0	23.53	23.48	23.47	0-1	1
16QAM	1	0	23.24	23.57	23.38	0-1	1
	1	2	23.38	23.70	23.39		1
	1	5	23.47	23.68	23.47		1
	3	0	23.52	23.65	23.63		1
	3	2	23.48	23.66	23.65		1
	3	3	23.50	23.62	23.64		1
	6	0	22.61	22.40	22.70	0-2	2
64QAM	1	0	22.46	22.54	22.61	0-2	2
	1	2	22.52	22.40	22.70		2
	1	5	22.47	22.51	22.63		2
	3	0	22.44	22.57	22.68		2
	3	2	22.47	22.58	22.67		2
	3	3	22.48	22.60	22.65		2
	6	0	21.57	21.37	21.45	0-3	3

Table 9-27
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	22.86	22.85	23.01	0	0
	1	50	22.63	23.06	**23.11**		0
	1	99	22.78	22.93	22.88		0
	50	0	22.96	22.99	23.03	0-1	0
	50	25	23.00	23.08	**23.09**		0
	50	50	22.94	22.62	23.01		0
	100	0	22.93	22.98	23.02		0
16QAM	1	0	23.07	23.11	23.20	0-1	0
	1	50	22.96	23.10	23.18		0
	1	99	23.09	23.20	23.10		0
	50	0	22.45	22.47	22.56	0-2	0.5
	50	25	22.49	22.58	22.60		0.5
	50	50	22.40	22.53	22.49		0.5
	100	0	22.41	22.47	22.50		0.5
64QAM	1	0	22.57	22.48	22.69	0-2	0.5
	1	50	22.68	22.70	22.60		0.5
	1	99	22.47	22.64	22.61		0.5
	50	0	21.45	21.48	21.57	0-3	1.5
	50	25	21.50	21.60	21.50		1.5
	50	50	21.39	21.51	21.49		1.5
	100	0	21.30	21.52	21.40		1.5

Table 9-28
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	22.97	22.87	22.87	0	0
	1	36	23.09	23.00	22.94		0
	1	74	22.89	22.84	22.78		0
	36	0	23.08	23.05	23.09	0-1	0
	36	18	23.08	23.12	23.09		0
	36	37	23.03	23.13	23.06		0
	75	0	23.04	23.09	23.05		0
16QAM	1	0	22.83	22.97	22.86	0-1	0
	1	36	22.92	23.05	22.98		0
	1	74	22.77	23.03	22.79		0
	36	0	22.48	22.56	22.59	0-2	0.5
	36	18	22.53	22.60	22.63		0.5
	36	37	22.47	22.64	22.55		0.5
	75	0	22.45	22.61	22.57		0.5
64QAM	1	0	22.56	22.41	22.64	0-2	0.5
	1	36	22.47	22.38	22.69		0.5
	1	74	22.60	22.27	22.55		0.5
	36	0	21.49	21.59	21.64	0-3	1.5
	36	18	21.56	21.65	21.65		1.5
	36	37	21.50	21.68	21.58		1.5
	75	0	21.53	21.63	21.53		1.5

Table 9-29
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	22.89	22.92	22.94	0	0
	1	25	23.00	23.10	23.04		0
	1	49	22.85	22.98	22.80		0
	25	0	22.96	23.04	23.09	0-1	0
	25	12	22.98	23.03	23.00		0
	25	25	22.96	23.01	23.00		0
	50	0	22.98	23.06	23.06		0
16QAM	1	0	22.87	22.96	22.90	0-1	0
	1	25	22.77	23.04	23.06		0
	1	49	22.64	23.07	22.85		0
	25	0	22.59	22.64	22.68	0-2	0.5
	25	12	22.55	22.65	22.65		0.5
	25	25	22.54	22.64	22.65		0.5
	50	0	22.53	22.62	22.57		0.5
64QAM	1	0	22.53	22.31	22.58	0-2	0.5
	1	25	22.65	22.48	22.55		0.5
	1	49	22.46	22.37	22.66		0.5
	25	0	21.55	21.63	21.67	0-3	1.5
	25	12	21.59	21.66	21.59		1.5
	25	25	21.53	21.65	21.62		1.5
	50	0	21.48	21.66	21.66		1.5

Table 9-30
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	22.82	22.89	22.70	0	0
	1	12	23.09	22.84	22.99		0
	1	24	22.80	22.94	22.67		0
	12	0	22.92	23.00	22.97	0-1	0
	12	6	23.03	23.05	23.04		0
	12	13	22.94	22.99	22.97		0
	25	0	22.95	23.01	22.99		0
16QAM	1	0	22.78	23.05	22.90	0-1	0
	1	12	23.02	23.07	23.17		0
	1	24	22.73	23.02	22.88		0
	12	0	22.49	22.60	22.56	0-2	0.5
	12	6	22.56	22.63	22.59		0.5
	12	13	22.46	22.56	22.55		0.5
	25	0	22.45	22.62	22.57		0.5
64QAM	1	0	22.68	22.60	22.56	0-2	0.5
	1	12	22.63	22.67	22.62		0.5
	1	24	22.67	22.56	22.51		0.5
	12	0	21.46	21.48	21.57	0-3	1.5
	12	6	21.58	21.53	21.59		1.5
	12	13	21.45	21.53	21.51		1.5
	25	0	21.47	21.58	21.52		1.5

Table 9-31
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	22.86	22.91	22.86	0	0
	1	7	23.02	23.08	23.02		0
	1	14	22.75	22.95	22.82		0
	8	0	22.98	22.97	23.02	0-1	0
	8	4	23.00	23.01	23.04		0
	8	7	22.97	23.00	22.99		0
	15	0	22.93	23.03	23.00		0
16QAM	1	0	22.71	22.96	22.92	0-1	0
	1	7	22.84	23.05	23.05		0
	1	14	22.96	22.97	22.81		0
	8	0	22.41	22.63	22.58	0-2	0.5
	8	4	22.49	22.67	22.56		0.5
	8	7	22.41	22.59	22.51		0.5
	15	0	22.40	22.55	22.57		0.5
64QAM	1	0	22.58	22.26	22.65	0-2	0.5
	1	7	22.64	22.46	22.58		0.5
	1	14	22.55	22.39	22.61		0.5
	8	0	21.56	21.58	21.54	0-3	1.5
	8	4	21.49	21.61	21.60		1.5
	8	7	21.41	21.59	21.51		1.5
	15	0	21.48	21.58	21.55		1.5

Table 9-32
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	22.81	22.88	23.03	0	0
	1	2	22.89	22.98	23.10		0
	1	5	22.81	22.88	23.04		0
	3	0	23.01	23.07	23.05		0
	3	2	23.05	23.11	23.10		0
	3	3	23.00	23.12	23.05		0
	6	0	23.02	23.00	22.99	0-1	0
16QAM	1	0	22.78	23.02	22.75	0-1	0
	1	2	22.99	22.96	22.84		0
	1	5	22.78	23.01	22.75		0
	3	0	23.05	23.08	23.09		0
	3	2	23.06	23.10	23.12		0
	3	3	23.08	23.07	23.18		0
	6	0	22.63	22.50	22.69	0-2	0.5
64QAM	1	0	22.45	22.46	22.65	0-2	0.5
	1	2	22.55	22.42	22.59		0.5
	1	5	22.52	22.54	22.65		0.5
	3	0	22.48	22.58	22.63		0.5
	3	2	22.52	22.64	22.69		0.5
	3	3	22.51	22.61	22.58		0.5
	6	0	21.58	21.62	21.49	0-3	1.5

9.4.6 LTE Band 25 (PCS)

Table 9-33
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	24.40	24.44	24.49	0	0
	1	50	24.59	24.62	**24.63**		0
	1	99	24.35	24.42	24.41		0
	50	0	23.60	23.63	**23.70**	0-1	1
	50	25	23.61	23.65	23.65		1
	50	50	23.56	23.66	23.61		1
	100	0	23.54	23.62	23.69		1
16QAM	1	0	23.65	23.65	23.65	0-1	1
	1	50	23.70	23.70	23.70		1
	1	99	23.53	23.60	23.61		1
	50	0	22.58	22.58	22.69	0-2	2
	50	25	22.56	22.63	22.65		2
	50	50	22.48	22.62	22.70		2
	100	0	22.49	22.60	22.69		2
64QAM	1	0	22.57	22.59	22.53	0-2	2
	1	50	22.68	22.70	22.70		2
	1	99	22.47	22.57	22.61		2
	50	0	21.57	21.65	21.70	0-3	3
	50	25	21.56	21.67	21.65		3
	50	50	21.55	21.66	21.68		3
	100	0	21.52	21.64	21.69		3

Table 9-34
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	24.47	24.21	24.32	0	0
	1	36	24.54	24.39	24.45		0
	1	74	24.35	24.29	24.26		0
	36	0	23.57	23.43	23.64	0-1	1
	36	18	23.57	23.48	23.63		1
	36	37	23.48	23.52	23.58		1
	75	0	23.55	23.48	23.62		1
16QAM	1	0	23.31	23.57	23.30	0-1	1
	1	36	23.38	23.69	23.51		1
	1	74	23.22	23.61	23.27		1
	36	0	22.48	22.41	22.63	0-2	2
	36	18	22.51	22.46	22.62		2
	36	37	22.39	22.48	22.57		2
	75	0	22.46	22.44	22.59		2
64QAM	1	0	22.68	22.46	22.61	0-2	2
	1	36	22.65	22.24	22.58		2
	1	74	22.64	22.54	22.61		2
	36	0	21.56	21.44	21.69	0-3	3
	36	18	21.55	21.52	21.68		3
	36	37	21.49	21.53	21.65		3
	75	0	21.60	21.48	21.58		3

Table 9-35
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	24.44	24.27	24.36	0	0
	1	25	24.56	24.53	24.54		0
	1	49	24.32	24.35	24.29		0
	25	0	23.50	23.37	23.48	0-1	1
	25	12	23.57	23.49	23.56		1
	25	25	23.48	23.47	23.44		1
	50	0	23.52	23.44	23.51		1
16QAM	1	0	23.29	23.64	23.40	0-1	1
	1	25	23.37	23.67	23.56		1
	1	49	23.51	23.68	23.46		1
	25	0	22.63	22.42	22.60	0-2	2
	25	12	22.64	22.46	22.66		2
	25	25	22.54	22.46	22.57		2
	50	0	22.51	22.43	22.51		2
64QAM	1	0	22.57	22.57	22.70	0-2	2
	1	25	22.65	22.39	22.69		2
	1	49	22.54	22.41	22.63		2
	25	0	21.70	21.50	21.58	0-3	3
	25	12	21.66	21.59	21.68		3
	25	25	21.63	21.58	21.53		3
	50	0	21.54	21.50	21.56		3

Table 9-36
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	24.42	24.36	24.26	0	0
	1	12	24.67	24.56	24.48		0
	1	24	24.41	24.34	24.22		0
	12	0	23.54	23.35	23.48	0-1	1
	12	6	23.58	23.43	23.53		1
	12	13	23.56	23.37	23.43		1
	25	0	23.52	23.36	23.48		1
16QAM	1	0	23.40	23.56	23.43	0-1	1
	1	12	23.64	23.66	23.65		1
	1	24	23.36	23.58	23.37		1
	12	0	22.57	22.45	22.56	0-2	2
	12	6	22.62	22.53	22.62		2
	12	13	22.57	22.47	22.47		2
	25	0	22.50	22.48	22.50		2
64QAM	1	0	22.48	22.44	22.58	0-2	2
	1	12	22.65	22.66	22.62		2
	1	24	22.64	22.44	22.51		2
	12	0	21.57	21.36	21.55	0-3	3
	12	6	21.65	21.46	21.58		3
	12	13	21.59	21.35	21.49		3
	25	0	21.56	21.41	21.53		3

Table 9-37
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	24.45	24.31	24.34	0	0
	1	7	24.57	24.49	24.53		0
	1	14	24.42	24.36	24.35		0
	8	0	23.56	23.37	23.48	0-1	1
	8	4	23.61	23.43	23.50		1
	8	7	23.55	23.40	23.44		1
	15	0	23.54	23.39	23.44		1
16QAM	1	0	23.31	23.68	23.34	0-1	1
	1	7	23.41	23.68	23.49		1
	1	14	23.33	23.65	23.44		1
	8	0	22.50	22.46	22.54	0-2	2
	8	4	22.55	22.53	22.57		2
	8	7	22.48	22.47	22.46		2
	15	0	22.48	22.36	22.54		2
64QAM	1	0	22.66	22.56	22.69	0-2	2
	1	7	22.65	22.32	22.58		2
	1	14	22.55	22.43	22.63		2
	8	0	21.57	21.44	21.57	0-3	3
	8	4	21.58	21.50	21.59		3
	8	7	21.51	21.49	21.52		3
	15	0	21.55	21.41	21.50		3

Table 9-38
LTE Band 25 (PCS) Maximum Conducted Powers - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 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	24.37	24.29	24.43	0	0
	1	2	24.52	24.39	24.56		0
	1	5	24.42	24.33	24.48		0
	3	0	24.57	24.40	24.52		0
	3	2	24.63	24.41	24.52		0
	3	3	24.58	24.38	24.51		0
	6	0	23.64	23.42	23.45	0-1	1
16QAM	1	0	23.47	23.65	23.54	0-1	1
	1	2	23.40	23.67	23.51		1
	1	5	23.54	23.65	23.43		1
	3	0	23.60	23.64	23.65		1
	3	2	23.67	23.69	23.65		1
	3	3	23.58	23.69	23.61		1
	6	0	22.64	22.32	22.67	0-2	2
64QAM	1	0	22.56	22.16	22.63	0-2	2
	1	2	22.63	22.30	22.67		2
	1	5	22.62	22.57	22.65		2
	3	0	22.53	22.46	22.68		2
	3	2	22.54	22.47	22.66		2
	3	3	22.58	22.48	22.56		2
	6	0	21.41	21.62	21.50	0-3	3

Table 9-39
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	22.86	22.88	22.82	0	0
	1	50	22.93	**23.02**	23.01		0
	1	99	22.73	22.83	22.81		0
	50	0	22.99	23.00	**23.16**	0-1	0
	50	25	23.00	23.06	23.05		0
	50	50	22.87	23.05	23.04		0
	100	0	22.92	23.01	23.00		0
16QAM	1	0	22.80	23.11	23.10	0-1	0
	1	50	22.75	23.20	23.20		0
	1	99	22.70	23.07	23.08		0
	50	0	22.44	22.45	22.66	0-2	0.5
	50	25	22.43	22.52	22.55		0.5
	50	50	22.34	22.49	22.54		0.5
	100	0	22.40	22.48	22.55		0.5
64QAM	1	0	22.44	22.41	22.15	0-2	0.5
	1	50	22.40	22.66	22.68		0.5
	1	99	22.38	22.42	22.53		0.5
	50	0	21.44	21.48	21.70	0-3	1.5
	50	25	21.40	21.54	21.56		1.5
	50	50	21.31	21.56	21.50		1.5
	100	0	21.32	21.52	21.49		1.5

Table 9-40
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	22.96	22.67	22.82	0	0
	1	36	23.03	22.85	22.96		0
	1	74	22.90	22.75	22.76		0
	36	0	23.05	22.87	23.11	0-1	0
	36	18	23.05	22.95	23.07		0
	36	37	22.96	22.98	23.04		0
	75	0	23.04	22.93	23.07		0
16QAM	1	0	22.85	23.07	22.80	0-1	0
	1	36	22.91	23.01	22.99		0
	1	74	22.73	23.10	22.78		0
	36	0	22.47	22.41	22.62	0-2	0.5
	36	18	22.52	22.44	22.61		0.5
	36	37	22.41	22.46	22.54		0.5
	75	0	22.49	22.40	22.58		0.5
64QAM	1	0	22.60	22.40	22.61	0-2	0.5
	1	36	22.40	22.24	22.58		0.5
	1	74	22.50	22.61	22.57		0.5
	36	0	21.54	21.44	21.65	0-3	1.5
	36	18	21.57	21.50	21.67		1.5
	36	37	21.47	21.51	21.63		1.5
	75	0	21.57	21.44	21.62		1.5

Table 9-41
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	22.89	22.77	22.80	0	0
	1	25	23.07	22.99	23.00		0
	1	49	22.83	22.78	22.77		0
	25	0	23.00	22.91	22.98	0-1	0
	25	12	22.99	22.91	23.02		0
	25	25	22.95	22.91	22.95		0
	50	0	22.96	22.89	23.03		0
16QAM	1	0	22.70	23.11	22.90	0-1	0
	1	25	22.87	22.74	23.06		0
	1	49	22.79	23.12	22.78		0
	25	0	22.60	22.44	22.59	0-2	0.5
	25	12	22.59	22.46	22.64		0.5
	25	25	22.54	22.42	22.60		0.5
	50	0	22.53	22.40	22.47		0.5
64QAM	1	0	22.55	22.44	22.66	0-2	0.5
	1	25	22.67	22.42	22.57		0.5
	1	49	22.46	22.51	22.63		0.5
	25	0	21.60	21.49	21.53	0-3	1.5
	25	12	21.65	21.52	21.64		1.5
	25	25	21.58	21.53	21.59		1.5
	50	0	21.47	21.42	21.58		1.5

Table 9-42
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	22.88	22.76	22.71	0	0
	1	12	23.13	23.08	23.00		0
	1	24	22.84	22.77	22.69		0
	12	0	23.01	22.82	22.95	0-1	0
	12	6	23.04	22.89	23.00		0
	12	13	23.00	22.87	22.91		0
	25	0	22.95	22.82	22.96		0
16QAM	1	0	22.87	22.97	22.85	0-1	0
	1	12	23.09	23.00	23.09		0
	1	24	22.84	23.02	22.87		0
	12	0	22.55	22.38	22.49	0-2	0.5
	12	6	22.56	22.45	22.54		0.5
	12	13	22.49	22.44	22.47		0.5
	25	0	22.43	22.43	22.46		0.5
64QAM	1	0	22.69	22.44	22.53	0-2	0.5
	1	12	22.58	22.66	22.68		0.5
	1	24	22.70	22.41	22.56		0.5
	12	0	21.57	21.30	21.51	0-3	1.5
	12	6	21.57	21.41	21.60		1.5
	12	13	21.52	21.34	21.50		1.5
	25	0	21.54	21.39	21.51		1.5

Table 9-43
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	22.93	22.78	22.87	0	0
	1	7	23.06	22.93	22.99		0
	1	14	22.89	22.78	22.76		0
	8	0	23.03	22.82	22.92	0-1	0
	8	4	23.07	22.88	22.94		0
	8	7	22.99	22.81	22.89		0
	15	0	23.01	22.82	22.88		0
16QAM	1	0	22.77	23.15	22.87	0-1	0
	1	7	22.87	23.05	23.00		0
	1	14	22.94	23.14	22.83		0
	8	0	22.46	22.46	22.53	0-2	0.5
	8	4	22.52	22.48	22.52		0.5
	8	7	22.44	22.43	22.45		0.5
	15	0	22.43	22.33	22.49		0.5
64QAM	1	0	22.63	22.50	22.67	0-2	0.5
	1	7	22.62	22.28	22.55		0.5
	1	14	22.51	22.59	22.68		0.5
	8	0	21.53	21.40	21.57	0-3	1.5
	8	4	21.56	21.49	21.49		1.5
	8	7	21.49	21.43	21.47		1.5
	15	0	21.54	21.40	21.54		1.5

Table 9-44
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	22.84	22.72	22.93	0	0
	1	2	22.96	22.82	23.03		0
	1	5	22.88	22.77	22.95		0
	3	0	23.03	22.87	23.03		0
	3	2	23.07	22.91	22.96		0
	3	3	23.05	22.90	22.97		0
	6	0	23.09	22.87	22.96	0-1	0
16QAM	1	0	22.91	23.12	22.68	0-1	0
	1	2	22.74	23.04	22.79		0
	1	5	22.71	23.12	22.72		0
	3	0	23.06	23.08	23.13		0
	3	2	23.10	23.12	23.12		0
	3	3	23.09	23.15	23.10		0
	6	0	22.68	22.30	22.64	0-2	0.5
64QAM	1	0	22.54	22.30	22.59	0-2	0.5
	1	2	22.60	22.24	22.63		0.5
	1	5	22.57	22.29	22.63		0.5
	3	0	22.52	22.37	22.69		0.5
	3	2	22.58	22.43	22.65		0.5
	3	3	22.65	22.43	22.66		0.5
	6	0	21.65	21.67	21.50	0-3	1.5

9.4.7 LTE Band 41

Table 9-45
LTE Band 41 PC3 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.97	24.77	24.90	24.86	24.75	0	0
	1	50	**25.11**	25.04	25.09	25.01	24.96		0
	1	99	24.88	24.89	24.79	24.69	24.67		0
	50	0	**24.10**	24.02	24.08	24.07	23.90	0-1	1
	50	25	24.07	24.05	23.99	24.03	23.89		1
	50	50	24.05	23.98	24.00	23.96	23.85		1
	100	0	23.93	23.99	23.95	23.95	23.80		1
16QAM	1	0	24.04	23.98	24.02	24.03	23.82	0-1	1
	1	50	24.18	24.16	24.19	24.00	24.07		1
	1	99	24.17	23.90	23.92	23.88	23.80		1
	50	0	23.17	23.09	23.13	23.07	22.99	0-2	2
	50	25	23.05	23.16	23.16	23.12	22.97		2
	50	50	23.04	23.06	23.05	23.06	22.92		2
	100	0	23.09	23.07	23.06	22.97	22.88		2
64QAM	1	0	22.59	22.50	22.90	22.63	22.51	0-2	2
	1	50	22.77	22.73	22.81	22.75	22.65		2
	1	99	22.52	22.53	22.53	22.80	22.60		2
	50	0	22.14	22.15	22.12	22.15	21.96	0-3	3
	50	25	22.14	22.17	22.11	22.14	21.90		3
	50	50	22.13	22.14	22.05	22.20	21.93		3
	100	0	22.05	22.16	22.00	22.20	21.90		3

Table 9-46
LTE Band 41 PC3 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.79	24.92	24.85	24.94	24.79	0	0
	1	36	24.99	25.03	24.98	24.98	24.98		0
	1	74	24.78	24.85	24.83	24.89	24.80		0
	36	0	23.94	23.94	23.92	23.95	23.92	0-1	1
	36	18	23.99	23.90	23.99	23.96	23.98		1
	36	37	23.99	23.95	23.92	23.89	23.94		1
	75	0	23.96	23.98	23.89	23.92	23.94		1
16QAM	1	0	23.95	24.10	23.91	23.95	23.90	0-1	1
	1	36	23.90	24.09	23.95	24.02	23.89		1
	1	74	23.82	23.98	23.82	23.89	23.81		1
	36	0	22.99	22.92	22.98	22.92	22.98	0-2	2
	36	18	23.02	22.98	23.02	22.94	23.01		2
	36	37	22.98	22.89	22.99	22.93	22.99		2
	75	0	22.91	22.95	22.91	22.94	22.90		2
64QAM	1	0	22.76	22.35	22.74	22.74	22.85	0-2	2
	1	36	22.96	22.53	22.95	22.93	22.98		2
	1	74	22.76	22.33	22.75	22.71	22.79		2
	36	0	22.12	22.10	22.11	22.13	22.09	0-3	3
	36	18	22.14	22.09	22.10	22.11	22.17		3
	36	37	22.15	22.06	22.10	22.11	22.10		3
	75	0	22.13	22.14	22.11	22.12	22.13		3

Table 9-47
LTE Band 41 PC3 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.84	24.77	24.90	24.76	24.82	0	0
	1	25	24.87	24.95	24.98	24.92	24.92		0
	1	49	24.79	24.78	24.86	24.73	24.84		0
	25	0	23.73	23.80	23.88	23.93	23.86	0-1	1
	25	12	23.79	23.82	23.93	23.95	23.85		1
	25	25	23.76	23.82	23.93	23.89	23.85		1
	50	0	23.78	23.80	23.77	23.81	23.78		1
16QAM	1	0	23.98	23.53	24.02	23.73	23.98	0-1	1
	1	25	24.15	23.52	24.01	23.84	24.12		1
	1	49	23.95	23.53	24.02	23.73	23.96		1
	25	0	22.86	22.79	23.02	22.85	22.89	0-2	2
	25	12	22.88	22.74	22.97	22.93	22.88		2
	25	25	22.86	22.74	23.00	22.92	22.85		2
	50	0	22.83	22.82	22.84	22.81	22.82		2
64QAM	1	0	22.36	22.24	22.33	22.73	22.27	0-2	2
	1	25	22.43	22.43	22.60	22.94	22.48		2
	1	49	22.29	22.36	22.35	22.68	22.25		2
	25	0	22.16	22.18	22.19	22.08	22.19	0-3	3
	25	12	22.14	22.12	22.10	22.06	22.17		3
	25	25	22.15	22.17	22.09	22.07	22.20		3
	50	0	22.19	22.08	22.10	22.06	22.16		3

Table 9-48
LTE Band 41 PC3 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.93	24.89	25.03	24.87	24.92	0	0
	1	12	24.56	24.95	25.01	24.98	25.04		0
	1	24	24.94	25.00	25.08	24.92	24.93		0
	12	0	23.91	23.97	24.09	24.05	23.98	0-1	1
	12	6	23.99	24.04	24.12	24.13	23.97		1
	12	13	23.94	24.01	24.08	24.02	23.92		1
	25	0	23.95	24.01	24.06	24.03	23.97		1
16QAM	1	0	24.10	23.83	24.14	23.58	24.01	0-1	1
	1	12	24.06	24.08	23.96	23.69	24.08		1
	1	24	24.05	23.89	24.12	23.79	24.04		1
	12	0	22.94	22.99	23.06	23.01	22.95	0-2	2
	12	6	22.97	23.02	23.07	23.08	23.02		2
	12	13	22.91	22.97	23.04	23.01	22.95		2
	25	0	22.98	23.04	23.13	23.09	23.02		2
64QAM	1	0	23.05	22.84	22.79	22.85	22.80	0-2	2
	1	12	22.91	22.76	22.92	22.88	22.96		2
	1	24	23.13	22.56	22.64	22.81	23.16		2
	12	0	22.00	22.12	22.03	21.78	21.95	0-3	3
	12	6	22.05	22.09	22.08	21.86	22.00		3
	12	13	22.03	22.08	22.06	21.74	21.95		3
	25	0	21.89	22.02	21.89	21.92	21.86		3

Table 9-49
LTE Band 41 PC2 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.55	26.62	26.62	26.69	26.62	0	0
	1	50	26.74	26.72	**27.03**	26.82	26.79		0
	1	99	26.53	26.50	26.53	26.46	26.84		0
	50	0	25.72	25.50	25.70	25.77	25.72	0-1	1
	50	25	25.69	25.67	25.71	**25.79**	25.67		1
	50	50	25.67	25.58	25.68	25.64	25.63		1
	100	0	25.70	25.70	25.64	25.63	25.73		1
16QAM	1	0	25.81	25.74	25.83	25.60	25.60	0-1	1
	1	50	25.91	25.95	26.08	25.89	25.50		1
	1	99	25.72	25.73	25.77	25.66	25.54		1
	50	0	24.76	24.74	24.91	25.05	25.00	0-2	2
	50	25	24.78	24.87	24.81	24.90	25.09		2
	50	50	24.73	24.80	24.78	24.98	25.00		2
	100	0	24.70	24.79	24.79	24.85	24.95		2
64QAM	1	0	24.62	24.58	24.65	24.72	25.07	0-2	2
	1	50	24.72	24.81	24.83	24.74	25.15		2
	1	99	24.70	24.85	24.57	24.70	24.69		2
	50	0	23.76	23.83	23.81	23.92	23.58	0-3	3
	50	25	23.81	23.80	23.80	23.84	23.50		3
	50	50	23.75	23.74	23.74	23.87	23.59		3
	100	0	23.70	23.79	23.70	23.95	23.50		3

Table 9-50
LTE Band 41 PC2 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.58	26.50	26.54	26.58	26.54	0	0
	1	36	26.74	26.63	26.72	26.68	26.72		0
	1	74	26.59	26.48	26.52	26.49	26.55		0
	36	0	25.66	25.66	25.65	25.67	25.65	0-1	1
	36	18	25.67	25.69	25.70	25.70	25.69		1
	36	37	25.66	25.63	25.67	25.66	25.65		1
	75	0	25.66	25.66	25.65	25.67	25.64		1
16QAM	1	0	25.89	25.77	25.90	26.04	25.91	0-1	1
	1	36	26.08	25.99	26.08	26.16	26.07		1
	1	74	25.96	25.76	25.90	25.98	25.91		1
	36	0	24.69	24.63	24.73	24.62	24.69	0-2	2
	36	18	24.73	24.63	24.76	24.67	24.74		2
	36	37	24.74	24.62	24.73	24.62	24.71		2
	75	0	24.60	24.66	24.60	24.65	24.60		2
64QAM	1	0	24.90	24.78	24.79	24.89	24.71	0-2	2
	1	36	24.67	24.75	24.68	24.70	24.80		2
	1	74	24.65	24.93	24.64	24.63	24.76		2
	36	0	23.61	23.59	23.62	23.65	23.60	0-3	3
	36	18	23.65	23.61	23.66	23.63	23.64		3
	36	37	23.71	23.56	23.60	23.61	23.62		3
	75	0	23.75	23.61	23.62	23.65	23.61		3

Table 9-51
LTE Band 41 PC2 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.63	26.61	26.64	26.66	26.60	0	0
	1	25	26.69	26.68	26.73	26.72	26.70		0
	1	49	26.58	26.60	26.60	26.63	26.57		0
	25	0	25.69	25.60	25.75	25.61	25.77	0-1	1
	25	12	25.70	25.52	25.80	25.59	25.67		1
	25	25	25.71	25.51	25.54	25.57	25.70		1
	50	0	25.78	25.53	25.68	25.54	25.62		1
16QAM	1	0	25.83	25.70	25.63	25.74	25.60	0-1	1
	1	25	25.71	25.81	25.67	25.64	25.55		1
	1	49	25.61	25.70	25.67	25.59	25.67		1
	25	0	24.58	24.80	24.66	24.59	24.58	0-2	2
	25	12	24.59	24.75	24.67	24.60	24.60		2
	25	25	24.60	24.68	24.62	24.66	24.59		2
	50	0	24.66	24.65	24.58	24.56	24.63		2
64QAM	1	0	24.74	24.90	24.79	24.85	24.72	0-2	2
	1	25	24.93	25.09	25.04	25.01	24.95		2
	1	49	24.85	24.94	24.74	25.06	24.71		2
	25	0	23.59	23.55	23.63	23.54	23.56	0-3	3
	25	12	23.59	23.55	23.62	23.49	23.58		3
	25	25	23.60	23.54	23.58	23.58	23.55		3
	50	0	23.64	23.60	23.66	23.66	23.69		3

Table 9-52
LTE Band 41 PC2 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.55	26.70	26.60	26.59	26.54	0	0
	1	12	26.86	26.79	26.93	26.95	26.83		0
	1	24	26.56	26.57	26.61	26.55	26.53		0
	12	0	25.67	25.68	25.76	25.72	25.68	0-1	1
	12	6	25.76	25.74	25.81	25.79	25.74		1
	12	13	25.67	25.67	25.74	25.70	25.67		1
	25	0	25.69	25.71	25.76	25.72	25.73		1
16QAM	1	0	25.80	25.74	26.19	25.64	26.10	0-1	1
	1	12	25.67	25.97	25.78	25.98	25.81		1
	1	24	25.74	25.72	26.18	25.64	25.78		1
	12	0	24.49	24.47	24.62	24.51	24.68	0-2	2
	12	6	24.56	24.56	24.67	24.58	24.56		2
	12	13	24.48	24.71	24.57	24.72	24.58		2
	25	0	24.50	24.66	24.58	24.58	24.51		2
64QAM	1	0	24.65	24.64	24.70	24.80	24.78	0-2	2
	1	12	24.67	24.82	24.78	24.83	24.83		2
	1	24	24.72	24.66	24.69	24.91	24.81		2
	12	0	23.57	23.58	23.57	23.30	23.66	0-3	3
	12	6	23.58	23.63	23.62	23.69	23.57		3
	12	13	23.51	23.57	23.66	23.67	23.51		3
	25	0	23.65	23.61	23.64	23.63	23.67		3

Table 9-53
LTE Band 41 PC3 Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.37	23.50	23.50	23.40	23.22	0	0
	1	50	23.56	23.59	**23.60**	23.57	23.49		0
	1	99	23.42	23.46	23.55	23.36	23.30		0
	50	0	23.55	23.55	23.58	23.57	23.44	0-1	0
	50	25	23.57	23.54	23.58	23.55	23.49		0
	50	50	23.56	23.55	**23.59**	23.45	23.40		0
	100	0	23.55	23.51	23.58	23.47	23.42		0
16QAM	1	0	23.39	23.54	23.40	23.42	23.30	0-1	0
	1	50	23.58	23.60	23.60	23.59	23.49		0
	1	99	23.45	23.56	23.45	23.36	23.31		0
	50	0	22.56	22.59	22.65	22.63	22.49	0-2	0.5
	50	25	22.61	22.62	22.70	22.63	22.51		0.5
	50	50	22.54	22.53	22.59	22.54	22.48		0.5
	100	0	22.55	22.59	22.63	22.56	22.48		0.5
64QAM	1	0	22.32	22.20	22.33	22.31	22.18	0-2	0.5
	1	50	22.65	22.48	22.66	22.61	22.51		0.5
	1	99	22.32	22.33	22.38	22.23	22.25		0.5
	50	0	21.60	21.53	21.61	21.58	21.52	0-3	1.5
	50	25	21.67	21.58	21.70	21.61	21.57		1.5
	50	50	21.65	21.50	21.59	21.58	21.52		1.5
	100	0	21.60	21.60	21.63	21.55	21.50		1.5

Table 9-54
LTE Band 41 PC3 Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.40	23.35	23.20	23.24	23.30	0	0
	1	36	23.40	23.30	23.32	23.23	23.39		0
	1	74	23.27	23.12	23.10	23.37	23.26		0
	36	0	23.29	23.34	23.30	23.31	23.34	0-1	0
	36	18	23.32	23.39	23.39	23.36	23.36		0
	36	37	23.36	23.37	23.40	23.35	23.35		0
	75	0	23.35	23.40	23.28	23.32	23.36		0
16QAM	1	0	23.14	23.45	23.21	23.37	23.06	0-1	0
	1	36	23.22	23.50	23.33	23.37	23.22		0
	1	74	23.18	23.52	23.41	23.29	23.35		0
	36	0	22.73	22.79	22.68	22.75	22.80	0-2	0.5
	36	18	22.75	22.80	22.74	22.72	22.75		0.5
	36	37	22.74	22.76	22.68	22.72	22.71		0.5
	75	0	22.71	22.74	22.70	22.72	22.73		0.5
64QAM	1	0	22.50	22.64	22.64	22.41	22.55	0-2	0.5
	1	36	22.60	22.59	22.63	22.64	22.73		0.5
	1	74	22.57	22.67	22.64	22.74	22.69		0.5
	36	0	21.67	21.55	21.73	21.72	21.76	0-3	1.5
	36	18	21.66	21.68	21.68	21.69	21.70		1.5
	36	37	21.69	21.70	21.66	21.73	21.73		1.5
	75	0	21.70	21.73	21.65	21.70	21.71		1.5

Table 9-55
LTE Band 41 PC3 Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.39	23.42	23.31	23.32	23.33	0	0
	1	25	23.51	23.47	23.36	23.37	23.51		0
	1	49	23.40	23.39	23.32	23.35	23.34		0
	25	0	23.41	23.35	23.41	23.54	23.36	0-1	0
	25	12	23.42	23.38	23.49	23.48	23.36		0
	25	25	23.43	23.39	23.46	23.53	23.41		0
	50	0	23.36	23.37	23.44	23.40	23.39		0
16QAM	1	0	23.25	23.53	23.50	23.38	23.18	0-1	0
	1	25	23.26	23.60	23.32	23.42	23.28		0
	1	49	23.22	23.57	23.38	23.42	23.34		0
	25	0	23.00	23.15	23.09	23.16	23.00	0-2	0.5
	25	12	22.98	23.11	23.08	23.07	23.01		0.5
	25	25	22.96	23.10	23.03	23.09	22.94		0.5
	50	0	23.03	23.04	22.99	22.99	22.95		0.5
64QAM	1	0	22.49	22.49	22.88	22.86	22.49	0-2	0.5
	1	25	22.87	22.68	22.95	23.15	22.68		0.5
	1	49	22.49	22.52	22.91	22.82	22.49		0.5
	25	0	21.75	21.78	21.70	21.54	21.70	0-3	1.5
	25	12	21.68	21.77	21.65	21.71	21.68		1.5
	25	25	21.64	21.75	21.55	21.60	21.70		1.5
	50	0	21.68	21.65	21.62	21.65	21.65		1.5

Table 9-56
LTE Band 41 PC3 Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.43	23.44	23.40	23.30	23.32	0	0
	1	12	23.50	23.19	23.44	23.45	23.50		0
	1	24	23.40	23.50	23.35	23.25	23.34		0
	12	0	23.47	23.49	23.47	23.40	23.37	0-1	0
	12	6	23.46	23.44	23.49	23.45	23.38		0
	12	13	23.49	23.47	23.46	23.38	23.40		0
	25	0	23.43	23.49	23.48	23.40	23.38		0
16QAM	1	0	23.33	23.50	23.12	23.13	23.31	0-1	0
	1	12	23.48	23.44	23.19	23.15	23.40		0
	1	24	23.35	23.48	23.00	23.05	23.25		0
	12	0	22.70	22.79	23.07	22.66	22.66	0-2	0.5
	12	6	22.72	22.88	22.90	22.71	22.69		0.5
	12	13	22.72	22.77	22.90	22.66	22.66		0.5
	25	0	22.75	22.85	22.92	22.71	22.71		0.5
64QAM	1	0	22.76	22.94	22.70	22.58	22.61	0-2	0.5
	1	12	22.61	23.05	23.12	23.15	22.59		0.5
	1	24	22.76	22.86	22.78	22.62	22.55		0.5
	12	0	21.73	21.75	21.55	21.41	21.71	0-3	1.5
	12	6	21.80	21.73	21.57	21.46	21.78		1.5
	12	13	21.75	21.67	21.56	21.46	21.72		1.5
	25	0	21.68	21.58	21.65	21.50	21.60		1.5

Table 9-57
LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.42	25.31	25.46	25.41	25.38	0	0
	1	50	25.47	25.55	25.57	25.54	**25.61**		0
	1	99	25.35	25.31	25.38	25.36	25.35		0
	50	0	25.31	25.42	25.46	25.49	**25.55**	0-1	0
	50	25	25.36	25.43	25.50	25.46	25.49		0
	50	50	25.31	25.38	25.45	25.44	25.48		0
	100	0	25.20	25.37	25.48	25.49	25.54		0
16QAM	1	0	25.48	25.58	25.53	25.65	25.57	0-1	0
	1	50	25.36	25.67	25.69	25.68	25.61		0
	1	99	25.27	25.51	25.50	25.47	25.51		0
	50	0	24.38	24.55	24.55	24.50	24.55	0-2	0.5
	50	25	24.41	24.59	24.48	24.62	24.64		0.5
	50	50	24.47	24.52	24.51	24.53	24.53		0.5
	100	0	24.30	24.56	24.54	24.50	24.50		0.5
64QAM	1	0	24.57	24.38	24.85	24.85	24.80	0-2	0.5
	1	50	24.90	24.61	24.96	24.80	25.00		0.5
	1	99	24.67	24.29	24.77	24.79	24.98		0.5
	50	0	23.41	23.57	23.63	23.59	23.50	0-3	1.5
	50	25	23.43	23.58	23.57	23.58	23.60		1.5
	50	50	23.43	23.50	23.58	23.55	23.54		1.5
	100	0	23.40	23.51	23.50	23.50	23.48		1.5

Table 9-58
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.34	25.35	25.41	25.46	25.33	0	0
	1	36	25.59	25.62	25.61	25.60	25.52		0
	1	74	25.39	25.37	25.40	25.39	25.36		0
	36	0	25.51	25.47	25.53	25.48	25.46	0-1	0
	36	18	25.54	25.53	25.55	25.52	25.51		0
	36	37	25.51	25.51	25.52	25.49	25.48		0
	75	0	25.52	25.49	25.49	25.48	25.47		0
16QAM	1	0	25.58	25.57	25.62	25.57	25.57	0-1	0
	1	36	25.68	25.69	25.63	25.60	25.59		0
	1	74	25.63	25.58	25.61	25.64	25.60		0
	36	0	24.61	24.68	24.68	24.67	24.61	0-2	0.5
	36	18	24.65	24.60	24.70	24.45	24.67		0.5
	36	37	24.68	24.68	24.67	24.57	24.65		0.5
	75	0	24.66	24.67	24.66	24.63	24.65		0.5
64QAM	1	0	24.57	24.97	24.52	24.80	24.99	0-2	0.5
	1	36	24.89	24.72	24.77	24.68	24.68		0.5
	1	74	24.56	24.69	24.70	24.75	24.71		0.5
	36	0	23.67	23.67	23.63	23.64	23.60	0-3	1.5
	36	18	23.50	23.52	23.65	23.65	23.66		1.5
	36	37	23.69	23.67	23.62	23.63	23.60		1.5
	75	0	23.62	23.64	23.63	23.64	23.61		1.5

Table 9-59
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.52	25.51	25.55	25.55	25.50	0	0
	1	25	25.62	25.59	25.66	25.61	25.59		0
	1	49	25.56	25.53	25.52	25.52	25.49		0
	25	0	25.55	25.56	25.61	25.60	25.53	0-1	0
	25	12	25.57	25.62	25.64	25.55	25.53		0
	25	25	25.52	25.58	25.60	25.56	25.51		0
	50	0	25.54	25.55	25.58	25.55	25.50		0
16QAM	1	0	25.68	25.62	25.55	25.60	25.48	0-1	0
	1	25	25.58	25.69	25.62	25.48	25.56		0
	1	49	25.50	25.54	25.66	25.38	25.54		0
	25	0	24.67	24.56	24.65	24.57	24.58	0-2	0.5
	25	12	24.68	24.61	24.70	24.53	24.58		0.5
	25	25	24.74	24.53	24.68	24.54	24.58		0.5
	50	0	24.61	24.58	24.60	24.56	24.69		0.5
64QAM	1	0	24.68	24.67	24.73	25.07	24.73	0-2	0.5
	1	25	24.60	24.63	24.93	25.11	24.69		0.5
	1	49	24.91	24.66	24.59	24.57	24.60		0.5
	25	0	23.65	23.63	23.72	23.53	23.57	0-3	1.5
	25	12	23.67	23.61	23.65	23.46	23.58		1.5
	25	25	23.64	23.62	23.63	23.57	23.58		1.5
	50	0	23.53	23.56	23.54	23.51	23.48		1.5

Table 9-60
LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.57	25.57	25.63	25.55	25.57	0	0
	1	12	25.59	25.60	25.70	25.67	25.63		0
	1	24	25.56	25.56	25.64	25.50	25.57		0
	12	0	25.67	25.67	25.63	25.67	25.62	0-1	0
	12	6	25.65	25.63	25.69	25.67	25.69		0
	12	13	25.69	25.66	25.56	25.64	25.62		0
	25	0	25.62	25.68	25.68	25.68	25.66		0
16QAM	1	0	25.60	25.69	25.55	25.68	25.63	0-1	0
	1	12	25.49	25.64	25.65	25.53	25.54		0
	1	24	25.64	25.66	25.63	25.57	25.51		0
	12	0	24.62	24.56	24.47	24.63	24.62	0-2	0.5
	12	6	24.59	24.49	24.80	24.70	24.68		0.5
	12	13	24.68	24.65	24.59	24.60	24.62		0.5
	25	0	24.68	24.68	24.69	24.68	24.64		0.5
64QAM	1	0	24.67	24.70	24.80	24.94	24.76	0-2	0.5
	1	12	24.68	24.87	24.78	24.56	24.75		0.5
	1	24	24.72	24.80	24.70	24.86	24.66		0.5
	12	0	23.71	23.78	23.75	23.69	23.65	0-3	1.5
	12	6	23.55	23.85	23.83	23.52	23.73		1.5
	12	13	23.63	23.77	23.76	23.57	23.65		1.5
	25	0	23.64	23.71	23.65	23.58	23.57		1.5

9.4.8 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-61
LTE B41 Uplink Carrier Aggregation Maximum 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	LTE B41 PC3	20	39750	2506.0	QPSK	1	99	LTE B41 PC3	20	39948	2525.8	QPSK	1	0	24.90	24.88
	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	39750	2506.0	QPSK	1	99	LTE B41 PC2	20	39948	2525.8	QPSK	1	0	26.63	26.53

Table 9-62
LTE B41 Uplink Carrier Aggregation Reduced 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	LTE B41 PC3	20	40620	2593.0	QPSK	50	50	LTE B41 PC3	20	40818	2612.8	QPSK	50	0	23.52	23.59
CA_41C	LTE B41 PC3	20	41055	2636.5	QPSK	50	0	LTE B41 PC3	20	40857	2616.7	QPSK	50	50	23.48	23.57
	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40620	2593.0	QPSK	50	50	LTE B41 PC2	20	40818	2612.8	QPSK	50	0	25.38	25.45
CA_41C	LTE B41 PC2	20	41055	2636.5	QPSK	50	0	LTE B41 PC2	20	40857	2616.7	QPSK	50	50	25.36	25.49

Notes:

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

Figure 9-4
Power Measurement Setup

9.5 WLAN Conducted Powers

Table 9-63
2.4 GHz WLAN Maximum Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	20.87	17.45	16.34
2417	2		19.09	17.98
2437	6	21.30	19.34	18.26
2457	10		18.96	17.88
2462	11	20.91	17.34	16.27

Table 9-64
5 GHz WLAN Maximum Average RF Power

Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	18.65	17.64	17.72
5200	40	17.99	16.86	17.06
5220	44	18.15	17.11	17.62
5240	48	18.27	17.25	17.72
5260	52	18.39	17.32	17.85
5280	56	18.54	17.49	17.90
5300	60	18.50	17.50	17.93
5320	64	18.56	17.52	18.06
5500	100	18.75	17.58	18.46
5600	120	18.42	17.35	17.96
5620	124	18.14	17.12	17.85
5720	144	18.27	17.31	17.80
5745	149	18.39	17.46	18.29
5785	157	17.79	16.91	17.88
5825	165	18.12	17.07	17.78

Table 9-65
2.4 GHz WLAN Reduced Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	17.57	17.45	16.34
2417	2		17.70	17.58
2437	6	17.78	17.97	17.93
2457	10		17.78	17.63
2462	11	17.66	17.34	16.27

Table 9-66
5 GHz WLAN Reduced Average RF Power

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	15.14	15.29
5230	46	15.47	15.51
5270	54	15.23	15.24
5310	62	15.40	15.30
5510	102	15.97	15.95
5590	118	15.83	15.86
5630	126	15.46	15.57
5710	142	15.82	15.84
5755	151	15.49	15.54
5795	159	15.84	15.89

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

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

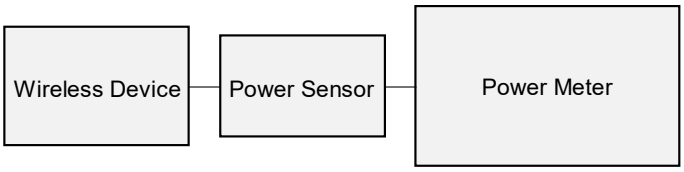


Figure 9-5
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-67
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	7.03	5.049
2441	1.0	39	8.22	6.637
2480	1.0	78	8.45	6.998
2402	2.0	0	6.86	4.850
2441	2.0	39	7.27	5.328
2480	2.0	78	7.52	5.649
2402	3.0	0	6.92	4.920
2441	3.0	39	7.32	5.395
2480	3.0	78	7.55	5.689

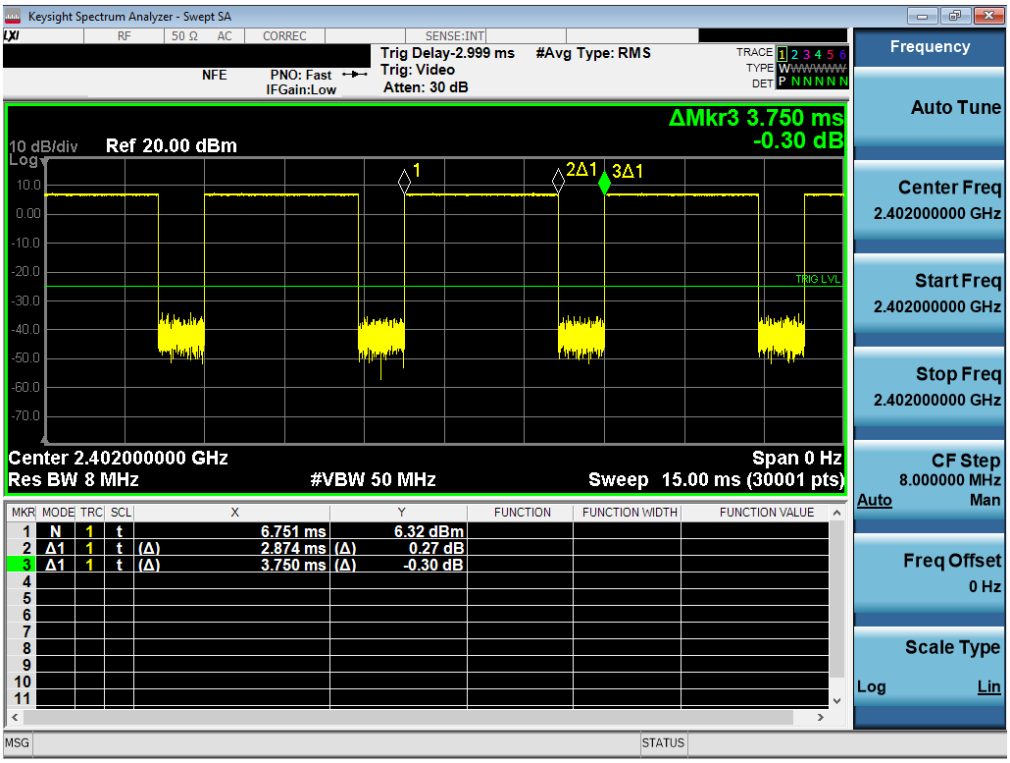


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.874\ ms}{3.750\ ms} * 100\% = 76.6\%$$

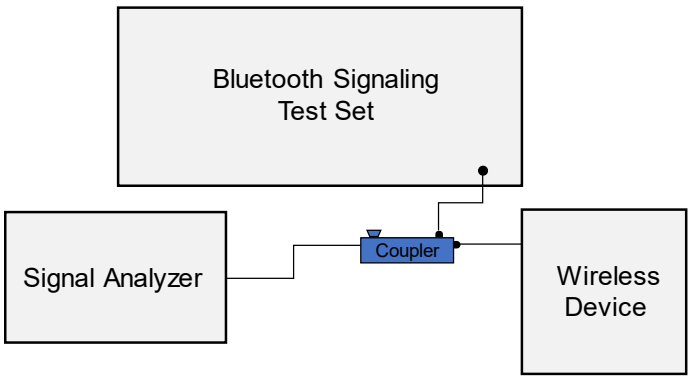


Figure 9-7
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
2/26/2020	700 Head	20.4	680	0.844	40.664	0.888	42.305	-4.95%	-3.88%
			695	0.849	40.619	0.889	42.227	-4.50%	-3.81%
			700	0.851	40.604	0.889	42.201	-4.27%	-3.78%
			710	0.854	40.574	0.890	42.149	-4.04%	-3.74%
			725	0.859	40.527	0.891	42.071	-3.59%	-3.67%
			740	0.864	40.476	0.893	41.994	-3.25%	-3.61%
			750	0.868	40.444	0.894	41.942	-2.91%	-3.57%
			755	0.870	40.430	0.894	41.916	-2.68%	-3.55%
			770	0.876	40.390	0.895	41.838	-2.12%	-3.46%
			785	0.881	40.355	0.896	41.760	-1.67%	-3.36%
			800	0.886	40.322	0.897	41.682	-1.23%	-3.26%
2/28/2020	835 Head	20.5	820	0.912	40.714	0.899	41.578	1.45%	-2.08%
			835	0.918	40.658	0.900	41.500	2.00%	-2.03%
			850	0.924	40.609	0.916	41.500	0.87%	-2.15%
3/5/2020	835 Head	21.9	820	0.870	40.486	0.899	41.578	-3.23%	-2.63%
			835	0.885	40.295	0.900	41.500	-1.67%	-2.90%
			850	0.900	40.096	0.916	41.500	-1.75%	-3.38%
3/10/2020	835 Head	20.6	820	0.864	39.938	0.899	41.578	-3.89%	-3.94%
			835	0.879	39.739	0.900	41.500	-2.33%	-4.24%
			850	0.894	39.540	0.916	41.500	-2.40%	-4.72%
3/2/2020	1750 Head	20.6	1710	1.337	39.048	1.348	40.142	-0.82%	-2.73%
			1720	1.343	39.034	1.354	40.126	-0.81%	-2.72%
			1745	1.359	38.991	1.368	40.087	-0.66%	-2.73%
			1750	1.362	38.982	1.371	40.079	-0.66%	-2.74%
			1770	1.374	38.944	1.383	40.047	-0.65%	-2.75%
			1790	1.386	38.902	1.394	40.016	-0.57%	-2.78%
2/28/2020	1900 Head	22.5	1850	1.393	38.591	1.400	40.000	-0.50%	-3.52%
			1860	1.404	38.547	1.400	40.000	0.29%	-3.63%
			1880	1.425	38.463	1.400	40.000	1.79%	-3.84%
			1900	1.447	38.379	1.400	40.000	3.36%	-4.05%
			1905	1.452	38.356	1.400	40.000	3.71%	-4.11%
			1910	1.458	38.335	1.400	40.000	4.14%	-4.16%
3/2/2020	1900 Head	22.1	1850	1.386	39.375	1.400	40.000	-1.00%	-1.56%
			1860	1.397	39.332	1.400	40.000	-0.21%	-1.67%
			1880	1.418	39.244	1.400	40.000	1.29%	-1.89%
			1900	1.439	39.154	1.400	40.000	2.79%	-2.11%
			1905	1.444	39.132	1.400	40.000	3.14%	-2.17%
			1910	1.449	39.109	1.400	40.000	3.50%	-2.23%
03/11/2020	1900 Head	21.6	1850	1.397	39.686	1.400	40.000	-0.21%	-0.79%
			1860	1.407	39.643	1.400	40.000	0.50%	-0.89%
			1880	1.428	39.552	1.400	40.000	2.00%	-1.12%
			1900	1.449	39.458	1.400	40.000	3.50%	-1.36%
			1905	1.454	39.434	1.400	40.000	3.86%	-1.42%
			1910	1.460	39.410	1.400	40.000	4.29%	-1.48%
3/2/2020	2450 Head	22.5	2400	1.790	38.507	1.756	39.289	1.94%	-1.99%
			2450	1.829	38.432	1.800	39.200	1.61%	-1.96%
			2500	1.865	38.343	1.855	39.136	0.54%	-2.03%
3/10/2020	2450 Head	24.2	2400	1.822	38.683	1.756	39.289	3.76%	-1.54%
			2450	1.863	38.607	1.800	39.200	3.50%	-1.51%
			2500	1.903	38.517	1.855	39.136	2.59%	-1.58%
			2510	1.911	38.498	1.866	39.123	2.41%	-1.60%
			2535	1.933	38.456	1.893	39.092	2.11%	-1.63%
3/17/2020	2450 Head	23.0	2400	1.782	37.631	1.756	39.289	1.48%	-4.22%
			2450	1.820	37.557	1.800	39.200	1.11%	-4.19%
			2500	1.855	37.466	1.855	39.136	0.00%	-4.27%
2/24/2020	5200-5800 Head	20.3	5250	4.592	34.919	4.706	35.929	-2.42%	-2.81%
			5310	4.665	34.830	4.768	35.860	-2.16%	-2.87%
			5510	4.886	34.462	4.973	35.632	-1.75%	-3.28%
			5600	4.989	34.292	5.065	35.529	-1.50%	-3.48%
			5750	5.168	34.041	5.219	35.357	-0.98%	-3.72%
			5755	5.172	34.038	5.224	35.351	-1.00%	-3.71%
			5795	5.210	33.976	5.265	35.305	-1.04%	-3.76%

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
2/26/2020	700 Body	21.4	680	0.952	53.314	0.958	55.804	-0.63%	-4.46%
			695	0.957	53.273	0.959	55.745	-0.21%	-4.43%
			700	0.959	53.257	0.959	55.726	0.00%	-4.43%
			710	0.962	53.231	0.960	55.687	0.21%	-4.41%
			725	0.968	53.189	0.961	55.629	0.73%	-4.39%
			740	0.974	53.151	0.963	55.570	1.14%	-4.35%
			750	0.977	53.132	0.964	55.531	1.35%	-4.32%
			755	0.979	53.122	0.964	55.512	1.56%	-4.31%
			770	0.984	53.077	0.965	55.453	1.97%	-4.28%
			785	0.989	53.030	0.966	55.395	2.38%	-4.27%
			800	0.995	52.988	0.967	55.336	2.90%	-4.24%
2/27/2020	835 Body	21.1	820	0.943	53.581	0.969	55.258	-2.68%	-3.03%
			835	0.959	53.418	0.970	55.200	-1.13%	-3.23%
			850	0.975	53.251	0.988	55.154	-1.32%	-3.45%
3/9/2020	835 Body	21.0	820	0.946	54.071	0.969	55.258	-2.37%	-2.15%
			835	0.962	53.927	0.970	55.200	-0.82%	-2.31%
			850	0.978	53.769	0.988	55.154	-1.01%	-2.51%
3/11/2020	835 Body	21.4	820	0.943	53.403	0.969	55.258	-2.68%	-3.36%
			835	0.959	53.252	0.970	55.200	-1.13%	-3.53%
			850	0.975	53.106	0.988	55.154	-1.32%	-3.71%
3/2/2020	1750 Body	22.0	1710	1.423	55.848	1.463	53.537	-2.73%	4.32%
			1720	1.434	55.818	1.469	53.511	-2.38%	4.31%
			1745	1.463	55.744	1.485	53.445	-1.48%	4.30%
			1750	1.469	55.727	1.488	53.432	-1.28%	4.30%
			1770	1.491	55.664	1.501	53.379	-0.67%	4.28%
			1790	1.512	55.594	1.514	53.326	-0.13%	4.25%
3/4/2020	1750 Body	22.0	1710	1.440	56.055	1.463	53.537	-1.57%	4.70%
			1720	1.451	56.018	1.469	53.511	-1.23%	4.69%
			1745	1.480	55.937	1.485	53.445	-0.34%	4.66%
			1750	1.486	55.921	1.488	53.432	-0.13%	4.66%
			1770	1.508	55.852	1.501	53.379	0.47%	4.63%
			1790	1.530	55.775	1.514	53.326	1.06%	4.59%
3/9/2020	1900 Body	24.5	1850	1.474	52.318	1.520	53.300	-3.03%	-1.84%
			1860	1.485	52.289	1.520	53.300	-2.30%	-1.90%
			1880	1.505	52.231	1.520	53.300	-0.99%	-2.01%
			1900	1.526	52.168	1.520	53.300	0.39%	-2.12%
			1905	1.531	52.152	1.520	53.300	0.72%	-2.15%
			1910	1.537	52.135	1.520	53.300	1.12%	-2.19%
3/11/2020	1900 Body	21.4	1850	1.518	52.007	1.520	53.300	-0.13%	-2.43%
			1860	1.530	51.974	1.520	53.300	0.66%	-2.49%
			1880	1.552	51.904	1.520	53.300	2.11%	-2.62%
			1900	1.575	51.824	1.520	53.300	3.62%	-2.77%
			1905	1.581	51.803	1.520	53.300	4.01%	-2.81%
			1910	1.587	51.783	1.520	53.300	4.41%	-2.85%

2/28/2020	2450 Body	23.2	2400	1.972	51.871	1.902	52.767	3.68%	-1.70%
			2450	2.032	51.738	1.950	52.700	4.21%	-1.83%
			2500	2.090	51.596	2.021	52.636	3.41%	-1.98%
3/2/2020	2450 Body	22.5	2400	1.979	52.157	1.902	52.767	4.05%	-1.16%
			2450	2.039	51.998	1.950	52.700	4.56%	-1.33%
			2500	2.098	51.848	2.021	52.636	3.81%	-1.50%
3/9/2020	2450 Body	22.8	2400	1.944	52.252	1.902	52.767	2.21%	-0.98%
			2450	2.014	52.082	1.950	52.700	3.28%	-1.17%
			2500	2.082	51.901	2.021	52.636	3.02%	-1.40%
			2510	2.097	51.865	2.035	52.623	3.05%	-1.44%
			2535	2.133	51.774	2.071	52.592	2.99%	-1.56%
			2550	2.155	51.721	2.092	52.573	3.01%	-1.62%
			2560	2.169	51.687	2.106	52.560	2.99%	-1.66%
			2600	2.224	51.535	2.163	52.509	2.82%	-1.85%
3/16/2020	2450 Body	22.5	2400	1.979	52.332	1.902	52.767	4.05%	-0.82%
			2450	2.036	52.194	1.950	52.700	4.41%	-0.96%
			2500	2.096	52.032	2.021	52.636	3.71%	-1.15%
3/19/2020	2450 Body	23.5	2400	1.974	51.761	1.902	52.767	3.79%	-1.91%
			2450	2.032	51.617	1.950	52.700	4.21%	-2.06%
			2500	2.087	51.469	2.021	52.636	3.27%	-2.22%
			2510	2.099	51.438	2.035	52.623	3.14%	-2.25%
			2535	2.130	51.368	2.071	52.592	2.85%	-2.33%
			2550	2.148	51.333	2.092	52.573	2.68%	-2.36%
			2560	2.160	51.309	2.106	52.560	2.56%	-2.38%
			2600	2.205	51.195	2.163	52.509	1.94%	-2.50%
			2650	2.266	51.044	2.234	52.445	1.43%	-2.67%
			2680	2.304	50.957	2.277	52.407	1.19%	-2.77%
			2700	2.328	50.902	2.305	52.382	1.00%	-2.83%
2/24/2020	5200-5800 Body	21.5	5180	5.416	47.364	5.276	49.041	2.65%	-3.42%
			5250	5.501	47.219	5.358	48.947	2.67%	-3.53%
			5260	5.517	47.213	5.369	48.933	2.76%	-3.52%
			5280	5.545	47.186	5.393	48.906	2.82%	-3.52%
			5320	5.595	47.114	5.439	48.851	2.87%	-3.56%
			5500	5.834	46.811	5.650	48.607	3.26%	-3.69%
			5550	5.897	46.741	5.708	48.539	3.31%	-3.70%
			5600	5.976	46.635	5.766	48.471	3.64%	-3.79%
			5745	6.179	46.404	5.936	48.275	4.09%	-3.88%
			5750	6.183	46.403	5.942	48.268	4.06%	-3.86%
			5785	6.230	46.364	5.982	48.220	4.15%	-3.85%
			5825	6.287	46.269	6.029	48.166	4.28%	-3.94%
3/17/2020	5200-5800 Body	23.0	5250	5.522	47.383	5.358	48.947	3.06%	-3.20%
			5600	5.990	46.757	5.766	48.471	3.88%	-3.54%
			5750	6.210	46.477	5.942	48.268	4.51%	-3.71%
			5785	6.240	46.462	5.982	48.220	4.31%	-3.65%

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

10.2 Test System Verification

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

Table 10-3
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)	$Deviation_{1g}$ (%)
L	750	HEAD	02/26/2020	21.2	20.4	0.200	1054	7410	1.680	8.290	8.400	1.33%
L	835	HEAD	02/28/2020	21.8	20.0	0.200	4d133	7410	1.990	9.430	9.950	5.51%
H	835	HEAD	03/05/2020	23.0	21.9	0.200	4d133	7406	1.890	9.430	9.450	0.21%
H	835	HEAD	03/10/2020	22.7	20.6	0.200	4d132	7406	1.920	9.650	9.600	-0.52%
L	1750	HEAD	03/02/2020	22.2	20.1	0.100	1150	7410	3.760	36.500	37.600	3.01%
G	1900	HEAD	02/28/2020	22.7	22.5	0.100	5d149	7409	4.000	39.300	40.000	1.78%
G	1900	HEAD	03/02/2020	22.3	22.1	0.100	5d149	7409	4.050	39.300	40.500	3.05%
G	1900	HEAD	03/11/2020	23.1	21.6	0.100	5d149	7409	4.180	39.300	41.800	6.36%
E	2450	HEAD	03/02/2020	22.5	23.5	0.100	719	3589	5.190	53.100	51.900	-2.26%
E	2450	HEAD	03/10/2020	23.7	23.4	0.100	797	3589	5.200	52.700	52.000	-1.33%
E	2450	HEAD	03/17/2020	22.8	22.1	0.100	719	3589	5.390	53.100	53.900	1.51%
H	5250	HEAD	02/24/2020	23.0	20.3	0.050	1057	7406	3.710	79.200	74.200	-6.31%
H	5600	HEAD	02/24/2020	23.0	20.3	0.050	1057	7406	3.900	84.100	78.000	-7.25%
H	5750	HEAD	02/24/2020	23.0	20.3	0.050	1057	7406	3.810	80.500	76.200	-5.34%
E	750	BODY	02/26/2020	22.7	21.4	0.200	1054	3589	1.810	8.550	9.050	5.85%
P	835	BODY	02/27/2020	23.1	21.1	0.200	4d133	7551	2.030	9.750	10.150	4.10%
D	835	BODY	03/09/2020	21.6	21.0	0.200	4d047	7488	1.830	9.470	9.150	-3.38%
D	835	BODY	03/11/2020	21.9	21.4	0.200	4d047	7488	1.810	9.470	9.050	-4.44%
I	1750	BODY	03/02/2020	22.8	22.0	0.100	1148	7357	3.910	37.700	39.100	3.71%
I	1750	BODY	03/04/2020	23.1	22.0	0.100	1150	7357	3.860	36.600	38.600	5.46%
P	1900	BODY	03/09/2020	22.0	24.5	0.100	5d149	7551	3.890	39.400	38.900	-1.27%
P	1900	BODY	03/11/2020	23.0	21.8	0.100	5d148	7551	4.150	39.100	41.500	6.14%
K	2450	BODY	02/28/2020	23.0	23.2	0.100	797	7547	5.070	51.100	50.700	-0.78%
K	2450	BODY	03/02/2020	23.0	22.5	0.100	797	7547	5.070	51.100	50.700	-0.78%
I	2450	BODY	03/09/2020	20.9	21.1	0.100	797	7357	5.110	51.100	51.100	0.00%
K	2450	BODY	03/16/2020	23.2	22.5	0.100	797	7547	5.050	51.100	50.500	-1.17%
I	2600	BODY	03/09/2020	20.9	21.1	0.100	1004	7357	5.700	54.800	57.000	4.01%
G	5250	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	3.790	75.900	75.800	-0.13%
G	5250	BODY	03/17/2020	22.8	22.3	0.050	1237	7409	3.700	75.600	74.000	-2.12%
G	5600	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	4.010	79.900	80.200	0.38%
G	5600	BODY	03/17/2020	22.8	22.3	0.050	1237	7409	3.930	78.500	78.600	0.13%
G	5750	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	3.760	76.700	75.200	-1.96%
G	5750	BODY	03/17/2020	22.8	22.3	0.050	1237	7409	3.740	75.900	74.800	-1.45%

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	03/02/2020	22.8	22.0	0.100	1148	7357	2.080	19.800	20.800	5.05%
P	1900	BODY	03/09/2020	22.0	24.5	0.100	5d149	7551	1.990	20.700	19.900	-3.86%
P	1900	BODY	03/11/2020	23.0	21.8	0.100	5d148	7551	2.120	20.500	21.200	3.41%
K	2450	BODY	03/19/2020	22.7	22.1	0.100	797	7547	2.330	24.200	23.300	-3.72%
K	2600	BODY	03/19/2020	22.7	22.1	0.100	1004	7547	2.400	24.700	24.000	-2.83%
G	5250	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	1.060	21.100	21.200	0.47%
G	5600	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	1.110	22.300	22.200	-0.45%
G	5750	BODY	02/24/2020	23.7	22.2	0.050	1057	7409	1.030	21.200	20.600	-2.83%

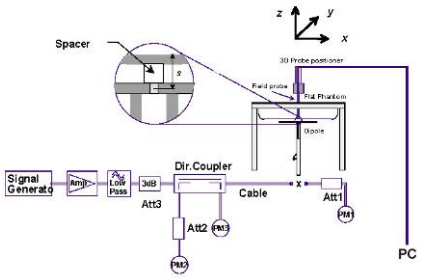


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.61	-0.02	Right	Cheek	04815	1	1:8.3	0.178	1.021	0.182	
836.60	190	GSM 850	GSM	33.7	33.61	0.05	Right	Tilt	04815	1	1:8.3	0.096	1.021	0.098	
836.60	190	GSM 850	GSM	33.7	33.61	-0.07	Left	Cheek	04815	1	1:8.3	0.129	1.021	0.132	
836.60	190	GSM 850	GSM	33.7	33.61	-0.04	Left	Tilt	04815	1	1:8.3	0.062	1.021	0.063	
836.60	190	GSM 850	GPRS	30.7	30.40	-0.01	Right	Cheek	04815	3	1:2.76	0.241	1.072	0.258	
836.60	190	GSM 850	GPRS	30.7	30.40	0.03	Right	Tilt	04815	3	1:2.76	0.118	1.072	0.126	
836.60	190	GSM 850	GPRS	30.7	30.40	0.10	Left	Cheek	04815	3	1:2.76	0.271	1.072	**0.291**	A1
836.60	190	GSM 850	GPRS	30.7	30.40	0.06	Left	Tilt	04815	3	1:2.76	0.129	1.072	0.138	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram								

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.7	30.54	-0.12	Right	Cheek	04823	1	1:8.3	0.053	1.038	0.055	
1880.00	661	GSM 1900	GSM	30.7	30.54	0.07	Right	Tilt	04823	1	1:8.3	0.022	1.038	0.023	
1880.00	661	GSM 1900	GSM	30.7	30.54	-0.06	Left	Cheek	04823	1	1:8.3	0.030	1.038	0.031	
1880.00	661	GSM 1900	GSM	30.7	30.54	0.14	Left	Tilt	04823	1	1:8.3	0.022	1.038	0.023	
1880.00	661	GSM 1900	GPRS	27.7	27.69	-0.19	Right	Cheek	04823	3	1:2.76	0.084	1.002	0.084	A2
1880.00	661	GSM 1900	GPRS	27.7	27.69	0.02	Right	Tilt	04823	3	1:2.76	0.025	1.002	0.025	
1880.00	661	GSM 1900	GPRS	27.7	27.69	0.18	Left	Cheek	04823	3	1:2.76	0.048	1.002	0.048	
1880.00	661	GSM 1900	GPRS	27.7	27.69	-0.15	Left	Tilt	04823	3	1:2.76	0.034	1.002	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 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.2	25.15	-0.06	Right	Cheek	04815	1:1	0.187	1.012	0.189	
836.60	4183	UMTS 850	RMC	25.2	25.15	0.06	Right	Tilt	04815	1:1	0.092	1.012	0.093	
836.60	4183	UMTS 850	RMC	25.2	25.15	-0.05	Left	Cheek	04815	1:1	0.194	1.012	0.196	A3
836.60	4183	UMTS 850	RMC	25.2	25.15	0.07	Left	Tilt	04815	1:1	0.092	1.012	0.093	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.03	Right	Cheek	04823	1:1	0.128	1.012	0.130	A4
1732.40	1412	UMTS 1750	RMC	24.7	24.65	-0.11	Right	Tilt	04823	1:1	0.085	1.012	0.086	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.02	Left	Cheek	04823	1:1	0.108	1.012	0.109	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.10	Left	Tilt	04823	1:1	0.070	1.012	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.07	Right	Cheek	04815	1:1	0.121	1.023	0.124	A5
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.05	Right	Tilt	04815	1:1	0.059	1.023	0.060	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.03	Left	Cheek	04815	1:1	0.096	1.023	0.098	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.03	Left	Tilt	04815	1:1	0.064	1.023	0.065	
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
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.12	-0.10	Right	Cheek	04815	1:1	0.180	1.019	0.183	A6
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.12	0.03	Right	Tilt	04815	1:1	0.083	1.019	0.085	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.12	0.08	Left	Cheek	04815	1:1	0.160	1.019	0.163	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.12	0.05	Left	Tilt	04815	1:1	0.086	1.019	0.088	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.17	0.00	Right	Cheek	04815	1:1	0.157	1.007	0.158	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.17	0.08	Right	Tilt	04815	1:1	0.084	1.007	0.085	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.17	0.00	Left	Cheek	04815	1:1	0.144	1.007	0.145	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.17	0.12	Left	Tilt	04815	1:1	0.079	1.007	0.080	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	24.98	-0.07	Right	Cheek	04815	1:1	0.185	1.052	0.195	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	24.98	0.08	Right	Tilt	04815	1:1	0.086	1.052	0.090	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	24.98	0.08	Left	Cheek	04815	1:1	0.194	1.052	0.204	A7
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	24.98	0.04	Left	Tilt	04815	1:1	0.094	1.052	0.099	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.10	-0.05	Right	Cheek	04815	1:1	0.127	1.023	0.130	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.10	0.02	Right	Tilt	04815	1:1	0.066	1.023	0.068	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.10	0.13	Left	Cheek	04815	1:1	0.143	1.023	0.146	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.10	0.01	Left	Tilt	04815	1:1	0.072	1.023	0.074	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.51	0.08	Right	Cheek	04823	1:1	0.121	1.045	0.126	A8
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.51	0.03	Right	Tilt	04823	1:1	0.043	1.045	0.045	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.51	-0.20	Left	Cheek	04823	1:1	0.091	1.045	0.095	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.51	-0.09	Left	Tilt	04823	1:1	0.057	1.045	0.060	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.69	0.06	Right	Cheek	04823	1:1	0.097	1.002	0.097	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.69	0.04	Right	Tilt	04823	1:1	0.033	1.002	0.033	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.69	0.08	Left	Cheek	04823	1:1	0.058	1.002	0.058	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.69	0.20	Left	Tilt	04823	1:1	0.042	1.002	0.042	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-9
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	25.2	25.08	-0.13	0	Right	Cheek	QPSK	1	50	04823	1:1	0.149	1.028	0.153	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	-0.10	1	Right	Cheek	QPSK	50	25	04823	1:1	0.116	1.021	0.118	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	-0.10	0	Right	Tilt	QPSK	1	50	04823	1:1	0.066	1.028	0.068	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.07	1	Right	Tilt	QPSK	50	25	04823	1:1	0.052	1.021	0.053	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	0.03	0	Left	Cheek	QPSK	1	50	04823	1:1	0.155	1.028	0.159	A9
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.15	1	Left	Cheek	QPSK	50	25	04823	1:1	0.136	1.021	0.139	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	0.05	0	Left	Tilt	QPSK	1	50	04823	1:1	0.090	1.028	0.093	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.09	1	Left	Tilt	QPSK	50	25	04823	1:1	0.065	1.021	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										

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	25.2	24.95	0.20	0	Right	Cheek	QPSK	1	25	04823	1:1	0.144	1.059	0.152	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	0.16	1	Right	Cheek	QPSK	25	12	04823	1:1	0.118	1.033	0.122	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	-0.21	0	Right	Tilt	QPSK	1	25	04823	1:1	0.066	1.059	0.070	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	0.07	1	Right	Tilt	QPSK	25	12	04823	1:1	0.055	1.033	0.057	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	0.12	0	Left	Cheek	QPSK	1	25	04823	1:1	0.192	1.059	0.203	A10
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	-0.10	1	Left	Cheek	QPSK	25	12	04823	1:1	0.155	1.033	0.160	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	0.12	0	Left	Tilt	QPSK	1	25	04823	1:1	0.107	1.059	0.113	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	-0.13	1	Left	Tilt	QPSK	25	12	04823	1:1	0.089	1.033	0.092	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-11
LTE Band 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	25.2	24.93	0.03	0	Right	Cheek	QPSK	1	25	04823	1:1	0.120	1.064	0.128	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	0.07	1	Right	Cheek	QPSK	25	12	04823	1:1	0.095	1.042	0.099	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	-0.16	0	Right	Tilt	QPSK	1	25	04823	1:1	0.053	1.064	0.056	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	0.11	1	Right	Tilt	QPSK	25	12	04823	1:1	0.042	1.042	0.044	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	0.06	0	Left	Cheek	QPSK	1	25	04823	1:1	0.149	1.064	0.159	A11
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	0.06	1	Left	Cheek	QPSK	25	12	04823	1:1	0.122	1.042	0.127	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	-0.10	0	Left	Tilt	QPSK	1	25	04823	1:1	0.073	1.064	0.078	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	0.14	1	Left	Tilt	QPSK	25	12	04823	1:1	0.061	1.042	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 11-12
LTE Band 26 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.04	0	Right	Cheek	QPSK	1	36	04807	1:1	0.159	1.067	0.170	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.12	1	Right	Cheek	QPSK	36	18	04807	1:1	0.124	1.050	0.130	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.16	0	Right	Tilt	QPSK	1	36	04807	1:1	0.082	1.067	0.087	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.08	1	Right	Tilt	QPSK	36	18	04807	1:1	0.068	1.050	0.071	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.02	0	Left	Cheek	QPSK	1	36	04807	1:1	0.172	1.067	0.184	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.03	1	Left	Cheek	QPSK	36	18	04807	1:1	0.142	1.050	0.149	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.20	0	Left	Tilt	QPSK	1	36	04807	1:1	0.093	1.067	0.099	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	-0.01	1	Left	Tilt	QPSK	36	18	04807	1:1	0.073	1.050	0.077	
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 66 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.04	0	Right	Cheek	QPSK	1	50	04823	1:1	0.108	1.033	0.112	A13
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.17	1	Right	Cheek	QPSK	50	25	04823	1:1	0.085	1.028	0.087	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	0.03	0	Right	Tilt	QPSK	1	50	04823	1:1	0.063	1.033	0.065	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.04	1	Right	Tilt	QPSK	50	25	04823	1:1	0.050	1.028	0.051	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	0.03	0	Left	Cheek	QPSK	1	50	04823	1:1	0.091	1.033	0.094	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.16	1	Left	Cheek	QPSK	50	25	04823	1:1	0.075	1.028	0.077	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.11	0	Left	Tilt	QPSK	1	50	04823	1:1	0.054	1.033	0.056	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.04	1	Left	Tilt	QPSK	50	25	04823	1:1	0.050	1.028	0.051	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-14
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.14	0	Right	Cheek	QPSK	1	50	04815	1:1	0.202	1.016	0.205	A14
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.03	1	Right	Cheek	QPSK	50	0	04815	1:1	0.149	1.000	0.149	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.20	0	Right	Tilt	QPSK	1	50	04815	1:1	0.091	1.016	0.092	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.04	1	Right	Tilt	QPSK	50	0	04815	1:1	0.063	1.000	0.063	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.05	0	Left	Cheek	QPSK	1	50	04815	1:1	0.099	1.016	0.101	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.03	1	Left	Cheek	QPSK	50	0	04815	1:1	0.084	1.000	0.084	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.02	0	Left	Tilt	QPSK	1	50	04815	1:1	0.091	1.016	0.092	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.11	1	Left	Tilt	QPSK	50	0	04815	1:1	0.076	1.000	0.076	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-15
LTE Band 41 Head SAR

1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.07	0	Right	Cheek	QPSK	1	50	04831	1:1.58	0.146	1.021	0.149	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	24.88	0.06	0	Right	Cheek	QPSK	1	99	04831	1:1.58	0.135	1.076	0.145	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.12	1	Right	Cheek	QPSK	50	0	04831	1:1.58	0.110	1.023	0.113	
1 CC Uplink - Power Class 2	N/A	2506.00	39750	Low	LTE Band 41	20	27.2	26.74	0.14	0	Right	Cheek	QPSK	1	50	04831	1:2.31	0.146	1.112	0.162	A15
1 CC Uplink - Power Class 2	N/A	2506.00	39750	Low	LTE Band 41	20	27.2	26.53	0.00	0	Right	Cheek	QPSK	1	99	04831	1:2.31	0.133	1.167	0.155	
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	25.2	24.90	0.01	0	Right	Cheek	QPSK	1	99	04831	1:1.58	0.141	1.072	0.151	
	SCC	2525.80	39948												0						
2 CC Uplink - Power Class 2	PCC	2506.00	39750	Low	LTE Band 41	20	27.2	26.63	0.16	0	Right	Cheek	QPSK	1	99	04831	1:2.31	0.136	1.140	0.155	
	SCC	2525.80	39948												0						
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	0.13	0	Right	Tilt	QPSK	1	50	04831	1:1.58	0.065	1.021	0.066	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	-0.03	1	Right	Tilt	QPSK	50	0	04831	1:1.58	0.041	1.023	0.042	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.08	0	Left	Cheek	QPSK	1	50	04831	1:1.58	0.110	1.021	0.112	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.05	1	Left	Cheek	QPSK	50	0	04831	1:1.58	0.073	1.023	0.075	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	0.14	0	Left	Tilt	QPSK	1	50	04831	1:1.58	0.084	1.021	0.086	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.19	1	Left	Tilt	QPSK	50	0	04831	1:1.58	0.061	1.023	0.062	
																		Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-16
DTS Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	18.0	17.78	-0.02	Right	Cheek	04930	1	99.0	0.412	-	1.052	1.010	-	
2437	6	802.11b	DSSS	22	18.0	17.78	0.03	Right	Tilt	04930	1	99.0	0.300	-	1.052	1.010	-	
2412	1	802.11b	DSSS	22	18.0	17.57	0.05	Left	Cheek	04930	1	99.0	1.521	0.985	1.104	1.010	1.098	
2437	6	802.11b	DSSS	22	18.0	17.78	-0.18	Left	Cheek	04930	1	99.0	1.573	1.060	1.052	1.010	**1.126**	A16
2462	11	802.11b	DSSS	22	18.0	17.66	0.03	Left	Cheek	04930	1	99.0	1.412	0.908	1.081	1.010	0.991	
2437	6	802.11b	DSSS	22	18.0	17.78	-0.04	Left	Tilt	04930	1	99.0	0.795	0.517	1.052	1.010	0.549	
2437	6	802.11b	DSSS	22	18.0	17.78	0.05	Left	Cheek	04930	1	99.0	1.196	0.987	1.052	1.010	1.049	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Blue entries represent variability measurements.

Table 11-17
NII Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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)	
5310	62	802.11n	OFDM	40	16.0	15.40	0.20	Right	Cheek	04930	13.5	87.9	0.105	-	1.148	1.138	-	
5310	62	802.11n	OFDM	40	16.0	15.40	0.10	Right	Tilt	04930	13.5	87.9	0.132	-	1.148	1.138	-	
5310	62	802.11n	OFDM	40	16.0	15.40	0.06	Left	Cheek	04930	13.5	87.9	0.859	0.337	1.148	1.138	0.440	
5310	62	802.11n	OFDM	40	16.0	15.40	0.10	Left	Tilt	04930	13.5	87.9	0.359	0.135	1.148	1.138	0.176	
5510	102	802.11n	OFDM	40	16.0	15.97	0.06	Right	Cheek	04930	13.5	87.9	0.184	-	1.007	1.138	-	
5510	102	802.11n	OFDM	40	16.0	15.97	0.10	Right	Tilt	04930	13.5	87.9	0.197	-	1.007	1.138	-	
5510	102	802.11n	OFDM	40	16.0	15.97	0.04	Left	Cheek	04930	13.5	87.9	0.929	0.433	1.007	1.138	0.496	
5510	102	802.11n	OFDM	40	16.0	15.97	0.03	Left	Tilt	04930	13.5	87.9	0.414	0.181	1.007	1.138	0.207	
5795	159	802.11n	OFDM	40	16.0	15.84	0.10	Right	Cheek	04930	13.5	87.9	0.215	-	1.038	1.138	-	
5795	159	802.11n	OFDM	40	16.0	15.84	0.04	Right	Tilt	04930	13.5	87.9	0.186	-	1.038	1.138	-	
5755	151	802.11n	OFDM	40	16.0	15.49	0.05	Left	Cheek	04930	13.5	87.9	1.322	0.600	1.125	1.138	**0.768**	
5795	159	802.11n	OFDM	40	16.0	15.84	0.10	Left	Cheek	04930	13.5	87.9	1.348	0.618	1.038	1.138	0.730	A17
5795	159	802.11n	OFDM	40	16.0	15.84	0.04	Left	Tilt	04930	13.5	87.9	0.346	0.152	1.038	1.138	0.180	
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
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	9.0	8.45	0.11	Right	Cheek	04922	1	76.6	0.037	1.135	1.305	0.055	
2480.00	78	Bluetooth	FHSS	9.0	8.45	0.21	Right	Tilt	04922	1	76.6	0.023	1.135	1.305	0.034	
2480.00	78	Bluetooth	FHSS	9.0	8.45	0.18	Left	Cheek	04922	1	76.6	0.114	1.135	1.305	**0.169**	A18
2480.00	78	Bluetooth	FHSS	9.0	8.45	0.01	Left	Tilt	04922	1	76.6	0.047	1.135	1.305	0.070	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram									

11.2 Standalone Body-Worn SAR Data

Table 11-19
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)	
836.60	190	GSM 850	GSM	33.7	33.61	0.02	10 mm	04815	1	1:8.3	back	0.300	1.021	0.306	
836.60	190	GSM 850	GPRS	30.7	30.40	-0.01	10 mm	04815	3	1:2.76	back	0.473	1.072	0.507	A19
1880.00	661	GSM 1900	GSM	30.7	30.54	0.07	10 mm	04815	1	1:8.3	back	0.264	1.038	0.274	
1880.00	661	GSM 1900	GPRS	27.7	27.69	-0.07	10 mm	04815	3	1:2.76	back	0.409	1.002	0.410	A20
836.60	4183	UMTS 850	RMC	25.2	25.15	0.04	10 mm	04807	N/A	1:1	back	0.407	1.012	0.412	A22
1712.40	1312	UMTS 1750	RMC	24.7	24.68	-0.10	10 mm	04831	N/A	1:1	back	0.583	1.005	0.586	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.05	10 mm	04831	N/A	1:1	back	0.622	1.012	0.629	A23
1752.60	1513	UMTS 1750	RMC	24.7	24.70	-0.04	10 mm	04831	N/A	1:1	back	0.611	1.000	0.611	
1852.40	9262	UMTS 1900	RMC	24.7	24.70	0.01	10 mm	04807	N/A	1:1	back	0.662	1.000	0.662	A25
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.02	10 mm	04807	N/A	1:1	back	0.626	1.023	0.640	
1907.60	9538	UMTS 1900	RMC	24.7	24.68	-0.01	10 mm	04807	N/A	1:1	back	0.626	1.005	0.629	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.2	25.13	-0.07	10 mm	04831	N/A	1:1	back	0.324	1.016	0.329	A27
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.2	25.02	0.10	10 mm	04831	N/A	1:1	back	0.408	1.042	0.425	A29
1851.25	25	PCS CDMA	TDSO / SO32	24.7	24.62	0.08	10 mm	04831	N/A	1:1	back	0.761	1.019	0.775	A31
1880.00	600	PCS CDMA	TDSO / SO32	24.7	24.65	0.02	10 mm	04831	N/A	1:1	back	0.685	1.012	0.693	
1908.75	1175	PCS CDMA	TDSO / SO32	24.7	24.62	-0.01	10 mm	04831	N/A	1:1	back	0.759	1.019	0.773	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-20
LTE Body-Worn SAR

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	25.2	25.08	0.02	0	04815	QPSK	1	50	10 mm	back	1:1	0.280	1.028	0.288	A33
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.01	1	04815	QPSK	50	25	10 mm	back	1:1	0.217	1.021	0.222	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	0.10	0	04815	QPSK	1	25	10 mm	back	1:1	0.299	1.059	0.317	A35
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	-0.01	1	04815	QPSK	25	12	10 mm	back	1:1	0.231	1.033	0.239	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	0.02	0	04815	QPSK	1	25	10 mm	back	1:1	0.296	1.064	0.315	A37
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	-0.02	1	04815	QPSK	25	12	10 mm	back	1:1	0.224	1.042	0.233	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	-0.03	0	04807	QPSK	1	36	10 mm	back	1:1	0.371	1.067	0.396	A39
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.02	1	04807	QPSK	36	18	10 mm	back	1:1	0.301	1.050	0.316	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.10	0	04831	QPSK	1	50	10 mm	back	1:1	0.531	1.033	0.549	A40
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.14	1	04807	QPSK	50	25	10 mm	back	1:1	0.457	1.028	0.470	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.59	0.08	0	04807	QPSK	1	50	10 mm	back	1:1	0.768	1.026	**0.788**	A42
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.62	0.07	0	04807	QPSK	1	50	10 mm	back	1:1	0.734	1.019	0.748	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	-0.05	0	04807	QPSK	1	50	10 mm	back	1:1	0.749	1.016	0.761	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.06	1	04807	QPSK	50	0	10 mm	back	1:1	0.556	1.000	0.556	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-21
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.20	0	04831	QPSK	1	50	10 mm	back	1:1.58	0.500	1.021	0.511	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	24.88	-0.14	0	04831	QPSK	1	99	10 mm	back	1:1.58	0.489	1.076	0.526	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.07	1	04831	QPSK	50	0	10 mm	back	1:1.58	0.418	1.023	0.428	
1 CC Uplink - Power Class 2	N/A	2506.00	39750	Low	LTE Band 41	20	27.2	26.74	-0.14	0	04831	QPSK	1	50	10 mm	back	1:2.31	0.545	1.112	0.606	A44
1 CC Uplink - Power Class 2	N/A	2506.00	39750	Low	LTE Band 41	20	27.2	26.53	0.08	0	04831	QPSK	1	99	10 mm	back	1:2.31	0.519	1.167	0.606	
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	25.2	24.90	0.05	0	04831	QPSK	1	99	10 mm	back	1:1.58	0.487	1.072	0.522	
	SCC	2525.80	39948											0							
2 CC Uplink - Power Class 2	PCC	2506.00	39750	Low	LTE Band 41	20	27.2	26.63	0.07	0	04831	QPSK	1	99	10 mm	back	1:2.31	0.528	1.140	0.602	
	SCC	2525.80	39948											0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-22
DTS Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.5	21.30	-0.19	10 mm	04930	1	back	99.0	0.592	0.432	1.047	1.010	**0.457**	A46
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-23
NII Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	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)	
5320	64	802.11a	OFDM	20	19.0	18.56	0.09	10 mm	04922	6	back	96.8	1.177	0.505	1.107	1.033	0.577	
5500	100	802.11a	OFDM	20	19.0	18.75	0.01	10 mm	04922	6	back	96.8	1.090	0.499	1.059	1.033	0.546	
5745	149	802.11a	OFDM	20	19.0	18.39	0.10	10 mm	04922	6	back	96.8	1.231	0.625	1.151	1.033	0.743	
5785	157	802.11a	OFDM	20	19.0	17.79	0.04	10 mm	04922	6	back	96.8	1.420	0.645	1.321	1.033	**0.880**	
5825	165	802.11a	OFDM	20	19.0	18.12	-0.05	10 mm	04922	6	back	96.8	1.468	0.670	1.225	1.033	0.848	A48
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram										

Table 11-24
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	9.0	8.45	0.03	10 mm	04930	1	back	76.6	0.019	1.135	1.305	**0.028**	A50
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Body** **1.6 W/kg (mW/g)** averaged over 1 gram									

11.3 Standalone Hotspot SAR Data

Table 11-25
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	30.7	30.40	-0.01	10 mm	04815	3	1:2.76	back	0.473	1.072	0.507	A19
836.60	190	GSM 850	GPRS	30.7	30.40	-0.02	10 mm	04815	3	1:2.76	front	0.383	1.072	0.411	
836.60	190	GSM 850	GPRS	30.7	30.40	-0.01	10 mm	04815	3	1:2.76	bottom	0.467	1.072	0.501	
836.60	190	GSM 850	GPRS	30.7	30.40	0.01	10 mm	04815	3	1:2.76	left	0.321	1.072	0.344	
1880.00	661	GSM 1900	GPRS	27.7	27.69	-0.07	10 mm	04815	3	1:2.76	back	0.409	1.002	0.410	
1880.00	661	GSM 1900	GPRS	27.7	27.69	0.00	10 mm	04815	3	1:2.76	front	0.348	1.002	0.349	
1850.20	512	GSM 1900	GPRS	27.7	27.70	-0.11	10 mm	04815	3	1:2.76	bottom	0.785	1.000	0.785	A21
1880.00	661	GSM 1900	GPRS	27.7	27.69	0.10	10 mm	04815	3	1:2.76	bottom	0.693	1.002	0.694	
1909.80	810	GSM 1900	GPRS	27.7	27.69	-0.05	10 mm	04815	3	1:2.76	bottom	0.593	1.002	0.594	
1880.00	661	GSM 1900	GPRS	27.7	27.69	0.03	10 mm	04815	3	1:2.76	right	0.123	1.002	0.123	
836.60	4183	UMTS 850	RMC	25.2	25.15	0.04	10 mm	04807	N/A	1:1	back	0.407	1.012	0.412	A22
836.60	4183	UMTS 850	RMC	25.2	25.15	-0.02	10 mm	04807	N/A	1:1	front	0.377	1.012	0.382	
836.60	4183	UMTS 850	RMC	25.2	25.15	-0.02	10 mm	04807	N/A	1:1	bottom	0.394	1.012	0.399	
836.60	4183	UMTS 850	RMC	25.2	25.15	0.02	10 mm	04807	N/A	1:1	left	0.249	1.012	0.252	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	0.10	10 mm	04831	N/A	1:1	back	0.466	1.062	0.495	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	-0.03	10 mm	04831	N/A	1:1	front	0.393	1.062	0.417	
1712.40	1312	UMTS 1750	RMC	23.2	22.98	0.04	10 mm	04831	N/A	1:1	bottom	0.732	1.052	0.770	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	-0.08	10 mm	04831	N/A	1:1	bottom	0.809	1.062	0.859	A24
1752.60	1513	UMTS 1750	RMC	23.2	23.04	0.02	10 mm	04831	N/A	1:1	bottom	0.808	1.038	0.839	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	-0.04	10 mm	04831	N/A	1:1	right	0.143	1.062	0.152	
1880.00	9400	UMTS 1900	RMC	23.2	23.00	-0.11	10 mm	04807	N/A	1:1	back	0.502	1.047	0.526	
1880.00	9400	UMTS 1900	RMC	23.2	23.00	0.05	10 mm	04807	N/A	1:1	front	0.427	1.047	0.447	
1852.40	9262	UMTS 1900	RMC	23.2	23.03	-0.02	10 mm	04807	N/A	1:1	bottom	0.748	1.040	0.778	A26
1880.00	9400	UMTS 1900	RMC	23.2	23.00	0.02	10 mm	04807	N/A	1:1	bottom	0.742	1.047	0.777	
1907.60	9538	UMTS 1900	RMC	23.2	23.04	0.03	10 mm	04807	N/A	1:1	bottom	0.661	1.038	0.686	
1880.00	9400	UMTS 1900	RMC	23.2	23.00	-0.16	10 mm	04807	N/A	1:1	right	0.121	1.047	0.127	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.20	0.09	10 mm	04831	N/A	1:1	back	0.245	1.000	0.245	A28
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.20	-0.14	10 mm	04831	N/A	1:1	front	0.182	1.000	0.182	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.20	0.03	10 mm	04831	N/A	1:1	bottom	0.220	1.000	0.220	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.20	0.02	10 mm	04831	N/A	1:1	left	0.155	1.000	0.155	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.10	0.07	10 mm	04815	N/A	1:1	back	0.270	1.023	0.276	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.10	0.01	10 mm	04815	N/A	1:1	front	0.233	1.023	0.238	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.10	0.03	10 mm	04815	N/A	1:1	bottom	0.274	1.023	0.280	A30
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.10	0.02	10 mm	04815	N/A	1:1	left	0.168	1.023	0.172	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	-0.06	10 mm	04815	N/A	1:1	back	0.312	1.112	0.347	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	-0.10	10 mm	04815	N/A	1:1	front	0.308	1.112	0.342	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	-0.06	10 mm	04831	N/A	1:1	bottom	0.533	1.112	0.593	A32
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	0.06	10 mm	04831	N/A	1:1	right	0.098	1.112	0.109	
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 11-26
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	25.2	25.08	0.02	0	04815	QPSK	1	50	10 mm	back	1:1	0.280	1.028	0.288	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.01	1	04815	QPSK	50	25	10 mm	back	1:1	0.217	1.021	0.222	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	-0.06	0	04815	QPSK	1	50	10 mm	front	1:1	0.267	1.028	0.274	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	0.05	1	04815	QPSK	50	25	10 mm	front	1:1	0.211	1.021	0.215	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	-0.06	0	04815	QPSK	1	50	10 mm	bottom	1:1	0.295	1.028	0.303	
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	-0.02	1	04815	QPSK	50	25	10 mm	bottom	1:1	0.236	1.021	0.241	
680.50	133297	Mid	LTE Band 71	20	25.2	25.08	-0.10	0	04815	QPSK	1	50	10 mm	left	1:1	0.544	1.028	0.559	A34
680.50	133297	Mid	LTE Band 71	20	24.2	24.11	-0.01	1	04815	QPSK	50	25	10 mm	left	1:1	0.417	1.021	0.426	
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
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	25.2	24.95	0.10	0	04815	QPSK	1	25	10 mm	back	1:1	0.299	1.059	0.317	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	-0.01	1	04815	QPSK	25	12	10 mm	back	1:1	0.231	1.033	0.239	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	-0.05	0	04815	QPSK	1	25	10 mm	front	1:1	0.348	1.059	0.369	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	0.03	1	04815	QPSK	25	12	10 mm	front	1:1	0.267	1.033	0.276	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	-0.01	0	04815	QPSK	1	25	10 mm	bottom	1:1	0.317	1.059	0.336	
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	-0.02	1	04815	QPSK	25	12	10 mm	bottom	1:1	0.248	1.033	0.256	
707.50	23095	Mid	LTE Band 12	10	25.2	24.95	0.01	0	04815	QPSK	1	25	10 mm	left	1:1	0.636	1.059	0.674	A36
707.50	23095	Mid	LTE Band 12	10	24.2	24.06	0.10	1	04815	QPSK	25	12	10 mm	left	1:1	0.500	1.033	0.517	
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
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	25.2	24.93	0.02	0	04815	QPSK	1	25	10 mm	back	1:1	0.296	1.064	0.315	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	-0.02	1	04815	QPSK	25	12	10 mm	back	1:1	0.224	1.042	0.233	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	-0.01	0	04815	QPSK	1	25	10 mm	front	1:1	0.324	1.064	0.345	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	0.04	1	04815	QPSK	25	12	10 mm	front	1:1	0.245	1.042	0.255	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	0.10	0	04815	QPSK	1	25	10 mm	bottom	1:1	0.329	1.064	0.350	A38
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	-0.04	1	04815	QPSK	25	12	10 mm	bottom	1:1	0.256	1.042	0.267	
782.00	23230	Mid	LTE Band 13	10	25.2	24.93	-0.03	0	04815	QPSK	1	25	10 mm	left	1:1	0.295	1.064	0.314	
782.00	23230	Mid	LTE Band 13	10	24.2	24.02	-0.05	1	04815	QPSK	25	12	10 mm	left	1:1	0.231	1.042	0.241	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-29
LTE 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	25.2	24.92	-0.03	0	04807	QPSK	1	36	10 mm	back	1:1	0.371	1.067	0.396	A39
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.02	1	04807	QPSK	36	18	10 mm	back	1:1	0.301	1.050	0.316	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.03	0	04807	QPSK	1	36	10 mm	front	1:1	0.312	1.067	0.333	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.10	1	04807	QPSK	36	18	10 mm	front	1:1	0.254	1.050	0.267	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.02	0	04807	QPSK	1	36	10 mm	bottom	1:1	0.362	1.067	0.386	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.02	1	04807	QPSK	36	18	10 mm	bottom	1:1	0.294	1.050	0.309	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	24.92	0.03	0	04807	QPSK	1	36	10 mm	left	1:1	0.228	1.067	0.243	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	23.99	0.03	1	04807	QPSK	36	18	10 mm	left	1:1	0.190	1.050	0.200	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-30
LTE 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)	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	0.00	0	04807	QPSK	1	50	10 mm	back	1:1	0.450	1.021	0.459	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	0.02	0	04807	QPSK	50	25	10 mm	back	1:1	0.453	1.026	0.465	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	-0.08	0	04831	QPSK	1	50	10 mm	front	1:1	0.400	1.021	0.408	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	-0.10	0	04831	QPSK	50	25	10 mm	front	1:1	0.406	1.026	0.417	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.86	-0.04	0	04831	QPSK	1	0	10 mm	bottom	1:1	0.793	1.081	0.857	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.06	0.03	0	04831	QPSK	1	50	10 mm	bottom	1:1	0.847	1.033	0.875	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	0.02	0	04831	QPSK	1	50	10 mm	bottom	1:1	0.920	1.021	0.939	A41
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.01	0	04831	QPSK	50	25	10 mm	bottom	1:1	0.805	1.047	0.843	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.08	0.10	0	04831	QPSK	50	25	10 mm	bottom	1:1	0.862	1.028	0.886	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	-0.01	0	04831	QPSK	50	25	10 mm	bottom	1:1	0.910	1.026	0.934	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	-0.01	0	04831	QPSK	100	0	10 mm	bottom	1:1	0.915	1.042	**0.953**	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	-0.08	0	04831	QPSK	1	50	10 mm	right	1:1	0.137	1.021	0.140	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	0.03	0	04831	QPSK	50	25	10 mm	right	1:1	0.139	1.026	0.143	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	0.02	0	04831	QPSK	1	50	10 mm	bottom	1:1	0.908	1.021	0.927	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

Note: Blue entry represent variability measurement.

Table 11-31
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)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	-0.03	0	04807	QPSK	1	50	10 mm	back	1:1	0.544	1.042	0.567	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	-0.05	0	04807	QPSK	50	0	10 mm	back	1:1	0.533	1.009	0.538	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	0.01	0	04807	QPSK	1	50	10 mm	front	1:1	0.396	1.042	0.413	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	0.01	0	04807	QPSK	50	0	10 mm	front	1:1	0.374	1.009	0.377	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.93	-0.07	0	04807	QPSK	1	50	10 mm	bottom	1:1	0.703	1.064	0.748	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	0.16	0	04807	QPSK	1	50	10 mm	bottom	1:1	0.704	1.042	0.734	A43
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.01	0.05	0	04807	QPSK	1	50	10 mm	bottom	1:1	0.642	1.045	0.671	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	-0.12	0	04807	QPSK	50	0	10 mm	bottom	1:1	0.664	1.009	0.670	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	-0.02	0	04807	QPSK	1	50	10 mm	right	1:1	0.102	1.042	0.106	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	0.10	0	04807	QPSK	50	0	10 mm	right	1:1	0.106	1.009	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-32
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	0.02	0	04831	QPSK	1	50	10 mm	back	1:1.58	0.450	1.023	0.460	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.05	0	04831	QPSK	50	50	10 mm	back	1:1.58	0.442	1.026	0.453	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	0.07	0	04831	QPSK	1	50	10 mm	front	1:1.58	0.245	1.023	0.251	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.04	0	04831	QPSK	50	50	10 mm	front	1:1.58	0.242	1.026	0.248	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	0.10	0	04831	QPSK	1	50	10 mm	bottom	1:1.58	0.451	1.023	0.461	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.04	0	04831	QPSK	50	50	10 mm	bottom	1:1.58	0.460	1.026	0.472	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	25.7	25.45	0.07	0	04831	QPSK	50	50	10 mm	bottom	1:2.31	0.480	1.059	0.508	A45
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	23.7	23.52	0.12	0	04831	QPSK	50	50	10 mm	bottom	1:1.58	0.431	1.042	0.449	
	SCC	2612.80	40818											0							
2 CC Uplink - Power Class 2	PCC	2593.00	40620	Mid	LTE Band 41	20	25.7	25.38	0.12	0	04831	QPSK	50	50	10 mm	bottom	1:2.31	0.452	1.076	0.486	
	SCC	2612.80	40818											0							
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	0.03	0	04831	QPSK	1	50	10 mm	right	1:1.58	0.063	1.023	0.064	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.08	0	04831	QPSK	50	50	10 mm	right	1:1.58	0.064	1.026	0.066	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-33
WLAN Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.5	21.30	-0.19	10 mm	04930	1	back	99.0	0.592	0.432	1.047	1.010	0.457	
2437	6	802.11b	DSSS	22	21.5	21.30	0.16	10 mm	04930	1	front	99.0	0.456	-	1.047	1.010	-	
2437	6	802.11b	DSSS	22	21.5	21.30	0.17	10 mm	04930	1	top	99.0	0.254	-	1.047	1.010	-	
2412	1	802.11b	DSSS	22	21.5	20.87	0.03	10 mm	04930	1	right	99.0	1.235	0.762	1.156	1.010	**0.890**	A47
2437	6	802.11b	DSSS	22	21.5	21.30	0.03	10 mm	04930	1	right	99.0	1.142	0.750	1.047	1.010	0.793	
2462	11	802.11b	DSSS	22	21.5	20.91	0.03	10 mm	04930	1	right	99.0	0.930	0.616	1.146	1.010	0.713	
5180	36	802.11a	OFDM	20	19.0	18.65	0.10	10 mm	04922	6	back	96.8	1.168	0.575	1.084	1.033	0.644	
5180	36	802.11a	OFDM	20	19.0	18.65	0.12	10 mm	04922	6	front	96.8	0.249	-	1.084	1.033	-	
5180	36	802.11a	OFDM	20	19.0	18.65	-0.04	10 mm	04922	6	top	96.8	0.347	-	1.084	1.033	-	
5180	36	802.11a	OFDM	20	19.0	18.65	0.04	10 mm	04922	6	right	96.8	1.376	0.605	1.084	1.033	0.677	
5745	149	802.11a	OFDM	20	19.0	18.39	0.10	10 mm	04922	6	back	96.8	1.231	0.625	1.151	1.033	0.743	
5745	149	802.11a	OFDM	20	19.0	18.39	0.05	10 mm	04922	6	front	96.8	0.521	-	1.151	1.033	-	
5745	149	802.11a	OFDM	20	19.0	18.39	0.20	10 mm	04922	6	top	96.8	0.538	-	1.151	1.033	-	
5745	149	802.11a	OFDM	20	19.0	18.39	0.08	10 mm	04922	6	right	96.8	1.975	0.824	1.151	1.033	0.980	
5785	157	802.11a	OFDM	20	19.0	17.79	0.04	10 mm	04922	6	right	96.8	2.018	0.810	1.321	1.033	**1.105**	
5825	165	802.11a	OFDM	20	19.0	18.12	0.03	10 mm	04922	6	right	96.8	1.989	0.824	1.225	1.033	1.043	A49
5825	165	802.11a	OFDM	20	19.0	18.12	0.06	10 mm	04922	6	right	96.8	1.913	0.824	1.225	1.033	1.043	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**													**Body** **1.6 W/kg (mW/g)** averaged over 1 gram					

Note: Blue entry represent variability measurement.

Table 11-34
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	9.0	8.45	0.03	10 mm	04930	1	back	76.6	0.019	1.135	1.305	0.028	
2480	78	Bluetooth	FHSS	9.0	8.45	0.03	10 mm	04930	1	front	76.6	0.017	1.135	1.305	0.025	
2480	78	Bluetooth	FHSS	9.0	8.45	0.07	10 mm	04930	1	top	76.6	0.005	1.135	1.305	0.007	
2480	78	Bluetooth	FHSS	9.0	8.45	0.08	10 mm	04930	1	right	76.6	0.035	1.135	1.305	**0.052**	A51
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Body** **1.6 W/kg (mW/g)** averaged over 1 gram				

11.4 Standalone Phablet SAR Data

Table 11-35
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)	
1712.40	1312	UMTS 1750	RMC	24.7	24.68	0.09	1 mm	04831	1:1	back	2.270	1.005	2.281	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	-0.03	1 mm	04831	1:1	back	2.290	1.012	2.317	
1752.60	1513	UMTS 1750	RMC	24.7	24.70	-0.04	1 mm	04831	1:1	back	2.260	1.000	2.260	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.04	2 mm	04831	1:1	front	1.310	1.012	1.326	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	-0.01	5 mm	04831	1:1	bottom	1.510	1.012	1.528	
1732.40	1412	UMTS 1750	RMC	24.7	24.65	0.16	0 mm	04831	1:1	right	0.571	1.012	0.578	
1712.40	1312	UMTS 1750	RMC	23.2	22.98	0.06	0 mm	04831	1:1	back	2.350	1.052	2.472	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	0.05	0 mm	04831	1:1	back	2.370	1.062	2.517	
1752.60	1513	UMTS 1750	RMC	23.2	23.04	0.04	0 mm	04831	1:1	back	2.400	1.038	2.491	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	-0.03	0 mm	04831	1:1	front	1.730	1.062	1.837	
1712.40	1312	UMTS 1750	RMC	23.2	22.98	-0.08	0 mm	04831	1:1	bottom	2.660	1.052	2.798	
1732.40	1412	UMTS 1750	RMC	23.2	22.94	-0.10	0 mm	04831	1:1	bottom	2.680	1.062	2.846	
1752.60	1513	UMTS 1750	RMC	23.2	23.04	-0.20	0 mm	04831	1:1	bottom	2.760	1.038	2.865	A52
1752.60	1513	UMTS 1750	RMC	23.2	23.04	-0.20	0 mm	04831	1:1	bottom	2.690	1.038	2.792	
1852.40	9262	UMTS 1900	RMC	24.7	24.70	-0.02	1 mm	04807	1:1	back	2.310	1.000	2.310	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.06	1 mm	04807	1:1	back	2.170	1.023	2.220	
1907.60	9538	UMTS 1900	RMC	24.7	24.68	-0.04	1 mm	04807	1:1	back	2.170	1.005	2.181	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.10	2 mm	04807	1:1	front	1.470	1.023	1.504	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.13	5 mm	04807	1:1	bottom	1.300	1.023	1.330	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.03	0 mm	04807	1:1	right	0.460	1.023	0.471	
1852.40	9262	UMTS 1900	RMC	23.2	23.03	-0.08	0 mm	04807	1:1	back	2.390	1.040	2.486	
1880.00	9400	UMTS 1900	RMC	23.2	23.00	-0.06	0 mm	04807	1:1	back	2.330	1.047	2.440	
1907.60	9538	UMTS 1900	RMC	23.2	23.04	-0.09	0 mm	04807	1:1	back	2.360	1.038	2.450	
1852.40	9262	UMTS 1900	RMC	23.2	23.03	-0.17	0 mm	04807	1:1	front	2.040	1.040	2.122	
1880.00	9400	UMTS 1900	RMC	23.2	23.00	0.11	0 mm	04807	1:1	front	2.020	1.047	2.115	
1907.60	9538	UMTS 1900	RMC	23.2	23.04	-0.02	0 mm	04807	1:1	front	1.980	1.038	2.055	
1852.40	9262	UMTS 1900	RMC	23.2	23.03	-0.02	0 mm	04807	1:1	bottom	2.570	1.040	2.673	A53
1880.00	9400	UMTS 1900	RMC	23.2	23.00	-0.01	0 mm	04807	1:1	bottom	2.440	1.047	2.555	
1907.60	9538	UMTS 1900	RMC	23.2	23.04	-0.03	0 mm	04807	1:1	bottom	2.360	1.038	2.450	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.66	-0.09	1 mm	04831	1:1	back	1.390	1.009	1.403	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.66	0.08	2 mm	04831	1:1	front	1.070	1.009	1.080	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.66	-0.05	5 mm	04831	1:1	bottom	0.936	1.009	0.944	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.66	0.02	0 mm	04831	1:1	right	0.343	1.009	0.346	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.2	22.91	0.06	0 mm	04831	1:1	back	1.900	1.069	2.031	A54
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	-0.05	0 mm	04831	1:1	back	1.850	1.112	2.057	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.2	22.95	0.04	0 mm	04831	1:1	back	1.840	1.059	1.949	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	0.04	0 mm	04831	1:1	front	1.500	1.112	1.668	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.2	22.74	-0.05	0 mm	04831	1:1	bottom	1.770	1.112	1.968	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) averaged over 10 grams						

Note: Blue entry represent variability measurement.

Table 11-36
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	0.10	0	04831	QPSK	1	50	1 mm	back	1:1	1.930	1.033	1.994	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	0.11	1	04831	QPSK	50	25	1 mm	back	1:1	1.580	1.028	1.624	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.12	0	04831	QPSK	1	50	2 mm	front	1:1	1.350	1.033	1.395	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	-0.06	1	04831	QPSK	50	25	2 mm	front	1:1	1.100	1.028	1.131	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.01	0	04831	QPSK	1	50	5 mm	bottom	1:1	1.470	1.033	1.519	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	-0.03	1	04831	QPSK	50	25	5 mm	bottom	1:1	1.190	1.028	1.223	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.56	-0.04	0	04831	QPSK	1	50	0 mm	right	1:1	0.432	1.033	0.446	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.58	-0.01	1	04831	QPSK	50	25	0 mm	right	1:1	0.354	1.028	0.364	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.86	0.05	0	04831	QPSK	1	0	0 mm	back	1:1	2.120	1.081	2.292	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.06	0.05	0	04831	QPSK	1	50	0 mm	back	1:1	2.240	1.033	2.314	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	0.04	0	04831	QPSK	1	50	0 mm	back	1:1	2.300	1.021	2.348	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.03	0	04831	QPSK	50	25	0 mm	back	1:1	2.280	1.047	2.387	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.08	0.02	0	04831	QPSK	50	25	0 mm	back	1:1	2.240	1.028	2.303	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	0.05	0	04831	QPSK	50	25	0 mm	back	1:1	2.330	1.026	2.391	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	0.02	0	04831	QPSK	100	0	0 mm	back	1:1	2.340	1.042	2.438	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	0.05	0	04831	QPSK	1	50	0 mm	front	1:1	1.740	1.021	1.777	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	0.06	0	04831	QPSK	50	25	0 mm	front	1:1	1.750	1.026	1.796	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.86	-0.01	0	04831	QPSK	1	0	0 mm	bottom	1:1	2.420	1.081	2.616	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.06	-0.10	0	04831	QPSK	1	50	0 mm	bottom	1:1	2.540	1.033	2.624	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.11	-0.04	0	04831	QPSK	1	50	0 mm	bottom	1:1	2.510	1.021	2.563	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.02	0	04831	QPSK	50	25	0 mm	bottom	1:1	2.640	1.047	2.764	A55
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	23.08	-0.02	0	04831	QPSK	50	25	0 mm	bottom	1:1	2.580	1.028	2.652	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.09	-0.01	0	04831	QPSK	50	25	0 mm	bottom	1:1	2.570	1.026	2.637	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	0.03	0	04831	QPSK	100	0	0 mm	bottom	1:1	2.540	1.042	2.647	
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 11-37
LTE Band 25 (PCS) Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	-0.03	0	04807	QPSK	1	50	1 mm	back	1:1	1.680	1.016	1.707	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.10	1	04807	QPSK	50	0	1 mm	back	1:1	1.340	1.000	1.340	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.01	0	04807	QPSK	1	50	2 mm	front	1:1	1.210	1.016	1.229	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.05	1	04807	QPSK	50	0	2 mm	front	1:1	0.970	1.000	0.970	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	-0.07	0	04807	QPSK	1	50	5 mm	bottom	1:1	1.290	1.016	1.311	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.05	1	04807	QPSK	50	0	5 mm	bottom	1:1	1.020	1.000	1.020	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.63	0.02	0	04807	QPSK	1	50	0 mm	right	1:1	0.505	1.016	0.513	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.10	1	04807	QPSK	50	0	0 mm	right	1:1	0.387	1.000	0.387	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.93	-0.04	0	04807	QPSK	1	50	0 mm	back	1:1	2.450	1.064	2.607	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	-0.05	0	04807	QPSK	1	50	0 mm	back	1:1	2.410	1.042	2.511	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.01	-0.06	0	04807	QPSK	1	50	0 mm	back	1:1	2.420	1.045	2.529	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.00	-0.03	0	04807	QPSK	50	25	0 mm	back	1:1	2.410	1.047	2.523	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.06	-0.03	0	04807	QPSK	50	25	0 mm	back	1:1	2.400	1.033	2.479	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	-0.06	0	04807	QPSK	50	0	0 mm	back	1:1	2.440	1.009	2.462	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.01	-0.05	0	04807	QPSK	100	0	0 mm	back	1:1	2.310	1.045	2.414	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.93	-0.10	0	04807	QPSK	1	50	0 mm	front	1:1	2.100	1.064	2.234	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	-0.10	0	04807	QPSK	1	50	0 mm	front	1:1	2.100	1.042	2.188	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.01	-0.08	0	04807	QPSK	1	50	0 mm	front	1:1	2.070	1.045	2.163	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.00	-0.09	0	04807	QPSK	50	25	0 mm	front	1:1	2.050	1.047	2.146	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.06	-0.08	0	04807	QPSK	50	25	0 mm	front	1:1	2.090	1.033	2.159	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	-0.10	0	04807	QPSK	50	0	0 mm	front	1:1	2.120	1.009	2.139	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.01	-0.08	0	04807	QPSK	100	0	0 mm	front	1:1	2.020	1.045	2.111	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.93	0.02	0	04807	QPSK	1	50	0 mm	bottom	1:1	2.590	1.064	2.756	A56
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.02	-0.03	0	04807	QPSK	1	50	0 mm	bottom	1:1	2.450	1.042	2.553	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.01	0.02	0	04807	QPSK	1	50	0 mm	bottom	1:1	2.470	1.045	2.581	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.00	-0.03	0	04807	QPSK	50	25	0 mm	bottom	1:1	2.530	1.047	2.649	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.06	-0.10	0	04807	QPSK	50	25	0 mm	bottom	1:1	2.430	1.033	2.510	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	23.16	0.06	0	04807	QPSK	50	0	0 mm	bottom	1:1	2.450	1.009	2.472	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.01	-0.02	0	04807	QPSK	100	0	0 mm	bottom	1:1	2.380	1.045	2.487	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.93	-0.02	0	04807	QPSK	1	50	0 mm	bottom	1:1	2.340	1.064	2.490	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Phablet 4.0 W/kg (mW/g) averaged over 10 grams					

Note: Blue entry represent variability measurement.

Table 11-38
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
		MHz		Ch.																	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.13	0	04823	QPSK	1	50	1 mm	back	1:1.58	2.460	1.021	2.512	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	25.2	25.04	-0.12	0	04823	QPSK	1	50	1 mm	back	1:1.58	2.590	1.038	2.688	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.2	25.09	-0.14	0	04823	QPSK	1	50	1 mm	back	1:1.58	2.540	1.026	2.606	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.2	25.01	-0.10	0	04823	QPSK	1	50	1 mm	back	1:1.58	2.600	1.045	2.717	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.2	24.96	-0.04	0	04823	QPSK	1	50	1 mm	back	1:1.58	2.630	1.057	2.780	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.10	1	04823	QPSK	50	0	1 mm	back	1:1.58	1.790	1.023	1.831	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.2	24.05	-0.15	1	04823	QPSK	50	25	1 mm	back	1:1.58	2.120	1.035	2.194	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.2	24.08	-0.08	1	04823	QPSK	50	0	1 mm	back	1:1.58	2.060	1.028	2.118	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.2	24.07	-0.09	1	04823	QPSK	50	0	1 mm	back	1:1.58	2.120	1.030	2.184	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.2	23.90	-0.10	1	04823	QPSK	50	0	1 mm	back	1:1.58	2.190	1.072	2.348	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.2	23.99	-0.11	1	04823	QPSK	100	0	1 mm	back	1:1.58	1.970	1.050	2.069	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	0.04	0	04823	QPSK	1	50	2 mm	front	1:1.58	1.200	1.021	1.225	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.00	1	04823	QPSK	50	0	2 mm	front	1:1.58	0.950	1.023	0.972	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.10	0	04823	QPSK	1	50	5 mm	bottom	1:1.58	0.566	1.021	0.578	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	-0.13	1	04823	QPSK	50	0	5 mm	bottom	1:1.58	0.442	1.023	0.452	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	25.2	25.11	-0.04	0	04823	QPSK	1	50	0 mm	right	1:1.58	0.375	1.021	0.383	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.06	1	04823	QPSK	50	0	0 mm	right	1:1.58	0.284	1.023	0.291	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.56	-0.17	0	04823	QPSK	1	50	0 mm	back	1:1.58	2.400	1.033	2.479	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.59	-0.16	0	04823	QPSK	1	50	0 mm	back	1:1.58	2.470	1.026	2.534	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	-0.02	0	04823	QPSK	1	50	0 mm	back	1:1.58	2.490	1.023	2.547	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	-0.02	0	04823	QPSK	1	50	0 mm	back	1:1.58	2.410	1.030	2.482	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	-0.17	0	04823	QPSK	1	50	0 mm	back	1:1.58	2.260	1.050	2.373	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.57	-0.19	0	04823	QPSK	50	25	0 mm	back	1:1.58	2.470	1.030	2.544	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.55	-0.21	0	04823	QPSK	50	0	0 mm	back	1:1.58	2.550	1.035	2.639	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	-0.16	0	04823	QPSK	50	50	0 mm	back	1:1.58	2.520	1.026	2.586	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	-0.21	0	04823	QPSK	50	0	0 mm	back	1:1.58	2.510	1.030	2.585	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	-0.20	0	04823	QPSK	50	25	0 mm	back	1:1.58	2.310	1.050	2.426	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.58	-0.17	0	04823	QPSK	100	0	0 mm	back	1:1.58	2.550	1.028	2.621	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.56	-0.04	0	04823	QPSK	1	50	0 mm	front	1:1.58	1.890	1.033	1.952	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.59	-0.05	0	04823	QPSK	1	50	0 mm	front	1:1.58	1.820	1.026	1.867	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	-0.05	0	04823	QPSK	1	50	0 mm	front	1:1.58	1.780	1.023	1.821	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	-0.05	0	04823	QPSK	1	50	0 mm	front	1:1.58	1.630	1.030	1.679	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	-0.05	0	04823	QPSK	1	50	0 mm	front	1:1.58	1.420	1.050	1.491	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.57	-0.04	0	04823	QPSK	50	25	0 mm	front	1:1.58	1.920	1.030	1.978	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.55	-0.05	0	04823	QPSK	50	0	0 mm	front	1:1.58	1.870	1.035	1.935	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.00	0	04823	QPSK	50	50	0 mm	front	1:1.58	1.780	1.026	1.826	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	-0.05	0	04823	QPSK	50	0	0 mm	front	1:1.58	1.680	1.030	1.730	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	-0.05	0	04823	QPSK	50	25	0 mm	front	1:1.58	1.460	1.050	1.533	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.58	-0.05	0	04823	QPSK	100	0	0 mm	front	1:1.58	1.810	1.028	1.861	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.56	0.04	0	04831	QPSK	1	50	0 mm	bottom	1:1.58	2.260	1.033	2.335	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.59	0.07	0	04831	QPSK	1	50	0 mm	bottom	1:1.58	2.590	1.026	2.657	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.60	0.05	0	04831	QPSK	1	50	0 mm	bottom	1:1.58	2.720	1.023	2.783	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	0.08	0	04831	QPSK	1	50	0 mm	bottom	1:1.58	2.730	1.030	2.812	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	0.08	0	04831	QPSK	1	50	0 mm	bottom	1:1.58	2.670	1.050	2.804	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.57	0.05	0	04831	QPSK	50	25	0 mm	bottom	1:1.58	2.300	1.030	2.369	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.55	0.02	0	04831	QPSK	50	0	0 mm	bottom	1:1.58	2.580	1.035	2.670	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.59	0.04	0	04831	QPSK	50	50	0 mm	bottom	1:1.58	2.700	1.026	2.770	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.57	0.02	0	04831	QPSK	50	0	0 mm	bottom	1:1.58	2.750	1.030	2.833	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.7	23.49	0.09	0	04831	QPSK	50	25	0 mm	bottom	1:1.58	2.660	1.050	2.793	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.7	23.58	0.03	0	04831	QPSK	100	0	0 mm	bottom	1:1.58	2.570	1.028	2.642	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.7	25.49	-0.19	0	04831	QPSK	50	0	0 mm	bottom	1:2.31	2.890	1.050	3.035	A57
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.48	0.12	0	04831	QPSK	50	0	0 mm	bottom	1:1.58	2.630	1.052	2.767	
	SCC	2616.70	40857											50							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	25.7	25.36	0.15	0	04831	QPSK	50	0	0 mm	bottom	1:2.31	2.680	1.081	2.897	
	SCC	2616.70	40857											50							
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.7	23.57	-0.17	0	04823	QPSK	50	25	0 mm	back	1:1.58	2.190	1.030	2.256	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	25.7	25.49	0.10	0	04831	QPSK	50	0	0 mm	Bottom	1:2.31	2.880	1.050	3.024	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																		Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entries represent variability measurements.

Table 11-39
WLAN Phablet SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	19.0	18.39	0.09	0 mm	04922	6	back	96.8	34.330	1.720	1.151	1.033	**2.045**	A58
5280	56	802.11a	OFDM	20	19.0	18.54	0.10	0 mm	04922	6	back	96.8	34.092	1.720	1.112	1.033	1.976	
5320	64	802.11a	OFDM	20	19.0	18.56	0.10	0 mm	04922	6	back	96.8	33.934	1.670	1.107	1.033	1.910	
5320	64	802.11a	OFDM	20	19.0	18.56	-0.09	0 mm	04922	6	front	96.8	6.905	0.476	1.107	1.033	0.544	
5320	64	802.11a	OFDM	20	19.0	18.56	0.03	0 mm	04922	6	top	96.8	2.119	-	1.107	1.033	-	
5320	64	802.11a	OFDM	20	19.0	18.56	0.20	0 mm	04922	6	right	96.8	15.344	1.360	1.107	1.033	1.555	
5500	100	802.11a	OFDM	20	19.0	18.75	0.10	0 mm	04922	6	back	96.8	29.645	1.670	1.059	1.033	1.827	
5500	100	802.11a	OFDM	20	19.0	18.75	-0.05	0 mm	04922	6	front	96.8	8.512	0.559	1.059	1.033	0.612	
5500	100	802.11a	OFDM	20	19.0	18.75	0.03	0 mm	04922	6	top	96.8	4.145	-	1.059	1.033	-	
5500	100	802.11a	OFDM	20	19.0	18.75	0.10	0 mm	04922	6	right	96.8	21.365	1.340	1.059	1.033	1.466	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) averaged over 10 grams										

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 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. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
11. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the 1g thresholds for the equivalent test cases.
12. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.2. 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.

13. The orange highlights throughout the report represents the highest SAR per FCC Equipment Class

GSM Test Notes:

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

CDMA Notes:

1. Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03r01.
2. Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO Rev0 and RevA and TDSO / SO32 FCH+SCH SAR tests were not required per the 3G SAR Test Reduction Procedure in FCC KDB Publication 941225 D01v03r01.
3. CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03r01 procedures for data devices. Wireless Router SAR tests for 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.

UMTS Notes:

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

LTE Notes:

1. LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 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.
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.
9. This device supports LTE Band 41 ULCA active with Power Class 2. Highest SAR test configuration for each exposure condition in Power Class 3 with ULCA active was repeated with Power Class 2 with ULCA active.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.

4. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.

Bluetooth Notes

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

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.291	1.126	**1.417**
	GSM/GPRS 1900	0.084	1.126	1.210
	UMTS 850	0.196	1.126	1.322
	UMTS 1750	0.130	1.126	1.256
	UMTS 1900	0.124	1.126	1.250
	CDMA/EVDO BC10 (§90S)	0.183	1.126	1.309
	CDMA/EVDO BC0 (§22H)	0.204	1.126	1.330
	PCS CDMA/EVDO	0.126	1.126	1.252
	LTE Band 71	0.159	1.126	1.285
	LTE Band 12	0.203	1.126	1.329
	LTE Band 13	0.159	1.126	1.285
	LTE Band 26 (Cell)	0.184	1.126	1.310
	LTE Band 66 (AWS)	0.112	1.126	1.238
	LTE Band 25 (PCS)	0.205	1.126	1.331
	LTE Band 41	0.162	1.126	1.288

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 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.291	0.768	**1.059**
	GSM/GPRS 1900	0.084	0.768	0.852
	UMTS 850	0.196	0.768	0.964
	UMTS 1750	0.130	0.768	0.898
	UMTS 1900	0.124	0.768	0.892
	CDMA/EVDO BC10 (§90S)	0.183	0.768	0.951
	CDMA/EVDO BC0 (§22H)	0.204	0.768	0.972
	PCS CDMA/EVDO	0.126	0.768	0.894
	LTE Band 71	0.159	0.768	0.927
	LTE Band 12	0.203	0.768	0.971
	LTE Band 13	0.159	0.768	0.927
	LTE Band 26 (Cell)	0.184	0.768	0.952
	LTE Band 66 (AWS)	0.112	0.768	0.880
	LTE Band 25 (PCS)	0.205	0.768	0.973
	LTE Band 41	0.162	0.768	0.930

Table 12-3
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	GSM/GPRS 850	0.291	0.169	**0.460**
	GSM/GPRS 1900	0.084	0.169	0.253
	UMTS 850	0.196	0.169	0.365
	UMTS 1750	0.130	0.169	0.299
	UMTS 1900	0.124	0.169	0.293
	CDMA/EVDO BC10 (§90S)	0.183	0.169	0.352
	CDMA/EVDO BC0 (§22H)	0.204	0.169	0.373
	PCS CDMA/EVDO	0.126	0.169	0.295
	LTE Band 71	0.159	0.169	0.328
	LTE Band 12	0.203	0.169	0.372
	LTE Band 13	0.159	0.169	0.328
	LTE Band 26 (Cell)	0.184	0.169	0.353
	LTE Band 66 (AWS)	0.112	0.169	0.281
	LTE Band 25 (PCS)	0.205	0.169	0.374
	LTE Band 41	0.162	0.169	0.331

Table 12-4
Simultaneous Transmission Scenario with 5GHz WLAN and Bluetooth (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	
		1	2	3	1+2+3
Head SAR	GSM/GPRS 850	0.291	0.768	0.169	**1.228**
	GSM/GPRS 1900	0.084	0.768	0.169	1.021
	UMTS 850	0.196	0.768	0.169	1.133
	UMTS 1750	0.130	0.768	0.169	1.067
	UMTS 1900	0.124	0.768	0.169	1.061
	CDMA/EVDO BC10 (§90S)	0.183	0.768	0.169	1.120
	CDMA/EVDO BC0 (§22H)	0.204	0.768	0.169	1.141
	PCS CDMA/EVDO	0.126	0.768	0.169	1.063
	LTE Band 71	0.159	0.768	0.169	1.096
	LTE Band 12	0.203	0.768	0.169	1.140
	LTE Band 13	0.159	0.768	0.169	1.096
	LTE Band 26 (Cell)	0.184	0.768	0.169	1.121
	LTE Band 66 (AWS)	0.112	0.768	0.169	1.049
	LTE Band 25 (PCS)	0.205	0.768	0.169	1.142
	LTE Band 41	0.162	0.768	0.169	1.099

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 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.507	0.457	0.964
	GSM/GPRS 1900	0.410	0.457	0.867
	UMTS 850	0.412	0.457	0.869
	UMTS 1750	0.629	0.457	1.086
	UMTS 1900	0.662	0.457	1.119
	CDMA BC10 (§90S)	0.329	0.457	0.786
	CDMA BC0 (§22H)	0.425	0.457	0.882
	PCS CDMA	0.775	0.457	1.232
	LTE Band 71	0.288	0.457	0.745
	LTE Band 12	0.317	0.457	0.774
	LTE Band 13	0.315	0.457	0.772
	LTE Band 26 (Cell)	0.396	0.457	0.853
	LTE Band 66 (AWS)	0.549	0.457	1.006
	LTE Band 25 (PCS)	0.788	0.457	**1.245**
	LTE Band 41	0.606	0.457	1.063

Table 12-6
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 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Body-Worn	GSM/GPRS 850	0.507	0.880	1.387	N/A
	GSM/GPRS 1900	0.410	0.880	1.290	N/A
	UMTS 850	0.412	0.880	1.292	N/A
	UMTS 1750	0.629	0.880	1.509	N/A
	UMTS 1900	0.662	0.880	**1.542**	N/A
	CDMA BC10 (§90S)	0.329	0.880	1.209	N/A
	CDMA BC0 (§22H)	0.425	0.880	1.305	N/A
	PCS CDMA	0.775	0.880	See Note 1	0.01
	LTE Band 71	0.288	0.880	1.168	N/A
	LTE Band 12	0.317	0.880	1.197	N/A
	LTE Band 13	0.315	0.880	1.195	N/A
	LTE Band 26 (Cell)	0.396	0.880	1.276	N/A
	LTE Band 66 (AWS)	0.549	0.880	1.429	N/A
	LTE Band 25 (PCS)	0.788	0.880	See Note 1	0.01
	LTE Band 41	0.606	0.880	1.486	N/A

Note 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.

Table 12-7
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	GSM/GPRS 850	0.507	0.028	0.535
	GSM/GPRS 1900	0.410	0.028	0.438
	UMTS 850	0.412	0.028	0.440
	UMTS 1750	0.629	0.028	0.657
	UMTS 1900	0.662	0.028	0.690
	CDMA BC10 (§90S)	0.329	0.028	0.357
	CDMA BC0 (§22H)	0.425	0.028	0.453
	PCS CDMA	0.775	0.028	0.803
	LTE Band 71	0.288	0.028	0.316
	LTE Band 12	0.317	0.028	0.345
	LTE Band 13	0.315	0.028	0.343
	LTE Band 26 (Cell)	0.396	0.028	0.424
	LTE Band 66 (AWS)	0.549	0.028	0.577
	LTE Band 25 (PCS)	0.788	0.028	**0.816**
	LTE Band 41	0.606	0.028	0.634

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	GSM/GPRS 850	0.507	0.880	0.028	1.415
	GSM/GPRS 1900	0.410	0.880	0.028	1.318
	UMTS 850	0.412	0.880	0.028	1.320
	UMTS 1750	0.629	0.880	0.028	1.537
	UMTS 1900	0.662	0.880	0.028	**1.570**
	CDMA BC10 (§90S)	0.329	0.880	0.028	1.237
	CDMA BC0 (§22H)	0.425	0.880	0.028	1.333
	PCS CDMA	0.775	0.880	0.028	See Note 2
	LTE Band 71	0.288	0.880	0.028	1.196
	LTE Band 12	0.317	0.880	0.028	1.225
	LTE Band 13	0.315	0.880	0.028	1.223
	LTE Band 26 (Cell)	0.396	0.880	0.028	1.304
	LTE Band 66 (AWS)	0.549	0.880	0.028	1.457
	LTE Band 25 (PCS)	0.788	0.880	0.028	See Note 2
	LTE Band 41	0.606	0.880	0.028	1.514

Note 2: Please see section 12.8 for detailed simultaneous transmission analysis.

12.5 Hotspot SAR Simultaneous Transmission Analysis

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

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

Table 12-9
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 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.507	0.890	1.397
	GPRS 1900	0.785	0.890	See Table Below
	UMTS 850	0.412	0.890	1.302
	UMTS 1750	0.859	0.890	See Table Below
	UMTS 1900	0.778	0.890	See Table Below
	EVDO BC10 (§90S)	0.245	0.890	1.135
	EVDO BC0 (§22H)	0.280	0.890	1.170
	PCS EVDO	0.593	0.890	1.483
	LTE Band 71	0.559	0.890	1.449
	LTE Band 12	0.674	0.890	**1.564**
	LTE Band 13	0.350	0.890	1.240
	LTE Band 26 (Cell)	0.396	0.890	1.286
	LTE Band 66 (AWS)	0.953	0.890	See Table Below
	LTE Band 25 (PCS)	0.748	0.890	See Table Below
	LTE Band 41	0.508	0.890	1.398

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.410	0.457	0.867
	Front	0.349	0.890*	**1.239**
	Top	-	0.890*	0.890
	Bottom	0.785	-	0.785
	Right	0.123	0.890	1.013

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.495	0.457	0.952
	Front	0.417	0.890*	**1.307**
	Top	-	0.890*	0.890
	Bottom	0.859	-	0.859
	Right	0.152	0.890	1.042

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.526	0.457	0.983
	Front	0.447	0.890*	**1.337**
	Top	-	0.890*	0.890
	Bottom	0.778	-	0.778
	Right	0.127	0.890	1.017

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.465	0.457	0.922
	Front	0.417	0.890*	**1.307**
	Top	-	0.890*	0.890
	Bottom	0.953	-	0.953
	Right	0.143	0.890	1.033

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.567	0.457	1.024
	Front	0.413	0.890*	**1.303**
	Top	-	0.890*	0.890
	Bottom	0.748	-	0.748
	Right	0.107	0.890	0.997

Table 12-10
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.507	1.105	See Table Below
	GPRS 1900	0.785	1.105	See Table Below
	UMTS 850	0.412	1.105	**1.517**
	UMTS 1750	0.859	1.105	See Table Below
	UMTS 1900	0.778	1.105	See Table Below
	EVDO BC10 (§90S)	0.245	1.105	1.350
	EVDO BC0 (§22H)	0.280	1.105	1.385
	PCS EVDO	0.593	1.105	See Table Below
	LTE Band 71	0.559	1.105	See Table Below
	LTE Band 12	0.674	1.105	See Table Below
	LTE Band 13	0.350	1.105	1.455
	LTE Band 26 (Cell)	0.396	1.105	1.501
	LTE Band 66 (AWS)	0.953	1.105	See Table Below
	LTE Band 25 (PCS)	0.748	1.105	See Table Below
	LTE Band 41	0.508	1.105	See Table Below

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.507	0.743	1.250
	Front	0.411	1.105*	**1.516**
	Top	-	1.105*	1.105
	Bottom	0.501	-	0.501
	Right	-	1.105	1.105
	Left	0.344	-	0.344

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.410	0.743	1.153
	Front	0.349	1.105*	**1.454**
	Top	-	1.105*	1.105
	Bottom	0.785	-	0.785
	Right	0.123	1.105	1.228

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.495	0.743	1.238
	Front	0.417	1.105*	**1.522**
	Top	-	1.105*	1.105
	Bottom	0.859	-	0.859
	Right	0.152	1.105	1.257

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.526	0.743	1.269
	Front	0.447	1.105*	**1.552**
	Top	-	1.105*	1.105
	Bottom	0.778	-	0.778
	Right	0.127	1.105	1.232

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.347	0.743	1.090
	Front	0.342	1.105*	**1.447**
	Top	-	1.105*	1.105
	Bottom	0.593	-	0.593
	Right	0.109	1.105	1.214

Simult Tx	Configuration	LTE Band 71 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.288	0.743	1.031
	Front	0.274	1.105*	**1.379**
	Top	-	1.105*	1.105
	Bottom	0.303	-	0.303
	Right	-	1.105	1.105
	Left	0.559	-	0.559

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.317	0.743	1.060
	Front	0.369	1.105*	**1.474**
	Top	-	1.105*	1.105
	Bottom	0.336	-	0.336
	Right	-	1.105	1.105
	Left	0.674	-	0.674

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.465	0.743	1.208
	Front	0.417	1.105*	**1.522**
	Top	-	1.105*	1.105
	Bottom	0.953	-	0.953
	Right	0.143	1.105	1.248

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.567	0.743	1.310
	Front	0.413	1.105*	**1.518**
	Top	-	1.105*	1.105
	Bottom	0.748	-	0.748
	Right	0.107	1.105	1.212

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.460	0.743	1.203
	Front	0.251	1.105*	**1.356**
	Top	-	1.105*	1.105
	Bottom	0.508	-	0.508
	Right	0.066	1.105	1.171

Table 12-11
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	GPRS 850	0.507	0.052	0.559
	GPRS 1900	0.785	0.052	0.837
	UMTS 850	0.412	0.052	0.464
	UMTS 1750	0.859	0.052	0.911
	UMTS 1900	0.778	0.052	0.830
	EVDO BC10 (§90S)	0.245	0.052	0.297
	EVDO BC0 (§22H)	0.280	0.052	0.332
	PCS EVDO	0.593	0.052	0.645
	LTE Band 71	0.559	0.052	0.611
	LTE Band 12	0.674	0.052	0.726
	LTE Band 13	0.350	0.052	0.402
	LTE Band 26 (Cell)	0.396	0.052	0.448
	LTE Band 66 (AWS)	0.953	0.052	**1.005**
	LTE Band 25 (PCS)	0.748	0.052	0.800
	LTE Band 41	0.508	0.052	0.560

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.507	1.105	0.052	See Table Below
	GPRS 1900	0.785	1.105	0.052	See Table Below
	UMTS 850	0.412	1.105	0.052	**1.569**
	UMTS 1750	0.859	1.105	0.052	See Table Below
	UMTS 1900	0.778	1.105	0.052	See Table Below
	EVDO BC10 (§90S)	0.245	1.105	0.052	1.402
	EVDO BC0 (§22H)	0.280	1.105	0.052	1.437
	PCS EVDO	0.593	1.105	0.052	See Table Below
	LTE Band 71	0.559	1.105	0.052	See Table Below
	LTE Band 12	0.674	1.105	0.052	See Table Below
	LTE Band 13	0.350	1.105	0.052	1.507
	LTE Band 26 (Cell)	0.396	1.105	0.052	1.553
	LTE Band 66 (AWS)	0.953	1.105	0.052	See Table Below
	LTE Band 25 (PCS)	0.748	1.105	0.052	See Table Below
	LTE Band 41	0.508	1.105	0.052	See Table Below

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.507	0.743	0.028	1.278
	Front	0.411	1.105*	0.025	**1.541**
	Top	-	1.105*	0.007	1.112
	Bottom	0.501	-	-	0.501
	Right	-	1.105	0.052	1.157
	Left	0.344	-	-	0.344

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.410	0.743	0.028	1.181
	Front	0.349	1.105*	0.025	**1.479**
	Top	-	1.105*	0.007	1.112
	Bottom	0.785	-	-	0.785
	Right	0.123	1.105	0.052	1.280
	Left	-	-	-	0.000

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.495	0.743	0.028	1.266
	Front	0.417	1.105*	0.025	**1.547**
	Top	-	1.105*	0.007	1.112
	Bottom	0.859	-	-	0.859
	Right	0.152	1.105	0.052	1.309

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.526	0.743	0.028	1.297
	Front	0.447	1.105*	0.025	**1.577**
	Top	-	1.105*	0.007	1.112
	Bottom	0.778	-	-	0.778
	Right	0.127	1.105	0.052	1.284

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.347	0.743	0.028	1.118
	Front	0.342	1.105*	0.025	**1.472**
	Top	-	1.105*	0.007	1.112
	Bottom	0.593	-	-	0.593
	Right	0.109	1.105	0.052	1.266

Simult Tx	Configuration	LTE Band 71 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.288	0.743	0.028	1.059
	Front	0.274	1.105*	0.025	**1.404**
	Top	-	1.105*	0.007	1.112
	Bottom	0.303	-	-	0.303
	Right	-	1.105	0.052	1.157
	Left	0.559	-	-	0.559

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.317	0.743	0.028	1.088
	Front	0.369	1.105*	0.025	**1.499**
	Top	-	1.105*	0.007	1.112
	Bottom	0.336	-	-	0.336
	Right	-	1.105	0.052	1.157
	Left	0.674	-	-	0.674

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.465	0.743	0.028	1.236
	Front	0.417	1.105*	0.025	**1.547**
	Top	-	1.105*	0.007	1.112
	Bottom	0.953	-	-	0.953
	Right	0.143	1.105	0.052	1.300

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.567	0.743	0.028	1.338
	Front	0.413	1.105*	0.025	**1.543**
	Top	-	1.105*	0.007	1.112
	Bottom	0.748	-	-	0.748
	Right	0.107	1.105	0.052	1.264

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.460	0.743	0.028	1.231
	Front	0.251	1.105*	0.025	**1.381**
	Top	-	1.105*	0.007	1.112
	Bottom	0.508	-	-	0.508
	Right	0.066	1.105	0.052	1.223

12.6 Phablet Simultaneous Transmission Analysis

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

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

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

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

Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Exposure Condition	Mode	3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	UMTS 1750	2.865	2.045	See Table Below
	UMTS 1900	2.673	2.045	See Table Below
	PCS EVDO	2.057	2.045	See Table Below
	LTE Band 66 (AWS)	2.764	2.045	See Table Below
	LTE Band 25 (PCS)	2.756	2.045	See Table Below
	LTE Band 41	3.035	2.045	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.517	2.045	See Note 1	0.07
	Front	1.837	0.612	2.449	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	2.865	-	**2.865**	N/A
	Right	0.578	1.555	2.133	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.486	2.045	See Note 1	0.07
	Front	2.122	0.612	**2.734**	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	2.673	-	2.673	N/A
	Right	0.471	1.555	2.026	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.057	2.045	See Note 1	0.06
	Front	1.668	0.612	**2.280**	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	1.968	-	1.968	N/A
	Right	0.346	1.555	1.901	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.438	2.045	See Note 1	0.07
	Front	1.796	0.612	2.408	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	2.764	-	**2.764**	N/A
	Right	0.446	1.555	2.001	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.607	2.045	See Note 1	0.07
	Front	2.234	0.612	**2.846**	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	2.756	-	2.756	N/A
	Right	0.513	1.555	2.068	N/A

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.780	2.045	See Note 1	0.08
	Front	1.978	0.612	2.590	N/A
	Top	-	2.045*	2.045	N/A
	Bottom	3.035	-	**3.035**	N/A
	Right	0.383	1.555	1.938	N/A

Note 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.

12.7 SPLSR Evaluation and Analysis

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

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

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

12.7.1 Back Side SPLSR Evaluation and Analysis

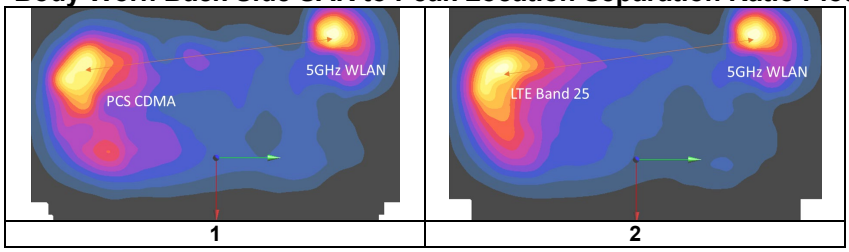
Table 12-14
Peak SAR Locations for Body- Worn Back Side

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN	-68.00	65.00	0.880
PCS CDMA	-46.50	-84.00	0.775
LTE Band 25 (PCS)	-42.50	-83.00	0.788

Table 12-15
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}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN	PCS CDMA	0.880	0.775	1.655	150.54	0.01	1
5 GHz WLAN	LTE Band 25 (PCS)	0.880	0.788	1.668	150.18	0.01	2

Table 12-16
Body Worn Back Side SAR to Peak Location Separation Ratio Plots



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12.7.2 Phablet SPLSR Evaluation and Analysis

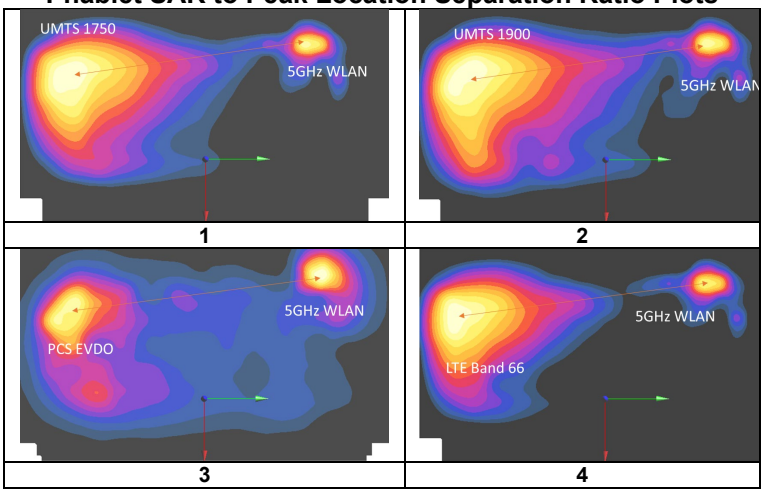
Table 12-17
Peak SAR Locations for Phablet Back Side

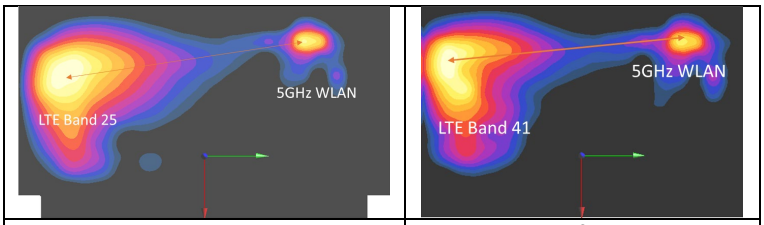
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN Phablet	-65.00	60.00	2.045
UMTS 1750	-39.50	-78.00	2.517
UMTS 1900	-49.00	-81.50	2.486
PCS EVDO	-49.00	-87.50	2.057
LTE Band 66 (AWS)	-47.50	-84.00	2.438
LTE Band 25 (PCS)	-39.50	-79.50	2.607
LTE Band 41	-50.20	-76.80	2.780

Table 12-18
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 Phablet	UMTS 1750	2.045	2.517	4.562	140.34	0.07	1
5 GHz WLAN Phablet	UMTS 1900	2.045	2.486	4.531	142.40	0.07	2
5 GHz WLAN Phablet	PCS EVDO	2.045	2.057	4.102	148.37	0.06	3
5 GHz WLAN Phablet	LTE Band 66 (AWS)	2.045	2.438	4.483	145.06	0.07	4
5 GHz WLAN Phablet	LTE Band 25 (PCS)	2.045	2.607	4.652	141.81	0.07	5
5 GHz WLAN Phablet	LTE Band 41	2.045	2.780	4.825	137.60	0.08	6

Table 12-19
Phablet SAR to Peak Location Separation Ratio Plots





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

Per KDB Publication 865664, when the sum of the transmitters potentially operating simultaneously is greater than the 1.6 W/kg or 4.0 W/kg and the sum to peak SAR location separation ratio between any pair of transmitters is more than 0.04 for 1g or 0.1 for 10g, SAR tests are required for simultaneous transmission to determine the aggregate 1g or 10g SAR. When required, each transmitter is tested for simultaneous transmission in the configuration, channel and operating mode that resulted in the highest SAR during the stand-alone evaluation.

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

12.8.1 Body-worn Back Side Volumetric SAR Evaluation and Analysis for Bluetooth, and 5GHz WLAN Simultaneous Transmission

Table 12-20
Simultaneous Transmission SAR Analysis

Band/ Mode	Configuration	Frequency [MHz]	Measured Standalone 1g SAR [W/kg]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Duty Cycle (%)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Volumetric 1g SAR [W/kg]	Scaled Volumetric 1g SAR [W/kg]	Volumetric SAR Plot Number
Bluetooth	Back side, Ch. 78, 1 Mbps, 10 mm	2480	0.019	9.0	8.45	76.6	1.135	1.305	0.021	0.030	A59
5GHz WLAN Body Worn	Back side, 802.11a, 20 MHz, Ch. 157, 6 Mbps, 10 mm	5785	0.645	19.0	17.79	96.8	1.321	1.033	0.563	0.768	A60

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot Number
Bluetooth	5GHz WLAN Body Worn	0.787	A61

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

4. The Bluetooth and 5 GHz WIFI SAR values above represent the aggregate distributions from the simultaneous transmission (volumetric) SAR evaluation.

12.8.2 Body-worn Simultaneous Transmission Analysis for Main Band, Bluetooth and 5GHz WLAN simultaneous Transmission

Table 12-21
Body-worn Back Side Simultaneous Transmission Analysis

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)
Ant "a"	Ant "b"	a	b	a+b
5 GHz WLAN and Bluetooth	PCS CDMA	0.787	0.775	1.562
5 GHz WLAN and Bluetooth	LTE Band 25 (PCS)	0.787	0.788	1.575

12.9 Simultaneous Transmission Conclusion

The above analysis for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

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

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Test Position	Data Rate (Mbps)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2437.00	6	802.11b, 22 MHz Bandwidth	DSSS	Left	Cheek	1	1.060	0.987	1.07	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 13-2
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Data Rate (Mbps)	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 50 RB Offset	N/A	bottom	10 mm	0.920	0.908	1.01	N/A	N/A	N/A	N/A
5750	5825.00	165	802.11a, 20 MHz Bandwidth	OFDM	6	right	10 mm	0.824	0.824	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 13-3
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	bottom	0 mm	2.760	2.690	1.03	N/A	N/A	N/A	N/A
1900	1860.00	26140	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 50 RB Offset	bottom	0 mm	2.590	2.340	1.11	N/A	N/A	N/A	N/A
2450	2506.00	39750	LTE Band 41 PC3, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	back	0 mm	2.470	2.190	1.13	N/A	N/A	N/A	N/A
2600	2636.50	41055	LTE Band 41 PC2, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	0 mm	2.890	2.880	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams						

13.2 Measurement Uncertainty

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

14 ADDITIONAL TESTING PER FCC GUIDANCE

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

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR for each exposure condition. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. When ULCA is active, the linearity between the Power Class 2 with ULCA active and Power Class 3 with ULCA active SAR results and the respective frame averaged powers was calculated to determine that the results were linear.

Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes was < 10% and all reported SAR values were < 1.4 W/kg for 1g.

Table 14-1
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.20	27.20
Measured Output Power (dBm)	24.88	26.53
Measured SAR (W/kg)	0.135	0.133
Measured Power (mW)	307.61	449.78
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	194.72	194.75
% deviation from expected linearity		-1.50%

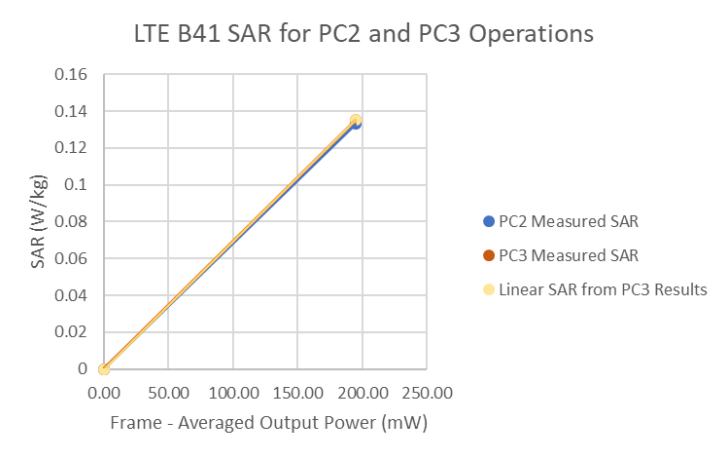

Figure 14-1
LTE Band 41 Head Linearity

Table 14-2
LTE Band 41 ULCA Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.20	27.20
Measured Output Power (dBm)	24.90	26.63
Measured SAR (W/kg)	0.141	0.136
Measured Power (mW)	309.03	460.26
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	195.62	199.29
% deviation from expected linearity		-5.32%

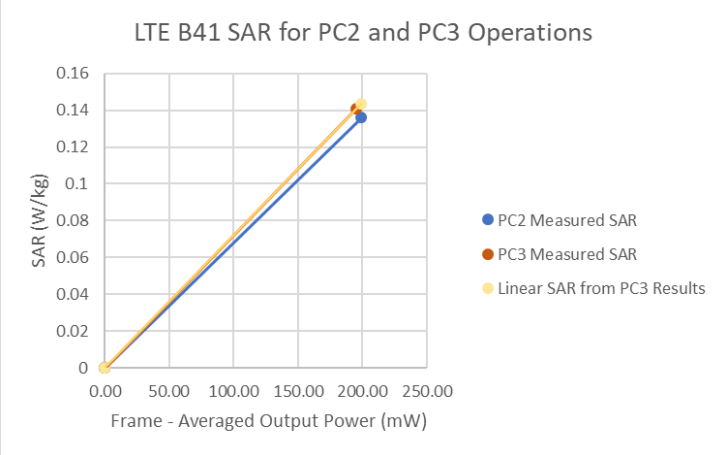

Figure 14-2
LTE Band 41 ULCA Head Linearity

Table 14-3
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.20	27.20
Measured Output Power (dBm)	25.11	26.74
Measured SAR (W/kg)	0.500	0.545
Measured Power (mW)	324.34	472.06
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	205.31	204.40
% deviation from expected linearity		9.48%

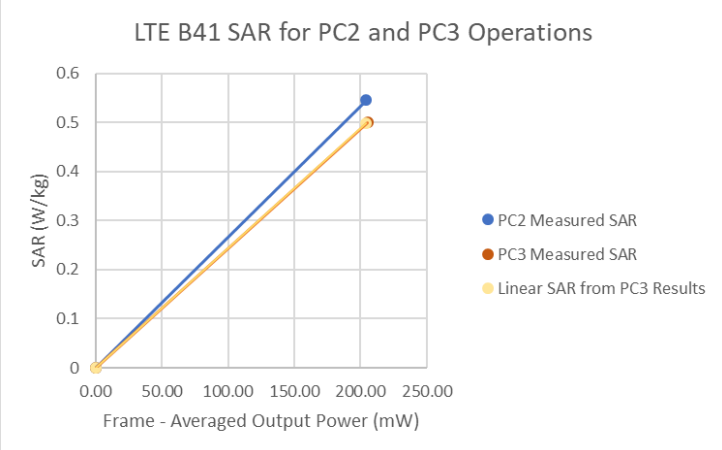

Figure 14-3
LTE Band 41 Body-Worn Linearity

Table 14-4
LTE Band 41 ULCA Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.20	27.20
Measured Output Power (dBm)	24.90	26.63
Measured SAR (W/kg)	0.487	0.528
Measured Power (mW)	309.03	460.26
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	195.62	199.29
% deviation from expected linearity		6.42%

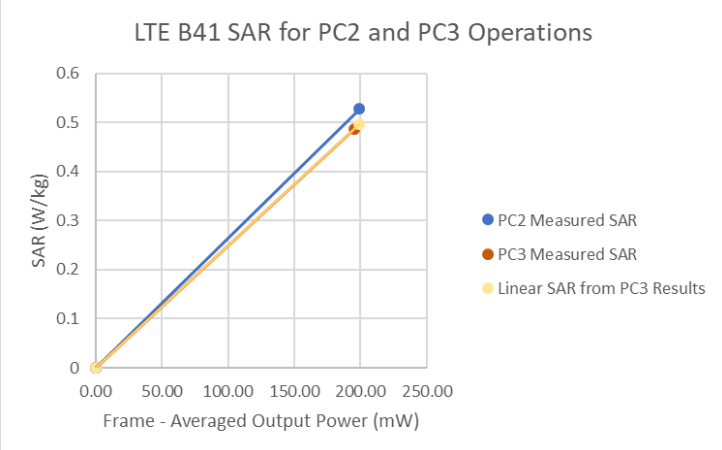

Figure 14-4
LTE Band 41 ULCA Body-Worn Linearity

Table 14-5
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.70	25.70
Measured Output Power (dBm)	23.59	25.45
Measured SAR (W/kg)	0.460	0.480
Measured Power (mW)	228.56	350.75
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	144.68	151.88
% deviation from expected linearity		-0.60%

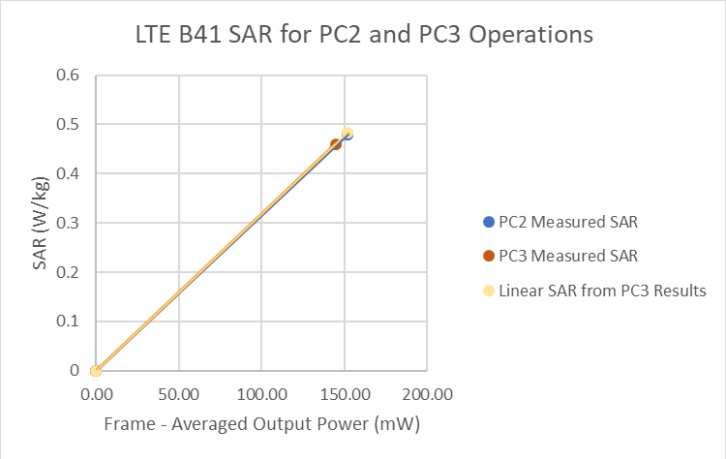

Figure 14-5
LTE Band 41 Hotspot Linearity

Table 14-6
LTE Band 41 ULCA Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.70	25.70
Measured Output Power (dBm)	23.52	25.38
Measured SAR (W/kg)	0.431	0.452
Measured Power (mW)	224.91	345.14
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	142.37	149.45
% deviation from expected linearity		-0.10%

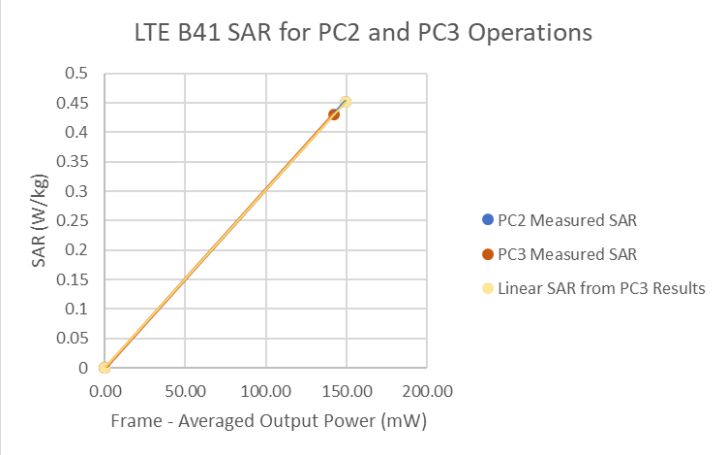

Figure 14-6
LTE Band 41 ULCA Hotspot Linearity

Table 14-7
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.70	25.70
Measured Output Power (dBm)	23.57	25.49
Measured SAR (W/kg)	2.750	2.890
Measured Power (mW)	227.51	354.00
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	144.01	153.28
% deviation from expected linearity		-1.26%

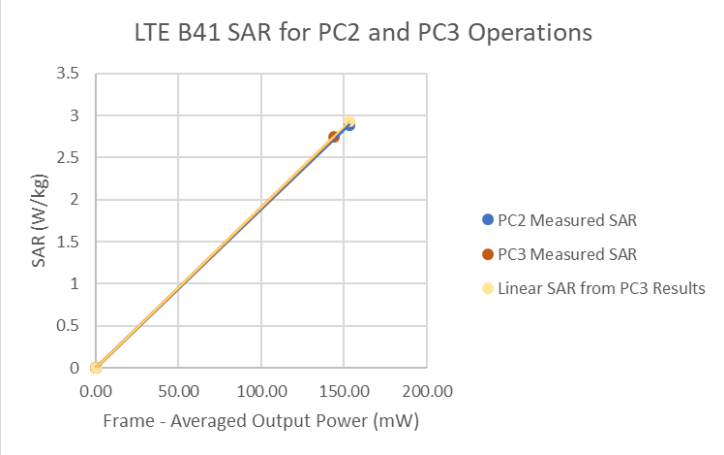

Figure 14-7
LTE Band 41 Phablet Linearity

Table 14-8
LTE Band 41 ULCA Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.70	25.70
Measured Output Power (dBm)	23.48	25.36
Measured SAR (W/kg)	2.630	2.680
Measured Power (mW)	222.84	343.56
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	141.06	148.76
% deviation from expected linearity		-3.37%

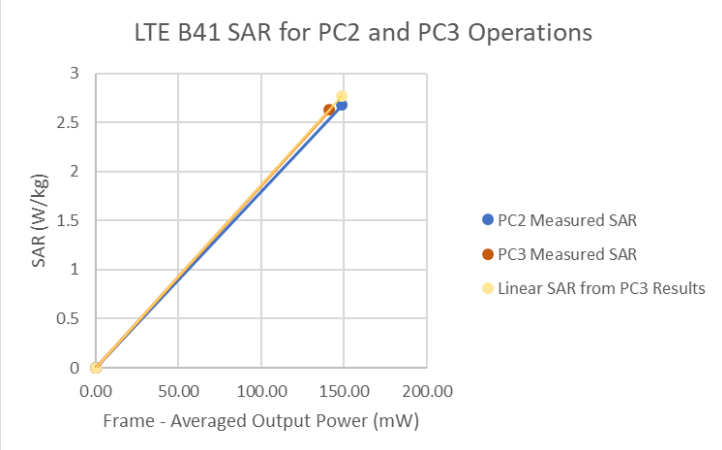

Figure 14-8
LTE Band 41 ULCA Phablet Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	8753ES	S-Parameter Network Analyzer	8/26/2019	Annual	8/26/2020	MY40000670
Agilent	E4438C	ESG Vector Signal Generator	5/22/2019	Annual	5/22/2020	MY45091346
Agilent	E4438C	ESG Vector Signal Generator	5/23/2019	Annual	5/23/2020	MY47270002
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/11/2019	Biennial	3/11/2021	MY45090700
Agilent	E5515C	Wireless Communications Test Set	6/26/2019	Annual	6/26/2020	MY50267125
Agilent	E5515C	Wireless Communications Test Set	9/25/2019	Annual	9/25/2020	GB43304278
Agilent	E5515C	Wireless Communications Test Set	2/7/2018	Triennial	2/7/2021	GB43304447
Agilent	N5182A	MXG Vector Signal Generator	7/10/2019	Annual	7/10/2020	MY47420800
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N9030A	PXA Signal Analyzer (44GHz)	6/12/2019	Annual	6/12/2020	MY52350166
Agilent	E5515C	Wireless Communications Test Set	2/28/2018	Biennial	2/28/2020	GB41450275
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433975
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433976
Anritsu	MA24106A	USB Power Sensor	5/6/2019	Annual	5/6/2020	1231538
Anritsu	MA24106A	USB Power Sensor	7/8/2019	Annual	7/8/2020	1248508
Anritsu	MA24106A	USB Power Sensor	4/17/2019	Annual	4/17/2020	1344556
Anritsu	MA24106A	USB Power Sensor	7/15/2019	Annual	7/15/2020	1349513
Anritsu	MA2411B	Pulse Power Sensor	6/11/2019	Annual	6/11/2020	1207364
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	8/16/2019	Annual	8/16/2020	6201144418
Anritsu	MT8821C	Radio Communication Analyzer	11/22/2019	Annual	11/22/2020	6262044715
Anritsu	MT8821C	Radio Communication Analyzer	5/13/2019	Annual	5/13/2020	6201524637
Anritsu	MT8862A	Wireless Connectivity Test Set	8/8/2019	Annual	8/8/2020	6261782395
Anritsu	ML2496A	Power Meter	11/6/2019	Annual	11/6/2020	1405003
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291455
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291460
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291463
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282744
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282753
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766801
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766777
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53004059
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	8/26/2019	Annual	8/26/2020	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	8/27/2019	Annual	8/27/2020	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	10/4/2019	Annual	10/4/2020	166462
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Rohde& Schwarz	CMW500	Wideband Radio Communication Tester	7/12/2019	Annual	7/12/2020	145645
Rohde& Schwarz	CMW500	Wideband Radio Communication Tester	7/24/2019	Annual	7/24/2020	151849
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2019	Annual	6/3/2020	109892
SPEAG	D750V3	750 MHz SAR Dipole	3/18/2019	Annual	3/18/2020	1054
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	4d133
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Annual	3/13/2020	4d047
SPEAG	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	4d132
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Biennial	2/21/2021	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/10/2018	Biennial	8/10/2020	1237
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/16/2018	Triennial	1/16/2021	1057
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/7/2019	Annual	5/7/2020	1070
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	3589
SPEAG	EX3DV4	SAR Probe	1/21/2020	Annual	1/21/2021	7488

Note: Equipment was solely used during its calibration period

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

16 MEASUREMENT UNCERTAINTIES

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

17 CONCLUSION

17.1 Measurement Conclusion

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

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

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