FCC SAR TEST REPORT

FCC ID	:	**IHDT56XN2**
Equipment	:	**Mobile Cellular Phone**
Brand Name	:	**Motorola**
Applicant	:	**Motorola Mobility LLC** **222 W,Merchandise Mart Plaza, Chicago IL 60654 USA**
Manufacturer	:	**Motorola Mobility LLC** **222 W,Merchandise Mart Plaza, Chicago IL 60654 USA**
Standard	:	**FCC 47 CFR Part 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2013**

The product was received on Sep. 08, 2018 and testing was started from Sep. 10, 2018 and completed on Oct. 02, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FA890437	01	Initial issue of report	Oct. 12, 2018
FA890437	02	Updated SW Version	Oct. 25, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone,** are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 5mm)	Hotspot (Separation 5mm)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.35	1.19	1.19		1.56
	GSM1900	0.08	1.37	1.37	3.16	
	WCDMA II	0.11	1.28	1.28	3.31	
	WCDMA IV	0.17	1.38	1.38	3.47	
	WCDMA V	0.32	1.23	1.23	2.02	
	LTE Band 2	0.11	1.19	1.19	3.43	
	LTE Band 5	0.41	1.19	1.19		
	LTE Band 7	0.36	1.33	1.33	3.41	
	LTE Band 12 / 17	0.27	0.71	0.71		
	LTE Band 4 / 66	0.28	1.32	1.32	3.27	
DTS	2.4GHz WLAN	1.19	1.00	1.00		1.55
NII	5GHz WLAN	1.18	1.19	1.20	1.45	1.56
DSS	Bluetooth	0.20	0.16	0.16		1.54
Date of Testing:		2018/9/10 ~ 2018/10/2				

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Eric Huang
Report Producer: Daisy Peng

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
FCC ID	IHDT56XN2
IMEI Code	SIM1: 355577090033398 SIM2: 355577090033406
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz : 802.11b/g/n/ac HT20/VHT20 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DVT1B
SW Version	PPW29.56
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. The device has two SIM slots and supports Dual SIM Dual Standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active).
2. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
3. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, this technique is employed in the WCDMA and LTE modes but not supports GSM 850/1900 and LTE B7. In this report SAR was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing. The detail descriptions of the antenna tuner are included in the operational description and supplemental data for additional information on section15.
4. When operating in a call in talk position at the head, the device utilizes the At-Head power table. When operating in a body-worn condition, with proximity of the user's body at the front or back of the device, the device operates in the Body-Worn power table. If neither the At-Head or Body-Worn condition is detected, but the device is operating in WiFi Hotspot mode, the device utilizes the Hotspot power table. When operating in any other radiated condition, the device uses the Default power table.
5. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. The control logic is such that, when this front or back body-worn condition is detected and the device is

operating in a mode where on-body operation may be expected, the conducted power is applied in the Body-Worn power table. In this condition (user's body detected at front or back face of the device), the Body-Worn power table is applied regardless whether or not the Wi-Fi hotspot mode is active.

6. Note that the Body-Worn Reduced power tables and detection schemes described above are sufficient to assure that body-worn SAR limits are met, regardless whether the Wi-Fi hotspot feature is active or not. However, because FCC has an additional specific test definition and limit for Wi-Fi hotspot mode operation, the additional Hotspot power table is applied if hand-held operation is indicated (i.e., not At-Head or Body-Worn) when the Wi-Fi hotspot feature is active. This ensures the 4 edges of the device comply with the letter of the Wi-Fi Hotspot requirement.
7. The device additionally employs proximity sensors that detect the presence of tissue near the currently active transmit antenna (if that antenna may require reduced power relative the Default power table in order to meet extremity SAR limits). The control logic is such that, if the Body-Worn, At-Head or WiFi Hotspot conditions are not detected, but tissue (as a finger or hand, for example) is detected near the transmitting antenna, the Handheld Reduced power table will be applied
8. Reduced power for different RF exposure conditions:
9. Head: If audio is present at the earpiece, the device will reduce output powers on the WLAN transmitter for held-to-ear and detail descriptions of the power reduction mechanism are included in the operational description.
10. Body worn: The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device, when operating in near-body condition by end user, the device will reduced maximum output powers on the GSM850, GSM1900, WCDMA B2 / B5 / B4, LTE B2 / B4 / B7 / B66 and 5GHz WLAN and detail descriptions of the power reduction mechanism are included in the operational description.
11. Hotspot: When the mobile hotspot session is turn on by end user, the device will reduced output powers on the GSM850, GSM1900, WCDMA B2 / B5 / B4 LTE B2 / B4 / B7 / B66 and 5GHz WLAN and detail descriptions of the power reduction mechanism are included in the operational description.
12. Handheld: The device additionally employs proximity sensors that detect the presence of tissue near the currently active transmit antenna, the device will reduced output powers on the GSM 850 ,WCDMA B2 / B4 and LTE B2 / B4 / B7 / B66 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.

<Maximum power for each bands and exposure conditions>

TX. freq.	Default	Head		Body Worn		Hotspot		Extremity	
	max. tune up limit (dBm)	max. tune up limit(dBm)	power reduction (dB)	max. tune up limit(dBm)	power reduction (dB)	max. tune up limit(dBm)	power reduction (dB)	max. tune up limit(dBm)	power reduction (dB)
GSM850 GSM 1 Tx slot	33.50	33.50		33.00	0.50	33.00	0.50	33.00	0.50
GSM850 GPRS 1 Tx slot	33.50	33.50		33.00	0.50	33.00	0.50	33.00	0.50
GSM850 GPRS 2 Tx slots	30.50	30.50		30.00	0.50	30.00	0.50	30.00	0.50
GSM850 GPRS 3 Tx slots	28.75	28.75		28.00	0.75	28.00	0.75	28.00	0.75
GSM850 GPRS 4 Tx slots	27.50	27.50		25.00	2.50	25.00	2.50	25.00	2.50
GSM850 EDGE 1 Tx slot	28.00	28.00		26.50	1.50	26.50	1.50	26.50	1.50
GSM850 EDGE 2 Tx slots	28.00	28.00		26.50	1.50	26.50	1.50	26.50	1.50
GSM850 EDGE 3 Tx slots	26.25	26.25		25.50	0.75	25.50	0.75	25.50	0.75
GSM850 EDGE 4 Tx slots	25.00	25.00		24.50	0.50	24.50	0.50	24.50	0.50
GSM1900 GSM 1 Tx slot	30.50	30.50		26.50	4.00	25.00	5.50	30.50	
GSM1900 GPRS 1 Tx slot	30.50	30.50		26.50	4.00	25.00	5.50	30.50	
GSM1900 GPRS 2 Tx slots	27.50	27.50		23.00	4.50	21.00	6.50	27.50	
GSM1900 GPRS 3 Tx slots	25.75	25.75		20.50	5.25	20.25	5.50	25.75	
GSM1900 GPRS 4 Tx slots	24.50	24.50		19.50	5.00	18.00	6.50	24.50	
GSM1900 EDGE 1 Tx slot	27.00	27.00		23.00	4.00	21.50	5.50	27.00	
GSM1900 EDGE 2 Tx slots	27.00	27.00		23.00	4.00	21.50	5.50	27.00	
GSM1900 EDGE 3 Tx slots	25.25	25.25		21.25	4.00	19.75	5.50	25.25	
GSM1900 EDGE 4 Tx slots	24.00	24.00		20.00	4.00	18.50	5.50	24.00	
WCDMA II	24.00	24.00		17.50	6.50	15.50	8.50	20.50	3.50
WCDMA IV	24.00	24.00		18.00	6.00	16.00	8.00	21.00	3.00
WCDMA V	25.00	25.00		24.50	0.50	24.50	0.50	25.00	
LTE B2	24.00	24.00		17.50	6.50	16.00	8.00	21.50	2.50
LTE B4	24.00	24.00		17.00	7.00	15.00	9.00	20.00	4.00
LTE B5	24.00	24.00		24.00		24.00		24.00	
LTE B7	24.00	24.00		20.50	3.50	20.50	3.50	23.00	1.00
LTE B12	24.00	24.00		24.00		24.00		24.00	
LTE B17	24.00	24.00		24.00		24.00		24.00	
LTE B66	24.00	24.00		17.00	7.00	15.00	9.00	20.00	4.00
2.4GHz WLAN 802.11b	20.00	20.00		20.00		20.00		20.00	
2.4GHz WLAN 802.11g	18.00	18.00		18.00		18.00		18.00	
2.4GHz WLAN 802.11n-HT20	18.00	18.00		18.00		18.00		18.00	
2.4GHz WLAN 802.11ac-VHT20	18.00	18.00		18.00		18.00		18.00	
5GHz WLAN 802.11a	18.00	13.50	4.50	15.50	2.50	14.00	4.00	18.00	
5GHz WLAN 802.11n-HT20	18.00	13.50	4.50	15.50	2.50	13.50	4.50	18.00	
5GHz WLAN 802.11n-HT40	18.00	13.50	4.50	14.50	3.50	14.50	3.50	18.00	
5GHz WLAN 802.11ac-VHT20	18.00	13.50	4.50	15.50	2.50	13.50	4.50	18.00	
5GHz WLAN 802.11ac-VHT40	18.00	13.50	4.50	14.50	3.50	14.50	3.50	18.00	
5GHz WLAN 802.11ac-VHT80	17.00	12.50	4.50	12.50	4.50	14.00	3.00	17.00	
BT	13.00	13.00		13.00		13.00		13.00	

3.2 General LTE SAR Test and Reporting Considerations

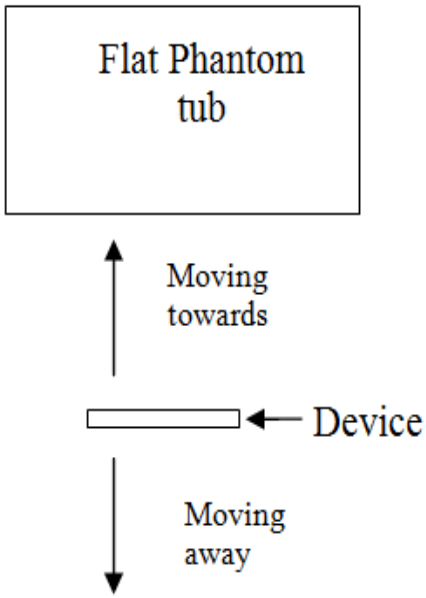
<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>IHDT56XN2</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850.7 MHz ~ 1909.3 MHz
LTE Band 4: 1710.7 MHz ~ 1754.3 MHz
LTE Band 5: 824.7 MHz ~ 848.3 MHz
LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
LTE Band 12: 699.7 MHz ~ 715.3 MHz
LTE Band 17: 706.5 MHz ~ 713.5 MHz
LTE Band 66: 1710.7 MHz ~ 1779.3 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice / Data only</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in hotspot mode that LTE B2 / B4 / B7 / B66 power reduction applied to satisfy SAR compliance.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>This device supports maximum of 2 carriers in the downlink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560
LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711
LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

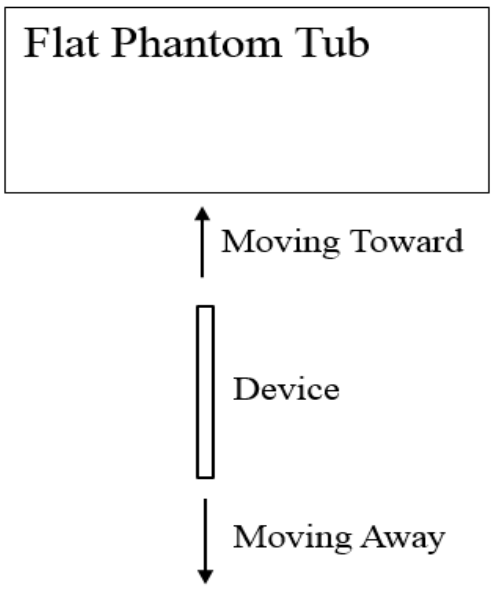
3.1 Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (2600MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body (Body-Worn condition) at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s).
5. The device additionally employs proximity sensors that detect the presence of tissue near the currently active transmit antenna (if that antenna may require reduced power relative the Default power table in order to meet extremity SAR limits). The control logic is such that, if the Body-Worn, At-Head or WiFi Hotspot conditions are not detected, but tissue (as a finger or hand, for example) is detected near the transmitting antenna, the Handheld Reduced power table will be applied
6. When the sensor is active, the device will reduced maximum output powers on the GSM850/1900, WCDMA B2 / B4 / B5 and LTE B2 / B4 / B7 / B66 transmitter.



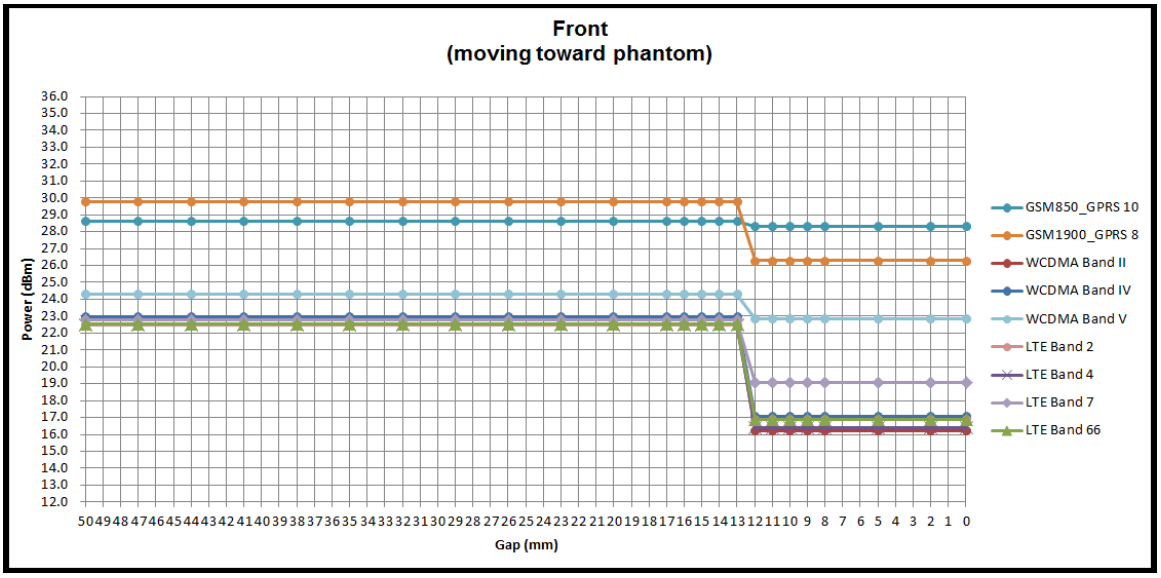
Sensor detection test set-up, front and back faces

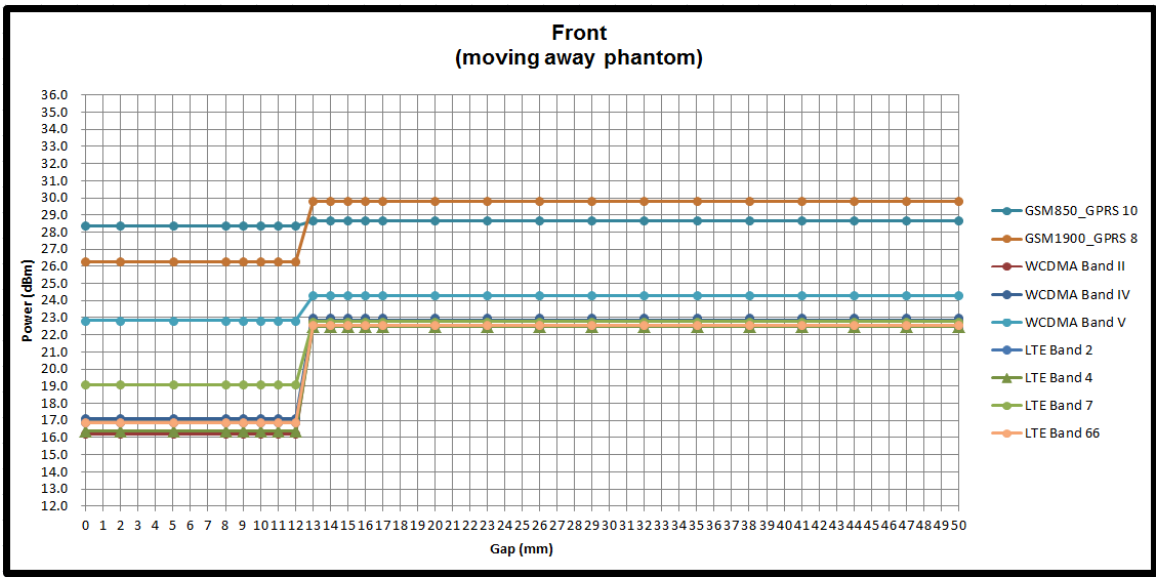


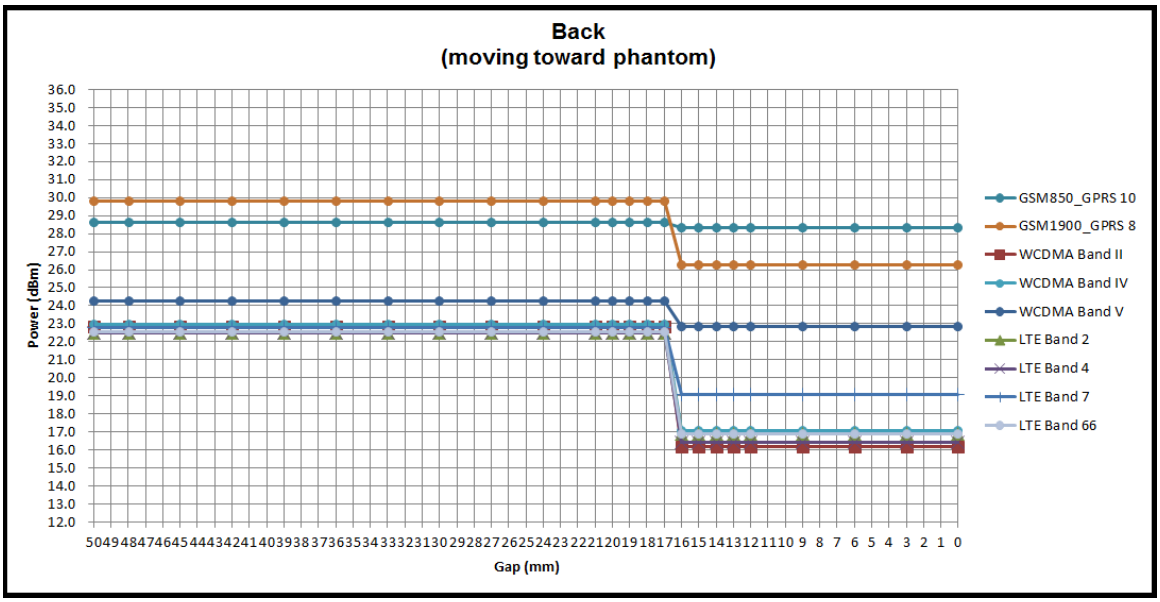
Sensor detection test set-up, bottom face

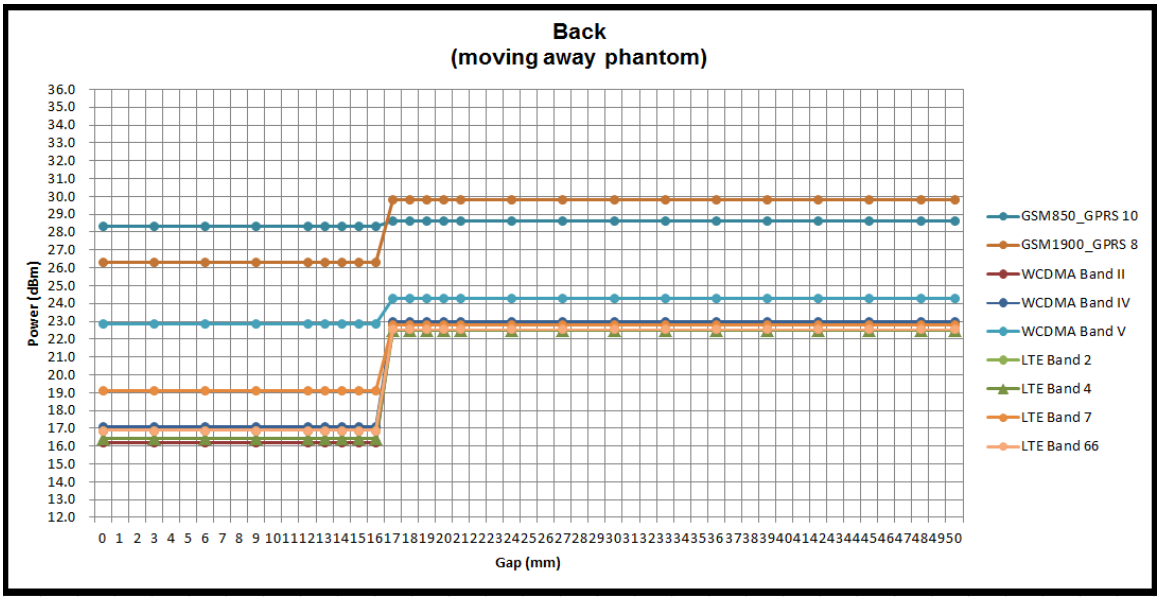
Proximity Sensor Trigger Distance (mm)						
Position	Front		Back		Bottom Side	
Position	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	12	12	16	16	17	17

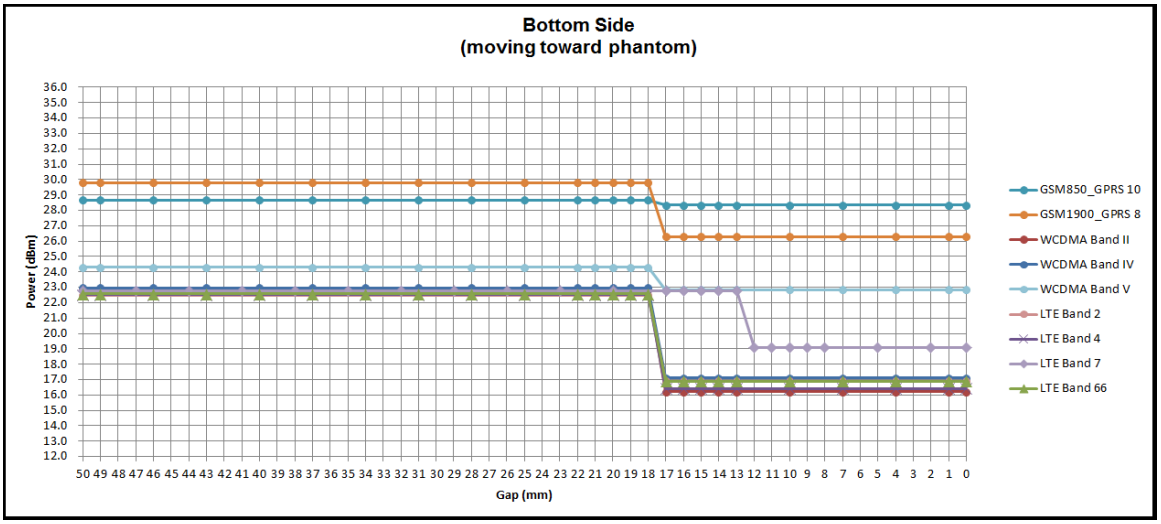
<Sensor triggers distance V.S Measure power>

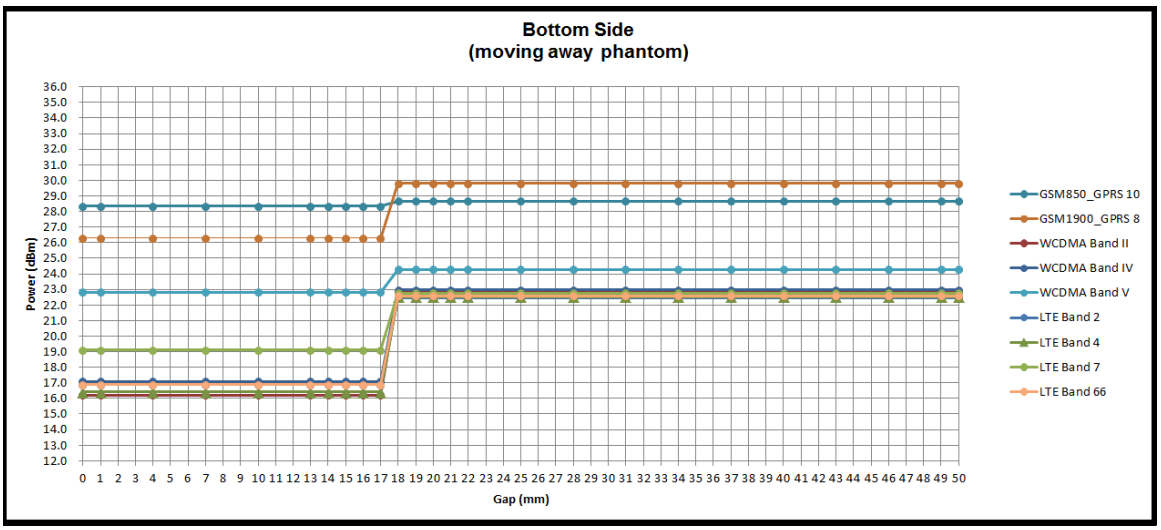





Back
(moving toward phantom)
Power (dBm)
Gap (mm)
GSM850_GPRS 10
GSM1900_GPRS 8
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 7
LTE Band 66


Back
(moving away phantom)
Power (dBm)
Gap (mm)
GSM850_GPRS 10
GSM1900_GPRS 8
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 7
LTE Band 66


Bottom Side
(moving toward phantom)
Power (dBm)
Gap (mm)
GSM850_GPRS 10
GSM1900_GPRS 8
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 7
LTE Band 66


Bottom Side
(moving away phantom)
Power (dBm)
Gap (mm)
GSM850_GPRS 10
GSM1900_GPRS 8
WCDMA Band II
WCDMA Band IV
WCDMA Band V
LTE Band 2
LTE Band 4
LTE Band 7
LTE Band 66

4. RF Exposure Limits

4.1 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.

4.2 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. The 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.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

5. Specific Absorption Rate (SAR)

5.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

5.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

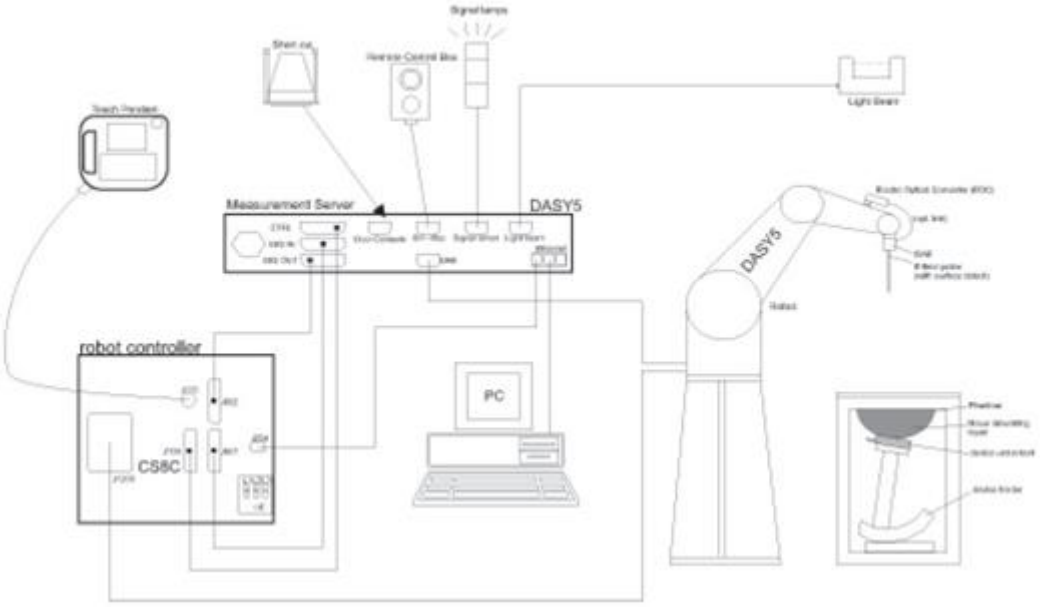
SAR is expressed in units of Watts per kilogram (W/kg)

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^{\mathbf{2}}}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

6. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)	
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

6.2 Data Acquisition Electronics (DAE)

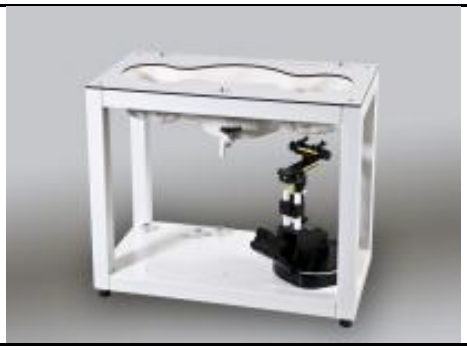
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

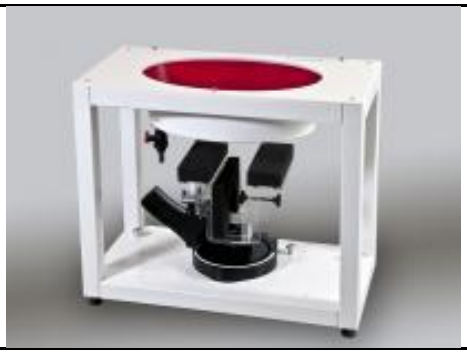
6.3 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm	

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

6.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

7.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

7.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

7.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

7.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

7.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

7.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Feb. 27, 2018	Feb. 26, 2019
SPEAG	835MHz System Validation Kit	D835V2	4d167	Feb. 27, 2018	Feb. 26, 2019
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 15, 2017	Nov. 14, 2018
SPEAG	1900MHz System Validation Kit	D1900V2	5d018	Jun. 21, 2018	Jun. 20, 2019
SPEAG	2450MHz System Validation Kit	D2450V2	929	Mar. 01, 2018	Feb. 28, 2019
SPEAG	2600MHz System Validation Kit	D2600V2	1078	Mar. 01, 2018	Feb. 28, 2019
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	Sep. 26, 2017	Sep. 25, 2018
SPEAG	5GHz System Validation Kit	D5GHzV2	1203	Dec. 14, 2017	Dec. 13, 2018
SPEAG	Data Acquisition Electronics	DAE4	1424	Jan. 18, 2018	Jan. 17, 2019
SPEAG	Data Acquisition Electronics	DAE3	495	May. 24, 2018	May. 23, 2019
SPEAG	Data Acquisition Electronics	DAE4	1399	Nov. 16, 2017	Nov. 15, 2018
SPEAG	Data Acquisition Electronics	DAE4	910	Jun. 21, 2018	Jun. 20, 2019
SPEAG	Data Acquisition Electronics	DAE4	853	Jul. 24, 2018	Jul. 23, 2019
SPEAG	Data Acquisition Electronics	DAE4	917	Dec. 14, 2017	Dec. 13, 2018
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 23, 2018	Jan. 22, 2019
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Sep. 25, 2017	Sep. 24, 2018
SPEAG	Dosimetric E-Field Probe	ES3DV3	3169	May. 28, 2018	May. 27, 2019
SPEAG	Dosimetric E-Field Probe	EX3DV4	7346	Feb. 28, 2018	Feb. 27, 2019
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 26, 2018	Jul. 25, 2019
RCPTWN	Thermometer	HTC-1	TM685-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM281-1	Mar. 16, 2018	Mar. 15, 2019
RCPTWN	Thermometer	HTC-1	TM560-1	Mar. 16, 2018	Mar. 15, 2019
Gencom	Thermometer	TE1	TM225-1	Mar. 16, 2018	Mar. 15, 2019
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Apr. 17, 2018	Apr. 16, 2019
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 21, 2018	May. 20, 2019
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Dec. 07, 2017	Dec. 06, 2018
Agilent	ENA Network Analyzer	E5071C	MY46316648	Jan. 17, 2018	Jan. 16, 2019
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 26, 2017	Sep. 25, 2018
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Dec. 08, 2017	Dec. 07, 2018
Anritsu	Power Meter	ML2495A	1419002	May. 18, 2018	May. 17, 2019
Anritsu	Power Sensor	MA2411B	1339124	May. 18, 2018	May. 17, 2019
Anritsu	Power Meter	ML2495A	1218006	Oct. 06, 2017	Oct. 05, 2018
Anritsu	Power Sensor	MA2411B	1207363	Oct. 06, 2017	Oct. 05, 2018
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 28, 2018	Aug. 27, 2019
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 23, 2018	Jun. 22, 2019
Mini-Circuits	Power Amplifier	ZVE-8G+	6382	Aug. 09, 2018	Aug. 08, 2019
Mini-Circuits	Power Amplifier	ZHL-42W+	15542	Aug. 09, 2018	Aug. 08, 2019
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

9. System Verification

9.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.2.

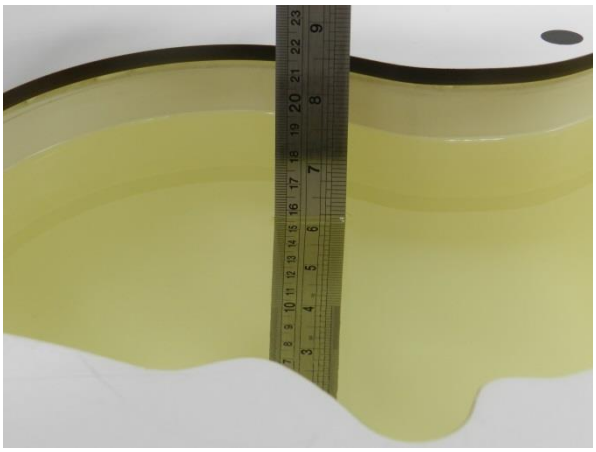


Fig 10.1Photo of Liquid Height for Head SAR

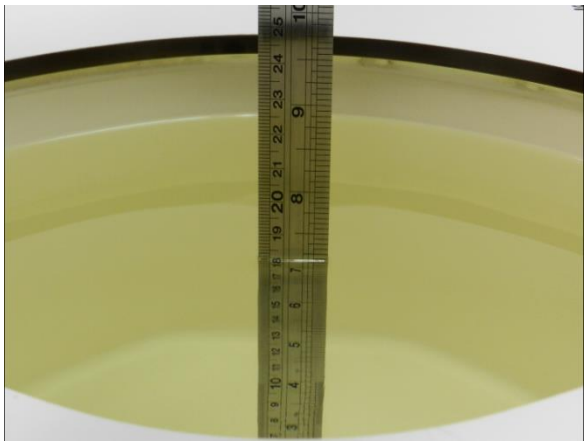


Fig 10.2 Photo of Liquid Height for Body SAR

9.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	HSL	22.2	0.892	40.486	0.89	41.90	0.22	-3.37	±5	2018/9/11
750	MSL	22.6	0.972	54.183	0.96	55.50	1.25	-2.37	±5	2018/9/12
750	MSL	22.2	0.975	54.274	0.96	55.50	1.56	-2.21	±5	2018/9/13
835	HSL	22.3	0.901	41.759	0.90	41.50	0.11	0.62	±5	2018/9/11
835	HSL	22.5	0.870	41.224	0.90	41.50	-3.33	-0.67	±5	2018/9/11
835	MSL	22.6	0.962	57.390	0.97	55.20	-0.82	3.97	±5	2018/9/12
835	MSL	22.2	0.996	54.269	0.97	55.20	2.68	-1.69	±5	2018/9/13
835	MSL	22.5	0.968	52.841	0.97	55.20	-0.21	-4.27	±5	2018/9/20
1750	HSL	22.5	1.346	39.880	1.37	40.10	-1.75	-0.55	±5	2018/9/11
1750	MSL	22.9	1.444	53.406	1.49	53.40	-3.09	0.01	±5	2018/9/13
1750	MSL	22.2	1.434	55.764	1.49	53.40	-3.76	4.43	±5	2018/9/18
1750	MSL	22.2	1.434	55.764	1.49	53.40	-3.76	4.43	±5	2018/9/18
1750	MSL	22.4	1.454	55.160	1.49	53.40	-2.42	3.30	±5	2018/9/29
1750	MSL	22.6	1.468	55.361	1.49	53.40	-1.48	3.67	±5	2018/9/30
1900	HSL	22.3	1.376	40.069	1.40	40.00	-1.71	0.17	±5	2018/9/11
1900	MSL	22.3	1.563	54.562	1.52	53.30	2.83	2.37	±5	2018/9/12
1900	MSL	22.9	1.575	54.452	1.52	53.30	3.62	2.16	±5	2018/9/13
1900	MSL	22.2	1.533	53.419	1.52	53.30	0.86	0.22	±5	2018/9/18
1900	MSL	22.2	1.533	53.419	1.52	53.30	0.86	0.22	±5	2018/9/18
1900	MSL	22.4	1.546	52.396	1.52	53.30	1.71	-1.70	±5	2018/9/28
1900	MSL	22.5	1.556	55.543	1.52	53.30	2.37	4.21	±5	2018/9/29

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
2450	HSL	22.6	1.835	40.041	1.80	39.20	1.94	2.15	±5	2018/9/14
2450	HSL	22.6	1.794	37.824	1.80	39.20	-0.33	-3.51	±5	2018/9/19
2450	MSL	22.2	1.961	53.349	1.95	52.70	0.56	1.23	±5	2018/9/18
2600	HSL	22.6	1.950	39.111	1.96	39.00	-0.51	0.28	±5	2018/9/10
2600	MSL	22.3	2.204	52.654	2.16	52.50	2.04	0.29	±5	2018/9/12
2600	MSL	22.6	2.144	52.247	2.16	52.50	-0.74	-0.48	±5	2018/9/30
5250	HSL	22.6	4.641	37.021	4.71	35.95	-1.46	2.98	±5	2018/10/2
5250	MSL	22.2	5.379	48.088	5.36	48.95	0.35	-1.76	±5	2018/9/20
5250	MSL	22.6	5.145	50.452	5.36	48.95	-4.01	3.07	±5	2018/10/1
5600	HSL	22.6	5.005	36.464	5.07	35.50	-1.28	2.72	±5	2018/10/2
5600	MSL	22.2	5.836	47.513	5.77	48.50	1.14	-2.04	±5	2018/9/20
5600	MSL	22.6	5.603	49.878	5.77	48.50	-2.89	2.84	±5	2018/10/1
5750	HSL	22.6	5.140	36.313	5.22	35.35	-1.53	2.72	±5	2018/10/2
5750	MSL	22.2	6.035	47.282	5.94	48.28	1.60	-2.07	±5	2018/9/20
5750	MSL	22.6	5.803	49.652	5.94	48.28	-2.31	2.84	±5	2018/10/1

9.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/9/11	750	HSL	250	D750V3-1107	ES3DV3 - SN3169	DAE3 Sn495	2.11	8.18	8.44	3.18
2018/9/12	750	MSL	250	D750V3-1107	EX3DV4 - SN3976	DAE4 Sn1424	2.25	8.52	9.00	5.63
2018/9/13	750	MSL	250	D750V3-1107	ES3DV3 - SN3270	DAE4 Sn853	2.20	8.52	8.80	3.29
2018/9/11	835	HSL	250	D835V2-4d167	ES3DV3 - SN3169	DAE3 Sn495	2.32	9.26	9.28	0.22
2018/9/11	835	HSL	250	D835V2-4d167	EX3DV4 - SN3976	DAE4 Sn1424	2.41	9.26	9.64	4.10
2018/9/12	835	MSL	250	D835V2-4d167	EX3DV4 - SN3976	DAE4 Sn1424	2.48	9.62	9.92	3.12
2018/9/13	835	MSL	250	D835V2-4d167	ES3DV3 - SN3270	DAE4 Sn853	2.41	9.62	9.64	0.21
2018/9/20	835	MSL	250	D835V2-4d167	EX3DV4 - SN7346	DAE4 Sn1399	2.52	9.62	10.08	4.78
2018/9/11	1750	HSL	250	D1750V2-1068	ES3DV3 - SN3169	DAE3 Sn495	8.45	36.70	33.80	-7.90
2018/9/13	1750	MSL	250	D1750V2-1068	ES3DV3 - SN3169	DAE3 Sn495	9.19	37.20	36.76	-1.18
2018/9/18	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3976	DAE4 Sn1424	9.18	37.20	36.72	-1.29
2018/9/18	1750	MSL	250	D1750V2-1068	EX3DV4 - SN7346	DAE4 Sn1399	9.44	37.20	37.76	1.51
2018/9/29	1750	MSL	250	D1750V2-1068	EX3DV4 - SN7306	DAE4 Sn917	9.25	37.20	37.00	-0.54
2018/9/30	1750	MSL	250	D1750V2-1068	EX3DV4 - SN7346	DAE4 Sn910	9.15	37.20	36.60	-1.61
2018/9/11	1900	HSL	250	D1900V2-5d018	ES3DV3 - SN3169	DAE3 Sn495	9.57	40.10	38.28	-4.54
2018/9/12	1900	MSL	250	D1900V2-5d018	ES3DV3 - SN3169	DAE3 Sn495	10.20	40.20	40.80	1.49
2018/9/13	1900	MSL	250	D1900V2-5d018	ES3DV3 - SN3169	DAE3 Sn495	10.30	40.20	41.20	2.49
2018/9/18	1900	MSL	250	D1900V2-5d018	EX3DV4 - SN3976	DAE4 Sn1424	10.40	40.20	41.60	3.48
2018/9/18	1900	MSL	250	D1900V2-5d018	EX3DV4 - SN7346	DAE4 Sn1399	10.00	40.20	40.00	-0.50
2018/9/28	1900	MSL	250	D1900V2-5d018	EX3DV4 - SN7306	DAE4 Sn917	10.70	40.20	42.80	6.47
2018/9/29	1900	MSL	250	D1900V2-5d018	EX3DV4 - SN7306	DAE4 Sn1399	9.77	40.20	39.08	-2.79
2018/9/14	2450	HSL	250	D2450V2-929	EX3DV4 - SN7306	DAE4 Sn917	13.70	52.20	54.80	4.98
2018/9/19	2450	HSL	250	D2450V2-929	EX3DV4 - SN7346	DAE4 Sn1399	13.20	52.20	52.80	1.15
2018/9/18	2450	MSL	250	D2450V2-929	EX3DV4 - SN7346	DAE4 Sn1399	12.00	52.30	48.00	-8.22
2018/9/10	2600	HSL	250	D2600V2-1078	ES3DV3 - SN3169	DAE3 Sn495	13.20	56.50	52.80	-6.55
2018/9/12	2600	MSL	250	D2600V2-1078	ES3DV3 - SN3169	DAE3 Sn495	14.20	54.10	56.80	4.99
2018/9/30	2600	MSL	250	D2600V2-1078	EX3DV4 - SN7346	DAE4 Sn910	13.00	54.10	52.00	-3.88
2018/10/2	5250	HSL	100	D5GHzV2-1006-5250	EX3DV4 - SN7306	DAE4 Sn1399	8.28	78.30	82.80	5.75
2018/9/20	5250	MSL	100	D5GHzV2-1006-5250	EX3DV4 - SN7346	DAE4 Sn1399	7.29	77.00	72.90	-5.32
2018/10/1	5250	MSL	100	D5GHzV2-1203-5250	EX3DV4 - SN7346	DAE4 Sn910	6.99	77.50	69.90	-9.81
2018/10/2	5600	HSL	100	D5GHzV2-1006-5600	EX3DV4 - SN7306	DAE4 Sn1399	9.03	85.00	90.30	6.24
2018/9/20	5600	MSL	100	D5GHzV2-1006-5600	EX3DV4 - SN7346	DAE4 Sn1399	8.27	80.10	82.70	3.25
2018/10/1	5600	MSL	100	D5GHzV2-1203-5600	EX3DV4 - SN7306	DAE4 Sn1399	7.86	79.30	78.60	-0.88
2018/10/2	5750	HSL	100	D5GHzV2-1006-5750	EX3DV4 - SN7306	DAE4 Sn1399	8.61	78.50	86.10	9.68
2018/9/20	5750	MSL	100	D5GHzV2-1006-5750	EX3DV4 - SN7346	DAE4 Sn1399	7.43	75.10	74.30	-1.07
2018/10/1	5750	MSL	100	D5GHzV2-1203-5750	EX3DV4 - SN7306	DAE4 Sn1399	7.42	76.80	74.20	-3.39

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2018/9/20	835	MSL	250	D835V2-4d167	EX3DV4 - SN7346	DAE4 Sn1399	1.69	6.27	6.76	7.81
2018/9/13	1750	MSL	250	D1750V2-1068	ES3DV3 - SN3169	DAE3 Sn495	5.01	19.70	20.04	1.73
2018/9/18	1750	MSL	250	D1750V2-1068	EX3DV4 - SN7346	DAE4 Sn1399	5.17	19.70	20.68	4.97
2018/9/12	1900	MSL	250	D1900V2-5d018	ES3DV3 - SN3169	DAE3 Sn495	5.32	21.40	21.28	-0.56
2018/9/13	1900	MSL	250	D1900V2-5d018	ES3DV3 - SN3169	DAE3 Sn495	5.36	21.40	21.44	0.19
2018/9/12	2600	MSL	250	D2600V2-1078	ES3DV3 - SN3169	DAE3 Sn495	6.33	24.10	25.32	5.06
2018/9/20	5250	MSL	100	D5GHzV2-1006-5250	EX3DV4 - SN7346	DAE4 Sn1399	2.05	21.30	20.50	-3.76
2018/9/20	5600	MSL	100	D5GHzV2-1006-5600	EX3DV4 - SN7346	DAE4 Sn1399	2.29	22.40	22.90	2.23
2018/9/20	5750	MSL	100	D5GHzV2-1006-5750	EX3DV4 - SN7346	DAE4 Sn1399	2.06	20.80	20.60	-0.96

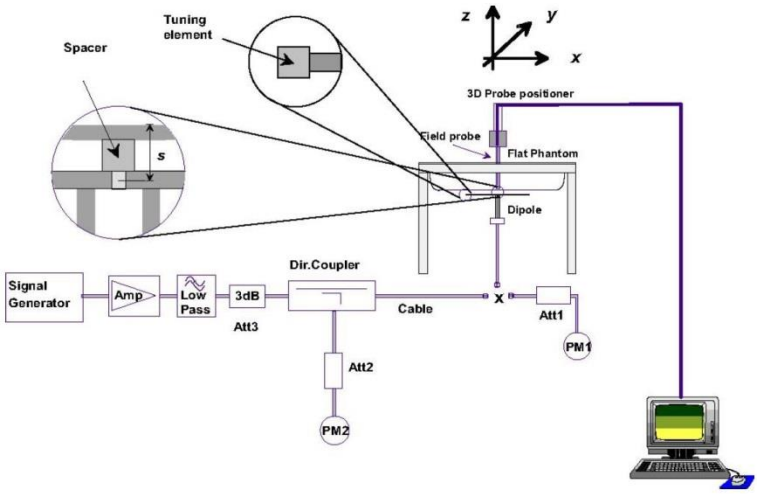


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

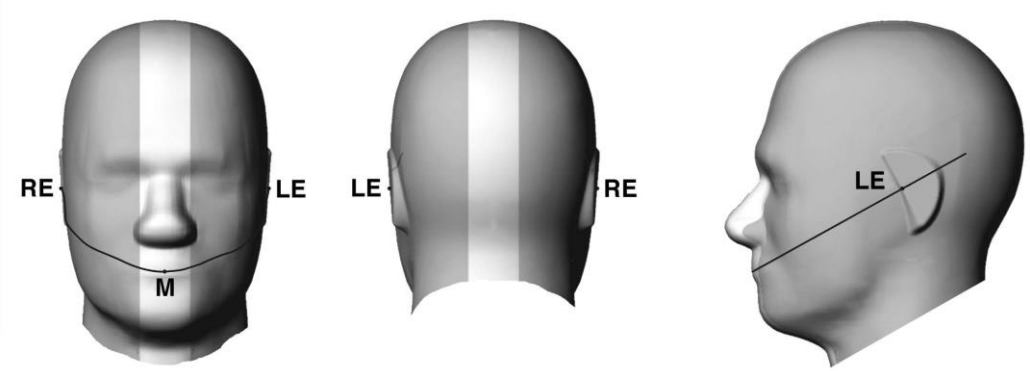


Fig 9.1.1 Front, back, and side views of SAM twin phantom

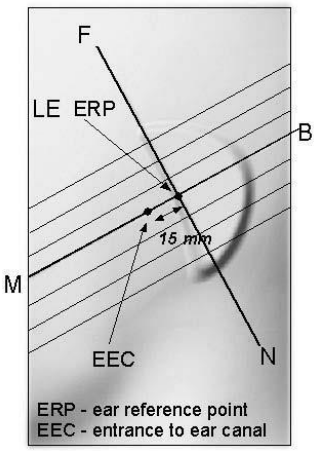


Fig 9.1.2 Close-up side view of phantom showing the ear region.

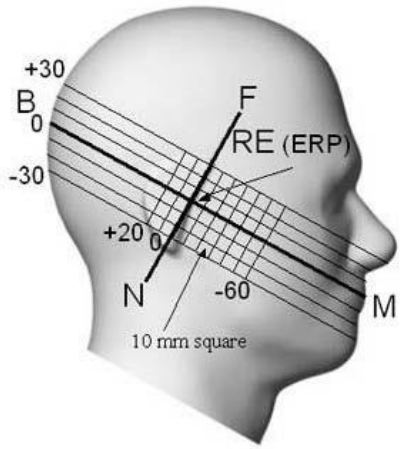


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset 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 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

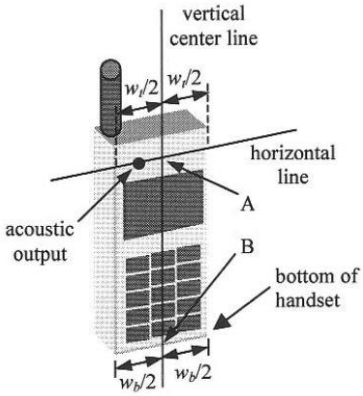


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

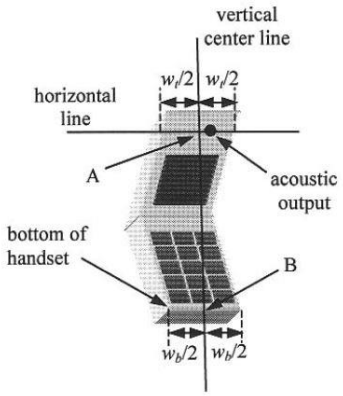


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

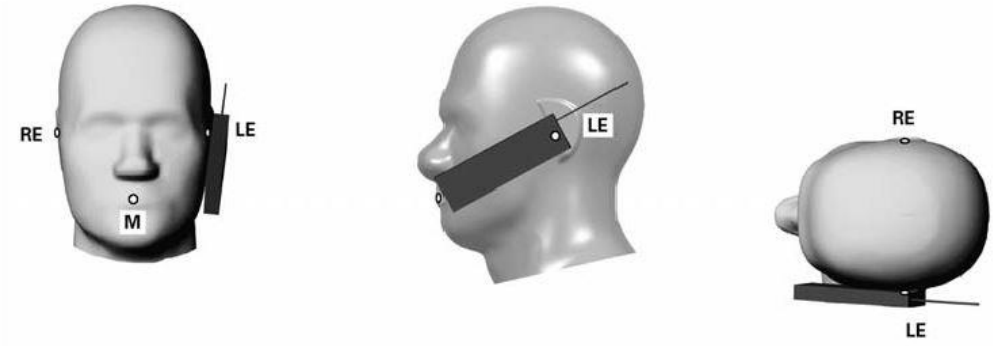


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

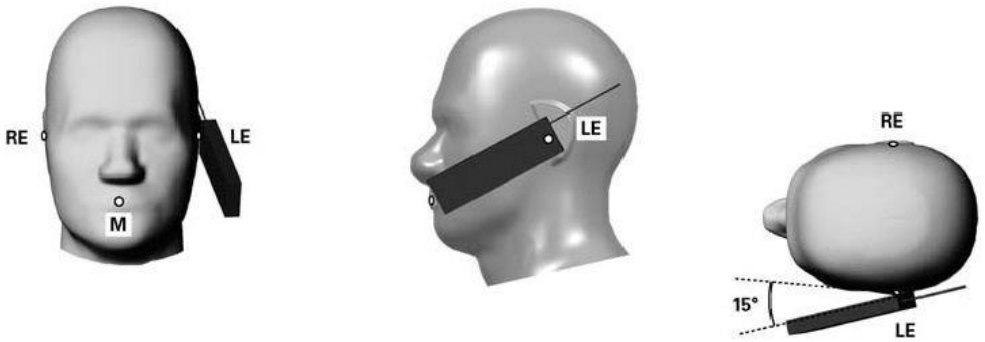


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

10.4 Body Worn Accessory

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 9.4). Per KDB648474 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 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 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 handset attached to the handset.

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

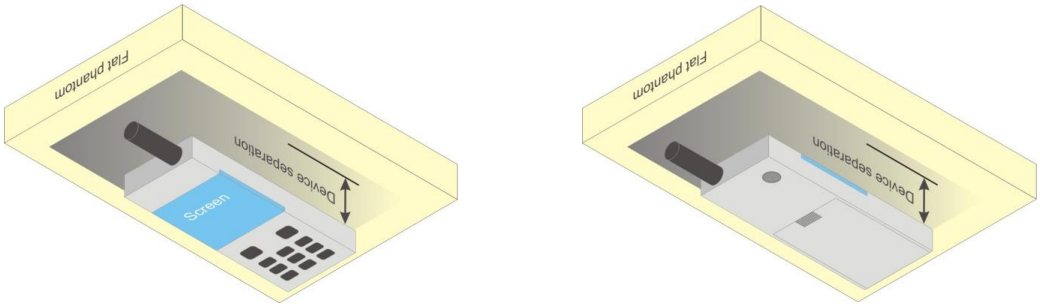


Fig 9.4 Body Worn Position

10.5 Product Specific

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm 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, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

10.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form 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 publication 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.

11. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. For Head SAR Test, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
   For Hotspot, Body-worn, Product Specific SAR Test, the GPRS (2Tx slots) for GSM850 and GPRS (1Tx slots) for GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode
3. Power reduction which is triggered by hotspot mode is implemented in GSM1900 band, for hotspot mode SAR testing EUT was set in reduced power mode and GPRS 1 Tx slot due to its highest frame-average power.

<Default Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.03	32.62	33.22	33.50	23.03	23.62	24.22	24.50
GPRS 1 Tx slot	32.01	32.61	33.21	33.50	23.01	23.61	24.21	24.50
GPRS 2 Tx slots	28.64	29.27	29.87	30.50	22.64	23.27	23.87	24.50
GPRS 3 Tx slots	26.75	27.30	27.82	28.75	22.49	23.04	23.56	24.49
GPRS 4 Tx slots	25.55	25.77	26.30	27.50	22.55	22.77	23.30	24.50
EDGE 1 Tx slot	26.36	26.15	26.24	28.00	17.36	17.15	17.24	19.00
EDGE 2 Tx slots	26.67	26.52	26.55	28.00	20.67	20.52	20.55	22.00
EDGE 3 Tx slots	25.23	25.17	25.24	26.25	20.97	20.91	20.98	21.99
EDGE 4 Tx slots	23.78	23.72	23.75	25.00	20.78	20.72	20.75	22.00

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.80	29.86	29.89	30.50	20.80	20.86	20.89	21.50
GPRS 1 Tx slot	29.79	29.85	29.88	30.50	20.79	20.85	20.88	21.50
GPRS 2 Tx slots	26.39	26.33	26.30	27.50	20.39	20.33	20.30	21.50
GPRS 3 Tx slots	24.43	24.32	24.22	25.75	20.17	20.06	19.96	21.49
GPRS 4 Tx slots	23.08	22.92	22.90	24.50	20.08	19.92	19.90	21.50
EDGE 1 Tx slot	25.14	25.17	25.33	27.00	16.14	16.17	16.33	18.00
EDGE 2 Tx slots	25.60	25.63	25.76	27.00	19.60	19.63	19.76	21.00
EDGE 3 Tx slots	24.22	24.28	24.41	25.25	19.96	20.02	20.15	20.99
EDGE 4 Tx slots	22.93	22.91	23.06	24.00	19.93	19.91	20.06	21.00

<Near-body Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.27	32.06	31.92	33.00	23.27	23.06	22.92	24.00
GPRS 1 Tx slot	32.26	32.09	31.98	33.00	23.26	23.09	22.98	24.00
GPRS 2 Tx slots	28.88	28.66	28.75	30.00	22.34	22.18	22.29	24.00
GPRS 3 Tx slots	26.24	26.00	26.06	28.00	21.98	21.74	21.80	23.74
GPRS 4 Tx slots	24.07	24.05	24.00	25.00	21.07	21.05	21.00	23.00
EDGE 1 Tx slot	24.82	24.83	24.92	26.50	15.82	15.83	15.92	17.50
EDGE 2 Tx slots	24.62	24.69	24.58	26.50	18.62	18.69	18.58	20.50
EDGE 3 Tx slots	23.75	23.62	23.75	25.50	19.49	19.36	19.49	21.24
EDGE 4 Tx slots	22.53	22.67	22.58	24.50	19.53	19.67	19.58	21.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	26.25	25.99	25.97	26.50	17.25	16.99	16.97	17.50
GPRS 1 Tx slot	26.28	26.03	26.01	26.50	17.28	17.03	17.01	17.50
GPRS 2 Tx slots	21.78	21.79	21.66	23.00	15.78	15.79	15.66	17.00
GPRS 3 Tx slots	19.40	19.38	19.34	20.50	15.14	15.12	15.08	16.24
GPRS 4 Tx slots	18.54	18.51	18.36	19.50	15.54	15.51	15.36	16.50
EDGE 1 Tx slot	22.37	22.32	22.33	23.00	13.37	13.32	13.33	14.00
EDGE 2 Tx slots	22.29	22.23	22.16	23.00	16.29	16.23	16.16	17.00
EDGE 3 Tx slots	20.33	19.98	20.09	21.25	16.07	15.72	15.83	16.99
EDGE 4 Tx slots	19.03	19.08	18.84	20.00	16.03	16.08	15.84	17.00

<Hotspot Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.16	31.94	31.88	33.00	23.16	22.94	22.88	24.00
GPRS 1 Tx slot	32.18	31.98	31.91	33.00	23.18	22.98	22.91	24.00
GPRS 2 Tx slots	28.89	28.56	28.62	30.00	22.37	22.00	22.17	24.00
GPRS 3 Tx slots	26.22	26.10	26.00	28.00	21.96	21.84	21.74	23.74
GPRS 4 Tx slots	24.05	24.12	24.10	25.00	21.05	21.12	21.10	23.00
EDGE 1 Tx slot	24.87	24.76	24.79	26.50	15.87	15.76	15.79	17.50
EDGE 2 Tx slots	24.59	24.53	24.67	26.50	18.59	18.53	18.67	20.50
EDGE 3 Tx slots	23.82	23.66	23.74	25.50	19.56	19.40	19.48	21.24
EDGE 4 Tx slots	22.55	22.57	22.56	24.50	19.55	19.57	19.56	21.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	23.75	23.60	23.60	25.00	14.75	14.60	14.60	16.00
GPRS 1 Tx slot	23.78	23.62	23.60	25.00	14.78	14.62	14.60	16.00
GPRS 2 Tx slots	20.40	20.34	20.31	21.00	14.40	14.34	14.31	15.00
GPRS 3 Tx slots	18.78	18.72	18.43	20.25	14.52	14.46	14.17	15.99
GPRS 4 Tx slots	17.70	17.62	17.70	18.00	14.70	14.62	14.70	15.00
EDGE 1 Tx slot	19.80	19.73	19.69	21.50	10.80	10.73	10.69	12.50
EDGE 2 Tx slots	20.24	20.17	20.17	21.50	14.24	14.17	14.17	15.50
EDGE 3 Tx slots	18.25	18.23	18.26	19.75	13.99	13.97	14.00	15.49
EDGE 4 Tx slots	16.97	16.91	16.88	18.50	13.97	13.91	13.88	15.50

<Product Specific Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.27	32.06	31.92	33.00	23.16	22.94	22.88	24.00
GPRS 1 Tx slot	32.26	32.09	31.98	33.00	23.18	22.98	22.91	24.00
GPRS 2 Tx slots	28.88	28.66	28.75	30.00	22.37	22.00	22.17	24.00
GPRS 3 Tx slots	26.24	26.00	26.06	28.00	21.96	21.84	21.74	23.74
GPRS 4 Tx slots	24.07	24.05	24.00	25.00	21.05	21.12	21.10	23.00
EDGE 1 Tx slot	24.82	24.83	24.92	26.50	15.87	15.76	15.79	17.50
EDGE 2 Tx slots	24.62	24.69	24.58	26.50	18.59	18.53	18.67	20.50
EDGE 3 Tx slots	23.75	23.62	23.75	25.50	19.56	19.40	19.48	21.24
EDGE 4 Tx slots	22.53	22.67	22.58	24.50	19.55	19.57	19.56	21.50

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	**CM** (dB) *(Note 3)*	**MPR** (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

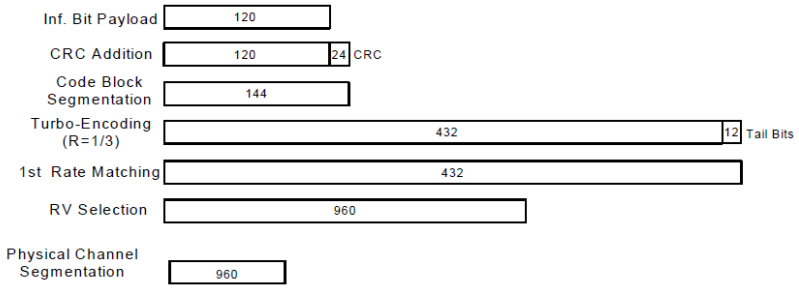


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<Default Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	22.80	22.82	22.85	24.00	23.03	22.95	22.85	24.00	24.27	24.17	24.06	25.00
3GPP Rel 99	RMC 12.2Kbps	22.82	22.83	22.87	24.00	23.05	22.96	22.87	24.00	24.29	24.18	24.07	25.00
3GPP Rel 6	HSDPA Subtest-1	21.63	21.60	21.60	23.00	21.80	21.68	21.56	23.00	22.95	22.81	22.69	24.00
3GPP Rel 6	HSDPA Subtest-2	21.62	21.64	21.62	23.00	21.79	21.72	21.58	23.00	22.95	22.88	22.71	24.00
3GPP Rel 6	HSDPA Subtest-3	21.11	21.14	21.14	22.50	21.28	21.21	21.02	22.50	22.48	22.36	22.27	23.50
3GPP Rel 6	HSDPA Subtest-4	21.15	21.18	21.15	22.50	21.30	21.21	21.07	22.50	22.44	22.36	22.21	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.63	21.52	21.56	23.00	21.80	21.64	21.46	23.00	22.91	22.81	22.62	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.62	21.63	21.57	23.00	21.71	21.64	21.52	23.00	22.92	22.88	22.71	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.09	21.10	21.10	22.50	21.20	21.20	20.97	22.50	22.48	22.29	22.22	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.13	21.13	21.06	22.50	21.28	21.13	20.99	22.50	22.36	22.27	22.13	23.50
3GPP Rel 6	HSUPA Subtest-1	21.59	21.61	21.58	22.00	21.62	21.65	21.59	22.00	22.93	22.81	22.85	23.00
3GPP Rel 6	HSUPA Subtest-2	19.58	19.59	19.62	20.00	19.70	19.78	19.54	20.00	20.88	20.82	20.86	21.00
3GPP Rel 6	HSUPA Subtest-3	20.64	20.63	20.57	21.00	20.60	20.65	20.43	21.00	21.91	21.78	21.80	22.00
3GPP Rel 6	HSUPA Subtest-4	19.56	19.58	19.57	20.00	19.64	19.59	19.63	20.00	20.89	20.81	20.85	21.00
3GPP Rel 6	HSUPA Subtest-5	21.60	21.60	21.60	22.00	21.67	21.63	21.60	22.00	22.90	22.80	22.86	23.00

<Near-body Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	16.11	16.18	16.15	17.50	17.04	17.05	17.02	18.00	22.82	22.73	22.70	24.50
3GPP Rel 99	RMC 12.2Kbps	16.12	16.20	16.18	17.50	17.07	17.09	17.03	18.00	22.83	22.75	22.72	24.50
3GPP Rel 6	HSDPA Subtest-1	15.50	15.46	15.51	16.50	15.79	15.80	15.76	17.00	21.78	21.77	21.75	23.50
3GPP Rel 6	HSDPA Subtest-2	15.54	15.50	15.51	16.50	15.81	15.81	15.75	17.00	21.90	21.80	21.77	23.50
3GPP Rel 6	HSDPA Subtest-3	15.07	15.01	15.01	16.00	15.30	15.30	15.21	16.50	21.40	21.29	21.28	23.00
3GPP Rel 6	HSDPA Subtest-4	14.98	15.00	15.02	16.00	15.31	15.30	15.27	16.50	21.39	21.27	21.24	23.00
3GPP Rel 8	DC-HSDPA Subtest-1	15.49	15.42	15.44	16.50	15.75	15.76	15.72	17.00	21.86	21.74	21.70	23.50
3GPP Rel 8	DC-HSDPA Subtest-2	15.48	15.42	15.46	16.50	15.74	15.77	15.72	17.00	21.84	21.73	21.69	23.50
3GPP Rel 8	DC-HSDPA Subtest-3	14.97	14.91	14.96	16.00	15.26	15.27	15.19	16.50	21.33	21.23	21.18	23.00
3GPP Rel 8	DC-HSDPA Subtest-4	14.96	14.90	14.82	16.00	15.26	15.22	15.17	16.50	21.35	21.25	21.20	23.00
3GPP Rel 6	HSUPA Subtest-1	15.19	15.12	15.15	15.50	15.48	15.47	15.42	16.00	21.73	21.74	21.73	22.50
3GPP Rel 6	HSUPA Subtest-2	13.30	13.44	13.20	13.50	13.74	13.77	13.70	14.00	19.87	19.76	19.73	20.50
3GPP Rel 6	HSUPA Subtest-3	14.20	14.15	14.16	14.50	14.43	14.47	14.42	15.00	20.40	20.35	20.36	21.50
3GPP Rel 6	HSUPA Subtest-4	13.20	13.14	13.17	13.50	13.46	13.48	13.44	14.00	19.86	19.75	19.70	20.50
3GPP Rel 6	HSUPA Subtest-5	15.20	15.16	15.19	15.50	15.47	15.49	15.43	16.00	21.86	21.76	21.73	22.50

<Hotspot Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	14.15	14.10	14.15	15.50	14.64	14.69	14.62	16.00	22.82	22.73	22.70	24.50
3GPP Rel 99	RMC 12.2Kbps	14.17	14.11	14.16	15.50	14.65	14.70	14.63	16.00	22.83	22.75	22.72	24.50
3GPP Rel 6	HSDPA Subtest-1	13.30	13.26	13.31	14.50	13.79	13.80	13.76	15.00	21.78	21.77	21.75	23.50
3GPP Rel 6	HSDPA Subtest-2	13.34	13.30	13.31	14.50	13.81	13.81	13.75	15.00	21.90	21.80	21.77	23.50
3GPP Rel 6	HSDPA Subtest-3	12.87	12.81	12.81	14.00	13.30	13.30	13.21	14.50	21.40	21.29	21.28	23.00
3GPP Rel 6	HSDPA Subtest-4	12.78	12.80	12.82	14.00	13.31	13.30	13.27	14.50	21.39	21.27	21.24	23.00
3GPP Rel 8	DC-HSDPA Subtest-1	13.29	13.22	13.24	14.50	13.75	13.76	13.72	15.00	21.86	21.74	21.70	23.50
3GPP Rel 8	DC-HSDPA Subtest-2	13.28	13.22	13.26	14.50	13.74	13.77	13.72	15.00	21.84	21.73	21.69	23.50
3GPP Rel 8	DC-HSDPA Subtest-3	12.77	12.71	12.76	14.00	13.26	13.27	13.19	14.50	21.33	21.23	21.18	23.00
3GPP Rel 8	DC-HSDPA Subtest-4	12.76	12.70	12.62	14.00	13.26	13.22	13.17	14.50	19.03	18.90	18.90	23.00
3GPP Rel 6	HSUPA Subtest-1	12.99	12.92	12.95	13.50	13.48	13.47	13.42	14.00	21.73	21.74	21.73	22.50
3GPP Rel 6	HSUPA Subtest-2	11.32	11.24	11.31	11.50	11.74	11.77	11.70	12.00	19.87	19.76	19.73	20.50
3GPP Rel 6	HSUPA Subtest-3	12.00	11.95	11.96	12.50	12.43	12.47	12.42	13.00	20.40	20.35	20.36	21.50
3GPP Rel 6	HSUPA Subtest-4	11.00	10.94	10.97	11.50	11.46	11.48	11.44	12.00	19.86	19.75	19.70	20.50
3GPP Rel 6	HSUPA Subtest-5	13.00	12.96	12.99	13.50	13.47	13.49	13.43	14.00	21.86	21.76	21.73	22.50

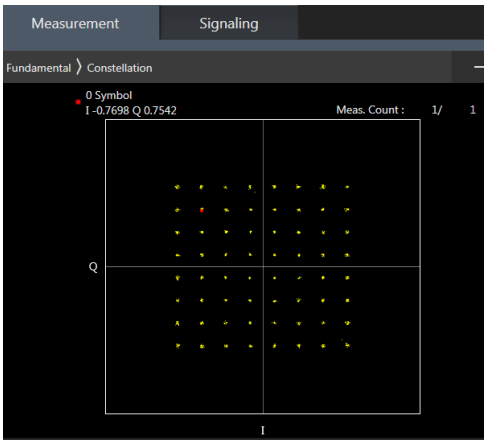
<Product Specific Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	AMR 12.2Kbps	20.14	20.05	20.10	20.50	19.10	19.13	19.05	21.00
3GPP Rel 99	RMC 12.2Kbps	20.15	20.07	20.12	20.50	19.18	19.14	19.06	21.00
3GPP Rel 6	HSDPA Subtest-1	18.81	19.24	18.85	19.50	18.30	18.31	18.26	20.00
3GPP Rel 6	HSDPA Subtest-2	18.85	18.85	18.76	19.50	18.32	18.30	18.31	20.00
3GPP Rel 6	HSDPA Subtest-3	18.38	18.29	18.30	19.00	17.82	17.82	17.73	19.50
3GPP Rel 6	HSDPA Subtest-4	18.27	18.28	18.37	19.00	17.87	17.82	17.81	19.50
3GPP Rel 8	DC-HSDPA Subtest-1	18.79	18.68	18.76	19.50	18.32	18.25	18.20	20.00
3GPP Rel 8	DC-HSDPA Subtest-2	18.76	18.67	18.79	19.50	18.25	18.25	18.26	20.00
3GPP Rel 8	DC-HSDPA Subtest-3	18.24	18.17	18.23	19.00	17.78	17.79	17.73	19.50
3GPP Rel 8	DC-HSDPA Subtest-4	18.30	18.20	18.11	19.00	17.75	17.69	17.68	19.50
3GPP Rel 6	HSUPA Subtest-1	18.46	18.42	18.42	18.50	18.02	18.02	18.03	19.00
3GPP Rel 6	HSUPA Subtest-2	16.35	16.50	16.40	16.50	16.23	16.33	16.19	17.00
3GPP Rel 6	HSUPA Subtest-3	17.48	17.48	17.42	17.50	16.97	17.00	16.90	18.00
3GPP Rel 6	HSUPA Subtest-4	16.48	16.40	16.48	16.50	15.93	15.96	15.93	17.00
3GPP Rel 6	HSUPA Subtest-5	18.48	18.47	18.48	18.50	18.03	18.00	18.05	19.00

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, 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. LTE band 4 / 17 SAR test was covered by Band 12 / 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM

16QAM

Default Power Mode

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.23	22.47	22.34	24	0
20	QPSK	1	49	22.19	22.42	22.35		
20	QPSK	1	99	22.35	22.45	22.24		
20	QPSK	50	0	21.28	21.44	21.36	23	1
20	QPSK	50	24	21.31	21.49	21.38		
20	QPSK	50	50	21.28	21.40	21.31		
20	QPSK	100	0	21.33	21.37	21.36		
20	16QAM	1	0	21.52	21.78	21.88	23	1
20	16QAM	1	49	21.53	21.65	21.53		
20	16QAM	1	99	21.38	21.93	21.71		
20	16QAM	50	0	20.35	20.51	20.39	22	2
20	16QAM	50	24	20.19	20.57	20.45		
20	16QAM	50	50	20.32	20.44	20.46		
20	16QAM	100	0	20.37	20.42	20.42		
20	64QAM	1	0	21.35	21.83	21.53	22	2
20	64QAM	1	49	21.23	21.77	21.44		
20	64QAM	1	99	21.71	21.89	21.50		
20	64QAM	50	0	20.37	20.54	20.59	21	3
20	64QAM	50	24	20.31	20.47	20.48		
20	64QAM	50	50	20.44	20.50	20.38		
20	64QAM	100	0	20.37	20.44	20.39		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.17	22.39	22.19	24	0
15	QPSK	1	37	22.07	22.28	22.21		
15	QPSK	1	74	22.09	22.28	22.01		
15	QPSK	36	0	21.29	21.38	21.24	23	1
15	QPSK	36	20	21.26	21.40	21.21		
15	QPSK	36	39	21.18	21.32	21.28		
15	QPSK	75	0	21.22	21.37	21.25		
15	16QAM	1	0	21.77	21.84	21.33	23	1
15	16QAM	1	37	21.53	21.77	21.60		
15	16QAM	1	74	21.55	21.94	21.19		
15	16QAM	36	0	20.38	20.34	20.24	22	2
15	16QAM	36	20	20.36	20.51	20.54		
15	16QAM	36	39	20.21	20.49	20.35		
15	16QAM	75	0	20.20	20.52	20.41		
15	64QAM	1	0	21.71	21.87	21.65	22	2
15	64QAM	1	37	21.70	21.78	21.83		
15	64QAM	1	74	21.59	21.91	21.01		
15	64QAM	36	0	20.37	20.47	20.07	21	3
15	64QAM	36	20	20.34	20.50	20.36		
15	64QAM	36	39	20.26	20.48	20.39		
15	64QAM	75	0	20.23	20.49	20.30		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.29	22.31	22.26	24	0
10	QPSK	1	25	22.24	22.21	22.07		
10	QPSK	1	49	22.15	22.36	22.19		
10	QPSK	25	0	21.33	21.38	21.25	23	1
10	QPSK	25	12	21.28	21.39	21.38		
10	QPSK	25	25	21.25	21.30	21.30		
10	QPSK	50	0	21.27	21.39	21.22		
10	16QAM	1	0	21.55	21.59	21.38	23	1
10	16QAM	1	25	21.44	21.55	21.02		
10	16QAM	1	49	21.38	21.73	21.71		
10	16QAM	25	0	20.43	20.41	20.31	22	2
10	16QAM	25	12	20.43	20.44	20.45		
10	16QAM	25	25	20.30	20.41	20.39		
10	16QAM	50	0	20.40	20.40	20.23		
10	64QAM	1	0	21.17	21.41	21.22	22	2
10	64QAM	1	25	21.13	21.24	21.00		
10	64QAM	1	49	21.30	21.78	21.30		
10	64QAM	25	0	20.38	20.48	20.33	21	3
10	64QAM	25	12	20.31	20.51	20.53		
10	64QAM	25	25	20.30	20.44	20.40		
10	64QAM	50	0	20.35	20.43	20.27		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.18	22.31	22.26	24	0
5	QPSK	1	12	22.15	22.31	22.29		
5	QPSK	1	24	22.09	22.21	22.31		
5	QPSK	12	0	21.26	21.43	21.30	23	1
5	QPSK	12	7	21.28	21.37	21.36		
5	QPSK	12	13	21.23	21.38	21.31		
5	QPSK	25	0	21.27	21.39	21.29		
5	16QAM	1	0	21.35	21.42	21.73	23	1
5	16QAM	1	12	21.58	22.00	21.37		
5	16QAM	1	24	21.49	21.82	21.24		
5	16QAM	12	0	20.38	20.43	20.40	22	2
5	16QAM	12	7	20.36	20.48	20.37		
5	16QAM	12	13	20.24	20.41	20.35		
5	16QAM	25	0	20.33	20.37	20.42		
5	64QAM	1	0	21.41	21.76	21.72	22	2
5	64QAM	1	12	21.68	21.45	21.70		
5	64QAM	1	24	21.58	21.79	21.54		
5	64QAM	12	0	20.35	20.40	20.52	21	3
5	64QAM	12	7	20.36	20.50	20.49		
5	64QAM	12	13	20.30	20.45	20.39		
5	64QAM	25	0	20.34	20.45	20.44		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.21	22.23	22.20	24	0
3	QPSK	1	8	22.21	22.38	22.29		
3	QPSK	1	14	22.18	22.41	22.20		
3	QPSK	8	0	21.29	21.40	21.25	23	1
3	QPSK	8	4	21.34	21.43	21.30		
3	QPSK	8	7	21.15	21.39	21.32		
3	QPSK	15	0	21.32	21.38	21.26		
3	16QAM	1	0	21.29	21.82	21.36	23	1
3	16QAM	1	8	21.18	21.37	21.31		
3	16QAM	1	14	21.08	21.45	21.30		
3	16QAM	8	0	20.44	20.43	20.40	22	2
3	16QAM	8	4	20.44	20.50	20.37		
3	16QAM	8	7	20.49	20.52	20.36		
3	16QAM	15	0	20.36	20.37	20.33		
3	64QAM	1	0	21.41	21.50	21.41	22	2
3	64QAM	1	8	21.34	21.35	21.41		
3	64QAM	1	14	21.33	21.43	21.13		
3	64QAM	8	0	20.45	20.48	20.42	21	3
3	64QAM	8	4	20.36	20.54	20.42		
3	64QAM	8	7	20.29	20.48	20.32		
3	64QAM	15	0	20.31	20.38	20.37		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.17	22.33	22.11	24	0
1.4	QPSK	1	3	22.29	22.36	22.19		
1.4	QPSK	1	5	22.20	22.32	22.14		
1.4	QPSK	3	0	22.20	22.32	22.21		
1.4	QPSK	3	1	22.31	22.37	22.23		
1.4	QPSK	3	3	22.29	22.32	22.21		
1.4	QPSK	6	0	21.22	21.34	21.25	23	1
1.4	16QAM	1	0	21.09	21.71	21.74	23	1
1.4	16QAM	1	3	21.70	21.80	21.43		
1.4	16QAM	1	5	21.62	21.78	21.37		
1.4	16QAM	3	0	21.31	21.36	21.12		
1.4	16QAM	3	1	21.19	21.26	21.15		
1.4	16QAM	3	3	21.32	21.40	21.10		
1.4	16QAM	6	0	20.47	20.53	20.33	22	2
1.4	64QAM	1	0	21.26	21.79	21.65	22	2
1.4	64QAM	1	3	21.30	21.34	21.35		
1.4	64QAM	1	5	21.27	21.72	21.63		
1.4	64QAM	3	0	21.31	21.45	21.35		
1.4	64QAM	3	1	21.10	21.25	21.34		
1.4	64QAM	3	3	21.37	21.38	21.30		
1.4	64QAM	6	0	20.25	20.29	20.26	21	3

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.61	22.41	22.51	24	0
20	QPSK	1	49	22.38	22.51	22.41		
20	QPSK	1	99	22.32	22.38	22.31		
20	QPSK	50	0	21.56	21.47	21.40	23	1
20	QPSK	50	24	21.51	21.46	21.40		
20	QPSK	50	50	21.35	21.42	21.38		
20	QPSK	100	0	21.38	21.36	21.36		
20	16QAM	1	0	21.90	21.72	21.97	23	1
20	16QAM	1	49	21.71	21.77	21.64		
20	16QAM	1	99	21.56	21.89	21.64		
20	16QAM	50	0	20.61	20.54	20.47	22	2
20	16QAM	50	24	20.49	20.55	20.45		
20	16QAM	50	50	20.50	20.60	20.38		
20	16QAM	100	0	20.51	20.57	20.48		
20	64QAM	1	0	21.60	21.33	21.92	22	2
20	64QAM	1	49	21.31	21.41	21.53		
20	64QAM	1	99	21.53	21.63	21.53		
20	64QAM	50	0	20.67	20.46	20.50	21	3
20	64QAM	50	24	20.51	20.57	20.48		
20	64QAM	50	50	20.49	20.50	20.41		
20	64QAM	100	0	20.46	20.47	20.42		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.43	22.43	22.28	24	0
15	QPSK	1	37	22.44	22.36	22.30		
15	QPSK	1	74	22.32	22.27	22.25		
15	QPSK	36	0	21.60	21.47	21.38	23	1
15	QPSK	36	20	21.58	21.49	21.39		
15	QPSK	36	39	21.39	21.47	21.29		
15	QPSK	75	0	21.46	21.47	21.35		
15	16QAM	1	0	21.54	21.56	21.35	23	1
15	16QAM	1	37	21.48	21.36	21.12		
15	16QAM	1	74	21.37	21.34	21.19		
15	16QAM	36	0	20.60	20.40	20.45	22	2
15	16QAM	36	20	20.59	20.57	20.46		
15	16QAM	36	39	20.46	20.55	20.43		
15	16QAM	75	0	20.43	20.49	20.41		
15	64QAM	1	0	21.70	21.69	21.62	22	2
15	64QAM	1	37	21.69	21.65	21.22		
15	64QAM	1	74	21.63	21.66	21.38		
15	64QAM	36	0	20.60	20.48	20.36	21	3
15	64QAM	36	20	20.61	20.55	20.40		
15	64QAM	36	39	20.42	20.54	20.42		
15	64QAM	75	0	20.54	20.49	20.34		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.60	22.44	22.36	24	0
10	QPSK	1	25	22.55	22.40	22.29		
10	QPSK	1	49	22.49	22.43	22.14		
10	QPSK	25	0	21.55	21.44	21.35	23	1
10	QPSK	25	12	21.60	21.44	21.34		
10	QPSK	25	25	21.53	21.43	21.25		
10	QPSK	50	0	21.54	21.50	21.39		
10	16QAM	1	0	21.79	21.61	21.91	23	1
10	16QAM	1	25	21.80	21.68	21.52		
10	16QAM	1	49	21.58	21.59	21.43		
10	16QAM	25	0	20.56	20.49	20.42	22	2
10	16QAM	25	12	20.72	20.50	20.41		
10	16QAM	25	25	20.63	20.52	20.33		
10	16QAM	50	0	20.59	20.50	20.37		
10	64QAM	1	0	21.55	21.51	21.37	22	2
10	64QAM	1	25	21.71	21.52	21.37		
10	64QAM	1	49	21.48	21.47	21.30		
10	64QAM	25	0	20.64	20.59	20.41	21	3
10	64QAM	25	12	20.57	20.49	20.41		
10	64QAM	25	25	20.55	20.42	20.34		
10	64QAM	50	0	20.59	20.51	20.38		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.50	22.47	22.30	24	0
5	QPSK	1	12	22.54	22.45	22.42		
5	QPSK	1	24	22.50	22.30	22.22		
5	QPSK	12	0	21.55	21.50	21.35	23	1
5	QPSK	12	7	21.68	21.56	21.38		
5	QPSK	12	13	21.52	21.41	21.33		
5	QPSK	25	0	21.55	21.43	21.32		
5	16QAM	1	0	21.99	21.92	21.85	23	1
5	16QAM	1	12	21.90	21.96	21.80		
5	16QAM	1	24	21.95	21.78	21.79		
5	16QAM	12	0	20.60	20.56	20.45	22	2
5	16QAM	12	7	20.64	20.58	20.43		
5	16QAM	12	13	20.57	20.49	20.38		
5	16QAM	25	0	20.69	20.58	20.49		
5	64QAM	1	0	22.00	21.94	21.50	22	2
5	64QAM	1	12	21.49	21.66	21.50		
5	64QAM	1	24	21.97	21.89	21.43		
5	64QAM	12	0	20.49	20.49	20.31	21	3
5	64QAM	12	7	20.54	20.45	20.50		
5	64QAM	12	13	20.46	20.51	20.35		
5	64QAM	25	0	20.66	20.52	20.36		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.45	22.40	22.31	24	0
3	QPSK	1	8	22.47	22.52	22.36		
3	QPSK	1	14	22.48	22.42	22.35		
3	QPSK	8	0	21.61	21.48	21.35	23	1
3	QPSK	8	4	21.67	21.49	21.38		
3	QPSK	8	7	21.61	21.49	21.36		
3	QPSK	15	0	21.51	21.47	21.35		
3	16QAM	1	0	21.69	21.68	21.80	23	1
3	16QAM	1	8	21.86	21.82	21.85		
3	16QAM	1	14	21.85	21.91	21.73		
3	16QAM	8	0	20.59	20.58	20.50	22	2
3	16QAM	8	4	20.68	20.57	20.47		
3	16QAM	8	7	20.55	20.58	20.46		
3	16QAM	15	0	20.67	20.57	20.34		
3	64QAM	1	0	21.41	21.64	21.75	22	2
3	64QAM	1	8	21.74	21.66	21.79		
3	64QAM	1	14	21.44	21.56	21.74		
3	64QAM	8	0	20.50	20.57	20.40	21	3
3	64QAM	8	4	20.59	20.62	20.59		
3	64QAM	8	7	20.61	20.49	20.37		
3	64QAM	15	0	20.53	20.49	20.52		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.50	22.40	22.25	24	0
1.4	QPSK	1	3	22.56	22.43	22.29		
1.4	QPSK	1	5	22.35	22.30	22.14		
1.4	QPSK	3	0	22.56	22.36	22.16		
1.4	QPSK	3	1	22.53	22.46	22.29		
1.4	QPSK	3	3	22.51	22.39	22.22		
1.4	QPSK	6	0	21.46	21.46	21.26	23	1
1.4	16QAM	1	0	21.65	21.39	21.36	23	1
1.4	16QAM	1	3	21.47	21.52	21.23		
1.4	16QAM	1	5	21.63	21.31	21.25		
1.4	16QAM	3	0	21.57	21.51	21.35		
1.4	16QAM	3	1	21.64	21.55	21.38		
1.4	16QAM	3	3	21.52	21.53	21.29		
1.4	16QAM	6	0	20.69	20.47	20.33	22	2
1.4	64QAM	1	0	21.69	21.55	21.40	22	2
1.4	64QAM	1	3	21.72	21.70	21.51		
1.4	64QAM	1	5	21.62	21.56	21.40		
1.4	64QAM	3	0	21.50	21.53	21.38		
1.4	64QAM	3	1	21.60	21.46	21.31		
1.4	64QAM	3	3	21.54	21.44	21.30		
1.4	64QAM	6	0	20.55	20.43	20.35	21	3

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.61	22.46	22.50	24	0
10	QPSK	1	25	22.57	22.53	22.57		
10	QPSK	1	49	22.69	22.43	22.53		
10	QPSK	25	0	21.69	21.63	21.52	23	1
10	QPSK	25	12	21.61	21.69	21.67		
10	QPSK	25	25	21.70	21.63	21.63		
10	QPSK	50	0	21.64	21.63	21.56		
10	16QAM	1	0	21.89	21.86	21.90	23	1
10	16QAM	1	25	21.95	22.00	22.00		
10	16QAM	1	49	21.95	21.89	21.98		
10	16QAM	25	0	20.82	20.74	20.59	22	2
10	16QAM	25	12	20.78	20.71	20.75		
10	16QAM	25	25	20.82	20.65	20.72		
10	16QAM	50	0	20.75	20.83	20.67		
10	64QAM	1	0	21.59	21.90	22.00	22	2
10	64QAM	1	25	21.80	21.60	21.96		
10	64QAM	1	49	21.56	21.50	21.92		
10	64QAM	25	0	20.76	20.84	20.60	21	3
10	64QAM	25	12	20.78	20.70	20.76		
10	64QAM	25	25	20.87	20.80	20.85		
10	64QAM	50	0	20.74	20.71	20.77		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.56	22.51	22.61	24	0
5	QPSK	1	12	22.55	22.58	22.57		
5	QPSK	1	24	22.56	22.51	22.46		
5	QPSK	12	0	21.51	21.59	21.59	23	1
5	QPSK	12	7	21.64	21.67	21.64		
5	QPSK	12	13	21.57	21.63	21.68		
5	QPSK	25	0	21.62	21.66	21.58		
5	16QAM	1	0	21.74	21.86	21.92	23	1
5	16QAM	1	12	21.66	21.90	21.83		
5	16QAM	1	24	21.67	21.77	21.83		
5	16QAM	12	0	20.70	20.75	20.74	22	2
5	16QAM	12	7	20.79	20.83	20.79		
5	16QAM	12	13	20.74	20.81	20.74		
5	16QAM	25	0	20.72	20.66	20.70		
5	64QAM	1	0	21.58	21.64	21.84	22	2
5	64QAM	1	12	21.49	21.64	21.76		
5	64QAM	1	24	21.61	21.55	21.76		
5	64QAM	12	0	20.57	20.73	20.66	21	3
5	64QAM	12	7	20.69	20.64	20.75		
5	64QAM	12	13	20.69	20.62	20.70		
5	64QAM	25	0	20.71	20.65	20.66		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.54	22.56	22.58	24	0
3	QPSK	1	8	22.45	22.61	22.59		
3	QPSK	1	14	22.43	22.58	22.57		
3	QPSK	8	0	21.49	21.64	21.57	23	1
3	QPSK	8	4	21.57	21.64	21.67		
3	QPSK	8	7	21.56	21.55	21.57		
3	QPSK	15	0	21.51	21.61	21.57		
3	16QAM	1	0	22.24	22.25	22.26	23	1
3	16QAM	1	8	22.10	22.21	22.29		
3	16QAM	1	14	21.79	22.19	22.18		
3	16QAM	8	0	20.71	20.73	20.77	22	2
3	16QAM	8	4	20.66	20.74	20.76		
3	16QAM	8	7	20.69	20.79	20.78		
3	16QAM	15	0	20.64	20.76	20.81		
3	64QAM	1	0	21.98	21.96	21.97	22	2
3	64QAM	1	8	21.46	21.76	21.60		
3	64QAM	1	14	21.60	21.66	21.69		
3	64QAM	8	0	20.64	20.78	20.65	21	3
3	64QAM	8	4	20.61	20.78	20.59		
3	64QAM	8	7	20.68	20.74	20.65		
3	64QAM	15	0	20.53	20.64	20.59		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.45	22.45	22.52	24	0
1.4	QPSK	1	3	22.63	22.66	22.55		
1.4	QPSK	1	5	22.49	22.48	22.52		
1.4	QPSK	3	0	22.52	22.55	22.59		
1.4	QPSK	3	1	22.48	22.50	22.48		
1.4	QPSK	3	3	22.47	22.47	22.57		
1.4	QPSK	6	0	21.56	21.47	21.58	23	1
1.4	16QAM	1	0	21.91	22.15	22.17	23	1
1.4	16QAM	1	3	22.02	22.25	21.86		
1.4	16QAM	1	5	21.78	21.99	22.09		
1.4	16QAM	3	0	21.52	21.66	21.71		
1.4	16QAM	3	1	21.63	21.61	21.69		
1.4	16QAM	3	3	21.61	21.69	21.66		
1.4	16QAM	6	0	20.78	20.77	20.69	22	2
1.4	64QAM	1	0	21.73	21.84	22.00	22	2
1.4	64QAM	1	3	21.77	21.83	22.07		
1.4	64QAM	1	5	22.00	21.78	22.03		
1.4	64QAM	3	0	21.63	21.86	21.79		
1.4	64QAM	3	1	21.85	21.83	21.81		
1.4	64QAM	3	3	21.84	21.90	21.89		
1.4	64QAM	6	0	20.69	20.67	20.67	21	3

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.46	22.45	22.44	24	0
20	QPSK	1	49	22.77	22.43	22.51		
20	QPSK	1	99	22.75	22.52	22.56		
20	QPSK	50	0	21.85	21.54	21.49	23	1
20	QPSK	50	24	21.84	21.51	21.54		
20	QPSK	50	50	21.80	21.50	21.59		
20	QPSK	100	0	21.84	21.53	21.53		
20	16QAM	1	0	22.19	21.80	21.81	23	1
20	16QAM	1	49	22.17	21.77	21.83		
20	16QAM	1	99	22.09	21.90	21.92		
20	16QAM	50	0	20.95	20.63	20.61	22	2
20	16QAM	50	24	20.95	20.61	20.63		
20	16QAM	50	50	20.95	20.61	20.67		
20	16QAM	100	0	20.92	20.64	20.61		
20	64QAM	1	0	22.00	21.71	21.72	22	2
20	64QAM	1	49	22.05	21.67	21.76		
20	64QAM	1	99	22.03	21.78	21.82		
20	64QAM	50	0	20.93	20.62	20.58	21	3
20	64QAM	50	24	20.96	20.59	20.61		
20	64QAM	50	50	20.93	20.60	20.66		
20	64QAM	100	0	20.96	20.62	20.61		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.49	22.45	22.47	24	0
15	QPSK	1	37	22.65	22.42	22.48		
15	QPSK	1	74	22.53	22.54	22.59		
15	QPSK	36	0	21.87	21.53	21.54	23	1
15	QPSK	36	20	21.92	21.54	21.59		
15	QPSK	36	39	21.83	21.49	21.57		
15	QPSK	75	0	21.86	21.54	21.56		
15	16QAM	1	0	22.24	21.78	21.86	23	1
15	16QAM	1	37	22.24	21.75	21.84		
15	16QAM	1	74	22.24	21.91	21.95		
15	16QAM	36	0	20.96	20.58	20.62	22	2
15	16QAM	36	20	21.01	20.60	20.65		
15	16QAM	36	39	20.94	20.65	20.64		
15	16QAM	75	0	20.96	20.61	20.64		
15	64QAM	1	0	22.00	21.70	21.74	22	2
15	64QAM	1	37	21.98	21.68	21.74		
15	64QAM	1	74	21.97	21.80	21.82		
15	64QAM	36	0	20.41	20.57	20.61	21	3
15	64QAM	36	20	20.60	20.58	20.64		
15	64QAM	36	39	20.80	20.63	20.62		
15	64QAM	75	0	20.95	20.61	20.63		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.45	22.48	22.35	24	0
10	QPSK	1	25	22.40	22.44	22.39		
10	QPSK	1	49	22.42	22.48	22.49		
10	QPSK	25	0	21.50	21.48	21.49	23	1
10	QPSK	25	12	21.40	21.51	21.58		
10	QPSK	25	25	21.44	21.48	21.50		
10	QPSK	50	0	21.46	21.52	21.49		
10	16QAM	1	0	21.39	21.58	21.68	23	1
10	16QAM	1	25	21.59	21.54	22.10		
10	16QAM	1	49	21.50	21.70	21.66		
10	16QAM	25	0	20.64	20.58	20.51	22	2
10	16QAM	25	12	20.61	20.58	20.60		
10	16QAM	25	25	20.60	20.56	20.53		
10	16QAM	50	0	20.58	20.57	20.56		
10	64QAM	1	0	21.39	21.65	21.61	22	2
10	64QAM	1	25	21.45	21.42	21.43		
10	64QAM	1	49	21.69	21.66	21.54		
10	64QAM	25	0	20.56	20.48	20.50	21	3
10	64QAM	25	12	20.59	20.56	20.67		
10	64QAM	25	25	20.57	20.57	20.60		
10	64QAM	50	0	20.62	20.57	20.54		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.72	22.38	22.50	24	0
5	QPSK	1	12	22.56	22.46	22.38		
5	QPSK	1	24	22.50	22.51	22.46		
5	QPSK	12	0	21.86	21.47	21.46	23	1
5	QPSK	12	7	21.89	21.47	21.58		
5	QPSK	12	13	21.89	21.46	21.56		
5	QPSK	25	0	21.91	21.51	21.48		
5	16QAM	1	0	22.42	21.93	21.69	23	1
5	16QAM	1	12	22.49	22.04	21.78		
5	16QAM	1	24	22.45	21.80	21.76		
5	16QAM	12	0	20.92	20.53	20.57	22	2
5	16QAM	12	7	20.95	20.54	20.65		
5	16QAM	12	13	20.93	20.52	20.63		
5	16QAM	25	0	21.02	20.65	20.70		
5	64QAM	1	0	21.95	21.96	21.58	22	2
5	64QAM	1	12	21.84	22.00	21.66		
5	64QAM	1	24	21.98	22.00	21.65		
5	64QAM	12	0	20.82	20.85	20.56	21	3
5	64QAM	12	7	20.96	20.38	20.70		
5	64QAM	12	13	20.94	20.57	20.46		
5	64QAM	25	0	20.94	20.55	20.63		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.53	22.59	22.60	24	0
10	QPSK	1	25	22.68	22.72	22.57		
10	QPSK	1	49	22.84	22.69	22.63		
10	QPSK	25	0	21.66	21.72	21.74	23	1
10	QPSK	25	12	21.80	21.79	21.79		
10	QPSK	25	25	21.78	21.68	21.68		
10	QPSK	50	0	21.80	21.70	21.69		
10	16QAM	1	0	21.71	21.81	21.76	23	1
10	16QAM	1	25	21.72	21.91	21.93		
10	16QAM	1	49	21.83	21.80	21.95		
10	16QAM	25	0	20.74	20.82	20.86	22	2
10	16QAM	25	12	20.87	20.87	20.81		
10	16QAM	25	25	20.90	20.76	20.85		
10	16QAM	50	0	20.91	20.77	20.77		
10	64QAM	1	0	21.74	21.75	21.65	22	2
10	64QAM	1	25	21.65	21.70	21.77		
10	64QAM	1	49	21.94	21.69	22.27		
10	64QAM	25	0	20.77	20.95	20.85	21	3
10	64QAM	25	12	20.90	20.80	20.80		
10	64QAM	25	25	20.87	20.79	20.73		
10	64QAM	50	0	20.92	20.76	20.78		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.60	22.50	22.60	24	0
5	QPSK	1	12	22.57	22.74	22.59		
5	QPSK	1	24	22.63	22.70	22.57		
5	QPSK	12	0	21.74	21.79	21.69	23	1
5	QPSK	12	7	21.79	21.80	21.78		
5	QPSK	12	13	21.68	21.70	21.81		
5	QPSK	25	0	21.69	21.68	21.62		
5	16QAM	1	0	21.76	22.08	21.91	23	1
5	16QAM	1	12	21.93	21.94	22.20		
5	16QAM	1	24	21.95	22.26	22.17		
5	16QAM	12	0	20.86	20.81	20.75	22	2
5	16QAM	12	7	20.81	20.93	20.85		
5	16QAM	12	13	20.85	20.82	20.84		
5	16QAM	25	0	20.77	20.81	20.78		
5	64QAM	1	0	21.65	21.71	22.15	22	2
5	64QAM	1	12	21.77	22.18	22.22		
5	64QAM	1	24	22.27	22.21	21.79		
5	64QAM	12	0	20.85	20.75	20.55	21	3
5	64QAM	12	7	20.80	20.87	20.86		
5	64QAM	12	13	20.73	20.67	20.69		
5	64QAM	25	0	20.78	20.82	20.76		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.50	22.63	22.63	24	0
3	QPSK	1	8	22.51	22.64	22.63		
3	QPSK	1	14	22.55	22.65	22.62		
3	QPSK	8	0	21.61	21.74	21.69	23	1
3	QPSK	8	4	21.63	21.78	21.71		
3	QPSK	8	7	21.68	21.72	21.76		
3	QPSK	15	0	21.71	21.76	21.70		
3	16QAM	1	0	21.82	21.94	21.93	23	1
3	16QAM	1	8	21.84	21.95	22.12		
3	16QAM	1	14	21.93	21.89	22.20		
3	16QAM	8	0	20.74	20.86	20.90	22	2
3	16QAM	8	4	20.79	20.77	20.85		
3	16QAM	8	7	20.81	20.86	20.81		
3	16QAM	15	0	20.71	20.76	20.75		
3	64QAM	1	0	21.66	21.67	21.66	22	2
3	64QAM	1	8	21.64	21.65	21.57		
3	64QAM	1	14	21.78	21.82	21.86		
3	64QAM	8	0	20.67	20.81	20.76	21	3
3	64QAM	8	4	20.79	20.90	20.78		
3	64QAM	8	7	20.73	20.86	20.75		
3	64QAM	15	0	20.77	20.77	20.85		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.47	22.59	22.63	24	0
1.4	QPSK	1	3	22.54	22.59	22.66		
1.4	QPSK	1	5	22.40	22.59	22.56		
1.4	QPSK	3	0	22.46	22.58	22.80		
1.4	QPSK	3	1	22.51	22.63	22.65		
1.4	QPSK	3	3	22.49	22.66	22.71		
1.4	QPSK	6	0	21.55	21.73	21.66	23	1
1.4	16QAM	1	0	21.46	21.67	21.76	23	1
1.4	16QAM	1	3	21.67	21.78	21.76		
1.4	16QAM	1	5	21.52	21.91	21.65		
1.4	16QAM	3	0	21.71	21.80	21.55		
1.4	16QAM	3	1	21.65	21.67	21.63		
1.4	16QAM	3	3	21.46	21.55	21.71		
1.4	16QAM	6	0	20.63	20.85	20.94	22	2
1.4	64QAM	1	0	21.79	21.84	21.57	22	2
1.4	64QAM	1	3	21.74	21.79	21.69		
1.4	64QAM	1	5	21.72	21.85	21.66		
1.4	64QAM	3	0	21.67	21.76	21.51		
1.4	64QAM	3	1	21.71	21.60	21.57		
1.4	64QAM	3	3	21.59	21.71	21.50		
1.4	64QAM	6	0	20.64	20.72	20.61	21	3

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.65	22.65	22.71	24	0
10	QPSK	1	25	22.74	22.68	22.68		
10	QPSK	1	49	22.77	22.71	22.88		
10	QPSK	25	0	21.74	21.73	21.70	23	1
10	QPSK	25	12	21.70	21.74	21.79		
10	QPSK	25	25	21.76	21.65	21.69		
10	QPSK	50	0	21.72	21.75	21.76		
10	16QAM	1	0	22.19	22.15	22.29	23	1
10	16QAM	1	25	22.22	22.19	22.27		
10	16QAM	1	49	22.28	22.30	22.25		
10	16QAM	25	0	20.84	20.79	20.89	22	2
10	16QAM	25	12	20.90	20.85	20.91		
10	16QAM	25	25	20.79	20.78	20.82		
10	16QAM	50	0	20.82	20.78	20.84		
10	64QAM	1	0	21.74	21.72	22.00	22	2
10	64QAM	1	25	22.00	22.17	21.84		
10	64QAM	1	49	21.71	22.28	22.26		
10	64QAM	25	0	20.85	20.87	20.86	21	3
10	64QAM	25	12	20.89	20.83	20.88		
10	64QAM	25	25	20.84	20.82	20.80		
10	64QAM	50	0	20.77	20.80	20.80		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.61	22.78	22.58	24	0
5	QPSK	1	12	22.66	22.64	22.80		
5	QPSK	1	24	22.70	22.66	22.79		
5	QPSK	12	0	21.67	21.75	21.67	23	1
5	QPSK	12	7	21.83	21.72	21.74		
5	QPSK	12	13	21.83	21.71	21.80		
5	QPSK	25	0	21.74	21.74	21.72		
5	16QAM	1	0	22.00	22.07	21.95	23	1
5	16QAM	1	12	22.02	22.00	22.03		
5	16QAM	1	24	22.04	22.02	22.08		
5	16QAM	12	0	20.80	20.80	20.73	22	2
5	16QAM	12	7	20.82	20.75	20.81		
5	16QAM	12	13	20.83	20.73	20.75		
5	16QAM	25	0	20.87	20.87	20.72		
5	64QAM	1	0	21.56	21.61	21.90	22	2
5	64QAM	1	12	21.69	21.97	22.01		
5	64QAM	1	24	21.63	21.97	21.91		
5	64QAM	12	0	20.89	20.84	20.78	21	3
5	64QAM	12	7	20.93	20.97	20.88		
5	64QAM	12	13	20.94	20.88	20.83		
5	64QAM	25	0	20.79	20.81	20.72		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	22.56	22.36	22.33	24	0
20	QPSK	1	49	22.62	22.30	22.29		
20	QPSK	1	99	22.40	22.13	22.15		
20	QPSK	50	0	21.50	21.29	21.25	23	1
20	QPSK	50	24	21.44	21.22	21.18		
20	QPSK	50	50	21.44	21.20	21.16		
20	QPSK	100	0	21.48	21.25	21.20		
20	16QAM	1	0	21.85	21.66	21.61	23	1
20	16QAM	1	49	21.81	21.57	21.57		
20	16QAM	1	99	21.74	21.38	21.48		
20	16QAM	50	0	20.59	20.60	20.55	22	2
20	16QAM	50	24	20.57	20.58	20.52		
20	16QAM	50	50	20.53	20.55	20.53		
20	16QAM	100	0	20.52	20.56	20.53		
20	64QAM	1	0	21.75	21.55	21.49	22	2
20	64QAM	1	49	21.76	21.50	21.47		
20	64QAM	1	99	21.58	21.34	21.30		
20	64QAM	50	0	20.55	20.36	20.33	21	3
20	64QAM	50	24	20.53	20.33	20.28		
20	64QAM	50	50	20.55	20.23	20.19		
20	64QAM	100	0	20.55	20.30	20.31		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	22.42	22.35	22.30	24	0
15	QPSK	1	37	22.60	22.32	22.30		
15	QPSK	1	74	22.47	22.17	22.13		
15	QPSK	36	0	21.51	21.25	21.20	23	1
15	QPSK	36	20	21.57	21.32	21.27		
15	QPSK	36	39	21.46	21.15	21.11		
15	QPSK	75	0	21.50	21.23	21.14		
15	16QAM	1	0	21.84	21.61	21.57	23	1
15	16QAM	1	37	21.89	21.58	21.56		
15	16QAM	1	74	21.79	21.44	21.52		
15	16QAM	36	0	20.55	20.58	20.59	22	2
15	16QAM	36	20	20.65	20.58	20.55		
15	16QAM	36	39	20.55	20.54	20.52		
15	16QAM	75	0	20.53	20.51	20.55		
15	64QAM	1	0	21.76	21.51	21.48	22	2
15	64QAM	1	37	21.78	21.49	21.49		
15	64QAM	1	74	21.69	21.34	21.32		
15	64QAM	36	0	20.54	20.34	20.31	21	3
15	64QAM	36	20	20.63	20.35	20.33		
15	64QAM	36	39	20.53	20.24	20.18		
15	64QAM	75	0	20.56	20.30	20.26		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	22.23	22.29	22.22	24	0
10	QPSK	1	25	22.25	22.29	22.21		
10	QPSK	1	49	22.16	22.16	22.11		
10	QPSK	25	0	22.20	22.26	22.25	23	1
10	QPSK	25	12	22.30	22.29	22.21		
10	QPSK	25	25	22.24	22.23	22.33		
10	QPSK	50	0	21.58	21.27	21.18		
10	16QAM	1	0	21.82	21.58	21.54	23	1
10	16QAM	1	25	21.88	21.55	21.49		
10	16QAM	1	49	21.75	21.45	21.38		
10	16QAM	25	0	20.63	20.59	20.51	22	2
10	16QAM	25	12	20.64	20.54	20.56		
10	16QAM	25	25	20.57	20.53	20.55		
10	16QAM	50	0	20.59	20.57	20.50		
10	64QAM	1	0	21.54	21.50	21.43	22	2
10	64QAM	1	25	21.45	21.48	21.40		
10	64QAM	1	49	21.69	21.50	21.29		
10	64QAM	25	0	20.66	20.56	20.31	21	3
10	64QAM	25	12	20.64	20.45	20.27		
10	64QAM	25	25	20.60	20.36	20.22		
10	64QAM	50	0	20.61	20.29	20.23		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	22.41	22.12	22.04	24	0
5	QPSK	1	12	22.56	22.26	22.20		
5	QPSK	1	24	22.09	22.08	22.00		
5	QPSK	12	0	21.15	21.25	21.16	23	1
5	QPSK	12	7	21.63	21.32	21.25		
5	QPSK	12	13	21.54	21.25	21.15		
5	QPSK	25	0	21.53	21.24	21.15		
5	16QAM	1	0	21.70	21.39	21.41	23	1
5	16QAM	1	12	21.82	21.48	21.49		
5	16QAM	1	24	21.66	21.34	21.29		
5	16QAM	12	0	20.59	20.54	20.54	22	2
5	16QAM	12	7	20.68	20.54	20.53		
5	16QAM	12	13	20.60	20.53	20.58		
5	16QAM	25	0	20.58	20.53	20.53		
5	64QAM	1	0	21.57	21.30	21.21	22	2
5	64QAM	1	12	21.76	21.42	21.41		
5	64QAM	1	24	21.56	21.26	21.23		
5	64QAM	12	0	20.60	20.37	20.20	21	3
5	64QAM	12	7	20.69	20.39	20.27		
5	64QAM	12	13	20.63	20.34	20.21		
5	64QAM	25	0	20.58	20.29	20.21		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	22.43	22.15	22.06	24	0
3	QPSK	1	8	22.57	22.05	22.14		
3	QPSK	1	14	22.42	22.32	22.20		
3	QPSK	8	0	21.60	21.29	21.17	23	1
3	QPSK	8	4	21.64	21.36	21.24		
3	QPSK	8	7	21.57	21.27	21.16		
3	QPSK	15	0	21.59	21.29	21.18		
3	16QAM	1	0	21.68	21.40	21.34	23	1
3	16QAM	1	8	21.85	21.55	21.44		
3	16QAM	1	14	21.67	21.38	21.29		
3	16QAM	8	0	20.68	20.51	20.53	22	2
3	16QAM	8	4	20.74	20.55	20.55		
3	16QAM	8	7	20.67	20.57	20.58		
3	16QAM	15	0	20.67	20.59	20.53		
3	64QAM	1	0	21.62	21.35	21.20	22	2
3	64QAM	1	8	21.75	21.43	21.37		
3	64QAM	1	14	21.62	21.32	21.20		
3	64QAM	8	0	20.62	20.35	20.22	21	3
3	64QAM	8	4	20.69	20.43	20.29		
3	64QAM	8	7	20.60	20.36	20.21		
3	64QAM	15	0	20.61	20.32	20.23		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	22.49	22.17	22.06	24	0
1.4	QPSK	1	3	22.52	22.25	22.18		
1.4	QPSK	1	5	22.47	22.17	22.07		
1.4	QPSK	3	0	22.53	22.25	22.14		
1.4	QPSK	3	1	22.56	22.28	22.19		
1.4	QPSK	3	3	22.51	22.23	22.13		
1.4	QPSK	6	0	21.57	21.28	21.16	23	1
1.4	16QAM	1	0	21.69	21.41	21.39	23	1
1.4	16QAM	1	3	21.83	21.49	21.44		
1.4	16QAM	1	5	21.75	21.37	21.31		
1.4	16QAM	3	0	21.59	21.32	21.19		
1.4	16QAM	3	1	21.63	21.32	21.23		
1.4	16QAM	3	3	21.57	21.28	21.17		
1.4	16QAM	6	0	21.01	21.00	21.10	22	2
1.4	64QAM	1	0	21.67	21.35	21.27	22	2
1.4	64QAM	1	3	21.81	21.46	21.37		
1.4	64QAM	1	5	21.64	21.33	21.29		
1.4	64QAM	3	0	21.60	21.33	21.20		
1.4	64QAM	3	1	21.67	21.35	21.24		
1.4	64QAM	3	3	21.60	21.30	21.19		
1.4	64QAM	6	0	20.62	20.36	20.21	21	3

Near-body Power Mode

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	16.75	16.88	16.80	17.5	0
20	QPSK	1	49	16.49	16.55	16.49		
20	QPSK	1	99	16.50	16.49	16.45		
20	QPSK	50	0	16.84	16.85	16.77	17.5	0
20	QPSK	50	24	16.56	16.60	16.57		
20	QPSK	50	50	16.58	16.59	16.58		
20	QPSK	100	0	16.51	16.67	16.50		
20	16QAM	1	0	16.71	16.77	16.76	17.5	0
20	16QAM	1	49	16.71	16.76	16.84		
20	16QAM	1	99	16.81	16.60	16.74		
20	16QAM	50	0	16.45	16.56	16.50	17.5	0
20	16QAM	50	24	16.48	16.60	16.53		
20	16QAM	50	50	16.53	16.55	16.50		
20	16QAM	100	0	16.56	16.52	16.48		
20	64QAM	1	0	16.73	16.68	16.76	17.5	0
20	64QAM	1	49	16.63	16.84	16.62		
20	64QAM	1	99	16.66	16.79	16.74		
20	64QAM	50	0	16.46	16.58	16.54	17.5	0
20	64QAM	50	24	16.49	16.62	16.51		
20	64QAM	50	50	16.53	16.55	16.49		
20	64QAM	100	0	16.56	16.57	16.50		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.35	16.40	16.27	17.5	0
15	QPSK	1	37	16.31	16.39	16.36		
15	QPSK	1	74	16.25	16.32	16.31		
15	QPSK	36	0	16.39	16.42	16.27	17.5	0
15	QPSK	36	20	16.38	16.47	16.31		
15	QPSK	36	39	16.35	16.42	16.39		
15	QPSK	75	0	16.33	16.43	16.29		
15	16QAM	1	0	16.70	16.76	16.71	17.5	0
15	16QAM	1	37	16.66	16.78	16.70		
15	16QAM	1	74	16.65	16.74	16.67		
15	16QAM	36	0	16.49	16.56	16.40	17.5	0
15	16QAM	36	20	16.53	16.58	16.41		
15	16QAM	36	39	16.48	16.55	16.49		
15	16QAM	75	0	16.47	16.55	16.36		
15	64QAM	1	0	16.65	16.78	16.61	17.5	0
15	64QAM	1	37	16.68	16.75	16.65		
15	64QAM	1	74	16.63	16.62	16.61		
15	64QAM	36	0	16.56	16.61	16.45	17.5	0
15	64QAM	36	20	16.54	16.66	16.49		
15	64QAM	36	39	16.50	16.58	16.52		
15	64QAM	75	0	16.48	16.56	16.40		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	16.44	16.51	16.22	17.5	0
10	QPSK	1	25	16.38	16.42	16.34		
10	QPSK	1	49	16.38	16.46	16.30		
10	QPSK	25	0	16.37	16.40	16.26	17.5	0
10	QPSK	25	12	16.42	16.46	16.36		
10	QPSK	25	25	16.38	16.45	16.37		
10	QPSK	50	0	16.38	16.43	16.25		
10	16QAM	1	0	16.72	16.80	16.69	17.5	0
10	16QAM	1	25	16.83	16.81	16.74		
10	16QAM	1	49	16.80	16.80	16.67		
10	16QAM	25	0	16.52	16.57	16.35	17.5	0
10	16QAM	25	12	16.54	16.54	16.46		
10	16QAM	25	25	16.47	16.56	16.48		
10	16QAM	50	0	16.49	16.56	16.38		
10	64QAM	1	0	16.81	16.78	16.54	17.5	0
10	64QAM	1	25	16.74	16.78	16.70		
10	64QAM	1	49	16.69	16.73	16.67		
10	64QAM	25	0	16.57	16.59	16.41	17.5	0
10	64QAM	25	12	16.52	16.62	16.51		
10	64QAM	25	25	16.53	16.57	16.48		
10	64QAM	50	0	16.51	16.56	16.41		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.36	16.42	16.34	17.5	0
5	QPSK	1	12	16.38	16.44	16.36		
5	QPSK	1	24	16.32	16.37	16.31		
5	QPSK	12	0	16.38	16.50	16.40	17.5	0
5	QPSK	12	7	16.43	16.50	16.40		
5	QPSK	12	13	16.38	16.43	16.36		
5	QPSK	25	0	16.39	16.42	16.36		
5	16QAM	1	0	16.78	16.82	16.73	17.5	0
5	16QAM	1	12	16.81	16.81	16.81		
5	16QAM	1	24	16.69	16.78	16.68		
5	16QAM	12	0	16.53	16.62	16.48	17.5	0
5	16QAM	12	7	16.51	16.58	16.53		
5	16QAM	12	13	16.52	16.55	16.48		
5	16QAM	25	0	16.51	16.57	16.49		
5	64QAM	1	0	16.63	16.80	16.64	17.5	0
5	64QAM	1	12	16.78	16.72	16.65		
5	64QAM	1	24	16.74	16.73	16.60		
5	64QAM	12	0	16.59	16.65	16.52	17.5	0
5	64QAM	12	7	16.64	16.65	16.58		
5	64QAM	12	13	16.59	16.63	16.52		
5	64QAM	25	0	16.52	16.57	16.48		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	16.39	16.38	16.31	17.5	0
3	QPSK	1	8	16.40	16.43	16.36		
3	QPSK	1	14	16.36	16.35	16.31		
3	QPSK	8	0	16.43	16.44	16.34	17.5	0
3	QPSK	8	4	16.44	16.47	16.40		
3	QPSK	8	7	16.41	16.46	16.37		
3	QPSK	15	0	16.39	16.42	16.36		
3	16QAM	1	0	16.77	16.82	16.67	17.5	0
3	16QAM	1	8	16.73	16.81	16.70		
3	16QAM	1	14	16.71	16.82	16.60		
3	16QAM	8	0	16.58	16.64	16.56	17.5	0
3	16QAM	8	4	16.60	16.64	16.56		
3	16QAM	8	7	16.60	16.63	16.53		
3	16QAM	15	0	16.50	16.54	16.46		
3	64QAM	1	0	16.66	16.64	16.60	17.5	0
3	64QAM	1	8	16.76	16.76	16.60		
3	64QAM	1	14	16.51	16.67	16.69		
3	64QAM	8	0	16.59	16.62	16.51	17.5	0
3	64QAM	8	4	16.61	16.70	16.55		
3	64QAM	8	7	16.58	16.64	16.49		
3	64QAM	15	0	16.56	16.60	16.43		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	16.30	16.36	16.22	17.5	0
1.4	QPSK	1	3	16.40	16.42	16.35		
1.4	QPSK	1	5	16.30	16.35	16.22		
1.4	QPSK	3	0	16.35	16.40	16.31		
1.4	QPSK	3	1	16.40	16.44	16.36		
1.4	QPSK	3	3	16.35	16.41	16.32		
1.4	QPSK	6	0	16.28	16.37	16.28	17.5	0
1.4	16QAM	1	0	16.76	16.69	16.56	17.5	0
1.4	16QAM	1	3	16.85	16.83	16.77		
1.4	16QAM	1	5	16.61	16.67	16.58		
1.4	16QAM	3	0	16.49	16.55	16.37		
1.4	16QAM	3	1	16.55	16.56	16.42		
1.4	16QAM	3	3	16.47	16.51	16.45		
1.4	16QAM	6	0	16.51	16.61	16.48	17.5	0
1.4	64QAM	1	0	16.68	16.70	16.61	17.5	0
1.4	64QAM	1	3	16.71	16.79	16.66		
1.4	64QAM	1	5	16.61	16.62	16.58		
1.4	64QAM	3	0	16.59	16.66	16.51		
1.4	64QAM	3	1	16.65	16.73	16.62		
1.4	64QAM	3	3	16.63	16.68	16.50		
1.4	64QAM	6	0	16.49	16.54	16.37	17.5	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	16.39	16.41	16.36	17	0
20	QPSK	1	49	16.16	16.23	16.23		
20	QPSK	1	99	16.13	16.17	16.18		
20	QPSK	50	0	16.25	16.29	16.21	17	0
20	QPSK	50	24	16.25	16.30	16.23		
20	QPSK	50	50	16.23	16.18	16.26		
20	QPSK	100	0	16.26	16.28	16.15		
20	16QAM	1	0	16.57	16.60	16.56	17	0
20	16QAM	1	49	16.59	16.57	16.58		
20	16QAM	1	99	16.49	16.45	16.49		
20	16QAM	50	0	16.32	16.40	16.33	17	0
20	16QAM	50	24	16.34	16.41	16.32		
20	16QAM	50	50	16.29	16.31	16.35		
20	16QAM	100	0	16.29	16.33	16.26		
20	64QAM	1	0	16.58	16.59	16.39	17	0
20	64QAM	1	49	16.49	16.56	16.58		
20	64QAM	1	99	16.44	16.38	16.51		
20	64QAM	50	0	16.36	16.41	16.36	17	0
20	64QAM	50	24	16.39	16.42	16.38		
20	64QAM	50	50	16.32	16.34	16.39		
20	64QAM	100	0	16.33	16.41	16.26		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	16.24	16.25	16.16	17	0
15	QPSK	1	37	16.25	16.22	16.23		
15	QPSK	1	74	16.16	16.15	16.12		
15	QPSK	36	0	16.26	16.26	16.17	17	0
15	QPSK	36	20	16.30	16.31	16.27		
15	QPSK	36	39	16.25	16.24	16.25		
15	QPSK	75	0	16.24	16.27	16.16		
15	16QAM	1	0	16.57	16.55	16.55	17	0
15	16QAM	1	37	16.59	16.56	16.55		
15	16QAM	1	74	16.53	16.50	16.56		
15	16QAM	36	0	16.37	16.40	16.26	17	0
15	16QAM	36	20	16.36	16.41	16.44		
15	16QAM	36	39	16.33	16.35	16.33		
15	16QAM	75	0	16.34	16.38	16.28		
15	64QAM	1	0	16.51	16.55	16.44	17	0
15	64QAM	1	37	16.54	16.57	16.43		
15	64QAM	1	74	16.44	16.47	16.48		
15	64QAM	36	0	16.43	16.45	16.33	17	0
15	64QAM	36	20	16.41	16.44	16.45		
15	64QAM	36	39	16.39	16.38	16.38		
15	64QAM	75	0	16.36	16.40	16.29		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	16.28	16.30	16.27	17	0
10	QPSK	1	25	16.26	16.24	16.24		
10	QPSK	1	49	16.20	16.19	16.19		
10	QPSK	25	0	16.28	16.27	16.30	17	0
10	QPSK	25	12	16.28	16.29	16.28		
10	QPSK	25	25	16.21	16.26	16.23		
10	QPSK	50	0	16.24	16.27	16.25		
10	16QAM	1	0	16.52	16.51	16.50	17	0
10	16QAM	1	25	16.49	16.49	16.57		
10	16QAM	1	49	16.55	16.48	16.55		
10	16QAM	25	0	16.41	16.40	16.38	17	0
10	16QAM	25	12	16.43	16.42	16.39		
10	16QAM	25	25	16.35	16.38	16.34		
10	16QAM	50	0	16.38	16.40	16.39		
10	64QAM	1	0	16.58	16.58	16.59	17	0
10	64QAM	1	25	16.55	16.52	16.50		
10	64QAM	1	49	16.52	16.51	16.45		
10	64QAM	25	0	16.42	16.46	16.40	17	0
10	64QAM	25	12	16.44	16.42	16.40		
10	64QAM	25	25	16.39	16.39	16.37		
10	64QAM	50	0	16.41	16.38	16.41		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	16.29	16.27	16.24	17	0
5	QPSK	1	12	16.28	16.23	16.23		
5	QPSK	1	24	16.21	16.23	16.17		
5	QPSK	12	0	16.31	16.27	16.25	17	0
5	QPSK	12	7	16.36	16.32	16.30		
5	QPSK	12	13	16.30	16.25	16.22		
5	QPSK	25	0	16.30	16.28	16.22		
5	16QAM	1	0	16.47	16.44	16.53	17	0
5	16QAM	1	12	16.45	16.46	16.58		
5	16QAM	1	24	16.52	16.54	16.55		
5	16QAM	12	0	16.49	16.39	16.35	17	0
5	16QAM	12	7	16.42	16.45	16.42		
5	16QAM	12	13	16.40	16.38	16.37		
5	16QAM	25	0	16.41	16.37	16.35		
5	64QAM	1	0	16.41	16.50	16.48	17	0
5	64QAM	1	12	16.42	16.43	16.50		
5	64QAM	1	24	16.56	16.56	16.48		
5	64QAM	12	0	16.46	16.46	16.39	17	0
5	64QAM	12	7	16.48	16.48	16.47		
5	64QAM	12	13	16.46	16.45	16.43		
5	64QAM	25	0	16.39	16.40	16.38		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	16.29	16.26	16.23	17	0
3	QPSK	1	8	16.29	16.27	16.21		
3	QPSK	1	14	16.28	16.24	16.19		
3	QPSK	8	0	16.31	16.27	16.26	17	0
3	QPSK	8	4	16.35	16.30	16.30		
3	QPSK	8	7	16.35	16.27	16.26		
3	QPSK	15	0	16.33	16.23	16.24		
3	16QAM	1	0	16.59	16.59	16.54	17	0
3	16QAM	1	8	16.58	16.58	16.49		
3	16QAM	1	14	16.53	16.52	16.53		
3	16QAM	8	0	16.49	16.49	16.47	17	0
3	16QAM	8	4	16.49	16.52	16.47		
3	16QAM	8	7	16.49	16.44	16.46		
3	16QAM	15	0	16.43	16.39	16.37		
3	64QAM	1	0	16.56	16.58	16.50	17	0
3	64QAM	1	8	16.56	16.48	16.59		
3	64QAM	1	14	16.52	16.49	16.54		
3	64QAM	8	0	16.48	16.44	16.46	17	0
3	64QAM	8	4	16.48	16.48	16.45		
3	64QAM	8	7	16.47	16.43	16.45		
3	64QAM	15	0	16.41	16.43	16.37		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	16.21	16.21	16.17	17	0
1.4	QPSK	1	3	16.33	16.30	16.22		
1.4	QPSK	1	5	16.22	16.16	16.10		
1.4	QPSK	3	0	16.25	16.26	16.18		
1.4	QPSK	3	1	16.28	16.25	16.21		
1.4	QPSK	3	3	16.25	16.24	16.18		
1.4	QPSK	6	0	16.21	16.24	16.17	17	0
1.4	16QAM	1	0	16.54	16.55	16.49	17	0
1.4	16QAM	1	3	16.47	16.46	16.59		
1.4	16QAM	1	5	16.58	16.49	16.55		
1.4	16QAM	3	0	16.33	16.35	16.28		
1.4	16QAM	3	1	16.38	16.39	16.42		
1.4	16QAM	3	3	16.32	16.30	16.31		
1.4	16QAM	6	0	16.40	16.43	16.41	17	0
1.4	64QAM	1	0	16.51	16.57	16.45	17	0
1.4	64QAM	1	3	16.58	16.53	16.53		
1.4	64QAM	1	5	16.53	16.49	16.49		
1.4	64QAM	3	0	16.45	16.44	16.45		
1.4	64QAM	3	1	16.54	16.49	16.49		
1.4	64QAM	3	3	16.46	16.49	16.40		
1.4	64QAM	6	0	16.34	16.37	16.32	17	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	19.09	18.98	19.06	20.5	0
20	QPSK	1	49	19.10	18.95	18.99		
20	QPSK	1	99	19.07	19.06	19.03		
20	QPSK	50	0	19.15	19.01	19.10	20.5	0
20	QPSK	50	24	19.14	19.04	19.12		
20	QPSK	50	50	19.11	19.03	19.02		
20	QPSK	100	0	19.15	19.02	19.08		
20	16QAM	1	0	19.46	19.40	19.52	20.5	0
20	16QAM	1	49	19.54	19.38	19.37		
20	16QAM	1	99	19.36	19.38	19.35		
20	16QAM	50	0	19.23	19.16	19.23	20.5	0
20	16QAM	50	24	19.28	19.12	19.17		
20	16QAM	50	50	19.25	19.08	19.15		
20	16QAM	100	0	19.23	19.14	19.20		
20	64QAM	1	0	19.35	19.17	19.32	20.5	0
20	64QAM	1	49	19.38	19.23	19.26		
20	64QAM	1	99	19.33	19.25	19.29		
20	64QAM	50	0	19.22	19.15	19.19	20.5	0
20	64QAM	50	24	19.27	19.12	19.16		
20	64QAM	50	50	19.24	19.07	19.14		
20	64QAM	100	0	19.22	19.13	19.19		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	19.14	19.00	19.09	20.5	0
15	QPSK	1	37	19.09	18.95	19.09		
15	QPSK	1	74	19.14	19.04	19.08		
15	QPSK	36	0	19.17	19.02	19.10	20.5	0
15	QPSK	36	20	19.19	19.05	19.08		
15	QPSK	36	39	19.19	18.99	19.13		
15	QPSK	75	0	19.17	19.03	19.06		
15	16QAM	1	0	19.52	19.39	19.48	20.5	0
15	16QAM	1	37	19.41	19.26	19.39		
15	16QAM	1	74	19.51	19.41	19.49		
15	16QAM	36	0	19.25	19.15	19.20	20.5	0
15	16QAM	36	20	19.25	19.12	19.18		
15	16QAM	36	39	19.26	19.13	19.26		
15	16QAM	75	0	19.30	19.11	19.16		
15	64QAM	1	0	19.35	19.31	19.34	20.5	0
15	64QAM	1	37	19.37	19.23	19.37		
15	64QAM	1	74	19.43	19.27	19.30		
15	64QAM	36	0	19.22	19.15	19.16	20.5	0
15	64QAM	36	20	19.26	19.13	19.21		
15	64QAM	36	39	19.29	19.08	19.19		
15	64QAM	75	0	19.24	19.11	19.18		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	19.12	19.02	19.04	20.5	0
10	QPSK	1	25	19.07	18.98	19.08		
10	QPSK	1	49	19.14	18.96	19.09		
10	QPSK	25	0	19.15	19.00	19.07	20.5	0
10	QPSK	25	12	19.14	19.04	19.12		
10	QPSK	25	25	19.17	18.97	19.14		
10	QPSK	50	0	19.16	18.99	19.07		
10	16QAM	1	0	19.51	19.30	19.40	20.5	0
10	16QAM	1	25	19.38	19.34	19.46		
10	16QAM	1	49	19.53	19.38	19.46		
10	16QAM	25	0	19.21	19.09	19.13	20.5	0
10	16QAM	25	12	19.25	19.16	19.27		
10	16QAM	25	25	19.22	19.12	19.21		
10	16QAM	50	0	19.23	19.10	19.12		
10	64QAM	1	0	19.35	19.24	19.32	20.5	0
10	64QAM	1	25	19.34	19.16	19.34		
10	64QAM	1	49	19.39	19.18	19.33		
10	64QAM	25	0	19.21	19.10	19.13	20.5	0
10	64QAM	25	12	19.26	19.13	19.25		
10	64QAM	25	25	19.21	19.12	19.21		
10	64QAM	50	0	19.21	19.10	19.11		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	19.09	18.96	19.11	20.5	0
5	QPSK	1	12	19.09	18.94	19.06		
5	QPSK	1	24	19.11	18.98	19.07		
5	QPSK	12	0	19.13	18.97	19.11	20.5	0
5	QPSK	12	7	19.18	19.03	19.14		
5	QPSK	12	13	19.17	19.03	19.14		
5	QPSK	25	0	19.12	19.00	19.09		
5	16QAM	1	0	19.39	19.36	19.36	20.5	0
5	16QAM	1	12	19.42	19.25	19.43		
5	16QAM	1	24	19.46	19.24	19.46		
5	16QAM	12	0	19.23	19.13	19.22	20.5	0
5	16QAM	12	7	19.29	19.16	19.23		
5	16QAM	12	13	19.24	19.08	19.16		
5	16QAM	25	0	19.21	19.09	19.22		
5	64QAM	1	0	19.35	19.21	19.30	20.5	0
5	64QAM	1	12	19.37	19.28	19.32		
5	64QAM	1	24	19.32	19.27	19.35		
5	64QAM	12	0	19.17	19.12	19.25	20.5	0
5	64QAM	12	7	19.28	19.17	19.29		
5	64QAM	12	13	19.21	19.16	19.21		
5	64QAM	25	0	19.22	19.10	19.24		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	16.88	16.64	16.65	17	0
20	QPSK	1	49	16.68	16.49	16.60		
20	QPSK	1	99	16.59	16.42	16.40		
20	QPSK	50	0	16.54	16.37	16.46	17	0
20	QPSK	50	24	16.59	16.38	16.49		
20	QPSK	50	50	16.50	16.26	16.48		
20	QPSK	100	0	16.55	16.34	16.40		
20	16QAM	1	0	16.71	16.84	16.83	17	0
20	16QAM	1	49	16.71	16.71	16.77		
20	16QAM	1	99	16.83	16.63	16.63		
20	16QAM	50	0	16.67	16.39	16.47	17	0
20	16QAM	50	24	16.63	16.34	16.46		
20	16QAM	50	50	16.62	16.37	16.51		
20	16QAM	100	0	16.63	16.33	16.52		
20	64QAM	1	0	16.64	16.64	16.68	17	0
20	64QAM	1	49	16.69	16.79	16.69		
20	64QAM	1	99	16.81	16.55	16.69		
20	64QAM	50	0	16.72	16.39	16.48	17	0
20	64QAM	50	24	16.61	16.34	16.44		
20	64QAM	50	50	16.60	16.36	16.50		
20	64QAM	100	0	16.70	16.42	16.45		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	16.52	16.16	16.23	17	0
15	QPSK	1	37	16.51	16.25	16.36		
15	QPSK	1	74	16.34	16.17	16.28		
15	QPSK	36	0	16.32	16.11	16.21	17	0
15	QPSK	36	20	16.41	16.18	16.33		
15	QPSK	36	39	16.30	16.08	16.19		
15	QPSK	75	0	16.35	16.13	16.20		
15	16QAM	1	0	16.82	16.67	16.53	17	0
15	16QAM	1	37	16.77	16.61	16.78		
15	16QAM	1	74	16.74	16.55	16.72		
15	16QAM	36	0	16.40	16.19	16.21	17	0
15	16QAM	36	20	16.57	16.22	16.32		
15	16QAM	36	39	16.37	16.14	16.31		
15	16QAM	75	0	16.44	16.20	16.18		
15	64QAM	1	0	16.72	16.57	16.56	17	0
15	64QAM	1	37	16.79	16.54	16.66		
15	64QAM	1	74	16.60	16.36	16.53		
15	64QAM	36	0	16.48	16.20	16.26	17	0
15	64QAM	36	20	16.56	16.28	16.49		
15	64QAM	36	39	16.43	16.21	16.33		
15	64QAM	75	0	16.47	16.16	16.21		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	16.47	16.20	16.33	17	0
10	QPSK	1	25	16.44	16.17	16.36		
10	QPSK	1	49	16.43	16.13	16.22		
10	QPSK	25	0	16.40	16.14	16.30	17	0
10	QPSK	25	12	16.37	16.16	16.29		
10	QPSK	25	25	16.39	16.10	16.20		
10	QPSK	50	0	16.41	16.09	16.23		
10	16QAM	1	0	16.87	16.53	16.77	17	0
10	16QAM	1	25	16.83	16.54	16.77		
10	16QAM	1	49	16.77	16.31	16.72		
10	16QAM	25	0	16.46	16.21	16.39	17	0
10	16QAM	25	12	16.52	16.23	16.33		
10	16QAM	25	25	16.50	16.19	16.29		
10	16QAM	50	0	16.50	16.16	16.39		
10	64QAM	1	0	16.68	16.38	16.65	17	0
10	64QAM	1	25	16.73	16.48	16.62		
10	64QAM	1	49	16.63	16.34	16.53		
10	64QAM	25	0	16.56	16.23	16.40	17	0
10	64QAM	25	12	16.49	16.25	16.39		
10	64QAM	25	25	16.45	16.24	16.36		
10	64QAM	50	0	16.46	16.27	16.39		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	16.37	16.07	16.15	17	0
5	QPSK	1	12	16.50	16.19	16.35		
5	QPSK	1	24	16.21	15.99	16.10		
5	QPSK	12	0	16.36	16.19	16.21	17	0
5	QPSK	12	7	16.54	16.19	16.32		
5	QPSK	12	13	16.41	16.06	16.32		
5	QPSK	25	0	16.45	16.10	16.32		
5	16QAM	1	0	16.71	16.37	16.51	17	0
5	16QAM	1	12	16.85	16.40	16.65		
5	16QAM	1	24	16.54	16.26	16.50		
5	16QAM	12	0	16.45	16.14	16.36	17	0
5	16QAM	12	7	16.59	16.22	16.51		
5	16QAM	12	13	16.55	16.23	16.41		
5	16QAM	25	0	16.47	16.23	16.36		
5	64QAM	1	0	16.56	16.26	16.39	17	0
5	64QAM	1	12	16.71	16.46	16.59		
5	64QAM	1	24	16.58	16.26	16.38		
5	64QAM	12	0	16.62	16.23	16.38	17	0
5	64QAM	12	7	16.64	16.33	16.54		
5	64QAM	12	13	16.48	16.18	16.36		
5	64QAM	25	0	16.54	16.22	16.35		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	16.35	16.11	16.24	17	0
3	QPSK	1	8	16.48	16.20	16.30		
3	QPSK	1	14	16.29	16.08	16.15		
3	QPSK	8	0	16.52	16.22	16.28	17	0
3	QPSK	8	4	16.46	16.28	16.38		
3	QPSK	8	7	16.48	16.18	16.29		
3	QPSK	15	0	16.39	16.18	16.31		
3	16QAM	1	0	16.72	16.38	16.58	17	0
3	16QAM	1	8	16.83	16.42	16.78		
3	16QAM	1	14	16.59	16.40	16.60		
3	16QAM	8	0	16.65	16.24	16.43	17	0
3	16QAM	8	4	16.63	16.37	16.56		
3	16QAM	8	7	16.58	16.30	16.37		
3	16QAM	15	0	16.56	16.29	16.42		
3	64QAM	1	0	16.50	16.35	16.48	17	0
3	64QAM	1	8	16.66	16.48	16.51		
3	64QAM	1	14	16.61	16.38	16.47		
3	64QAM	8	0	16.53	16.26	16.37	17	0
3	64QAM	8	4	16.66	16.38	16.46		
3	64QAM	8	7	16.58	16.34	16.38		
3	64QAM	15	0	16.51	16.25	16.41		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	16.40	16.11	16.24	17	0
1.4	QPSK	1	3	16.54	16.21	16.36		
1.4	QPSK	1	5	16.38	16.06	16.14		
1.4	QPSK	3	0	16.47	16.18	16.32		
1.4	QPSK	3	1	16.47	16.15	16.38		
1.4	QPSK	3	3	16.52	16.15	16.32		
1.4	QPSK	6	0	16.45	16.15	16.34	17	0
1.4	16QAM	1	0	16.71	16.34	16.63	17	0
1.4	16QAM	1	3	16.78	16.49	16.75		
1.4	16QAM	1	5	16.76	16.42	16.63		
1.4	16QAM	3	0	16.52	16.21	16.37		
1.4	16QAM	3	1	16.55	16.32	16.44		
1.4	16QAM	3	3	16.60	16.27	16.41		
1.4	16QAM	6	0	16.59	16.21	16.44	17	0
1.4	64QAM	1	0	16.72	16.29	16.41	17	0
1.4	64QAM	1	3	16.82	16.44	16.52		
1.4	64QAM	1	5	16.63	16.35	16.47		
1.4	64QAM	3	0	16.60	16.28	16.50		
1.4	64QAM	3	1	16.69	16.37	16.62		
1.4	64QAM	3	3	16.69	16.35	16.56		
1.4	64QAM	6	0	16.52	16.17	16.45	17	0

Hotspot Power Mode

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	14.72	14.73	14.70	16	0
20	QPSK	1	49	14.59	14.65	14.59		
20	QPSK	1	99	14.60	14.59	14.55		
20	QPSK	50	0	14.78	14.79	14.70	16	0
20	QPSK	50	24	14.56	14.60	14.57		
20	QPSK	50	50	14.58	14.59	14.58		
20	QPSK	100	0	14.61	14.77	14.60		
20	16QAM	1	0	14.81	14.87	14.86	16	0
20	16QAM	1	49	14.81	14.86	14.94		
20	16QAM	1	99	14.91	15.00	14.84		
20	16QAM	50	0	14.55	14.66	14.60	16	0
20	16QAM	50	24	14.58	14.70	14.63		
20	16QAM	50	50	14.63	14.65	14.60		
20	16QAM	100	0	14.66	14.62	14.58		
20	64QAM	1	0	14.83	14.78	14.86	16	0
20	64QAM	1	49	14.73	14.94	14.72		
20	64QAM	1	99	14.76	14.89	14.84		
20	64QAM	50	0	14.56	14.68	14.64	16	0
20	64QAM	50	24	14.59	14.72	14.61		
20	64QAM	50	50	14.63	14.65	14.59		
20	64QAM	100	0	14.66	14.67	14.60		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	14.45	14.50	14.37	16	0
15	QPSK	1	37	14.41	14.49	14.46		
15	QPSK	1	74	14.35	14.42	14.41		
15	QPSK	36	0	14.49	14.52	14.37	16	0
15	QPSK	36	20	14.48	14.57	14.41		
15	QPSK	36	39	14.45	14.52	14.49		
15	QPSK	75	0	14.43	14.53	14.39		
15	16QAM	1	0	14.80	14.86	14.81	16	0
15	16QAM	1	37	14.76	14.88	14.80		
15	16QAM	1	74	14.75	14.84	14.77		
15	16QAM	36	0	14.59	14.66	14.50	16	0
15	16QAM	36	20	14.63	14.68	14.51		
15	16QAM	36	39	14.58	14.65	14.59		
15	16QAM	75	0	14.57	14.65	14.46		
15	64QAM	1	0	14.75	14.88	14.71	16	0
15	64QAM	1	37	14.78	14.85	14.75		
15	64QAM	1	74	14.73	14.72	14.71		
15	64QAM	36	0	14.66	14.71	14.55	16	0
15	64QAM	36	20	14.64	14.76	14.59		
15	64QAM	36	39	14.60	14.68	14.62		
15	64QAM	75	0	14.58	14.66	14.50		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	14.54	14.61	14.32	16	0
10	QPSK	1	25	14.48	14.52	14.44		
10	QPSK	1	49	14.48	14.56	14.40		
10	QPSK	25	0	14.47	14.50	14.36	16	0
10	QPSK	25	12	14.52	14.56	14.46		
10	QPSK	25	25	14.48	14.55	14.47		
10	QPSK	50	0	14.48	14.53	14.35		
10	16QAM	1	0	14.82	14.90	14.79	16	0
10	16QAM	1	25	14.93	14.91	14.84		
10	16QAM	1	49	14.90	14.90	14.77		
10	16QAM	25	0	14.62	14.67	14.45	16	0
10	16QAM	25	12	14.64	14.64	14.56		
10	16QAM	25	25	14.57	14.66	14.58		
10	16QAM	50	0	14.59	14.66	14.48		
10	64QAM	1	0	14.91	14.88	14.64	16	0
10	64QAM	1	25	14.84	14.88	14.80		
10	64QAM	1	49	14.79	14.83	14.77		
10	64QAM	25	0	14.67	14.69	14.51	16	0
10	64QAM	25	12	14.62	14.72	14.61		
10	64QAM	25	25	14.63	14.67	14.58		
10	64QAM	50	0	14.61	14.66	14.51		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	14.46	14.52	14.44	16	0
5	QPSK	1	12	14.48	14.54	14.46		
5	QPSK	1	24	14.42	14.47	14.41		
5	QPSK	12	0	14.48	14.60	14.50	16	0
5	QPSK	12	7	14.53	14.60	14.50		
5	QPSK	12	13	14.48	14.53	14.46		
5	QPSK	25	0	14.49	14.52	14.46		
5	16QAM	1	0	14.88	14.92	14.83	16	0
5	16QAM	1	12	14.91	14.91	14.91		
5	16QAM	1	24	14.79	14.88	14.78		
5	16QAM	12	0	14.63	14.72	14.58	16	0
5	16QAM	12	7	14.61	14.68	14.63		
5	16QAM	12	13	14.62	14.65	14.58		
5	16QAM	25	0	14.61	14.67	14.59		
5	64QAM	1	0	14.73	14.90	14.74	16	0
5	64QAM	1	12	14.88	14.82	14.75		
5	64QAM	1	24	14.84	14.83	14.70		
5	64QAM	12	0	14.69	14.75	14.62	16	0
5	64QAM	12	7	14.74	14.75	14.68		
5	64QAM	12	13	14.69	14.73	14.62		
5	64QAM	25	0	14.62	14.67	14.58		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	14.49	14.48	14.41	16	0
3	QPSK	1	8	14.50	14.53	14.46		
3	QPSK	1	14	14.46	14.45	14.41		
3	QPSK	8	0	14.53	14.54	14.44	16	0
3	QPSK	8	4	14.54	14.57	14.50		
3	QPSK	8	7	14.51	14.56	14.47		
3	QPSK	15	0	14.49	14.52	14.46		
3	16QAM	1	0	14.87	14.92	14.77	16	0
3	16QAM	1	8	14.83	14.91	14.80		
3	16QAM	1	14	14.81	14.92	14.70		
3	16QAM	8	0	14.68	14.74	14.66	16	0
3	16QAM	8	4	14.70	14.74	14.66		
3	16QAM	8	7	14.70	14.73	14.63		
3	16QAM	15	0	14.60	14.64	14.56		
3	64QAM	1	0	14.76	14.74	14.70	16	0
3	64QAM	1	8	14.86	14.86	14.70		
3	64QAM	1	14	14.61	14.77	14.79		
3	64QAM	8	0	14.69	14.72	14.61	16	0
3	64QAM	8	4	14.71	14.80	14.65		
3	64QAM	8	7	14.68	14.74	14.59		
3	64QAM	15	0	14.66	14.70	14.53		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	14.40	14.46	14.32	16	0
1.4	QPSK	1	3	14.50	14.52	14.45		
1.4	QPSK	1	5	14.40	14.45	14.32		
1.4	QPSK	3	0	14.45	14.50	14.41		
1.4	QPSK	3	1	14.50	14.54	14.46		
1.4	QPSK	3	3	14.45	14.51	14.42		
1.4	QPSK	6	0	14.38	14.47	14.38	16	0
1.4	16QAM	1	0	14.86	14.79	14.66	16	0
1.4	16QAM	1	3	14.95	14.93	14.87		
1.4	16QAM	1	5	14.71	14.77	14.68		
1.4	16QAM	3	0	14.59	14.65	14.47		
1.4	16QAM	3	1	14.65	14.66	14.52		
1.4	16QAM	3	3	14.57	14.61	14.55		
1.4	16QAM	6	0	14.61	14.71	14.58	16	0
1.4	64QAM	1	0	14.78	14.80	14.71	16	0
1.4	64QAM	1	3	14.81	14.89	14.76		
1.4	64QAM	1	5	14.71	14.72	14.68		
1.4	64QAM	3	0	14.69	14.76	14.61		
1.4	64QAM	3	1	14.75	14.83	14.72		
1.4	64QAM	3	3	14.73	14.78	14.60		
1.4	64QAM	6	0	14.59	14.64	14.47	16	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	13.12	13.15	13.07	15	0
20	QPSK	1	49	13.06	13.13	13.13		
20	QPSK	1	99	13.03	13.07	13.08		
20	QPSK	50	0	13.15	13.19	13.11	15	0
20	QPSK	50	24	13.15	13.20	13.13		
20	QPSK	50	50	13.13	13.08	13.16		
20	QPSK	100	0	13.16	13.18	13.05		
20	16QAM	1	0	13.47	13.50	13.46	15	0
20	16QAM	1	49	13.49	13.47	13.48		
20	16QAM	1	99	13.39	13.35	13.39		
20	16QAM	50	0	13.22	13.30	13.23	15	0
20	16QAM	50	24	13.24	13.31	13.22		
20	16QAM	50	50	13.19	13.21	13.25		
20	16QAM	100	0	13.19	13.23	13.16		
20	64QAM	1	0	13.48	13.49	13.29	15	0
20	64QAM	1	49	13.39	13.46	13.48		
20	64QAM	1	99	13.34	13.28	13.41		
20	64QAM	50	0	13.26	13.31	13.26	15	0
20	64QAM	50	24	13.29	13.32	13.28		
20	64QAM	50	50	13.22	13.24	13.29		
20	64QAM	100	0	13.23	13.31	13.16		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	13.14	13.15	13.06	15	0
15	QPSK	1	37	13.15	13.12	13.13		
15	QPSK	1	74	13.06	13.05	13.02		
15	QPSK	36	0	13.16	13.16	13.07	15	0
15	QPSK	36	20	13.20	13.21	13.17		
15	QPSK	36	39	13.15	13.14	13.15		
15	QPSK	75	0	13.14	13.17	13.06		
15	16QAM	1	0	13.47	13.45	13.45	15	0
15	16QAM	1	37	13.49	13.46	13.45		
15	16QAM	1	74	13.43	13.40	13.46		
15	16QAM	36	0	13.27	13.30	13.16	15	0
15	16QAM	36	20	13.26	13.31	13.34		
15	16QAM	36	39	13.23	13.25	13.23		
15	16QAM	75	0	13.24	13.28	13.18		
15	64QAM	1	0	13.41	13.45	13.34	15	0
15	64QAM	1	37	13.44	13.47	13.33		
15	64QAM	1	74	13.34	13.37	13.38		
15	64QAM	36	0	13.33	13.35	13.23	15	0
15	64QAM	36	20	13.31	13.34	13.35		
15	64QAM	36	39	13.29	13.28	13.28		
15	64QAM	75	0	13.26	13.30	13.19		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	13.18	13.20	13.17	15	0
10	QPSK	1	25	13.16	13.14	13.14		
10	QPSK	1	49	13.10	13.09	13.09		
10	QPSK	25	0	13.18	13.17	13.20	15	0
10	QPSK	25	12	13.18	13.19	13.18		
10	QPSK	25	25	13.11	13.16	13.13		
10	QPSK	50	0	13.14	13.17	13.15		
10	16QAM	1	0	13.42	13.41	13.40	15	0
10	16QAM	1	25	13.39	13.39	13.47		
10	16QAM	1	49	13.45	13.38	13.45		
10	16QAM	25	0	13.31	13.30	13.28	15	0
10	16QAM	25	12	13.33	13.32	13.29		
10	16QAM	25	25	13.25	13.28	13.24		
10	16QAM	50	0	13.28	13.30	13.29		
10	64QAM	1	0	13.48	13.48	13.49	15	0
10	64QAM	1	25	13.45	13.42	13.40		
10	64QAM	1	49	13.42	13.41	13.35		
10	64QAM	25	0	13.32	13.36	13.30	15	0
10	64QAM	25	12	13.34	13.32	13.30		
10	64QAM	25	25	13.29	13.29	13.27		
10	64QAM	50	0	13.31	13.28	13.31		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	13.19	13.17	13.14	15	0
5	QPSK	1	12	13.18	13.13	13.13		
5	QPSK	1	24	13.11	13.13	13.07		
5	QPSK	12	0	13.21	13.17	13.15	15	0
5	QPSK	12	7	13.26	13.22	13.20		
5	QPSK	12	13	13.20	13.15	13.12		
5	QPSK	25	0	13.20	13.18	13.12		
5	16QAM	1	0	13.37	13.34	13.43	15	0
5	16QAM	1	12	13.35	13.36	13.48		
5	16QAM	1	24	13.42	13.44	13.45		
5	16QAM	12	0	13.39	13.29	13.25	15	0
5	16QAM	12	7	13.32	13.35	13.32		
5	16QAM	12	13	13.30	13.28	13.27		
5	16QAM	25	0	13.31	13.27	13.25		
5	64QAM	1	0	13.31	13.40	13.38	15	0
5	64QAM	1	12	13.32	13.33	13.40		
5	64QAM	1	24	13.46	13.46	13.38		
5	64QAM	12	0	13.36	13.36	13.29	15	0
5	64QAM	12	7	13.38	13.38	13.37		
5	64QAM	12	13	13.36	13.35	13.33		
5	64QAM	25	0	13.29	13.30	13.28		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	13.19	13.16	13.13	15	0
3	QPSK	1	8	13.19	13.17	13.11		
3	QPSK	1	14	13.18	13.14	13.09		
3	QPSK	8	0	13.21	13.17	13.16	15	0
3	QPSK	8	4	13.25	13.20	13.20		
3	QPSK	8	7	13.25	13.17	13.16		
3	QPSK	15	0	13.23	13.13	13.14		
3	16QAM	1	0	13.49	13.49	13.44	15	0
3	16QAM	1	8	13.48	13.48	13.39		
3	16QAM	1	14	13.43	13.42	13.43		
3	16QAM	8	0	13.39	13.39	13.37	15	0
3	16QAM	8	4	13.39	13.42	13.37		
3	16QAM	8	7	13.39	13.34	13.36		
3	16QAM	15	0	13.33	13.29	13.27		
3	64QAM	1	0	13.46	13.48	13.40	15	0
3	64QAM	1	8	13.46	13.38	13.49		
3	64QAM	1	14	13.42	13.39	13.44		
3	64QAM	8	0	13.38	13.34	13.36	15	0
3	64QAM	8	4	13.38	13.38	13.35		
3	64QAM	8	7	13.37	13.33	13.35		
3	64QAM	15	0	13.31	13.33	13.27		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	13.11	13.11	13.07	15	0
1.4	QPSK	1	3	13.23	13.20	13.12		
1.4	QPSK	1	5	13.12	13.06	13.00		
1.4	QPSK	3	0	13.15	13.16	13.08		
1.4	QPSK	3	1	13.18	13.15	13.11		
1.4	QPSK	3	3	13.15	13.14	13.08		
1.4	QPSK	6	0	13.11	13.14	13.07	15	0
1.4	16QAM	1	0	13.44	13.45	13.39	15	0
1.4	16QAM	1	3	13.37	13.36	13.49		
1.4	16QAM	1	5	13.48	13.39	13.45		
1.4	16QAM	3	0	13.23	13.25	13.18		
1.4	16QAM	3	1	13.28	13.29	13.32		
1.4	16QAM	3	3	13.22	13.20	13.21		
1.4	16QAM	6	0	13.30	13.33	13.31	15	0
1.4	64QAM	1	0	13.41	13.47	13.35	15	0
1.4	64QAM	1	3	13.48	13.43	13.43		
1.4	64QAM	1	5	13.43	13.39	13.39		
1.4	64QAM	3	0	13.35	13.34	13.35		
1.4	64QAM	3	1	13.44	13.39	13.39		
1.4	64QAM	3	3	13.36	13.39	13.30		
1.4	64QAM	6	0	13.24	13.27	13.22	15	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	19.09	18.98	19.06	20.5	0
20	QPSK	1	49	19.10	18.95	18.99		
20	QPSK	1	99	19.07	19.06	19.03		
20	QPSK	50	0	19.15	19.01	19.10	20.5	0
20	QPSK	50	24	19.14	19.04	19.12		
20	QPSK	50	50	19.11	19.03	19.02		
20	QPSK	100	0	19.15	19.02	19.08		
20	16QAM	1	0	19.46	19.40	19.52	20.5	0
20	16QAM	1	49	19.54	19.38	19.37		
20	16QAM	1	99	19.36	19.38	19.35		
20	16QAM	50	0	19.23	19.16	19.23	20.5	0
20	16QAM	50	24	19.28	19.12	19.17		
20	16QAM	50	50	19.25	19.08	19.15		
20	16QAM	100	0	19.23	19.14	19.20		
20	64QAM	1	0	19.35	19.17	19.32	20.5	0
20	64QAM	1	49	19.38	19.23	19.26		
20	64QAM	1	99	19.33	19.25	19.29		
20	64QAM	50	0	19.22	19.15	19.19	20.5	0
20	64QAM	50	24	19.27	19.12	19.16		
20	64QAM	50	50	19.24	19.07	19.14		
20	64QAM	100	0	19.22	19.13	19.19		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	19.14	19.00	19.09	20.5	0
15	QPSK	1	37	19.09	18.95	19.09		
15	QPSK	1	74	19.14	19.04	19.08		
15	QPSK	36	0	19.17	19.02	19.10	20.5	0
15	QPSK	36	20	19.19	19.05	19.08		
15	QPSK	36	39	19.19	18.99	19.13		
15	QPSK	75	0	19.17	19.03	19.06		
15	16QAM	1	0	19.52	19.39	19.48	20.5	0
15	16QAM	1	37	19.41	19.26	19.39		
15	16QAM	1	74	19.51	19.41	19.49		
15	16QAM	36	0	19.25	19.15	19.20	20.5	0
15	16QAM	36	20	19.25	19.12	19.18		
15	16QAM	36	39	19.26	19.13	19.26		
15	16QAM	75	0	19.30	19.11	19.16		
15	64QAM	1	0	19.35	19.31	19.34	20.5	0
15	64QAM	1	37	19.37	19.23	19.37		
15	64QAM	1	74	19.43	19.27	19.30		
15	64QAM	36	0	19.22	19.15	19.16	20.5	0
15	64QAM	36	20	19.26	19.13	19.21		
15	64QAM	36	39	19.29	19.08	19.19		
15	64QAM	75	0	19.24	19.11	19.18		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	19.12	19.02	19.04	20.5	0
10	QPSK	1	25	19.07	18.98	19.08		
10	QPSK	1	49	19.14	18.96	19.09		
10	QPSK	25	0	19.15	19.00	19.07	20.5	0
10	QPSK	25	12	19.14	19.04	19.12		
10	QPSK	25	25	19.17	18.97	19.14		
10	QPSK	50	0	19.16	18.99	19.07		
10	16QAM	1	0	19.51	19.30	19.40	20.5	0
10	16QAM	1	25	19.38	19.34	19.46		
10	16QAM	1	49	19.53	19.38	19.46		
10	16QAM	25	0	19.21	19.09	19.13	20.5	0
10	16QAM	25	12	19.25	19.16	19.27		
10	16QAM	25	25	19.22	19.12	19.21		
10	16QAM	50	0	19.23	19.10	19.12		
10	64QAM	1	0	19.35	19.24	19.32	20.5	0
10	64QAM	1	25	19.34	19.16	19.34		
10	64QAM	1	49	19.39	19.18	19.33		
10	64QAM	25	0	19.21	19.10	19.13	20.5	0
10	64QAM	25	12	19.26	19.13	19.25		
10	64QAM	25	25	19.21	19.12	19.21		
10	64QAM	50	0	19.21	19.10	19.11		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	19.09	18.96	19.11	20.5	0
5	QPSK	1	12	19.09	18.94	19.06		
5	QPSK	1	24	19.11	18.98	19.07		
5	QPSK	12	0	19.13	18.97	19.11	20.5	0
5	QPSK	12	7	19.18	19.03	19.14		
5	QPSK	12	13	19.17	19.03	19.14		
5	QPSK	25	0	19.12	19.00	19.09		
5	16QAM	1	0	19.39	19.36	19.36	20.5	0
5	16QAM	1	12	19.42	19.25	19.43		
5	16QAM	1	24	19.46	19.24	19.46		
5	16QAM	12	0	19.23	19.13	19.22	20.5	0
5	16QAM	12	7	19.29	19.16	19.23		
5	16QAM	12	13	19.24	19.08	19.16		
5	16QAM	25	0	19.21	19.09	19.22		
5	64QAM	1	0	19.35	19.21	19.30	20.5	0
5	64QAM	1	12	19.37	19.28	19.32		
5	64QAM	1	24	19.32	19.27	19.35		
5	64QAM	12	0	19.17	19.12	19.25	20.5	0
5	64QAM	12	7	19.28	19.17	19.29		
5	64QAM	12	13	19.21	19.16	19.21		
5	64QAM	25	0	19.22	19.10	19.24		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	13.60	13.36	13.41	15	0
20	QPSK	1	49	13.62	13.43	13.55		
20	QPSK	1	99	13.49	13.33	13.40		
20	QPSK	50	0	13.52	13.30	13.41	15	0
20	QPSK	50	24	13.49	13.28	13.33		
20	QPSK	50	50	13.48	13.23	13.38		
20	QPSK	100	0	13.50	13.29	13.34		
20	16QAM	1	0	14.03	13.75	13.76	15	0
20	16QAM	1	49	14.07	13.67	13.93		
20	16QAM	1	99	13.77	13.61	13.81		
20	16QAM	50	0	13.61	13.38	13.45	15	0
20	16QAM	50	24	13.60	13.34	13.43		
20	16QAM	50	50	13.58	13.33	13.49		
20	16QAM	100	0	13.59	13.31	13.42		
20	64QAM	1	0	13.85	13.63	13.68	15	0
20	64QAM	1	49	13.90	13.69	13.87		
20	64QAM	1	99	13.72	13.47	13.65		
20	64QAM	50	0	13.62	13.38	13.48	15	0
20	64QAM	50	24	13.60	13.31	13.44		
20	64QAM	50	50	13.56	13.36	13.49		
20	64QAM	100	0	13.60	13.32	13.41		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	13.63	13.35	13.41	15	0
15	QPSK	1	37	13.69	13.37	13.53		
15	QPSK	1	74	13.53	13.29	13.44		
15	QPSK	36	0	13.51	13.27	13.32	15	0
15	QPSK	36	20	13.61	13.32	13.46		
15	QPSK	36	39	13.49	13.19	13.35		
15	QPSK	75	0	13.54	13.26	13.30		
15	16QAM	1	0	13.94	13.78	13.72	15	0
15	16QAM	1	37	14.00	13.72	13.94		
15	16QAM	1	74	13.88	13.65	13.83		
15	16QAM	36	0	13.60	13.30	13.39	15	0
15	16QAM	36	20	13.70	13.39	13.52		
15	16QAM	36	39	13.57	13.29	13.48		
15	16QAM	75	0	13.60	13.30	13.35		
15	64QAM	1	0	13.83	13.67	13.67	15	0
15	64QAM	1	37	13.89	13.67	13.81		
15	64QAM	1	74	13.73	13.52	13.71		
15	64QAM	36	0	13.59	13.38	13.42	15	0
15	64QAM	36	20	13.71	13.44	13.60		
15	64QAM	36	39	13.56	13.33	13.48		
15	64QAM	75	0	13.58	13.31	13.36		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	13.60	13.35	13.46	15	0
10	QPSK	1	25	13.63	13.33	13.49		
10	QPSK	1	49	13.55	13.24	13.39		
10	QPSK	25	0	13.54	13.26	13.42	15	0
10	QPSK	25	12	13.55	13.29	13.44		
10	QPSK	25	25	13.55	13.28	13.40		
10	QPSK	50	0	13.55	13.26	13.41		
10	16QAM	1	0	13.98	13.64	13.87	15	0
10	16QAM	1	25	13.93	13.64	13.91		
10	16QAM	1	49	13.92	13.47	13.85		
10	16QAM	25	0	13.64	13.41	13.51	15	0
10	16QAM	25	12	13.66	13.35	13.52		
10	16QAM	25	25	13.61	13.30	13.49		
10	16QAM	50	0	13.62	13.36	13.50		
10	64QAM	1	0	13.87	13.57	13.78	15	0
10	64QAM	1	25	13.92	13.60	13.77		
10	64QAM	1	49	13.83	13.49	13.65		
10	64QAM	25	0	13.69	13.36	13.50	15	0
10	64QAM	25	12	13.63	13.37	13.55		
10	64QAM	25	25	13.64	13.37	13.50		
10	64QAM	50	0	13.66	13.37	13.52		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	13.47	13.21	13.32	15	0
5	QPSK	1	12	13.64	13.34	13.48		
5	QPSK	1	24	13.40	13.14	13.27		
5	QPSK	12	0	13.56	13.29	13.41	15	0
5	QPSK	12	7	13.65	13.37	13.51		
5	QPSK	12	13	13.57	13.25	13.42		
5	QPSK	25	0	13.56	13.27	13.42		
5	16QAM	1	0	13.86	13.52	13.71	15	0
5	16QAM	1	12	13.96	13.60	13.80		
5	16QAM	1	24	13.74	13.46	13.61		
5	16QAM	12	0	13.65	13.34	13.52	15	0
5	16QAM	12	7	13.76	13.42	13.61		
5	16QAM	12	13	13.66	13.34	13.52		
5	16QAM	25	0	13.67	13.33	13.49		
5	64QAM	1	0	13.67	13.43	13.55	15	0
5	64QAM	1	12	13.87	13.59	13.73		
5	64QAM	1	24	13.69	13.37	13.58		
5	64QAM	12	0	13.72	13.42	13.56	15	0
5	64QAM	12	7	13.78	13.46	13.64		
5	64QAM	12	13	13.66	13.34	13.55		
5	64QAM	25	0	13.65	13.32	13.47		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	13.55	13.23	13.37	15	0
3	QPSK	1	8	13.61	13.31	13.49		
3	QPSK	1	14	13.46	13.19	13.33		
3	QPSK	8	0	13.63	13.32	13.41	15	0
3	QPSK	8	4	13.64	13.39	13.53		
3	QPSK	8	7	13.64	13.32	13.42		
3	QPSK	15	0	13.59	13.30	13.46		
3	16QAM	1	0	13.82	13.51	13.71	15	0
3	16QAM	1	8	13.97	13.60	13.90		
3	16QAM	1	14	13.79	13.57	13.77		
3	16QAM	8	0	13.79	13.43	13.60	15	0
3	16QAM	8	4	13.82	13.50	13.70		
3	16QAM	8	7	13.78	13.47	13.55		
3	16QAM	15	0	13.68	13.40	13.55		
3	64QAM	1	0	13.70	13.47	13.61	15	0
3	64QAM	1	8	13.85	13.60	13.65		
3	64QAM	1	14	13.76	13.53	13.62		
3	64QAM	8	0	13.71	13.44	13.55	15	0
3	64QAM	8	4	13.82	13.50	13.63		
3	64QAM	8	7	13.72	13.44	13.57		
3	64QAM	15	0	13.70	13.40	13.52		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	13.52	13.28	13.38	15	0
1.4	QPSK	1	3	13.66	13.32	13.49		
1.4	QPSK	1	5	13.52	13.17	13.34		
1.4	QPSK	3	0	13.62	13.31	13.46		
1.4	QPSK	3	1	13.66	13.34	13.49		
1.4	QPSK	3	3	13.63	13.32	13.44		
1.4	QPSK	6	0	13.61	13.31	13.44	15	0
1.4	16QAM	1	0	13.85	13.48	13.79	15	0
1.4	16QAM	1	3	14.01	13.66	13.89		
1.4	16QAM	1	5	13.88	13.55	13.74		
1.4	16QAM	3	0	13.68	13.33	13.55		
1.4	16QAM	3	1	13.75	13.47	13.62		
1.4	16QAM	3	3	13.72	13.38	13.57		
1.4	16QAM	6	0	13.74	13.40	13.61	15	0
1.4	64QAM	1	0	13.84	13.48	13.60	15	0
1.4	64QAM	1	3	13.92	13.63	13.71		
1.4	64QAM	1	5	13.81	13.45	13.64		
1.4	64QAM	3	0	13.77	13.47	13.63		
1.4	64QAM	3	1	13.84	13.57	13.73		
1.4	64QAM	3	3	13.79	13.52	13.67		
1.4	64QAM	6	0	13.67	13.35	13.55	15	0

<Product Specific Power Mode>

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	19.97	20.03	19.95	21.5	0
20	QPSK	1	49	19.84	19.97	19.91		
20	QPSK	1	99	19.82	20.01	19.87		
20	QPSK	50	0	19.84	19.92	19.95	21.5	0
20	QPSK	50	24	19.85	19.97	19.95		
20	QPSK	50	50	19.92	19.90	19.90		
20	QPSK	100	0	19.93	19.92	19.89		
20	16QAM	1	0	20.31	20.33	20.33	21.5	0
20	16QAM	1	49	20.30	20.39	20.23		
20	16QAM	1	99	20.28	20.36	20.31		
20	16QAM	50	0	19.54	19.64	19.57	21.5	0
20	16QAM	50	24	19.71	19.80	19.58		
20	16QAM	50	50	19.73	19.81	19.61		
20	16QAM	100	0	19.66	19.75	19.62		
20	64QAM	1	0	19.57	19.64	19.54	21.5	0
20	64QAM	1	49	19.61	19.69	19.55		
20	64QAM	1	99	19.54	19.63	19.51		
20	64QAM	50	0	19.59	19.56	19.56	21.0	0.5
20	64QAM	50	24	19.69	19.82	19.53		
20	64QAM	50	50	19.68	19.76	19.54		
20	64QAM	100	0	19.62	19.72	19.59		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.87	19.96	19.79	21.5	0
15	QPSK	1	37	19.84	19.93	19.89		
15	QPSK	1	74	19.73	19.86	19.88		
15	QPSK	36	0	19.87	19.97	19.80	21.5	0
15	QPSK	36	20	19.93	20.02	19.81		
15	QPSK	36	39	19.85	19.95	19.91		
15	QPSK	75	0	19.84	19.93	19.79		
15	16QAM	1	0	20.36	20.44	20.20	21.5	0
15	16QAM	1	37	20.29	20.29	20.20		
15	16QAM	1	74	20.13	20.28	20.19		
15	16QAM	36	0	19.53	19.60	19.52	21.5	0
15	16QAM	36	20	19.64	19.77	19.55		
15	16QAM	36	39	19.66	19.82	19.61		
15	16QAM	75	0	19.65	19.71	19.63		
15	64QAM	1	0	19.63	19.62	19.55	21.5	0
15	64QAM	1	37	19.64	19.67	19.53		
15	64QAM	1	74	19.63	19.64	19.59		
15	64QAM	36	0	19.57	19.56	19.55	21.0	0.5
15	64QAM	36	20	19.65	19.77	19.59		
15	64QAM	36	39	19.76	19.83	19.52		
15	64QAM	75	0	19.57	19.76	19.62		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	20.00	20.06	19.80	21.5	0
10	QPSK	1	25	19.89	19.98	19.90		
10	QPSK	1	49	19.88	19.98	19.83		
10	QPSK	25	0	19.89	19.94	19.81	21.5	0
10	QPSK	25	12	19.92	19.98	19.93		
10	QPSK	25	25	19.86	19.91	19.86		
10	QPSK	50	0	19.90	19.96	19.79		
10	16QAM	1	0	20.45	20.42	20.23	21.5	0
10	16QAM	1	25	20.30	20.39	20.34		
10	16QAM	1	49	20.34	20.39	20.16		
10	16QAM	25	0	19.50	19.52	19.59	21.5	0
10	16QAM	25	12	19.70	19.78	19.50		
10	16QAM	25	25	19.60	19.86	19.62		
10	16QAM	50	0	19.67	19.72	19.61		
10	64QAM	1	0	19.55	19.58	19.59	21.5	0
10	64QAM	1	25	19.57	19.60	19.53		
10	64QAM	1	49	19.53	19.64	19.57		
10	64QAM	25	0	19.56	19.58	19.55	21.0	0.5
10	64QAM	25	12	19.56	19.80	19.58		
10	64QAM	25	25	19.68	19.76	19.52		
10	64QAM	50	0	19.61	19.58	19.63		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.90	19.95	19.81	21.5	0
5	QPSK	1	12	19.87	19.99	19.89		
5	QPSK	1	24	19.84	19.94	19.82		
5	QPSK	12	0	19.92	19.98	19.93	21.5	0
5	QPSK	12	7	19.94	20.02	19.94		
5	QPSK	12	13	19.90	19.95	19.87		
5	QPSK	25	0	19.86	19.95	19.88		
5	16QAM	1	0	20.25	20.43	20.19	21.5	0
5	16QAM	1	12	20.18	20.33	20.25		
5	16QAM	1	24	20.23	20.36	20.13		
5	16QAM	12	0	19.52	19.54	19.55	21.5	0
5	16QAM	12	7	19.72	19.80	19.52		
5	16QAM	12	13	19.68	19.84	19.53		
5	16QAM	25	0	19.65	19.73	19.54		
5	64QAM	1	0	19.55	19.70	19.54	21.5	0
5	64QAM	1	12	19.62	19.74	19.53		
5	64QAM	1	24	19.56	19.64	19.56		
5	64QAM	12	0	19.54	19.64	19.56	21.0	0.5
5	64QAM	12	7	19.69	19.77	19.61		
5	64QAM	12	13	19.72	19.80	19.61		
5	64QAM	25	0	19.63	19.69	19.62		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.85	19.92	19.85	21.5	0
3	QPSK	1	8	19.88	19.96	19.87		
3	QPSK	1	14	19.86	19.96	19.84		
3	QPSK	8	0	19.93	19.98	19.89	21.5	0
3	QPSK	8	4	19.92	20.02	19.88		
3	QPSK	8	7	19.93	19.97	19.92		
3	QPSK	15	0	19.87	19.96	19.89		
3	16QAM	1	0	20.34	20.36	20.15	21.5	0
3	16QAM	1	8	20.24	20.35	20.23		
3	16QAM	1	14	20.26	20.35	20.12		
3	16QAM	8	0	19.55	19.61	19.50	21.5	0
3	16QAM	8	4	19.71	19.73	19.58		
3	16QAM	8	7	19.72	19.79	19.55		
3	16QAM	15	0	19.61	19.76	19.57		
3	64QAM	1	0	19.62	19.61	19.54	21.5	0
3	64QAM	1	8	19.62	19.69	19.61		
3	64QAM	1	14	19.60	19.68	19.53		
3	64QAM	8	0	19.60	19.64	19.57	21.0	0.5
3	64QAM	8	4	19.65	19.82	19.53		
3	64QAM	8	7	19.66	19.86	19.59		
3	64QAM	15	0	19.62	19.68	19.53		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.88	19.87	19.76	21.5	0
1.4	QPSK	1	3	19.91	19.94	19.94		
1.4	QPSK	1	5	19.82	19.92	19.77		
1.4	QPSK	3	0	19.89	19.96	19.89		
1.4	QPSK	3	1	19.95	19.99	19.92		
1.4	QPSK	3	3	19.90	19.95	19.86		
1.4	QPSK	6	0	19.90	19.92	19.84	21.5	0
1.4	16QAM	1	0	20.19	20.24	20.10	21.5	0
1.4	16QAM	1	3	20.31	20.41	20.24		
1.4	16QAM	1	5	20.28	20.33	20.13		
1.4	16QAM	3	0	20.06	20.09	19.94		
1.4	16QAM	3	1	20.08	20.19	19.98		
1.4	16QAM	3	3	20.05	20.06	19.86		
1.4	16QAM	6	0	19.60	19.64	19.51	21.5	0
1.4	64QAM	1	0	19.72	19.82	19.62	21.5	0
1.4	64QAM	1	3	19.76	19.86	19.62		
1.4	64QAM	1	5	19.67	19.76	19.63		
1.4	64QAM	3	0	19.63	19.70	19.57		
1.4	64QAM	3	1	19.65	19.74	19.63		
1.4	64QAM	3	3	19.63	19.70	19.59		
1.4	64QAM	6	0	19.50	19.60	19.54	21.0	0.5

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	19.47	19.42	19.41	20	0
20	QPSK	1	49	19.45	19.46	19.42		
20	QPSK	1	99	19.36	19.39	19.39		
20	QPSK	50	0	19.45	19.40	19.40	20	0
20	QPSK	50	24	19.48	19.47	19.42		
20	QPSK	50	50	19.44	19.46	19.47		
20	QPSK	100	0	19.47	19.47	19.39		
20	16QAM	1	0	19.36	19.50	19.33	20	0
20	16QAM	1	49	19.29	19.43	19.41		
20	16QAM	1	99	19.33	19.36	19.24		
20	16QAM	50	0	18.99	18.99	18.95	20	0
20	16QAM	50	24	18.98	19.07	18.96		
20	16QAM	50	50	18.97	18.95	18.99		
20	16QAM	100	0	18.97	19.01	18.87		
20	64QAM	1	0	19.18	19.30	19.13	20	0
20	64QAM	1	49	19.20	19.21	19.22		
20	64QAM	1	99	19.11	19.17	19.23		
20	64QAM	50	0	18.00	18.07	18.00	20	0
20	64QAM	50	24	18.02	18.07	18.05		
20	64QAM	50	50	18.05	18.04	18.02		
20	64QAM	100	0	18.03	18.04	18.03		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	19.48	19.42	19.37	20	0
15	QPSK	1	37	19.48	19.44	19.43		
15	QPSK	1	74	19.39	19.38	19.40		
15	QPSK	36	0	19.43	19.41	19.41	20	0
15	QPSK	36	20	19.43	19.48	19.42		
15	QPSK	36	39	19.45	19.49	19.42		
15	QPSK	75	0	19.49	19.49	19.42		
15	16QAM	1	0	19.36	19.39	19.33	20	0
15	16QAM	1	37	19.28	19.46	19.32		
15	16QAM	1	74	19.30	19.36	19.26		
15	16QAM	36	0	19.03	19.06	18.88	20	0
15	16QAM	36	20	19.04	19.09	19.06		
15	16QAM	36	39	19.04	19.02	18.98		
15	16QAM	75	0	19.03	19.04	18.91		
15	64QAM	1	0	19.28	19.22	19.13	20	0
15	64QAM	1	37	19.20	19.22	19.13		
15	64QAM	1	74	19.14	19.21	19.10		
15	64QAM	36	0	18.07	18.11	18.03	20	0
15	64QAM	36	20	18.10	18.13	18.11		
15	64QAM	36	39	18.03	18.03	18.06		
15	64QAM	75	0	18.03	18.07	18.04		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	19.44	19.43	19.42	20	0
10	QPSK	1	25	19.49	19.48	19.42		
10	QPSK	1	49	19.46	19.42	19.41		
10	QPSK	25	0	19.45	19.49	19.44	20	0
10	QPSK	25	12	19.44	19.43	19.48		
10	QPSK	25	25	19.47	19.49	19.46		
10	QPSK	50	0	19.49	19.49	19.49		
10	16QAM	1	0	19.39	19.35	19.40	20	0
10	16QAM	1	25	19.35	19.49	19.38		
10	16QAM	1	49	19.23	19.35	19.27		
10	16QAM	25	0	19.02	19.06	19.00	20	0
10	16QAM	25	12	19.06	19.08	19.01		
10	16QAM	25	25	19.01	18.98	18.98		
10	16QAM	50	0	19.03	19.04	18.99		
10	64QAM	1	0	19.26	19.23	19.20	20	0
10	64QAM	1	25	19.23	19.23	19.20		
10	64QAM	1	49	19.14	19.11	19.11		
10	64QAM	25	0	18.06	18.07	18.03	20	0
10	64QAM	25	12	18.09	18.07	18.07		
10	64QAM	25	25	18.00	18.07	18.01		
10	64QAM	50	0	18.05	18.05	18.03		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.47	19.48	19.47	20	0
5	QPSK	1	12	19.49	19.47	19.46		
5	QPSK	1	24	19.48	19.45	19.46		
5	QPSK	12	0	19.48	19.41	19.42	20	0
5	QPSK	12	7	19.49	19.48	19.38		
5	QPSK	12	13	19.38	19.49	19.48		
5	QPSK	25	0	19.37	19.48	19.47		
5	16QAM	1	0	19.38	19.38	19.33	20	0
5	16QAM	1	12	19.38	19.40	19.39		
5	16QAM	1	24	19.43	19.26	19.28		
5	16QAM	12	0	19.09	19.04	19.02	20	0
5	16QAM	12	7	19.12	19.11	19.05		
5	16QAM	12	13	19.03	19.04	19.03		
5	16QAM	25	0	19.06	19.02	18.99		
5	64QAM	1	0	19.21	19.26	19.16	20	0
5	64QAM	1	12	19.22	19.26	19.18		
5	64QAM	1	24	19.18	19.22	19.11		
5	64QAM	12	0	18.13	18.07	18.10	20	0
5	64QAM	12	7	18.14	18.15	18.06		
5	64QAM	12	13	18.10	18.05	18.03		
5	64QAM	25	0	18.08	18.02	18.04		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.34	19.47	19.48	20	0
3	QPSK	1	8	19.38	19.49	19.45		
3	QPSK	1	14	19.49	19.49	19.46		
3	QPSK	8	0	19.34	19.41	19.49	20	0
3	QPSK	8	4	19.48	19.43	19.48		
3	QPSK	8	7	19.42	19.47	19.48		
3	QPSK	15	0	19.49	19.45	19.33		
3	16QAM	1	0	19.33	19.33	19.33	20	0
3	16QAM	1	8	19.42	19.45	19.38		
3	16QAM	1	14	19.39	19.32	19.35		
3	16QAM	8	0	19.11	19.13	19.09	20	0
3	16QAM	8	4	19.16	19.16	19.13		
3	16QAM	8	7	19.13	19.11	19.11		
3	16QAM	15	0	19.07	19.04	19.02		
3	64QAM	1	0	19.16	19.24	19.18	20	0
3	64QAM	1	8	19.31	19.31	19.14		
3	64QAM	1	14	19.22	19.24	19.12		
3	64QAM	8	0	18.13	18.10	18.07	20	0
3	64QAM	8	4	18.19	18.15	18.08		
3	64QAM	8	7	18.11	18.11	18.03		
3	64QAM	15	0	18.05	18.08	18.05		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.48	19.44	19.40	20	0
1.4	QPSK	1	3	19.46	19.41	19.48		
1.4	QPSK	1	5	19.42	19.43	19.39		
1.4	QPSK	3	0	19.48	19.46	19.48		
1.4	QPSK	3	1	19.48	19.49	19.49		
1.4	QPSK	3	3	19.46	19.49	19.45		
1.4	QPSK	6	0	19.49	19.45	19.46	20	0
1.4	16QAM	1	0	19.26	19.25	19.23	20	0
1.4	16QAM	1	3	19.39	19.37	19.39		
1.4	16QAM	1	5	19.28	19.31	19.29		
1.4	16QAM	3	0	19.08	19.16	19.03		
1.4	16QAM	3	1	19.21	19.18	19.12		
1.4	16QAM	3	3	19.48	19.41	19.48		
1.4	16QAM	6	0	19.10	19.07	19.03	20	0
1.4	64QAM	1	0	19.15	19.11	19.08	20	0
1.4	64QAM	1	3	19.30	19.26	19.26		
1.4	64QAM	1	5	19.17	19.15	19.16		
1.4	64QAM	3	0	19.18	19.16	19.06		
1.4	64QAM	3	1	19.20	19.24	19.10		
1.4	64QAM	3	3	19.12	19.16	19.08		
1.4	64QAM	6	0	18.04	18.05	18.04	20	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				100	12850	25600		
Frequency (MHz)				10	1285	2560		
20	QPSK	1	0	21.58	21.51	21.65	23	0
20	QPSK	1	49	21.57	21.47	21.52		
20	QPSK	1	99	21.56	21.48	21.56		
20	QPSK	50	0	21.64	21.53	21.65	22	1
20	QPSK	50	24	21.67	21.50	21.63		
20	QPSK	50	50	21.63	21.45	21.55		
20	QPSK	100	0	21.61	21.47	21.59		
20	16QAM	1	0	21.79	21.85	21.96	22	1
20	16QAM	1	49	21.99	21.83	21.79		
20	16QAM	1	99	21.98	21.90	21.84		
20	16QAM	50	0	21.29	21.10	21.21	22	1
20	16QAM	50	24	21.23	21.16	21.23		
20	16QAM	50	50	21.28	21.12	21.12		
20	16QAM	100	0	21.28	21.11	21.16		
20	64QAM	1	0	21.32	21.25	21.35	22	1
20	64QAM	1	49	21.34	21.22	21.24		
20	64QAM	1	99	21.40	21.22	21.34		
20	64QAM	50	0	20.79	20.62	20.72	21	2
20	64QAM	50	24	20.74	20.61	20.68		
20	64QAM	50	50	20.75	20.62	20.65		
20	64QAM	100	0	20.71	20.64	20.68		
Channel				75	12850	25625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				7.5	1285	2562.5		
15	QPSK	1	0	21.56	21.50	21.62	23	0
15	QPSK	1	37	21.56	21.43	21.63		
15	QPSK	1	74	21.61	21.53	21.59		
15	QPSK	36	0	21.64	21.52	21.61	22	1
15	QPSK	36	20	21.67	21.49	21.59		
15	QPSK	36	39	21.63	21.50	21.64		
15	QPSK	75	0	21.64	21.47	21.57		
15	16QAM	1	0	21.93	21.76	21.92	22	1
15	16QAM	1	37	21.93	21.78	21.88		
15	16QAM	1	74	21.96	21.86	21.89		
15	16QAM	36	0	21.22	21.10	21.18	22	1
15	16QAM	36	20	21.27	21.16	21.15		
15	16QAM	36	39	21.22	21.09	21.20		
15	16QAM	75	0	21.24	21.12	21.15		
15	64QAM	1	0	21.29	21.19	21.31	22	1
15	64QAM	1	37	21.34	21.20	21.17		
15	64QAM	1	74	21.34	21.12	21.28		
15	64QAM	36	0	20.69	20.56	20.66	21	2
15	64QAM	36	20	20.69	20.51	20.58		
15	64QAM	36	39	20.71	20.61	20.62		
15	64QAM	75	0	20.70	20.61	20.61		

Channel				50	12850	25650	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				5	1285	2565		
10	QPSK	1	0	21.57	21.47	21.55	23	0
10	QPSK	1	25	21.58	21.46	21.59		
10	QPSK	1	49	21.57	21.42	21.57		
10	QPSK	25	0	21.59	21.49	21.58	22	1
10	QPSK	25	12	21.64	21.44	21.64		
10	QPSK	25	25	21.63	21.46	21.64		
10	QPSK	50	0	21.61	21.48	21.56		
10	16QAM	1	0	21.92	21.84	21.77	22	1
10	16QAM	1	25	21.92	21.70	21.92		
10	16QAM	1	49	21.95	21.85	21.83		
10	16QAM	25	0	21.19	21.09	21.17	22	1
10	16QAM	25	12	21.29	21.15	21.21		
10	16QAM	25	25	21.24	21.06	21.23		
10	16QAM	50	0	21.22	21.10	21.16		
10	64QAM	1	0	21.26	21.13	21.26	22	1
10	64QAM	1	25	21.29	21.10	21.16		
10	64QAM	1	49	21.28	21.06	21.22		
10	64QAM	25	0	20.69	20.54	20.61	21	2
10	64QAM	25	12	20.63	20.50	20.50		
10	64QAM	25	25	20.61	20.52	20.60		
10	64QAM	50	0	20.61	20.58	20.55		
Channel				25	12850	25675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2.5	1285	2567.5		
5	QPSK	1	0	21.58	21.41	21.62	23	0
5	QPSK	1	12	21.58	21.44	21.62		
5	QPSK	1	24	21.61	21.45	21.56		
5	QPSK	12	0	21.62	21.45	21.62	22	1
5	QPSK	12	7	21.65	21.45	21.66		
5	QPSK	12	13	21.66	21.44	21.59		
5	QPSK	25	0	21.58	21.46	21.64		
5	16QAM	1	0	21.93	21.79	21.86	22	1
5	16QAM	1	12	21.84	21.80	21.82		
5	16QAM	1	24	21.94	21.77	21.90		
5	16QAM	12	0	21.23	21.07	21.20	22	1
5	16QAM	12	7	21.24	21.11	21.27		
5	16QAM	12	13	21.26	21.12	21.17		
5	16QAM	25	0	21.20	21.08	21.22		
5	64QAM	1	0	21.25	21.10	21.22	22	1
5	64QAM	1	12	21.28	21.09	21.07		
5	64QAM	1	24	21.24	21.05	21.12		
5	64QAM	12	0	20.61	20.50	20.60	21	2
5	64QAM	12	7	20.53	20.52	20.53		
5	64QAM	12	13	20.61	20.51	20.51		
5	64QAM	25	0	20.57	20.51	20.53		

<LTE Band 66>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	18.92	18.71	18.77	20	0
20	QPSK	1	49	18.99	18.72	18.92		
20	QPSK	1	99	18.88	18.68	18.79		
20	QPSK	50	0	18.87	18.60	18.76	20	0
20	QPSK	50	24	18.83	18.56	18.68		
20	QPSK	50	50	18.85	18.59	18.75		
20	QPSK	100	0	18.85	18.60	18.68		
20	16QAM	1	0	19.09	19.08	19.19	20	0
20	16QAM	1	49	19.44	19.17	19.25		
20	16QAM	1	99	19.30	19.04	19.25		
20	16QAM	50	0	19.02	18.74	18.79	20	0
20	16QAM	50	24	18.96	18.75	18.80		
20	16QAM	50	50	18.95	18.67	18.91		
20	16QAM	100	0	19.00	18.72	18.78		
20	64QAM	1	0	19.14	18.99	19.12	20	0
20	64QAM	1	49	19.32	19.07	19.28		
20	64QAM	1	99	19.15	18.95	19.11		
20	64QAM	50	0	18.42	18.19	18.21	20	0
20	64QAM	50	24	18.39	18.14	18.23		
20	64QAM	50	50	18.36	18.13	18.32		
20	64QAM	100	0	18.39	18.13	18.22		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	18.96	18.69	18.76	20	0
15	QPSK	1	37	19.03	18.80	18.91		
15	QPSK	1	74	18.93	18.63	18.81		
15	QPSK	36	0	18.86	18.59	18.66	20	0
15	QPSK	36	20	18.96	18.68	18.88		
15	QPSK	36	39	18.85	18.61	18.76		
15	QPSK	75	0	18.86	18.61	18.69		
15	16QAM	1	0	19.28	19.11	19.22	20	0
15	16QAM	1	37	19.00	19.15	19.27		
15	16QAM	1	74	19.35	18.96	19.29		
15	16QAM	36	0	18.90	18.68	18.77	20	0
15	16QAM	36	20	19.13	18.82	18.99		
15	16QAM	36	39	18.98	18.68	18.91		
15	16QAM	75	0	19.02	18.70	18.82		
15	64QAM	1	0	19.20	19.10	19.10	20	0
15	64QAM	1	37	19.31	19.18	19.32		
15	64QAM	1	74	19.22	18.91	19.17		
15	64QAM	36	0	18.47	18.13	18.21	20	0
15	64QAM	36	20	18.55	18.25	18.46		
15	64QAM	36	39	18.43	18.12	18.34		
15	64QAM	75	0	18.43	18.15	18.18		

Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	18.92	18.67	18.81	20	0
10	QPSK	1	25	18.95	18.67	18.82		
10	QPSK	1	49	18.89	18.59	18.76		
10	QPSK	25	0	18.91	18.66	18.80	20	0
10	QPSK	25	12	18.95	18.61	18.77		
10	QPSK	25	25	18.85	18.58	18.75		
10	QPSK	50	0	18.93	18.61	18.77		
10	16QAM	1	0	19.24	19.04	19.22	20	0
10	16QAM	1	25	19.27	19.06	19.21		
10	16QAM	1	49	19.36	18.92	19.15		
10	16QAM	25	0	19.03	18.76	18.91	20	0
10	16QAM	25	12	19.00	18.73	18.94		
10	16QAM	25	25	19.02	18.72	18.94		
10	16QAM	50	0	19.01	18.75	18.91		
10	64QAM	1	0	19.17	18.90	19.15	20	0
10	64QAM	1	25	19.14	19.01	19.24		
10	64QAM	1	49	19.22	18.90	19.11		
10	64QAM	25	0	18.50	18.18	18.36	20	0
10	64QAM	25	12	18.48	18.18	18.35		
10	64QAM	25	25	18.44	18.12	18.32		
10	64QAM	50	0	18.46	18.16	18.35		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	18.84	18.54	18.66	20	0
5	QPSK	1	12	18.94	18.66	18.82		
5	QPSK	1	24	18.81	18.46	18.66		
5	QPSK	12	0	18.90	18.65	18.74	20	0
5	QPSK	12	7	19.02	18.71	18.87		
5	QPSK	12	13	18.91	18.59	18.77		
5	QPSK	25	0	18.89	18.61	18.79		
5	16QAM	1	0	19.04	18.90	19.08	20	0
5	16QAM	1	12	19.26	19.10	19.26		
5	16QAM	1	24	19.09	18.96	19.02		
5	16QAM	12	0	18.99	18.75	18.89	20	0
5	16QAM	12	7	19.12	18.86	19.04		
5	16QAM	12	13	19.00	18.71	18.90		
5	16QAM	25	0	19.03	18.71	18.87		
5	64QAM	1	0	19.09	18.76	19.03	20	0
5	64QAM	1	12	19.20	18.99	19.20		
5	64QAM	1	24	19.10	18.80	19.00		
5	64QAM	12	0	18.53	18.24	18.38	20	0
5	64QAM	12	7	18.61	18.29	18.47		
5	64QAM	12	13	18.47	18.16	18.37		
5	64QAM	25	0	18.46	18.17	18.32		

Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	18.86	18.57	18.69	20	0
3	QPSK	1	8	19.01	18.68	18.83		
3	QPSK	1	14	18.80	18.49	18.70		
3	QPSK	8	0	18.98	18.63	18.82	20	0
3	QPSK	8	4	19.04	18.72	18.89		
3	QPSK	8	7	18.94	18.65	18.76		
3	QPSK	15	0	18.96	18.63	18.77		
3	16QAM	1	0	19.14	18.84	19.05	20	0
3	16QAM	1	8	19.18	18.99	19.15		
3	16QAM	1	14	19.14	18.76	19.12		
3	16QAM	8	0	19.11	18.84	18.99	20	0
3	16QAM	8	4	19.15	18.87	19.06		
3	16QAM	8	7	19.11	18.83	18.98		
3	16QAM	15	0	19.06	18.80	18.91		
3	64QAM	1	0	19.10	18.82	19.01	20	0
3	64QAM	1	8	19.23	19.01	19.15		
3	64QAM	1	14	19.00	18.87	19.08		
3	64QAM	8	0	18.58	18.19	18.39	20	0
3	64QAM	8	4	18.61	18.26	18.45		
3	64QAM	8	7	18.56	18.26	18.43		
3	64QAM	15	0	18.50	18.17	18.34		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	18.87	18.61	18.72	20	0
1.4	QPSK	1	3	18.95	18.72	18.90		
1.4	QPSK	1	5	18.88	18.57	18.75		
1.4	QPSK	3	0	18.83	18.55	18.59		
1.4	QPSK	3	1	18.86	18.65	18.84		
1.4	QPSK	3	3	18.80	18.53	18.71		
1.4	QPSK	6	0	18.86	18.60	18.59	20	0
1.4	16QAM	1	0	19.19	19.10	19.15	20	0
1.4	16QAM	1	3	19.00	19.07	19.27		
1.4	16QAM	1	5	19.29	18.90	19.24		
1.4	16QAM	3	0	18.90	18.63	18.70		
1.4	16QAM	3	1	19.08	18.80	18.89		
1.4	16QAM	3	3	18.91	18.62	18.81		
1.4	16QAM	6	0	18.97	18.68	18.75	20	0
1.4	64QAM	1	0	19.16	19.06	19.05	20	0
1.4	64QAM	1	3	19.21	19.11	19.27		
1.4	64QAM	1	5	19.20	18.91	19.17		
1.4	64QAM	3	0	18.42	18.09	18.16		
1.4	64QAM	3	1	18.53	18.19	18.42		
1.4	64QAM	3	3	18.43	18.06	18.32		
1.4	64QAM	6	0	18.40	18.11	18.18	20	0

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation	
Number	Combination
1	2A-4A
2	2A-7A
3	4A-5A
4	4A-7A
5	4A-12A
6	4A-17A
7	7A-7A
8	12A-66A
9	7B
10	7C
11	66B
12	66C
13	66A-66A

<Power verification when LTE Carrier Aggregation Active>

General Note:

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

<Two Carrier power verification>

Configure		PCC								SCC				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	Intra-Band	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		2	20	1880	18900	QPSK	1	0	M	4	20	2132.5	2175	22.44	22.47
		2	20	1880	18900	QPSK	1	0	M	7	20	2655	3100	22.42	22.47
		4	20	1720	20050	QPSK	1	0	L	5	10	881.5	2525	22.58	22.61
		4	20	1720	20050	QPSK	1	0	L	7	20	2655	3100	22.58	22.61
		4	20	1720	20050	QPSK	1	0	L	12	10	737.5	5095	22.58	22.61
		4	20	1720	20050	QPSK	1	0	L	17	10	740	5790	22.58	22.61
		12	10	704	23060	QPSK	1	49	L	66	20	2155	66886	22.82	22.84
Intra-Band	Non-Contiguous	7	20	2510	20850	QPSK	1	49	L	7	5	2687.5	3425	22.67	22.77
		66	20	1720	132072	QPSK	1	49	L	66	5	2197.5	67311	22.56	22.62
	Contiguous	7	15	2507.5	20825	QPSK	1	37	L	7	5	2636.80	2918	22.61	22.65
		7	20	2510	20850	QPSK	1	49	L	7	20	2649.80	3048	22.67	22.77
		66	15	1717.5	132047	QPSK	1	37	L	66	5	2162.80	66954	22.55	22.60

<WLAN Conducted Power>

General Note:

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

Default Power Mode

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.94	19.00	99.04
		6	2437	19.96	20.00	
		11	2462	18.41	19.00	
	802.11g 6Mbps	1	2412	17.16	17.50	94.50
		6	2437	17.90	18.00	
		11	2462	16.75	17.00	
	802.11n-HT20 MCS0	1	2412	16.82	17.50	94.06
		6	2437	17.77	18.00	
		11	2462	16.61	17.00	
	802.11ac-VHT20 MCS0	1	2412	16.67	17.50	94.15
		6	2437	17.70	18.00	
		11	2462	16.59	17.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	17.16	18.00	95.31
		40	5200	17.23	18.00	
		44	5220	17.48	18.00	
		48	5240	17.47	18.00	
	802.11n-HT20 MCS0	36	5180	17.11	18.00	95.07
		40	5200	17.19	18.00	
		44	5220	17.33	18.00	
		48	5240	17.42	18.00	
	802.11n-HT40 MCS0	38	5190	13.83	14.50	90.91
		46	5230	17.32	18.00	
	802.11ac-VHT20 MCS0	36	5180	16.97	18.00	95.10
		40	5200	17.11	18.00	
		44	5220	17.32	18.00	
		48	5240	17.35	18.00	
	802.11ac-VHT40 MCS0	38	5190	13.79	14.50	90.91
		46	5230	17.31	18.00	
	802.11ac-VHT80 MCS0	42	5210	13.67	14.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	17.57	18.00	95.31
		56	5280	17.55	18.00	
		60	5300	17.46	18.00	
		64	5320	17.59	18.00	
	802.11n-HT20 MCS0	52	5260	17.44	18.00	95.07
		56	5280	17.38	18.00	
		60	5300	17.33	18.00	
		64	5320	17.49	18.00	
	802.11n-HT40 MCS0	54	5270	17.34	18.00	90.91
		62	5310	16.79	17.00	
	802.11ac-VHT20 MCS0	52	5260	17.33	18.00	95.10
		56	5280	17.31	18.00	
		60	5300	17.19	18.00	
		64	5320	17.43	18.00	
	802.11ac-VHT40 MCS0	54	5270	17.33	18.00	90.91
		62	5310	16.71	17.00	
	802.11ac-VHT80 MCS0	58	5290	14.78	15.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	17.37	18.00	95.31
		116	5580	17.59	18.00	
		132	5660	17.57	18.00	
		140	5700	15.00	15.50	
	802.11n-HT20 MCS0	100	5500	17.05	18.00	95.07
		116	5580	17.54	18.00	
		132	5660	17.45	18.00	
		140	5700	15.45	16.00	
	802.11n-HT40 MCS0	102	5510	14.55	15.00	90.91
		110	5550	17.77	18.00	
		134	5670	17.06	18.00	
	802.11ac-VHT20 MCS0	100	5500	17.01	18.00	95.10
		116	5580	17.45	18.00	
		132	5660	17.42	18.00	
		140	5700	15.19	16.00	
	802.11ac-VHT40 MCS0	102	5510	14.49	15.00	90.91
		110	5550	17.75	18.00	
		134	5670	17.00	18.00	
	802.11ac-VHT80 MCS0	106	5530	12.37	12.50	87.77
		138	5690	15.79	16.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	14.64	15.00	95.31
		157	5785	14.52	15.00	
		165	5825	13.72	14.00	
	802.11n-HT20 MCS0	149	5745	15.57	16.00	95.07
		157	5785	13.83	14.50	
		165	5825	13.00	13.50	
	802.11n-HT40 MCS0	151	5755	15.13	15.50	90.91
		159	5795	14.73	15.00	
	802.11ac-VHT20 MCS0	149	5745	15.53	16.00	95.10
		157	5785	13.79	14.50	
		165	5825	12.94	13.50	
	802.11ac-VHT40 MCS0	151	5755	15.10	15.50	90.91
		159	5795	14.71	15.00	
	802.11ac-VHT80 MCS0	155	5775	16.72	17.00	87.77

At-Head Power Mode

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	14.97	15.50	95.31
		40	5200	14.86	15.50	
		44	5220	14.77	15.50	
		48	5240	14.81	15.50	
	802.11n-HT20 MCS0	36	5180	14.85	15.50	95.07
		40	5200	14.84	15.50	
		44	5220	14.69	15.50	
		48	5240	14.73	15.50	
	802.11n-HT40 MCS0	38	5190	13.83	14.50	90.91
		46	5230	14.81	15.50	
	802.11ac-VHT20 MCS0	36	5180	14.82	15.50	95.10
		40	5200	14.80	15.50	
		44	5220	14.64	15.50	
		48	5240	14.71	15.50	
	802.11ac-VHT40 MCS0	38	5190	14.87	15.50	90.91
		46	5230	14.76	15.50	
	802.11ac-VHT80 MCS0	42	5210	13.67	14.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	14.96	15.50	95.31
		56	5280	14.93	15.50	
		60	5300	14.91	15.50	
		64	5320	14.94	15.50	
	802.11n-HT20 MCS0	52	5260	14.81	15.50	95.07
		56	5280	14.83	15.50	
		60	5300	14.93	15.50	
		64	5320	14.95	15.50	
	802.11n-HT40 MCS0	54	5270	14.94	15.50	90.91
		62	5310	14.96	15.50	
	802.11ac-VHT20 MCS0	52	5260	14.73	15.50	95.10
		56	5280	14.78	15.50	
		60	5300	14.85	15.50	
		64	5320	14.90	15.50	
	802.11ac-VHT40 MCS0	54	5270	14.84	15.50	90.91
		62	5310	14.88	15.50	
	802.11ac-VHT80 MCS0	58	5290	14.78	15.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	13.47	13.50	95.31
		116	5580	13.18	13.50	
		132	5660	13.41	13.50	
		140	5700	13.45	13.50	
	802.11n-HT20 MCS0	100	5500	13.42	13.50	95.07
		116	5580	13.46	13.50	
		132	5660	13.43	13.50	
		140	5700	13.40	13.50	
	802.11n-HT40 MCS0	102	5510	13.39	13.50	90.91
		110	5550	13.46	13.50	
		134	5670	13.19	13.50	
	802.11ac-VHT20 MCS0	100	5500	13.37	13.50	95.10
		116	5580	13.41	13.50	
		132	5660	13.38	13.50	
		140	5700	13.30	13.50	
	802.11ac-VHT40 MCS0	102	5510	13.36	13.50	90.91
		110	5550	13.38	13.50	
		134	5670	13.16	13.50	
	802.11ac-VHT80 MCS0	106	5530	12.37	12.50	87.77
		138	5690	13.45	13.50	

Hotspot Power Mode

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.44	17.00	95.31
		40	5200	16.38	17.00	
		44	5220	16.41	17.00	
		48	5240	16.33	17.00	
	802.11n-HT20 MCS0	36	5180	16.34	17.00	95.07
		40	5200	16.25	17.00	
		44	5220	16.47	17.00	
		48	5240	16.49	17.00	
	802.11n-HT40 MCS0	38	5190	13.83	14.50	90.91
		46	5230	16.29	17.00	
	802.11ac-VHT20 MCS0	36	5180	16.30	17.00	95.10
		40	5200	16.28	17.00	
		44	5220	16.44	17.00	
		48	5240	16.45	17.00	
	802.11ac-VHT40 MCS0	38	5190	13.79	14.50	90.91
		46	5230	16.23	17.00	
	802.11ac-VHT80 MCS0	42	5210	13.67	14.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	14.64	15.00	95.31
		157	5785	14.52	15.00	
		165	5825	13.72	14.00	
	802.11n-HT20 MCS0	149	5745	15.57	16.00	95.07
		157	5785	13.83	14.50	
		165	5825	13.00	13.50	
	802.11n-HT40 MCS0	151	5755	15.13	15.50	90.91
		159	5795	14.73	15.00	
	802.11ac-VHT20 MCS0	149	5745	15.53	16.00	95.10
		157	5785	13.79	14.50	
		165	5825	12.94	13.50	
	802.11ac-VHT40 MCS0	151	5755	15.10	15.50	90.91
		159	5795	14.71	15.00	
	802.11ac-VHT80 MCS0	155	5775	15.95	16.50	87.77

Near-body Power Mode

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.44	17.00	95.31
		40	5200	16.38	17.00	
		44	5220	16.41	17.00	
		48	5240	16.33	17.00	
	802.11n-HT20 MCS0	36	5180	16.34	17.00	95.07
		40	5200	16.25	17.00	
		44	5220	16.47	17.00	
		48	5240	16.49	17.00	
	802.11n-HT40 MCS0	38	5190	13.83	14.50	90.91
		46	5230	16.29	17.00	
	802.11ac-VHT20 MCS0	36	5180	16.30	17.00	95.10
		40	5200	16.28	17.00	
		44	5220	16.44	17.00	
		48	5240	16.45	17.00	
	802.11ac-VHT40 MCS0	38	5190	13.79	14.50	90.91
		46	5230	16.23	17.00	
	802.11ac-VHT80 MCS0	42	5210	13.67	14.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	15.48	17.00	95.31
		56	5280	15.44	17.00	
		60	5300	15.47	17.00	
		64	5320	15.46	17.00	
	802.11n-HT20 MCS0	52	5260	15.39	17.00	95.07
		56	5280	15.32	17.00	
		60	5300	15.49	17.00	
		64	5320	15.37	17.00	
	802.11n-HT40 MCS0	54	5270	15.42	17.00	90.91
		62	5310	15.44	17.00	
	802.11ac-VHT20 MCS0	52	5260	15.36	17.00	95.10
		56	5280	15.31	17.00	
		60	5300	15.46	17.00	
		64	5320	15.32	17.00	
	802.11ac-VHT40 MCS0	54	5270	15.39	17.00	90.91
		62	5310	15.36	17.00	
	802.11ac-VHT80 MCS0	58	5290	14.78	15.00	87.77

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	14.64	15.50	95.31
		116	5580	14.60	15.50	
		132	5660	14.68	15.50	
		140	5700	14.71	15.50	
	802.11n-HT20 MCS0	100	5500	14.62	15.50	95.07
		116	5580	14.80	15.50	
		132	5660	14.83	15.50	
		140	5700	14.88	15.50	
	802.11n-HT40 MCS0	102	5510	14.55	15.00	90.91
		110	5550	14.82	15.50	
		134	5670	14.64	15.50	
	802.11ac-VHT20 MCS0	100	5500	14.57	15.50	95.10
		116	5580	14.77	15.50	
		132	5660	14.81	15.50	
		140	5700	14.86	15.50	
	802.11ac-VHT40 MCS0	102	5510	14.49	15.00	90.91
		110	5550	14.78	15.50	
		134	5670	14.60	15.50	
	802.11ac-VHT80 MCS0	106	5530	12.37	12.50	87.77
		138	5690	14.93	15.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	14.64	15.00	95.31
		157	5785	14.52	15.00	
		165	5825	13.72	14.00	
	802.11n-HT20 MCS0	149	5745	15.57	16.00	95.07
		157	5785	13.83	14.50	
		165	5825	13.00	13.50	
	802.11n-HT40 MCS0	151	5755	15.13	15.50	90.91
		159	5795	14.73	15.00	
	802.11ac-VHT20 MCS0	149	5745	15.53	16.00	95.10
		157	5785	13.79	14.50	
		165	5825	12.94	13.50	
	802.11ac-VHT40 MCS0	151	5755	15.10	15.50	90.91
		159	5795	14.71	15.00	
	802.11ac-VHT80 MCS0	155	5775	15.95	16.50	87.77

<2.4GHz Bluetooth>

General Note:

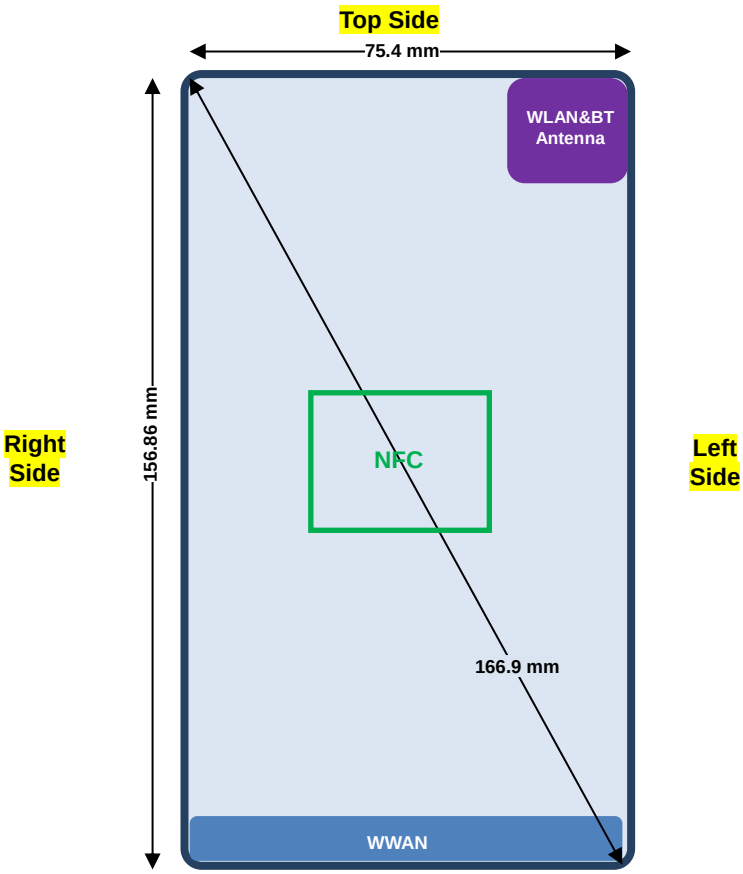
1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 77.13% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	12.53	10.44	10.38
	CH 39	2441	12.15	9.51	9.48
	CH 78	2480	11.52	9.27	9.29
Tune-up Limit			13.00	10.50	10.50

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	7.32	7.38
	CH 19	2440	6.85	6.98
	CH 39	2480	7.71	7.82
Tune-up Limit			8.00	8.00

12. Antenna Location

<Mobile Phone>



Back View

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
BT&WLAN	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	Yes	Yes	No	Yes	Yes	Yes
BT&WLAN	Yes	Yes	Yes	No	No	Yes

General Note:

1. Referring to KDB 941225 D06 v02r01, when the overall device length and width are < 9cm*5cm, the test distance is 5 mm. SAR must be measured for all sides and surfaces.

13. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of GSM1900, WCDMA B2 / B4 and LTE B4 / B7.
5. Pre KDB648474 D04v01r03, 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.
6. While the device operating in near-body condition by end user, the device will limit different maximum output powers on the GSM850, GSM1900, WCDMA B2 / B5 / B4 and LTE B2 / B4 / B7 / B66 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
7. While the device operating in mobile hotspot session, the device will reduced output powers on the GSM850, GSM1900, WCDMA B2 / B5 / B4 and LTE B2 / B4 / B7 / B66 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
8. While the device operating in handheld condition, the device will limit different maximum output powers on the WCDMA B2 / B4 and LTE B2 / B4 / B7 / B66 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
9. While the device operating in Held to head, near-body and mobile hotspot session, the device will limit different maximum output powers on the WLAN transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
10. For front and back position at hotspot exposure condition was choose higher power level for SAR compliance of GSM1900, WCDMA B2/B4 and LTE B2/B66.
11. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for this device only for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg of GSM1900, WCDMA B2 / B4 / B5, LTE B2 / B7 / B66 and 5.2GHz / 5.8GHz WLAN,, therefore product specific SAR is necessary.
12. For 5.3 / 5.5 GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.
13. Use a higher power level conservative test for the front and back positions of hotspot exposure condition.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. For Head SAR Test, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode. For Hotspot, Body-worn, Extremity SAR Test, the GPRS (2Tx slots) for GSM850 and GPRS (1Tx slots) for GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

13.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Right Cheek	0mm	251	848.8	26.30	27.50	1.318	0.09	0.205	0.270
	GSM850	GPRS (4 Tx slots)	Right Tilted	0mm	251	848.8	26.30	27.50	1.318	0.04	0.114	0.150
01	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	251	848.8	26.30	27.50	1.318	0.05	0.264	0.348
	GSM850	GPRS (4 Tx slots)	Left Tilted	0mm	251	848.8	26.30	27.50	1.318	0.01	0.138	0.182
02	GSM1900	GPRS (4 Tx slots)	Right Cheek	0mm	512	1850.2	23.08	24.50	1.387	-0.04	0.054	0.075
	GSM1900	GPRS (4 Tx slots)	Right Tilted	0mm	512	1850.2	23.08	24.50	1.387	0.14	0.024	0.033
	GSM1900	GPRS (4 Tx slots)	Left Cheek	0mm	512	1850.2	23.08	24.50	1.387	0.12	0.051	0.071
	GSM1900	GPRS (4 Tx slots)	Left Tilted	0mm	512	1850.2	23.08	24.50	1.387	0.17	0.020	0.028

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
03	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	9538	1907.6	22.87	24.00	1.297	0.17	0.082	0.106
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	9538	1907.6	22.87	24.00	1.297	0.12	0.036	0.047
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	9538	1907.6	22.87	24.00	1.297	0.19	0.076	0.099
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	9538	1907.6	22.87	24.00	1.297	0.04	0.032	0.042
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1312	1712.4	23.05	24.00	1.245	-0.03	0.114	0.142
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	1312	1712.4	23.05	24.00	1.245	0.18	0.046	0.057
04	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1312	1712.4	23.05	24.00	1.245	0.16	0.137	0.170
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	1312	1712.4	23.05	24.00	1.245	-0.16	0.044	0.055
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	4132	826.4	24.29	25.00	1.178	-0.05	0.207	0.244
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	4132	826.4	24.29	25.00	1.178	0.04	0.121	0.142
05	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4132	826.4	24.29	25.00	1.178	0.05	0.274	0.323
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	4132	826.4	24.29	25.00	1.178	0.01	0.132	0.155

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	18900	1880	22.47	24.00	1.422	0.12	0.077	0.110
	LTE Band 2	20M	QPSK	50	24	Right Cheek	0mm	18900	1880	21.49	23.00	1.416	0.07	0.056	0.079
	LTE Band 2	20M	QPSK	1	0	Right Tilted	0mm	18900	1880	22.47	24.00	1.422	0.08	0.043	0.061
	LTE Band 2	20M	QPSK	50	24	Right Tilted	0mm	18900	1880	21.49	23.00	1.416	0.12	0.031	0.044
	LTE Band 2	20M	QPSK	1	0	Left Cheek	0mm	18900	1880	22.47	24.00	1.422	0.14	0.071	0.101
	LTE Band 2	20M	QPSK	50	24	Left Cheek	0mm	18900	1880	21.49	23.00	1.416	0.14	0.052	0.074
	LTE Band 2	20M	QPSK	1	0	Left Tilted	0mm	18900	1880	22.47	24.00	1.422	0	0.022	0.031
	LTE Band 2	20M	QPSK	50	24	Left Tilted	0mm	18900	1880	21.49	23.00	1.416	0.02	0.017	0.024
	LTE Band 5	10M	QPSK	1	25	Right Cheek	0mm	20525	836.5	22.53	24.00	1.403	-0.05	0.207	0.290
	LTE Band 5	10M	QPSK	25	12	Right Cheek	0mm	20525	836.5	21.69	23.00	1.352	0.02	0.111	0.150
	LTE Band 5	10M	QPSK	1	25	Right Tilted	0mm	20525	836.5	22.53	24.00	1.403	0	0.129	0.181
	LTE Band 5	10M	QPSK	25	12	Right Tilted	0mm	20525	836.5	21.69	23.00	1.352	0.04	0.071	0.096
07	LTE Band 5	10M	QPSK	1	25	Left Cheek	0mm	20525	836.5	22.53	24.00	1.403	0	0.294	0.412
	LTE Band 5	10M	QPSK	25	12	Left Cheek	0mm	20525	836.5	21.69	23.00	1.352	0.04	0.159	0.215
	LTE Band 5	10M	QPSK	1	25	Left Tilted	0mm	20525	836.5	22.53	24.00	1.403	-0.01	0.137	0.192
	LTE Band 5	10M	QPSK	25	12	Left Tilted	0mm	20525	836.5	21.69	23.00	1.352	0.03	0.074	0.100
08	LTE Band 7	20M	QPSK	1	49	Right Cheek	0mm	20850	2510	22.77	24.00	1.327	0.17	0.270	0.358
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	20850	2510	21.85	23.00	1.303	0.17	0.219	0.285
	LTE Band 7	20M	QPSK	1	49	Right Tilted	0mm	20850	2510	22.77	24.00	1.327	0	0.078	0.104
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	20850	2510	21.85	23.00	1.303	0.06	0.063	0.082
	LTE Band 7	20M	QPSK	1	49	Left Cheek	0mm	20850	2510	22.77	24.00	1.327	0.06	0.184	0.244
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	20850	2510	21.85	23.00	1.303	0.13	0.149	0.194
	LTE Band 7	20M	QPSK	1	49	Left Tilted	0mm	20850	2510	22.77	24.00	1.327	-0.16	0.165	0.219
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	20850	2510	21.85	23.00	1.303	0.05	0.119	0.155
	LTE Band 12	10M	QPSK	1	25	Right Cheek	0mm	23095	707.5	22.72	24.00	1.343	0	0.183	0.246
	LTE Band 12	10M	QPSK	25	12	Right Cheek	0mm	23095	707.5	21.79	23.00	1.321	0.01	0.099	0.131
	LTE Band 12	10M	QPSK	1	25	Right Tilted	0mm	23095	707.5	22.72	24.00	1.343	0.05	0.122	0.164
	LTE Band 12	10M	QPSK	25	12	Right Tilted	0mm	23095	707.5	21.79	23.00	1.321	0.01	0.064	0.085
09	LTE Band 12	10M	QPSK	1	25	Left Cheek	0mm	23095	707.5	22.72	24.00	1.343	-0.01	0.198	0.266
	LTE Band 12	10M	QPSK	25	12	Left Cheek	0mm	23095	707.5	21.79	23.00	1.321	0.06	0.107	0.141
	LTE Band 12	10M	QPSK	1	25	Left Tilted	0mm	23095	707.5	22.72	24.00	1.343	0.03	0.110	0.148
	LTE Band 12	10M	QPSK	25	12	Left Tilted	0mm	23095	707.5	21.79	23.00	1.321	-0.02	0.059	0.078
	LTE Band 66	20M	QPSK	1	49	Right Cheek	0mm	132072	1720	22.62	24.00	1.374	-0.15	0.170	0.234
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	132072	1720	21.50	23.00	1.413	0.1	0.091	0.129
	LTE Band 66	20M	QPSK	1	49	Right Tilted	0mm	132072	1720	22.62	24.00	1.374	0.02	0.072	0.099
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	132072	1720	21.50	23.00	1.413	0.02	0.039	0.055
10	LTE Band 66	20M	QPSK	1	49	Left Cheek	0mm	132072	1720	22.62	24.00	1.374	0.12	0.201	0.276
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	132072	1720	21.50	23.00	1.413	0.08	0.109	0.154
	LTE Band 66	20M	QPSK	1	49	Left Tilted	0mm	132072	1720	22.62	24.00	1.374	-0.02	0.065	0.089
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	132072	1720	21.50	23.00	1.413	0.05	0.035	0.049

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
11	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	6	2437	19.96	20.00	1.009	99.04	1.010	0.06	1.170	1.193
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	1	2412	18.94	19.00	1.014	99.04	1.010	-0.04	0.898	0.920
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	6	2437	19.96	20.00	1.009	99.04	1.010	-0.02	1.130	1.152
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	1	2412	18.94	19.00	1.014	99.04	1.010	-0.01	0.836	0.856
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	6	2437	19.96	20.00	1.009	99.04	1.010	0.02	0.814	0.830
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	1	2412	18.94	19.00	1.014	99.04	1.010	0.12	0.579	0.593
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	6	2437	19.96	20.00	1.009	99.04	1.010	-0.07	0.774	0.789
12	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	62	5310	14.96	15.50	1.131	90.91	1.100	0.07	0.806	1.003
	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	54	5270	14.94	15.50	1.137	90.91	1.100	0.12	0.736	0.920
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	62	5310	14.96	15.50	1.131	90.91	1.100	0.06	0.683	0.850
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	54	5270	14.94	15.50	1.137	90.91	1.100	0.16	0.654	0.818
	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	62	5310	14.96	15.50	1.131	90.91	1.100	-0.14	0.309	0.384
	WLAN5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	62	5310	14.96	15.50	1.131	90.91	1.100	0.13	0.285	0.355
13	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	138	5690	13.45	13.50	1.012	87.77	1.139	0.14	0.930	1.072
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	110	5550	13.46	13.50	1.008	90.91	1.100	0.06	0.830	0.921
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	138	5690	13.45	13.50	1.012	87.77	1.139	-0.13	0.916	1.056
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	110	5550	13.46	13.50	1.008	90.91	1.100	-0.1	0.777	0.862
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	138	5690	13.45	13.50	1.012	87.77	1.139	-0.13	0.586	0.676
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	138	5690	13.45	13.50	1.012	87.77	1.139	-0.08	0.576	0.664
14	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	-0.1	0.973	1.183
	WLAN5GHz	802.11n-HT20 MCS0	Right Cheek	0mm	149	5745	15.57	16.00	1.104	95.07	1.052	0.01	0.914	1.062
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	-0.05	0.953	1.159
	WLAN5GHz	802.11n-HT20 MCS0	Right Tilted	0mm	149	5745	15.57	16.00	1.104	95.07	1.052	-0.05	0.896	1.041
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	-0.04	0.584	0.710
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	0.09	0.543	0.660

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
15	Bluetooth	1Mbps	Right Cheek	0mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.02	0.168	0.202
	Bluetooth	1Mbps	Right Tilted	0mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.07	0.164	0.197
	Bluetooth	1Mbps	Left Cheek	0mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.19	0.111	0.134
	Bluetooth	1Mbps	Left Tilted	0mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.03	0.105	0.126

13.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Front	5mm	128	824.2	28.88	30.00	1.294	-0.11	0.545	0.705
	GSM850	GPRS (2 Tx slots)	Back	5mm	128	824.2	28.88	30.00	1.294	0	0.908	1.175
	GSM850	GPRS (2 Tx slots)	Back	5mm	189	836.4	28.66	30.00	1.361	0.03	0.871	1.186
16	GSM850	GPRS (2 Tx slots)	Back	5mm	251	848.8	28.75	30.00	1.334	0.1	0.894	1.192
	GSM850	GPRS (2 Tx slots)	Left Side	5mm	128	824.2	28.89	30.00	1.291	0.133	0.300	0.387
	GSM850	GPRS (2 Tx slots)	Right Side	5mm	128	824.2	28.89	30.00	1.291	0.065	0.124	0.160
	GSM850	GPRS (2 Tx slots)	Bottom Side	5mm	128	824.2	28.89	30.00	1.291	-0.11	0.543	0.701
	GSM1900	GPRS (1 Tx slot)	Front	5mm	512	1850.2	26.28	26.50	1.052	0.13	0.881	0.927
	GSM1900	GPRS (1 Tx slot)	Front	5mm	661	1880	26.03	26.50	1.114	0.04	0.762	0.849
	GSM1900	GPRS (1 Tx slot)	Front	5mm	810	1909.8	26.01	26.50	1.119	0.07	0.832	0.931
17	GSM1900	GPRS (1 Tx slot)	Back	5mm	512	1850.2	26.28	26.50	1.052	0.09	1.300	1.368
	GSM1900	GPRS (1 Tx slot)	Back	5mm	661	1880	26.03	26.50	1.114	-0.03	1.180	1.315
	GSM1900	GPRS (1 Tx slot)	Back	5mm	810	1909.8	26.01	26.50	1.119	0.03	1.210	1.355
	GSM1900	GPRS (1 Tx slot)	Left Side	5mm	512	1850.2	23.78	25.00	1.324	-0.08	0.044	0.058
	GSM1900	GPRS (1 Tx slot)	Right Side	5mm	512	1850.2	23.78	25.00	1.324	0.17	0.033	0.044
	GSM1900	GPRS (1 Tx slot)	Bottom Side	5mm	512	1850.2	23.78	25.00	1.324	0	1.010	1.338
	GSM1900	GPRS (1 Tx slot)	Bottom Side	5mm	661	1880	23.62	25.00	1.374	0.01	0.957	1.315
	GSM1900	GPRS (1 Tx slot)	Bottom Side	5mm	810	1909.8	23.60	25.00	1.380	0.02	0.815	1.125

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	5mm	9400	1880	16.20	17.50	1.349	-0.02	0.640	0.863
	WCDMA II	RMC 12.2Kbps	Front	5mm	9262	1852.4	16.12	17.50	1.374	-0.02	0.622	0.855
	WCDMA II	RMC 12.2Kbps	Front	5mm	9538	1907.6	16.18	17.50	1.355	-0.05	0.658	0.892
18	WCDMA II	RMC 12.2Kbps	Back	5mm	9400	1880	16.20	17.50	1.349	0.02	0.945	1.275
	WCDMA II	RMC 12.2Kbps	Back	5mm	9262	1852.4	16.12	17.50	1.374	-0.02	0.877	1.205
	WCDMA II	RMC 12.2Kbps	Back	5mm	9538	1907.6	16.18	17.50	1.355	-0.06	0.798	1.081
	WCDMA II	RMC 12.2Kbps	Left Side	5mm	9262	1852.4	14.17	15.50	1.358	-0.09	0.038	0.052
	WCDMA II	RMC 12.2Kbps	Right Side	5mm	9262	1852.4	14.17	15.50	1.358	0.04	0.029	0.039
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	9262	1852.4	14.17	15.50	1.358	0.03	0.729	0.990
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	9400	1880	14.11	15.50	1.377	0.05	0.815	1.122
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	9538	1907.6	14.16	15.50	1.361	0.12	0.817	1.112
	WCDMA IV	RMC 12.2Kbps	Front	5mm	1413	1732.6	17.09	18.00	1.233	-0.02	0.624	0.769
19	WCDMA IV	RMC 12.2Kbps	Back	5mm	1413	1732.6	17.09	18.00	1.233	0.04	1.120	1.381
	WCDMA IV	RMC 12.2Kbps	Back	5mm	1312	1712.4	17.07	18.00	1.239	0.03	1.030	1.276
	WCDMA IV	RMC 12.2Kbps	Back	5mm	1513	1752.6	17.03	18.00	1.250	0	0.905	1.131
	WCDMA IV	RMC 12.2Kbps	Left Side	5mm	1413	1732.6	14.70	16.00	1.349	0.08	0.058	0.078
	WCDMA IV	RMC 12.2Kbps	Right Side	5mm	1413	1732.6	14.70	16.00	1.349	-0.19	0.027	0.036
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	1413	1732.6	14.70	16.00	1.349	-0.01	0.800	1.079
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	1312	1712.4	14.65	16.00	1.365	-0.07	0.725	0.989
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	1513	1752.6	14.63	16.00	1.371	-0.02	0.854	1.171
	WCDMA V	RMC 12.2Kbps	Front	5mm	4132	826.4	22.83	24.50	1.469	0.07	0.476	0.699
	WCDMA V	RMC 12.2Kbps	Back	5mm	4132	826.4	22.83	24.50	1.469	0.024	0.760	1.116
	WCDMA V	RMC 12.2Kbps	Back	5mm	4182	836.4	22.75	24.50	1.496	0.024	0.791	1.184
20	WCDMA V	RMC 12.2Kbps	Back	5mm	4233	846.6	22.72	24.50	1.507	0.035	0.817	1.231
	WCDMA V	RMC 12.2Kbps	Left Side	5mm	4132	826.4	22.83	24.50	1.469	0.018	0.327	0.480
	WCDMA V	RMC 12.2Kbps	Right Side	5mm	4132	826.4	22.83	24.50	1.469	0.026	0.159	0.234
	WCDMA V	RMC 12.2Kbps	Bottom Side	5mm	4132	826.4	22.83	24.50	1.469	0.026	0.416	0.611

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	5mm	18900	1880	16.88	17.50	1.153	0	0.706	0.814
	LTE Band 2	20M	QPSK	1	0	Front	5mm	18700	1860	16.75	17.50	1.189	0	0.718	0.853
	LTE Band 2	20M	QPSK	1	0	Front	5mm	19100	1900	16.80	17.50	1.175	-0.14	0.622	0.731
	LTE Band 2	20M	QPSK	50	0	Front	5mm	18900	1880	16.85	17.50	1.161	0	0.641	0.744
	LTE Band 2	20M	QPSK	100	0	Front	5mm	18900	1880	16.67	17.50	1.211	-0.09	0.626	0.758
	LTE Band 2	20M	QPSK	1	0	Back	5mm	18900	1880	16.88	17.50	1.153	0.02	0.922	1.063
	LTE Band 2	20M	QPSK	1	0	Back	5mm	18700	1860	16.75	17.50	1.189	-0.01	0.913	1.085
	LTE Band 2	20M	QPSK	1	0	Back	5mm	19100	1900	16.80	17.50	1.175	-0.11	0.802	0.942
	LTE Band 2	20M	QPSK	50	0	Back	5mm	18900	1880	16.85	17.50	1.161	-0.02	0.941	1.093
	LTE Band 2	20M	QPSK	50	0	Back	5mm	18700	1860	16.84	17.50	1.164	-0.04	1.020	1.187
	LTE Band 2	20M	QPSK	50	0	Back	5mm	19100	1900	16.77	17.50	1.183	0.12	0.867	1.026
	LTE Band 2	20M	QPSK	100	0	Back	5mm	18900	1880	16.67	17.50	1.211	-0.04	0.936	1.133
	LTE Band 2	20M	QPSK	1	0	Left Side	5mm	18900	1880	14.73	16.00	1.340	0	0.041	0.055
	LTE Band 2	20M	QPSK	50	0	Left Side	5mm	18900	1880	14.79	16.00	1.321	-0.05	0.033	0.044
	LTE Band 2	20M	QPSK	1	0	Right Side	5mm	18900	1880	14.73	16.00	1.340	-0.05	0.018	0.024
	LTE Band 2	20M	QPSK	50	0	Right Side	5mm	18900	1880	14.79	16.00	1.321	0.18	0.018	0.024
21	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	18900	1880	14.73	16.00	1.340	-0.12	0.890	1.192
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	18700	1860	14.72	16.00	1.343	-0.19	0.844	1.133
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	19100	1900	14.70	16.00	1.349	-0.15	0.770	1.039
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	18900	1880	14.79	16.00	1.321	-0.06	0.843	1.114
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	18700	1860	14.78	16.00	1.324	-0.1	0.899	1.191
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	19100	1900	14.70	16.00	1.349	-0.15	0.802	1.082
	LTE Band 2	20M	QPSK	100	0	Bottom Side	5mm	18900	1880	14.77	16.00	1.327	-0.1	0.841	1.116
	LTE Band 5	10M	QPSK	1	25	Front	5mm	20525	836.5	22.53	24.00	1.403	-0.11	0.502	0.704
	LTE Band 5	10M	QPSK	25	12	Front	5mm	20525	836.5	21.69	23.00	1.352	-0.02	0.408	0.552
22	LTE Band 5	10M	QPSK	1	25	Back	5mm	20525	836.5	22.53	24.00	1.403	0.11	0.849	1.191
	LTE Band 5	10M	QPSK	25	12	Back	5mm	20525	836.5	21.69	23.00	1.352	0.1	0.695	0.940
	LTE Band 5	10M	QPSK	50	0	Back	5mm	20525	836.5	21.63	23.00	1.371	0.06	0.517	0.709
	LTE Band 5	10M	QPSK	1	25	Left Side	5mm	20525	836.5	22.53	24.00	1.403	-0.06	0.525	0.736
	LTE Band 5	10M	QPSK	25	12	Left Side	5mm	20525	836.5	21.69	23.00	1.352	-0.01	0.288	0.389
	LTE Band 5	10M	QPSK	1	25	Right Side	5mm	20525	836.5	22.53	24.00	1.403	-0.04	0.116	0.163
	LTE Band 5	10M	QPSK	25	12	Right Side	5mm	20525	836.5	21.69	23.00	1.352	0.05	0.093	0.126
	LTE Band 5	10M	QPSK	1	25	Bottom Side	5mm	20525	836.5	22.53	24.00	1.403	0.11	0.470	0.659
	LTE Band 5	10M	QPSK	25	12	Bottom Side	5mm	20525	836.5	21.69	23.00	1.352	-0.1	0.382	0.516
	LTE Band 7	20M	QPSK	1	49	Front	5mm	20850	2510	19.10	20.50	1.380	0.01	0.439	0.606
	LTE Band 7	20M	QPSK	50	0	Front	5mm	20850	2510	19.15	20.50	1.365	0.02	0.452	0.617
	LTE Band 7	20M	QPSK	1	49	Back	5mm	20850	2510	19.10	20.50	1.380	0.12	0.928	1.281
	LTE Band 7	20M	QPSK	1	49	Back	5mm	21100	2535	18.95	20.50	1.429	0.07	0.871	1.245
	LTE Band 7	20M	QPSK	1	49	Back	5mm	21350	2560	18.99	20.50	1.416	0.09	0.875	1.239
23	LTE Band 7	20M	QPSK	50	0	Back	5mm	20850	2510	19.15	20.50	1.365	0.09	0.971	1.325
	LTE Band 7	20M	QPSK	50	0	Back	5mm	21100	2535	19.01	20.50	1.409	0.07	0.895	1.261
	LTE Band 7	20M	QPSK	50	0	Back	5mm	21350	2560	19.10	20.50	1.380	0.15	0.893	1.233
	LTE Band 7	20M	QPSK	100	0	Back	5mm	20850	2510	19.15	20.50	1.365	0.16	0.960	1.310
	LTE Band 7	20M	QPSK	1	49	Left Side	5mm	20850	2510	19.10	20.50	1.380	0.04	0.028	0.039
	LTE Band 7	20M	QPSK	50	0	Left Side	5mm	20850	2510	19.15	20.50	1.365	0.01	0.030	0.041
	LTE Band 7	20M	QPSK	1	49	Right Side	5mm	20850	2510	19.10	20.50	1.380	0	0.448	0.618
	LTE Band 7	20M	QPSK	50	0	Right Side	5mm	20850	2510	19.15	20.50	1.365	0	0.457	0.624
	LTE Band 7	20M	QPSK	1	49	Bottom Side	5mm	20850	2510	19.10	20.50	1.380	-0.16	0.344	0.475
	LTE Band 7	20M	QPSK	50	0	Bottom Side	5mm	20850	2510	19.15	20.50	1.365	-0.01	0.345	0.471

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	QPSK	1	25	Front	5mm	23095	707.5	22.72	24.00	1.343	0	0.282	0.379
	LTE Band 12	10M	QPSK	25	12	Front	5mm	23095	707.5	21.79	23.00	1.321	0.02	0.226	0.299
24	LTE Band 12	10M	QPSK	1	25	Back	5mm	23095	707.5	22.72	24.00	1.343	0.04	0.531	0.713
	LTE Band 12	10M	QPSK	25	12	Back	5mm	23095	707.5	21.79	23.00	1.321	0.03	0.425	0.562
	LTE Band 12	10M	QPSK	1	25	Left Side	5mm	23095	707.5	22.72	24.00	1.343	-0.05	0.487	0.654
	LTE Band 12	10M	QPSK	25	12	Left Side	5mm	23095	707.5	21.79	23.00	1.321	-0.01	0.268	0.354
	LTE Band 12	10M	QPSK	1	25	Right Side	5mm	23095	707.5	22.72	24.00	1.343	0	0.217	0.291
	LTE Band 12	10M	QPSK	25	12	Right Side	5mm	23095	707.5	21.79	23.00	1.321	0.03	0.120	0.159
	LTE Band 12	10M	QPSK	1	25	Bottom Side	5mm	23095	707.5	22.72	24.00	1.343	0.06	0.272	0.365
	LTE Band 12	10M	QPSK	25	12	Bottom Side	5mm	23095	707.5	21.79	23.00	1.321	0.028	0.227	0.300
	LTE Band 66	20M	QPSK	1	0	Front	5mm	132072	1720	16.88	17.00	1.028	-0.05	0.850	0.874
	LTE Band 66	20M	QPSK	1	0	Front	5mm	132322	1745	16.64	17.00	1.086	-0.02	0.678	0.737
	LTE Band 66	20M	QPSK	1	0	Front	5mm	132572	1770	16.65	17.00	1.084	-0.02	0.816	0.884
	LTE Band 66	20M	QPSK	50	24	Front	5mm	132072	1720	16.59	17.00	1.099	0.01	0.856	0.941
	LTE Band 66	20M	QPSK	50	24	Front	5mm	132322	1745	16.38	17.00	1.153	-0.01	0.775	0.894
	LTE Band 66	20M	QPSK	50	24	Front	5mm	132572	1770	16.49	17.00	1.125	-0.07	0.799	0.899
	LTE Band 66	20M	QPSK	100	0	Front	5mm	132072	1720	16.55	17.00	1.109	-0.01	0.862	0.956
	LTE Band 66	20M	QPSK	1	0	Back	5mm	132072	1720	16.88	17.00	1.028	-0.02	1.130	1.162
	LTE Band 66	20M	QPSK	1	0	Back	5mm	132322	1745	16.64	17.00	1.086	-0.03	1.180	1.282
	LTE Band 66	20M	QPSK	1	0	Back	5mm	132572	1770	16.65	17.00	1.084	-0.17	1.140	1.236
	LTE Band 66	20M	QPSK	50	24	Back	5mm	132072	1720	16.59	17.00	1.099	-0.04	1.150	1.264
	LTE Band 66	20M	QPSK	50	24	Back	5mm	132322	1745	16.38	17.00	1.153	-0.04	0.959	1.106
	LTE Band 66	20M	QPSK	50	24	Back	5mm	132572	1770	16.49	17.00	1.125	-0.12	1.130	1.271
25	LTE Band 66	20M	QPSK	100	0	Back	5mm	132072	1720	16.55	17.00	1.109	-0.02	1.190	1.320
	LTE Band 66	20M	QPSK	1	49	Left Side	5mm	132072	1720	13.62	15.00	1.374	0.07	0.057	0.078
	LTE Band 66	20M	QPSK	50	0	Left Side	5mm	132072	1720	13.52	15.00	1.406	0.02	0.055	0.077
	LTE Band 66	20M	QPSK	1	49	Right Side	5mm	132072	1720	13.62	15.00	1.374	0.13	0.028	0.038
	LTE Band 66	20M	QPSK	50	0	Right Side	5mm	132072	1720	13.52	15.00	1.406	0.04	0.029	0.041
	LTE Band 66	20M	QPSK	1	49	Bottom Side	5mm	132072	1720	13.62	15.00	1.374	0	0.894	1.228
	LTE Band 66	20M	QPSK	1	49	Bottom Side	5mm	132322	1745	13.43	15.00	1.435	0.06	0.891	1.279
	LTE Band 66	20M	QPSK	1	49	Bottom Side	5mm	132572	1770	13.55	15.00	1.396	0.13	0.881	1.230
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	132072	1720	13.52	15.00	1.406	0.03	0.863	1.213
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	132322	1745	13.30	15.00	1.479	0	0.886	1.310
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	132572	1770	13.41	15.00	1.442	0.19	0.863	1.245
	LTE Band 66	20M	QPSK	100	0	Bottom Side	5mm	132072	1720	13.50	15.00	1.413	-0.01	0.869	1.227

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	6	2437	19.96	20.00	1.009	99.04	1.010	0.06	0.537	0.547
26	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	6	2437	19.96	20.00	1.009	99.04	1.010	-0.1	0.980	0.999
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	1	2412	18.94	19.00	1.014	99.04	1.010	-0.16	0.747	0.765
	WLAN2.4GHz	802.11b 1Mbps	Left Side	5mm	6	2437	19.96	20.00	1.009	99.04	1.010	-0.19	0.158	0.161
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	6	2437	19.96	20.00	1.009	99.04	1.010	0.11	0.728	0.742
	WLAN5GHz	802.11n-HT40 MCS0	Front	5mm	46	5230	16.29	17.00	1.177	90.91	1.100	-0.12	0.546	0.706
27	WLAN5GHz	802.11n-HT40 MCS0	Back	5mm	46	5230	16.29	17.00	1.177	90.91	1.100	-0.08	0.926	1.198
	WLAN5GHz	802.11a 6Mbps	Back	5mm	36	5180	16.44	17.00	1.138	95.31	1.049	-0.15	0.969	1.157
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	5mm	46	5230	16.29	17.00	1.177	90.91	1.100	-0.05	0.193	0.249
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	5mm	46	5230	16.29	17.00	1.177	90.91	1.100	-0.17	0.888	1.149
	WLAN5GHz	802.11a 6Mbps	Top Side	5mm	36	5180	16.44	17.00	1.138	95.31	1.049	0.04	0.810	0.967
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	155	5775	15.95	16.50	1.136	87.77	1.139	0.07	0.397	0.514
28	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	155	5775	15.95	16.50	1.136	87.77	1.139	-0.11	0.921	1.192
	WLAN5GHz	802.11n-HT20 MCS0	Back	5mm	149	5745	15.57	16.00	1.104	95.07	1.052	-0.12	0.958	1.113
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	5mm	155	5775	15.95	16.50	1.136	87.77	1.139	0.02	0.191	0.247
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	5mm	155	5775	15.95	16.50	1.136	87.77	1.139	0.04	0.875	1.132
	WLAN5GHz	802.11n-HT20 MCS0	Top Side	5mm	149	5745	15.57	16.00	1.104	95.07	1.052	0.01	0.820	0.953

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	5mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.12	0.079	0.095
29	Bluetooth	1Mbps	Back	5mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.02	0.135	0.162
	Bluetooth	1Mbps	Left Side	5mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.08	0.022	0.026
	Bluetooth	1Mbps	Top Side	5mm	0	2402	12.53	13.00	1.114	77.13	1.080	0.14	0.119	0.143

13.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Front	5mm	-	128	824.2	28.88	30.00	1.294	-0.11	0.545	0.705
	GSM850	GPRS (2 Tx slots)	Back	5mm	-	128	824.2	28.88	30.00	1.294	0	0.908	1.175
	GSM850	GPRS (2 Tx slots)	Back	5mm	-	189	836.4	28.66	30.00	1.361	0.03	0.871	1.186
30	GSM850	GPRS (2 Tx slots)	Back	5mm	-	251	848.8	28.75	30.00	1.334	0.1	0.894	1.192
	GSM1900	GPRS (1 Tx slot)	Front	5mm	-	512	1850.2	26.28	26.50	1.052	0.13	0.881	0.927
	GSM1900	GPRS (1 Tx slot)	Front	5mm	-	661	1880	26.03	26.50	1.114	0.04	0.762	0.849
	GSM1900	GPRS (1 Tx slot)	Front	5mm	-	810	1909.8	26.01	26.50	1.119	0.07	0.832	0.931
31	GSM1900	GPRS (1 Tx slot)	Back	5mm	-	512	1850.2	26.28	26.50	1.052	0.09	1.300	1.368
	GSM1900	GPRS (1 Tx slot)	Back	5mm	-	661	1880	26.03	26.50	1.114	-0.03	1.180	1.315
	GSM1900	GPRS (1 Tx slot)	Back	5mm	-	810	1909.8	26.01	26.50	1.119	0.03	1.210	1.355
	GSM1900	GPRS (1 Tx slot)	Back	5mm	Headset	512	1850.2	26.28	26.50	1.052	-0.02	1.200	1.262

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	5mm	-	9400	1880	16.20	17.50	1.349	-0.02	0.640	0.863
	WCDMA II	RMC 12.2Kbps	Front	5mm	-	9262	1852.4	16.12	17.50	1.374	-0.02	0.622	0.855
	WCDMA II	RMC 12.2Kbps	Front	5mm	-	9538	1907.6	16.18	17.50	1.355	-0.05	0.658	0.892
32	WCDMA II	RMC 12.2Kbps	Back	5mm	-	9400	1880	16.20	17.50	1.349	0.02	0.945	1.275
	WCDMA II	RMC 12.2Kbps	Back	5mm	-	9262	1852.4	16.12	17.50	1.374	-0.02	0.877	1.205
	WCDMA II	RMC 12.2Kbps	Back	5mm	-	9538	1907.6	16.18	17.50	1.355	-0.06	0.798	1.081
	WCDMA II	RMC 12.2Kbps	Back	5mm	Headset	9400	1880	16.20	17.50	1.349	-0.02	0.902	1.217
	WCDMA IV	RMC 12.2Kbps	Front	5mm	-	1413	1732.6	17.09	18.00	1.233	-0.02	0.624	0.769
33	WCDMA IV	RMC 12.2Kbps	Back	5mm	-	1413	1732.6	17.09	18.00	1.233	0.04	1.120	1.381
	WCDMA IV	RMC 12.2Kbps	Back	5mm	-	1312	1712.4	17.07	18.00	1.239	0.03	1.030	1.276
	WCDMA IV	RMC 12.2Kbps	Back	5mm	-	1513	1752.6	17.03	18.00	1.250	0	0.905	1.131
	WCDMA IV	RMC 12.2Kbps	Back	5mm	Headset	1413	1732.6	17.09	18.00	1.233	0.03	1.050	1.295
	WCDMA V	RMC 12.2Kbps	Front	5mm	-	4132	826.4	22.83	24.50	1.469	0.07	0.476	0.699
	WCDMA V	RMC 12.2Kbps	Back	5mm	-	4132	826.4	22.83	24.50	1.469	0.024	0.760	1.116
	WCDMA V	RMC 12.2Kbps	Back	5mm	-	4182	836.4	22.75	24.50	1.496	0.024	0.791	1.184
34	WCDMA V	RMC 12.2Kbps	Back	5mm	-	4233	846.6	22.72	24.50	1.507	0.035	0.817	1.231
	WCDMA V	RMC 12.2Kbps	Back	5mm	Headset	4233	846.6	22.72	24.50	1.507	-0.06	0.784	1.181

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	5mm	-	18900	1880	16.88	17.50	1.153	0	0.706	0.814
	LTE Band 2	20M	QPSK	1	0	Front	5mm	-	18700	1860	16.75	17.50	1.189	0	0.718	0.853
	LTE Band 2	20M	QPSK	1	0	Front	5mm	-	19100	1900	16.80	17.50	1.175	-0.14	0.622	0.731
	LTE Band 2	20M	QPSK	50	0	Front	5mm	-	18900	1880	16.85	17.50	1.161	0	0.641	0.744
	LTE Band 2	20M	QPSK	100	0	Front	5mm	-	18900	1880	16.67	17.50	1.211	-0.09	0.626	0.758
	LTE Band 2	20M	QPSK	1	0	Back	5mm	-	18900	1880	16.88	17.50	1.153	0.02	0.922	1.063
	LTE Band 2	20M	QPSK	1	0	Back	5mm	-	18700	1860	16.75	17.50	1.189	-0.01	0.913	1.085
	LTE Band 2	20M	QPSK	1	0	Back	5mm	-	19100	1900	16.80	17.50	1.175	-0.11	0.802	0.942
	LTE Band 2	20M	QPSK	50	0	Back	5mm	-	18900	1880	16.85	17.50	1.161	-0.02	0.941	1.093
35	LTE Band 2	20M	QPSK	50	0	Back	5mm	-	18700	1860	16.84	17.50	1.164	-0.04	1.020	1.187
	LTE Band 2	20M	QPSK	50	0	Back	5mm	-	19100	1900	16.77	17.50	1.183	0.12	0.867	1.026
	LTE Band 2	20M	QPSK	100	0	Back	5mm	-	18900	1880	16.67	17.50	1.211	-0.04	0.936	1.133
	LTE Band 5	10M	QPSK	1	25	Front	5mm	-	20525	836.5	22.53	24.00	1.403	-0.11	0.502	0.704
	LTE Band 5	10M	QPSK	25	12	Front	5mm	-	20525	836.5	21.69	23.00	1.352	-0.02	0.408	0.552
36	LTE Band 5	10M	QPSK	1	25	Back	5mm	-	20525	836.5	22.53	24.00	1.403	0.11	0.849	1.191
	LTE Band 5	10M	QPSK	25	12	Back	5mm	-	20525	836.5	21.69	23.00	1.352	0.1	0.695	0.940
	LTE Band 5	10M	QPSK	50	0	Back	5mm	-	20525	836.5	21.63	23.00	1.371	0.06	0.517	0.709
	LTE Band 7	20M	QPSK	1	49	Front	5mm	-	20850	2510	19.10	20.50	1.380	0.01	0.439	0.606
	LTE Band 7	20M	QPSK	50	0	Front	5mm	-	20850	2510	19.15	20.50	1.365	0.02	0.452	0.617
	LTE Band 7	20M	QPSK	1	49	Back	5mm	-	20850	2510	19.10	20.50	1.380	0.12	0.928	1.281
	LTE Band 7	20M	QPSK	1	49	Back	5mm	-	21100	2535	18.95	20.50	1.429	0.07	0.871	1.245
	LTE Band 7	20M	QPSK	1	49	Back	5mm	-	21350	2560	18.99	20.50	1.416	0.09	0.875	1.239
37	LTE Band 7	20M	QPSK	50	0	Back	5mm	-	20850	2510	19.15	20.50	1.365	0.09	0.971	1.325
	LTE Band 7	20M	QPSK	50	0	Back	5mm	-	21100	2535	19.01	20.50	1.409	0.07	0.895	1.261
	LTE Band 7	20M	QPSK	50	0	Back	5mm	-	21350	2560	19.10	20.50	1.380	0.15	0.893	1.233
	LTE Band 7	20M	QPSK	100	0	Back	5mm	-	20850	2510	19.15	20.50	1.365	0.16	0.960	1.310
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Headset	20850	2510	19.15	20.50	1.365	-0.11	0.874	1.193
	LTE Band 12	10M	QPSK	1	25	Front	5mm	-	23095	707.5	22.72	24.00	1.343	0	0.282	0.379
	LTE Band 12	10M	QPSK	25	12	Front	5mm	-	23095	707.5	21.79	23.00	1.321	0.02	0.226	0.299
38	LTE Band 12	10M	QPSK	1	25	Back	5mm	-	23095	707.5	22.72	24.00	1.343	0.04	0.531	0.713
	LTE Band 12	10M	QPSK	25	12	Back	5mm	-	23095	707.5	21.79	23.00	1.321	0.03	0.425	0.562
	LTE Band 66	20M	QPSK	1	0	Front	5mm	-	132072	1720	16.88	17.00	1.028	-0.05	0.850	0.874
	LTE Band 66	20M	QPSK	1	0	Front	5mm	-	132322	1745	16.64	17.00	1.086	-0.02	0.678	0.737
	LTE Band 66	20M	QPSK	1	0	Front	5mm	-	132572	1770	16.65	17.00	1.084	-0.02	0.816	0.884
	LTE Band 66	20M	QPSK	50	24	Front	5mm	-	132072	1720	16.59	17.00	1.099	0.01	0.856	0.941
	LTE Band 66	20M	QPSK	50	24	Front	5mm	-	132322	1745	16.38	17.00	1.153	-0.01	0.775	0.894
	LTE Band 66	20M	QPSK	50	24	Front	5mm	-	132572	1770	16.49	17.00	1.125	-0.07	0.799	0.899
	LTE Band 66	20M	QPSK	100	0	Front	5mm	-	132072	1720	16.55	17.00	1.109	-0.01	0.862	0.956
	LTE Band 66	20M	QPSK	1	0	Back	5mm	-	132072	1720	16.88	17.00	1.028	-0.02	1.130	1.162
	LTE Band 66	20M	QPSK	1	0	Back	5mm	-	132322	1745	16.64	17.00	1.086	-0.03	1.180	1.282
	LTE Band 66	20M	QPSK	1	0	Back	5mm	-	132572	1770	16.65	17.00	1.084	-0.17	1.140	1.236
	LTE Band 66	20M	QPSK	50	24	Back	5mm	-	132072	1720	16.59	17.00	1.099	-0.04	1.150	1.264
	LTE Band 66	20M	QPSK	50	24	Back	5mm	-	132322	1745	16.38	17.00	1.153	-0.04	0.959	1.106
	LTE Band 66	20M	QPSK	50	24	Back	5mm	-	132572	1770	16.49	17.00	1.125	-0.12	1.130	1.271
39	LTE Band 66	20M	QPSK	100	0	Back	5mm	-	132072	1720	16.55	17.00	1.109	-0.02	1.190	1.320
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Headset	132072	1720	16.55	17.00	1.109	-0.07	1.160	1.287

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	-	6	2437	19.96	20.00	1.009	99.04	1.010	0.06	0.537	0.547
40	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	-	6	2437	19.96	20.00	1.009	99.04	1.010	-0.1	0.980	0.999
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	-	1	2412	18.94	19.00	1.014	99.04	1.010	-0.16	0.747	0.765
	WLAN5GHz	802.11n-HT40 MCS0	Front	5mm	-	62	5310	15.44	17.00	1.431	90.91	1.100	-0.05	0.278	0.437
41	WLAN5GHz	802.11n-HT40 MCS0	Back	5mm	-	62	5310	15.44	17.00	1.431	90.91	1.100	-0.14	0.642	1.010
	WLAN5GHz	802.11n-HT40 MCS0	Back	5mm	-	54	5270	15.42	17.00	1.439	90.91	1.100	-0.12	0.629	0.995
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	-	138	5690	14.93	15.50	1.141	87.77	1.139	-0.04	0.356	0.463
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	-	138	5690	14.93	15.50	1.141	87.77	1.139	-0.13	0.832	1.081
42	WLAN5GHz	802.11n-HT40 MCS0	Back	5mm	-	110	5550	14.82	15.50	1.169	90.91	1.100	-0.15	0.862	1.109
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	-	155	5775	15.95	16.50	1.136	87.77	1.139	0.07	0.397	0.514
43	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	-	155	5775	15.95	16.50	1.136	87.77	1.139	-0.11	0.921	1.192
	WLAN5GHz	802.11n-HT20 MCS0	Back	5mm	-	149	5745	15.57	16.00	1.104	95.07	1.052	-0.12	0.958	1.113

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	5mm	-	0	2402	12.53	13.00	1.114	77.13	1.080	0.12	0.079	0.095
44	Bluetooth	1Mbps	Back	5mm	-	0	2402	12.53	13.00	1.114	77.13	1.080	0.02	0.135	0.162

13.4 Product Specific SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	GSM1900	GPRS (1 Tx slot)	Front	0mm	512	1850.2	29.79	30.50	1.178	0.01	2.210	2.603
	GSM1900	GPRS (1 Tx slot)	Front	0mm	661	1880	29.85	30.50	1.161	-0.06	2.290	2.660
	GSM1900	GPRS (1 Tx slot)	Front	0mm	810	1909.8	29.88	30.50	1.153	-0.19	2.030	2.342
	GSM1900	GPRS (1 Tx slot)	Back	0mm	512	1850.2	29.79	30.50	1.178	0.07	2.590	3.050
	GSM1900	GPRS (1 Tx slot)	Back	0mm	661	1880	29.85	30.50	1.161	-0.06	2.580	2.997
	GSM1900	GPRS (1 Tx slot)	Back	0mm	810	1909.8	29.88	30.50	1.153	0.03	2.010	2.318
	GSM1900	GPRS (1 Tx slot)	Bottom Side	0mm	512	1850.2	29.79	30.50	1.178	0.04	2.660	3.132
45	GSM1900	GPRS (1 Tx slot)	Bottom Side	0mm	661	1880	29.85	30.50	1.161	0	2.720	3.159
	GSM1900	GPRS (1 Tx slot)	Bottom Side	0mm	810	1909.8	29.88	30.50	1.153	-0.04	1.560	1.799

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	9262	1852.4	20.15	20.50	1.084	-0.15	2.250	2.439
	WCDMA II	RMC 12.2Kbps	Front	0mm	9400	1880	20.07	20.50	1.104	-0.02	2.050	2.263
	WCDMA II	RMC 12.2Kbps	Front	0mm	9538	1907.6	20.12	20.50	1.091	-0.18	2.080	2.270
	WCDMA II	RMC 12.2Kbps	Back	0mm	9262	1852.4	20.15	20.50	1.084	0.04	2.840	3.078
	WCDMA II	RMC 12.2Kbps	Back	0mm	9400	1880	20.07	20.50	1.104	0.04	2.600	2.871
	WCDMA II	RMC 12.2Kbps	Back	0mm	9538	1907.6	20.12	20.50	1.091	0.13	2.370	2.587
46	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9262	1852.4	20.15	20.50	1.084	-0.11	3.050	3.306
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9400	1880	20.07	20.50	1.104	-0.1	2.760	3.047
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9538	1907.6	20.12	20.50	1.091	-0.13	2.850	3.111
	WCDMA IV	RMC 12.2Kbps	Front	0mm	1312	1712.4	19.18	21.00	1.521	-0.12	1.570	2.387
	WCDMA IV	RMC 12.2Kbps	Front	0mm	1413	1732.6	19.14	21.00	1.535	-0.06	1.530	2.348
	WCDMA IV	RMC 12.2Kbps	Front	0mm	1513	1752.6	19.06	21.00	1.563	0.11	1.480	2.313
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1312	1712.4	19.18	21.00	1.521	-0.02	2.080	3.163
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1413	1732.6	19.14	21.00	1.535	-0.04	2.130	3.269
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1513	1752.6	19.06	21.00	1.563	0.02	2.150	3.361
47	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	1312	1712.4	19.18	21.00	1.521	-0.09	2.280	3.467
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	1413	1732.6	19.14	21.00	1.535	-0.08	2.000	3.069
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	1513	1752.6	19.06	21.00	1.563	-0.03	2.090	3.267
	WCDMA V	RMC 12.2Kbps	Back	0mm	4132	826.4	24.29	25.00	1.178	0.09	1.650	1.943
	WCDMA V	RMC 12.2Kbps	Back	0mm	4182	836.4	24.18	25.00	1.208	0.02	1.610	1.945
48	WCDMA V	RMC 12.2Kbps	Back	0mm	4233	846.6	24.07	25.00	1.239	-0.01	1.630	2.019

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	0mm	18900	1880	20.03	21.50	1.403	-0.1	1.650	2.315
	LTE Band 2	20M	QPSK	1	0	Front	0mm	18700	1860	19.97	21.50	1.422	-0.14	1.660	2.361
	LTE Band 2	20M	QPSK	1	0	Front	0mm	19100	1900	19.95	21.50	1.429	0.03	1.650	2.358
	LTE Band 2	20M	QPSK	50	0	Back	0mm	18900	1880	19.92	21.50	1.439	-0.03	2.100	3.021
	LTE Band 2	20M	QPSK	50	0	Back	0mm	18700	1860	19.84	21.50	1.466	-0.07	2.320	3.400
	LTE Band 2	20M	QPSK	50	0	Back	0mm	19100	1900	19.95	21.50	1.429	0.15	1.880	2.686
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	18900	1880	20.03	21.50	1.403	0.14	2.350	3.297
49	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	18700	1860	19.97	21.50	1.422	-0.08	2.410	3.428
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	19100	1900	19.95	21.50	1.429	-0.07	2.280	3.258
	LTE Band 7	20M	QPSK	50	0	Front	0mm	20850	2510	21.64	23.00	1.368	-0.05	1.530	2.093
	LTE Band 7	20M	QPSK	50	0	Front	0mm	21100	2535	21.53	23.00	1.403	-0.05	1.340	1.880
	LTE Band 7	20M	QPSK	50	0	Front	0mm	21350	2560	21.65	23.00	1.365	-0.06	1.360	1.856
50	LTE Band 7	20M	QPSK	50	0	Back	0mm	20850	2510	21.64	23.00	1.368	0.11	2.490	3.406
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21100	2535	21.53	23.00	1.403	0.11	2.340	3.283
	LTE Band 7	20M	QPSK	50	0	Back	0mm	21350	2560	21.65	23.00	1.365	0.12	2.390	3.261
	LTE Band 7	20M	QPSK	50	0	Right Side	0mm	20850	2510	21.64	23.00	1.368	-0.02	1.580	2.161
	LTE Band 7	20M	QPSK	50	0	Right Side	0mm	21100	2535	21.53	23.00	1.403	-0.04	1.530	2.146
	LTE Band 7	20M	QPSK	50	0	Right Side	0mm	21350	2560	21.65	23.00	1.365	0.1	1.590	2.170
	LTE Band 66	20M	QPSK	100	0	Front	0mm	132072	1720	18.85	20.00	1.303	-0.1	1.750	2.281
	LTE Band 66	20M	QPSK	100	0	Front	0mm	132322	1745	18.60	20.00	1.380	0.11	1.860	2.568
	LTE Band 66	20M	QPSK	100	0	Front	0mm	132572	1770	18.68	20.00	1.355	0.02	1.650	2.236
	LTE Band 66	20M	QPSK	100	0	Back	0mm	132072	1720	18.85	20.00	1.303	-0.07	2.350	3.062
	LTE Band 66	20M	QPSK	100	0	Back	0mm	132322	1745	18.60	20.00	1.380	-0.07	2.010	2.775
	LTE Band 66	20M	QPSK	100	0	Back	0mm	132572	1770	18.68	20.00	1.355	-0.08	2.070	2.805
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	132072	1720	18.87	20.00	1.297	-0.14	2.310	2.996
51	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	132322	1745	18.60	20.00	1.380	-0.11	2.370	3.272
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	132572	1770	18.76	20.00	1.330	-0.17	2.340	3.113

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
52	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	46	5230	17.32	18.00	1.169	90.91	1.100	0.03	0.976	1.256
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	0mm	46	5230	17.32	18.00	1.169	90.91	1.100	0.08	0.517	0.665
	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	54	5270	17.34	18.00	1.164	90.91	1.100	0.07	0.552	0.707
53	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	54	5270	17.34	18.00	1.164	90.91	1.100	-0.11	1.020	1.306
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	0mm	54	5270	17.34	18.00	1.164	90.91	1.100	0.08	0.342	0.438
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	0mm	54	5270	17.34	18.00	1.164	90.91	1.100	-0.19	0.343	0.439
	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	110	5550	17.77	18.00	1.053	90.91	1.100	0.01	0.997	1.155
54	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	110	5550	17.77	18.00	1.053	90.91	1.100	-0.09	1.250	1.448
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	0mm	110	5550	17.77	18.00	1.053	90.91	1.100	-0.01	0.526	0.610
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	0mm	110	5550	17.77	18.00	1.053	90.91	1.100	-0.13	0.598	0.693
55	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	-0.05	1.120	1.362
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	155	5775	16.72	17.00	1.067	87.77	1.139	0	0.466	0.567

13.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	GSM850	GPRS (2 Tx slots)	Back	5mm	ON	128	824.2	28.88	30.00	1.294			0	0.908	-	1.175
2nd	GSM850	GPRS (2 Tx slots)	Back	5mm	ON	128	824.2	28.88	30.00	1.294			0.02	0.894	1.02	1.157
1st	GSM1900	GPRS (1 Tx slot)	Back	5mm	ON	512	1850.2	26.28	26.50	1.052			0.09	1.300	-	1.368
2nd	GSM1900	GPRS (1 Tx slot)	Back	5mm	ON	512	1850.2	26.28	26.50	1.052			0.07	1.270	1.02	1.336
1st	LTE Band 7	20M_QPSK_50_0	Back	5mm	ON	20850	2510	19.15	20.50	1.365			0.09	0.971	-	1.325
2nd	LTE Band 7	20M_QPSK_50_0	Back	5mm	ON	20850	2510	19.15	20.50	1.365			0.14	0.911	1.07	1.243
1st	LTE Band 66	20M_QPSK_100_0	Back	5mm	ON	132072	1720	16.55	17.00	1.109			-0.02	1.190	-	1.320
2nd	LTE Band 66	20M_QPSK_100_0	Back	5mm	ON	132072	1720	16.55	17.00	1.109			-0.03	1.140	1.04	1.264
1st	WLAN5GHz	802.11a 6Mbps	Back	5mm	ON	36	5180	16.44	17.00	1.138	95.31	1.049	-0.15	0.969	-	1.157
2nd	WLAN5GHz	802.11a 6Mbps	Back	5mm	ON	36	5180	16.44	17.00	1.138	95.31	1.049	-0.11	0.964	1.01	1.150
1st	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	OFF	6	2437	19.96	20.00	1.009	99.04	1.010	0.06	1.170	-	1.193
2nd	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	OFF	6	2437	19.96	20.00	1.009	99.04	1.010	0.04	1.140	1.03	1.162
1st	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	ON	62	5310	14.96	15.50	1.131	90.91	1.100	0.07	0.806	-	1.003
2nd	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	ON	62	5310	14.96	15.50	1.131	90.91	1.100	0.15	0.746	1.08	0.928
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	ON	138	5690	13.45	13.50	1.012	87.77	1.139	0.14	0.930	-	1.072
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	ON	138	5690	13.45	13.50	1.012	87.77	1.139	0.14	0.890	1.04	1.026
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	ON	155	5775	16.72	17.00	1.067	87.77	1.139	-0.1	0.973	-	1.183
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	ON	155	5775	16.72	17.00	1.067	87.77	1.139	0.01	0.963	1.01	1.171

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	ON	9262	1852.4	20.15	20.50	1.084	-0.11	3.050	-	3.306
2nd	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	ON	9262	1852.4	20.15	20.50	1.084	-0.09	3.000	1.02	3.252
1st	LTE Band 7	20M_QPSK_50_0	Back	0mm	ON	20850	2510	21.64	23.00	1.368	0.11	2.490	-	3.406
2nd	LTE Band 7	20M_QPSK_50_0	Back	0mm	ON	20850	2510	21.64	23.00	1.368	0.09	2.450	1.02	3.351
1st	LTE Band 66	20M_QPSK_50_0	Bottom Side	0mm	ON	132322	1745	18.60	20.00	1.380	-0.11	2.370	-	3.272
2nd	LTE Band 66	20M_QPSK_50_0	Bottom Side	0mm	ON	132322	1745	18.60	20.00	1.380	-0.14	2.360	1.00	3.258

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

14. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product Specific
1.	GSM Voice + WLAN2.4GHz	Yes	Yes		Yes
2.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes	Yes	Yes
3.	WCDMA + WLAN2.4GHz	Yes	Yes	Yes	Yes
4.	LTE + WLAN2.4GHz	Yes	Yes	Yes	Yes
5.	GSM Voice + Bluetooth	Yes	Yes		Yes
6.	GPRS/EDGE + Bluetooth	Yes	Yes	Yes	Yes
7.	WCDMA+ Bluetooth	Yes	Yes	Yes	Yes
8.	LTE + Bluetooth	Yes	Yes	Yes	Yes
9.	GSM Voice + WLAN5GHz	Yes	Yes		Yes
10.	GPRS/EDGE + WLAN5GHz	Yes	Yes	Yes	Yes
11.	WCDMA + WLAN5GHz	Yes	Yes	Yes	Yes
12.	LTE + WLAN5GHz	Yes	Yes	Yes	Yes

General Note:

1. This device WLAN 2.4GHz/5.2GHz/5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
4. The Scaled SAR summation is calculated based on the same configuration and test position.
5. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
   v) The SPLSR calculated results please refer to section 14.5.

14.1 Head Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
GSM	GSM850	Right Cheek	0.270	1.193	1.183	0.202	**1.463**	**1.453**	**0.472**
		Right Tilted	0.150	1.152	1.159	0.197	**1.302**	**1.309**	**0.347**
		Left Cheek	0.348	0.830	0.710	0.134	**1.178**	**1.058**	**0.482**
		Left Tilted	0.182	0.789	0.664	0.126	**0.971**	**0.846**	**0.308**
	GSM1900	Right Cheek	0.075	1.193	1.183	0.202	**1.268**	**1.258**	**0.277**
		Right Tilted	0.033	1.152	1.159	0.197	**1.185**	**1.192**	**0.230**
		Left Cheek	0.071	0.830	0.710	0.134	**0.901**	**0.781**	**0.205**
		Left Tilted	0.028	0.789	0.664	0.126	**0.817**	**0.692**	**0.154**
WCDMA	WCDMA II	Right Cheek	0.106	1.193	1.183	0.202	**1.299**	**1.289**	**0.308**
		Right Tilted	0.047	1.152	1.159	0.197	**1.199**	**1.206**	**0.244**
		Left Cheek	0.099	0.830	0.710	0.134	**0.929**	**0.809**	**0.233**
		Left Tilted	0.042	0.789	0.664	0.126	**0.831**	**0.706**	**0.168**
	WCDMA IV	Right Cheek	0.142	1.193	1.183	0.202	**1.335**	**1.325**	**0.344**
		Right Tilted	0.057	1.152	1.159	0.197	**1.209**	**1.216**	**0.254**
		Left Cheek	0.170	0.830	0.710	0.134	**1.000**	**0.880**	**0.304**
		Left Tilted	0.055	0.789	0.664	0.126	**0.844**	**0.719**	**0.181**
	WCDMA V	Right Cheek	0.244	1.193	1.183	0.202	**1.437**	**1.427**	**0.446**
		Right Tilted	0.142	1.152	1.159	0.197	**1.294**	**1.301**	**0.339**
		Left Cheek	0.323	0.830	0.710	0.134	**1.153**	**1.033**	**0.457**
		Left Tilted	0.155	0.789	0.664	0.126	**0.944**	**0.819**	**0.281**
LTE	LTE Band 2	Right Cheek	0.110	1.193	1.183	0.202	**1.303**	**1.293**	**0.312**
		Right Tilted	0.061	1.152	1.159	0.197	**1.213**	**1.220**	**0.258**
		Left Cheek	0.101	0.830	0.710	0.134	**0.931**	**0.811**	**0.235**
		Left Tilted	0.031	0.789	0.664	0.126	**0.820**	**0.695**	**0.157**
	LTE Band 5	Right Cheek	0.290	1.193	1.183	0.202	**1.483**	**1.473**	**0.492**
		Right Tilted	0.181	1.152	1.159	0.197	**1.333**	**1.340**	**0.378**
		Left Cheek	0.412	0.830	0.710	0.134	**1.242**	**1.122**	**0.546**
		Left Tilted	0.192	0.789	0.664	0.126	**0.981**	**0.856**	**0.318**
	LTE Band 7	Right Cheek	0.358	1.193	1.183	0.202	**1.551**	**1.541**	**0.560**
		Right Tilted	0.104	1.152	1.159	0.197	**1.256**	**1.263**	**0.301**
		Left Cheek	0.244	0.830	0.710	0.134	**1.074**	**0.954**	**0.378**
		Left Tilted	0.219	0.789	0.664	0.126	**1.008**	**0.883**	**0.345**
	LTE Band 12	Right Cheek	0.246	1.193	1.183	0.202	**1.439**	**1.429**	**0.448**
		Right Tilted	0.164	1.152	1.159	0.197	**1.316**	**1.323**	**0.361**
		Left Cheek	0.266	0.830	0.710	0.134	**1.096**	**0.976**	**0.400**
		Left Tilted	0.148	0.789	0.664	0.126	**0.937**	**0.812**	**0.274**
	LTE Band 66	Right Cheek	0.234	1.193	1.183	0.202	**1.427**	**1.417**	**0.436**
		Right Tilted	0.099	1.152	1.159	0.197	**1.251**	**1.258**	**0.296**
		Left Cheek	0.276	0.830	0.710	0.134	**1.106**	**0.986**	**0.410**
		Left Tilted	0.089	0.789	0.664	0.126	**0.878**	**0.753**	**0.215**

14.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.705	0.547	0.706	0.095	**1.252**	**1.411**	**0.800**		
		Back	1.192	0.999	1.198	0.162	**2.191**	**2.390**	**1.354**	0.020	Case 1
		Left side	0.387	0.161	0.249	0.026	**0.548**	**0.636**	**0.413**		
		Right side	0.160				**0.160**	**0.160**	**0.160**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	0.701				**0.701**	**0.701**	**0.701**		
	GSM1900	Front	0.931	0.547	0.706	0.095	**1.478**	**1.637**	**1.026**	0.01	Case 2
		Back	1.368	0.999	1.198	0.162	**2.367**	**2.566**	**1.530**	0.03	Case 3
		Left side	0.058	0.161	0.249	0.026	**0.219**	**0.307**	**0.084**		
		Right side	0.044				**0.044**	**0.044**	**0.044**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	1.338				**1.338**	**1.338**	**1.338**		
WCDMA	WCDMA II	Front	0.892	0.547	0.706	0.095	**1.439**	**1.598**	**0.987**	0.01	Case 4
		Back	1.275	0.999	1.198	0.162	**2.274**	**2.473**	**1.437**	0.03	Case 5
		Left side	0.052	0.161	0.249	0.026	**0.213**	**0.301**	**0.078**		
		Right side	0.039				**0.039**	**0.039**	**0.039**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	1.122				**1.122**	**1.122**	**1.122**		
	WCDMA IV	Front	0.769	0.547	0.706	0.095	**1.316**	**1.475**	**0.864**		
		Back	1.381	0.999	1.198	0.162	**2.380**	**2.579**	**1.543**	0.03	Case 6
		Left side	0.078	0.161	0.249	0.026	**0.239**	**0.327**	**0.104**		
		Right side	0.036				**0.036**	**0.036**	**0.036**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	1.171				**1.171**	**1.171**	**1.171**		
	WCDMA V	Front	0.699	0.547	0.706	0.095	**1.246**	**1.405**	**0.794**		
		Back	1.231	0.999	1.198	0.162	**2.230**	**2.429**	**1.393**	0.03	Case 7
		Left side	0.480	0.161	0.249	0.026	**0.641**	**0.729**	**0.506**		
		Right side	0.234				**0.234**	**0.234**	**0.234**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	0.611				**0.611**	**0.611**	**0.611**		
LTE	LTE Band 2	Front	0.853	0.547	0.706	0.095	**1.400**	**1.559**	**0.948**		
		Back	1.187	0.999	1.198	0.162	**2.186**	**2.385**	**1.349**	0.03	Case 8
		Left side	0.055	0.161	0.249	0.026	**0.216**	**0.304**	**0.081**		
		Right side	0.024				**0.024**	**0.024**	**0.024**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	1.192				**1.192**	**1.192**	**1.192**		
	LTE Band 5	Front	0.704	0.547	0.706	0.095	**1.251**	**1.410**	**0.799**		
		Back	1.191	0.999	1.198	0.162	**2.190**	**2.389**	**1.353**	0.02	Case 9
		Left side	0.736	0.161	0.249	0.026	**0.897**	**0.985**	**0.762**		
		Right side	0.163				**0.163**	**0.163**	**0.163**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	0.659				**0.659**	**0.659**	**0.659**		
	LTE Band 7	Front	0.617	0.547	0.706	0.095	**1.164**	**1.323**	**0.712**		
		Back	1.325	0.999	1.198	0.162	**2.324**	**2.523**	**1.487**	0.03	Case 10
		Left side	0.041	0.161	0.249	0.026	**0.202**	**0.290**	**0.067**		
		Right side	0.624				**0.624**	**0.624**	**0.624**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	0.475				**0.475**	**0.475**	**0.475**		
	LTE Band 12	Front	0.379	0.547	0.706	0.095	**0.926**	**1.085**	**0.474**		
		Back	0.713	0.999	1.198	0.162	**1.712**	**1.911**	**0.875**	0.02	Case 11
		Left side	0.654	0.161	0.249	0.026	**0.815**	**0.903**	**0.680**		
		Right side	0.291				**0.291**	**0.291**	**0.291**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	0.365				**0.365**	**0.365**	**0.365**		
	LTE Band 66	Front	0.956	0.547	0.706	0.095	**1.503**	**1.662**	**1.051**	0.01	Case 12
		Back	1.320	0.999	1.198	0.162	**2.319**	**2.518**	**1.482**	0.03	Case 13
		Left side	0.078	0.161	0.249	0.026	**0.239**	**0.327**	**0.104**		
		Right side	0.041				**0.041**	**0.041**	**0.041**		
		Top side		0.742	1.149	0.143	**0.742**	**1.149**	**0.143**		
		Bottom side	1.310				**1.310**	**1.310**	**1.310**		

14.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.705	0.547	0.514	0.095	**1.252**	**1.219**	**0.800**		
		Back	1.192	0.999	1.192	0.162	**2.191**	**2.384**	**1.354**	0.02	Case 14
	GSM1900	Front	0.931	0.547	0.514	0.095	**1.478**	**1.445**	**1.026**		
		Back	1.368	0.999	1.192	0.162	**2.367**	**2.560**	**1.530**	0.03	Case 15
		Back with Headset	1.262	0.999	1.192	0.162	**2.261**	**2.454**	**1.424**	0.03	Case 16
WCDMA	WCDMA II	Front	0.892	0.547	0.514	0.095	**1.439**	**1.406**	**0.987**		
		Back	1.275	0.999	1.192	0.162	**2.274**	**2.467**	**1.437**	0.03	Case 17
		Back with Headset	1.217	0.999	1.192	0.162	**2.216**	**2.409**	**1.379**	0.02	Case 18
	WCDMA IV	Front	0.769	0.547	0.514	0.095	**1.316**	**1.283**	**0.864**		
		Back	1.381	0.999	1.192	0.162	**2.380**	**2.573**	**1.543**	0.03	Case 19
		Back with Headset	1.295	0.999	1.192	0.162	**2.294**	**2.487**	**1.457**	0.03	Case 20
	WCDMA V	Front	0.699	0.547	0.514	0.095	**1.246**	**1.213**	**0.794**		
		Back	1.231	0.999	1.192	0.162	**2.230**	**2.423**	**1.393**	0.02	Case 21
		Back with Headset	1.181	0.999	1.192	0.162	**2.180**	**2.373**	**1.343**	0.02	Case 22
LTE	LTE Band 2	Front	0.853	0.547	0.514	0.095	**1.400**	**1.367**	**0.948**		
		Back	1.187	0.999	1.192	0.162	**2.186**	**2.379**	**1.349**	0.02	Case 23
	LTE Band 5	Front	0.704	0.547	0.514	0.095	**1.251**	**1.218**	**0.799**		
		Back	1.191	0.999	1.192	0.162	**2.190**	**2.383**	**1.353**	0.02	Case 24
	LTE Band 7	Front	0.617	0.547	0.514	0.095	**1.164**	**1.131**	**0.712**		
		Back	1.325	0.999	1.192	0.162	**2.324**	**2.517**	**1.487**	0.03	Case 25
		Back with Headset	1.193	0.999	1.192	0.162	**2.192**	**2.385**	**1.355**	0.03	Case 26
	LTE Band 12	Front	0.379	0.547	0.514	0.095	**0.926**	**0.893**	**0.474**		
		Back	0.713	0.999	1.192	0.162	**1.712**	**1.905**	**0.875**	0.02	Case 27
	LTE Band 66	Front	0.956	0.547	0.514	0.095	**1.503**	**1.470**	**1.051**		
		Back	1.320	0.999	1.192	0.162	**2.319**	**2.512**	**1.482**	0.03	Case 28
		Back with Headset	1.287	0.999	1.192	0.162	**2.286**	**2.479**	**1.449**	0.03	Case 29

14.4 Product Specific Exposure Conditions

Remark:

1. According to KDB 941225 D06 v02r01 and KDB 648474 D04v01r03, for WWAN / 2.4GHz WLAN / Bluetooth and 5GHz WLAN SAR ("-") was excluded, due to transmitting antenna located larger 25mm from that surface or edge and Hotspot SAR was < 1.2W/Kg.

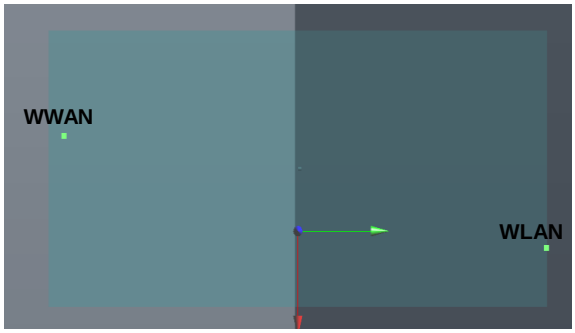
WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	2 2.4GHz WLAN 10g SAR (W/kg)	3 5GHz WLAN 10g SAR (W/kg)	4 Bluetooth 10g SAR (W/kg)	1+2 Summed 10g SAR (W/kg)	1+3 Summed 10g SAR (W/kg)	1+4 Summed 10g SAR (W/kg)	SPLSR	Case No
GSM	GSM1900	Front	2.660	-	1.155	-	**2.660**	**3.815**	**2.660**		
		Back	3.050	-	1.448	-	**3.050**	**4.498**	**3.050**	0.06	Case 30
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	3.159	-	-	-	**3.159**	**3.159**	**3.159**		
WCDMA	WCDMA II	Front	2.439	-	1.155	-	**2.439**	**3.594**	**2.439**		
		Back	3.078	-	1.448	-	**3.078**	**4.526**	**3.078**	0.07	Case 31
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	3.306	-	-	-	**3.306**	**3.306**	**3.306**		
	WCDMA IV	Front	2.387	-	1.155	-	**2.387**	**3.542**	**2.387**		
		Back	3.361	-	1.448	-	**3.361**	**4.809**	**3.361**	0.07	Case 32
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	3.467	-	-	-	**3.467**	**3.467**	**3.467**		
	WCDMA V	Front	-	-	1.155	-	**0.000**	**1.155**	**0.000**		
		Back	2.019	-	1.448	-	**2.019**	**3.467**	**2.019**		
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	-	-	-	-	**0.000**	**0.000**	**0.000**		
LTE	LTE Band 2	Front	2.361	-	1.155	-	**2.361**	**3.516**	**2.361**		
		Back	3.400	-	1.448	-	**3.400**	**4.848**	**3.400**	0.07	Case 33
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	3.428	-	-	-	**3.428**	**3.428**	**3.428**		
	LTE Band 7	Front	2.093	-	1.155	-	**2.093**	**3.248**	**2.093**		
		Back	3.406	-	1.448	-	**3.406**	**4.854**	**3.406**	0.07	Case 34
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	2.170	-	-	-	**2.170**	**2.170**	**2.170**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	-	-	-	-	**0.000**	**0.000**	**0.000**		
	LTE Band 66	Front	2.568	-	1.155	-	**2.568**	**3.723**	**2.568**		
		Back	3.062	-	1.448	-	**3.062**	**4.510**	**3.062**	0.06	Case 35
		Left side	-	-	0.610	-	**0.000**	**0.610**	**0.000**		
		Right side	-	-	-	-	**0.000**	**0.000**	**0.000**		
		Top side	-	-	0.693	-	**0.000**	**0.693**	**0.000**		
		Bottom side	3.272	-	-	-	**3.272**	**3.272**	**3.272**		

14.5 SPLSR Evaluation and Analysis

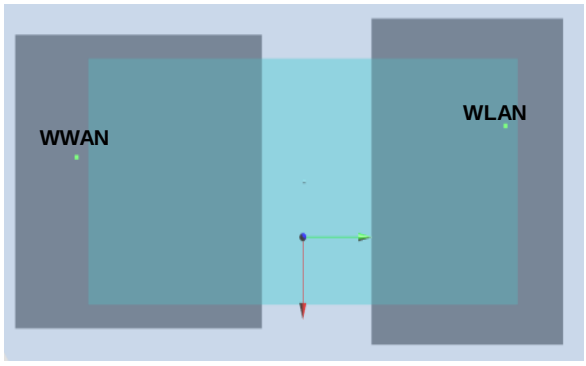
General Note:

1. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

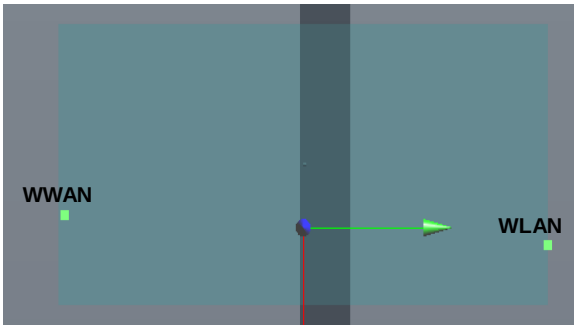
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 1	GSM850	Back	1.192	5	-4.21	-78.29	-1.67	157.6	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	GSM850	Back	1.192	5	-4.21	-78.29	-1.67	151.2	2.39	0.02	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



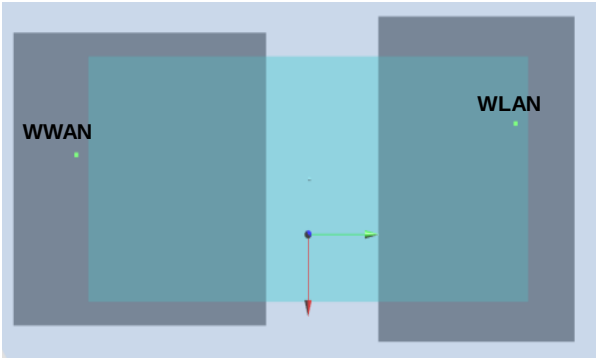
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 2	GSM1900	Front	0.931	5	-37	-82.5	-2.25	158.6	1.64	0.01	Not required
	WLAN5GHz		0.706	5	-16.98	74.82	-0.63				



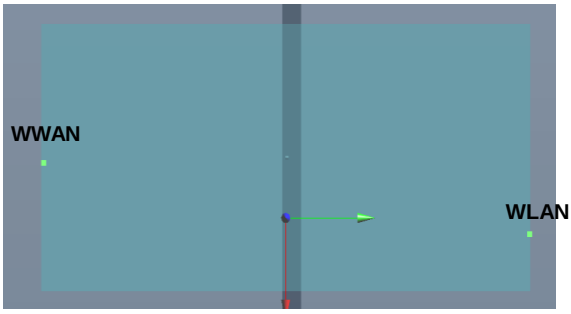
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 3	GSM1900	Back	1.368	5	8.91	-78.11	-2.27	155.8	2.37	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	GSM1900	Back	1.368	5	8.91	-78.11	-2.27	149.7	2.57	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



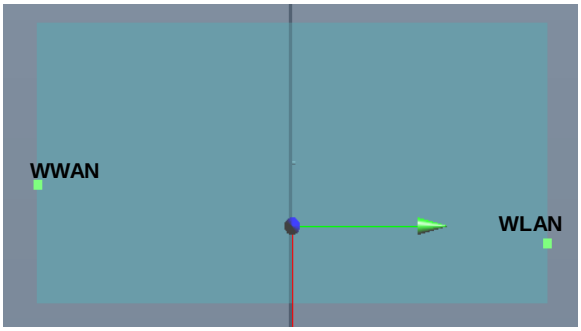
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 4	WCDMA II	Front	0.892	5	-12.28	-81.82	-2.56	156.7	1.60	0.01	Not required
	WLAN5GHz		0.706	5	-16.98	74.82	-0.63				



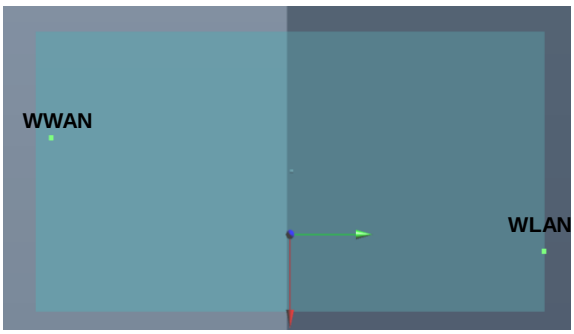
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 5	WCDMA II	Back	1.275	5	4.7	-75.9	-0.83	154.0	2.27	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA II	Back	1.275	5	4.7	-75.9	-0.83	147.8	2.47	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



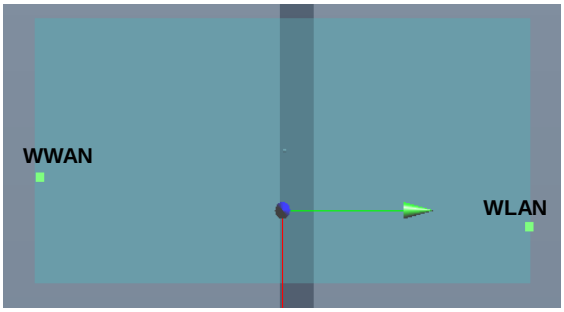
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 6	WCDMA IV	Back	1.381	5	7.6	-76.4	-1.4	154.2	2.38	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA IV	Back	1.381	5	7.6	-76.4	-1.4	148.1	2.58	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



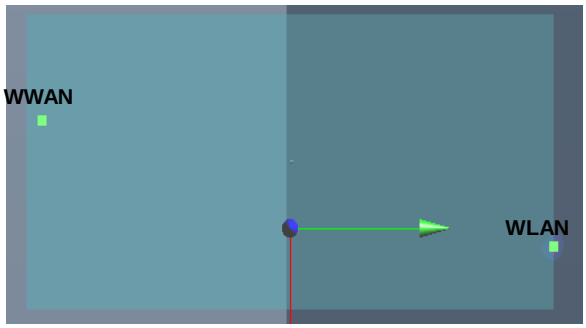
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 7	WCDMA V	Back	1.231	5	-5.81	-76.69	-1.74	156.3	2.23	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA V	Back	1.231	5	-5.81	-76.69	-1.74	149.8	2.43	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



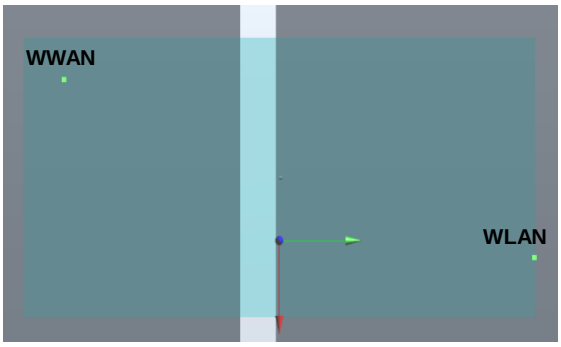
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 8	LTE Band 2	Back	1.187	5	10.7	-75.4	-1.47	153.0	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE Band 2	Back	1.187	5	10.7	-75.4	-1.47	147.0	2.39	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



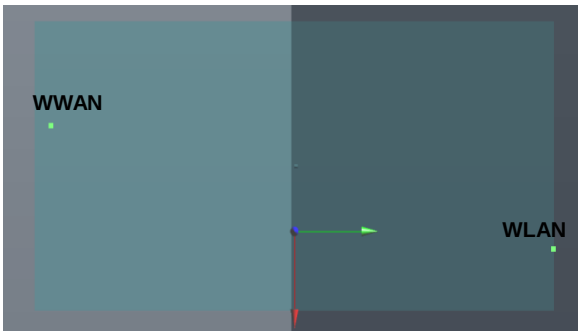
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 9	LTE Band 5	Back	1.191	5	-8.9	-76.7	-0.3	156.9	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE Band 5	Back	1.191	5	-8.9	-76.7	-0.3	150.3	2.39	0.02	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



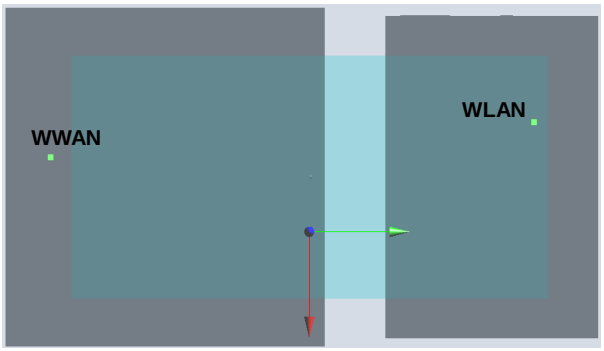
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 10	LTE Band 7	Back	1.325	5	-29.4	-65	-1.88	151.1	2.32	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE Band 7	Back	1.325	5	-29.4	-65	-1.88	144.0	2.52	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



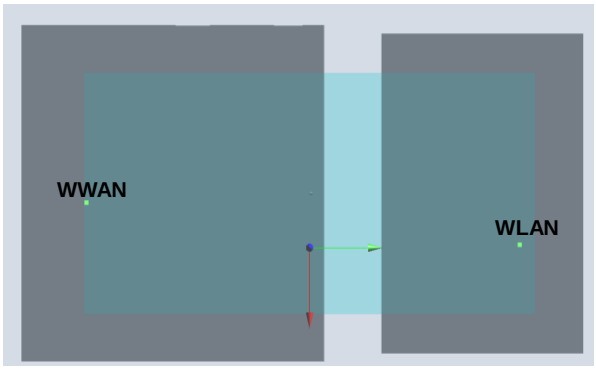
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 11	LTE Band 12	Back	0.713	5	-8.9	-76.7	-0.31	156.9	1.71	0.01	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE Band 12	Back	0.713	5	-8.9	-76.7	-0.31	150.3	1.91	0.02	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



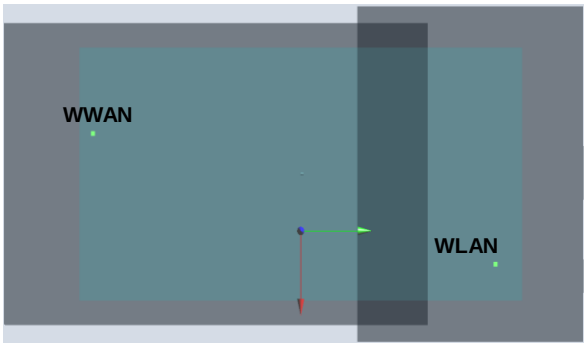
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 12	LTE B66	Front	0.956	5	-9.16	-81.81	-2.63	156.8	1.66	0.01	Not required
	WLAN5GHz		0.706	5	-16.98	74.82	-0.63				



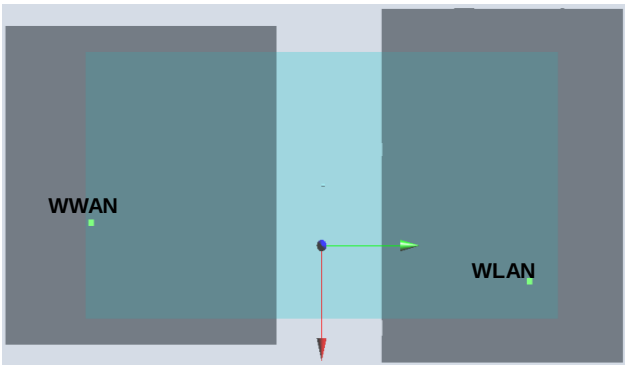
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 13	LTE Band 66	Back	1.32	5	6.25	-77.51	-2.71	155.5	2.32	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE Band 66	Back	1.32	5	6.25	-77.51	-2.71	149.3	2.52	0.03	Not required
	WLAN5GHz		1.198	5	16.83	71.42	-0.61				



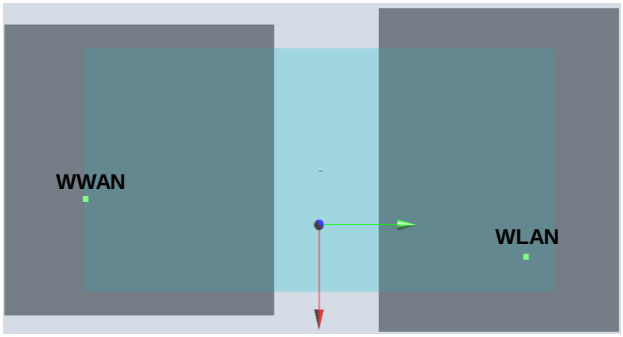
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 14	GSM850	Back	1.192	5	-4.21	-78.29	-1.67	157.6	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	GSM850	Back	1.192	5	-4.21	-78.29	-1.67	152.6	2.38	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



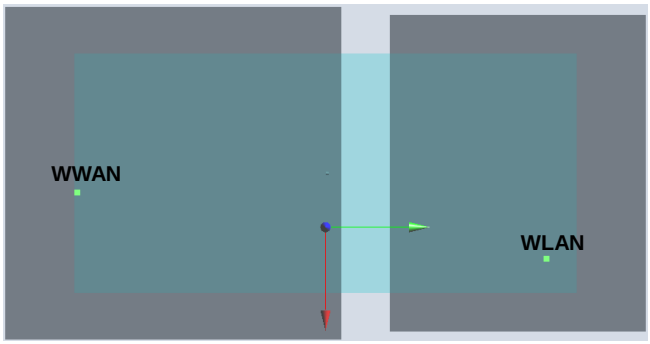
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 15	GSM1900	Back	1.368	5	8.91	-78.11	-2.27	155.8	2.37	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	GSM1900	Back	1.368	5	8.91	-78.11	-2.27	150.4	2.56	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



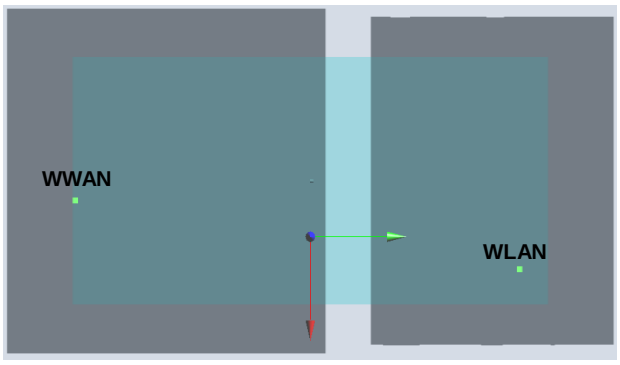
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 16	GSM1900	Back with Headset	1.262	5	5.86	-78.01	-2.3	156.0	2.26	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	GSM1900	Back with Headset	1.262	5	5.86	-78.01	-2.3	150.7	2.45	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



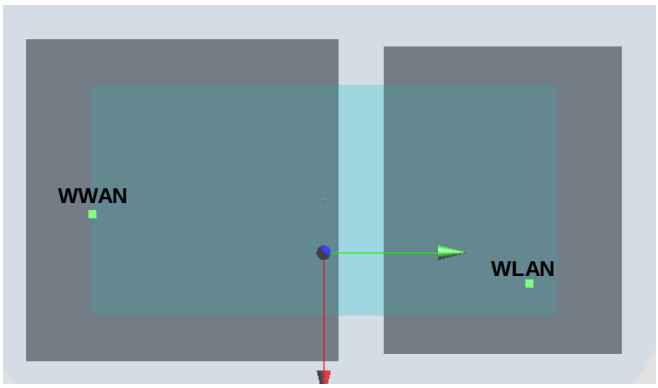
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 17	WCDMA II	Back	1.275	5	4.7	-75.9	-0.83	154.0	2.27	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA II	Back	1.275	5	4.7	-75.9	-0.83	148.8	2.47	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



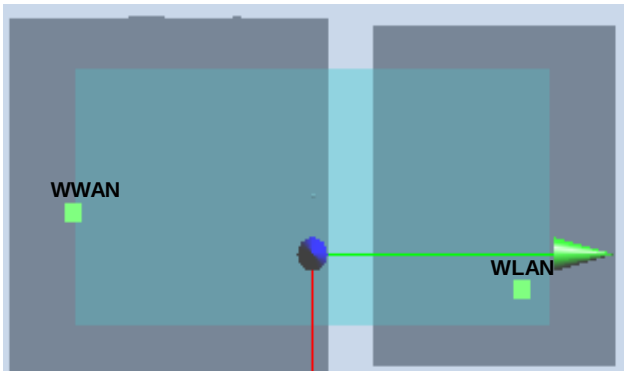
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 18	WCDMA II	Back	1.217	5	9.25	-77.5	-2.63	155.2	2.22	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA II	Back	1.217	5	9.25	-77.5	-2.63	149.8	2.41	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



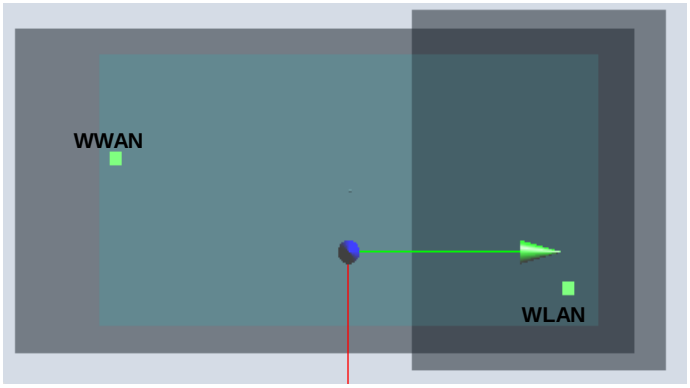
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 19	WCDMA IV	Back	1.381	5	6.14	-77.51	-2.7	155.5	2.38	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA IV	Back	1.381	5	6.14	-77.51	-2.7	150.2	2.57	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



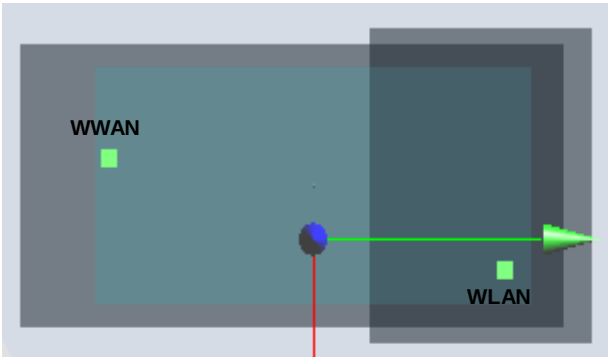
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 20	WCDMA IV	Back with Headset	1.295	5	7.75	-75.8	-2.65	153.6	2.29	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA IV	Back with Headset	1.295	5	7.75	-75.8	-2.65	148.3	2.49	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



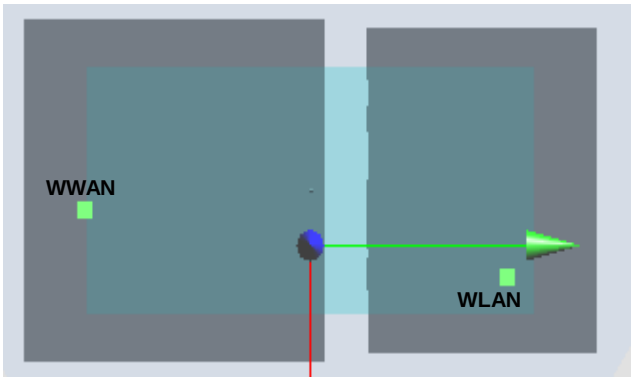
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 21	WCDMA V	Back	1.231	5	-5.81	-76.69	-1.74	156.3	2.23	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA V	Back	1.231	5	-5.81	-76.69	-1.74	151.4	2.42	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



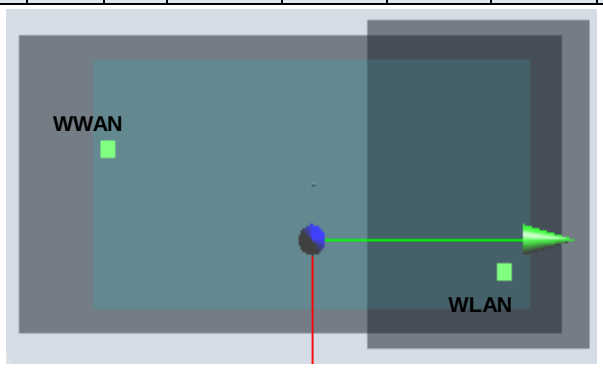
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 22	WCDMA V	Back with Headset	1.181	5	-5.82	-76.68	-1.72	156.3	2.18	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	WCDMA V	Back with Headset	1.181	5	-5.82	-76.68	-1.72	151.3	2.37	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



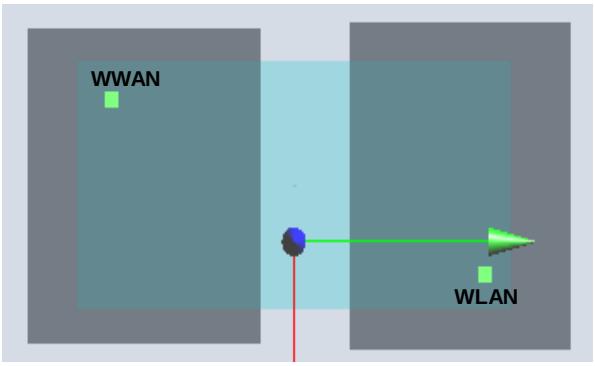
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 23	LTE B2	Back	1.187	5	9.22	-77.4	-2.62	155.1	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B2	Back	1.187	5	9.22	-77.4	-2.62	149.7	2.38	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



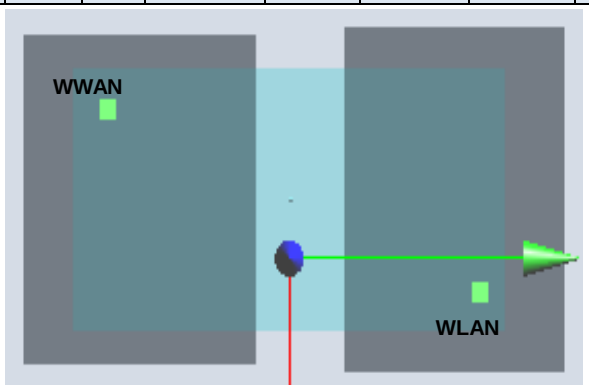
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 24	LTE B5	Back	1.191	5mm	-8.9	-76.7	-0.3	156.9	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5mm	21.6	77.2	-0.57				
	LTE B5	Back	1.191	5mm	-8.9	-76.7	-0.3	152.0	2.38	0.02	Not required
	WLAN5GHz		1.192	5mm	25.44	71.4	-0.63				



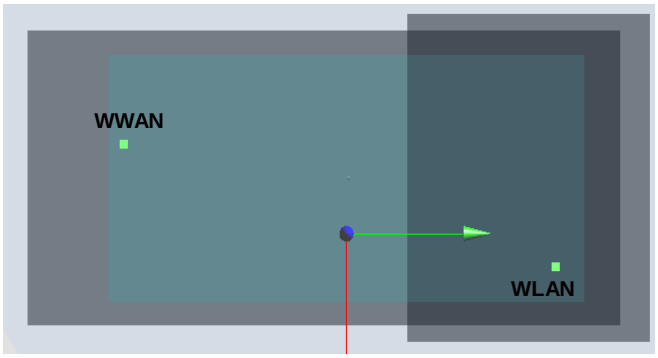
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 25	LTE B7	Back	1.325	5	-29.4	-65	-1.88	151.1	2.32	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B7	Back	1.325	5	-29.4	-65	-1.88	147.0	2.52	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



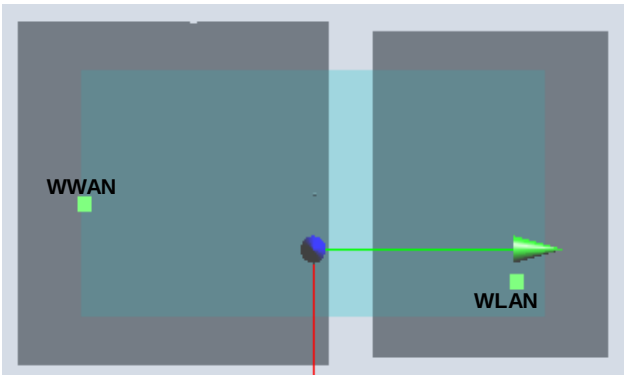
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 26	LTE B7	Back with Headset	1.193	5	-28.4	-65	-1.89	150.7	2.19	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B7	Back with Headset	1.193	5	-28.4	-65	-1.89	146.6	2.39	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



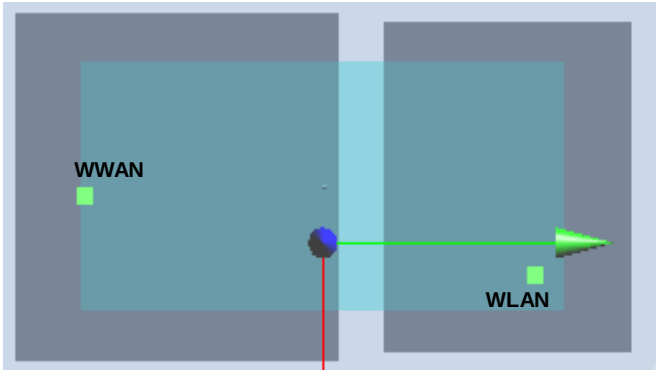
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 27	LTE B12	Back	0.713	5	-8.9	-76.7	-0.31	156.9	1.71	0.01	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B12	Back	0.713	5	-8.9	-76.7	-0.31	152.0	1.91	0.02	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



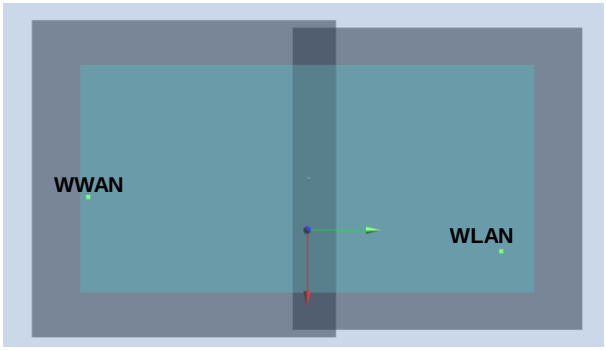
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 28	LTE B66	Back	1.32	5	6.25	-77.51	-2.71	155.5	2.32	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B66	Back	1.32	5	6.25	-77.51	-2.71	150.2	2.51	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



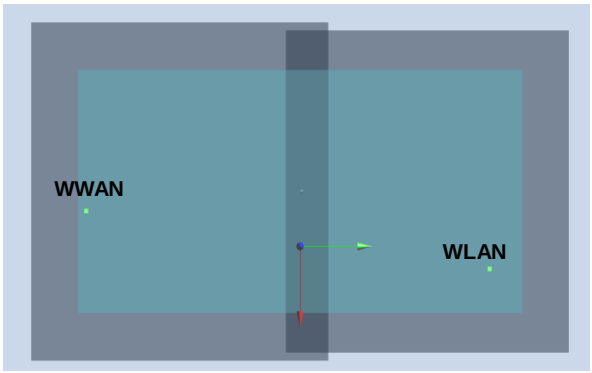
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 29	LTE B66	Back with Headset	1.287	5	6.25	-77.51	-2.69	155.5	2.29	0.02	Not required
	WLAN2.4GHz		0.999	5	21.6	77.2	-0.57				
	LTE B66	Back with Headset	1.287	5	6.25	-77.51	-2.69	150.2	2.48	0.03	Not required
	WLAN5GHz		1.192	5	25.44	71.4	-0.63				



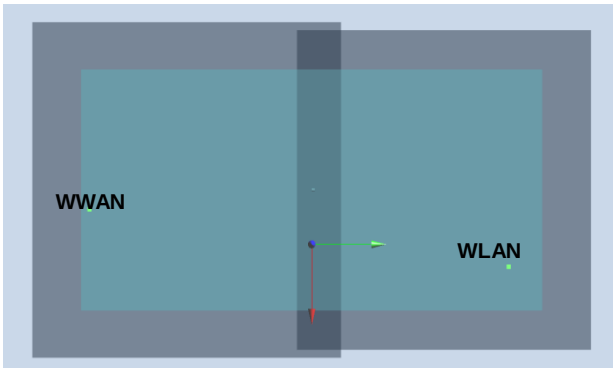
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 30	GSM1900	Back	3.05	0	9.2	-73.9	-1.38	147.4	4.50	0.06	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



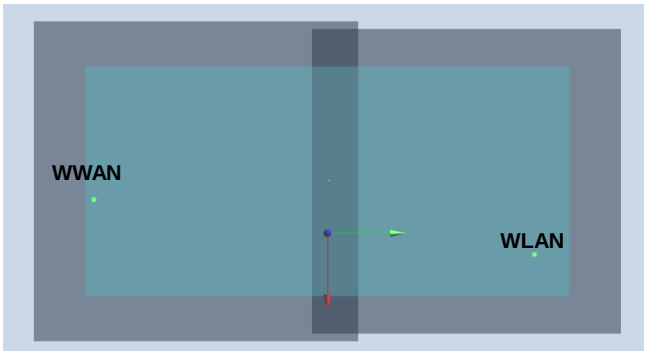
Case 31	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	WCDMA II	Back	3.078	0	9.3	-73.7	-1.42	147.2	4.53	0.07	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



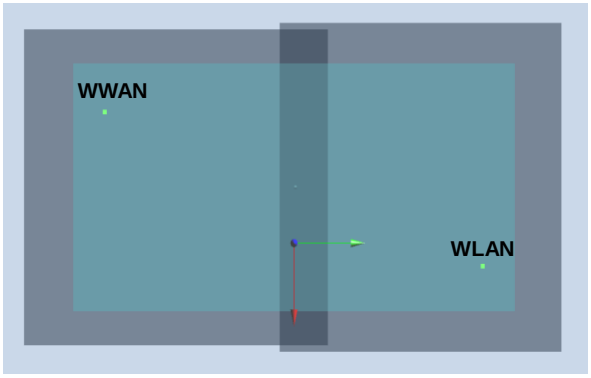
Case 32	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	WCDMA IV	Back	3.361	0	7.6	-73.9	-1.41	147.6	4.81	0.07	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



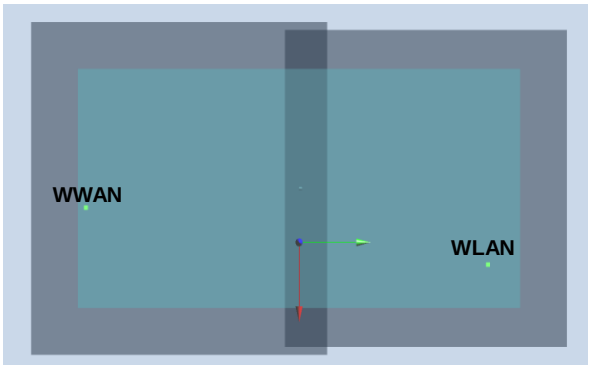
Case 33	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	LTE B2	Back	3.4	0	9.2	-75.5	-1.35	149.0	4.85	0.07	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



Case 34	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	LTE B7	Back	3.406	0	-28.8	-68.2	-1.86	151.8	4.85	0.07	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



Case 35	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	LTE B66	Back	3.062	0	8.94	-75.01	-2.1	148.6	4.51	0.06	Not required
	WLAN5GHz		1.448	0	28.8	72.2	-0.2				



15. Supplemental tuner tests results

General Note:

1. The following test procedure was followed to demonstrate that the SAR results in this report represent the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR will be measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements will be evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence to the antenna characteristics, other than impedance matching.
2. To evaluate all of the tuner states, the 144 tuner states are divided evenly among band, mode and exposure combinations so that at least one single point SAR measurement is measured in each configuration. Single point time-sweep measurements will be performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state will be established remotely so that the device is not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe will remain stationary at the same position throughout the entire series of single point measurements for each combination.
3. The device supports LTE B12/B17 and B5/B26. Since the supported frequency span for LTE B17/B5 falls completely within the supported frequency span for LTE B12/B26, and both bands have the same target power and both LTE bands share the same transmission path, therefore standalone SAR was only assessed for LTE B12/B26. The single point SAR time-sweep measurements were treated independently for each supported ACL frequency band. For the LTE Band 17/B5 single point SAR measurement selected the highest measured SAR configuration and exposure condition of LTE B12/B26. And the number of required single point measurements at least 11 applies to the band.
4. The tuner state was established remotely through Wi-Fi so that the device is not moved for the entire series of single point SAR for the tuner states in each combination (band, mode, exposure conditions).
5. The operational decryption contains more information about the design and implementation of the dynamic antenna tuning.

15.1 Supplemental Head SAR results

Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140		
WCDMA B2	RMC12.2K	1907.6	9538	N/A	N/A	Right Cheek	0mm	0.082	0.086	0.081	0.079	0.069	0.068	0.065	0.061	0.084	0.085	0.083	0.081	0.071	0.069	0.056	0.059	0.059	0.047	0.044	0.041	0.035	0.084	0.076		
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	1	8	15	22	29	36	43	50	57	64	71	78	85	92	99	106	113	120	127	134	141		
WCDMA B4	RMC12.2K	1712.4	1312	N/A	N/A	Left Cheek	0mm	0.137	0.157	0.059	0.125	0.142	0.144	0.146	0.029	0.101	0.112	0.113	0.111	0.097	0.083	0.062	0.021	0.102	0.139	0.147	0.154	0.139	0.109	0.105		
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	2	9	16	23	30	37	44	51	58	65	72	79	86	93	100	107	114	121	128	135	142		
WCDMA B5	RMC12.2K	826.4	4132	N/A	N/A	Left Cheek	0mm	0.274	0.302	0.033	0.129	0.271	0.239	0.186	0.031	0.125	0.301	0.244	0.194	0.105	0.101	0.205	0.027	0.046	0.164	0.283	0.218	0.079	0.251	0.079		
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	3	10	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143		
LTE B2	QPSK	1880	18900	1	0	Right Cheek	0mm	0.077	0.088	0.087	0.078	0.072	0.066	0.063	0.085	0.087	0.081	0.076	0.073	0.055	0.067	0.056	0.084	0.063	0.052	0.046	0.041	0.055	0.081	0.07		
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	4	11	18	25	32	39	46	53	60	67	74	81	88	95	102	109	116	123	130	137			
LTE B5	QPSK	836.5	20525	1	25	Left Cheek	0mm	0.294	0.306	0.075	0.216	0.275	0.222	0.121	0.072	0.224	0.291	0.229	0.186	0.122	0.129	0.251	0.059	0.094	0.235	0.262	0.188	0.059	0.282			
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	5	12	19	26	33	40	47	54	61	68	75	82	89	96	103	110	117	124	131	138			
LTE B12	QPSK	707.5	23095	1	25	Left Cheek	0mm	0.198	0.196	0.028	0.038	0.054	0.077	0.181	0.026	0.035	0.051	0.073	0.174	0.186	0.172	0.051	0.022	0.024	0.028	0.034	0.085	0.022	0.041			
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																							
									Auto-Tune	6	13	20	27	34	41	48	55	62	69	76	83	90	97	104	111	118	125	132	139			
LTE B66	QPSK	1720	132072	1	49	Left Cheek	0mm	0.201	0.288	0.232	0.272	0.281	0.285	0.233	0.171	0.211	0.214	0.215	0.183	0.153	0.108	0.061	0.155	0.251	0.275	0.287	0.257	0.191	0.205			

15.2 Supplemental Body SAR results

Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
WCDMA B2	RMC12.2K	1880	9400	N/A	N/A	Back	5mm	0.945	1.41	1.172	1.339	1.403	1.359	1.313	1.192	1.371	1.341	1.401	1.352	1.157	1.081	1.066	1.043	1.385	1.202	1.126	1.053	0.8055	1.398	1.342
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	1	8	15	22	29	36	43	50	57	64	71	78	85	92	99	106	113	120	127	134	141
WCDMA B4	RMC12.2K	1732.6	1413	N/A	N/A	Back	5mm	1.12	1.701	0.696	1.446	1.66	1.694	1.616	0.337	1.161	1.301	1.319	1.315	1.165	0.989	0.669	0.259	1.142	1.497	1.617	1.673	1.624	1.141	1.209
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	2	9	16	23	30	37	44	51	58	65	72	79	86	93	100	107	114	121	128	135	142
WCDMA B5	RMC12.2K	846.6	4233	N/A	N/A	Back	5mm	0.817	0.961	0.0672	0.615	0.844	0.604	0.462	0.055	0.63	0.856	0.616	0.473	0.259	0.251	0.793	0.0868	0.156	0.772	0.675	0.413	0.155	0.798	0.167
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	3	10	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143
LTE B2	QPSK	1880	18900	1	0	Bottom Side	5mm	0.89	1.147	1.143	1.092	1.139	1.095	1.055	1.146	1.126	1.102	1.146	1.125	0.871	1.016	0.6495	1.05	1.091	1.091	1.015	0.9587	0.724	1.126	1.066
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	4	11	18	25	32	39	46	53	60	67	74	81	88	95	102	109	116	123	130	137	
LTE B5	QPSK	836.5	20525	1	25	Back	5mm	0.849	1.28	0.203	1.126	1.088	0.8007	0.364	0.177	1.194	1.126	0.811	0.636	0.369	0.427	1.172	0.046	0.389	1.059	0.779	0.526	0.055	1.002	
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	5	12	19	26	33	40	47	54	61	68	75	82	89	96	103	110	117	124	131	138	
LTE B12	QPSK	707.5	23095	1	25	Back	5mm	0.272	0.847	0.047	0.116	0.236	0.396	0.814	0.034	0.102	0.219	0.376	0.813	0.835	0.732	0.206	0.013	0.0288	0.0566	0.0976	0.467	0.0155	0.154	
Mode	Service/ Modulation	Frequency (MHz)	Channel	RB Size	RB Offset	Test Position	Spacing	Measured 1g SAR (W/kg)	Average Value of Time Sweep (W/kg)																						
									Auto-Tune	6	13	20	27	34	41	48	55	62	69	76	83	90	97	104	111	118	125	132	139	
LTE B66	QPSK	1720	132072	100	0	Back	5mm	1.19	1.78	1.409	1.706	1.773	1.726	1.64	1.048	1.344	1.393	1.411	1.296	1.1	0.727	0.458	0.901	1.424	1.607	1.722	1.69	1.223	1.33	

Test Engineer： Mood Huang, Ted Hsieh, Kurt Liu, Randy Lin, Iran Wang, Galen Chang, Willy Yu, Andy Jiang and Bevis Chang

16. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

17. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[6] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

[8] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[9] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[10] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[11] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

[12] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[13] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.