FCC SAR Test Report

APPLICANT	:	Motorola Mobility, LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	9653
FCC ID	:	IHDT56WA1
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA720310	Rev. 01	Initial issue of report	Mar. 20, 2017

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Motorola Mobility, LLC, Mobile Cellular Phone, 9653 are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 10mm)	Hotspot (Separation 10mm)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.36	1.15	1.15		1.59
	GSM1900	0.27	0.72	0.73		
	WCDMA II	0.56	1.20	1.20	3.68	
	WCDMA IV	0.63	0.90	0.99		
	WCDMA V	0.41	0.98	0.98	2.16	
	CDMA BC0	0.42	1.16	1.17		
	CDMA BC1	0.48	1.16	1.19	3.28	
	CDMA BC10	0.50	0.82	0.81	1.51	
	LTE Band 2	0.49	0.99	1.06	3.43	
	LTE Band 4	0.62	1.08	1.08	2.59	
	LTE Band 5	0.47	0.89	0.89		
	LTE Band 7	0.56	1.03	1.03		
	LTE Band 12	0.29	0.99	0.99	1.77	
	LTE Band 13	0.43	1.19	1.19	2.30	
	LTE Band 17	0.36	0.95	1.10	1.96	
	LTE Band 25	0.71	1.04	1.12	2.96	
	LTE Band 26	0.41	1.05	1.05		
	LTE Band 30	0.32	1.19	1.19	2.46	
	LTE Band 38	0.29	0.58	0.68		
	LTE Band 41	0.32	0.79	0.91		
	LTE Band 66	0.53	0.97	0.99	3.12	
DTS	2.4GHz WLAN	1.29	0.40	0.40		1.59
NII	5GHz WLAN	1.30	0.54	0.47	2.76	1.59
DSS	Bluetooth		0.07			1.59
Date of Testing:		2017/2/18 ~ 2017/3/16				

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body, 4.0 W/kg for Product Specific) 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

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	Motorola Mobility, LLC
Address	222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

Manufacturer	
Company Name	Motorola Mobility, LLC
Address	222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

3. 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

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	9653
FCC ID	IHDT56WA1
IMEI Code	351884080020987
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 CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 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 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 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 ~ 5720 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 CDMA2000 : 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) LTE: QPSK, 16QAM 802.11a/b/g/n HT20/HT40 Bluetooth BR/EDR/LE NFC:ASK
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. This device 2.4GHz / 5.2GHz / 5.8GHz WLAN supports Hotspot operation.
2. When the device operating under different conditions of At-Head, body-worn, near-body, hotspot and free space will limit different maximum output powers in several cellular transmitters and the detail mechanisms description of the different output power levels are included in the operation description.
3. The device used different output power mechanisms for SAR compliance for WLAN transmitter for held-to-are exposure conditions and detail descriptions of the output power mechanism are included in the operational description.
4. This device implements antenna tuning techniques for several WWAN (cellular) operating modes for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in several frequency bands. 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 section16.

4.2 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>IHDT56WA1</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 13: 779.5 MHz ~ 784.5 MHz
LTE Band 17: 706.5 MHz ~ 713.5 MHz
LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
LTE Band 26: 814.7 MHz ~ 848.3 MHz
LTE Band 30: 2307.5 MHz ~ 2312.5 MHz
LTE Band 38: 2572.5 MHz ~ 2617.5 MHz
LTE Band 41: 2498.5 MHz ~ 2687.5 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 13: 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 30: 5MHz, 10MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK, and 16QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>1. Voice and data.</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 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (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>
</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 the device operating under different conditions of At-Head, body-worn, near-body, hotspot and free space will limit different maximum output powers in several cellular transmitters and the detail mechanisms description of the different output power levels are included in the operation description.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations as below page and the detail power verification please referred to section 12.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>This device does not support full CA features on 3GPP Release 10. It supports a maximum of 2 carriers in the downlink only. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. Due to carrier capability, only the combinations listed above are supported. The 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 13

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

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 25

	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	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	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	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41								
	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	39675	2498.5	39700	2501	39725	2503.5	39750	2506
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

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

5. RF Exposure Limits

5.1 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.

5.2 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.

6. Specific Absorption Rate (SAR)

6.1 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.

6.2 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:

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

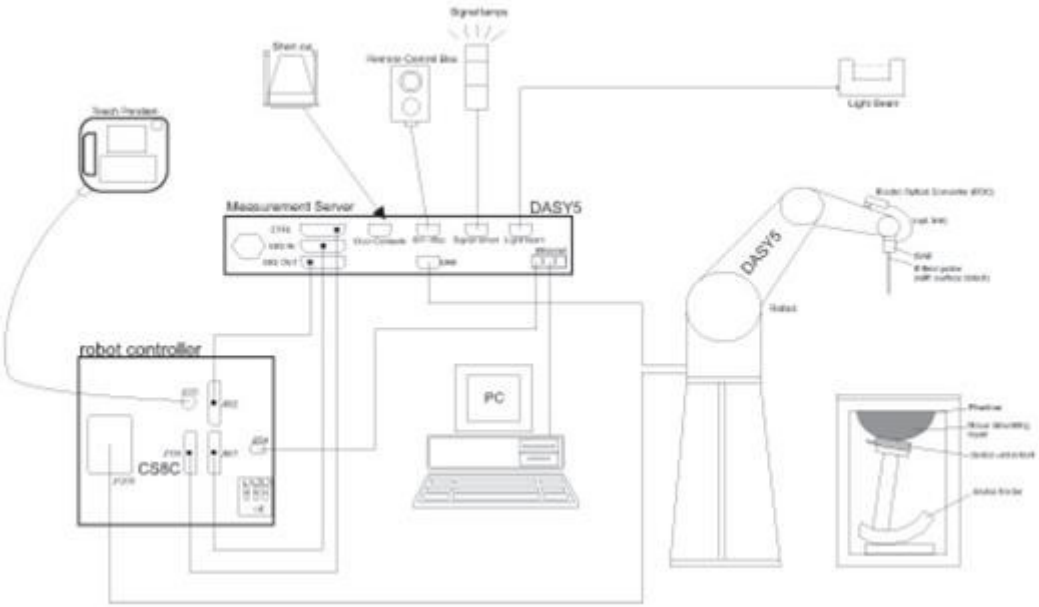
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. 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.

7.1 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	

7.2 Data Acquisition Electronics (DAE)

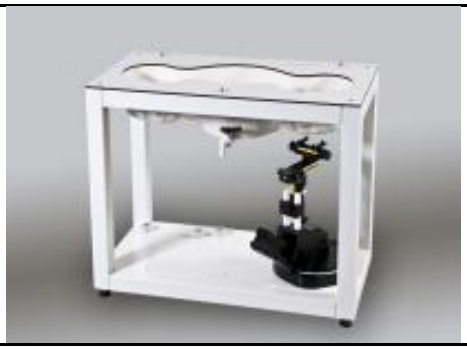
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an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

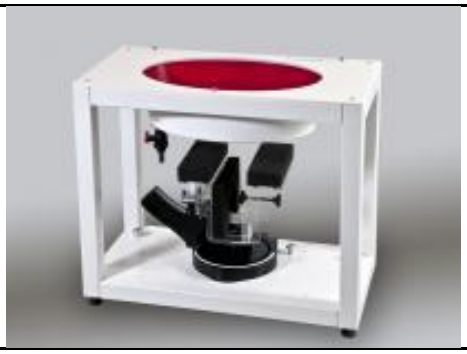
7.3 Phantom

<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.

7.4 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

8. 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

8.1 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

8.2 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.

8.3 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.	

8.4 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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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.

8.5 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.

8.6 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.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	May. 18, 2016	May. 17, 2017
SPEAG	835MHz System Validation Kit	D835V2	499	Mar. 21, 2016	Mar. 20, 2017
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 16, 2016	Nov. 15, 2017
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Sep. 30, 2016	Sep. 29, 2017
SPEAG	2300MHz System Validation Kit	D2300V2	1006	Jan. 25, 2017	Jan. 24, 2018
SPEAG	2450MHz System Validation Kit	D2450V2	926	Jul. 25, 2016	Jul. 24, 2017
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Aug. 30, 2016	Aug. 29, 2017
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	Sep. 27, 2016	Sep. 26, 2017
SPEAG	Data Acquisition Electronics	DAE4	778	May. 12, 2016	May. 11, 2017
SPEAG	Data Acquisition Electronics	DAE3	495	May. 27, 2016	May. 26, 2017
SPEAG	Data Acquisition Electronics	DAE4	1399	Nov. 17, 2016	Nov. 16, 2017
SPEAG	Data Acquisition Electronics	DAE4	914	Jan. 06, 2017	Jan. 05, 2018
SPEAG	Data Acquisition Electronics	DAE3	577	Sep. 28, 2016	Sep. 27, 2017
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Aug. 26, 2016	Aug. 25, 2017
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	May. 26, 2016	May. 25, 2017
SPEAG	Dosimetric E-Field Probe	EX3DV4	3955	Nov. 24, 2016	Nov. 23, 2017
SPEAG	Dosimetric E-Field Probe	EX3DV4	3578	May. 11, 2016	May. 10, 2017
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Oct. 03, 2016	Oct. 02, 2017
WonDer	Thermometer	WD-5015	TM642	Oct. 12, 2016	Oct. 11, 2017
WonDer	Thermometer	WD-5015	TM281	Oct. 12, 2016	Oct. 11, 2017
Wisewind	Thermometer	HTC-1	TM560	Oct. 12, 2016	Oct. 11, 2017
Wisewind	Thermometer	HTC-1	TM225	Oct. 12, 2016	Oct. 11, 2017
Anritsu	Radio Communication Analyzer	MT8820C	6200930978	May. 03, 2016	May. 02, 2017
Anritsu	Radio Communication Analyzer	MT8820C	6201381760	May. 10, 2016	May. 09, 2017
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 17, 2016	May. 16, 2017
R&S	BT Base Station	CBT32	100519	Jun. 03, 2016	Jun. 02, 2017
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Dec. 09, 2016	Dec. 08, 2017
Agilent	ENA Network Analyzer	E5071C	MY46316648	Jan. 04, 2017	Jan. 03, 2018
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Jul. 19, 2016	Jul. 18, 2017
LINE SEIKI	Digital Thermometer	LKMelectronic	DTM3000SPEZIAL	Sep. 05, 2016	Sep. 04, 2017
Anritsu	Power Meter	ML2495A	1419002	May. 10, 2016	May. 09, 2017
Anritsu	Power Sensor	MA2411B	1339124	May. 10, 2016	May. 09, 2017
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 22, 2016	Aug. 21, 2017
Mini-Circuits	Power Amplifier	ZVE-8G+	D120604	Mar. 20, 2016	Mar. 19, 2017
Mini-Circuits	Power Amplifier	ZHL-42W+	QA1344002	Mar. 20, 2016	Mar. 19, 2017
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.

10. System Verification

10.1 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.

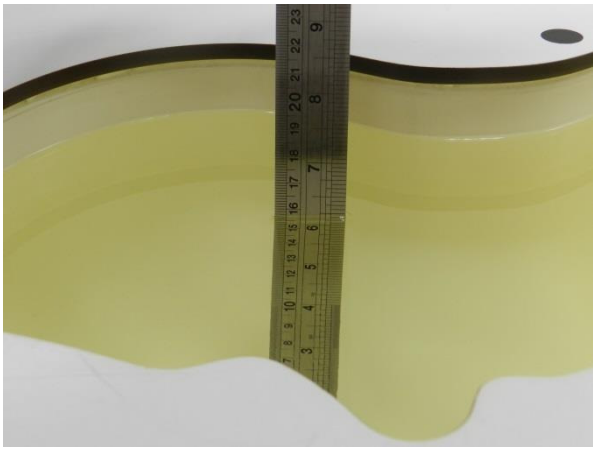


Fig 10.1Photo of Liquid Height for Head SAR

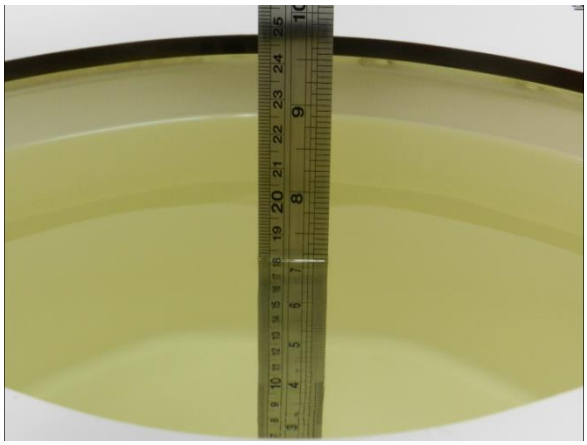


Fig 10.2 Photo of Liquid Height for Body SAR

10.2 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	22.6	0.884	43.451	0.89	41.90	-0.67	3.70	±5	2017/2/22
750	MSL	22.7	0.969	53.070	0.96	55.50	0.94	-4.38	±5	2017/3/4
835	HSL	22.4	0.886	43.265	0.90	41.50	-1.56	4.25	±5	2017/2/19
835	HSL	22.5	0.900	42.550	0.90	41.50	0.00	2.53	±5	2017/3/16
835	MSL	22.2	0.983	53.989	0.97	55.20	1.34	-2.19	±5	2017/3/2
835	MSL	22.2	0.983	53.989	0.97	55.20	1.34	-2.19	±5	2017/3/2
835	MSL	22.4	0.976	54.101	0.97	55.20	0.62	-1.99	±5	2017/3/3
835	MSL	22.5	1.015	53.537	0.97	55.20	4.64	-3.01	±5	2017/3/9
835	MSL	22.5	0.947	54.756	0.97	55.20	-2.37	-0.80	±5	2017/3/16
1750	HSL	22.4	1.370	38.672	1.37	40.10	0.00	-3.56	±5	2017/3/3
1750	HSL	22.3	1.364	38.512	1.37	40.10	-0.44	-3.96	±5	2017/3/8
1750	MSL	22.6	1.452	53.550	1.49	53.40	-2.55	0.28	±5	2017/2/28
1750	MSL	22.7	1.503	55.178	1.49	53.40	0.87	3.33	±5	2017/3/6
1900	HSL	22.3	1.418	40.270	1.40	40.00	1.29	0.68	±5	2017/2/24
1900	HSL	22.6	1.388	39.981	1.40	40.00	-0.86	-0.05	±5	2017/3/9
1900	MSL	22.4	1.572	55.371	1.52	53.30	3.42	3.89	±5	2017/2/26
1900	MSL	22.6	1.532	51.624	1.52	53.30	0.79	-3.14	±5	2017/2/27
1900	MSL	22.7	1.519	52.969	1.52	53.30	-0.07	-0.62	±5	2017/3/5
2300	HSL	22.1	1.646	41.078	1.67	39.50	-1.44	3.99	±5	2017/3/8
2300	MSL	22.1	1.820	52.941	1.81	52.90	0.55	0.08	±5	2017/3/8
2450	HSL	22.3	1.820	40.500	1.80	39.20	1.11	3.32	±5	2017/3/8
2450	MSL	22.2	1.980	54.100	1.95	52.70	1.54	2.66	±5	2017/3/9
2600	HSL	22.8	1.945	38.628	1.96	39.00	-0.77	-0.95	±5	2017/2/18
2600	HSL	22.5	2.044	37.752	1.96	39.00	4.29	-3.20	±5	2017/3/4
2600	HSL	22.1	1.994	39.923	1.96	39.00	1.73	2.37	±5	2017/3/8
2600	MSL	22.1	2.233	51.922	2.16	52.50	3.38	-1.10	±5	2017/3/7
2600	MSL	22.1	2.232	52.761	2.16	52.50	3.33	0.50	±5	2017/3/8
5250	HSL	22.7	4.680	37.300	4.71	35.95	-0.64	3.76	±5	2017/3/6
5250	MSL	22.7	5.530	47.600	5.36	48.95	3.17	-2.76	±5	2017/3/4
5250	MSL	22.1	5.500	46.800	5.36	48.95	2.61	-4.39	±5	2017/3/8
5600	HSL	22.7	5.030	36.800	5.07	35.50	-0.79	3.66	±5	2017/3/6
5600	MSL	22.7	6.000	47.000	5.77	48.50	3.99	-3.09	±5	2017/3/4
5600	MSL	22.1	5.960	46.200	5.77	48.50	3.29	-4.74	±5	2017/3/8
5750	HSL	22.7	5.190	36.600	5.22	35.35	-0.57	3.54	±5	2017/3/6
5750	MSL	22.2	6.170	45.900	5.94	48.28	3.87	-4.93	±5	2017/3/10

<Tissue Dielectric Parameter Check for Low / Middle / High Frequencies>

General Note:

The tissue measure results for low / middle / high frequencies list below, the results were used in the Dasy SAR system to perform interpolation to determine the dielectric parameters on the SAR test device. The SAR test plots may slightly difference between the tables below due to the digit rounding in the software calculated.

CH	Frequency (MHz)	Liquid Type	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
20850	2510	Head	1.844	38.942	1.864	39.120	-0.86	-0.41	±5	Feb. 18, 2017
21100	2535	Head	1.879	38.867	1.891	39.087	-0.57	-0.60	±5	Feb. 18, 2017
21350	2560	Head	1.901	38.814	1.917	39.053	-0.97	-0.73	±5	Feb. 18, 2017
20450	829	Head	0.881	43.333	0.899	41.528	-2.10	4.42	±5	Feb. 19, 2017
20525	836.5	Head	0.888	43.245	0.902	41.500	-1.38	4.20	±5	Feb. 19, 2017
20600	844	Head	0.895	43.162	0.910	41.500	-1.69	4.00	±5	Feb. 19, 2017
26765	821.5	Head	0.875	43.422	0.898	41.564	-2.83	4.38	±5	Feb. 19, 2017
26865	831.5	Head	0.883	43.304	0.900	41.516	-1.86	4.35	±5	Feb. 19, 2017
26965	841.5	Head	0.892	43.190	0.907	41.500	-1.94	4.07	±5	Feb. 19, 2017
128	824.2	Head	0.891	42.688	0.899	41.551	-1.05	2.62	±5	Mar. 16, 2017
189	836.4	Head	0.902	42.531	0.902	41.500	0.19	2.48	±5	Mar. 16, 2017
251	848.8	Head	0.914	42.368	0.915	41.500	0.40	2.09	±5	Mar. 16, 2017
4132	826.4	Head	0.879	43.365	0.899	41.540	-2.36	4.49	±5	Feb. 19, 2017
4182	836.4	Head	0.887	43.246	0.902	41.500	-1.40	4.21	±5	Feb. 19, 2017
4233	846.6	Head	0.897	43.134	0.912	41.500	-1.42	3.94	±5	Feb. 19, 2017
476	817.9	Head	0.871	43.467	0.898	41.580	-3.20	4.49	±5	Feb. 19, 2017
580	820.5	Head	0.874	43.432	0.898	41.568	-2.92	4.40	±5	Feb. 19, 2017
670	822.75	Head	0.876	43.401	0.899	41.556	-2.67	4.33	±5	Feb. 19, 2017
1013	824.7	Head	0.877	43.384	0.899	41.548	-2.51	4.54	±5	Feb. 19, 2017
384	836.52	Head	0.888	43.245	0.902	41.500	-1.38	4.20	±5	Feb. 19, 2017
777	848.31	Head	0.899	43.117	0.914	41.500	-1.25	3.90	±5	Feb. 19, 2017
23060	704	Head	0.850	44.066	0.887	42.145	-4.50	4.67	±5	Feb. 22, 2017
23095	707.5	Head	0.853	44.020	0.887	42.127	-4.14	4.56	±5	Feb. 22, 2017
23130	711	Head	0.852	43.976	0.887	42.108	-4.22	4.45	±5	Feb. 22, 2017
23230	782	Head	0.916	43.021	0.894	42.145	2.91	2.19	±5	Feb. 22, 2017
23780	709	Head	0.855	44.002	0.887	42.119	-3.99	4.52	±5	Feb. 22, 2017
23790	710	Head	0.855	43.989	0.887	42.113	-3.90	4.49	±5	Feb. 22, 2017
23800	711	Head	0.852	43.976	0.887	42.108	-4.22	4.45	±5	Feb. 22, 2017
18700	1860	Head	1.379	40.443	1.400	40.000	-1.52	1.11	±5	Feb. 24, 2017
18900	1880	Head	1.398	40.365	1.400	40.000	-0.17	0.91	±5	Feb. 24, 2017
19100	1900	Head	1.418	40.270	1.400	40.000	1.30	0.67	±5	Feb. 24, 2017
26140	1860	Head	1.379	40.443	1.400	40.000	-1.52	1.11	±5	Feb. 24, 2017
26340	1880	Head	1.398	40.365	1.400	40.000	-0.17	0.91	±5	Feb. 24, 2017
26590	1905	Head	1.423	40.251	1.400	40.000	1.66	0.63	±5	Feb. 24, 2017
9262	1852.4	Head	1.371	40.460	1.400	40.000	-2.07	1.15	±5	Feb. 24, 2017
9400	1880	Head	1.398	40.360	1.400	40.000	-0.14	0.90	±5	Feb. 24, 2017
9538	1907.6	Head	1.426	40.240	1.400	40.000	1.86	0.60	±5	Feb. 24, 2017
18700	1860	Body	1.524	55.544	1.520	53.300	0.28	4.21	±5	Feb. 26, 2017
18900	1880	Body	1.547	55.462	1.520	53.300	1.79	4.06	±5	Feb. 26, 2017
19100	1900	Body	1.572	55.371	1.520	53.300	3.40	3.89	±5	Feb. 26, 2017
26140	1860	Body	1.524	55.544	1.520	53.300	0.28	4.21	±5	Feb. 26, 2017
26340	1880	Body	1.547	55.462	1.520	53.300	1.79	4.06	±5	Feb. 26, 2017
26590	1905	Body	1.577	55.351	1.520	53.300	3.78	3.85	±5	Feb. 26, 2017

Table of Low/Middle/High Channel for Liquid Validation

CH	Frequency (MHz)	Liquid Type	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Delta (σ) (%)	Delta (εr) (%)	Limit (%)	Date
25	1851.25	Body	1.482	51.814	1.520	53.300	-2.52	-2.79	±5	Feb. 27, 2017
600	1880	Body	1.510	51.705	1.520	53.300	-0.67	-2.99	±5	Feb. 27, 2017
1175	1908.75	Body	1.540	51.585	1.520	53.300	1.34	-3.22	±5	Feb. 27, 2017
9262	1852.4	Body	1.483	51.809	1.520	53.300	-2.43	-2.80	±5	Feb. 27, 2017
9400	1880	Body	1.510	51.705	1.520	53.300	-0.67	-2.99	±5	Feb. 27, 2017
9538	1907.6	Body	1.539	51.589	1.520	53.300	1.26	-3.21	±5	Feb. 27, 2017
18700	1860	Body	1.490	51.787	1.520	53.300	-1.96	-2.84	±5	Feb. 27, 2017
18900	1880	Body	1.510	51.705	1.520	53.300	-0.67	-2.99	±5	Feb. 27, 2017
19100	1900	Body	1.532	51.624	1.520	53.300	0.76	-3.14	±5	Feb. 27, 2017
26140	1860	Body	1.490	51.787	1.520	53.300	-1.96	-2.84	±5	Feb. 27, 2017
26340	1880	Body	1.510	51.705	1.520	53.300	-0.67	-2.99	±5	Feb. 27, 2017
26590	1905	Body	1.536	51.599	1.520	53.300	1.08	-3.19	±5	Feb. 27, 2017
132072	1720	Body	1.422	53.634	1.470	53.496	-3.28	0.25	±5	Feb. 28, 2017
132322	1745	Body	1.447	53.566	1.485	53.420	-2.87	0.31	±5	Feb. 28, 2017
132572	1770	Body	1.471	53.481	1.501	53.355	-1.96	0.15	±5	Feb. 28, 2017
1312	1712.4	Body	1.414	53.658	1.471	53.471	-3.84	0.29	±5	Feb. 28, 2017
1413	1732.6	Body	1.435	53.599	1.481	53.433	-3.04	0.37	±5	Feb. 28, 2017
1513	1752.6	Body	1.455	53.544	1.492	53.395	-2.37	0.27	±5	Feb. 28, 2017
20450	829	Body	0.977	54.067	0.969	55.221	0.77	-2.05	±5	Mar. 02, 2017
20525	836.5	Body	0.985	53.971	0.972	55.195	1.54	-2.23	±5	Mar. 02, 2017
20600	844	Body	0.993	53.880	0.981	55.172	1.29	-2.39	±5	Mar. 02, 2017
128	824.2	Body	0.936	54.870	0.969	55.238	-3.49	-0.60	±5	Mar. 16, 2017
189	836.4	Body	0.948	54.740	0.972	55.196	-2.27	-0.83	±5	Mar. 16, 2017
251	848.8	Body	0.961	54.604	0.987	55.158	-2.96	-1.08	±5	Mar. 16, 2017
1013	824.7	Body	0.974	54.111	0.969	55.236	0.37	-1.97	±5	Mar. 02, 2017
384	836.52	Body	0.985	53.971	0.972	55.195	1.54	-2.23	±5	Mar. 02, 2017
777	848.31	Body	0.997	53.833	0.986	55.159	0.74	-2.48	±5	Mar. 02, 2017
26765	821.5	Body	0.970	54.149	0.968	55.248	0.04	-1.90	±5	Mar. 02, 2017
26865	831.5	Body	0.980	54.033	0.970	55.212	1.03	-2.11	±5	Mar. 02, 2017
26965	841.5	Body	0.990	53.906	0.978	55.180	1.01	-2.34	±5	Mar. 02, 2017
26865	831.5	Body	0.980	54.033	0.968	55.248	1.03	-2.11	±5	Mar. 02, 2017
26915	836.5	Body	0.985	53.971	0.970	55.212	1.54	-2.23	±5	Mar. 02, 2017
26965	841.5	Body	0.990	53.906	0.978	55.180	1.01	-2.34	±5	Mar. 02, 2017
1312	1712.4	Head	1.335	38.832	1.352	40.162	-1.12	-3.40	±5	Mar. 03, 2017
1413	1732.6	Head	1.353	38.743	1.362	40.129	-0.49	-3.38	±5	Mar. 03, 2017
1513	1752.6	Head	1.372	38.664	1.372	40.095	0.14	-3.58	±5	Mar. 03, 2017
4132	826.4	Body	0.968	54.194	0.969	55.230	-0.22	-1.82	±5	Mar. 03, 2017
4182	836.4	Body	0.978	54.086	0.972	55.196	0.80	-2.02	±5	Mar. 03, 2017
4233	846.6	Body	0.988	53.984	0.984	55.164	0.77	-2.20	±5	Mar. 03, 2017
476	817.9	Body	0.959	54.269	0.968	55.260	-1.17	-1.86	±5	Mar. 03, 2017
580	820.5	Body	0.961	54.247	0.968	55.251	-0.91	-1.90	±5	Mar. 03, 2017
670	822.75	Body	0.964	54.226	0.969	55.242	-0.60	-1.76	±5	Mar. 03, 2017
23780	709	Body	0.929	53.583	0.957	55.664	-3.22	-3.80	±5	Mar. 04, 2017
23790	710	Body	0.930	53.572	0.957	55.660	-3.12	-3.82	±5	Mar. 04, 2017
23800	711	Body	0.931	53.555	0.957	55.656	-3.02	-3.85	±5	Mar. 04, 2017
23230	782	Body	1.002	52.678	0.964	55.390	4.33	-4.91	±5	Mar. 04, 2017
23060	704	Body	0.924	53.637	0.957	55.684	-3.71	-3.70	±5	Mar. 04, 2017
23095	707.5	Body	0.928	53.599	0.957	55.670	-3.37	-3.77	±5	Mar. 04, 2017

Table of Low/Middle/High Channel for Liquid Validation

CH	Frequency (MHz)	Liquid Type	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Delta (σ) (%)	Delta (εr) (%)	Limit (%)	Date
23130	711	Body	0.931	53.555	0.957	55.656	-3.02	-3.85	±5	Mar. 04, 2017
20850	2510	Head	1.934	38.092	1.864	39.120	3.99	-2.58	±5	Mar. 04, 2017
21100	2535	Head	1.964	37.999	1.891	39.087	3.93	-2.82	±5	Mar. 04, 2017
21350	2560	Head	1.994	37.901	1.917	39.053	3.85	-3.07	±5	Mar. 04, 2017
37850	2580	Head	2.019	37.821	1.938	39.025	4.08	-3.02	±5	Mar. 04, 2017
38000	2595	Head	2.037	37.768	1.955	39.006	4.47	-3.16	±5	Mar. 04, 2017
38150	2610	Head	2.055	37.714	1.971	38.987	4.31	-3.30	±5	Mar. 04, 2017
39790	2510	Head	1.934	38.092	1.861	39.117	3.99	-2.58	±5	Mar. 04, 2017
39750	2506	Head	1.929	38.109	1.857	39.123	3.74	-2.53	±5	Mar. 04, 2017
40185	2549.5	Head	1.981	37.947	1.904	39.065	4.29	-2.95	±5	Mar. 04, 2017
40620	2593	Head	2.035	37.775	1.952	39.009	4.35	-3.14	±5	Mar. 04, 2017
41055	2636.5	Head	2.088	37.599	2.000	38.954	4.38	-3.59	±5	Mar. 04, 2017
41490	2680	Head	2.138	37.431	2.048	38.899	4.28	-3.78	±5	Mar. 04, 2017
36	5180	Body	5.445	47.717	5.276	49.027	3.13	-2.62	±5	Mar. 04, 2017
38	5190	Body	5.457	47.703	5.288	49.013	3.15	-2.65	±5	Mar. 04, 2017
40	5200	Body	5.467	47.683	5.300	49.000	3.16	-2.69	±5	Mar. 04, 2017
42	5210	Body	5.482	47.662	5.312	48.990	3.24	-2.73	±5	Mar. 04, 2017
44	5220	Body	5.496	47.642	5.323	48.980	3.32	-2.77	±5	Mar. 04, 2017
46	5230	Body	5.513	47.625	5.335	48.970	3.43	-2.81	±5	Mar. 04, 2017
48	5240	Body	5.525	47.621	5.346	48.960	3.28	-2.82	±5	Mar. 04, 2017
52	5260	Body	5.545	47.579	5.370	48.940	3.27	-2.70	±5	Mar. 04, 2017
54	5270	Body	5.562	47.552	5.381	48.930	3.38	-2.76	±5	Mar. 04, 2017
56	5280	Body	5.578	47.537	5.393	48.920	3.48	-2.79	±5	Mar. 04, 2017
58	5290	Body	5.591	47.528	5.404	48.910	3.54	-2.81	±5	Mar. 04, 2017
60	5300	Body	5.601	47.511	5.416	48.900	3.33	-2.84	±5	Mar. 04, 2017
62	5310	Body	5.613	47.490	5.428	48.787	3.38	-2.68	±5	Mar. 04, 2017
64	5320	Body	5.627	47.471	5.439	48.673	3.44	-2.52	±5	Mar. 04, 2017
100	5500	Body	5.865	47.173	5.650	48.600	3.80	-2.94	±5	Mar. 04, 2017
102	5510	Body	5.878	47.161	5.661	48.590	3.85	-2.96	±5	Mar. 04, 2017
104	5520	Body	5.889	47.142	5.673	48.580	3.86	-3.00	±5	Mar. 04, 2017
106	5530	Body	5.904	47.122	5.685	48.570	3.94	-3.04	±5	Mar. 04, 2017
108	5540	Body	5.918	47.103	5.696	48.560	3.83	-3.08	±5	Mar. 04, 2017
110	5550	Body	5.935	47.086	5.708	48.550	3.94	-3.12	±5	Mar. 04, 2017
112	5560	Body	5.948	47.077	5.720	48.540	3.99	-2.93	±5	Mar. 04, 2017
116	5580	Body	5.972	47.037	5.743	48.520	4.04	-3.02	±5	Mar. 04, 2017
120	5600	Body	6.004	47.004	5.770	48.500	4.05	-3.08	±5	Mar. 04, 2017
122	5610	Body	6.018	46.992	5.778	48.485	4.11	-3.11	±5	Mar. 04, 2017
124	5620	Body	6.029	46.979	5.790	48.470	4.14	-3.14	±5	Mar. 04, 2017
126	5630	Body	6.043	46.959	5.801	48.455	4.19	-3.18	±5	Mar. 04, 2017
128	5640	Body	6.057	46.942	5.813	48.440	4.26	-3.01	±5	Mar. 04, 2017
132	5660	Body	6.088	46.911	5.837	48.410	4.24	-3.08	±5	Mar. 04, 2017
134	5670	Body	6.099	46.906	5.848	48.395	4.26	-3.09	±5	Mar. 04, 2017
136	5680	Body	6.110	46.886	5.860	48.380	4.27	-3.13	±5	Mar. 04, 2017
138	5690	Body	6.125	46.858	5.872	48.365	4.35	-3.19	±5	Mar. 04, 2017
140	5700	Body	6.142	46.842	5.883	48.350	4.45	-3.22	±5	Mar. 04, 2017
142	5710	Body	6.157	46.831	5.895	48.335	4.52	-3.04	±5	Mar. 04, 2017
144	5720	Body	6.170	46.818	5.907	48.320	4.39	-3.07	±5	Mar. 04, 2017
149	5745	Body	6.204	46.776	5.936	48.283	4.44	-3.16	±5	Mar. 04, 2017

Table of Low/Middle/High Channel for Liquid Validation

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151	5755	Body	6.218	46.753	5.947	48.268	4.51	-3.20	±5	Mar. 04, 2017
153	5765	Body	6.235	46.741	5.959	48.253	4.61	-3.23	±5	Mar. 04, 2017
155	5775	Body	6.246	46.732	5.971	48.238	4.62	-3.05	±5	Mar. 04, 2017
157	5785	Body	6.258	46.713	5.982	48.223	4.64	-3.08	±5	Mar. 04, 2017
159	5795	Body	6.272	46.687	5.994	48.208	4.70	-3.14	±5	Mar. 04, 2017
161	5805	Body	6.289	46.670	6.000	48.200	4.82	-3.17	±5	Mar. 04, 2017
165	5825	Body	6.316	46.651	6.030	48.200	4.75	-3.21	±5	Mar. 04, 2017
25	1851.25	Body	1.471	53.155	1.520	53.300	-3.22	-0.27	±5	Mar. 05, 2017
600	1880	Body	1.498	53.055	1.520	53.300	-1.44	-0.46	±5	Mar. 05, 2017
1175	1908.75	Body	1.528	52.945	1.520	53.300	0.51	-0.67	±5	Mar. 05, 2017
512	1850.2	Body	1.470	53.159	1.520	53.300	-3.28	-0.26	±5	Mar. 05, 2017
661	1880	Body	1.498	53.055	1.520	53.300	-1.44	-0.46	±5	Mar. 05, 2017
810	1909.8	Body	1.529	52.941	1.520	53.300	0.58	-0.67	±5	Mar. 05, 2017
18700	1860	Body	1.479	53.135	1.520	53.300	-2.68	-0.31	±5	Mar. 05, 2017
18900	1880	Body	1.498	53.055	1.520	53.300	-1.44	-0.46	±5	Mar. 05, 2017
19100	1900	Body	1.519	52.969	1.520	53.300	-0.04	-0.62	±5	Mar. 05, 2017
26140	1860	Body	1.479	53.135	1.520	53.300	-2.68	-0.31	±5	Mar. 05, 2017
26340	1880	Body	1.498	53.055	1.520	53.300	-1.44	-0.46	±5	Mar. 05, 2017
26590	1905	Body	1.524	52.955	1.520	53.300	0.28	-0.65	±5	Mar. 05, 2017
20050	1720	Body	1.469	55.271	1.474	53.456	-0.08	3.31	±5	Mar. 06, 2017
20175	1732.5	Body	1.483	55.233	1.481	53.433	0.18	3.43	±5	Mar. 06, 2017
20300	1745	Body	1.497	55.192	1.487	53.409	0.48	3.36	±5	Mar. 06, 2017
1312	1712.4	Body	1.460	55.294	1.471	53.471	-0.65	3.35	±5	Mar. 06, 2017
1413	1732.6	Body	1.483	55.233	1.481	53.433	0.18	3.43	±5	Mar. 06, 2017
1513	1752.6	Body	1.505	55.173	1.492	53.395	1.03	3.32	±5	Mar. 06, 2017
132072	1720	Body	1.469	55.271	1.470	53.496	-0.08	3.31	±5	Mar. 06, 2017
132322	1745	Body	1.497	55.192	1.485	53.420	0.48	3.36	±5	Mar. 06, 2017
132572	1770	Body	1.524	55.112	1.501	53.355	1.59	3.21	±5	Mar. 06, 2017
36	5180	Head	4.609	37.400	4.639	36.020	-0.67	3.89	±5	Mar. 06, 2017
38	5190	Head	4.619	37.390	4.650	36.010	-0.67	3.86	±5	Mar. 06, 2017
40	5200	Head	4.627	37.370	4.660	36.000	-0.71	3.81	±5	Mar. 06, 2017
42	5210	Head	4.638	37.350	4.670	35.990	-0.69	3.75	±5	Mar. 06, 2017
44	5220	Head	4.651	37.340	4.680	35.980	-0.62	3.72	±5	Mar. 06, 2017
46	5230	Head	4.664	37.320	4.690	35.970	-0.55	3.67	±5	Mar. 06, 2017
48	5240	Head	4.675	37.320	4.700	35.960	-0.53	3.67	±5	Mar. 06, 2017
52	5260	Head	4.686	37.290	4.720	35.940	-0.72	3.87	±5	Mar. 06, 2017
54	5270	Head	4.698	37.270	4.730	35.930	-0.68	3.82	±5	Mar. 06, 2017
56	5280	Head	4.710	37.260	4.740	35.920	-0.63	3.79	±5	Mar. 06, 2017
58	5290	Head	4.720	37.240	4.750	35.910	-0.63	3.73	±5	Mar. 06, 2017
60	5300	Head	4.728	37.230	4.760	35.900	-0.67	3.70	±5	Mar. 06, 2017
62	5310	Head	4.737	37.210	4.770	35.890	-0.69	3.65	±5	Mar. 06, 2017
64	5320	Head	4.750	37.190	4.781	35.870	-0.63	3.59	±5	Mar. 06, 2017
100	5500	Head	4.926	36.960	4.967	35.630	-0.89	3.82	±5	Mar. 06, 2017
102	5510	Head	4.936	36.950	4.977	35.620	-0.88	3.79	±5	Mar. 06, 2017
104	5520	Head	4.945	36.930	4.987	35.610	-0.90	3.74	±5	Mar. 06, 2017
106	5530	Head	4.958	36.910	4.998	35.590	-0.84	3.68	±5	Mar. 06, 2017
108	5540	Head	4.972	36.900	5.008	35.580	-0.76	3.65	±5	Mar. 06, 2017
110	5550	Head	4.985	36.890	5.018	35.570	-0.70	3.62	±5	Mar. 06, 2017
112	5560	Head	4.995	36.890	5.029	35.550	-0.70	3.62	±5	Mar. 06, 2017

Table of Low/Middle/High Channel for Liquid Validation

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116	5580	Head	5.009	36.850	5.049	35.530	-0.81	3.80	±5	Mar. 06, 2017
120	5600	Head	5.034	36.820	5.070	35.500	-0.71	3.72	±5	Mar. 06, 2017
122	5610	Head	5.044	36.810	5.080	35.490	-0.71	3.69	±5	Mar. 06, 2017
124	5620	Head	5.053	36.800	5.090	35.480	-0.73	3.66	±5	Mar. 06, 2017
126	5630	Head	5.063	36.780	5.100	35.470	-0.73	3.61	±5	Mar. 06, 2017
128	5640	Head	5.077	36.760	5.110	35.460	-0.65	3.55	±5	Mar. 06, 2017
132	5660	Head	5.103	36.740	5.130	35.440	-0.53	3.79	±5	Mar. 06, 2017
134	5670	Head	5.109	36.740	5.140	35.430	-0.60	3.79	±5	Mar. 06, 2017
136	5680	Head	5.114	36.730	5.150	35.420	-0.70	3.76	±5	Mar. 06, 2017
138	5690	Head	5.125	36.700	5.160	35.410	-0.68	3.67	±5	Mar. 06, 2017
140	5700	Head	5.139	36.680	5.170	35.400	-0.60	3.62	±5	Mar. 06, 2017
142	5710	Head	5.151	36.670	5.180	35.390	-0.56	3.59	±5	Mar. 06, 2017
144	5720	Head	5.159	36.660	5.190	35.380	-0.60	3.56	±5	Mar. 06, 2017
149	5745	Head	5.187	36.620	5.215	35.360	-0.63	3.45	±5	Mar. 06, 2017
151	5755	Head	5.201	36.610	5.225	35.350	-0.55	3.42	±5	Mar. 06, 2017
153	5765	Head	5.213	36.600	5.235	35.340	-0.52	3.68	±5	Mar. 06, 2017
155	5775	Head	5.220	36.600	5.245	35.330	-0.57	3.68	±5	Mar. 06, 2017
157	5785	Head	5.225	36.590	5.255	35.320	-0.67	3.65	±5	Mar. 06, 2017
159	5795	Head	5.235	36.560	5.265	35.310	-0.66	3.57	±5	Mar. 06, 2017
161	5805	Head	5.249	36.540	5.275	35.300	-0.59	3.51	±5	Mar. 06, 2017
165	5825	Head	5.269	36.520	5.296	35.280	-0.58	3.46	±5	Mar. 06, 2017
20850	2510	Body	2.103	52.279	2.034	52.620	3.61	-0.61	±5	Mar. 07, 2017
21100	2535	Body	2.139	52.179	2.069	52.587	3.33	-0.80	±5	Mar. 07, 2017
21350	2560	Body	2.174	52.079	2.104	52.553	3.53	-0.99	±5	Mar. 07, 2017
39790	2510	Body	2.103	52.280	2.030	52.620	3.60	-0.61	±5	Mar. 07, 2017
39750	2506	Body	2.098	52.300	2.030	52.630	3.35	-0.57	±5	Mar. 07, 2017
40185	2549.5	Body	2.160	52.120	2.090	52.570	3.35	-0.91	±5	Mar. 07, 2017
40620	2593	Body	2.222	51.950	2.150	52.520	3.35	-1.05	±5	Mar. 07, 2017
41055	2636.5	Body	2.283	51.770	2.210	52.460	3.30	-1.39	±5	Mar. 07, 2017
41490	2680	Body	2.343	51.590	2.280	52.410	2.76	-1.55	±5	Mar. 07, 2017
37850	2580	Body	2.203	52.823	2.131	52.535	3.44	0.62	±5	Mar. 07, 2017
38000	2595	Body	2.224	52.778	2.153	52.516	3.43	0.53	±5	Mar. 07, 2017
38150	2610	Body	2.244	52.728	2.175	52.497	3.42	0.43	±5	Mar. 07, 2017
27710	2310	Body	1.832	52.898	1.780	52.884	2.94	0.00	±5	Mar. 08, 2017
37850	2580	Body	2.203	52.823	2.131	52.535	3.44	0.62	±5	Mar. 08, 2017
38000	2595	Body	2.224	52.778	2.153	52.516	3.43	0.53	±5	Mar. 08, 2017
38150	2610	Body	2.244	52.728	2.175	52.497	3.42	0.43	±5	Mar. 08, 2017
39790	2510	Head	1.885	40.250	1.861	39.117	1.37	2.94	±5	Mar. 08, 2017
39750	2506	Head	1.881	40.265	1.857	39.123	1.14	2.98	±5	Mar. 08, 2017
40185	2549.5	Head	1.932	40.110	1.904	39.065	1.67	2.58	±5	Mar. 08, 2017
40620	2593	Head	1.985	39.945	1.952	39.009	1.79	2.42	±5	Mar. 08, 2017
41055	2636.5	Head	2.038	39.772	2.000	38.954	1.89	1.98	±5	Mar. 08, 2017
41490	2680	Head	2.089	39.602	2.048	38.899	1.90	1.80	±5	Mar. 08, 2017
27710	2310	Head	1.658	41.030	1.673	39.424	-0.73	4.14	±5	Mar. 08, 2017

Table of Low/Middle/High Channel for Liquid Validation

CH	Frequency (MHz)	Liquid Type	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Delta (σ) (%)	Delta (εr) (%)	Limit (%)	Date
1	2412	head	1.777	40.617	1.766	39.268	0.40	3.35	±5	Mar. 08, 2017
3	2422	head	1.789	40.572	1.775	39.250	0.53	3.50	±5	Mar. 08, 2017
6	2437	head	1.805	40.517	1.788	39.223	0.85	3.36	±5	Mar. 08, 2017
9	2452	head	1.821	40.448	1.802	39.197	1.18	3.18	±5	Mar. 08, 2017
11	2462	head	1.833	40.407	1.813	39.184	1.25	3.08	±5	Mar. 08, 2017
100	5500	Body	5.824	46.383	5.650	48.600	3.07	-4.56	±5	Mar. 08, 2017
102	5510	Body	5.837	46.369	5.661	48.590	3.12	-4.59	±5	Mar. 08, 2017
104	5520	Body	5.850	46.348	5.673	48.580	3.17	-4.63	±5	Mar. 08, 2017
106	5530	Body	5.866	46.329	5.685	48.570	3.27	-4.67	±5	Mar. 08, 2017
108	5540	Body	5.881	46.313	5.696	48.560	3.17	-4.71	±5	Mar. 08, 2017
110	5550	Body	5.897	46.295	5.708	48.550	3.28	-4.74	±5	Mar. 08, 2017
112	5560	Body	5.910	46.296	5.720	48.540	3.32	-4.54	±5	Mar. 08, 2017
116	5580	Body	5.930	46.253	5.743	48.520	3.31	-4.63	±5	Mar. 08, 2017
120	5600	Body	5.962	46.212	5.770	48.500	3.34	-4.72	±5	Mar. 08, 2017
122	5610	Body	5.976	46.197	5.778	48.485	3.38	-4.75	±5	Mar. 08, 2017
124	5620	Body	5.989	46.181	5.790	48.470	3.43	-4.78	±5	Mar. 08, 2017
126	5630	Body	6.002	46.158	5.801	48.455	3.49	-4.83	±5	Mar. 08, 2017
128	5640	Body	6.019	46.144	5.813	48.440	3.59	-4.66	±5	Mar. 08, 2017
132	5660	Body	6.050	46.120	5.837	48.410	3.60	-4.71	±5	Mar. 08, 2017
134	5670	Body	6.059	46.113	5.848	48.395	3.57	-4.72	±5	Mar. 08, 2017
136	5680	Body	6.068	46.091	5.860	48.380	3.56	-4.77	±5	Mar. 08, 2017
138	5690	Body	6.084	46.060	5.872	48.365	3.65	-4.83	±5	Mar. 08, 2017
140	5700	Body	6.101	46.041	5.883	48.350	3.76	-4.87	±5	Mar. 08, 2017
142	5710	Body	6.115	46.030	5.895	48.335	3.82	-4.70	±5	Mar. 08, 2017
144	5720	Body	6.129	46.018	5.907	48.320	3.71	-4.72	±5	Mar. 08, 2017
36	5180	Body	5.408	46.940	5.276	49.030	2.42	-4.20	±5	Mar. 08, 2017
38	5190	Body	5.421	46.930	5.288	49.010	2.48	-4.22	±5	Mar. 08, 2017
40	5200	Body	5.433	46.910	5.300	49.000	2.51	-4.27	±5	Mar. 08, 2017
42	5210	Body	5.447	46.890	5.312	48.990	2.58	-4.31	±5	Mar. 08, 2017
44	5220	Body	5.461	46.870	5.323	48.980	2.65	-4.35	±5	Mar. 08, 2017
46	5230	Body	5.476	46.850	5.335	48.970	2.55	-4.39	±5	Mar. 08, 2017
48	5240	Body	5.490	46.840	5.346	48.960	2.62	-4.41	±5	Mar. 08, 2017
512	1850.2	Head	1.340	40.178	1.400	40.000	-4.27	0.44	±5	Mar. 09, 2017
661	1880	Head	1.368	40.076	1.400	40.000	-2.30	0.19	±5	Mar. 09, 2017
810	1909.8	Head	1.398	39.940	1.400	40.000	-0.15	-0.15	±5	Mar. 09, 2017
25	1851.25	Head	1.341	40.175	1.400	40.000	-4.20	0.44	±5	Mar. 09, 2017
600	1880	Head	1.368	40.076	1.400	40.000	-2.30	0.19	±5	Mar. 09, 2017
1175	1908.75	Head	1.397	39.946	1.400	40.000	-0.22	-0.14	±5	Mar. 09, 2017
1013	824.7	Body	1.005	53.640	0.970	55.240	3.61	-2.83	±5	Mar. 09, 2017
384	836.52	Body	1.016	53.520	0.970	55.200	4.74	-3.04	±5	Mar. 09, 2017
777	848.31	Body	1.028	53.390	0.990	55.160	3.84	-3.28	±5	Mar. 09, 2017
476	817.9	Body	0.998	53.710	0.970	55.260	2.89	-2.88	±5	Mar. 09, 2017
580	820.5	Body	1.001	53.680	0.970	55.250	3.20	-2.93	±5	Mar. 09, 2017
670	822.75	Body	1.003	53.659	0.970	55.240	3.40	-2.79	±5	Mar. 09, 2017
1	2412	Body	1.932	54.220	1.914	52.751	1.14	2.69	±5	Mar. 09, 2017
3	2422	Body	1.945	54.176	1.923	52.737	1.32	2.80	±5	Mar. 09, 2017
6	2437	Body	1.964	54.124	1.938	52.717	1.22	2.70	±5	Mar. 09, 2017
9	2452	Body	1.983	54.059	1.953	52.697	1.69	2.58	±5	Mar. 09, 2017
11	2462	Body	1.996	54.019	1.967	52.684	1.31	2.50	±5	Mar. 09, 2017

Table of Low/Middle/High Channel for Liquid Validation

CH	Frequency (MHz)	Liquid Type	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Delta (σ) (%)	Delta (εr) (%)	Limit (%)	Date
149	5745	Body	6.158	45.940	5.936	48.280	3.67	-4.89	±5	Mar. 10, 2017
151	5755	Body	6.173	45.930	5.947	48.270	3.75	-4.91	±5	Mar. 10, 2017
153	5765	Body	6.190	45.920	5.959	48.250	3.86	-4.93	±5	Mar. 10, 2017
155	5775	Body	6.200	45.910	5.971	48.240	3.85	-4.75	±5	Mar. 10, 2017
157	5785	Body	6.208	45.890	5.982	48.220	3.81	-4.79	±5	Mar. 10, 2017
159	5795	Body	6.223	45.860	5.994	48.210	3.89	-4.85	±5	Mar. 10, 2017
161	5805	Body	6.240	45.840	6.000	48.200	4.00	-4.90	±5	Mar. 10, 2017
165	5825	Body	6.267	45.820	6.030	48.200	3.93	-4.94	±5	Mar. 10, 2017

Table of Low/Middle/High Channel for Liquid Validation

10.3 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 (%)
2017/2/22	750	HSL	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.15	8.21	8.60	4.75
2017/3/4	750	MSL	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.33	8.72	9.32	6.88
2017/2/19	835	HSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.30	9.14	9.20	0.66
2017/3/16	835	HSL	250	D835V2-499	ES3DV3 - SN3270	DAE4 Sn778	2.44	9.14	9.76	6.78
2017/3/2	835	MSL	250	D835V2-499	EX3DV4 - SN3578	DAE4 Sn914	2.50	9.52	10.00	5.04
2017/3/2	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.52	9.52	10.08	5.88
2017/3/3	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.52	9.52	10.08	5.88
2017/3/9	835	MSL	250	D835V2-499	EX3DV4 - SN3931	DAE3 Sn577	2.55	9.52	10.20	7.14
2017/3/16	835	MSL	250	D835V2-499	ES3DV3 - SN3270	DAE4 Sn778	2.53	9.52	10.12	6.30
2017/3/3	1750	HSL	250	D1750V2-1068	EX3DV4 - SN3925	DAE3 Sn495	9.30	36.60	37.20	1.64
2017/3/8	1750	HSL	250	D1750V2-1068	EX3DV4 - SN3931	DAE3 Sn577	9.34	36.60	37.36	2.08
2017/2/28	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	8.85	36.20	35.40	-2.21
2017/3/6	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	9.16	36.20	36.64	1.22
2017/2/24	1900	HSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	10.00	40.50	40.00	-1.23
2017/3/9	1900	HSL	250	D1900V2-5d041	EX3DV4 - SN3578	DAE4 Sn914	9.69	40.50	38.76	-4.30
2017/2/26	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE3 Sn495	10.30	38.80	41.20	6.19
2017/2/27	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	10.30	38.80	41.20	6.19
2017/3/5	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	9.53	38.80	38.12	-1.75
2017/3/8	2300	HSL	250	D2300V2-1006	EX3DV4 - SN3578	DAE4 Sn914	11.50	49.00	46.00	-6.12
2017/3/8	2300	MSL	250	D2300V2-1006	EX3DV4 - SN3931	DAE3 Sn577	12.50	47.90	50.00	4.38
2017/3/8	2450	HSL	250	D2450V2-926	EX3DV4 - SN3955	DAE4 Sn1399	13.30	52.80	53.20	0.76
2017/3/9	2450	MSL	250	D2450V2-926	EX3DV4 - SN3955	DAE4 Sn1399	12.80	51.20	51.20	0.00
2017/2/18	2600	HSL	250	D2600V2-1008	EX3DV4 - SN3955	DAE4 Sn1399	14.70	56.80	58.80	3.52
2017/3/4	2600	HSL	250	D2600V2-1008	EX3DV4 - SN3925	DAE3 Sn495	14.00	56.80	56.00	-1.41
2017/3/8	2600	HSL	250	D2600V2-1008	EX3DV4 - SN3578	DAE4 Sn914	14.00	56.80	56.00	-1.41
2017/3/7	2600	MSL	250	D2600V2-1008	EX3DV4 - SN3955	DAE4 Sn1399	14.60	55.20	58.40	5.80
2017/3/8	2600	MSL	250	D2600V2-1008	EX3DV4 - SN3931	DAE3 Sn577	14.90	55.20	59.60	7.97
2017/3/6	5250	HSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	7.98	83.80	79.80	-4.77
2017/3/4	5250	MSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	7.75	78.60	77.50	-1.40
2017/3/8	5250	MSL	100	D5GHzV2-1006	EX3DV4 - SN3955	DAE4 Sn1399	7.57	78.60	75.70	-3.69
2017/3/6	5600	HSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	8.41	83.80	84.10	0.36
2017/3/4	5600	MSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	8.41	78.60	84.10	7.00
2017/3/8	5600	MSL	100	D5GHzV2-1006	EX3DV4 - SN3955	DAE4 Sn1399	7.78	78.60	77.80	-1.02
2017/3/6	5750	HSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	7.99	83.80	79.90	-4.65
2017/3/10	5750	MSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	7.52	78.60	75.20	-4.33

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 (%)
2017/3/4	750	MSL	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	1.56	5.73	6.24	8.90
2017/3/3	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	1.67	6.28	6.68	6.37
2017/3/9	835	MSL	250	D835V2-499	EX3DV4 - SN3931	DAE3 Sn577	1.66	6.28	6.64	5.73
2017/2/28	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	4.90	19.40	19.60	1.03
2017/3/6	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	5.07	19.40	20.28	4.54
2017/2/27	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	5.38	20.60	21.52	4.47
2017/3/5	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	4.95	20.60	19.80	-3.88
2017/3/8	2300	MSL	250	D2300V2-1006	EX3DV4 - SN3931	DAE3 Sn577	6.06	23.10	24.24	4.94
2017/3/4	5250	MSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	2.16	22.00	21.60	-1.82
2017/3/4	5600	MSL	100	D5GHzV2-1006	EX3DV4 - SN3931	DAE3 Sn577	2.24	22.00	22.40	1.82

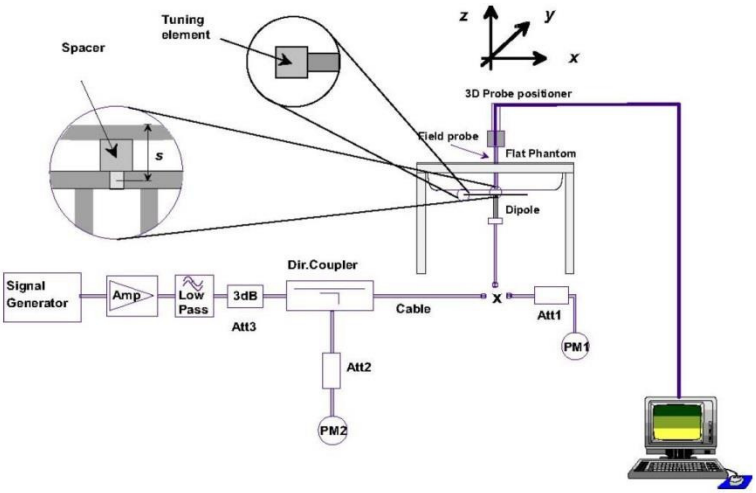


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 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.

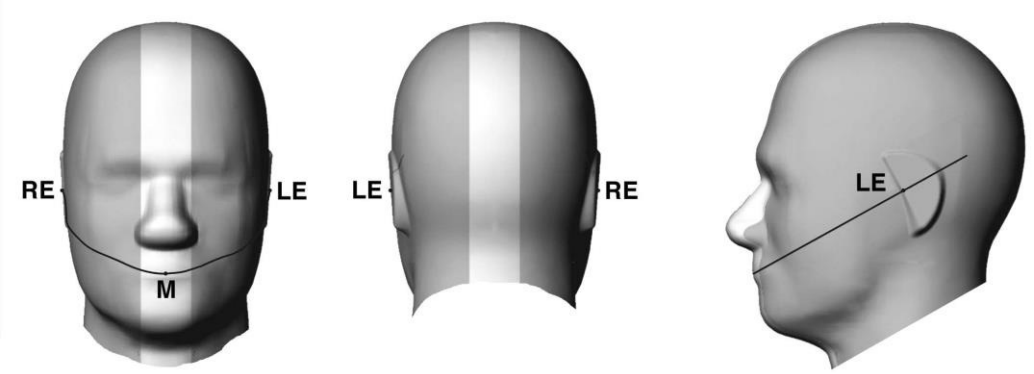


Fig 9.1.1 Front, back, and side views of SAM twin phantom

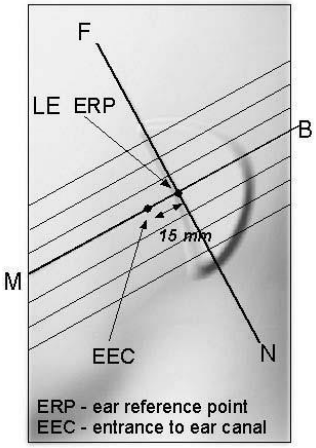


Fig 9.1.2 Close-up side view of phantom showing the ear region.

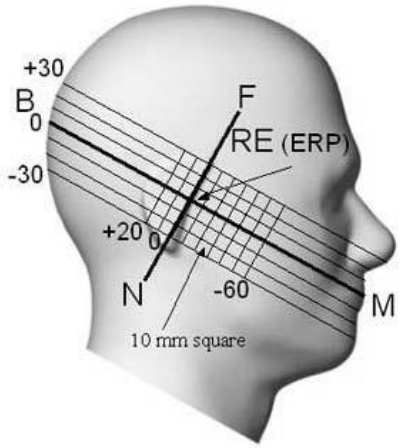


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 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.

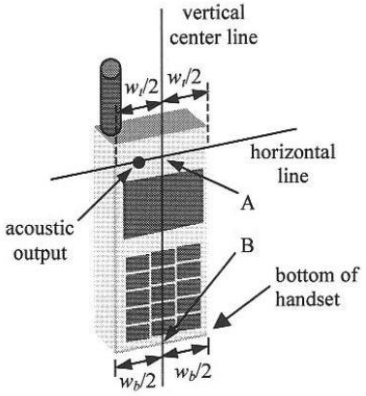


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

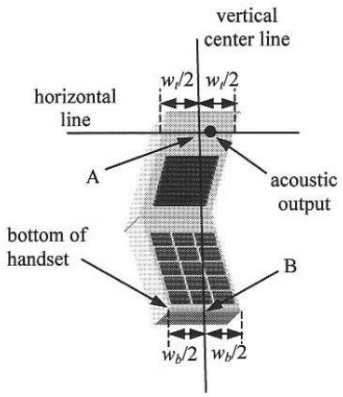


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

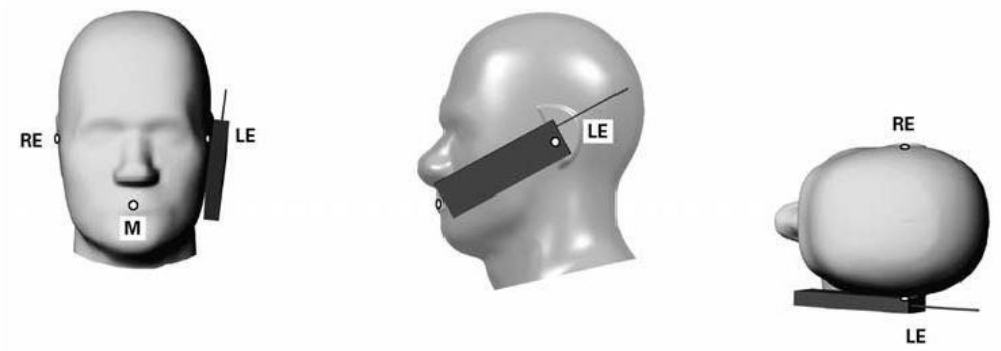


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 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

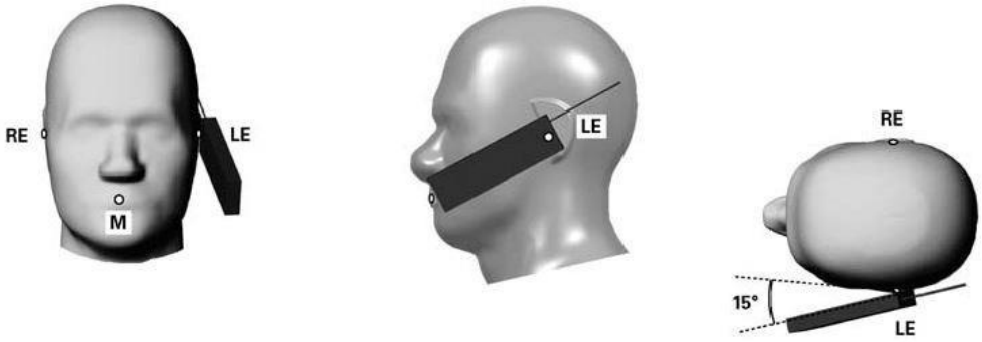


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 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.

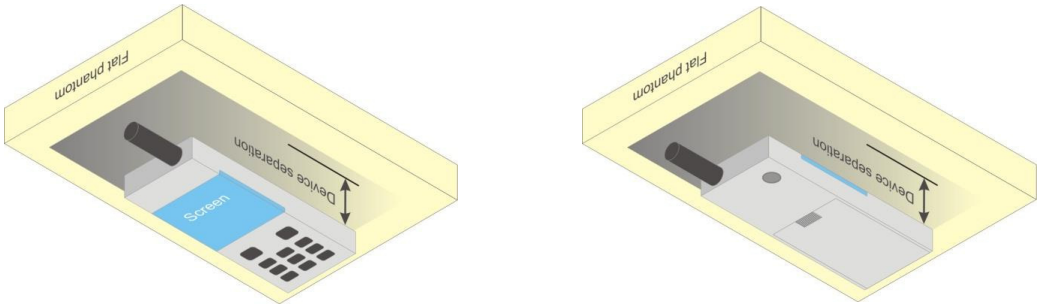


Fig 9.4 Body Worn Position

11.5 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 Product Specific 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 Product Specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

11.6 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.

12. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. 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. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
3. 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

<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	32.38	32.37	32.36	33.50	23.38	23.37	23.36	24.50
GPRS 1 Tx slot	32.37	32.36	32.33	33.50	23.37	23.36	23.33	24.50
GPRS 2 Tx slots	29.15	29.19	29.19	30.50	23.15	23.19	23.19	24.50
GPRS 3 Tx slots	27.03	27.11	27.03	28.75	22.77	22.85	22.77	24.49
GPRS 4 Tx slots	25.69	25.72	25.71	27.50	22.69	22.72	22.71	24.50
EDGE 1 Tx slot	26.36	26.29	26.33	28.50	17.36	17.29	17.33	19.50
EDGE 2 Tx slots	26.18	26.17	26.17	28.50	20.18	20.17	20.17	22.50
EDGE 3 Tx slots	24.82	24.79	24.78	26.75	20.56	20.53	20.52	22.49
EDGE 4 Tx slots	23.41	23.39	23.31	25.50	20.41	20.39	20.31	22.50

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	29.27	29.35	29.26	30.50	20.27	20.35	20.26	21.50
GPRS 1 Tx slot	29.32	29.35	29.29	30.50	20.32	20.35	20.29	21.50
GPRS 2 Tx slots	26.00	26.01	25.90	27.50	20.00	20.01	19.90	21.50
GPRS 3 Tx slots	24.05	24.00	23.89	25.75	19.79	19.74	19.63	21.49
GPRS 4 Tx slots	22.75	22.63	22.61	24.50	19.75	19.63	19.61	21.50
EDGE 1 Tx slot	25.05	25.11	25.05	27.50	16.05	16.11	16.05	18.50
EDGE 2 Tx slots	24.90	24.96	24.87	27.50	18.90	18.96	18.87	21.50
EDGE 3 Tx slots	23.45	23.45	23.35	25.75	19.19	19.19	19.09	21.49
EDGE 4 Tx slots	22.00	22.03	21.95	24.50	19.00	19.03	18.95	21.50

<At-Head 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	32.38	32.37	32.36	33.50	23.38	23.37	23.36	24.50
GPRS 1 Tx slot	32.37	32.36	32.33	33.50	23.37	23.36	23.33	24.50
GPRS 2 Tx slots	29.15	29.19	29.19	30.50	23.15	23.19	23.19	24.50
GPRS 3 Tx slots	27.03	27.11	27.03	28.75	22.77	22.85	22.77	24.49
GPRS 4 Tx slots	25.69	25.72	25.71	27.50	22.69	22.72	22.71	24.50
EDGE 1 Tx slot	26.36	26.29	26.33	28.50	17.36	17.29	17.33	19.50
EDGE 2 Tx slots	26.18	26.17	26.17	28.50	20.18	20.17	20.17	22.50
EDGE 3 Tx slots	24.82	24.79	24.78	26.75	20.56	20.53	20.52	22.49
EDGE 4 Tx slots	23.41	23.39	23.31	25.50	20.41	20.39	20.31	22.50

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	29.27	29.35	29.26	30.50	20.27	20.35	20.26	21.50
GPRS 1 Tx slot	29.32	29.35	29.29	30.50	20.32	20.35	20.29	21.50
GPRS 2 Tx slots	26.00	26.01	25.90	27.50	20.00	20.01	19.90	21.50
GPRS 3 Tx slots	24.05	24.00	23.89	25.75	19.79	19.74	19.63	21.49
GPRS 4 Tx slots	22.75	22.63	22.61	24.50	19.75	19.63	19.61	21.50
EDGE 1 Tx slot	25.05	25.11	25.05	27.50	16.05	16.11	16.05	18.50
EDGE 2 Tx slots	24.90	24.96	24.87	27.50	18.90	18.96	18.87	21.50
EDGE 3 Tx slots	23.45	23.45	23.35	25.75	19.19	19.19	19.09	21.49
EDGE 4 Tx slots	22.00	22.03	21.95	24.50	19.00	19.03	18.95	21.50

<Near-body and Hotspot 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	32.38	32.37	32.36	33.50	23.38	23.37	23.36	24.50
GPRS 1 Tx slot	32.37	32.36	32.33	33.50	23.37	23.36	23.33	24.50
GPRS 2 Tx slots	29.15	29.19	29.19	30.50	23.15	23.19	23.19	24.50
GPRS 3 Tx slots	27.03	27.11	27.03	28.75	22.77	22.85	22.77	24.49
GPRS 4 Tx slots	25.69	25.72	25.71	27.50	22.69	22.72	22.71	24.50
EDGE 1 Tx slot	26.36	26.29	26.33	28.50	17.36	17.29	17.33	19.50
EDGE 2 Tx slots	26.18	26.17	26.17	28.50	20.18	20.17	20.17	22.50
EDGE 3 Tx slots	24.82	24.79	24.78	26.75	20.56	20.53	20.52	22.49
EDGE 4 Tx slots	23.41	23.39	23.31	25.50	20.41	20.39	20.31	22.50

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	29.27	29.35	29.26	30.50	20.27	20.35	20.26	21.50
GPRS 1 Tx slot	29.32	29.35	29.29	30.50	20.32	20.35	20.29	21.50
GPRS 2 Tx slots	26.00	26.01	25.90	27.50	20.00	20.01	19.90	21.50
GPRS 3 Tx slots	24.05	24.00	23.89	25.75	19.79	19.74	19.63	21.49
GPRS 4 Tx slots	22.75	22.63	22.61	24.50	19.75	19.63	19.61	21.50
EDGE 1 Tx slot	25.05	25.11	25.05	27.50	16.05	16.11	16.05	18.50
EDGE 2 Tx slots	24.90	24.96	24.87	27.50	18.90	18.96	18.87	21.50
EDGE 3 Tx slots	23.45	23.45	23.35	25.75	19.19	19.19	19.09	21.49
EDGE 4 Tx slots	22.00	22.03	21.95	24.50	19.00	19.03	18.95	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 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	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 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * 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: For subtest 5 the β_c/β_d ratio of 15/15 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 = 14/15 and β_d = 15/15.
Note 5: 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 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

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	Processes	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.		

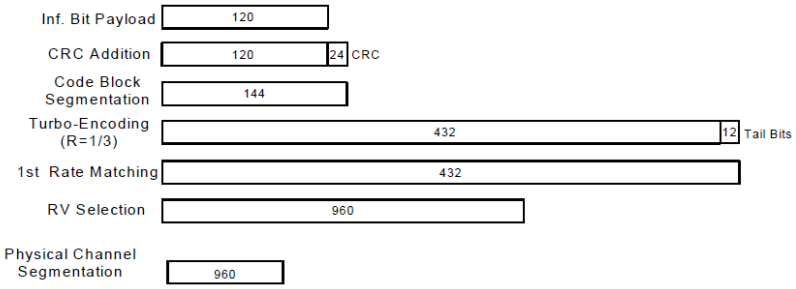


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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. If 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.

<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	20.55	20.60	20.80	22.00	20.95	21.03	21.10	22.00	22.60	22.85	22.54	24.00
3GPP Rel 99	RMC 12.2Kbps	20.56	20.63	20.83	22.00	20.98	21.05	21.13	22.00	22.62	22.86	22.58	24.00
3GPP Rel 6	HSDPA Subtest-1	19.42	19.73	19.74	21.00	19.82	19.95	19.98	21.00	21.72	21.85	21.69	23.00
3GPP Rel 6	HSDPA Subtest-2	19.40	19.54	19.69	21.00	19.82	19.88	19.97	21.00	21.62	21.94	21.72	23.00
3GPP Rel 6	HSDPA Subtest-3	18.90	18.96	19.12	20.50	19.31	19.36	19.34	20.50	21.13	21.35	21.10	22.50
3GPP Rel 6	HSDPA Subtest-4	18.92	18.97	19.12	20.50	19.33	19.31	19.39	20.50	21.14	21.33	21.12	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	19.45	19.48	19.71	21.00	19.81	19.80	19.96	21.00	20.37	20.56	20.35	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	19.40	19.45	19.63	21.00	19.82	19.81	19.95	21.00	20.35	20.66	20.34	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	18.94	18.95	19.10	20.50	19.33	19.30	19.32	20.50	20.43	20.66	20.34	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	18.90	18.94	19.11	20.50	19.31	19.32	19.30	20.50	20.35	20.58	20.36	22.50
3GPP Rel 6	HSUPA Subtest-1	19.60	19.69	19.80	21.00	20.01	20.03	20.16	21.00	21.42	21.68	21.38	23.00
3GPP Rel 6	HSUPA Subtest-2	17.69	17.72	17.83	19.00	18.08	18.04	17.95	19.00	19.44	19.64	19.38	21.00
3GPP Rel 6	HSUPA Subtest-3	18.41	18.44	18.61	20.00	18.80	18.88	18.87	20.00	20.48	20.63	20.44	22.00
3GPP Rel 6	HSUPA Subtest-4	17.40	17.44	17.61	19.00	17.82	17.89	17.87	19.00	19.45	19.66	19.32	21.00
3GPP Rel 6	HSUPA Subtest-5	19.43	19.45	19.71	21.00	19.84	19.87	19.97	21.00	21.65	21.87	21.61	23.00

<At-Head 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	22.43	22.55	22.67	24.00	22.61	22.57	22.67	24.00	22.60	22.85	22.54	24.00
3GPP Rel 99	RMC 12.2Kbps	22.70	22.73	22.89	24.00	22.88	22.82	22.93	24.00	22.62	22.86	22.58	24.00
3GPP Rel 6	HSDPA Subtest-1	21.42	21.73	21.74	23.00	21.62	21.75	21.78	23.00	21.72	21.85	21.69	23.00
3GPP Rel 6	HSDPA Subtest-2	21.40	21.54	21.69	23.00	21.62	21.68	21.77	23.00	21.62	21.94	21.72	23.00
3GPP Rel 6	HSDPA Subtest-3	20.90	20.96	21.12	22.50	21.11	21.16	21.14	22.50	21.13	21.35	21.10	22.50
3GPP Rel 6	HSDPA Subtest-4	20.92	20.97	21.12	22.50	21.13	21.11	21.19	22.50	21.14	21.33	21.12	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.45	21.48	21.71	23.00	21.61	21.57	21.76	23.00	20.37	20.56	20.35	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.40	21.45	21.63	23.00	21.62	21.61	21.75	23.00	20.35	20.66	20.34	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	20.94	20.95	21.10	22.50	21.13	21.10	21.12	22.50	20.43	20.66	20.34	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	20.90	20.94	21.11	22.50	21.11	21.07	21.10	22.50	20.35	20.58	20.36	22.50
3GPP Rel 6	HSUPA Subtest-1	21.60	21.69	21.80	23.00	21.81	21.83	21.96	23.00	21.42	21.68	21.38	23.00
3GPP Rel 6	HSUPA Subtest-2	19.69	19.72	19.83	21.00	19.88	19.84	19.75	21.00	19.44	19.64	19.38	21.00
3GPP Rel 6	HSUPA Subtest-3	20.41	20.44	20.61	22.00	20.60	20.57	20.67	22.00	20.48	20.63	20.44	22.00
3GPP Rel 6	HSUPA Subtest-4	19.40	19.44	19.61	21.00	19.62	19.59	19.67	21.00	19.45	19.66	19.32	21.00
3GPP Rel 6	HSUPA Subtest-5	21.43	21.45	21.71	23.00	21.64	21.67	21.77	23.00	21.65	21.87	21.61	23.00

<Near-body and Hotspot 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	19.92	20.01	20.17	21.30	20.67	20.83	20.86	21.20	21.21	21.47	21.17	22.20
3GPP Rel 99	RMC 12.2Kbps	19.90	19.97	20.19	21.30	20.68	20.76	20.88	21.20	21.28	21.50	21.18	22.20
3GPP Rel 6	HSDPA Subtest-1	18.68	18.94	19.03	20.30	19.52	19.65	19.78	20.20	20.42	20.54	20.35	21.20
3GPP Rel 6	HSDPA Subtest-2	18.61	18.79	18.98	20.30	19.60	19.64	19.73	20.20	20.32	20.56	20.41	21.20
3GPP Rel 6	HSDPA Subtest-3	18.15	18.17	18.39	19.80	19.06	19.07	19.04	19.70	19.82	20.00	19.80	20.70
3GPP Rel 6	HSDPA Subtest-4	18.21	18.27	18.36	19.80	19.04	19.07	19.13	19.70	19.80	19.97	19.72	20.70
3GPP Rel 8	DC-HSDPA Subtest-1	18.75	18.69	19.00	20.30	19.54	19.56	19.69	20.20	19.05	19.26	18.99	21.80
3GPP Rel 8	DC-HSDPA Subtest-2	18.61	18.68	18.88	20.30	19.56	19.55	19.69	20.20	19.03	19.30	19.02	21.20
3GPP Rel 8	DC-HSDPA Subtest-3	18.18	18.25	18.37	19.80	19.07	19.06	19.04	19.70	19.09	19.30	18.99	21.30
3GPP Rel 8	DC-HSDPA Subtest-4	18.13	18.21	18.38	19.80	19.10	18.98	19.04	19.70	18.95	19.24	19.02	21.30
3GPP Rel 6	HSUPA Subtest-1	18.83	18.99	19.09	20.30	19.72	19.73	19.95	20.20	20.03	20.31	20.08	21.20
3GPP Rel 6	HSUPA Subtest-2	16.98	16.94	17.07	18.30	17.88	17.82	17.69	18.20	18.06	18.24	18.00	19.20
3GPP Rel 6	HSUPA Subtest-3	17.69	17.71	17.91	19.30	18.50	18.57	18.63	19.20	19.13	19.30	19.11	20.20
3GPP Rel 6	HSUPA Subtest-4	16.63	16.66	16.84	18.30	17.53	17.51	17.64	18.20	18.05	18.34	17.97	19.20
3GPP Rel 6	HSUPA Subtest-5	18.63	18.72	18.91	20.30	19.61	19.60	19.72	20.20	20.27	20.48	20.28	21.20

<CDMA2000 Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, SAR for head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

<Default Power Mode>

Band	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)	CDMA2000 BC10			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175		476	580	670	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	822.75	
RC1 SO55	23.82	23.96	23.95	25.00	22.15	22.39	22.32	22.80	23.92	24.00	24.01	25.00
RC3 SO55	23.97	23.98	23.90	25.00	22.12	22.46	22.45	22.80	24.02	24.09	24.02	25.00
RC3 SO32 (F+SCH)	23.96	24.02	24.01	25.00	22.38	22.60	22.56	22.80	24.01	24.05	24.00	25.00
RC3 SO32 (+SCH)	23.97	24.01	23.91	25.00	22.28	22.48	22.42	22.80	23.97	24.04	23.99	25.00
RTAP 153.6Kbps	23.96	23.99	23.89	25.00	22.27	22.52	22.45	22.80	24.09	24.03	24.01	25.00
RETAP 4096Bits	23.75	23.77	23.71	25.00	22.11	22.28	22.27	22.80	23.62	23.57	23.99	25.00

<At-Head Power Mode>

Band	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)	CDMA2000 BC10			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175		476	580	670	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	822.75	
RC1 SO55	23.82	23.96	23.95	25.00	23.55	23.79	23.72	25.00	23.92	24.00	24.01	25.00
RC3 SO55	23.98	23.97	23.90	25.00	23.70	23.90	23.84	25.00	24.02	24.09	24.02	25.00
RC3 SO32 (F+SCH)	23.96	24.02	24.01	25.00	23.78	24.00	23.96	25.00	24.01	24.05	24.00	25.00
RC3 SO32 (+SCH)	23.97	24.01	23.91	25.00	23.68	23.88	23.82	25.00	23.97	24.04	23.99	25.00
RTAP 153.6Kbps	23.96	23.99	23.89	25.00	23.67	23.92	23.85	25.00	24.09	24.03	24.01	25.00
RETAP 4096Bits	23.75	23.77	23.71	25.00	23.51	23.68	23.67	25.00	23.62	23.57	23.99	25.00

<Near-body and Hotspot Mode>

Band	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)	CDMA2000 BC10			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175		476	580	670	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	822.75	
RC1 SO55	21.64	21.72	21.68	22.90	21.60	21.83	21.80	22.50	20.08	20.03	19.97	21.00
RC3 SO55	21.75	21.75	21.66	22.90	21.66	21.85	21.82	22.50	20.00	20.13	19.97	21.00
RC3 SO32 (F+SCH)	21.70	21.73	21.68	22.90	21.64	21.86	21.84	22.50	20.02	20.04	20.01	21.00
RC3 SO32 (+SCH)	21.70	21.72	21.66	22.90	21.61	21.84	21.83	22.50	20.05	20.05	20.06	21.00
RTAP 153.6Kbps	21.72	21.76	21.64	22.90	21.60	21.88	21.87	22.50	20.05	20.15	19.92	21.00
RETAP 4096Bits	21.50	21.57	21.45	22.90	21.41	21.65	21.68	22.50	19.78	19.93	19.78	21.00

<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 / B26/ B38 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.

<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	20.78	20.91	20.82	22.3	0
20	QPSK	1	49	20.70	20.82	20.80		
20	QPSK	1	99	20.58	20.69	20.74		
20	QPSK	50	0	20.95	21.04	21.20	22.3	0
20	QPSK	50	24	20.92	21.03	21.10		
20	QPSK	50	50	20.80	20.85	20.94		
20	QPSK	100	0	20.80	21.01	21.09		
20	16QAM	1	0	21.12	21.08	21.16	22.3	0
20	16QAM	1	49	21.12	20.98	21.02		
20	16QAM	1	99	20.72	20.86	20.95		
20	16QAM	50	0	20.64	20.77	20.85	22	0.3
20	16QAM	50	24	20.60	20.79	20.83		
20	16QAM	50	50	20.51	20.53	20.63		
20	16QAM	100	0	20.58	20.65	20.72		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	20.67	20.79	20.90	22.3	0
15	QPSK	1	37	20.63	20.65	20.57		
15	QPSK	1	74	20.88	21.00	21.05		
15	QPSK	36	0	20.77	20.92	20.97	22.3	0
15	QPSK	36	20	20.79	20.87	20.99		
15	QPSK	36	39	20.76	20.89	20.92		
15	QPSK	75	0	20.74	20.91	20.99		
15	16QAM	1	0	21.11	20.96	21.07	22.3	0
15	16QAM	1	37	20.76	21.04	21.05		
15	16QAM	1	74	21.12	21.00	21.06		
15	16QAM	36	0	20.44	20.59	20.68	22	0.3
15	16QAM	36	20	20.50	20.63	20.70		
15	16QAM	36	39	20.44	20.58	20.62		
15	16QAM	75	0	20.45	20.62	20.73		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	20.44	20.60	20.67	22.3	0
10	QPSK	1	25	20.52	20.66	20.73		
10	QPSK	1	49	20.64	20.71	20.92		
10	QPSK	25	0	20.58	20.73	20.95	22.3	0
10	QPSK	25	12	20.60	20.73	20.83		
10	QPSK	25	25	20.59	20.74	20.85		
10	QPSK	50	0	20.58	20.75	20.88		
10	16QAM	1	0	20.93	21.03	21.17	22.3	0
10	16QAM	1	25	20.86	20.93	21.03		
10	16QAM	1	49	20.90	21.04	21.02		
10	16QAM	25	0	20.31	20.46	20.64	22	0.3
10	16QAM	25	12	20.30	20.41	20.53		
10	16QAM	25	25	20.33	20.47	20.55		
10	16QAM	50	0	20.31	20.41	20.54		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	20.63	20.51	20.60	22.3	0
5	QPSK	1	12	20.46	20.68	20.76		
5	QPSK	1	24	20.48	20.69	20.82		
5	QPSK	12	0	20.65	20.81	21.05	22.3	0
5	QPSK	12	7	20.61	20.78	20.91		
5	QPSK	12	13	20.59	20.69	20.91		
5	QPSK	25	0	20.61	20.75	20.91		
5	16QAM	1	0	20.86	21.06	21.14	22.3	0
5	16QAM	1	12	20.76	20.96	20.98		
5	16QAM	1	24	20.78	20.92	21.08		
5	16QAM	12	0	20.38	20.54	20.69	22	0.3
5	16QAM	12	7	20.30	20.46	20.65		
5	16QAM	12	13	20.32	20.42	20.64		
5	16QAM	25	0	20.33	20.49	20.61		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	20.54	20.42	20.53	22.3	0
3	QPSK	1	8	20.48	20.65	20.83		
3	QPSK	1	14	20.43	20.57	20.78		
3	QPSK	8	0	20.56	20.73	20.90	22.3	0
3	QPSK	8	4	20.61	20.78	20.91		
3	QPSK	8	7	20.53	20.71	20.85		
3	QPSK	15	0	20.57	20.77	20.86		
3	16QAM	1	0	20.81	20.97	21.13	22.3	0
3	16QAM	1	8	20.75	20.91	21.12		
3	16QAM	1	14	20.71	20.79	21.02		
3	16QAM	8	0	20.35	20.52	20.66	22	0.3
3	16QAM	8	4	20.32	20.50	20.66		
3	16QAM	8	7	20.30	20.45	20.62		
3	16QAM	15	0	20.31	20.44	20.61		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	20.50	20.48	20.51	22.3	0
1.4	QPSK	1	3	20.55	20.73	20.89		
1.4	QPSK	1	5	20.48	20.59	20.81		
1.4	QPSK	3	0	20.52	20.64	20.81		
1.4	QPSK	3	1	20.56	20.72	20.86		
1.4	QPSK	3	3	20.50	20.59	20.84		
1.4	QPSK	6	0	20.58	20.75	20.89	22.3	0
1.4	16QAM	1	0	20.73	20.88	21.09	22.3	0
1.4	16QAM	1	3	20.82	20.97	21.13		
1.4	16QAM	1	5	20.74	20.92	21.04		
1.4	16QAM	3	0	20.57	20.71	20.85		
1.4	16QAM	3	1	20.56	20.73	20.89		
1.4	16QAM	3	3	20.49	20.70	20.86		
1.4	16QAM	6	0	20.33	20.50	20.69	22	0.3

<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	20.56	20.86	20.50	22.2	0
20	QPSK	1	49	20.76	20.87	20.88		
20	QPSK	1	99	20.69	20.79	20.85		
20	QPSK	50	0	20.91	21.02	20.97	22.2	0
20	QPSK	50	24	20.93	20.99	20.91		
20	QPSK	50	50	20.78	20.93	20.91		
20	QPSK	100	0	20.91	21.01	20.92		
20	16QAM	1	0	20.68	20.80	20.88	22.2	0
20	16QAM	1	49	20.86	20.94	20.99		
20	16QAM	1	99	20.69	20.76	20.96		
20	16QAM	50	0	20.54	20.56	20.60	22	0.2
20	16QAM	50	24	20.49	20.60	20.51		
20	16QAM	50	50	20.39	20.53	20.56		
20	16QAM	100	0	20.54	20.52	20.57		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	20.20	20.25	20.31	22.2	0
15	QPSK	1	37	20.53	20.57	20.59		
15	QPSK	1	74	20.57	20.54	20.67		
15	QPSK	36	0	20.69	20.74	20.89	22.2	0
15	QPSK	36	20	20.75	20.77	20.79		
15	QPSK	36	39	20.66	20.69	20.71		
15	QPSK	75	0	20.74	20.77	20.78		
15	16QAM	1	0	20.84	20.99	20.98	22.2	0
15	16QAM	1	37	20.76	20.66	20.92		
15	16QAM	1	74	20.76	20.78	20.88		
15	16QAM	36	0	20.51	20.50	20.67	22	0.2
15	16QAM	36	20	20.53	20.59	20.61		
15	16QAM	36	39	20.47	20.51	20.48		
15	16QAM	75	0	20.51	20.58	20.58		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	20.58	20.53	20.51	22.2	0
10	QPSK	1	25	20.72	20.81	20.71		
10	QPSK	1	49	21.01	20.98	20.93		
10	QPSK	25	0	20.92	20.91	20.90	22.2	0
10	QPSK	25	12	20.89	20.90	20.85		
10	QPSK	25	25	20.85	21.00	20.93		
10	QPSK	50	0	20.91	20.97	20.90		
10	16QAM	1	0	20.83	20.86	21.01	22.2	0
10	16QAM	1	25	21.01	20.87	21.00		
10	16QAM	1	49	20.83	20.89	20.82		
10	16QAM	25	0	20.74	20.77	20.70	22	0.2
10	16QAM	25	12	20.67	20.72	20.68		
10	16QAM	25	25	20.82	20.76	20.77		
10	16QAM	50	0	20.80	20.82	20.69		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	20.25	20.22	20.23	22.2	0
5	QPSK	1	12	20.74	20.83	20.75		
5	QPSK	1	24	20.83	20.75	20.72		
5	QPSK	12	0	20.93	20.89	20.92	22.2	0
5	QPSK	12	7	20.90	20.88	20.82		
5	QPSK	12	13	20.83	20.84	20.85		
5	QPSK	25	0	20.92	20.91	20.85		
5	16QAM	1	0	20.82	20.89	21.00	22.2	0
5	16QAM	1	12	20.82	20.85	20.99		
5	16QAM	1	24	20.86	20.94	21.01		
5	16QAM	12	0	20.74	20.71	20.74	22	0.2
5	16QAM	12	7	20.70	20.73	20.66		
5	16QAM	12	13	20.67	20.64	20.70		
5	16QAM	25	0	20.72	20.75	20.66		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	20.76	20.26	20.23	22.2	0
3	QPSK	1	8	20.75	20.74	20.71		
3	QPSK	1	14	20.68	20.64	20.61		
3	QPSK	8	0	20.78	20.78	20.75	22.2	0
3	QPSK	8	4	20.79	20.80	20.78		
3	QPSK	8	7	20.68	20.76	20.73		
3	QPSK	15	0	20.78	20.77	20.66		
3	16QAM	1	0	20.98	20.96	20.93	22.2	0
3	16QAM	1	8	21.01	20.98	20.96		
3	16QAM	1	14	20.92	20.86	20.90		
3	16QAM	8	0	20.61	20.61	20.60	22	0.2
3	16QAM	8	4	20.66	20.66	20.62		
3	16QAM	8	7	20.57	20.61	20.57		
3	16QAM	15	0	20.62	20.62	20.50		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	20.64	20.23	20.28	22.2	0
1.4	QPSK	1	3	20.66	20.72	20.68		
1.4	QPSK	1	5	20.63	20.67	20.58		
1.4	QPSK	3	0	20.53	20.60	20.68		
1.4	QPSK	3	1	20.80	20.74	20.72		
1.4	QPSK	3	3	20.66	20.70	20.67		
1.4	QPSK	6	0	20.66	20.77	20.74	22.2	0
1.4	16QAM	1	0	20.91	20.83	20.91	22.2	0
1.4	16QAM	1	3	20.90	20.98	20.93		
1.4	16QAM	1	5	20.88	20.89	20.81		
1.4	16QAM	3	0	20.75	20.65	20.69		
1.4	16QAM	3	1	20.78	20.77	20.72		
1.4	16QAM	3	3	20.64	20.71	20.65		
1.4	16QAM	6	0	20.58	20.66	20.59	22	0.2

<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	22.85	22.77	24	0
10	QPSK	1	25	22.53	22.48	22.37		
10	QPSK	1	49	22.77	22.78	22.84		
10	QPSK	25	0	21.65	21.59	21.74	23	1
10	QPSK	25	12	21.62	21.55	21.63		
10	QPSK	25	25	21.63	21.60	21.77		
10	QPSK	50	0	21.64	21.64	21.75		
10	16QAM	1	0	21.84	21.93	21.96	23	1
10	16QAM	1	25	21.81	21.73	21.78		
10	16QAM	1	49	21.97	22.08	22.08		
10	16QAM	25	0	20.64	20.57	20.72	22	2
10	16QAM	25	12	20.61	20.53	20.64		
10	16QAM	25	25	20.63	20.64	20.69		
10	16QAM	50	0	20.66	20.63	20.78		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.61	22.52	22.57	24	0
5	QPSK	1	12	22.54	22.57	22.36		
5	QPSK	1	24	22.53	22.55	22.51		
5	QPSK	12	0	21.57	21.57	21.61	23	1
5	QPSK	12	7	21.63	21.66	21.58		
5	QPSK	12	13	21.59	21.62	21.72		
5	QPSK	25	0	21.66	21.67	21.60		
5	16QAM	1	0	21.87	21.81	21.83	23	1
5	16QAM	1	12	21.85	21.83	21.73		
5	16QAM	1	24	21.81	21.77	21.71		
5	16QAM	12	0	20.62	20.61	20.61	22	2
5	16QAM	12	7	20.67	20.59	20.63		
5	16QAM	12	13	20.59	20.55	20.63		
5	16QAM	25	0	20.69	20.59	20.55		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.38	22.56	22.56	24	0
3	QPSK	1	8	22.51	22.48	22.47		
3	QPSK	1	14	22.48	22.41	22.39		
3	QPSK	8	0	21.55	21.54	21.49	23	1
3	QPSK	8	4	21.54	21.55	21.56		
3	QPSK	8	7	21.48	21.48	21.50		
3	QPSK	15	0	21.50	21.58	21.49		
3	16QAM	1	0	21.79	21.70	21.71	23	1
3	16QAM	1	8	21.79	21.78	21.72		
3	16QAM	1	14	21.73	21.68	21.72		
3	16QAM	8	0	20.61	20.62	20.64	22	2
3	16QAM	8	4	20.62	20.61	20.67		
3	16QAM	8	7	20.57	20.54	20.59		
3	16QAM	15	0	20.54	20.61	20.51		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.48	22.54	22.53	24	0
1.4	QPSK	1	3	22.55	22.58	22.58		
1.4	QPSK	1	5	22.52	22.50	22.46		
1.4	QPSK	3	0	22.46	22.47	22.43		
1.4	QPSK	3	1	22.52	22.48	22.42		
1.4	QPSK	3	3	22.53	22.55	22.49		
1.4	QPSK	6	0	21.56	21.59	21.59	23	1
1.4	16QAM	1	0	21.73	21.72	21.75	23	1
1.4	16QAM	1	3	21.81	21.86	21.80		
1.4	16QAM	1	5	21.75	21.71	21.69		
1.4	16QAM	3	0	21.47	21.50	21.59		
1.4	16QAM	3	1	21.56	21.54	21.57		
1.4	16QAM	3	3	21.54	21.55	21.54		
1.4	16QAM	6	0	20.60	20.70	20.56	22	2

<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	22.00	21.78	22.12	23.6	0
20	QPSK	1	49	21.96	21.89	21.93		
20	QPSK	1	99	22.01	21.98	22.13		
20	QPSK	50	0	21.71	21.66	21.72	23	0.6
20	QPSK	50	24	21.65	21.64	21.70		
20	QPSK	50	50	21.68	21.67	21.69		
20	QPSK	100	0	21.68	21.69	21.70		
20	16QAM	1	0	21.68	21.66	21.75	23	0.6
20	16QAM	1	49	21.74	21.66	21.72		
20	16QAM	1	99	21.76	21.84	21.72		
20	16QAM	50	0	20.48	20.51	20.49	22	1.6
20	16QAM	50	24	20.44	20.50	20.49		
20	16QAM	50	50	20.47	20.48	20.49		
20	16QAM	100	0	20.43	20.42	20.52		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.89	21.76	21.93	23.6	0
15	QPSK	1	37	22.00	21.72	21.68		
15	QPSK	1	74	21.97	22.09	21.99		
15	QPSK	36	0	21.43	21.42	21.55	23	0.6
15	QPSK	36	20	21.54	21.41	21.62		
15	QPSK	36	39	21.43	21.47	21.49		
15	QPSK	75	0	21.47	21.42	21.46		
15	16QAM	1	0	21.64	21.57	21.70	23	0.6
15	16QAM	1	37	21.65	21.55	21.58		
15	16QAM	1	74	21.68	21.74	21.66		
15	16QAM	36	0	20.44	20.43	20.53	22	1.6
15	16QAM	36	20	20.53	20.46	20.59		
15	16QAM	36	39	20.44	20.49	20.51		
15	16QAM	75	0	20.48	20.47	20.49		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.13	22.11	22.36	23.6	0
10	QPSK	1	25	22.08	21.95	22.02		
10	QPSK	1	49	22.04	22.03	22.03		
10	QPSK	25	0	21.59	21.55	21.60	23	0.6
10	QPSK	25	12	21.67	21.46	21.57		
10	QPSK	25	25	21.57	21.55	21.57		
10	QPSK	50	0	21.58	21.47	21.54		
10	16QAM	1	0	21.92	21.91	21.97	23	0.6
10	16QAM	1	25	21.74	21.67	21.75		
10	16QAM	1	49	21.99	21.78	21.92		
10	16QAM	25	0	20.58	20.52	20.64	22	1.6
10	16QAM	25	12	20.67	20.45	20.61		
10	16QAM	25	25	20.53	20.52	20.55		
10	16QAM	50	0	20.57	20.51	20.54		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.00	21.94	22.00	23.6	0
5	QPSK	1	12	22.09	21.95	22.09		
5	QPSK	1	24	22.04	22.03	22.05		
5	QPSK	12	0	21.62	21.56	21.60	23	0.6
5	QPSK	12	7	21.56	21.48	21.58		
5	QPSK	12	13	21.59	21.48	21.56		
5	QPSK	25	0	21.60	21.53	21.59		
5	16QAM	1	0	21.82	21.76	21.76	23	0.6
5	16QAM	1	12	21.75	21.56	21.69		
5	16QAM	1	24	21.77	21.74	21.80		
5	16QAM	12	0	20.69	20.56	20.62	22	1.6
5	16QAM	12	7	20.57	20.48	20.63		
5	16QAM	12	13	20.63	20.50	20.61		
5	16QAM	25	0	20.58	20.49	20.60		

<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	22.19	22.19	22.32	24	0
10	QPSK	1	25	22.47	22.69	22.67		
10	QPSK	1	49	22.19	22.26	22.22		
10	QPSK	25	0	21.44	21.44	21.52	23	1
10	QPSK	25	12	21.50	21.70	21.68		
10	QPSK	25	25	21.49	21.60	21.58		
10	QPSK	50	0	21.48	21.62	21.58		
10	16QAM	1	0	21.42	21.46	21.49	23	1
10	16QAM	1	25	21.87	21.79	21.82		
10	16QAM	1	49	21.50	21.52	21.44		
10	16QAM	25	0	20.43	20.45	20.54	22	2
10	16QAM	25	12	20.53	20.63	20.72		
10	16QAM	25	25	20.52	20.60	20.58		
10	16QAM	50	0	20.45	20.49	20.62		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.48	22.62	22.66	24	0
5	QPSK	1	12	22.17	22.29	22.43		
5	QPSK	1	24	22.37	22.66	22.45		
5	QPSK	12	0	21.36	21.65	21.56	23	1
5	QPSK	12	7	21.43	21.65	21.58		
5	QPSK	12	13	21.42	21.65	21.55		
5	QPSK	25	0	21.40	21.65	21.60		
5	16QAM	1	0	21.55	21.80	21.77	23	1
5	16QAM	1	12	21.55	21.78	21.73		
5	16QAM	1	24	21.65	21.96	21.81		
5	16QAM	12	0	20.36	20.63	20.56	22	2
5	16QAM	12	7	20.45	20.64	20.52		
5	16QAM	12	13	20.44	20.69	20.57		
5	16QAM	25	0	20.43	20.65	20.58		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.44	22.68	22.62	24	0
3	QPSK	1	8	22.35	22.59	22.45		
3	QPSK	1	14	22.37	22.54	22.40		
3	QPSK	8	0	21.41	21.68	21.54	23	1
3	QPSK	8	4	21.39	21.61	21.58		
3	QPSK	8	7	21.40	21.58	21.55		
3	QPSK	15	0	21.38	21.58	21.55		
3	16QAM	1	0	21.54	21.80	21.73	23	1
3	16QAM	1	8	21.58	21.94	21.68		
3	16QAM	1	14	21.62	21.85	21.69		
3	16QAM	8	0	20.46	20.71	20.61	22	2
3	16QAM	8	4	20.39	20.70	20.60		
3	16QAM	8	7	20.45	20.70	20.61		
3	16QAM	15	0	20.36	20.64	20.55		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.45	22.64	22.57	24	0
1.4	QPSK	1	3	22.37	22.55	22.44		
1.4	QPSK	1	5	22.21	22.54	22.34		
1.4	QPSK	3	0	22.32	22.50	22.44		
1.4	QPSK	3	1	22.35	22.56	22.44		
1.4	QPSK	3	3	22.35	22.53	22.36		
1.4	QPSK	6	0	21.37	21.59	21.50	23	1
1.4	16QAM	1	0	21.53	21.71	21.67	23	1
1.4	16QAM	1	3	21.63	21.81	21.69		
1.4	16QAM	1	5	21.53	21.76	21.75		
1.4	16QAM	3	0	21.36	21.56	21.48		
1.4	16QAM	3	1	21.42	21.61	21.51		
1.4	16QAM	3	3	21.35	21.55	21.42		
1.4	16QAM	6	0	20.46	20.59	20.49	22	2

<LTE Band 13>

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					23230			
Frequency (MHz)					782			
10	QPSK	1	0		22.98		24	0
10	QPSK	1	25		22.80			
10	QPSK	1	49		23.00			
10	QPSK	25	0		21.97		23	1
10	QPSK	25	12		21.80			
10	QPSK	25	25		21.90			
10	QPSK	50	0		21.85			
10	16QAM	1	0		22.12		23	1
10	16QAM	1	25		21.97			
10	16QAM	1	49		22.12			
10	16QAM	25	0		20.87		22	2
10	16QAM	25	12		20.81			
10	16QAM	25	25		20.87			
10	16QAM	50	0		20.96			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.69	22.90	22.87	24	0
5	QPSK	1	12	22.47	22.77	22.75		
5	QPSK	1	24	22.58	22.81	22.69		
5	QPSK	12	0	21.65	21.86	21.87	23	1
5	QPSK	12	7	21.69	21.87	21.94		
5	QPSK	12	13	21.65	21.87	21.82		
5	QPSK	25	0	21.64	21.90	21.88		
5	16QAM	1	0	21.78	22.05	22.00	23	1
5	16QAM	1	12	21.79	22.00	21.94		
5	16QAM	1	24	21.84	22.00	21.88		
5	16QAM	12	0	20.69	20.89	20.79	22	2
5	16QAM	12	7	20.68	20.91	20.87		
5	16QAM	12	13	20.68	20.87	20.79		
5	16QAM	25	0	20.69	20.89	20.83		

<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	22.22	22.31	22.42	24	0
10	QPSK	1	25	22.54	22.66	22.60		
10	QPSK	1	49	22.37	22.39	22.36		
10	QPSK	25	0	21.62	21.42	21.48	23	1
10	QPSK	25	12	21.69	21.71	21.71		
10	QPSK	25	25	21.58	21.62	21.65		
10	QPSK	50	0	21.55	21.52	21.54		
10	16QAM	1	0	21.45	21.46	21.39	23	1
10	16QAM	1	25	21.84	21.87	21.84		
10	16QAM	1	49	21.47	21.45	21.46		
10	16QAM	25	0	20.56	20.49	20.50	22	2
10	16QAM	25	12	20.69	20.73	20.72		
10	16QAM	25	25	20.57	20.54	20.57		
10	16QAM	50	0	20.60	20.59	20.57		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.64	22.77	22.74	24	0
5	QPSK	1	12	22.34	22.61	22.53		
5	QPSK	1	24	22.51	22.62	22.51		
5	QPSK	12	0	21.53	21.63	21.65	23	1
5	QPSK	12	7	21.57	21.69	21.75		
5	QPSK	12	13	21.60	21.76	21.65		
5	QPSK	25	0	21.50	21.71	21.73		
5	16QAM	1	0	21.72	21.86	21.90	23	1
5	16QAM	1	12	21.76	21.88	21.78		
5	16QAM	1	24	21.79	21.87	21.82		
5	16QAM	12	0	20.54	20.67	20.64	22	2
5	16QAM	12	7	20.57	20.70	20.71		
5	16QAM	12	13	20.60	20.74	20.67		
5	16QAM	25	0	20.53	20.72	20.72		

<LTE Band 25>

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				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	19.78	19.99	19.88	21.4	0
20	QPSK	1	49	20.24	20.66	20.37		
20	QPSK	1	99	20.13	20.29	20.24		
20	QPSK	50	0	20.40	20.68	20.50	21.4	0
20	QPSK	50	24	20.36	20.53	20.47		
20	QPSK	50	50	20.35	20.52	20.49		
20	QPSK	100	0	20.42	20.53	20.52		
20	16QAM	1	0	20.17	20.35	20.37	21.4	0
20	16QAM	1	49	20.36	20.37	20.43		
20	16QAM	1	99	20.01	20.21	20.06		
20	16QAM	50	0	20.05	20.32	20.23	21.4	0
20	16QAM	50	24	20.16	20.20	20.21		
20	16QAM	50	50	20.07	20.24	20.21		
20	16QAM	100	0	20.10	20.21	20.24		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	19.46	19.60	19.67	21.4	0
15	QPSK	1	37	19.90	20.11	19.85		
15	QPSK	1	74	20.16	20.35	20.30		
15	QPSK	36	0	20.13	20.32	20.31	21.4	0
15	QPSK	36	20	20.13	20.37	20.32		
15	QPSK	36	39	20.28	20.32	20.26		
15	QPSK	75	0	20.17	20.37	20.39		
15	16QAM	1	0	20.25	20.27	20.34	21.4	0
15	16QAM	1	37	20.20	20.35	20.28		
15	16QAM	1	74	20.34	20.32	20.39		
15	16QAM	36	0	20.13	20.36	20.34	21.4	0
15	16QAM	36	20	20.11	20.34	20.30		
15	16QAM	36	39	20.27	20.35	20.35		
15	16QAM	75	0	20.13	20.39	20.39		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	19.54	19.54	19.68	21.4	0
10	QPSK	1	25	19.84	19.84	20.06		
10	QPSK	1	49	20.08	20.09	20.39		
10	QPSK	25	0	19.98	19.96	20.19	21.4	0
10	QPSK	25	12	19.94	19.94	20.18		
10	QPSK	25	25	19.98	19.89	20.26		
10	QPSK	50	0	19.97	19.97	20.20		
10	16QAM	1	0	20.35	20.38	20.40	21.4	0
10	16QAM	1	25	20.29	20.09	20.35		
10	16QAM	1	49	20.38	20.43	20.38		
10	16QAM	25	0	19.97	19.96	20.20	21.4	0
10	16QAM	25	12	19.94	19.97	20.20		
10	16QAM	25	25	19.96	19.93	20.28		
10	16QAM	50	0	19.99	19.93	20.23		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	19.42	19.40	19.58	21.4	0
5	QPSK	1	12	19.84	19.85	20.13		
5	QPSK	1	24	19.86	19.81	20.13		
5	QPSK	12	0	19.99	19.95	20.18	21.4	0
5	QPSK	12	7	19.92	19.90	20.16		
5	QPSK	12	13	19.92	19.90	20.07		
5	QPSK	25	0	19.95	19.94	20.23		
5	16QAM	1	0	20.29	20.25	20.33	21.4	0
5	16QAM	1	12	20.15	20.15	20.38		
5	16QAM	1	24	20.16	20.13	20.34		
5	16QAM	12	0	20.01	20.01	20.20	21.4	0
5	16QAM	12	7	19.97	19.94	20.17		
5	16QAM	12	13	19.94	19.89	20.06		
5	16QAM	25	0	19.95	19.92	20.18		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	19.58	19.48	19.52	21.4	0
3	QPSK	1	8	19.90	19.86	20.10		
3	QPSK	1	14	19.83	19.81	20.10		
3	QPSK	8	0	19.94	19.90	20.12	21.4	0
3	QPSK	8	4	19.89	19.89	20.14		
3	QPSK	8	7	19.87	19.89	20.15		
3	QPSK	15	0	19.92	19.88	20.13		
3	16QAM	1	0	20.18	20.20	20.36	21.4	0
3	16QAM	1	8	20.18	20.16	20.39		
3	16QAM	1	14	20.09	20.07	20.42		
3	16QAM	8	0	20.01	19.96	20.17	21.4	0
3	16QAM	8	4	19.98	19.97	20.15		
3	16QAM	8	7	19.95	19.93	20.22		
3	16QAM	15	0	19.92	19.92	20.12		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	19.46	19.52	19.47	21.4	0
1.4	QPSK	1	3	19.97	19.93	20.15		
1.4	QPSK	1	5	19.87	19.84	20.10		
1.4	QPSK	3	0	19.91	19.86	20.17		
1.4	QPSK	3	1	19.96	19.92	20.18		
1.4	QPSK	3	3	19.92	19.79	20.15		
1.4	QPSK	6	0	19.93	19.91	20.15	21.4	0
1.4	16QAM	1	0	20.25	20.12	20.41	21.4	0
1.4	16QAM	1	3	20.23	20.16	20.37		
1.4	16QAM	1	5	20.11	20.04	20.30		
1.4	16QAM	3	0	19.94	19.93	20.18		
1.4	16QAM	3	1	19.95	19.95	20.18		
1.4	16QAM	3	3	19.90	19.92	20.13		
1.4	16QAM	6	0	19.96	19.94	20.27	21.4	0

<LTE Band 26>

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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.92	22.87	22.90	24	0
15	QPSK	1	37	22.52	22.65	22.44		
15	QPSK	1	74	23.04	23.06	22.96		
15	QPSK	36	0	21.79	21.92	21.85	23	1
15	QPSK	36	20	21.60	21.64	21.60		
15	QPSK	36	39	21.52	21.36	21.40		
15	QPSK	75	0	21.68	21.64	21.76		
15	16QAM	1	0	22.15	22.05	22.02	23	1
15	16QAM	1	37	21.77	21.83	21.80		
15	16QAM	1	74	22.26	22.26	22.19		
15	16QAM	36	0	20.75	20.85	20.87	22	2
15	16QAM	36	20	20.61	20.49	20.57		
15	16QAM	36	39	20.44	20.42	20.30		
15	16QAM	75	0	20.66	20.57	20.69		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.34	22.19	22.38	24	0
10	QPSK	1	25	22.49	22.51	22.55		
10	QPSK	1	49	22.70	22.75	22.79		
10	QPSK	25	0	21.60	21.58	21.74	23	1
10	QPSK	25	12	21.58	21.62	21.67		
10	QPSK	25	25	21.66	21.64	21.81		
10	QPSK	50	0	21.62	21.63	21.73		
10	16QAM	1	0	22.18	22.03	22.17	23	1
10	16QAM	1	25	21.78	21.79	21.87		
10	16QAM	1	49	21.97	21.96	22.06		
10	16QAM	25	0	20.67	20.66	20.72	22	2
10	16QAM	25	12	20.58	20.64	20.67		
10	16QAM	25	25	20.62	20.64	20.66		
10	16QAM	50	0	20.66	20.65	20.74		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.67	22.64	22.72	24	0
5	QPSK	1	12	22.43	22.45	22.52		
5	QPSK	1	24	22.43	22.51	22.46		
5	QPSK	12	0	21.59	21.56	21.59	23	1
5	QPSK	12	7	21.54	21.58	21.62		
5	QPSK	12	13	21.52	21.55	21.63		
5	QPSK	25	0	21.58	21.58	21.67		
5	16QAM	1	0	21.80	21.80	21.83	23	1
5	16QAM	1	12	21.74	21.76	21.85		
5	16QAM	1	24	21.71	21.73	21.82		
5	16QAM	12	0	20.60	20.59	20.62	22	2
5	16QAM	12	7	20.58	20.50	20.59		
5	16QAM	12	13	20.56	20.46	20.66		
5	16QAM	25	0	20.58	20.49	20.60		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.60	22.62	22.63	24	0
3	QPSK	1	8	22.51	22.54	22.42		
3	QPSK	1	14	22.47	22.47	22.48		
3	QPSK	8	0	21.53	21.57	21.54	23	1
3	QPSK	8	4	21.58	21.52	21.60		
3	QPSK	8	7	21.48	21.47	21.60		
3	QPSK	15	0	21.53	21.47	21.63		
3	16QAM	1	0	21.75	21.64	21.78	23	1
3	16QAM	1	8	21.81	21.69	21.85		
3	16QAM	1	14	21.75	21.61	21.70		
3	16QAM	8	0	20.57	20.53	20.63	22	2
3	16QAM	8	4	20.65	20.54	20.66		
3	16QAM	8	7	20.54	20.51	20.62		
3	16QAM	15	0	20.58	20.50	20.57		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.59	22.57	22.60	24	0
1.4	QPSK	1	3	22.44	22.49	22.48		
1.4	QPSK	1	5	22.41	22.42	22.44		
1.4	QPSK	3	0	22.44	22.48	22.39		
1.4	QPSK	3	1	22.51	22.49	22.46		
1.4	QPSK	3	3	22.42	22.49	22.51		
1.4	QPSK	6	0	21.44	21.54	21.46	23	1
1.4	16QAM	1	0	21.70	21.69	21.72	23	1
1.4	16QAM	1	3	21.71	21.79	21.88		
1.4	16QAM	1	5	21.64	21.70	21.77		
1.4	16QAM	3	0	21.49	21.51	21.51		
1.4	16QAM	3	1	21.58	21.54	21.53		
1.4	16QAM	3	3	21.42	21.46	21.53		
1.4	16QAM	6	0	20.48	20.59	20.59	22	2

<LTE Band 30>

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				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	22.15			23.1	0
10	QPSK	1	25	21.59				
10	QPSK	1	49	22.16				
10	QPSK	25	0	21.65			23	0.1
10	QPSK	25	12	21.60				
10	QPSK	25	25	21.67				
10	QPSK	50	0	21.67				
10	16QAM	1	0	22.11			23	0.1
10	16QAM	1	25	21.74				
10	16QAM	1	49	21.97				
10	16QAM	25	0	20.64			22	1.1
10	16QAM	25	12	20.58				
10	16QAM	25	25	20.65				
10	16QAM	50	0	20.61				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	21.82	21.21	21.12	23.1	0
5	QPSK	1	12	21.69	21.58	21.62		
5	QPSK	1	24	21.60	21.66	21.66		
5	QPSK	12	0	21.71	21.66	21.60	23	0.1
5	QPSK	12	7	21.64	21.59	21.67		
5	QPSK	12	13	21.61	21.61	21.57		
5	QPSK	25	0	21.71	21.65	21.65		
5	16QAM	1	0	21.88	21.86	21.94	23	0.1
5	16QAM	1	12	21.83	21.82	21.93		
5	16QAM	1	24	22.00	21.91	21.98		
5	16QAM	12	0	20.75	20.70	20.66	22	1.1
5	16QAM	12	7	20.67	20.55	20.73		
5	16QAM	12	13	20.59	20.68	20.61		
5	16QAM	25	0	20.64	20.63	20.60		

<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	21.44	21.74	21.73	22.9	0
20	QPSK	1	49	21.57	21.79	21.85		
20	QPSK	1	99	22.25	22.32	22.57		
20	QPSK	50	0	21.61	21.78	22.03	22.9	0
20	QPSK	50	24	21.62	21.84	22.00		
20	QPSK	50	50	21.75	21.87	22.05		
20	QPSK	100	0	21.70	21.90	22.08		
20	16QAM	1	0	21.62	21.90	22.22	22.9	0
20	16QAM	1	49	21.43	22.02	22.19		
20	16QAM	1	99	22.20	22.53	22.53		
20	16QAM	50	0	20.92	20.95	21.10	22	0.9
20	16QAM	50	24	20.93	20.94	21.12		
20	16QAM	50	50	20.90	20.99	21.18		
20	16QAM	100	0	20.91	20.93	21.10		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	21.46	21.71	22.39	22.9	0
15	QPSK	1	37	21.57	21.78	21.89		
15	QPSK	1	74	21.82	22.05	22.20		
15	QPSK	36	0	21.70	21.92	22.10	22.9	0
15	QPSK	36	20	21.61	21.86	22.02		
15	QPSK	36	39	21.61	21.82	22.01		
15	QPSK	75	0	21.66	21.89	22.08		
15	16QAM	1	0	22.11	22.32	22.49	22.9	0
15	16QAM	1	37	21.72	22.01	22.15		
15	16QAM	1	74	22.03	22.23	22.44		
15	16QAM	36	0	20.96	21.01	21.19	22	0.9
15	16QAM	36	20	20.91	20.97	21.13		
15	16QAM	36	39	20.90	20.92	21.10		
15	16QAM	75	0	20.91	20.96	21.15		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	21.15	21.33	21.54	22.9	0
10	QPSK	1	25	21.67	21.95	22.02		
10	QPSK	1	49	22.20	22.47	22.54		
10	QPSK	25	0	21.71	21.92	22.03	22.9	0
10	QPSK	25	12	21.78	22.03	22.15		
10	QPSK	25	25	21.86	22.15	22.22		
10	QPSK	50	0	21.77	22.04	22.13		
10	16QAM	1	0	21.37	21.64	21.81	22.9	0
10	16QAM	1	25	21.93	22.17	22.27		
10	16QAM	1	49	22.45	22.48	22.50		
10	16QAM	25	0	21.01	21.06	21.16	22	0.9
10	16QAM	25	12	21.06	21.18	21.26		
10	16QAM	25	25	21.16	21.24	21.29		
10	16QAM	50	0	21.09	21.14	21.23		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	21.37	21.67	21.76	22.9	0
5	QPSK	1	12	21.66	21.97	22.08		
5	QPSK	1	24	21.71	21.99	22.08		
5	QPSK	12	0	21.75	22.07	22.13	22.9	0
5	QPSK	12	7	21.71	22.04	22.11		
5	QPSK	12	13	21.70	21.98	22.08		
5	QPSK	25	0	21.75	22.00	22.15		
5	16QAM	1	0	22.12	22.36	22.50	22.9	0
5	16QAM	1	12	21.94	22.22	22.35		
5	16QAM	1	24	21.96	22.25	22.52		
5	16QAM	12	0	21.07	21.17	21.26	22	0.9
5	16QAM	12	7	21.06	21.11	21.21		
5	16QAM	12	13	21.01	21.13	21.21		
5	16QAM	25	0	21.06	21.16	21.22		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	21.28	21.56	21.65	22.9	0
3	QPSK	1	8	21.68	21.98	22.08		
3	QPSK	1	14	21.69	21.93	22.04		
3	QPSK	8	0	21.75	22.02	22.11	22.9	0
3	QPSK	8	4	21.74	21.98	22.11		
3	QPSK	8	7	21.71	21.98	22.09		
3	QPSK	15	0	21.70	22.02	22.12		
3	16QAM	1	0	22.05	22.36	22.47	22.9	0
3	16QAM	1	8	21.99	22.31	22.37		
3	16QAM	1	14	21.89	22.22	22.38		
3	16QAM	8	0	21.09	21.17	21.23	22	0.9
3	16QAM	8	4	21.09	21.18	21.27		
3	16QAM	8	7	21.02	21.14	21.25		
3	16QAM	15	0	21.03	21.12	21.22		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	21.19	21.46	21.58	22.9	0
1.4	QPSK	1	3	21.69	21.98	22.12		
1.4	QPSK	1	5	21.65	21.93	22.02		
1.4	QPSK	3	0	21.70	21.97	22.06		
1.4	QPSK	3	1	21.69	21.99	22.12		
1.4	QPSK	3	3	21.67	21.95	22.08		
1.4	QPSK	6	0	21.65	21.93	22.07	22.9	0
1.4	16QAM	1	0	21.92	22.24	22.36	22.9	0
1.4	16QAM	1	3	21.98	22.27	22.35		
1.4	16QAM	1	5	21.91	22.18	22.32		
1.4	16QAM	3	0	21.70	21.97	22.08		
1.4	16QAM	3	1	21.74	21.99	22.09		
1.4	16QAM	3	3	21.65	21.93	22.04		
1.4	16QAM	6	0	21.00	21.16	21.25	22	0.9

<At-Head 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	22.33	22.55	22.47	24	0
20	QPSK	1	49	22.24	22.38	22.44		
20	QPSK	1	99	22.09	22.14	22.28		
20	QPSK	50	0	21.35	21.48	21.55	23	1
20	QPSK	50	24	21.28	21.45	21.50		
20	QPSK	50	50	21.34	21.47	21.48		
20	QPSK	100	0	21.31	21.52	21.41		
20	16QAM	1	0	21.47	21.65	21.69	23	1
20	16QAM	1	49	21.54	21.59	21.67		
20	16QAM	1	99	21.48	21.58	21.61		
20	16QAM	50	0	20.31	20.43	20.47	22	2
20	16QAM	50	24	20.31	20.44	20.51		
20	16QAM	50	50	20.34	20.43	20.46		
20	16QAM	100	0	20.29	20.42	20.51		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.45	22.35	22.44	24	0
15	QPSK	1	37	22.05	22.09	22.19		
15	QPSK	1	74	22.39	22.53	22.54		
15	QPSK	36	0	21.30	21.44	21.51	23	1
15	QPSK	36	20	21.29	21.40	21.51		
15	QPSK	36	39	21.28	21.38	21.48		
15	QPSK	75	0	21.28	21.40	21.50		
15	16QAM	1	0	21.63	21.78	21.77	23	1
15	16QAM	1	37	21.42	21.44	21.59		
15	16QAM	1	74	21.67	21.77	21.77		
15	16QAM	36	0	20.28	20.42	20.49	22	2
15	16QAM	36	20	20.29	20.42	20.50		
15	16QAM	36	39	20.27	20.42	20.49		
15	16QAM	75	0	20.26	20.40	20.50		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.07	22.15	22.31	24	0
10	QPSK	1	25	22.08	22.26	22.37		
10	QPSK	1	49	22.20	22.30	22.50		
10	QPSK	25	0	21.20	21.31	21.48	23	1
10	QPSK	25	12	21.16	21.31	21.41		
10	QPSK	25	25	21.18	21.32	21.42		
10	QPSK	50	0	21.17	21.34	21.41		
10	16QAM	1	0	21.49	21.63	21.79	23	1
10	16QAM	1	25	21.37	21.53	21.64		
10	16QAM	1	49	21.49	21.58	21.74		
10	16QAM	25	0	20.19	20.32	20.52	22	2
10	16QAM	25	12	20.17	20.32	20.43		
10	16QAM	25	25	20.16	20.35	20.42		
10	16QAM	50	0	20.17	20.29	20.41		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.24	22.13	22.17	24	0
5	QPSK	1	12	22.06	22.24	22.20		
5	QPSK	1	24	22.10	22.28	22.39		
5	QPSK	12	0	21.22	21.40	21.61	23	1
5	QPSK	12	7	21.18	21.32	21.45		
5	QPSK	12	13	21.15	21.29	21.47		
5	QPSK	25	0	21.24	21.38	21.47		
5	16QAM	1	0	21.45	21.65	21.72	23	1
5	16QAM	1	12	21.25	21.49	21.61		
5	16QAM	1	24	21.35	21.56	21.63		
5	16QAM	12	0	20.26	20.42	20.55	22	2
5	16QAM	12	7	20.23	20.35	20.52		
5	16QAM	12	13	20.21	20.32	20.48		
5	16QAM	25	0	20.19	20.33	20.48		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.16	22.00	22.12	24	0
3	QPSK	1	8	22.09	22.22	22.41		
3	QPSK	1	14	22.03	22.13	22.35		
3	QPSK	8	0	21.16	21.30	21.46	23	1
3	QPSK	8	4	21.16	21.31	21.47		
3	QPSK	8	7	21.12	21.25	21.47		
3	QPSK	15	0	21.18	21.31	21.44		
3	16QAM	1	0	21.38	21.56	21.69	23	1
3	16QAM	1	8	21.36	21.50	21.66		
3	16QAM	1	14	21.29	21.42	21.59		
3	16QAM	8	0	20.22	20.39	20.52	22	2
3	16QAM	8	4	20.22	20.39	20.53		
3	16QAM	8	7	20.19	20.33	20.50		
3	16QAM	15	0	20.21	20.32	20.45		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.05	22.05	22.04	24	0
1.4	QPSK	1	3	22.14	22.31	22.44		
1.4	QPSK	1	5	22.04	22.18	22.34		
1.4	QPSK	3	0	22.08	22.21	22.34		
1.4	QPSK	3	1	22.10	22.26	22.40		
1.4	QPSK	3	3	22.06	22.23	22.37		
1.4	QPSK	6	0	21.11	21.27	21.45	23	1
1.4	16QAM	1	0	21.31	21.48	21.61	23	1
1.4	16QAM	1	3	21.42	21.54	21.65		
1.4	16QAM	1	5	21.28	21.46	21.60		
1.4	16QAM	3	0	21.11	21.24	21.39		
1.4	16QAM	3	1	21.14	21.28	21.44		
1.4	16QAM	3	3	21.05	21.21	21.39		
1.4	16QAM	6	0	20.21	20.36	20.49	22	2

<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	22.17	22.19	22.03	24	0
20	QPSK	1	49	22.28	22.32	22.38		
20	QPSK	1	99	22.34	22.40	22.39		
20	QPSK	50	0	21.37	21.44	21.44	23	1
20	QPSK	50	24	21.41	21.44	21.46		
20	QPSK	50	50	21.37	21.51	21.39		
20	QPSK	100	0	21.37	21.41	21.48		
20	16QAM	1	0	21.41	21.41	21.46	23	1
20	16QAM	1	49	21.54	21.46	21.55		
20	16QAM	1	99	21.55	21.45	21.62		
20	16QAM	50	0	20.37	20.46	20.44	22	2
20	16QAM	50	24	20.41	20.46	20.55		
20	16QAM	50	50	20.38	20.49	20.41		
20	16QAM	100	0	20.40	20.43	20.52		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.13	22.40	22.25	24	0
15	QPSK	1	37	22.29	22.24	22.30		
15	QPSK	1	74	22.28	22.30	22.41		
15	QPSK	36	0	21.44	21.44	21.61	23	1
15	QPSK	36	20	21.48	21.48	21.52		
15	QPSK	36	39	21.37	21.40	21.45		
15	QPSK	75	0	21.45	21.48	21.52		
15	16QAM	1	0	21.62	21.76	21.75	23	1
15	16QAM	1	37	21.53	21.51	21.74		
15	16QAM	1	74	21.48	21.50	21.68		
15	16QAM	36	0	20.40	20.43	20.63	22	2
15	16QAM	36	20	20.48	20.54	20.57		
15	16QAM	36	39	20.37	20.42	20.46		
15	16QAM	75	0	20.48	20.51	20.57		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.45	22.41	22.54	24	0
10	QPSK	1	25	22.39	22.46	22.39		
10	QPSK	1	49	22.49	22.66	22.65		
10	QPSK	25	0	21.56	21.58	21.53	23	1
10	QPSK	25	12	21.51	21.55	21.52		
10	QPSK	25	25	21.62	21.61	21.65		
10	QPSK	50	0	21.59	21.63	21.55		
10	16QAM	1	0	22.05	21.98	21.99	23	1
10	16QAM	1	25	21.65	21.69	21.66		
10	16QAM	1	49	22.07	22.08	22.09		
10	16QAM	25	0	20.56	20.63	20.54	22	2
10	16QAM	25	12	20.49	20.59	20.51		
10	16QAM	25	25	20.65	20.60	20.62		
10	16QAM	50	0	20.64	20.65	20.57		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.21	22.32	22.22	24	0
5	QPSK	1	12	22.38	22.44	22.38		
5	QPSK	1	24	22.43	22.37	22.37		
5	QPSK	12	0	21.61	21.53	21.59	23	1
5	QPSK	12	7	21.49	21.53	21.51		
5	QPSK	12	13	21.42	21.49	21.51		
5	QPSK	25	0	21.49	21.56	21.54		
5	16QAM	1	0	21.84	21.74	21.79	23	1
5	16QAM	1	12	21.71	21.72	21.66		
5	16QAM	1	24	21.69	21.58	21.64		
5	16QAM	12	0	20.56	20.58	20.60	22	2
5	16QAM	12	7	20.50	20.60	20.52		
5	16QAM	12	13	20.47	20.51	20.55		
5	16QAM	25	0	20.56	20.58	20.49		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.45	22.31	22.40	24	0
3	QPSK	1	8	22.46	22.46	22.30		
3	QPSK	1	14	22.37	22.34	22.32		
3	QPSK	8	0	21.49	21.43	21.46	23	1
3	QPSK	8	4	21.55	21.54	21.52		
3	QPSK	8	7	21.44	21.50	21.48		
3	QPSK	15	0	21.49	21.51	21.40		
3	16QAM	1	0	21.73	21.68	21.67	23	1
3	16QAM	1	8	21.70	21.68	21.71		
3	16QAM	1	14	21.65	21.47	21.57		
3	16QAM	8	0	20.56	20.49	20.54	22	2
3	16QAM	8	4	20.56	20.61	20.59		
3	16QAM	8	7	20.48	20.56	20.54		
3	16QAM	15	0	20.51	20.55	20.42		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.23	22.17	22.05	24	0
1.4	QPSK	1	3	22.37	22.48	22.45		
1.4	QPSK	1	5	22.34	22.38	22.35		
1.4	QPSK	3	0	22.45	22.30	22.42		
1.4	QPSK	3	1	22.48	22.45	22.43		
1.4	QPSK	3	3	22.36	22.40	22.39		
1.4	QPSK	6	0	21.39	21.45	21.45	23	1
1.4	16QAM	1	0	21.66	21.55	21.66	23	1
1.4	16QAM	1	3	21.63	21.71	21.69		
1.4	16QAM	1	5	21.59	21.63	21.57		
1.4	16QAM	3	0	21.46	21.34	21.45		
1.4	16QAM	3	1	21.52	21.47	21.46		
1.4	16QAM	3	3	21.36	21.41	21.40		
1.4	16QAM	6	0	20.47	20.56	20.51	22	2

<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	22.85	22.77	24	0
10	QPSK	1	25	22.53	22.48	22.37		
10	QPSK	1	49	22.77	22.78	22.84		
10	QPSK	25	0	21.65	21.59	21.74	23	1
10	QPSK	25	12	21.62	21.55	21.63		
10	QPSK	25	25	21.63	21.60	21.77		
10	QPSK	50	0	21.64	21.64	21.75		
10	16QAM	1	0	21.84	21.93	21.96	23	1
10	16QAM	1	25	21.81	21.73	21.78		
10	16QAM	1	49	21.97	22.08	22.08		
10	16QAM	25	0	20.64	20.57	20.72	22	2
10	16QAM	25	12	20.61	20.53	20.64		
10	16QAM	25	25	20.63	20.64	20.69		
10	16QAM	50	0	20.66	20.63	20.78		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.61	22.52	22.57	24	0
5	QPSK	1	12	22.54	22.57	22.36		
5	QPSK	1	24	22.53	22.55	22.51		
5	QPSK	12	0	21.57	21.57	21.61	23	1
5	QPSK	12	7	21.63	21.66	21.58		
5	QPSK	12	13	21.59	21.62	21.72		
5	QPSK	25	0	21.66	21.67	21.60		
5	16QAM	1	0	21.87	21.81	21.83	23	1
5	16QAM	1	12	21.85	21.83	21.73		
5	16QAM	1	24	21.81	21.77	21.71		
5	16QAM	12	0	20.62	20.61	20.61	22	2
5	16QAM	12	7	20.67	20.59	20.63		
5	16QAM	12	13	20.59	20.55	20.63		
5	16QAM	25	0	20.69	20.59	20.55		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.38	22.56	22.56	24	0
3	QPSK	1	8	22.51	22.48	22.47		
3	QPSK	1	14	22.48	22.41	22.39		
3	QPSK	8	0	21.55	21.54	21.49	23	1
3	QPSK	8	4	21.54	21.55	21.56		
3	QPSK	8	7	21.48	21.48	21.50		
3	QPSK	15	0	21.50	21.58	21.49		
3	16QAM	1	0	21.79	21.70	21.71	23	1
3	16QAM	1	8	21.79	21.78	21.72		
3	16QAM	1	14	21.73	21.68	21.72		
3	16QAM	8	0	20.61	20.62	20.64	22	2
3	16QAM	8	4	20.62	20.61	20.67		
3	16QAM	8	7	20.57	20.54	20.59		
3	16QAM	15	0	20.54	20.61	20.51		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.48	22.54	22.53	24	0
1.4	QPSK	1	3	22.55	22.58	22.58		
1.4	QPSK	1	5	22.52	22.50	22.46		
1.4	QPSK	3	0	22.46	22.47	22.43		
1.4	QPSK	3	1	22.52	22.48	22.42		
1.4	QPSK	3	3	22.53	22.55	22.49		
1.4	QPSK	6	0	21.56	21.59	21.59	23	1
1.4	16QAM	1	0	21.73	21.72	21.75	23	1
1.4	16QAM	1	3	21.81	21.86	21.80		
1.4	16QAM	1	5	21.75	21.71	21.69		
1.4	16QAM	3	0	21.47	21.50	21.59		
1.4	16QAM	3	1	21.56	21.54	21.57		
1.4	16QAM	3	3	21.54	21.55	21.54		
1.4	16QAM	6	0	20.60	20.70	20.56	22	2

<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	22.23	22.15	22.32	24	0
20	QPSK	1	49	22.32	22.35	22.50		
20	QPSK	1	99	22.29	22.23	22.44		
20	QPSK	50	0	21.42	21.43	21.47	23	1
20	QPSK	50	24	21.38	21.42	21.44		
20	QPSK	50	50	21.41	21.38	21.51		
20	QPSK	100	0	21.37	21.32	21.48		
20	16QAM	1	0	21.65	21.59	21.75	23	1
20	16QAM	1	49	21.70	21.75	21.77		
20	16QAM	1	99	21.66	21.69	21.69		
20	16QAM	50	0	20.41	20.42	20.47	22	2
20	16QAM	50	24	20.36	20.37	20.49		
20	16QAM	50	50	20.40	20.47	20.47		
20	16QAM	100	0	20.36	20.37	20.50		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.24	22.16	22.31	24	0
15	QPSK	1	37	22.36	22.39	22.06		
15	QPSK	1	74	22.34	22.47	22.40		
15	QPSK	36	0	21.43	21.39	21.52	23	1
15	QPSK	36	20	21.45	21.41	21.57		
15	QPSK	36	39	21.39	21.50	21.49		
15	QPSK	75	0	21.39	21.38	21.47		
15	16QAM	1	0	21.58	21.53	21.66	23	1
15	16QAM	1	37	21.63	21.63	21.64		
15	16QAM	1	74	21.62	21.66	21.71		
15	16QAM	36	0	20.40	20.39	20.51	22	2
15	16QAM	36	20	20.45	20.45	20.62		
15	16QAM	36	39	20.37	20.48	20.49		
15	16QAM	75	0	20.39	20.40	20.48		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.56	22.56	22.64	24	0
10	QPSK	1	25	22.37	22.36	22.56		
10	QPSK	1	49	22.60	22.54	22.70		
10	QPSK	25	0	21.47	21.51	21.56	23	1
10	QPSK	25	12	21.54	21.43	21.57		
10	QPSK	25	25	21.42	21.53	21.58		
10	QPSK	50	0	21.44	21.48	21.51		
10	16QAM	1	0	21.83	21.96	22.01	23	1
10	16QAM	1	25	21.62	21.63	21.80		
10	16QAM	1	49	21.80	21.82	21.87		
10	16QAM	25	0	20.49	20.51	20.60	22	2
10	16QAM	25	12	20.55	20.46	20.58		
10	16QAM	25	25	20.42	20.51	20.61		
10	16QAM	50	0	20.48	20.48	20.55		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.28	22.31	22.41	24	0
5	QPSK	1	12	22.29	22.32	22.35		
5	QPSK	1	24	22.34	22.42	22.53		
5	QPSK	12	0	21.51	21.50	21.55	23	1
5	QPSK	12	7	21.50	21.42	21.56		
5	QPSK	12	13	21.54	21.44	21.50		
5	QPSK	25	0	21.52	21.45	21.56		
5	16QAM	1	0	21.76	21.65	21.75	23	1
5	16QAM	1	12	21.67	21.58	21.64		
5	16QAM	1	24	21.69	21.69	21.74		
5	16QAM	12	0	20.61	20.57	20.59	22	2
5	16QAM	12	7	20.55	20.45	20.60		
5	16QAM	12	13	20.57	20.47	20.58		
5	16QAM	25	0	20.51	20.46	20.59		

<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	22.19	22.19	22.32	24	0
10	QPSK	1	25	22.47	22.69	22.67		
10	QPSK	1	49	22.19	22.26	22.22		
10	QPSK	25	0	21.44	21.44	21.52	23	1
10	QPSK	25	12	21.50	21.70	21.68		
10	QPSK	25	25	21.49	21.60	21.58		
10	QPSK	50	0	21.48	21.62	21.58		
10	16QAM	1	0	21.42	21.46	21.49	23	1
10	16QAM	1	25	21.87	21.79	21.82		
10	16QAM	1	49	21.50	21.52	21.44		
10	16QAM	25	0	20.43	20.45	20.54	22	2
10	16QAM	25	12	20.53	20.63	20.72		
10	16QAM	25	25	20.52	20.60	20.58		
10	16QAM	50	0	20.45	20.49	20.62		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.48	22.62	22.66	24	0
5	QPSK	1	12	22.17	22.29	22.43		
5	QPSK	1	24	22.37	22.66	22.45		
5	QPSK	12	0	21.36	21.65	21.56	23	1
5	QPSK	12	7	21.43	21.65	21.58		
5	QPSK	12	13	21.42	21.65	21.55		
5	QPSK	25	0	21.40	21.65	21.60		
5	16QAM	1	0	21.55	21.80	21.77	23	1
5	16QAM	1	12	21.55	21.78	21.73		
5	16QAM	1	24	21.65	21.96	21.81		
5	16QAM	12	0	20.36	20.63	20.56	22	2
5	16QAM	12	7	20.45	20.64	20.52		
5	16QAM	12	13	20.44	20.69	20.57		
5	16QAM	25	0	20.43	20.65	20.58		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.44	22.68	22.62	24	0
3	QPSK	1	8	22.35	22.59	22.45		
3	QPSK	1	14	22.37	22.54	22.40		
3	QPSK	8	0	21.41	21.68	21.54	23	1
3	QPSK	8	4	21.39	21.61	21.58		
3	QPSK	8	7	21.40	21.58	21.55		
3	QPSK	15	0	21.38	21.58	21.55		
3	16QAM	1	0	21.54	21.80	21.73	23	1
3	16QAM	1	8	21.58	21.94	21.68		
3	16QAM	1	14	21.62	21.85	21.69		
3	16QAM	8	0	20.46	20.71	20.61	22	2
3	16QAM	8	4	20.39	20.70	20.60		
3	16QAM	8	7	20.45	20.70	20.61		
3	16QAM	15	0	20.36	20.64	20.55		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.45	22.64	22.57	24	0
1.4	QPSK	1	3	22.37	22.55	22.44		
1.4	QPSK	1	5	22.21	22.54	22.34		
1.4	QPSK	3	0	22.32	22.50	22.44		
1.4	QPSK	3	1	22.35	22.56	22.44		
1.4	QPSK	3	3	22.35	22.53	22.36		
1.4	QPSK	6	0	21.37	21.59	21.50	23	1
1.4	16QAM	1	0	21.53	21.71	21.67	23	1
1.4	16QAM	1	3	21.63	21.81	21.69		
1.4	16QAM	1	5	21.53	21.76	21.75		
1.4	16QAM	3	0	21.36	21.56	21.48		
1.4	16QAM	3	1	21.42	21.61	21.51		
1.4	16QAM	3	3	21.35	21.55	21.42		
1.4	16QAM	6	0	20.46	20.59	20.49	22	2

<LTE Band 13>

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				23230				
Frequency (MHz)				782				
10	QPSK	1	0	22.98			24	0
10	QPSK	1	25	22.80				
10	QPSK	1	49	23.00				
10	QPSK	25	0	21.97			23	1
10	QPSK	25	12	21.80				
10	QPSK	25	25	21.90				
10	QPSK	50	0	21.85				
10	16QAM	1	0	22.12			23	1
10	16QAM	1	25	21.97				
10	16QAM	1	49	22.12				
10	16QAM	25	0	20.87			22	2
10	16QAM	25	12	20.81				
10	16QAM	25	25	20.87				
10	16QAM	50	0	20.96				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.69	22.90	22.87	24	0
5	QPSK	1	12	22.47	22.77	22.75		
5	QPSK	1	24	22.58	22.81	22.69		
5	QPSK	12	0	21.65	21.86	21.87	23	1
5	QPSK	12	7	21.69	21.87	21.94		
5	QPSK	12	13	21.65	21.87	21.82		
5	QPSK	25	0	21.64	21.90	21.88		
5	16QAM	1	0	21.78	22.05	22.00	23	1
5	16QAM	1	12	21.79	22.00	21.94		
5	16QAM	1	24	21.84	22.00	21.88		
5	16QAM	12	0	20.69	20.89	20.79	22	2
5	16QAM	12	7	20.68	20.91	20.87		
5	16QAM	12	13	20.68	20.87	20.79		
5	16QAM	25	0	20.69	20.89	20.83		

<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	22.22	22.31	22.42	24	0
10	QPSK	1	25	22.54	22.66	22.60		
10	QPSK	1	49	22.37	22.39	22.36		
10	QPSK	25	0	21.62	21.42	21.48	23	1
10	QPSK	25	12	21.69	21.71	21.71		
10	QPSK	25	25	21.58	21.62	21.65		
10	QPSK	50	0	21.55	21.52	21.54		
10	16QAM	1	0	21.45	21.46	21.39	23	1
10	16QAM	1	25	21.84	21.87	21.84		
10	16QAM	1	49	21.47	21.45	21.46		
10	16QAM	25	0	20.56	20.49	20.50	22	2
10	16QAM	25	12	20.69	20.73	20.72		
10	16QAM	25	25	20.57	20.54	20.57		
10	16QAM	50	0	20.60	20.59	20.57		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.64	22.77	22.74	24	0
5	QPSK	1	12	22.34	22.61	22.53		
5	QPSK	1	24	22.51	22.62	22.51		
5	QPSK	12	0	21.53	21.63	21.65	23	1
5	QPSK	12	7	21.57	21.69	21.75		
5	QPSK	12	13	21.60	21.76	21.65		
5	QPSK	25	0	21.50	21.71	21.73		
5	16QAM	1	0	21.72	21.86	21.90	23	1
5	16QAM	1	12	21.76	21.88	21.78		
5	16QAM	1	24	21.79	21.87	21.82		
5	16QAM	12	0	20.54	20.67	20.64	22	2
5	16QAM	12	7	20.57	20.70	20.71		
5	16QAM	12	13	20.60	20.74	20.67		
5	16QAM	25	0	20.53	20.72	20.72		

<LTE Band 25>

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				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.44	22.51	22.49	24	0
20	QPSK	1	49	22.37	22.57	22.49		
20	QPSK	1	99	22.39	22.55	22.38		
20	QPSK	50	0	21.54	21.60	21.58	23	1
20	QPSK	50	24	21.42	21.66	21.57		
20	QPSK	50	50	21.42	21.61	21.54		
20	QPSK	100	0	21.45	21.65	21.57		
20	16QAM	1	0	21.77	21.88	21.84	23	1
20	16QAM	1	49	21.69	21.69	21.77		
20	16QAM	1	99	21.81	21.88	21.87		
20	16QAM	50	0	20.50	20.63	20.60	22	2
20	16QAM	50	24	20.48	20.66	20.59		
20	16QAM	50	50	20.42	20.59	20.55		
20	16QAM	100	0	20.47	20.64	20.58		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.56	22.69	22.70	24	0
15	QPSK	1	37	22.30	22.42	22.39		
15	QPSK	1	74	22.56	22.76	22.71		
15	QPSK	36	0	21.52	21.70	21.70	23	1
15	QPSK	36	20	21.54	21.69	21.68		
15	QPSK	36	39	21.62	21.68	21.70		
15	QPSK	75	0	21.55	21.73	21.73		
15	16QAM	1	0	21.76	21.87	21.85	23	1
15	16QAM	1	37	21.58	21.90	21.90		
15	16QAM	1	74	21.81	22.01	21.74		
15	16QAM	36	0	20.58	20.70	20.71	22	2
15	16QAM	36	20	20.49	20.71	20.67		
15	16QAM	36	39	20.63	20.70	20.65		
15	16QAM	75	0	20.49	20.71	20.73		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.62	22.61	22.78	24	0
10	QPSK	1	25	22.39	22.32	22.72		
10	QPSK	1	49	22.56	22.56	22.80		
10	QPSK	25	0	21.48	21.40	21.66	23	1
10	QPSK	25	12	21.46	21.42	21.65		
10	QPSK	25	25	21.46	21.47	21.75		
10	QPSK	50	0	21.43	21.40	21.67		
10	16QAM	1	0	21.83	21.86	22.09	23	1
10	16QAM	1	25	21.66	21.60	21.84		
10	16QAM	1	49	21.87	21.84	22.03		
10	16QAM	25	0	20.43	20.41	20.66	22	2
10	16QAM	25	12	20.45	20.42	20.66		
10	16QAM	25	25	20.42	20.45	20.66		
10	16QAM	50	0	20.42	20.46	20.68		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.54	22.52	22.71	24	0
5	QPSK	1	12	22.35	22.27	22.65		
5	QPSK	1	24	22.36	22.32	22.57		
5	QPSK	12	0	21.47	21.47	21.60	23	1
5	QPSK	12	7	21.40	21.39	21.59		
5	QPSK	12	13	21.40	21.32	21.48		
5	QPSK	25	0	21.42	21.37	21.67		
5	16QAM	1	0	21.76	21.76	22.03	23	1
5	16QAM	1	12	21.64	21.56	21.62		
5	16QAM	1	24	21.62	21.61	21.85		
5	16QAM	12	0	20.48	20.49	20.63	22	2
5	16QAM	12	7	20.45	20.42	20.64		
5	16QAM	12	13	20.39	20.41	20.59		
5	16QAM	25	0	20.41	20.40	20.70		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	22.40	22.41	22.63	24	0
3	QPSK	1	8	22.39	22.34	22.58		
3	QPSK	1	14	22.32	22.26	22.56		
3	QPSK	8	0	21.43	21.39	21.60	23	1
3	QPSK	8	4	21.43	21.35	21.57		
3	QPSK	8	7	21.35	21.33	21.62		
3	QPSK	15	0	21.41	21.35	21.58		
3	16QAM	1	0	21.70	21.64	21.97	23	1
3	16QAM	1	8	21.67	21.63	21.96		
3	16QAM	1	14	21.60	21.54	21.92		
3	16QAM	8	0	20.45	20.40	20.62	22	2
3	16QAM	8	4	20.45	20.44	20.62		
3	16QAM	8	7	20.42	20.41	20.66		
3	16QAM	15	0	20.42	20.40	20.60		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	22.35	22.34	22.59	24	0
1.4	QPSK	1	3	22.40	22.39	22.64		
1.4	QPSK	1	5	22.33	22.29	22.61		
1.4	QPSK	3	0	22.39	22.31	22.60		
1.4	QPSK	3	1	22.40	22.37	22.60		
1.4	QPSK	3	3	22.36	22.35	22.60		
1.4	QPSK	6	0	21.36	21.35	21.61	23	1
1.4	16QAM	1	0	21.64	21.58	22.08	23	1
1.4	16QAM	1	3	21.67	21.61	21.98		
1.4	16QAM	1	5	21.60	21.58	21.87		
1.4	16QAM	3	0	21.38	21.33	21.59		
1.4	16QAM	3	1	21.42	21.39	21.59		
1.4	16QAM	3	3	21.37	21.31	21.54		
1.4	16QAM	6	0	20.42	20.38	20.77	22	2

<LTE Band 26>

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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.92	22.87	22.90	24	0
15	QPSK	1	37	22.52	22.65	22.44		
15	QPSK	1	74	23.04	23.06	22.96		
15	QPSK	36	0	21.79	21.92	21.85	23	1
15	QPSK	36	20	21.60	21.64	21.60		
15	QPSK	36	39	21.52	21.36	21.40		
15	QPSK	75	0	21.68	21.64	21.76		
15	16QAM	1	0	22.15	22.05	22.02	23	1
15	16QAM	1	37	21.77	21.83	21.80		
15	16QAM	1	74	22.26	22.26	22.19		
15	16QAM	36	0	20.75	20.85	20.87	22	2
15	16QAM	36	20	20.61	20.49	20.57		
15	16QAM	36	39	20.44	20.42	20.30		
15	16QAM	75	0	20.66	20.57	20.69		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.34	22.19	22.38	24	0
10	QPSK	1	25	22.49	22.51	22.55		
10	QPSK	1	49	22.70	22.75	22.79		
10	QPSK	25	0	21.60	21.58	21.74	23	1
10	QPSK	25	12	21.58	21.62	21.67		
10	QPSK	25	25	21.66	21.64	21.81		
10	QPSK	50	0	21.62	21.63	21.73		
10	16QAM	1	0	22.18	22.03	22.17	23	1
10	16QAM	1	25	21.78	21.79	21.87		
10	16QAM	1	49	21.97	21.96	22.06		
10	16QAM	25	0	20.67	20.66	20.72	22	2
10	16QAM	25	12	20.58	20.64	20.67		
10	16QAM	25	25	20.62	20.64	20.66		
10	16QAM	50	0	20.66	20.65	20.74		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.67	22.64	22.72	24	0
5	QPSK	1	12	22.43	22.45	22.52		
5	QPSK	1	24	22.43	22.51	22.46		
5	QPSK	12	0	21.59	21.56	21.59	23	1
5	QPSK	12	7	21.54	21.58	21.62		
5	QPSK	12	13	21.52	21.55	21.63		
5	QPSK	25	0	21.58	21.58	21.67		
5	16QAM	1	0	21.80	21.80	21.83	23	1
5	16QAM	1	12	21.74	21.76	21.85		
5	16QAM	1	24	21.71	21.73	21.82		
5	16QAM	12	0	20.60	20.59	20.62	22	2
5	16QAM	12	7	20.58	20.50	20.59		
5	16QAM	12	13	20.56	20.46	20.66		
5	16QAM	25	0	20.58	20.49	20.60		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.60	22.62	22.63	24	0
3	QPSK	1	8	22.51	22.54	22.42		
3	QPSK	1	14	22.47	22.47	22.48		
3	QPSK	8	0	21.53	21.57	21.54	23	1
3	QPSK	8	4	21.58	21.52	21.60		
3	QPSK	8	7	21.48	21.47	21.60		
3	QPSK	15	0	21.53	21.47	21.63		
3	16QAM	1	0	21.75	21.64	21.78	23	1
3	16QAM	1	8	21.81	21.69	21.85		
3	16QAM	1	14	21.75	21.61	21.70		
3	16QAM	8	0	20.57	20.53	20.63	22	2
3	16QAM	8	4	20.65	20.54	20.66		
3	16QAM	8	7	20.54	20.51	20.62		
3	16QAM	15	0	20.58	20.50	20.57		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.59	22.57	22.60	24	0
1.4	QPSK	1	3	22.44	22.49	22.48		
1.4	QPSK	1	5	22.41	22.42	22.44		
1.4	QPSK	3	0	22.44	22.48	22.39		
1.4	QPSK	3	1	22.51	22.49	22.46		
1.4	QPSK	3	3	22.42	22.49	22.51		
1.4	QPSK	6	0	21.44	21.54	21.46	23	1
1.4	16QAM	1	0	21.70	21.69	21.72	23	1
1.4	16QAM	1	3	21.71	21.79	21.88		
1.4	16QAM	1	5	21.64	21.70	21.77		
1.4	16QAM	3	0	21.49	21.51	21.51		
1.4	16QAM	3	1	21.58	21.54	21.53		
1.4	16QAM	3	3	21.42	21.46	21.53		
1.4	16QAM	6	0	20.48	20.59	20.59	22	2

<LTE Band 30>

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				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	22.83			24	0
10	QPSK	1	25	22.45				
10	QPSK	1	49	22.72				
10	QPSK	25	0	21.59			23	1
10	QPSK	25	12	21.56				
10	QPSK	25	25	21.61				
10	QPSK	50	0	21.62				
10	16QAM	1	0	22.05			23	1
10	16QAM	1	25	21.76				
10	16QAM	1	49	21.94				
10	16QAM	25	0	20.68			22	2
10	16QAM	25	12	20.55				
10	16QAM	25	25	20.61				
10	16QAM	50	0	20.56				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	22.05	22.07	22.01	24	0
5	QPSK	1	12	22.57	22.59	22.67		
5	QPSK	1	24	22.51	22.65	22.68		
5	QPSK	12	0	21.68	21.65	21.60	23	1
5	QPSK	12	7	21.64	21.59	21.66		
5	QPSK	12	13	21.56	21.57	21.60		
5	QPSK	25	0	21.64	21.62	21.60		
5	16QAM	1	0	21.96	22.14	22.07	23	1
5	16QAM	1	12	21.88	21.80	21.81		
5	16QAM	1	24	21.93	21.82	21.85		
5	16QAM	12	0	20.68	20.65	20.60	22	2
5	16QAM	12	7	20.67	20.55	20.73		
5	16QAM	12	13	20.57	20.58	20.58		
5	16QAM	25	0	20.67	20.60	20.62		

<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	22.28	22.69	22.83	24	0
20	QPSK	1	49	22.48	22.70	22.84		
20	QPSK	1	99	22.50	22.84	23.00		
20	QPSK	50	0	21.51	21.69	21.84	23	1
20	QPSK	50	24	21.51	21.75	21.94		
20	QPSK	50	50	21.55	21.81	21.97		
20	QPSK	100	0	21.49	21.71	21.89		
20	16QAM	1	0	21.66	21.83	22.06	23	1
20	16QAM	1	49	21.66	21.93	22.17		
20	16QAM	1	99	21.71	21.94	22.14		
20	16QAM	50	0	20.45	20.64	20.84	22	2
20	16QAM	50	24	20.52	20.75	20.93		
20	16QAM	50	50	20.57	20.78	20.97		
20	16QAM	100	0	20.54	20.74	20.90		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	22.87	23.13	23.31	24	0
15	QPSK	1	37	22.48	22.82	23.28		
15	QPSK	1	74	22.82	23.01	23.07		
15	QPSK	36	0	21.63	21.86	22.04	23	1
15	QPSK	36	20	21.52	21.78	21.94		
15	QPSK	36	39	21.54	21.76	21.94		
15	QPSK	75	0	21.55	21.77	21.97		
15	16QAM	1	0	22.08	22.25	22.54	23	1
15	16QAM	1	37	21.71	21.89	22.14		
15	16QAM	1	74	21.96	22.16	22.34		
15	16QAM	36	0	20.58	20.84	21.02	22	2
15	16QAM	36	20	20.53	20.76	20.97		
15	16QAM	36	39	20.52	20.75	20.87		
15	16QAM	75	0	20.53	20.82	20.98		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	22.13	22.41	22.66	24	0
10	QPSK	1	25	22.70	23.10	23.15		
10	QPSK	1	49	23.23	23.48	23.17		
10	QPSK	25	0	21.60	21.86	22.06	23	1
10	QPSK	25	12	21.71	22.00	22.18		
10	QPSK	25	25	21.78	22.05	22.24		
10	QPSK	50	0	21.72	21.96	22.14		
10	16QAM	1	0	21.32	21.57	21.81	23	1
10	16QAM	1	25	21.85	22.12	22.34		
10	16QAM	1	49	22.36	22.59	22.76		
10	16QAM	25	0	20.63	20.85	21.05	22	2
10	16QAM	25	12	20.73	20.97	21.16		
10	16QAM	25	25	20.75	21.00	21.20		
10	16QAM	50	0	20.71	20.95	21.16		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	22.59	23.00	23.07	24	0
5	QPSK	1	12	22.66	22.89	23.11		
5	QPSK	1	24	22.69	22.91	23.06		
5	QPSK	12	0	21.74	22.00	22.16	23	1
5	QPSK	12	7	21.72	21.96	22.12		
5	QPSK	12	13	21.71	21.90	22.10		
5	QPSK	25	0	21.78	21.95	22.14		
5	16QAM	1	0	22.10	22.37	22.48	23	1
5	16QAM	1	12	21.90	22.11	22.35		
5	16QAM	1	24	21.96	22.16	22.33		
5	16QAM	12	0	20.76	20.99	21.20	22	2
5	16QAM	12	7	20.75	20.98	21.14		
5	16QAM	12	13	20.65	20.94	21.12		
5	16QAM	25	0	20.63	20.95	21.14		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	22.49	22.98	22.97	24	0
3	QPSK	1	8	22.62	22.88	23.11		
3	QPSK	1	14	22.55	22.92	23.08		
3	QPSK	8	0	21.63	21.90	22.15	23	1
3	QPSK	8	4	21.61	21.94	22.10		
3	QPSK	8	7	21.59	21.87	22.11		
3	QPSK	15	0	21.59	21.89	22.13		
3	16QAM	1	0	21.91	22.21	22.36	23	1
3	16QAM	1	8	21.89	22.24	22.54		
3	16QAM	1	14	21.89	22.13	22.40		
3	16QAM	8	0	20.67	20.96	21.17	22	2
3	16QAM	8	4	20.66	20.96	21.18		
3	16QAM	8	7	20.63	20.95	21.16		
3	16QAM	15	0	20.63	20.95	21.14		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	22.61	22.92	23.12	24	0
1.4	QPSK	1	3	22.65	22.98	23.20		
1.4	QPSK	1	5	22.57	22.90	23.17		
1.4	QPSK	3	0	22.56	22.88	23.12		
1.4	QPSK	3	1	22.62	22.94	23.14		
1.4	QPSK	3	3	22.58	22.88	23.12		
1.4	QPSK	6	0	21.58	21.86	22.09	23	1
1.4	16QAM	1	0	21.80	22.15	22.42	23	1
1.4	16QAM	1	3	21.88	22.26	22.40		
1.4	16QAM	1	5	21.82	22.13	22.45		
1.4	16QAM	3	0	21.57	21.87	22.10		
1.4	16QAM	3	1	21.62	21.90	22.13		
1.4	16QAM	3	3	21.55	21.86	22.08		
1.4	16QAM	6	0	20.62	20.97	21.16	22	2

<Near-body and Hotspot 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	20.08	20.23	20.17	21.5	0
20	QPSK	1	49	20.05	20.16	19.99		
20	QPSK	1	99	19.97	20.05	20.07		
20	QPSK	50	0	19.98	20.10	20.18	21.5	0
20	QPSK	50	24	19.97	20.11	20.14		
20	QPSK	50	50	19.83	19.90	19.98		
20	QPSK	100	0	19.98	20.06	20.14		
20	16QAM	1	0	19.98	20.03	20.08	21.5	0
20	16QAM	1	49	19.87	20.00	19.98		
20	16QAM	1	99	19.88	19.99	19.84		
20	16QAM	50	0	20.02	20.11	20.19	21.5	0
20	16QAM	50	24	19.99	20.14	19.93		
20	16QAM	50	50	19.84	19.93	20.00		
20	16QAM	100	0	19.93	20.04	20.10		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.71	19.90	19.99	21.5	0
15	QPSK	1	37	19.53	19.50	19.84		
15	QPSK	1	74	19.91	20.08	20.09		
15	QPSK	36	0	19.84	19.97	20.09	21.5	0
15	QPSK	36	20	19.85	20.01	20.03		
15	QPSK	36	39	19.84	19.97	20.03		
15	QPSK	75	0	19.84	19.95	20.04		
15	16QAM	1	0	19.82	20.06	20.07	21.5	0
15	16QAM	1	37	19.98	19.98	20.13		
15	16QAM	1	74	19.82	20.03	19.85		
15	16QAM	36	0	19.88	19.97	20.09	21.5	0
15	16QAM	36	20	19.81	19.98	20.06		
15	16QAM	36	39	19.77	19.99	19.99		
15	16QAM	75	0	19.81	19.98	20.11		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.50	19.60	19.71	21.5	0
10	QPSK	1	25	19.51	19.65	19.71		
10	QPSK	1	49	19.63	19.73	19.93		
10	QPSK	25	0	19.64	19.79	19.96	21.5	0
10	QPSK	25	12	19.58	19.77	19.86		
10	QPSK	25	25	19.62	19.81	19.90		
10	QPSK	50	0	19.58	19.78	19.86		
10	16QAM	1	0	19.95	20.08	19.96	21.5	0
10	16QAM	1	25	19.78	19.93	20.05		
10	16QAM	1	49	19.94	20.04	19.93		
10	16QAM	25	0	19.63	19.72	19.99	21.5	0
10	16QAM	25	12	19.61	19.77	19.90		
10	16QAM	25	25	19.56	19.78	19.86		
10	16QAM	50	0	19.62	19.76	19.91		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.55	19.75	19.80	21.5	0
5	QPSK	1	12	19.70	19.86	20.00		
5	QPSK	1	24	19.72	19.88	20.04		
5	QPSK	12	0	19.83	20.01	20.22	21.5	0
5	QPSK	12	7	19.82	20.01	20.11		
5	QPSK	12	13	19.82	19.90	20.14		
5	QPSK	25	0	19.85	19.99	20.13		
5	16QAM	1	0	20.04	20.07	20.08	21.5	0
5	16QAM	1	12	19.88	20.15	19.96		
5	16QAM	1	24	19.95	20.08	20.11		
5	16QAM	12	0	19.91	20.06	20.22	21.5	0
5	16QAM	12	7	19.87	20.00	20.17		
5	16QAM	12	13	19.78	19.96	20.13		
5	16QAM	25	0	19.81	19.97	20.14		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.75	19.67	19.76	21.5	0
3	QPSK	1	8	19.74	19.87	20.03		
3	QPSK	1	14	19.66	19.82	19.99		
3	QPSK	8	0	19.84	19.97	20.15	21.5	0
3	QPSK	8	4	19.84	20.00	20.16		
3	QPSK	8	7	19.79	19.93	20.09		
3	QPSK	15	0	19.79	19.99	20.12		
3	16QAM	1	0	20.02	20.04	20.11	21.5	0
3	16QAM	1	8	19.99	20.05	20.10		
3	16QAM	1	14	19.90	20.00	20.07		
3	16QAM	8	0	19.86	20.04	20.19	21.5	0
3	16QAM	8	4	19.87	20.06	20.20		
3	16QAM	8	7	19.86	20.02	20.17		
3	16QAM	15	0	19.79	19.97	20.16		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.66	19.59	19.74	21.5	0
1.4	QPSK	1	3	19.76	19.95	20.07		
1.4	QPSK	1	5	19.64	19.87	20.00		
1.4	QPSK	3	0	19.66	19.84	20.01		
1.4	QPSK	3	1	19.76	19.91	20.06		
1.4	QPSK	3	3	19.71	19.84	20.01		
1.4	QPSK	6	0	19.76	19.96	20.08	21.5	0
1.4	16QAM	1	0	19.88	20.01	20.08	21.5	0
1.4	16QAM	1	3	19.94	20.20	20.01		
1.4	16QAM	1	5	19.91	20.07	20.22		
1.4	16QAM	3	0	19.71	19.92	20.09		
1.4	16QAM	3	1	19.76	19.94	20.09		
1.4	16QAM	3	3	19.70	19.91	20.07		
1.4	16QAM	6	0	19.85	20.02	20.16	21.5	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	19.51	19.58	19.43	20.7	0
20	QPSK	1	49	19.47	19.49	19.42		
20	QPSK	1	99	19.38	19.48	19.41		
20	QPSK	50	0	19.39	19.45	19.39	20.7	0
20	QPSK	50	24	19.36	19.42	19.35		
20	QPSK	50	50	19.31	19.38	19.37		
20	QPSK	100	0	19.36	19.45	19.42		
20	16QAM	1	0	19.11	19.14	19.14	20.7	0
20	16QAM	1	49	19.24	19.27	19.23		
20	16QAM	1	99	19.25	19.36	19.40		
20	16QAM	50	0	19.28	19.32	19.38	20.7	0
20	16QAM	50	24	19.29	19.35	19.30		
20	16QAM	50	50	19.15	19.31	19.32		
20	16QAM	100	0	19.25	19.31	19.33		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	18.76	18.81	18.88	20.7	0
15	QPSK	1	37	19.08	19.22	19.11		
15	QPSK	1	74	19.16	19.13	19.25		
15	QPSK	36	0	19.25	19.29	19.46	20.7	0
15	QPSK	36	20	19.33	19.37	19.40		
15	QPSK	36	39	19.23	19.27	19.29		
15	QPSK	75	0	19.32	19.34	19.36		
15	16QAM	1	0	19.46	19.30	19.55	20.7	0
15	16QAM	1	37	19.32	19.34	19.34		
15	16QAM	1	74	19.36	19.40	19.46		
15	16QAM	36	0	19.28	19.32	19.43	20.7	0
15	16QAM	36	20	19.30	19.34	19.38		
15	16QAM	36	39	19.25	19.26	19.30		
15	16QAM	75	0	19.26	19.32	19.41		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	19.16	19.10	19.05	20.7	0
10	QPSK	1	25	19.18	19.28	19.23		
10	QPSK	1	49	19.26	19.42	19.41		
10	QPSK	25	0	19.40	19.44	19.37	20.7	0
10	QPSK	25	12	19.33	19.41	19.37		
10	QPSK	25	25	19.46	19.44	19.50		
10	QPSK	50	0	19.45	19.48	19.39		
10	16QAM	1	0	19.29	19.42	19.44	20.7	0
10	16QAM	1	25	19.47	19.54	19.47		
10	16QAM	1	49	19.53	19.43	19.35		
10	16QAM	25	0	19.45	19.47	19.34	20.7	0
10	16QAM	25	12	19.33	19.42	19.33		
10	16QAM	25	25	19.47	19.41	19.40		
10	16QAM	50	0	19.47	19.47	19.40		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.45	18.76	18.80	20.7	0
5	QPSK	1	12	19.30	19.38	19.22		
5	QPSK	1	24	19.28	19.25	19.23		
5	QPSK	12	0	19.53	19.40	19.41	20.7	0
5	QPSK	12	7	19.42	19.43	19.33		
5	QPSK	12	13	19.30	19.37	19.38		
5	QPSK	25	0	19.43	19.44	19.33		
5	16QAM	1	0	19.42	19.35	19.42	20.7	0
5	16QAM	1	12	19.48	19.55	19.51		
5	16QAM	1	24	19.57	19.48	19.48		
5	16QAM	12	0	19.47	19.44	19.46	20.7	0
5	16QAM	12	7	19.39	19.42	19.37		
5	16QAM	12	13	19.29	19.37	19.35		
5	16QAM	25	0	19.42	19.46	19.33		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.20	19.46	19.47	20.7	0
3	QPSK	1	8	19.33	19.30	19.26		
3	QPSK	1	14	19.24	19.20	19.19		
3	QPSK	8	0	19.36	19.34	19.30	20.7	0
3	QPSK	8	4	19.40	19.37	19.38		
3	QPSK	8	7	19.30	19.33	19.31		
3	QPSK	15	0	19.36	19.37	19.26		
3	16QAM	1	0	19.29	19.42	19.49	20.7	0
3	16QAM	1	8	19.32	19.55	19.56		
3	16QAM	1	14	19.48	19.47	19.39		
3	16QAM	8	0	19.50	19.39	19.34	20.7	0
3	16QAM	8	4	19.57	19.43	19.44		
3	16QAM	8	7	19.47	19.39	19.36		
3	16QAM	15	0	19.47	19.37	19.28		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.20	19.27	19.24	20.7	0
1.4	QPSK	1	3	19.29	19.33	19.27		
1.4	QPSK	1	5	19.24	19.25	19.17		
1.4	QPSK	3	0	19.33	19.21	19.26		
1.4	QPSK	3	1	19.39	19.34	19.26		
1.4	QPSK	3	3	19.24	19.30	19.21		
1.4	QPSK	6	0	19.31	19.39	19.33	20.7	0
1.4	16QAM	1	0	19.56	19.41	19.48	20.7	0
1.4	16QAM	1	3	19.54	19.44	19.49		
1.4	16QAM	1	5	19.50	19.45	19.44		
1.4	16QAM	3	0	19.33	19.25	19.28		
1.4	16QAM	3	1	19.42	19.37	19.32		
1.4	16QAM	3	3	19.27	19.27	19.24		
1.4	16QAM	6	0	19.39	19.46	19.38	20.7	0

<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	21.12	21.28	21.21	22.1	0
10	QPSK	1	25	20.81	20.79	20.80		
10	QPSK	1	49	21.01	20.99	20.99		
10	QPSK	25	0	20.81	20.94	20.89	22.1	0
10	QPSK	25	12	20.91	20.79	20.81		
10	QPSK	25	25	20.93	20.90	20.87		
10	QPSK	50	0	20.95	20.97	20.93		
10	16QAM	1	0	21.14	21.16	21.11	22.1	0
10	16QAM	1	25	21.06	20.99	20.93		
10	16QAM	1	49	21.24	21.26	21.22		
10	16QAM	25	0	20.77	20.73	20.77	22	0.1
10	16QAM	25	12	20.82	20.70	20.71		
10	16QAM	25	25	20.80	20.79	20.83		
10	16QAM	50	0	20.85	20.81	20.87		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	20.95	20.95	20.97	22.1	0
5	QPSK	1	12	20.68	20.74	20.62		
5	QPSK	1	24	20.67	20.69	20.65		
5	QPSK	12	0	20.79	20.81	20.82	22.1	0
5	QPSK	12	7	20.89	20.85	20.73		
5	QPSK	12	13	20.76	20.78	20.80		
5	QPSK	25	0	20.88	20.83	20.82		
5	16QAM	1	0	21.04	21.02	20.99	22.1	0
5	16QAM	1	12	21.04	20.99	20.91		
5	16QAM	1	24	20.98	20.98	20.89		
5	16QAM	12	0	20.73	20.70	20.73	22	0.1
5	16QAM	12	7	20.81	20.79	20.68		
5	16QAM	12	13	20.71	20.72	20.76		
5	16QAM	25	0	20.74	20.78	20.65		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	20.71	20.87	20.91	22.1	0
3	QPSK	1	8	20.73	20.75	20.74		
3	QPSK	1	14	20.70	20.64	20.66		
3	QPSK	8	0	20.79	20.79	20.75	22.1	0
3	QPSK	8	4	20.81	20.83	20.82		
3	QPSK	8	7	20.73	20.72	20.73		
3	QPSK	15	0	20.77	20.82	20.76		
3	16QAM	1	0	20.97	20.94	20.93	22.1	0
3	16QAM	1	8	21.00	20.99	21.02		
3	16QAM	1	14	21.00	20.93	20.87		
3	16QAM	8	0	20.76	20.73	20.72	22	0.1
3	16QAM	8	4	20.76	20.78	20.76		
3	16QAM	8	7	20.73	20.70	20.72		
3	16QAM	15	0	20.70	20.75	20.67		

Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	20.62	20.85	20.89	22.1	0
1.4	QPSK	1	3	20.72	20.78	20.72		
1.4	QPSK	1	5	20.74	20.64	20.65		
1.4	QPSK	3	0	20.65	20.62	20.65		
1.4	QPSK	3	1	20.72	20.65	20.63		
1.4	QPSK	3	3	20.72	20.70	20.63		
1.4	QPSK	6	0	20.75	20.79	20.80	22.1	0
1.4	16QAM	1	0	20.92	20.92	20.90	22.1	0
1.4	16QAM	1	3	20.99	21.03	20.95		
1.4	16QAM	1	5	20.91	20.91	20.89		
1.4	16QAM	3	0	20.69	20.69	20.72		
1.4	16QAM	3	1	20.76	20.70	20.68		
1.4	16QAM	3	3	20.75	20.75	20.72		
1.4	16QAM	6	0	20.68	20.78	20.72	22	0.1

<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	21.56	21.39	21.44	23.2	0
20	QPSK	1	49	21.45	21.40	21.49		
20	QPSK	1	99	21.65	21.64	21.81		
20	QPSK	50	0	21.48	21.46	21.51	23	0.2
20	QPSK	50	24	21.44	21.41	21.50		
20	QPSK	50	50	21.46	21.41	21.45		
20	QPSK	100	0	21.40	21.47	21.53		
20	16QAM	1	0	21.60	21.55	21.71	23	0.2
20	16QAM	1	49	21.62	21.62	21.71		
20	16QAM	1	99	21.62	21.71	21.72		
20	16QAM	50	0	20.44	20.45	20.53	22	1.2
20	16QAM	50	24	20.42	20.46	20.49		
20	16QAM	50	50	20.46	20.43	20.50		
20	16QAM	100	0	20.43	20.40	20.52		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.50	21.38	21.51	23.2	0
15	QPSK	1	37	21.78	21.47	21.37		
15	QPSK	1	74	21.50	21.63	21.59		
15	QPSK	36	0	21.43	21.40	21.51	23	0.2
15	QPSK	36	20	21.52	21.37	21.61		
15	QPSK	36	39	21.42	21.49	21.48		
15	QPSK	75	0	21.46	21.40	21.44		
15	16QAM	1	0	21.60	21.57	21.63	23	0.2
15	16QAM	1	37	21.65	21.64	21.60		
15	16QAM	1	74	21.63	21.71	21.70		
15	16QAM	36	0	20.44	20.43	20.51	22	1.2
15	16QAM	36	20	20.54	20.47	20.59		
15	16QAM	36	39	20.38	20.51	20.49		
15	16QAM	75	0	20.45	20.46	20.48		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.80	21.78	21.76	23.2	0
10	QPSK	1	25	21.67	21.58	21.75		
10	QPSK	1	49	21.78	21.75	21.79		
10	QPSK	25	0	21.70	21.53	21.61	23	0.2
10	QPSK	25	12	21.69	21.47	21.59		
10	QPSK	25	25	21.52	21.49	21.57		
10	QPSK	50	0	21.58	21.49	21.62		
10	16QAM	1	0	21.62	21.78	21.79	23	0.2
10	16QAM	1	25	21.77	21.65	21.78		
10	16QAM	1	49	21.68	21.72	21.79		
10	16QAM	25	0	20.60	20.55	20.66	22	1.2
10	16QAM	25	12	20.68	20.49	20.62		
10	16QAM	25	25	20.55	20.53	20.61		
10	16QAM	50	0	20.59	20.46	20.54		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.30	21.52	21.56	23.2	0
5	QPSK	1	12	21.58	21.53	21.69		
5	QPSK	1	24	21.59	21.64	21.73		
5	QPSK	12	0	21.55	21.53	21.60	23	0.2
5	QPSK	12	7	21.52	21.44	21.62		
5	QPSK	12	13	21.52	21.51	21.55		
5	QPSK	25	0	21.49	21.49	21.59		
5	16QAM	1	0	21.69	21.76	21.73	23	0.2
5	16QAM	1	12	21.70	21.65	21.70		
5	16QAM	1	24	21.69	21.73	21.78		
5	16QAM	12	0	20.59	20.57	20.66	22	1.2
5	16QAM	12	7	20.54	20.50	20.61		
5	16QAM	12	13	20.53	20.55	20.55		
5	16QAM	25	0	20.50	20.50	20.62		

<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	20.73	20.75	20.74	22.2	0
10	QPSK	1	25	20.92	21.08	21.07		
10	QPSK	1	49	20.63	20.64	20.60		
10	QPSK	25	0	20.71	20.75	20.82	22.2	0
10	QPSK	25	12	20.80	20.93	20.92		
10	QPSK	25	25	20.78	20.86	20.87		
10	QPSK	50	0	20.78	20.89	20.85		
10	16QAM	1	0	20.61	20.65	20.75	22.2	0
10	16QAM	1	25	20.95	20.99	20.95		
10	16QAM	1	49	20.79	20.79	20.71		
10	16QAM	25	0	20.55	20.56	20.63	21	1.2
10	16QAM	25	12	20.60	20.78	20.83		
10	16QAM	25	25	20.63	20.70	20.70		
10	16QAM	50	0	20.58	20.66	20.69		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	20.83	20.99	21.07	22.2	0
5	QPSK	1	12	20.59	20.82	20.77		
5	QPSK	1	24	20.66	21.04	20.78		
5	QPSK	12	0	20.77	21.03	20.90	22.2	0
5	QPSK	12	7	20.85	21.02	20.92		
5	QPSK	12	13	20.82	21.00	20.91		
5	QPSK	25	0	20.75	20.94	20.84		
5	16QAM	1	0	20.97	20.89	20.92	22.2	0
5	16QAM	1	12	20.90	20.85	21.01		
5	16QAM	1	24	21.01	20.92	20.96		
5	16QAM	12	0	20.54	20.84	20.76	21	1.2
5	16QAM	12	7	20.64	20.81	20.69		
5	16QAM	12	13	20.57	20.80	20.74		
5	16QAM	25	0	20.63	20.87	20.79		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	20.88	21.02	21.05	22.2	0
3	QPSK	1	8	20.69	20.94	20.80		
3	QPSK	1	14	20.70	20.88	20.78		
3	QPSK	8	0	20.75	21.06	20.92	22.2	0
3	QPSK	8	4	20.72	20.96	20.93		
3	QPSK	8	7	20.77	21.00	20.89		
3	QPSK	15	0	20.70	20.95	20.93		
3	16QAM	1	0	20.90	20.93	20.88	22.2	0
3	16QAM	1	8	20.95	20.82	20.92		
3	16QAM	1	14	20.86	20.88	20.91		
3	16QAM	8	0	20.65	20.95	20.76	21	1.2
3	16QAM	8	4	20.63	20.87	20.78		
3	16QAM	8	7	20.60	20.83	20.82		
3	16QAM	15	0	20.52	20.78	20.75		

Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	20.64	20.75	20.88	22.2	0
1.4	QPSK	1	3	20.73	20.85	20.79		
1.4	QPSK	1	5	20.56	20.88	20.77		
1.4	QPSK	3	0	20.69	20.84	20.81		
1.4	QPSK	3	1	20.74	20.83	20.82		
1.4	QPSK	3	3	20.68	20.81	20.64		
1.4	QPSK	6	0	20.75	20.93	20.83	22.2	0
1.4	16QAM	1	0	20.87	20.81	20.98	22.2	0
1.4	16QAM	1	3	20.97	20.88	20.88		
1.4	16QAM	1	5	20.87	20.92	20.81		
1.4	16QAM	3	0	20.71	20.89	20.84		
1.4	16QAM	3	1	20.77	20.78	20.85		
1.4	16QAM	3	3	20.75	20.81	20.76		
1.4	16QAM	6	0	20.60	20.70	20.68	21	1.2

<LTE Band 13>

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				23230				
Frequency (MHz)				782				
10	QPSK	1	0	21.63			22.4	0
10	QPSK	1	25	21.44				
10	QPSK	1	49	21.57				
10	QPSK	25	0	21.54			22.4	0
10	QPSK	25	12	21.50				
10	QPSK	25	25	21.40				
10	QPSK	50	0	21.36				
10	16QAM	1	0	21.61			22.4	0
10	16QAM	1	25	21.48				
10	16QAM	1	49	21.58				
10	16QAM	25	0	21.01			22	0.4
10	16QAM	25	12	20.96				
10	16QAM	25	25	21.01				
10	16QAM	50	0	21.06				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	21.23	21.36	21.25	22.4	0
5	QPSK	1	12	21.02	21.23	21.29		
5	QPSK	1	24	21.16	21.24	21.26		
5	QPSK	12	0	21.24	21.29	21.36	22.4	0
5	QPSK	12	7	21.23	21.34	21.42		
5	QPSK	12	13	21.20	21.33	21.39		
5	QPSK	25	0	21.24	21.32	21.45		
5	16QAM	1	0	21.33	21.53	21.54	22.4	0
5	16QAM	1	12	21.30	21.52	21.48		
5	16QAM	1	24	21.41	21.49	21.45		
5	16QAM	12	0	20.88	20.94	20.92	22	0.4
5	16QAM	12	7	20.84	20.93	21.01		
5	16QAM	12	13	20.83	20.90	20.97		
5	16QAM	25	0	20.83	20.99	21.01		

<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	20.73	20.72	20.82	22	0
10	QPSK	1	25	20.89	20.98	20.94		
10	QPSK	1	49	20.44	20.53	20.57		
10	QPSK	25	0	20.57	20.55	20.61	22	0
10	QPSK	25	12	20.72	20.81	20.79		
10	QPSK	25	25	20.66	20.60	20.69		
10	QPSK	50	0	20.61	20.64	20.59		
10	16QAM	1	0	20.42	20.46	20.52	22	0
10	16QAM	1	25	20.90	20.96	20.91		
10	16QAM	1	49	20.53	20.60	20.46		
10	16QAM	25	0	20.67	20.53	20.56	22	0
10	16QAM	25	12	20.74	20.76	20.78		
10	16QAM	25	25	20.62	20.58	20.67		
10	16QAM	50	0	20.60	20.60	20.62		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	20.77	20.90	20.93	22	0
5	QPSK	1	12	20.49	20.77	20.62		
5	QPSK	1	24	20.67	20.81	20.64		
5	QPSK	12	0	20.66	20.78	20.82	22	0
5	QPSK	12	7	20.74	20.84	20.88		
5	QPSK	12	13	20.75	20.82	20.86		
5	QPSK	25	0	20.69	20.94	20.85		
5	16QAM	1	0	20.82	20.92	20.83	22	0
5	16QAM	1	12	20.79	20.89	20.90		
5	16QAM	1	24	20.94	20.86	20.95		
5	16QAM	12	0	20.70	20.92	20.83	22	0
5	16QAM	12	7	20.76	20.86	20.91		
5	16QAM	12	13	20.76	20.93	20.81		
5	16QAM	25	0	20.68	20.86	20.95		

<LTE Band 25>

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				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	19.50	19.54	19.41	20.8	0
20	QPSK	1	49	19.83	19.86	19.85		
20	QPSK	1	99	19.53	19.66	19.64		
20	QPSK	50	0	19.44	19.63	19.55	20.8	0
20	QPSK	50	24	19.49	19.65	19.56		
20	QPSK	50	50	19.42	19.59	19.54		
20	QPSK	100	0	19.45	19.61	19.58		
20	16QAM	1	0	19.72	19.58	19.52	20.8	0
20	16QAM	1	49	19.63	19.70	19.56		
20	16QAM	1	99	19.29	19.61	19.56		
20	16QAM	50	0	19.47	19.64	19.56	20.8	0
20	16QAM	50	24	19.48	19.65	19.59		
20	16QAM	50	50	19.44	19.54	19.56		
20	16QAM	100	0	19.50	19.57	19.58		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	18.91	19.00	19.04	20.8	0
15	QPSK	1	37	19.17	19.46	19.26		
15	QPSK	1	74	19.48	19.63	19.55		
15	QPSK	36	0	19.45	19.66	19.67	20.8	0
15	QPSK	36	20	19.45	19.66	19.62		
15	QPSK	36	39	19.59	19.67	19.64		
15	QPSK	75	0	19.48	19.69	19.67		
15	16QAM	1	0	19.45	19.52	19.81	20.8	0
15	16QAM	1	37	19.50	19.68	19.64		
15	16QAM	1	74	19.64	19.61	19.53		
15	16QAM	36	0	19.47	19.67	19.68	20.8	0
15	16QAM	36	20	19.40	19.67	19.61		
15	16QAM	36	39	19.61	19.68	19.60		
15	16QAM	75	0	19.41	19.73	19.68		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	18.97	18.99	19.19	20.8	0
10	QPSK	1	25	19.28	19.28	19.47		
10	QPSK	1	49	19.47	19.54	19.60		
10	QPSK	25	0	19.40	19.37	19.62	20.8	0
10	QPSK	25	12	19.39	19.36	19.59		
10	QPSK	25	25	19.37	19.38	19.71		
10	QPSK	50	0	19.39	19.40	19.65		
10	16QAM	1	0	19.58	19.77	19.57	20.8	0
10	16QAM	1	25	19.58	19.57	19.78		
10	16QAM	1	49	19.50	19.54	19.59		
10	16QAM	25	0	19.42	19.39	19.63	20.8	0
10	16QAM	25	12	19.38	19.39	19.62		
10	16QAM	25	25	19.41	19.37	19.68		
10	16QAM	50	0	19.39	19.35	19.69		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	18.84	18.84	19.05	20.8	0
5	QPSK	1	12	19.36	19.32	19.57		
5	QPSK	1	24	19.28	19.28	19.57		
5	QPSK	12	0	19.43	19.44	19.63	20.8	0
5	QPSK	12	7	19.39	19.35	19.61		
5	QPSK	12	13	19.34	19.32	19.45		
5	QPSK	25	0	19.43	19.39	19.63		
5	16QAM	1	0	19.76	19.72	19.53	20.8	0
5	16QAM	1	12	19.61	19.70	19.75		
5	16QAM	1	24	19.61	19.69	19.53		
5	16QAM	12	0	19.49	19.47	19.65	20.8	0
5	16QAM	12	7	19.40	19.39	19.62		
5	16QAM	12	13	19.35	19.36	19.49		
5	16QAM	25	0	19.37	19.36	19.65		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	19.71	19.74	18.97	20.8	0
3	QPSK	1	8	19.30	19.29	19.51		
3	QPSK	1	14	19.27	19.26	19.50		
3	QPSK	8	0	19.38	19.35	19.55	20.8	0
3	QPSK	8	4	19.32	19.33	19.55		
3	QPSK	8	7	19.31	19.32	19.57		
3	QPSK	15	0	19.36	19.35	19.55		
3	16QAM	1	0	19.66	19.68	19.61	20.8	0
3	16QAM	1	8	19.58	19.62	19.78		
3	16QAM	1	14	19.52	19.51	19.58		
3	16QAM	8	0	19.41	19.42	19.59	20.8	0
3	16QAM	8	4	19.41	19.41	19.56		
3	16QAM	8	7	19.38	19.39	19.64		
3	16QAM	15	0	19.35	19.34	19.57		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	19.67	19.69	18.87	20.8	0
1.4	QPSK	1	3	19.38	19.33	19.61		
1.4	QPSK	1	5	19.27	19.22	19.51		
1.4	QPSK	3	0	19.29	19.31	19.55		
1.4	QPSK	3	1	19.38	19.34	19.58		
1.4	QPSK	3	3	19.31	19.30	19.55		
1.4	QPSK	6	0	19.36	19.34	19.58	20.8	0
1.4	16QAM	1	0	19.56	19.50	19.52	20.8	0
1.4	16QAM	1	3	19.60	19.61	19.58		
1.4	16QAM	1	5	19.48	19.49	19.78		
1.4	16QAM	3	0	19.33	19.35	19.56		
1.4	16QAM	3	1	19.38	19.38	19.59		
1.4	16QAM	3	3	19.33	19.34	19.54		
1.4	16QAM	6	0	19.38	19.38	19.66	20.8	0

<LTE Band 26>

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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	21.36	21.29	21.35	23	0
15	QPSK	1	37	21.52	22.20	21.30		
15	QPSK	1	74	22.03	22.04	21.86		
15	QPSK	36	0	21.87	22.00	21.98	23	0
15	QPSK	36	20	21.67	21.70	21.66		
15	QPSK	36	39	21.58	21.54	21.48		
15	QPSK	75	0	21.78	21.81	21.80		
15	16QAM	1	0	22.15	22.17	22.08	23	0
15	16QAM	1	37	21.87	21.85	21.81		
15	16QAM	1	74	22.34	22.29	22.19		
15	16QAM	36	0	20.88	20.98	20.97	22	1
15	16QAM	36	20	20.70	20.67	20.68		
15	16QAM	36	39	20.57	20.48	20.48		
15	16QAM	75	0	20.73	20.69	20.79		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	21.40	21.29	21.43	23	0
10	QPSK	1	25	21.53	21.56	21.63		
10	QPSK	1	49	21.78	21.83	21.87		
10	QPSK	25	0	21.79	21.75	21.81	23	0
10	QPSK	25	12	21.73	21.71	21.76		
10	QPSK	25	25	21.75	21.77	21.90		
10	QPSK	50	0	21.70	21.74	21.79		
10	16QAM	1	0	22.13	22.15	22.30	23	0
10	16QAM	1	25	21.91	21.84	21.95		
10	16QAM	1	49	22.12	22.10	22.11		
10	16QAM	25	0	20.72	20.73	20.83	22	1
10	16QAM	25	12	20.69	20.72	20.78		
10	16QAM	25	25	20.73	20.74	20.76		
10	16QAM	50	0	20.74	20.71	20.86		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	21.69	21.00	21.08	23	0
5	QPSK	1	12	21.58	21.55	21.58		
5	QPSK	1	24	21.62	21.56	21.61		
5	QPSK	12	0	21.78	21.70	21.70	23	0
5	QPSK	12	7	21.78	21.67	21.66		
5	QPSK	12	13	21.74	21.64	21.71		
5	QPSK	25	0	21.78	21.69	21.79		
5	16QAM	1	0	21.97	21.85	21.93	23	0
5	16QAM	1	12	21.89	21.83	21.86		
5	16QAM	1	24	21.89	21.83	21.84		
5	16QAM	12	0	20.77	20.69	20.72	22	1
5	16QAM	12	7	20.79	20.72	20.72		
5	16QAM	12	13	20.67	20.68	20.71		
5	16QAM	25	0	20.60	20.69	20.70		

Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	21.67	21.98	21.96	23	0
3	QPSK	1	8	21.68	21.60	21.57		
3	QPSK	1	14	21.65	21.51	21.56		
3	QPSK	8	0	21.74	21.68	21.61	23	0
3	QPSK	8	4	21.76	21.64	21.66		
3	QPSK	8	7	21.72	21.66	21.68		
3	QPSK	15	0	21.76	21.67	21.67		
3	16QAM	1	0	21.79	21.80	21.84	23	0
3	16QAM	1	8	21.97	21.85	21.89		
3	16QAM	1	14	21.90	21.77	21.89		
3	16QAM	8	0	20.77	20.70	20.72	22	1
3	16QAM	8	4	20.88	20.72	20.79		
3	16QAM	8	7	20.67	20.69	20.88		
3	16QAM	15	0	20.65	20.66	20.78		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	21.56	21.94	21.97	23	0
1.4	QPSK	1	3	21.61	21.59	21.61		
1.4	QPSK	1	5	21.61	21.49	21.55		
1.4	QPSK	3	0	21.68	21.55	21.55		
1.4	QPSK	3	1	21.74	21.57	21.63		
1.4	QPSK	3	3	21.60	21.52	21.66		
1.4	QPSK	6	0	21.63	21.60	21.75	23	0
1.4	16QAM	1	0	21.86	21.74	21.89	23	0
1.4	16QAM	1	3	21.87	21.84	21.93		
1.4	16QAM	1	5	21.81	21.76	21.83		
1.4	16QAM	3	0	21.71	21.58	21.66		
1.4	16QAM	3	1	21.77	21.63	21.74		
1.4	16QAM	3	3	21.63	21.55	21.68		
1.4	16QAM	6	0	20.67	20.68	20.75	22	1

<LTE Band 30>

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				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	20.83			22.2	0
10	QPSK	1	25	20.96				
10	QPSK	1	49	21.06				
10	QPSK	25	0	20.81			22.2	0
10	QPSK	25	12	20.74				
10	QPSK	25	25	20.89				
10	QPSK	50	0	20.96				
10	16QAM	1	0	20.96			22.2	0
10	16QAM	1	25	20.83				
10	16QAM	1	49	20.90				
10	16QAM	25	0	20.62			22	0.2
10	16QAM	25	12	20.59				
10	16QAM	25	25	20.63				
10	16QAM	50	0	20.66				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	20.84	20.24	20.21	22.2	0
5	QPSK	1	12	20.81	20.65	20.71		
5	QPSK	1	24	20.69	20.69	20.70		
5	QPSK	12	0	20.85	20.82	20.76	22.2	0
5	QPSK	12	7	20.81	20.74	20.89		
5	QPSK	12	13	20.77	20.70	20.80		
5	QPSK	25	0	20.83	20.75	20.81		
5	16QAM	1	0	20.90	20.87	20.86	22.2	0
5	16QAM	1	12	21.00	20.81	20.89		
5	16QAM	1	24	21.00	20.86	21.05		
5	16QAM	12	0	20.69	20.65	20.60	22	0.2
5	16QAM	12	7	20.64	20.57	20.70		
5	16QAM	12	13	20.58	20.59	20.59		
5	16QAM	25	0	20.66	20.58	20.61		

<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	20.08	20.32	20.44	21.5	0
20	QPSK	1	49	20.08	20.34	20.47		
20	QPSK	1	99	20.64	20.87	20.99		
20	QPSK	50	0	20.15	20.34	20.55	21.5	0
20	QPSK	50	24	20.17	20.41	20.59		
20	QPSK	50	50	20.24	20.44	20.63		
20	QPSK	100	0	20.19	20.41	20.59		
20	16QAM	1	0	20.32	20.50	20.76	21.5	0
20	16QAM	1	49	20.24	20.58	20.83		
20	16QAM	1	99	20.63	20.86	20.95		
20	16QAM	50	0	20.21	20.36	20.57	21.5	0
20	16QAM	50	24	20.28	20.40	20.64		
20	16QAM	50	50	20.35	20.46	20.64		
20	16QAM	100	0	20.34	20.41	20.53		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	20.41	20.59	20.81	21.5	0
15	QPSK	1	37	20.32	20.47	20.46		
15	QPSK	1	74	20.36	20.68	20.66		
15	QPSK	36	0	20.21	20.55	20.57	21.5	0
15	QPSK	36	20	20.14	20.45	20.46		
15	QPSK	36	39	20.14	20.43	20.46		
15	QPSK	75	0	20.18	20.52	20.50		
15	16QAM	1	0	20.67	20.96	20.95	21.5	0
15	16QAM	1	37	20.58	20.77	20.69		
15	16QAM	1	74	20.68	20.91	20.98		
15	16QAM	36	0	20.29	20.55	20.63	21.5	0
15	16QAM	36	20	20.25	20.49	20.53		
15	16QAM	36	39	20.25	20.43	20.52		
15	16QAM	75	0	20.25	20.49	20.60		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	20.22	20.38	20.61	21.5	0
10	QPSK	1	25	20.25	20.52	20.52		
10	QPSK	1	49	20.40	20.60	20.64		
10	QPSK	25	0	20.46	20.54	20.69	21.5	0
10	QPSK	25	12	20.37	20.54	20.61		
10	QPSK	25	25	20.47	20.60	20.61		
10	QPSK	50	0	20.36	20.50	20.75		
10	16QAM	1	0	20.85	20.81	20.82	21.5	0
10	16QAM	1	25	20.48	20.79	20.86		
10	16QAM	1	49	20.71	20.90	20.73		
10	16QAM	25	0	20.33	20.60	20.85	21.5	0
10	16QAM	25	12	20.47	20.61	20.74		
10	16QAM	25	25	20.31	20.55	20.59		
10	16QAM	50	0	20.36	20.57	20.78		

Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	20.28	20.62	20.65	21.5	0
5	QPSK	1	12	20.48	20.69	20.89		
5	QPSK	1	24	20.49	20.60	20.87		
5	QPSK	12	0	20.54	20.74	20.95	21.5	0
5	QPSK	12	7	20.55	20.87	20.95		
5	QPSK	12	13	20.52	20.64	20.98		
5	QPSK	25	0	20.64	20.79	20.97		
5	16QAM	1	0	20.79	20.85	20.84	21.5	0
5	16QAM	1	12	20.61	20.94	20.74		
5	16QAM	1	24	20.82	20.86	20.87		
5	16QAM	12	0	20.80	20.80	20.96	21.5	0
5	16QAM	12	7	20.64	20.90	20.96		
5	16QAM	12	13	20.53	20.84	20.84		
5	16QAM	25	0	20.64	20.83	20.97		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	20.64	20.56	20.52	21.5	0
3	QPSK	1	8	20.54	20.74	20.91		
3	QPSK	1	14	20.51	20.58	20.87		
3	QPSK	8	0	20.62	20.69	20.88	21.5	0
3	QPSK	8	4	20.60	20.84	20.97		
3	QPSK	8	7	20.52	20.64	20.84		
3	QPSK	15	0	20.62	20.77	20.86		
3	16QAM	1	0	20.80	20.94	20.98	21.5	0
3	16QAM	1	8	20.78	20.90	20.95		
3	16QAM	1	14	20.72	20.70	20.83		
3	16QAM	8	0	20.74	20.77	20.96	21.5	0
3	16QAM	8	4	20.63	20.88	20.98		
3	16QAM	8	7	20.73	20.91	20.95		
3	16QAM	15	0	20.60	20.79	20.98		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	20.54	20.36	20.58	21.5	0
1.4	QPSK	1	3	20.49	20.70	20.88		
1.4	QPSK	1	5	20.47	20.75	20.89		
1.4	QPSK	3	0	20.52	20.59	20.90		
1.4	QPSK	3	1	20.51	20.69	20.94		
1.4	QPSK	3	3	20.58	20.61	20.76		
1.4	QPSK	6	0	20.65	20.82	20.81	21.5	0
1.4	16QAM	1	0	20.77	20.82	20.89	21.5	0
1.4	16QAM	1	3	20.81	20.94	20.88		
1.4	16QAM	1	5	20.73	20.78	20.95		
1.4	16QAM	3	0	20.61	20.81	20.96		
1.4	16QAM	3	1	20.52	20.72	20.97		
1.4	16QAM	3	3	20.54	20.77	20.97		
1.4	16QAM	6	0	20.37	20.82	20.86	21.5	0

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

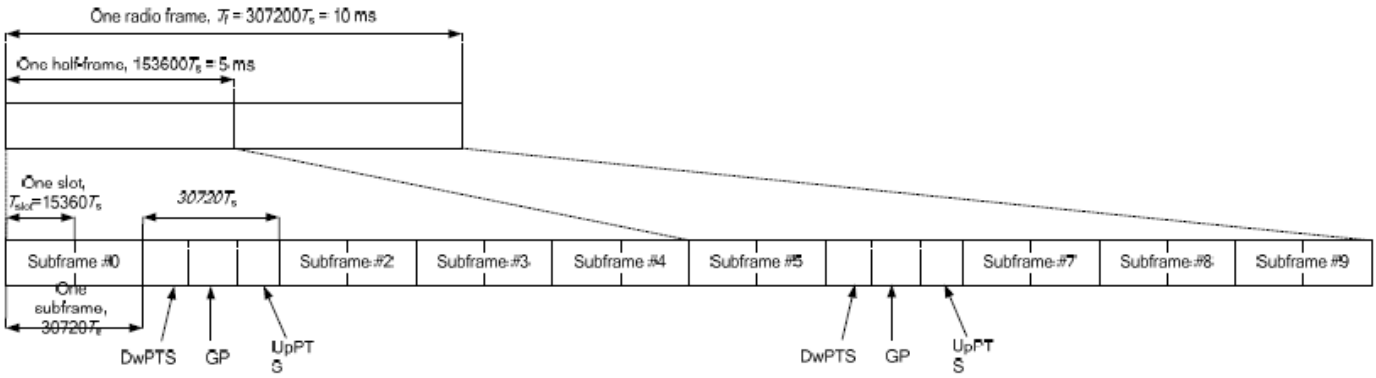


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~4**	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~3**	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

<Default Power Mode>

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	22.24	22.15	22.12	24	0
20	QPSK	1	49	22.22	22.44	22.23		
20	QPSK	1	99	22.62	22.33	22.39		
20	QPSK	50	0	21.42	21.34	21.05	23	1
20	QPSK	50	24	21.42	21.43	21.34		
20	QPSK	50	50	21.48	21.10	21.00		
20	QPSK	100	0	21.43	21.07	21.08		
20	16QAM	1	0	21.29	21.22	21.18	23	1
20	16QAM	1	49	21.58	21.55	21.23		
20	16QAM	1	99	21.61	21.54	21.27		
20	16QAM	50	0	20.47	20.28	20.28	22	2
20	16QAM	50	24	20.46	20.61	20.39		
20	16QAM	50	50	20.36	20.44	20.28		
20	16QAM	100	0	20.45	20.52	20.25		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	22.15	22.20	22.12	24	0
15	QPSK	1	37	22.29	22.32	22.16		
15	QPSK	1	74	22.55	22.59	22.27		
15	QPSK	36	0	21.30	21.19	21.16	23	1
15	QPSK	36	20	21.53	21.49	21.32		
15	QPSK	36	39	21.47	21.38	21.32		
15	QPSK	75	0	21.28	21.35	21.23		
15	16QAM	1	0	21.30	21.19	21.10	23	1
15	16QAM	1	37	21.47	21.59	21.06		
15	16QAM	1	74	21.76	21.97	21.61		
15	16QAM	36	0	20.18	20.20	20.19	22	2
15	16QAM	36	20	20.39	20.44	20.29		
15	16QAM	36	39	20.38	20.43	20.34		
15	16QAM	75	0	20.42	20.45	20.24		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	22.41	22.27	22.49	24	0
10	QPSK	1	25	22.44	22.54	22.50		
10	QPSK	1	49	22.75	22.68	22.64		
10	QPSK	25	0	21.61	21.55	21.52	23	1
10	QPSK	25	12	21.64	21.60	21.48		
10	QPSK	25	25	21.74	21.56	21.47		
10	QPSK	50	0	21.60	21.63	21.55		
10	16QAM	1	0	21.89	21.58	21.53	23	1
10	16QAM	1	25	21.69	21.69	21.49		
10	16QAM	1	49	22.08	21.85	21.70		
10	16QAM	25	0	20.63	20.65	20.37	22	2
10	16QAM	25	12	20.54	20.68	20.40		
10	16QAM	25	25	20.70	20.62	20.40		
10	16QAM	50	0	20.65	20.73	20.44		

Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	22.64	22.62	22.39	24	0
5	QPSK	1	12	22.52	22.58	22.11		
5	QPSK	1	24	22.60	22.50	22.31		
5	QPSK	12	0	21.73	21.60	21.47	23	1
5	QPSK	12	7	21.66	21.64	21.52		
5	QPSK	12	13	21.59	21.62	21.48		
5	QPSK	25	0	21.66	21.66	21.49		
5	16QAM	1	0	21.76	21.72	21.17	23	1
5	16QAM	1	12	21.86	21.87	21.34		
5	16QAM	1	24	21.67	21.64	21.45		
5	16QAM	12	0	20.62	20.60	20.44	22	2
5	16QAM	12	7	20.61	20.51	20.34		
5	16QAM	12	13	20.60	20.65	20.32		
5	16QAM	25	0	20.65	20.68	20.40		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.07	22.12	22.02	22.01	22.08	24	0
20	QPSK	1	49	22.33	22.30	22.28	22.12	22.31		
20	QPSK	1	99	22.47	22.56	22.57	22.31	22.44		
20	QPSK	50	0	21.52	21.37	21.50	21.24	21.38	23	1
20	QPSK	50	24	21.43	21.45	21.42	21.10	21.36		
20	QPSK	50	50	21.48	21.64	21.52	21.25	21.54		
20	QPSK	100	0	21.54	21.54	21.45	21.27	21.43		
20	16QAM	1	0	21.85	21.66	21.27	21.01	21.46	23	1
20	16QAM	1	49	21.61	21.30	21.41	21.23	21.55		
20	16QAM	1	99	21.30	21.50	21.75	21.29	21.33		
20	16QAM	50	0	20.49	20.51	20.52	20.23	20.39	22	2
20	16QAM	50	24	20.46	20.49	20.42	20.31	20.29		
20	16QAM	50	50	20.51	20.58	20.56	20.33	20.53		
20	16QAM	100	0	20.54	20.43	20.46	20.26	20.49		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.42	22.36	22.32	22.23	22.25	24	0
15	QPSK	1	37	22.63	22.41	22.32	22.06	22.04		
15	QPSK	1	74	22.51	22.65	22.64	22.03	22.52		
15	QPSK	36	0	21.46	21.40	21.51	21.20	21.37	23	1
15	QPSK	36	20	21.51	21.47	21.47	21.16	21.27		
15	QPSK	36	39	21.49	21.57	21.19	21.22	21.32		
15	QPSK	75	0	21.52	21.49	21.10	21.23	21.32		
15	16QAM	1	0	22.00	21.70	21.29	21.44	21.47	23	1
15	16QAM	1	37	21.93	21.79	21.11	21.14	21.23		
15	16QAM	1	74	21.65	21.82	21.75	21.40	21.87		
15	16QAM	36	0	20.44	20.44	20.50	20.25	20.36	22	2
15	16QAM	36	20	20.46	20.46	20.35	20.11	20.20		
15	16QAM	36	39	20.45	20.61	20.51	20.24	20.37		
15	16QAM	75	0	20.57	20.62	20.52	20.20	20.41		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.47	22.31	22.49	22.20	22.33	24	0
10	QPSK	1	25	22.46	22.35	22.41	22.15	22.29		
10	QPSK	1	49	22.62	22.73	22.79	22.54	22.55		
10	QPSK	25	0	21.66	21.39	21.53	21.29	21.43	23	1
10	QPSK	25	12	21.63	21.38	21.46	21.36	21.39		
10	QPSK	25	25	21.62	21.42	21.64	21.20	21.45		
10	QPSK	50	0	21.58	21.38	21.40	21.35	21.37		
10	16QAM	1	0	21.71	21.47	21.75	21.45	21.60	23	1
10	16QAM	1	25	21.54	21.36	21.51	21.37	21.47		
10	16QAM	1	49	21.67	21.72	21.63	21.63	21.83		
10	16QAM	25	0	20.60	20.36	20.52	20.31	20.47	22	2
10	16QAM	25	12	20.59	20.43	20.51	20.32	20.28		
10	16QAM	25	25	20.57	20.46	20.34	20.33	20.45		
10	16QAM	50	0	20.54	20.43	20.53	20.41	20.40		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	22.37	22.26	22.42	22.15	22.24	24	0
5	QPSK	1	12	22.40	22.31	22.33	22.18	22.38		
5	QPSK	1	24	22.44	22.30	22.50	22.19	22.31		
5	QPSK	12	0	21.58	21.39	21.51	21.32	21.40	23	1
5	QPSK	12	7	21.53	21.38	21.42	21.23	21.42		
5	QPSK	12	13	21.49	21.36	21.51	21.33	21.35		
5	QPSK	25	0	21.61	21.34	21.47	21.05	21.38		
5	16QAM	1	0	21.58	21.65	21.58	21.39	21.52	23	1
5	16QAM	1	12	21.73	21.42	21.66	21.42	21.78		
5	16QAM	1	24	21.42	21.32	21.61	21.31	21.46		
5	16QAM	12	0	20.48	20.40	20.51	20.33	20.46	22	2
5	16QAM	12	7	20.49	20.38	20.49	20.21	20.32		
5	16QAM	12	13	20.40	20.37	20.51	20.24	20.22		
5	16QAM	25	0	20.54	20.29	20.37	20.25	20.43		

<At-Head Power Mode>

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	22.24	22.15	22.12	24	0
20	QPSK	1	49	22.22	22.44	22.23		
20	QPSK	1	99	22.62	22.33	22.39		
20	QPSK	50	0	21.42	21.34	21.05	23	1
20	QPSK	50	24	21.42	21.43	21.34		
20	QPSK	50	50	21.48	21.10	21.00		
20	QPSK	100	0	21.43	21.07	21.08		
20	16QAM	1	0	21.29	21.22	21.18	23	1
20	16QAM	1	49	21.58	21.55	21.23		
20	16QAM	1	99	21.61	21.54	21.27		
20	16QAM	50	0	20.47	20.28	20.28	22	2
20	16QAM	50	24	20.46	20.61	20.39		
20	16QAM	50	50	20.36	20.44	20.28		
20	16QAM	100	0	20.45	20.52	20.25		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	22.15	22.20	22.12	24	0
15	QPSK	1	37	22.29	22.32	22.16		
15	QPSK	1	74	22.55	22.59	22.27		
15	QPSK	36	0	21.30	21.19	21.16	23	1
15	QPSK	36	20	21.53	21.49	21.32		
15	QPSK	36	39	21.47	21.38	21.32		
15	QPSK	75	0	21.28	21.35	21.23		
15	16QAM	1	0	21.30	21.19	21.10	23	1
15	16QAM	1	37	21.47	21.59	21.06		
15	16QAM	1	74	21.76	21.97	21.61		
15	16QAM	36	0	20.18	20.20	20.19	22	2
15	16QAM	36	20	20.39	20.44	20.29		
15	16QAM	36	39	20.38	20.43	20.34		
15	16QAM	75	0	20.42	20.45	20.24		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	22.41	22.27	22.49	24	0
10	QPSK	1	25	22.44	22.54	22.50		
10	QPSK	1	49	22.75	22.68	22.64		
10	QPSK	25	0	21.61	21.55	21.52	23	1
10	QPSK	25	12	21.64	21.60	21.48		
10	QPSK	25	25	21.74	21.56	21.47		
10	QPSK	50	0	21.60	21.63	21.55		
10	16QAM	1	0	21.89	21.58	21.53	23	1
10	16QAM	1	25	21.69	21.69	21.49		
10	16QAM	1	49	22.08	21.85	21.70		
10	16QAM	25	0	20.63	20.65	20.37	22	2
10	16QAM	25	12	20.54	20.68	20.40		
10	16QAM	25	25	20.70	20.62	20.40		
10	16QAM	50	0	20.65	20.73	20.44		

Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	22.64	22.62	22.39	24	0
5	QPSK	1	12	22.52	22.58	22.11		
5	QPSK	1	24	22.60	22.50	22.31		
5	QPSK	12	0	21.73	21.60	21.47	23	1
5	QPSK	12	7	21.66	21.64	21.52		
5	QPSK	12	13	21.59	21.62	21.48		
5	QPSK	25	0	21.66	21.66	21.49		
5	16QAM	1	0	21.76	21.72	21.17	23	1
5	16QAM	1	12	21.86	21.87	21.34		
5	16QAM	1	24	21.67	21.64	21.45		
5	16QAM	12	0	20.62	20.60	20.44	22	2
5	16QAM	12	7	20.61	20.51	20.34		
5	16QAM	12	13	20.60	20.65	20.32		
5	16QAM	25	0	20.65	20.68	20.40		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.07	22.12	22.02	22.01	22.08	24	0
20	QPSK	1	49	22.33	22.30	22.28	22.12	22.31		
20	QPSK	1	99	22.47	22.56	22.57	22.31	22.44		
20	QPSK	50	0	21.52	21.37	21.50	21.24	21.38	23	1
20	QPSK	50	24	21.43	21.45	21.42	21.10	21.36		
20	QPSK	50	50	21.48	21.64	21.52	21.25	21.54		
20	QPSK	100	0	21.54	21.54	21.45	21.27	21.43		
20	16QAM	1	0	21.85	21.66	21.27	21.01	21.46	23	1
20	16QAM	1	49	21.61	21.30	21.41	21.23	21.55		
20	16QAM	1	99	21.30	21.50	21.75	21.29	21.33		
20	16QAM	50	0	20.49	20.51	20.52	20.23	20.39	22	2
20	16QAM	50	24	20.46	20.49	20.42	20.31	20.29		
20	16QAM	50	50	20.51	20.58	20.56	20.33	20.53		
20	16QAM	100	0	20.54	20.43	20.46	20.26	20.49		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.42	22.36	22.32	22.23	22.25	24	0
15	QPSK	1	37	22.63	22.41	22.32	22.06	22.04		
15	QPSK	1	74	22.51	22.65	22.64	22.03	22.52		
15	QPSK	36	0	21.46	21.40	21.51	21.20	21.37	23	1
15	QPSK	36	20	21.51	21.47	21.47	21.16	21.27		
15	QPSK	36	39	21.49	21.57	21.19	21.22	21.32		
15	QPSK	75	0	21.52	21.49	21.10	21.23	21.32		
15	16QAM	1	0	22.00	21.70	21.29	21.44	21.47	23	1
15	16QAM	1	37	21.93	21.79	21.11	21.14	21.23		
15	16QAM	1	74	21.65	21.82	21.75	21.40	21.87		
15	16QAM	36	0	20.44	20.44	20.50	20.25	20.36	22	2
15	16QAM	36	20	20.46	20.46	20.35	20.11	20.20		
15	16QAM	36	39	20.45	20.61	20.51	20.24	20.37		
15	16QAM	75	0	20.57	20.62	20.52	20.20	20.41		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.47	22.31	22.49	22.20	22.33	24	0
10	QPSK	1	25	22.46	22.35	22.41	22.15	22.29		
10	QPSK	1	49	22.62	22.73	22.79	22.54	22.55		
10	QPSK	25	0	21.66	21.39	21.53	21.29	21.43	23	1
10	QPSK	25	12	21.63	21.38	21.46	21.36	21.39		
10	QPSK	25	25	21.62	21.42	21.64	21.20	21.45		
10	QPSK	50	0	21.58	21.38	21.40	21.35	21.37		
10	16QAM	1	0	21.71	21.47	21.75	21.45	21.60	23	1
10	16QAM	1	25	21.54	21.36	21.51	21.37	21.47		
10	16QAM	1	49	21.67	21.72	21.63	21.63	21.83		
10	16QAM	25	0	20.60	20.36	20.52	20.31	20.47	22	2
10	16QAM	25	12	20.59	20.43	20.51	20.32	20.28		
10	16QAM	25	25	20.57	20.46	20.34	20.33	20.45		
10	16QAM	50	0	20.54	20.43	20.53	20.41	20.40		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	22.37	22.26	22.42	22.15	22.24	24	0
5	QPSK	1	12	22.40	22.31	22.33	22.18	22.38		
5	QPSK	1	24	22.44	22.30	22.50	22.19	22.31		
5	QPSK	12	0	21.58	21.39	21.51	21.32	21.40	23	1
5	QPSK	12	7	21.53	21.38	21.42	21.23	21.42		
5	QPSK	12	13	21.49	21.36	21.51	21.33	21.35		
5	QPSK	25	0	21.61	21.34	21.47	21.05	21.38		
5	16QAM	1	0	21.58	21.65	21.58	21.39	21.52	23	1
5	16QAM	1	12	21.73	21.42	21.66	21.42	21.78		
5	16QAM	1	24	21.42	21.32	21.61	21.31	21.46		
5	16QAM	12	0	20.48	20.40	20.51	20.33	20.46	22	2
5	16QAM	12	7	20.49	20.38	20.49	20.21	20.32		
5	16QAM	12	13	20.40	20.37	20.51	20.24	20.22		
5	16QAM	25	0	20.54	20.29	20.37	20.25	20.43		

<Near-body and Hotspot Mode>

<LTE Band 38>

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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	22.24	22.15	22.12	24	0
20	QPSK	1	49	22.22	22.44	22.23		
20	QPSK	1	99	22.62	22.33	22.39		
20	QPSK	50	0	21.42	21.34	21.05	23	1
20	QPSK	50	24	21.42	21.43	21.34		
20	QPSK	50	50	21.48	21.10	21.00		
20	QPSK	100	0	21.43	21.07	21.08		
20	16QAM	1	0	21.29	21.22	21.18	23	1
20	16QAM	1	49	21.58	21.55	21.23		
20	16QAM	1	99	21.61	21.54	21.27		
20	16QAM	50	0	20.47	20.28	20.28	22	2
20	16QAM	50	24	20.46	20.61	20.39		
20	16QAM	50	50	20.36	20.44	20.28		
20	16QAM	100	0	20.45	20.52	20.25		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	22.15	22.20	22.12	24	0
15	QPSK	1	37	22.29	22.32	22.16		
15	QPSK	1	74	22.55	22.59	22.27		
15	QPSK	36	0	21.30	21.19	21.16	23	1
15	QPSK	36	20	21.53	21.49	21.32		
15	QPSK	36	39	21.47	21.38	21.32		
15	QPSK	75	0	21.28	21.35	21.23		
15	16QAM	1	0	21.30	21.19	21.10	23	1
15	16QAM	1	37	21.47	21.59	21.06		
15	16QAM	1	74	21.76	21.97	21.61		
15	16QAM	36	0	20.18	20.20	20.19	22	2
15	16QAM	36	20	20.39	20.44	20.29		
15	16QAM	36	39	20.38	20.43	20.34		
15	16QAM	75	0	20.42	20.45	20.24		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	22.41	22.27	22.49	24	0
10	QPSK	1	25	22.44	22.54	22.50		
10	QPSK	1	49	22.75	22.68	22.64		
10	QPSK	25	0	21.61	21.55	21.52	23	1
10	QPSK	25	12	21.64	21.60	21.48		
10	QPSK	25	25	21.74	21.56	21.47		
10	QPSK	50	0	21.60	21.63	21.55		
10	16QAM	1	0	21.89	21.58	21.53	23	1
10	16QAM	1	25	21.69	21.69	21.49		
10	16QAM	1	49	22.08	21.85	21.70		
10	16QAM	25	0	20.63	20.65	20.37	22	2
10	16QAM	25	12	20.54	20.68	20.40		
10	16QAM	25	25	20.70	20.62	20.40		
10	16QAM	50	0	20.65	20.73	20.44		

Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	22.64	22.62	22.39	24	0
5	QPSK	1	12	22.52	22.58	22.11		
5	QPSK	1	24	22.60	22.50	22.31		
5	QPSK	12	0	21.73	21.60	21.47	23	1
5	QPSK	12	7	21.66	21.64	21.52		
5	QPSK	12	13	21.59	21.62	21.48		
5	QPSK	25	0	21.66	21.66	21.49		
5	16QAM	1	0	21.76	21.72	21.17	23	1
5	16QAM	1	12	21.86	21.87	21.34		
5	16QAM	1	24	21.67	21.64	21.45		
5	16QAM	12	0	20.62	20.60	20.44	22	2
5	16QAM	12	7	20.61	20.51	20.34		
5	16QAM	12	13	20.60	20.65	20.32		
5	16QAM	25	0	20.65	20.68	20.40		

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.07	22.12	22.02	22.01	22.08	24	0
20	QPSK	1	49	22.33	22.30	22.28	22.12	22.31		
20	QPSK	1	99	22.47	22.56	22.57	22.31	22.44		
20	QPSK	50	0	21.52	21.37	21.50	21.24	21.38	23	1
20	QPSK	50	24	21.43	21.45	21.42	21.10	21.36		
20	QPSK	50	50	21.48	21.64	21.52	21.25	21.54		
20	QPSK	100	0	21.54	21.54	21.45	21.27	21.43		
20	16QAM	1	0	21.85	21.66	21.27	21.01	21.46	23	1
20	16QAM	1	49	21.61	21.30	21.41	21.23	21.55		
20	16QAM	1	99	21.30	21.50	21.75	21.29	21.33		
20	16QAM	50	0	20.49	20.51	20.52	20.23	20.39	22	2
20	16QAM	50	24	20.46	20.49	20.42	20.31	20.29		
20	16QAM	50	50	20.51	20.58	20.56	20.33	20.53		
20	16QAM	100	0	20.54	20.43	20.46	20.26	20.49		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.42	22.36	22.32	22.23	22.25	24	0
15	QPSK	1	37	22.63	22.41	22.32	22.06	22.04		
15	QPSK	1	74	22.51	22.65	22.64	22.03	22.52		
15	QPSK	36	0	21.46	21.40	21.51	21.20	21.37	23	1
15	QPSK	36	20	21.51	21.47	21.47	21.16	21.27		
15	QPSK	36	39	21.49	21.57	21.19	21.22	21.32		
15	QPSK	75	0	21.52	21.49	21.10	21.23	21.32		
15	16QAM	1	0	22.00	21.70	21.29	21.44	21.47	23	1
15	16QAM	1	37	21.93	21.79	21.11	21.14	21.23		
15	16QAM	1	74	21.65	21.82	21.75	21.40	21.87		
15	16QAM	36	0	20.44	20.44	20.50	20.25	20.36	22	2
15	16QAM	36	20	20.46	20.46	20.35	20.11	20.20		
15	16QAM	36	39	20.45	20.61	20.51	20.24	20.37		
15	16QAM	75	0	20.57	20.62	20.52	20.20	20.41		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.47	22.31	22.49	22.20	22.33	24	0
10	QPSK	1	25	22.46	22.35	22.41	22.15	22.29		
10	QPSK	1	49	22.62	22.73	22.79	22.54	22.55		
10	QPSK	25	0	21.66	21.39	21.53	21.29	21.43	23	1
10	QPSK	25	12	21.63	21.38	21.46	21.36	21.39		
10	QPSK	25	25	21.62	21.42	21.64	21.20	21.45		
10	QPSK	50	0	21.58	21.38	21.40	21.35	21.37		
10	16QAM	1	0	21.71	21.47	21.75	21.45	21.60	23	1
10	16QAM	1	25	21.54	21.36	21.51	21.37	21.47		
10	16QAM	1	49	21.67	21.72	21.63	21.63	21.83		
10	16QAM	25	0	20.60	20.36	20.52	20.31	20.47	22	2
10	16QAM	25	12	20.59	20.43	20.51	20.32	20.28		
10	16QAM	25	25	20.57	20.46	20.34	20.33	20.45		
10	16QAM	50	0	20.54	20.43	20.53	20.41	20.40		

Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	22.37	22.26	22.42	22.15	22.24	24	0
5	QPSK	1	12	22.40	22.31	22.33	22.18	22.38		
5	QPSK	1	24	22.44	22.30	22.50	22.19	22.31		
5	QPSK	12	0	21.58	21.39	21.51	21.32	21.40	23	1
5	QPSK	12	7	21.53	21.38	21.42	21.23	21.42		
5	QPSK	12	13	21.49	21.36	21.51	21.33	21.35		
5	QPSK	25	0	21.61	21.34	21.47	21.05	21.38		
5	16QAM	1	0	21.58	21.65	21.58	21.39	21.52	23	1
5	16QAM	1	12	21.73	21.42	21.66	21.42	21.78		
5	16QAM	1	24	21.42	21.32	21.61	21.31	21.46		
5	16QAM	12	0	20.48	20.40	20.51	20.33	20.46	22	2
5	16QAM	12	7	20.49	20.38	20.49	20.21	20.32		
5	16QAM	12	13	20.40	20.37	20.51	20.24	20.22		
5	16QAM	25	0	20.54	20.29	20.37	20.25	20.43		

<LTE Carrier Aggregation>

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 bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. All permutations exist. No restrictions on Pcell & Scell combinations. Only LTE Band 29A is limited to Scell.

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-4A	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
	4			Yes	Yes	Yes	Yes		
CA_2A-4A	2			Yes	Yes			20	1
	4			Yes	Yes				
CA_2A-4A	2			Yes	Yes	Yes	Yes	40	2
	4			Yes	Yes	Yes	Yes		
CA_2A-5A	2			Yes	Yes	Yes	Yes	30	0
	5			Yes	Yes				
CA_2A-5A	2			Yes	Yes			20	1
	5			Yes	Yes				
CA_2A-12A	2			Yes	Yes	Yes	Yes	30	0
	12			Yes	Yes				
CA_2A-12A	2			Yes	Yes	Yes	Yes	30	1
	12		Yes	Yes	Yes				
CA_2A-12A	2			Yes	Yes			20	2
	12			Yes	Yes				
CA_2A-13A	2			Yes	Yes	Yes	Yes	30	0
	13				Yes				
CA_2A-13A	2			Yes	Yes			20	1
	13				Yes				
CA_2A-17A	2			Yes	Yes			20	0
	17			Yes	Yes				
CA_2A-29A	2			Yes	Yes			20	0
	29		Yes	Yes	Yes			20	
CA_2A-29A	2			Yes	Yes			20	1
	29			Yes	Yes				
CA_2A-29A	2			Yes	Yes	Yes	Yes	30	2
	29			Yes	Yes				
CA_2A-66A	2	Yes	Yes	Yes	Yes	Yes	Yes	40	1
	66			Yes	Yes	Yes	Yes		
CA_2A-66A	2			Yes	Yes			20	1
	66			Yes	Yes				
CA_2A-66A	2			Yes	Yes	Yes	Yes	40	2
	66			Yes	Yes	Yes	Yes		
CA_4A-5A	4			Yes	Yes			20	0
	5			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	1
	5			Yes	Yes				
CA_4A-7A	4			Yes	Yes			30	0
	7			Yes	Yes	Yes	Yes		
	4			Yes	Yes	Yes	Yes	40	1
	7			Yes	Yes	Yes	Yes		

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_4A-12A	4	Yes	Yes	Yes	Yes			20	0
	12			Yes	Yes				
	4	Yes	Yes	Yes	Yes	Yes	Yes	30	1
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	2
	12		Yes	Yes	Yes				
	4			Yes	Yes			20	3
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	4
	12			Yes	Yes				
CA_4A-13A	4			Yes	Yes	Yes	Yes	30	0
	13				Yes				
	4			Yes	Yes			20	1
	13				Yes				
CA_4A-17A	4			Yes	Yes			20	0
	17			Yes	Yes				
CA_4A-29A	4			Yes	Yes			20	0
	29		Yes	Yes	Yes				
	4			Yes	Yes			20	1
	29			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	2
	29			Yes	Yes				
CA_4A-30A	4			Yes	Yes	Yes	Yes	30	0
	30			Yes	Yes				
CA_5A-7A	5	Yes	Yes	Yes	Yes			30	0
	7				Yes	Yes	Yes		
	5			Yes	Yes			30	1
	7				Yes	Yes	Yes		
CA_5A-30A	5			Yes	Yes			20	0
	30			Yes	Yes				
CA_5A-66A	5			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		
CA_12A-30A	12			Yes	Yes			20	0
	30			Yes	Yes				
CA_12A-66A	12			Yes	Yes			20	0
	66	Yes	Yes	Yes	Yes				
	12			Yes	Yes			30	1
	66	Yes	Yes	Yes	Yes	Yes	Yes		
	12		Yes	Yes	Yes			30	2
	66			Yes	Yes	Yes	Yes		
	12			Yes	Yes			20	3
	66			Yes	Yes				
	12			Yes	Yes			30	4
	66			Yes	Yes	Yes	Yes		
	12			Yes				20	5
	66			Yes	Yes	Yes			
CA_13A-66A	13			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		
CA_29A-30A	29			Yes	Yes			20	0
	30			Yes	Yes				
CA_29A-66A	29			Yes	Yes			30	0
	30			Yes	Yes	Yes	Yes		

E-UTRA CA Configuration	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_5B	5,10	10	20	0
	10	5		
CA_41C	10	20	40	0
	15	15,20		
	20	10,15,20		
	5, 10	20	40	1
	15	15, 20		
	20	5, 10, 15, 20		
	10	15, 20	40	2
	15	10, 15, 20		
	20	10, 15, 20		
	10	20	40	3
	20	20		
CA_66C	5	20	40	0
	10	15, 20		
	15	10, 15, 20		
	20	5, 10, 15, 20		
CA_2A-2A	5,10,15,20	5,10,15,20	40	0
CA_4A-4A	5,10,15,20	5,10,15,20	40	0
	5, 10	5, 10	20	1
CA_7A-7A	5	15	40	0
	10	10,15		
	15	15,20		
	20	20		
	5,10,15,20	5,10,15,20	40	1
CA_25A-25A	5, 10	5, 10	20	0
	5,10,15,20	5,10,15,20	40	1
CA_66A-66A	5,10,15,20	5,10,15,20	40	0

LTE Carrier Aggregation Conducted Power

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 carrier aggregation only. Uplink carrier aggregation is not supported. 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 Inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band.

vii. 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.

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

<At-Head Power Mode>

Configure		PCC							SCC				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		Band 2	20	1880	18900	QPSK	1	0	Band 4	20	2132.5	2175	22.53	22.55
		Band 4	10	1732.5	20175	QPSK	1	49	Band 2	20	1960	900	22.60	22.66
		Band 2	20	1880	18900	QPSK	1	0	Band 5	10	881.5	2525	22.54	22.55
		Band 5	10	836.5	20525	QPSK	1	0	Band 2	20	1960	900	22.81	22.85
		Band 2	20	1880	18900	QPSK	1	0	Band 12	10	737.5	5095	22.52	22.55
		Band 12	10	707.5	23095	QPSK	1	25	Band 2	20	1960	900	22.65	22.69
		Band 2	20	1880	18900	QPSK	1	0	Band 13	10	751	5230	22.52	22.55
		Ban 13	10	782	23230	QPSK	1	49	Band 2	20	1960	900	23.00	23.00
		Band 2	10	1905	19150	QPSK	1	49	Band 17	10	740	5790	22.48	22.50
		Ban 17	5	710	23790	QPSK	1	0	Band 2	10	1960	900	22.76	22.77
		Band 2	20	1880	18900	QPSK	1	0	Band 29	10	722.5	9715	22.55	22.55
		Band 2	20	1880	18900	QPSK	1	0	Band 66	20	2145	66786	22.54	22.55
		Band 66	10	1745	132322	QPSK	1	49	Band 2	20	1960	900	23.42	23.48
		Band 4	10	1732.5	20175	QPSK	1	49	Band 5	10	881.5	2525	22.61	22.66
		Band 5	10	836.5	20525	QPSK	1	0	Band 4	20	2132.5	2175	22.82	22.85
		Band 4	10	1732.5	20175	QPSK	1	49	Band 7	20	2655	3100	22.62	22.66
		Band 7	10	2565	21400	QPSK	1	49	Band 4	20	2132.5	2175	22.69	22.70
		Band 4	10	1732.5	20175	QPSK	1	49	Band 12	10	737.5	5095	22.65	22.66
		Band 12	10	707.5	23095	QPSK	1	25	Band 4	20	2132.5	2175	22.63	22.69
		Band 4	10	1732.5	20175	QPSK	1	49	Band 13	10	751	5230	22.64	22.66
		Band 13	10	782	23230	QPSK	1	49	Band 4	20	2132.5	2175	22.99	23.00
		Band 4	10	1732.5	20175	QPSK	1	49	Band 17	10	740	5790	22.66	22.66
		Band 17	5	710	23790	QPSK	1	0	Band 4	10	2132.5	2175	22.76	22.77
		Band 4	10	1732.5	20175	QPSK	1	49	Band 29	10	722.5	9715	22.64	22.66
		Band 4	10	1732.5	20175	QPSK	1	49	Band 30	10	2355	9820	22.63	22.66
		Band 30	10	2310	27710	QPSK	1	0	Band 4	20	2132.5	2175	22.83	22.83
		Band 5	10	836.5	20525	QPSK	1	0	Band 7	20	2655	3100	22.84	22.85
		Band 7	10	2565	21400	QPSK	1	49	Band 5	10	881.5	2525	22.69	22.70
		Band 5	10	836.5	20525	QPSK	1	0	Band 30	10	2355	9820	22.81	22.85
		Band 30	10	2310	27710	QPSK	1	0	Band 5	10	881.5	2525	22.80	22.83
		Band 5	10	836.5	20525	QPSK	1	0	Band 66	20	2145	66786	22.80	22.85
		Band 66	10	1745	132322	QPSK	1	49	Band 5	10	881.5	2525	23.45	23.48
		Band 12	10	707.5	23095	QPSK	1	25	Band 30	10	2355	9820	22.67	22.69
		Band 30	10	2310	27710	QPSK	1	0	Band 12	10	737.5	5095	22.81	22.83
		Band 12	10	707.5	23095	QPSK	1	25	Band 66	20	2145	66786	22.65	22.69
		Band 66	10	1745	132322	QPSK	1	49	Band 12	10	737.5	5095	23.44	23.48
		Band 13	10	782	23230	QPSK	1	49	Band 66	20	2145	66786	22.98	23.00
		Band 66	10	1745	132322	QPSK	1	49	Band 13	10	751	5230	23.46	23.48
		Band 30	10	2310	27710	QPSK	1	0	Band 29	10	722.5	9715	22.80	22.83
		Band 66	10	1745	132322	QPSK	1	49	Band 29	10	722.5	9715	23.47	23.48
Intra-Band	Non-Contiguous	Band 2	20	1880	18900	QPSK	1	0	Band 2	5	1987.5	1175	22.51	22.55
		Band 4	10	1732.5	20175	QPSK	1	49	Band 4	5	2152.5	2375	22.64	22.66
		Band 7	10	2565	21400	QPSK	1	49	Band 7	5	2622.5	2775	22.68	22.70
		Band 25	10	1910	26640	QPSK	1	49	Band 25	5	1932.5	8065	22.79	22.80
		Band 66	10	1745	132322	QPSK	1	49	Band 66	5	2177.5	67111	23.45	23.48
	Contiguous	Band 5	10	836.5	20525	QPSK	1	0	Band 5	10	891.4	2624	22.80	22.85
		Band 41	10	2593	40620	QPSK	1	49	Band 41	20	2607.4	40764	22.75	22.79
		Band 66	10	1745	132322	QPSK	1	49	Band 66	20	2159.4	66930	23.43	23.48

<Near-Body and Hotspot Power Mode>

Configure		PCC							SCC				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		Band 2	20	1880	18900	QPSK	1	0	Band 4	20	2132.5	2175	20.22	20.23
		Band 4	20	1732.5	20175	QPSK	1	0	Band 2	20	1960	900	19.55	19.58
		Band 2	20	1880	18900	QPSK	1	0	Band 5	10	881.5	2525	20.21	20.23
		Band 5	10	836.5	20525	QPSK	1	0	Band 2	20	1960	900	21.25	21.28
		Band 2	20	1880	18900	QPSK	1	0	Band 12	10	737.5	5095	20.20	20.23
		Band 12	10	707.5	23095	QPSK	1	25	Band 2	20	1960	900	21.05	21.08
		Band 2	20	1880	18900	QPSK	1	0	Band 13	10	751	5230	20.19	20.23
		Ban 13	10	782	23230	QPSK	1	0	Band 2	20	1960	900	21.60	21.63
		Band 2	10	1880	18900	16QAM	1	0	Band 17	10	740	5790	20.07	20.08
		Ban 17	10	710	23790	QPSK	1	25	Band 2	10	1960	900	20.98	20.98
		Band 2	20	1880	18900	QPSK	1	0	Band 29	10	722.5	9715	20.22	20.23
		Band 2	20	1880	18900	QPSK	1	0	Band 66	20	2145	66786	20.20	20.23
		Band 66	20	1770	132572	QPSK	1	99	Band 2	20	1960	900	20.95	20.99
		Band 4	20	1732.5	20175	QPSK	1	0	Band 5	10	881.5	2525	19.50	19.58
		Band 5	10	836.5	20525	QPSK	1	0	Band 4	20	2132.5	2175	21.24	21.28
		Band 4	20	1732.5	20175	QPSK	1	0	Band 7	20	2655	3100	19.55	19.58
		Band 7	20	2560	21350	QPSK	1	99	Band 4	20	2132.5	2175	21.80	21.81
		Band 4	20	1732.5	20175	QPSK	1	0	Band 12	10	737.5	5095	19.56	19.58
		Band 12	10	707.5	23095	QPSK	1	25	Band 4	20	2132.5	2175	21.06	21.08
		Band 4	20	1732.5	20175	QPSK	1	0	Band 13	10	751	5230	19.50	19.58
		Band 13	10	782	23230	QPSK	1	0	Band 4	20	2132.5	2175	21.60	21.63
		Band 4	10	1732.5	20175	16QAM	1	25	Band 17	10	740	5790	19.51	19.54
		Band 17	10	710	23790	QPSK	1	25	Band 4	10	2132.5	2175	20.98	20.98
		Band 4	20	1732.5	20175	QPSK	1	0	Band 29	10	722.5	9715	19.53	19.58
		Band 4	20	1732.5	20175	QPSK	1	0	Band 30	10	2355	9820	19.54	19.58
		Band 30	10	2310	27710	QPSK	1	49	Band 4	20	2132.5	2175	21.05	21.06
		Band 5	10	836.5	20525	QPSK	1	0	Band 7	20	2655	3100	21.27	21.28
		Band 7	20	2560	21350	QPSK	1	99	Band 5	10	881.5	2525	21.80	21.81
		Band 5	10	836.5	20525	QPSK	1	0	Band 30	10	2355	9820	21.28	21.28
		Band 30	10	2310	27710	QPSK	1	49	Band 5	10	881.5	2525	21.00	21.06
		Band 5	10	836.5	20525	QPSK	1	0	Band 66	20	2145	66786	21.25	21.28
		Band 66	20	1770	132572	QPSK	1	99	Band 5	10	881.5	2525	20.95	20.99
		Band 12	10	707.5	23095	QPSK	1	25	Band 30	10	2355	9820	21.05	21.08
		Band 30	10	2310	27710	QPSK	1	49	Band 12	10	737.5	5095	21.05	21.06
		Band 12	10	707.5	23095	QPSK	1	25	Band 66	20	2145	66786	21.07	21.08
		Band 66	20	1770	132572	QPSK	1	99	Band 12	10	737.5	5095	20.98	20.99
		Band 13	10	782	23230	QPSK	1	0	Band 66	20	2145	66786	21.60	21.63
		Band 66	20	1770	132572	QPSK	1	99	Band 13	10	751	5230	20.96	20.99
		Band 30	10	2310	27710	QPSK	1	49	Band 29	10	722.5	9715	21.00	21.06
		Band 66	20	1770	132572	QPSK	1	99	Band 29	10	722.5	9715	20.97	20.99
Intra-Band	Non-Contiguous	Band 2	20	1880	18900	QPSK	1	0	Band 2	5	1987.5	1175	20.20	20.23
		Band 4	20	1732.5	20175	QPSK	1	0	Band 4	5	2152.5	2375	19.53	19.58
		Band 7	20	2560	21350	QPSK	1	99	Band 7	5	2622.5	2775	21.78	21.81
		Band 25	20	1880	26340	QPSK	1	49	Band 25	5	1992.5	8665	19.85	19.86
		Band 66	20	1770	132572	QPSK	1	99	Band 66	5	2112.5	66461	20.98	20.99
	Contiguous	Band 5	10	836.5	20525	QPSK	1	0	Band 5	10	891.4	2624	21.22	21.28
		Band 66	20	1770	132572	QPSK	1	99	Band 66	20	2150.2	66838	20.96	20.99

<Default Power Mode>

Configure		PCC							SCC				Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band		Band 2	20	1900	19100	QPSK	50	0	Band 4	20	2132.5	2175	21.18	21.20
		Band 4	20	1732.5	20175	QPSK	50	0	Band 2	20	1960	900	21.00	21.02
		Band 2	20	1900	19100	QPSK	50	0	Band 5	10	881.5	2525	21.17	21.20
		Band 2	20	1900	19100	QPSK	50	0	Band 12	10	737.5	5095	21.18	21.20
		Band 2	20	1900	19100	QPSK	50	0	Band 13	10	751	5230	21.19	21.20
		Band 2	10	1905	19150	16QAM	1	0	Band 17	10	740	5790	21.15	21.17
		Band 2	20	1900	19100	QPSK	50	0	Band 29	10	722.5	9715	21.19	21.20
		Band 2	20	1900	19100	QPSK	50	0	Band 66	20	2145	66786	21.17	21.20
		Band 66	20	1770	132572	QPSK	1	99	Band 2	20	1960	900	22.50	22.57
		Band 4	20	1732.5	20175	QPSK	50	0	Band 5	10	881.5	2525	21.00	21.02
		Band 4	20	1732.5	20175	QPSK	50	0	Band 7	20	2655	3100	21.01	21.02
		Band 7	10	2565	21400	QPSK	1	0	Band 4	20	2132.5	2175	22.34	22.36
		Band 4	20	1732.5	20175	QPSK	50	0	Band 12	10	737.5	5095	20.99	21.02
		Band 4	20	1732.5	20175	QPSK	50	0	Band 13	10	751	5230	20.98	21.02
		Band 4	10	1715	20000	QPSK	1	49	Band 17	10	740	5790	20.99	21.01
		Band 4	20	1732.5	20175	QPSK	50	0	Band 29	10	722.5	9715	21.00	21.02
		Band 4	20	1732.5	20175	QPSK	50	0	Band 30	10	2355	9820	21.02	21.02
		Band 30	10	2310	27710	QPSK	1	49	Band 4	20	2132.5	2175	22.15	22.16
		Band 7	10	2565	21400	QPSK	1	0	Band 5	10	881.5	2525	22.30	22.36
		Band 30	10	2310	27710	QPSK	1	49	Band 5	10	881.5	2525	22.11	22.16
		Band 66	20	1770	132572	QPSK	1	99	Band 5	10	881.5	2525	22.54	22.57
		Band 30	10	2310	27710	QPSK	1	49	Band 12	10	737.5	5095	22.12	22.16
		Band 66	20	1770	132572	QPSK	1	99	Band 12	10	737.5	5095	22.54	22.57
		Band 66	20	1770	132572	QPSK	1	99	Band 13	10	751	5230	22.56	22.57
		Band 30	10	2310	27710	QPSK	1	49	Band 29	10	722.5	9715	22.13	22.16
		Band 66	20	1770	132572	QPSK	1	99	Band 29	10	722.5	9715	22.55	22.57
Intra-Band	Non-Contiguous	Band 2	20	1900	19100	QPSK	50	0	Band 2	5	1932.5	625	21.15	21.20
		Band 4	20	1732.5	20175	QPSK	50	0	Band 4	5	2152.5	2375	21.00	21.02
		Band 7	10	2565	21400	QPSK	1	0	Band 7	5	2622.5	2775	22.31	22.36
		Band 25	20	1880	26340	QPSK	50	0	Band 25	5	1932.5	8065	20.61	20.68
		Band 66	20	1770	132572	QPSK	1	99	Band 66	5	2112.5	66461	20.55	22.57
	Contiguous	Band 66	20	1770	132572	QPSK	1	99	Band 66	20	2159.4	66930	22.55	22.57

<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	CH 1	2412	17.90	18.00	97.63
		CH 6	2437	18.63	19.00	
		CH 11	2462	17.51	18.00	
	802.11g 6Mbps	CH 1	2412	14.31	14.50	87.18
		CH 6	2437	17.72	18.00	
		CH 11	2462	12.71	13.00	
	802.11n-HT20 MCS0	CH 1	2412	13.55	14.00	85.81
		CH 6	2437	16.21	16.50	
		CH 11	2462	11.74	12.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	CH 36	5180	18.91	19.00	86.92
		CH 40	5200	19.45	19.70	
		CH 44	5220	19.46	19.70	
		CH 48	5240	19.21	19.70	
	802.11n-HT20 MCS0	CH 36	5180	18.56	19.00	85.91
		CH 40	5200	19.52	19.70	
		CH 44	5220	19.56	19.70	
		CH 48	5240	19.21	19.70	
	802.11n-HT40 MCS0	CH 38	5190	14.05	14.50	85.14
		CH 46	5230	20.08	20.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	CH 52	5260	19.06	19.70	86.92
		CH 56	5280	19.00	19.70	
		CH 60	5300	18.86	19.70	
		CH 64	5320	18.36	18.50	
	802.11n-HT20 MCS0	CH 52	5260	19.19	19.70	85.91
		CH 56	5280	19.00	19.70	
		CH 60	5300	19.04	19.70	
		CH 64	5320	17.93	18.50	
	802.11n-HT40 MCS0	CH 54	5270	19.66	19.70	85.14
		CH 62	5310	13.42	13.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	CH 100	5500	18.05	19.20	86.92
		CH 116	5580	18.23	19.20	
		CH 124	5620	18.26	19.20	
		CH 132	5660	18.36	19.20	
		CH 140	5700	18.67	19.20	
		CH 144	5720	18.59	19.20	
	802.11n-HT20 MCS0	CH 100	5500	18.13	19.20	85.91
		CH 116	5580	18.15	19.20	
		CH 124	5620	18.20	19.20	
		CH 132	5660	18.05	19.20	
		CH 140	5700	18.16	19.20	
		CH 144	5720	18.04	19.20	
	802.11n-HT40 MCS0	CH 102	5510	15.85	16.00	85.14
		CH 110	5550	18.87	19.20	
		CH 126	5630	18.80	19.20	
		CH 134	5670	18.35	19.20	
		CH 142	5710	18.30	19.20	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	CH 149	5745	18.42	19.00	86.92
		CH 157	5785	18.61	19.00	
		CH 165	5825	18.36	19.00	
	802.11n-HT20 MCS0	CH 149	5745	18.07	19.00	85.91
		CH 157	5785	18.20	19.00	
		CH 165	5825	18.11	19.00	
	802.11n-HT40 MCS0	CH 151	5755	16.59	17.00	85.14
		CH 159	5795	18.50	19.00	

<At-Head 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	15.92	16.00	97.63
		6	2437	15.60	16.00	
		11	2462	15.70	16.00	
	802.11g 6Mbps	1	2412	14.31	14.50	87.18
		6	2437	15.82	16.00	
		11	2462	12.71	13.00	
	802.11n-HT20 MCS0	1	2412	13.55	14.00	85.81
		6	2437	15.81	16.00	
		11	2462	11.74	12.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	15.05	15.50	86.92
		40	5200	15.03	15.50	
		44	5220	15.02	15.50	
		48	5240	15.37	15.50	
	802.11n-HT20 MCS0	36	5180	15.43	15.50	85.91
		40	5200	15.12	15.50	
		44	5220	15.02	15.50	
		48	5240	15.41	15.50	
	802.11n-HT40 MCS0	38	5190	14.05	14.50	85.14
		46	5230	15.35	15.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	15.01	15.50	86.92
		56	5280	15.06	15.50	
		60	5300	15.17	15.50	
		64	5320	15.46	15.50	
	802.11n-HT20 MCS0	52	5260	15.26	15.50	85.91
		56	5280	15.27	15.50	
		60	5300	15.34	15.50	
		64	5320	15.11	15.50	
	802.11n-HT40 MCS0	54	5270	15.31	15.50	85.14
		62	5310	13.42	13.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.39	15.50	86.92
		116	5580	15.16	15.50	
		124	5620	15.20	15.50	
		132	5660	15.15	15.50	
		140	5700	15.42	15.50	
		144	5720	15.43	15.50	
	802.11n-HT20 MCS0	100	5500	15.44	15.50	85.91
		116	5580	15.01	15.50	
		124	5620	15.15	15.50	
		132	5660	15.17	15.50	
		140	5700	15.49	15.50	
		144	5720	15.40	15.50	
	802.11n-HT40 MCS0	102	5510	15.27	15.50	85.14
		110	5550	15.01	15.50	
		126	5630	15.22	15.50	
		134	5670	15.46	15.50	
		142	5710	15.25	15.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	15.45	15.50	86.92
		157	5785	15.36	15.50	
		165	5825	15.16	15.50	
	802.11n-HT20 MCS0	149	5745	15.36	15.50	85.91
		157	5785	15.26	15.50	
		165	5825	15.25	15.50	
	802.11n-HT40 MCS0	151	5755	15.31	15.50	85.14
		159	5795	15.38	15.50	

<2.4GHz Bluetooth>

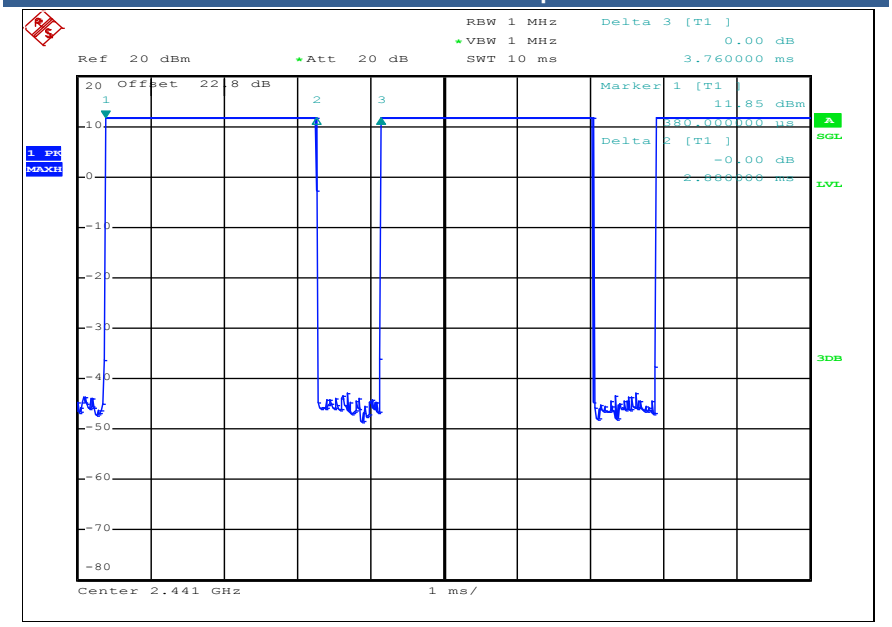
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	11.36	9.27	9.28
	CH 39	2441	11.96	9.94	9.97
	CH 78	2480	8.75	6.60	6.66
Tune-up Limit	CH 00	2402	11.5	9.5	9.5
	CH 39	2441	12	10	10
	CH 78	2480	9	7	7

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	7.10
	CH 19	2440	7.86
	CH 39	2480	4.80
Tune-up Limit	CH 00	2402	7.5
	CH 19	2440	8
	CH 39	2480	5

General Note:

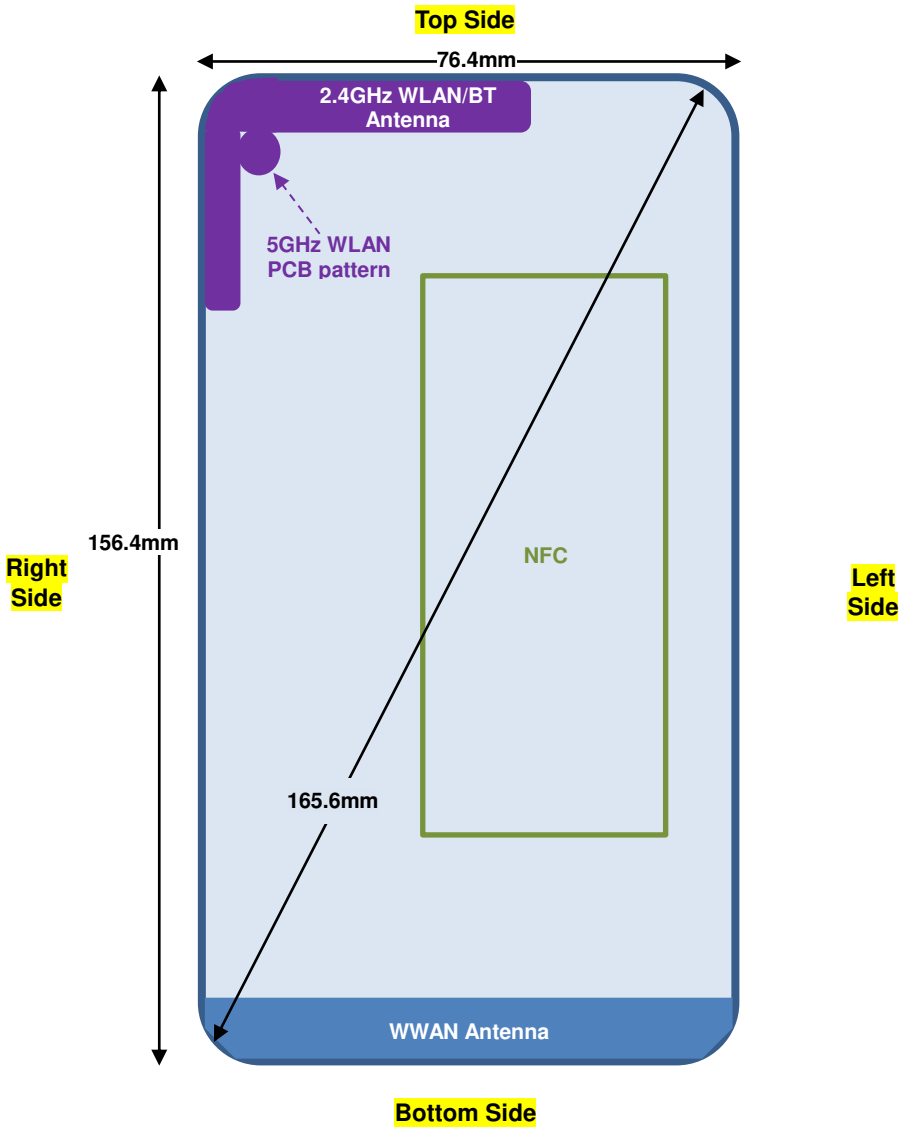
1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 76.6% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation

Bluetooth time-domain plot



13. 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 Main	≤ 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 Main	Yes	Yes	No	Yes	Yes	Yes
BT&WLAN	Yes	Yes	Yes	No	Yes	Yes

General Note:

1. Referring to KDB 941225 D06 v02r01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge

14. 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/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
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. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. 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 bottom side of UMTS B2,CDMA BC1, LTE B2 / B4 / B25 / B30 /B66 and left side of UMTS B5,CDMA BC10, LTE B12 / B13 / B17 SAR for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg, therefore product specific SAR is necessary.
6. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary, due to an overall diagonal dimension is > 16cm.
7. According to TCB workshop October 2016, when the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands; however for the SAR measurement was used a low-loss foam block performed testing, the relative permittivity and loss tangent of the foam material is 1.0 and 10^{-5}, respectively, therefore holder perturbation verification is not required even highest reported SAR is >1.2W/kg.
8. When the device operating under different conditions of At-Head, body-worn, near-body, hotspot and free space will limit different maximum output powers in several cellular transmitters and the detail mechanisms description of the different output power levels are included in the operation description.
9. The device used different output power mechanisms for SAR compliance for WLAN transmitter for held-to-are exposure conditions and detail descriptions of the output power mechanism are included in the operational description.
10. The device is used different output powers for SAR compliance and the output power states as following and showing on the below SAR test tables
    - Output power state1, the RF output power is limit in At-Head Power mode.
    - Output power state2, the RF output power is limit in near-body and hotspot power mode.
    - Output power state3, the RF output power is limit in default power mode

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. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is 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. If 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.

CDMA Note:

1. Per KDB 941225 D01v03r01, SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

LTE Note:

1. 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.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. 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.
4. 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.
5. 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.
6. For LTE B4 / B5 / B12 / B17 / B26/ B38 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.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n head SAR testing is 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.

14.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	1	189	836.4	25.72	27.50	1.507	0	0.178	0.268
	GSM850	GPRS (4 Tx slots)	Right Tilted	0mm	1	189	836.4	25.72	27.50	1.507	0.09	0.083	0.125
01	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	1	189	836.4	25.72	27.50	1.507	0.05	0.239	0.360
	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	1	128	824.2	25.69	27.50	1.517	0.03	0.220	0.334
	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	1	251	848.8	25.71	27.50	1.510	-0.04	0.225	0.340
	GSM850	GPRS (4 Tx slots)	Left Tilted	0mm	1	189	836.4	25.72	27.50	1.507	0.02	0.082	0.124
	GSM1900	GPRS (4 Tx slots)	Right Cheek	0mm	1	512	1850.2	22.75	24.50	1.496	0.02	0.131	0.196
	GSM1900	GPRS (4 Tx slots)	Right Tilted	0mm	1	512	1850.2	22.75	24.50	1.496	-0.15	0.058	0.087
	GSM1900	GPRS (4 Tx slots)	Left Cheek	0mm	1	512	1850.2	22.75	24.50	1.496	0.1	0.149	0.223
02	GSM1900	GPRS (4 Tx slots)	Left Cheek	0mm	1	661	1880	22.63	24.50	1.538	0.18	0.173	0.266
	GSM1900	GPRS (4 Tx slots)	Left Cheek	0mm	1	810	1909.8	22.61	24.50	1.545	0.12	0.115	0.178
	GSM1900	GPRS (4 Tx slots)	Left Tilted	0mm	1	512	1850.2	22.75	24.50	1.496	0.1	0.058	0.087

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	Right Cheek	0mm	1	9538	1907.6	22.89	24.00	1.291	-0.09	0.429	0.554
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	1	9262	1852.4	22.70	24.00	1.349	-0.02	0.407	0.549
03	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	1	9400	1880	22.73	24.00	1.340	0.01	0.418	0.560
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	1	9538	1907.6	22.89	24.00	1.291	-0.05	0.137	0.177
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	1	9538	1907.6	22.89	24.00	1.291	0.07	0.303	0.391
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	1	9538	1907.6	22.89	24.00	1.291	0.09	0.118	0.152
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1	1513	1752.6	22.93	24.00	1.279	0.02	0.405	0.518
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	1	1513	1752.6	22.93	24.00	1.279	0.05	0.168	0.215
04	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1	1513	1752.6	22.93	24.00	1.279	0	0.492	0.629
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1	1312	1712.4	22.88	24.00	1.294	0	0.375	0.485
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1	1413	1732.6	22.82	24.00	1.312	0.01	0.358	0.470
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	1	1513	1752.6	22.93	24.00	1.279	-0.04	0.151	0.193
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	1	4182	836.4	22.86	24.00	1.300	-0.08	0.276	0.359
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	1	4182	836.4	22.86	24.00	1.300	0.11	0.128	0.166
05	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	1	4182	836.4	22.86	24.00	1.300	-0.05	0.315	0.410
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	1	4132	826.4	22.62	24.00	1.374	-0.13	0.292	0.401
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	1	4233	846.6	22.58	24.00	1.387	-0.11	0.291	0.404
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	1	4182	836.4	22.86	24.00	1.300	-0.03	0.126	0.164

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
	CDMA BC0	1xRTT RC3 SO55	Right Cheek	0mm	1	1013	824.7	23.98	25.00	1.265	0.02	0.282	0.357
	CDMA BC0	1xRTT RC3 SO55	Right Tilted	0mm	1	1013	824.7	23.98	25.00	1.265	0.1	0.122	0.154
	CDMA BC0	1xRTT RC3 SO55	Left Cheek	0mm	1	1013	824.7	23.98	25.00	1.265	-0.1	0.302	0.382
06	CDMA BC0	1xRTT RC3 SO55	Left Cheek	0mm	1	384	836.52	23.97	25.00	1.268	-0.02	0.329	0.417
	CDMA BC0	1xRTT RC3 SO55	Left Cheek	0mm	1	777	848.31	23.90	25.00	1.288	-0.09	0.273	0.352
	CDMA BC0	1xRTT RC3 SO55	Left Tilted	0mm	1	1013	824.7	23.98	25.00	1.265	0.1	0.146	0.185
	CDMA BC1	1xRTT RC3 SO55	Right Cheek	0mm	1	600	1880	23.90	25.00	1.288	-0.15	0.306	0.394
	CDMA BC1	1xRTT RC3 SO55	Right Tilted	0mm	1	600	1880	23.90	25.00	1.288	0	0.150	0.193
	CDMA BC1	1xRTT RC3 SO55	Left Cheek	0mm	1	600	1880	23.90	25.00	1.288	-0.07	0.363	0.468
07	CDMA BC1	1xRTT RC3 SO55	Left Cheek	0mm	1	25	1851.25	23.70	25.00	1.349	-0.04	0.357	0.482
	CDMA BC1	1xRTT RC3 SO55	Left Cheek	0mm	1	1175	1908.75	23.84	25.00	1.306	0.05	0.325	0.425
	CDMA BC1	1xRTT RC3 SO55	Left Tilted	0mm	1	600	1880	23.90	25.00	1.288	0.1	0.113	0.146
	CDMA BC10	1xRTT RC3 SO55	Right Cheek	0mm	1	580	820.5	24.09	25.00	1.233	-0.13	0.368	0.454
	CDMA BC10	1xRTT RC3 SO55	Right Tilted	0mm	1	580	820.5	24.09	25.00	1.233	0.02	0.166	0.205
08	CDMA BC10	1xRTT RC3 SO55	Left Cheek	0mm	1	580	820.5	24.09	25.00	1.233	-0.05	0.406	0.501
	CDMA BC10	1xRTT RC3 SO55	Left Tilted	0mm	1	580	820.5	24.09	25.00	1.233	0.04	0.165	0.203

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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	Right Cheek	0mm	1	18900	1880	22.55	24.00	1.396	-0.19	0.334	0.466
09	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	1	18700	1860	22.33	24.00	1.469	-0.04	0.334	0.491
	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	1	19100	1900	22.47	24.00	1.422	-0.09	0.324	0.461
	LTE Band 2	20M	QPSK	50	0	Right Cheek	0mm	1	19100	1900	21.55	23.00	1.396	0.14	0.219	0.306
	LTE Band 2	20M	QPSK	1	0	Right Tilted	0mm	1	18900	1880	22.55	24.00	1.396	0.04	0.138	0.193
	LTE Band 2	20M	QPSK	50	0	Right Tilted	0mm	1	19100	1900	21.55	23.00	1.396	0.04	0.080	0.112
	LTE Band 2	20M	QPSK	1	0	Left Cheek	0mm	1	18900	1880	22.55	24.00	1.396	0.13	0.266	0.371
	LTE Band 2	20M	QPSK	50	0	Left Cheek	0mm	1	19100	1900	21.55	23.00	1.396	0.1	0.165	0.230
	LTE Band 2	20M	QPSK	1	0	Left Tilted	0mm	1	18900	1880	22.55	24.00	1.396	0.04	0.112	0.156
	LTE Band 2	20M	QPSK	50	0	Left Tilted	0mm	1	19100	1900	21.55	23.00	1.396	0.14	0.052	0.073
	LTE Band 4	20M	QPSK	1	99	Right Cheek	0mm	1	20175	1732.5	22.40	24.00	1.445	0.12	0.407	0.588
	LTE Band 4	20M	QPSK	50	50	Right Cheek	0mm	1	20175	1732.5	21.51	23.00	1.409	0.1	0.206	0.290
	LTE Band 4	20M	QPSK	1	99	Right Tilted	0mm	1	20175	1732.5	22.40	24.00	1.445	0.1	0.128	0.185
	LTE Band 4	20M	QPSK	50	50	Right Tilted	0mm	1	20175	1732.5	21.51	23.00	1.409	-0.07	0.071	0.100
10	LTE Band 4	20M	QPSK	1	99	Left Cheek	0mm	1	20175	1732.5	22.40	24.00	1.445	0.09	0.430	0.622
	LTE Band 4	20M	QPSK	50	50	Left Cheek	0mm	1	20175	1732.5	21.51	23.00	1.409	0.14	0.221	0.311
	LTE Band 4	20M	QPSK	1	99	Left Tilted	0mm	1	20175	1732.5	22.40	24.00	1.445	-0.06	0.112	0.162
	LTE Band 4	20M	QPSK	50	50	Left Tilted	0mm	1	20175	1732.5	21.51	23.00	1.409	0.02	0.057	0.080
	LTE Band 5	10M	QPSK	1	0	Right Cheek	0mm	1	20525	836.5	22.85	24.00	1.303	-0.11	0.334	0.435
	LTE Band 5	10M	QPSK	25	25	Right Cheek	0mm	1	20525	836.5	21.60	23.00	1.380	0.01	0.155	0.214
	LTE Band 5	10M	QPSK	1	0	Right Tilted	0mm	1	20525	836.5	22.85	24.00	1.303	-0.01	0.162	0.211
	LTE Band 5	10M	QPSK	25	25	Right Tilted	0mm	1	20525	836.5	21.60	23.00	1.380	-0.11	0.072	0.099
11	LTE Band 5	10M	QPSK	1	0	Left Cheek	0mm	1	20525	836.5	22.85	24.00	1.303	-0.14	0.359	0.468
	LTE Band 5	10M	QPSK	25	25	Left Cheek	0mm	1	20525	836.5	21.60	23.00	1.380	-0.04	0.162	0.224
	LTE Band 5	10M	QPSK	1	0	Left Tilted	0mm	1	20525	836.5	22.85	24.00	1.303	-0.1	0.179	0.233
	LTE Band 5	10M	QPSK	25	25	Left Tilted	0mm	1	20525	836.5	21.60	23.00	1.380	-0.14	0.081	0.112

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 7	20M	QPSK	1	49	Right Cheek	0mm	1	21350	2560	22.50	24.00	1.413	0.06	0.104	0.147
	LTE Band 7	20M	QPSK	50	50	Right Cheek	0mm	1	21350	2560	21.51	23.00	1.409	-0.02	0.071	0.100
	LTE Band 7	20M	QPSK	1	49	Right Tilted	0mm	1	21350	2560	22.50	24.00	1.413	0.02	0.085	0.120
	LTE Band 7	20M	QPSK	50	50	Right Tilted	0mm	1	21350	2560	21.51	23.00	1.409	0.16	0.060	0.085
	LTE Band 7	20M	QPSK	1	49	Left Cheek	0mm	1	21350	2560	22.50	24.00	1.413	-0.15	0.379	0.535
	LTE Band 7	20M	QPSK	1	49	Left Cheek	0mm	1	20850	2510	22.32	24.00	1.472	-0.03	0.347	0.511
12	LTE Band 7	20M	QPSK	1	49	Left Cheek	0mm	1	21100	2535	22.35	24.00	1.462	-0.17	0.386	0.564
	LTE Band 7	20M	QPSK	50	50	Left Cheek	0mm	1	21350	2560	21.51	23.00	1.409	-0.1	0.267	0.376
	LTE Band 7	20M	QPSK	1	49	Left Tilted	0mm	1	21350	2560	22.50	24.00	1.413	0.16	0.124	0.175
	LTE Band 7	20M	QPSK	50	50	Left Tilted	0mm	1	21350	2560	21.51	23.00	1.409	0.08	0.080	0.113
	LTE Band 12	10M	QPSK	1	25	Right Cheek	0mm	1	23095	707.5	22.69	24.00	1.352	-0.13	0.104	0.141
	LTE Band 12	10M	QPSK	25	12	Right Cheek	0mm	1	23095	707.5	21.70	23.00	1.349	0.07	0.080	0.108
	LTE Band 12	10M	QPSK	1	25	Right Tilted	0mm	1	23095	707.5	22.69	24.00	1.352	0.03	0.041	0.055
	LTE Band 12	10M	QPSK	25	12	Right Tilted	0mm	1	23095	707.5	21.70	23.00	1.349	0.18	0.032	0.043
13	LTE Band 12	10M	QPSK	1	25	Left Cheek	0mm	1	23095	707.5	22.69	24.00	1.352	-0.06	0.213	0.288
	LTE Band 12	10M	QPSK	25	12	Left Cheek	0mm	1	23095	707.5	21.70	23.00	1.349	-0.08	0.139	0.188
	LTE Band 12	10M	QPSK	1	25	Left Tilted	0mm	1	23095	707.5	22.69	24.00	1.352	0.01	0.054	0.073
	LTE Band 12	10M	QPSK	25	12	Left Tilted	0mm	1	23095	707.5	21.70	23.00	1.349	0.05	0.041	0.055
	LTE Band 13	10M	QPSK	1	49	Right Cheek	0mm	1	23230	782	23.00	24.00	1.259	-0.16	0.291	0.366
	LTE Band 13	10M	QPSK	25	0	Right Cheek	0mm	1	23230	782	21.97	23.00	1.268	-0.03	0.180	0.228
	LTE Band 13	10M	QPSK	1	49	Right Tilted	0mm	1	23230	782	23.00	24.00	1.259	-0.03	0.137	0.172
	LTE Band 13	10M	QPSK	25	0	Right Tilted	0mm	1	23230	782	21.97	23.00	1.268	0.15	0.088	0.112
14	LTE Band 13	10M	QPSK	1	49	Left Cheek	0mm	1	23230	782	23.00	24.00	1.259	0.01	0.340	0.428
	LTE Band 13	10M	QPSK	25	0	Left Cheek	0mm	1	23230	782	21.97	23.00	1.268	-0.05	0.208	0.264
	LTE Band 13	10M	QPSK	1	49	Left Tilted	0mm	1	23230	782	23.00	24.00	1.259	-0.03	0.149	0.188
	LTE Band 13	10M	QPSK	25	0	Left Tilted	0mm	1	23230	782	21.97	23.00	1.268	0.05	0.089	0.113
	LTE Band 17	10M	QPSK	1	25	Right Cheek	0mm	1	23790	710	22.66	24.00	1.361	-0.1	0.201	0.274
	LTE Band 17	10M	QPSK	25	12	Right Cheek	0mm	1	23790	710	21.71	23.00	1.346	0.17	0.093	0.125
	LTE Band 17	10M	QPSK	1	25	Right Tilted	0mm	1	23790	710	22.66	24.00	1.361	0.14	0.074	0.101
	LTE Band 17	10M	QPSK	25	12	Right Tilted	0mm	1	23790	710	21.71	23.00	1.346	0.02	0.037	0.050
15	LTE Band 17	10M	QPSK	1	25	Left Cheek	0mm	1	23790	710	22.66	24.00	1.361	-0.14	0.267	0.364
	LTE Band 17	10M	QPSK	25	12	Left Cheek	0mm	1	23790	710	21.71	23.00	1.346	-0.01	0.137	0.184
	LTE Band 17	10M	QPSK	1	25	Left Tilted	0mm	1	23790	710	22.66	24.00	1.361	0.01	0.057	0.078
	LTE Band 17	10M	QPSK	25	12	Left Tilted	0mm	1	23790	710	21.71	23.00	1.346	-0.11	0.044	0.059
	LTE Band 25	20M	QPSK	1	49	Right Cheek	0mm	1	26340	1880	22.57	24.00	1.390	0.18	0.433	0.602
16	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	1	26140	1860	22.44	24.00	1.432	-0.19	0.498	0.713
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	1	26590	1905	22.49	24.00	1.416	0.13	0.417	0.590
	LTE Band 25	20M	QPSK	50	24	Right Cheek	0mm	1	26340	1880	21.66	23.00	1.361	0.08	0.223	0.304
	LTE Band 25	20M	QPSK	1	49	Right Tilted	0mm	1	26340	1880	22.57	24.00	1.390	0.19	0.173	0.240
	LTE Band 25	20M	QPSK	50	24	Right Tilted	0mm	1	26340	1880	21.66	23.00	1.361	0.14	0.087	0.118
	LTE Band 25	20M	QPSK	1	49	Left Cheek	0mm	1	26340	1880	22.57	24.00	1.390	0.14	0.380	0.528
	LTE Band 25	20M	QPSK	50	24	Left Cheek	0mm	1	26340	1880	21.66	23.00	1.361	0.08	0.203	0.276
	LTE Band 25	20M	QPSK	1	49	Left Tilted	0mm	1	26340	1880	22.57	24.00	1.390	-0.1	0.156	0.217
	LTE Band 25	20M	QPSK	50	24	Left Tilted	0mm	1	26340	1880	21.66	23.00	1.361	-0.02	0.082	0.112
	LTE Band 2	15M	QPSK	1	74	Right Cheek	0mm	1	26865	831.5	23.06	24.00	1.242	0.08	0.304	0.377
	LTE Band 2	15M	QPSK	36	0	Right Cheek	0mm	1	26865	831.5	21.92	23.00	1.282	-0.03	0.153	0.196
	LTE Band 2	15M	QPSK	1	74	Right Tilted	0mm	1	26865	831.5	23.06	24.00	1.242	-0.08	0.132	0.164
	LTE Band 2	15M	QPSK	36	0	Right Tilted	0mm	1	26865	831.5	21.92	23.00	1.282	-0.15	0.068	0.087
17	LTE Band 2	15M	QPSK	1	74	Left Cheek	0mm	1	26865	831.5	23.06	24.00	1.242	-0.02	0.329	0.409
	LTE Band 2	15M	QPSK	36	0	Left Cheek	0mm	1	26865	831.5	21.92	23.00	1.282	-0.1	0.169	0.217
	LTE Band 2	15M	QPSK	1	74	Left Tilted	0mm	1	26865	831.5	23.06	24.00	1.242	-0.03	0.159	0.197
	LTE Band 2	15M	QPSK	36	0	Left Tilted	0mm	1	26865	831.5	21.92	23.00	1.282	-0.09	0.078	0.100

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 30	10M	QPSK	1	0	Right Cheek	0mm	1	27710	2310	22.83	24.00	1.309	0.1	0.119	0.156
	LTE Band 30	10M	QPSK	25	25	Right Cheek	0mm	1	27710	2310	21.61	23.00	1.377	0.11	0.059	0.081
	LTE Band 30	10M	QPSK	1	0	Right Tilted	0mm	1	27710	2310	22.83	24.00	1.309	-0.08	0.064	0.084
	LTE Band 30	10M	QPSK	25	25	Right Tilted	0mm	1	27710	2310	21.61	23.00	1.377	0.16	0.035	0.048
18	LTE Band 30	10M	QPSK	1	0	Left Cheek	0mm	1	27710	2310	22.83	24.00	1.309	-0.07	0.244	0.319
	LTE Band 30	10M	QPSK	25	25	Left Cheek	0mm	1	27710	2310	21.61	23.00	1.377	0.05	0.128	0.176
	LTE Band 30	10M	QPSK	1	0	Left Tilted	0mm	1	27710	2310	22.83	24.00	1.309	0.11	0.093	0.122
	LTE Band 30	10M	QPSK	25	25	Left Tilted	0mm	1	27710	2310	21.61	23.00	1.377	0.08	0.042	0.058
	LTE Band 66	20M	QPSK	1	99	Right Cheek	0mm	1	132572	1770	23.00	24.00	1.259	-0.01	0.392	0.493
	LTE Band 66	20M	QPSK	1	99	Right Cheek	0mm	1	132072	1720	22.50	24.00	1.413	-0.01	0.361	0.510
19	LTE Band 66	20M	QPSK	1	99	Right Cheek	0mm	1	132322	1745	22.84	24.00	1.306	-0.1	0.407	0.532
	LTE Band 66	20M	QPSK	50	50	Right Cheek	0mm	1	132572	1770	21.97	23.00	1.268	-0.04	0.268	0.340
	LTE Band 66	20M	QPSK	1	99	Right Tilted	0mm	1	132572	1770	23.00	24.00	1.259	-0.06	0.114	0.144
	LTE Band 66	20M	QPSK	50	50	Right Tilted	0mm	1	132572	1770	21.97	23.00	1.268	-0.06	0.077	0.098
	LTE Band 66	20M	QPSK	1	99	Left Cheek	0mm	1	132572	1770	23.00	24.00	1.259	-0.04	0.331	0.417
	LTE Band 66	20M	QPSK	50	50	Left Cheek	0mm	1	132572	1770	21.97	23.00	1.268	0.19	0.230	0.292
	LTE Band 66	20M	QPSK	1	99	Left Tilted	0mm	1	132572	1770	23.00	24.00	1.259	-0.05	0.117	0.147
	LTE Band 66	20M	QPSK	50	50	Left Tilted	0mm	1	132572	1770	21.97	23.00	1.268	0.06	0.079	0.100

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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)
	LTE Band 38	20M	QPSK	1	99	Right Cheek	0mm	1	37850	2580	22.62	24.00	1.374	62.9	1.006	-0.13	0.074	0.102
	LTE Band 38	20M	QPSK	50	50	Right Cheek	0mm	1	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.1	0.055	0.079
	LTE Band 38	20M	QPSK	1	99	Right Tilted	0mm	1	37850	2580	22.62	24.00	1.374	62.9	1.006	0.1	0.045	0.062
	LTE Band 38	20M	QPSK	50	50	Right Tilted	0mm	1	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.11	0.033	0.047
	LTE Band 38	20M	QPSK	1	99	Left Cheek	0mm	1	37850	2580	22.62	24.00	1.374	62.9	1.006	0.03	0.148	0.205
20	LTE Band 38	20M	QPSK	1	49	Left Cheek	0mm	1	38000	2595	22.44	24.00	1.432	62.9	1.006	-0.17	0.203	0.292
	LTE Band 38	20M	QPSK	1	99	Left Cheek	0mm	1	38150	2610	22.39	23.00	1.151	62.9	1.006	-0.19	0.190	0.220
	LTE Band 38	20M	QPSK	50	50	Left Cheek	0mm	1	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.03	0.115	0.164
	LTE Band 38	20M	QPSK	1	99	Left Tilted	0mm	1	37850	2580	22.62	24.00	1.374	62.9	1.006	-0.13	0.044	0.061
	LTE Band 38	20M	QPSK	50	50	Left Tilted	0mm	1	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.14	0.035	0.050
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	1	40620	2593	22.57	24.00	1.390	62.9	1.006	0.15	0.097	0.136
	LTE Band 41	20M	QPSK	50	50	Right Cheek	0mm	1	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.1	0.065	0.089
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	1	40620	2593	22.57	24.00	1.390	62.9	1.006	0.16	0.054	0.076
	LTE Band 41	20M	QPSK	50	50	Right Tilted	0mm	1	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.18	0.042	0.058
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	1	40620	2593	22.57	24.00	1.390	62.9	1.006	0.16	0.223	0.312
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	1	39750	2506	22.47	24.00	1.422	62.9	1.006	-0.15	0.203	0.290
21	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	1	40185	2549.5	22.56	24.00	1.393	62.9	1.006	0	0.230	0.322
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	1	41055	2636.5	22.31	24.00	1.476	62.9	1.006	-0.16	0.196	0.291
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	1	41490	2680	22.44	24.00	1.432	62.9	1.006	0.14	0.222	0.320
	LTE Band 41	20M	QPSK	50	50	Left Cheek	0mm	1	40620	2593	21.64	23.00	1.368	62.9	1.006	0.13	0.150	0.206
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	1	40620	2593	22.57	24.00	1.390	62.9	1.006	0.01	0.043	0.060
	LTE Band 41	20M	QPSK	50	50	Left Tilted	0mm	1	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.01	0.034	0.047

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	Right Cheek	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	0.062	0.492	0.513
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	0.082	0.437	0.455
22	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	0.014	1.240	1.292
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	1	11	2462	15.70	16.00	1.070	97.63	1.024	0.026	1.040	1.140
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	0.024	0.760	0.792
	WLAN2.4GHz	802.11g 6Mbps	Right Cheek	0mm	1	6	2462	15.82	16.00	1.043	87.18	1.147	0.062	0.242	0.290
	WLAN2.4GHz	802.11g 6Mbps	Right Tilted	0mm	1	6	2462	15.82	16.00	1.043	87.18	1.147	0.082	0.187	0.224
	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	1	6	2462	15.82	16.00	1.043	87.18	1.147	0.014	0.990	1.185
	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	1	6	2462	15.82	16.00	1.043	87.18	1.147	0.024	0.510	0.610
	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	1	54	5270	15.31	15.50	1.045	85.14	1.175	0.1	0.332	0.408
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	1	54	5270	15.31	15.50	1.045	85.14	1.175	0.075	0.278	0.341
23	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	54	5270	15.31	15.50	1.045	85.14	1.175	-0.149	0.949	1.165
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	1	64	5320	15.46	15.50	1.010	86.92	1.150	-0.157	0.952	1.105
	WLAN5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	1	54	5270	15.31	15.50	1.045	85.14	1.175	-0.085	0.564	0.692
	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	-0.008	0.564	0.669
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	0.142	0.452	0.536
24	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	-0.045	1.080	1.281
	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	102	5510	15.27	15.50	1.054	85.14	1.175	0.009	0.935	1.158
	WLAN5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	0.116	0.812	0.963
	WLAN5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	1	102	5510	15.27	15.50	1.054	85.14	1.175	0.066	0.581	0.720
	WLAN5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	1	159	5795	15.38	15.50	1.028	85.14	1.175	-0.018	0.501	0.605
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	1	159	5795	15.38	15.50	1.028	85.14	1.175	-0.073	0.442	0.534
	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	159	5795	15.38	15.50	1.028	85.14	1.175	-0.065	0.913	1.103
25	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	151	5755	15.31	15.50	1.045	85.14	1.175	-0.131	1.060	1.301
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	1	149	5745	15.45	15.50	1.012	86.92	1.150	0.026	1.020	1.187
	WLAN5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	1	159	5795	15.38	15.50	1.028	85.14	1.175	0.107	0.659	0.796

14.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
26	GSM850	GPRS (4 Tx slots)	Front	10mm	3	189	836.4	25.72	27.50	1.507	-0.06	0.764	1.151
	GSM850	GPRS (4 Tx slots)	Front	10mm	3	128	824.2	25.69	27.50	1.517	0.06	0.743	1.127
	GSM850	GPRS (4 Tx slots)	Front	10mm	3	251	848.8	25.71	27.50	1.510	0.06	0.726	1.096
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	189	836.4	25.72	27.50	1.507	-0.1	0.660	0.994
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	128	824.2	25.69	27.50	1.517	-0.03	0.644	0.977
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	251	848.8	25.71	27.50	1.510	0.09	0.653	0.986
	GSM850	GPRS (4 Tx slots)	Left Side	10mm	3	189	836.4	25.72	27.50	1.507	0.11	0.461	0.695
	GSM850	GPRS (4 Tx slots)	Right Side	10mm	3	189	836.4	25.72	27.50	1.507	0.03	0.242	0.365
	GSM850	GPRS (4 Tx slots)	Bottom Side	10mm	3	189	836.4	25.72	27.50	1.507	-0.16	0.273	0.411
	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	512	1850.2	22.75	24.50	1.496	-0.04	0.483	0.723
	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	661	1880	22.63	24.50	1.538	0.01	0.449	0.691
	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	810	1909.8	22.61	24.50	1.545	0.01	0.397	0.613
	GSM1900	GPRS (4 Tx slots)	Back	10mm	3	512	1850.2	22.75	24.50	1.496	-0.07	0.413	0.618
	GSM1900	GPRS (4 Tx slots)	Left Side	10mm	3	512	1850.2	22.75	24.50	1.496	-0.08	0.099	0.148
	GSM1900	GPRS (4 Tx slots)	Right Side	10mm	3	512	1850.2	22.75	24.50	1.496	0.1	0.177	0.265
27	GSM1900	GPRS (4 Tx slots)	Bottom Side	10mm	3	512	1850.2	22.75	24.50	1.496	-0.12	0.487	0.729
	GSM1900	GPRS (4 Tx slots)	Bottom Side	10mm	3	661	1880	22.63	24.50	1.538	0	0.471	0.724
	GSM1900	GPRS (4 Tx slots)	Bottom Side	10mm	3	810	1909.8	22.61	24.50	1.545	-0.01	0.459	0.709

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
28	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9538	1907.6	20.19	21.30	1.291	-0.01	0.926	1.196
	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9262	1852.4	19.90	21.30	1.380	-0.04	0.865	1.194
	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9400	1880	19.97	21.30	1.358	-0.04	0.880	1.195
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9538	1907.6	20.19	21.30	1.291	-0.05	0.816	1.054
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9262	1852.4	19.90	21.30	1.380	-0.01	0.751	1.037
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9400	1880	19.97	21.30	1.358	-0.02	0.786	1.068
	WCDMA II	RMC 12.2Kbps	Left Side	10mm	2	9538	1907.6	20.19	21.30	1.291	0.09	0.188	0.243
	WCDMA II	RMC 12.2Kbps	Right Side	10mm	2	9538	1907.6	20.19	21.30	1.291	0.12	0.305	0.394
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	2	9538	1907.6	20.19	21.30	1.291	-0.11	0.913	1.179
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	2	9262	1852.4	19.90	21.30	1.380	-0.18	0.839	1.158
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	2	9400	1880	19.97	21.30	1.358	-0.1	0.856	1.163
	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1513	1752.6	20.88	21.20	1.076	-0.03	0.801	0.862
	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1312	1712.4	20.68	21.20	1.127	-0.04	0.799	0.901
	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1413	1732.6	20.76	21.20	1.107	-0.01	0.812	0.899
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1513	1752.6	20.88	21.20	1.076	0.01	0.790	0.850
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1312	1712.4	20.68	21.20	1.127	0.01	0.762	0.859
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1413	1732.6	20.76	21.20	1.107	-0.1	0.767	0.849
	WCDMA IV	RMC 12.2Kbps	Left Side	10mm	2	1513	1752.6	20.88	21.20	1.076	0.17	0.209	0.225
	WCDMA IV	RMC 12.2Kbps	Right Side	10mm	2	1513	1752.6	20.88	21.20	1.076	0.15	0.319	0.343
29	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	2	1513	1752.6	20.88	21.20	1.076	-0.15	0.921	0.991
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	2	1312	1712.4	20.68	21.20	1.127	-0.15	0.789	0.889
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	2	1413	1732.6	20.76	21.20	1.107	-0.12	0.874	0.967
	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4182	836.4	21.50	22.20	1.175	-0.17	0.809	0.950
30	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4132	826.4	21.28	22.20	1.236	-0.07	0.795	0.983
	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4233	846.6	21.18	22.20	1.265	-0.07	0.771	0.975
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4182	836.4	21.50	22.20	1.175	-0.06	0.760	0.893
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4132	826.4	21.28	22.20	1.236	-0.19	0.689	0.852
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4233	846.6	21.18	22.20	1.265	-0.15	0.646	0.817
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	2	4182	836.4	21.50	22.20	1.175	-0.07	0.719	0.845
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	2	4132	826.4	21.28	22.20	1.236	0.02	0.693	0.857
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	2	4233	846.6	21.18	22.20	1.265	-0.09	0.754	0.954
	WCDMA V	RMC 12.2Kbps	Right Side	10mm	2	4182	836.4	21.50	22.20	1.175	-0.06	0.389	0.457
	WCDMA V	RMC 12.2Kbps	Bottom Side	10mm	2	4182	836.4	21.50	22.20	1.175	-0.12	0.296	0.348

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
	CDMA BC0	RTAP 153.6Kbps	Front	10mm	2	384	836.52	21.76	22.90	1.300	-0.01	0.868	1.129
	CDMA BC0	RTAP 153.6Kbps	Front	10mm	2	777	848.31	21.64	22.90	1.337	-0.03	0.780	1.043
31	CDMA BC0	RTAP 153.6Kbps	Front	10mm	2	1013	824.7	21.72	22.90	1.312	-0.08	0.889	1.167
	CDMA BC0	RTAP 153.6Kbps	Back	10mm	2	384	836.52	21.76	22.90	1.300	-0.08	0.779	1.013
	CDMA BC0	RTAP 153.6Kbps	Back	10mm	2	1013	824.7	21.72	22.90	1.312	-0.03	0.773	1.014
	CDMA BC0	RTAP 153.6Kbps	Back	10mm	2	777	848.31	21.64	22.90	1.337	-0.1	0.778	1.040
	CDMA BC0	RTAP 153.6Kbps	Left Side	10mm	2	384	836.52	21.76	22.90	1.300	0.07	0.567	0.737
	CDMA BC0	RTAP 153.6Kbps	Right Side	10mm	2	384	836.52	21.76	22.90	1.300	0.06	0.301	0.391
	CDMA BC0	RTAP 153.6Kbps	Bottom Side	10mm	2	384	836.52	21.76	22.90	1.300	-0.14	0.396	0.515
	CDMA BC1	RTAP 153.6Kbps	Front	10mm	2	600	1880	21.88	22.50	1.153	0.02	1.000	1.153
	CDMA BC1	RTAP 153.6Kbps	Front	10mm	2	25	1851.25	21.60	22.50	1.230	-0.06	0.946	1.164
	CDMA BC1	RTAP 153.6Kbps	Front	10mm	2	1175	1908.75	21.87	22.50	1.156	-0.11	1.010	1.168
	CDMA BC1	RTAP 153.6Kbps	Back	10mm	2	600	1880	21.88	22.50	1.153	-0.08	0.910	1.050
	CDMA BC1	RTAP 153.6Kbps	Back	10mm	2	25	1851.25	21.60	22.50	1.230	-0.07	0.866	1.065
	CDMA BC1	RTAP 153.6Kbps	Back	10mm	2	1175	1908.75	21.87	22.50	1.156	-0.02	0.892	1.031
	CDMA BC1	RTAP 153.6Kbps	Left Side	10mm	2	600	1880	21.88	22.50	1.153	0.06	0.305	0.352
	CDMA BC1	RTAP 153.6Kbps	Right Side	10mm	2	600	1880	21.88	22.50	1.153	0.01	0.445	0.513
	CDMA BC1	RTAP 153.6Kbps	Bottom Side	10mm	2	600	1880	21.88	22.50	1.153	-0.19	0.988	1.140
32	CDMA BC1	RTAP 153.6Kbps	Bottom Side	10mm	2	25	1851.25	21.60	22.50	1.230	0.08	0.966	1.188
	CDMA BC1	RTAP 153.6Kbps	Bottom Side	10mm	2	1175	1908.75	21.87	22.50	1.156	0.01	1.010	1.168
33	CDMA BC10	RTAP 153.6Kbps	Front	10mm	2	580	820.5	20.15	21.00	1.216	-0.08	0.666	0.810
	CDMA BC10	RTAP 153.6Kbps	Back	10mm	2	580	820.5	20.15	21.00	1.216	-0.01	0.572	0.696
	CDMA BC10	RTAP 153.6Kbps	Left Side	10mm	2	580	820.5	20.15	21.00	1.216	-0.03	0.584	0.710
	CDMA BC10	RTAP 153.6Kbps	Right Side	10mm	2	580	820.5	20.15	21.00	1.216	-0.06	0.324	0.394
	CDMA BC10	RTAP 153.6Kbps	Bottom Side	10mm	2	580	820.5	20.15	21.00	1.216	-0.1	0.266	0.324

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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	10mm	2	18900	1880	20.23	21.50	1.340	0	0.688	0.922
	LTE Band 2	20M	QPSK	1	0	Front	10mm	2	18700	1860	20.08	21.50	1.387	-0.02	0.664	0.921
	LTE Band 2	20M	QPSK	1	0	Front	10mm	2	19100	1900	20.17	21.50	1.358	0.07	0.708	0.962
	LTE Band 2	20M	QPSK	50	0	Front	10mm	2	19100	1900	20.18	21.50	1.355	-0.13	0.727	0.985
	LTE Band 2	20M	QPSK	50	0	Front	10mm	2	18700	1860	19.98	21.50	1.419	-0.05	0.677	0.961
	LTE Band 2	20M	QPSK	50	24	Front	10mm	2	18900	1880	20.11	21.50	1.377	0.02	0.700	0.964
	LTE Band 2	20M	QPSK	100	0	Front	10mm	2	19100	1900	20.14	21.50	1.368	-0.09	0.711	0.972
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	18900	1880	20.23	21.50	1.340	0.14	0.626	0.839
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	18700	1860	20.08	21.50	1.387	-0.02	0.659	0.914
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	19100	1900	20.17	21.50	1.358	-0.05	0.689	0.936
	LTE Band 2	20M	QPSK	50	0	Back	10mm	2	19100	1900	20.18	21.50	1.355	-0.05	0.663	0.898
	LTE Band 2	20M	QPSK	50	0	Back	10mm	2	18700	1860	19.98	21.50	1.419	0.04	0.633	0.898
	LTE Band 2	20M	QPSK	50	24	Back	10mm	2	18900	1880	20.11	21.50	1.377	-0.03	0.657	0.905
	LTE Band 2	20M	QPSK	100	0	Back	10mm	2	19100	1900	20.14	21.50	1.368	0.07	0.656	0.897
	LTE Band 2	20M	QPSK	1	0	Left Side	10mm	2	18900	1880	20.23	21.50	1.340	0	0.265	0.355
	LTE Band 2	20M	QPSK	50	0	Left Side	10mm	2	19100	1900	20.18	21.50	1.355	-0.12	0.164	0.222
	LTE Band 2	20M	QPSK	1	0	Right Side	10mm	2	18900	1880	20.23	21.50	1.340	0.05	0.436	0.584
	LTE Band 2	20M	QPSK	50	0	Right Side	10mm	2	19100	1900	20.18	21.50	1.355	-0.04	0.277	0.375
	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	2	18900	1880	20.23	21.50	1.340	0.02	0.753	1.009
	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	2	18700	1860	20.08	21.50	1.387	0.13	0.742	1.029
34	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	2	19100	1900	20.17	21.50	1.358	-0.08	0.781	1.061
	LTE Band 2	20M	QPSK	50	0	Bottom Side	10mm	2	19100	1900	20.18	21.50	1.355	0.06	0.777	1.053
	LTE Band 2	20M	QPSK	50	0	Bottom Side	10mm	2	18700	1860	19.98	21.50	1.419	-0.08	0.741	1.052
	LTE Band 2	20M	QPSK	50	24	Bottom Side	10mm	2	18900	1880	20.11	21.50	1.377	0.03	0.761	1.048
	LTE Band 2	20M	QPSK	100	0	Bottom Side	10mm	2	19100	1900	20.14	21.50	1.368	0	0.774	1.059
	LTE Band 4	20M	QPSK	1	0	Front	10mm	2	20175	1732.5	19.58	20.70	1.294	-0.12	0.711	0.920
	LTE Band 4	20M	QPSK	50	0	Front	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.15	0.796	1.061
35	LTE Band 4	20M	QPSK	100	0	Front	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.04	0.808	1.077
	LTE Band 4	20M	QPSK	1	0	Back	10mm	2	20175	1732.5	19.58	20.70	1.294	-0.01	0.680	0.880
	LTE Band 4	20M	QPSK	50	0	Back	10mm	2	20175	1732.5	19.45	20.70	1.334	0.01	0.742	0.989
	LTE Band 4	20M	QPSK	100	0	Back	10mm	2	20175	1732.5	19.45	20.70	1.334	0.08	0.737	0.983
	LTE Band 4	20M	QPSK	1	0	Left Side	10mm	2	20175	1732.5	19.58	20.70	1.294	0.12	0.371	0.480
	LTE Band 4	20M	QPSK	50	0	Left Side	10mm	2	20175	1732.5	19.45	20.70	1.334	0.15	0.197	0.263
	LTE Band 4	20M	QPSK	1	0	Right Side	10mm	2	20175	1732.5	19.58	20.70	1.294	0.18	0.607	0.786
	LTE Band 4	20M	QPSK	50	0	Right Side	10mm	2	20175	1732.5	19.45	20.70	1.334	0.05	0.313	0.417
	LTE Band 4	20M	QPSK	1	0	Bottom Side	10mm	2	20175	1732.5	19.58	20.70	1.294	-0.07	0.713	0.923
	LTE Band 4	20M	QPSK	50	0	Bottom Side	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.13	0.805	1.073
	LTE Band 4	20M	QPSK	100	0	Bottom Side	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.1	0.780	1.040
	LTE Band 5	10M	QPSK	1	0	Front	10mm	2	20525	836.5	21.28	22.10	1.208	-0.13	0.711	0.859
	LTE Band 5	10M	QPSK	25	0	Front	10mm	2	20525	836.5	20.94	22.10	1.306	0.06	0.610	0.797
	LTE Band 5	10M	QPSK	50	0	Front	10mm	2	20525	836.5	20.97	22.10	1.297	-0.1	0.642	0.833
36	LTE Band 5	10M	QPSK	1	0	Back	10mm	2	20525	836.5	21.28	22.10	1.208	-0.03	0.740	0.894
	LTE Band 5	10M	QPSK	25	0	Back	10mm	2	20525	836.5	20.94	22.10	1.306	-0.05	0.594	0.776
	LTE Band 5	10M	QPSK	50	0	Back	10mm	2	20525	836.5	20.97	22.10	1.297	-0.13	0.590	0.765
	LTE Band 5	10M	QPSK	1	0	Left Side	10mm	2	20525	836.5	21.28	22.10	1.208	0	0.490	0.592
	LTE Band 5	10M	QPSK	25	0	Left Side	10mm	2	20525	836.5	20.94	22.10	1.306	0.03	0.362	0.473
	LTE Band 5	10M	QPSK	1	0	Right Side	10mm	2	20525	836.5	21.28	22.10	1.208	-0.15	0.396	0.478
	LTE Band 5	10M	QPSK	25	0	Right Side	10mm	2	20525	836.5	20.94	22.10	1.306	-0.04	0.187	0.244
	LTE Band 5	10M	QPSK	1	0	Bottom Side	10mm	2	20525	836.5	21.28	22.10	1.208	-0.16	0.348	0.420
	LTE Band 5	10M	QPSK	25	0	Bottom Side	10mm	2	20525	836.5	20.94	22.10	1.306	-0.1	0.246	0.321

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 7	20M	QPSK	1	99	Front	10mm	2	21350	2560	21.64	23.20	1.432	0.1	0.624	0.894
37	LTE Band 7	20M	QPSK	1	99	Front	10mm	2	20850	2510	21.65	23.20	1.429	0.12	0.721	1.030
	LTE Band 7	20M	QPSK	1	99	Front	10mm	2	21100	2535	21.81	23.20	1.377	0.07	0.668	0.920
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	21350	2560	21.51	23.00	1.409	0.08	0.612	0.862
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	20850	2510	21.48	23.00	1.419	0.1	0.678	0.962
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	21100	2535	21.46	23.00	1.426	0.13	0.646	0.921
	LTE Band 7	20M	QPSK	100	0	Front	10mm	2	21350	2560	21.47	23.00	1.422	0.11	0.606	0.862
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	21350	2560	21.64	23.20	1.432	-0.1	0.624	0.894
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	20850	2510	21.65	23.20	1.429	-0.04	0.705	1.007
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	21100	2535	21.81	23.20	1.377	-0.1	0.671	0.924
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	21350	2560	21.51	23.00	1.409	0.01	0.589	0.830
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	20850	2510	21.48	23.00	1.419	-0.11	0.633	0.898
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	21100	2535	21.46	23.00	1.426	-0.01	0.613	0.874
	LTE Band 7	20M	QPSK	100	0	Back	10mm	2	21350	2560	21.47	23.00	1.422	-0.14	0.584	0.831
	LTE Band 7	20M	QPSK	1	99	Left Side	10mm	2	21350	2560	21.81	23.20	1.377	0.16	0.062	0.085
	LTE Band 7	20M	QPSK	50	0	Left Side	10mm	2	21350	2560	21.51	23.00	1.409	-0.18	0.131	0.185
	LTE Band 7	20M	QPSK	1	99	Right Side	10mm	2	21350	2560	21.81	23.20	1.377	-0.05	0.069	0.095
	LTE Band 7	20M	QPSK	50	0	Right Side	10mm	2	21350	2560	21.51	23.00	1.409	-0.1	0.050	0.070
	LTE Band 7	20M	QPSK	1	99	Bottom Side	10mm	2	21350	2560	21.64	23.20	1.432	-0.15	0.682	0.977
	LTE Band 7	20M	QPSK	1	99	Bottom Side	10mm	2	20850	2510	21.65	23.20	1.429	-0.14	0.696	0.995
	LTE Band 7	20M	QPSK	1	99	Bottom Side	10mm	2	21100	2535	21.81	23.20	1.377	-0.18	0.667	0.919
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	2	21350	2560	21.51	23.00	1.409	-0.18	0.569	0.802
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	2	20850	2510	21.48	23.00	1.419	-0.17	0.614	0.871
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	2	21100	2535	21.46	23.00	1.426	-0.09	0.615	0.877
	LTE Band 7	20M	QPSK	100	0	Bottom Side	10mm	2	21350	2560	21.47	23.00	1.422	-0.16	0.590	0.839
38	LTE Band 12	10M	QPSK	1	25	Front	10mm	2	23095	707.5	21.08	22.20	1.294	-0.05	0.766	0.991
	LTE Band 12	10M	QPSK	25	12	Front	10mm	2	23095	707.5	20.93	22.20	1.340	0.11	0.607	0.813
	LTE Band 12	10M	QPSK	50	0	Front	10mm	2	23095	707.5	20.89	22.20	1.352	0.03	0.578	0.781
	LTE Band 12	10M	QPSK	1	25	Back	10mm	2	23095	707.5	21.08	22.20	1.294	0.01	0.752	0.973
	LTE Band 12	10M	QPSK	25	12	Back	10mm	2	23095	707.5	20.93	22.20	1.340	-0.08	0.596	0.798
	LTE Band 12	10M	QPSK	50	0	Back	10mm	2	23095	707.5	20.89	22.20	1.352	-0.15	0.565	0.764
	LTE Band 12	10M	QPSK	1	25	Left Side	10mm	2	23095	707.5	21.08	22.20	1.294	-0.12	0.758	0.981
	LTE Band 12	10M	QPSK	25	12	Left Side	10mm	2	23095	707.5	20.93	22.20	1.340	-0.04	0.425	0.569
	LTE Band 12	10M	QPSK	50	0	Left Side	10mm	2	23095	707.5	20.89	22.20	1.352	-0.19	0.405	0.548
	LTE Band 12	10M	QPSK	1	25	Right Side	10mm	2	23095	707.5	21.08	22.20	1.294	-0.04	0.180	0.233
	LTE Band 12	10M	QPSK	25	12	Right Side	10mm	2	23095	707.5	20.93	22.20	1.340	-0.1	0.099	0.133
	LTE Band 12	10M	QPSK	1	25	Bottom Side	10mm	2	23095	707.5	21.08	22.20	1.294	0	0.253	0.327
	LTE Band 12	10M	QPSK	25	12	Bottom Side	10mm	2	23095	707.5	20.93	22.20	1.340	-0.13	0.185	0.248
	LTE Band 13	10M	QPSK	1	0	Front	10mm	2	23230	782	21.63	22.40	1.194	-0.03	0.934	1.115
	LTE Band 13	10M	QPSK	25	0	Front	10mm	2	23230	782	21.54	22.40	1.219	-0.15	0.818	0.997
	LTE Band 13	10M	QPSK	50	0	Front	10mm	2	23230	782	21.36	22.40	1.271	-0.01	0.799	1.015
39	LTE Band 13	10M	QPSK	1	0	Back	10mm	2	23230	782	21.63	22.40	1.194	-0.13	1.000	1.194
	LTE Band 13	10M	QPSK	25	0	Back	10mm	2	23230	782	21.54	22.40	1.219	-0.13	0.721	0.879
	LTE Band 13	10M	QPSK	50	0	Back	10mm	2	23230	782	21.36	22.40	1.271	0	0.667	0.847
	LTE Band 13	10M	QPSK	1	0	Left Side	10mm	2	23230	782	21.63	22.40	1.194	-0.1	0.928	1.108
	LTE Band 13	10M	QPSK	25	0	Left Side	10mm	2	23230	782	21.54	22.40	1.219	-0.09	0.439	0.535
	LTE Band 13	10M	QPSK	50	0	Left Side	10mm	2	23230	782	21.36	22.40	1.271	-0.17	0.424	0.539
	LTE Band 13	10M	QPSK	1	0	Right Side	10mm	2	23230	782	21.63	22.40	1.194	-0.19	0.548	0.654
	LTE Band 13	10M	QPSK	25	0	Right Side	10mm	2	23230	782	21.54	22.40	1.219	-0.08	0.259	0.316
	LTE Band 13	10M	QPSK	1	0	Bottom Side	10mm	2	23230	782	21.63	22.40	1.194	-0.19	0.431	0.515
	LTE Band 13	10M	QPSK	25	0	Bottom Side	10mm	2	23230	782	21.54	22.40	1.219	-0.17	0.307	0.374

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 17	10M	QPSK	1	25	Front	10mm	2	23790	710	20.98	22.00	1.265	0.07	0.673	0.851
	LTE Band 17	10M	QPSK	25	12	Front	10mm	2	23790	710	20.81	22.00	1.315	-0.19	0.609	0.801
	LTE Band 17	10M	QPSK	50	0	Front	10mm	2	23790	710	20.64	22.00	1.368	-0.1	0.594	0.812
	LTE Band 17	10M	QPSK	1	25	Back	10mm	2	23790	710	20.98	22.00	1.265	0.06	0.752	0.951
	LTE Band 17	10M	QPSK	25	12	Back	10mm	2	23790	710	20.81	22.00	1.315	-0.02	0.598	0.787
	LTE Band 17	10M	QPSK	50	0	Back	10mm	2	23790	710	20.64	22.00	1.368	0.03	0.571	0.781
40	LTE Band 17	10M	QPSK	1	25	Left Side	10mm	2	23790	710	20.98	22.00	1.265	0.14	0.873	1.104
	LTE Band 17	10M	QPSK	25	12	Left Side	10mm	2	23790	710	20.81	22.00	1.315	-0.19	0.424	0.558
	LTE Band 17	10M	QPSK	50	0	Left Side	10mm	2	23790	710	20.64	22.00	1.368	-0.15	0.412	0.564
	LTE Band 17	10M	QPSK	1	25	Right Side	10mm	2	23790	710	20.98	22.00	1.265	-0.17	0.205	0.259
	LTE Band 17	10M	QPSK	25	12	Right Side	10mm	2	23790	710	20.81	22.00	1.315	-0.01	0.096	0.126
	LTE Band 17	10M	QPSK	1	25	Bottom Side	10mm	2	23790	710	20.98	22.00	1.265	0.15	0.237	0.300
	LTE Band 17	10M	QPSK	25	12	Bottom Side	10mm	2	23790	710	20.81	22.00	1.315	-0.15	0.184	0.242
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26340	1880	19.86	20.80	1.242	-0.17	0.733	0.910
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26140	1860	19.83	20.80	1.250	0.01	0.726	0.908
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26590	1905	19.85	20.80	1.245	0.11	0.772	0.961
	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26340	1880	19.65	20.80	1.303	0.04	0.735	0.958
	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26140	1860	19.49	20.80	1.352	-0.03	0.732	0.990
	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26590	1905	19.56	20.80	1.330	-0.04	0.779	1.036
	LTE Band 25	20M	QPSK	100	0	Front	10mm	2	26340	1880	19.61	20.80	1.315	-0.02	0.749	0.985
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26340	1880	19.86	20.80	1.242	0.08	0.717	0.890
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26140	1860	19.83	20.80	1.250	-0.11	0.726	0.908
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26590	1905	19.85	20.80	1.245	0	0.747	0.930
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26340	1880	19.65	20.80	1.303	0	0.718	0.936
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26140	1860	19.49	20.80	1.352	-0.1	0.692	0.936
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26590	1905	19.56	20.80	1.330	0	0.722	0.961
	LTE Band 25	20M	QPSK	100	0	Back	10mm	2	26340	1880	19.61	20.80	1.315	-0.06	0.717	0.943
	LTE Band 25	20M	QPSK	1	49	Left Side	10mm	2	26340	1880	19.86	20.80	1.242	-0.05	0.344	0.427
	LTE Band 25	20M	QPSK	50	24	Left Side	10mm	2	26340	1880	19.65	20.80	1.303	0.07	0.179	0.233
	LTE Band 25	20M	QPSK	1	49	Right Side	10mm	2	26340	1880	19.86	20.80	1.242	0.02	0.549	0.682
	LTE Band 25	20M	QPSK	50	24	Right Side	10mm	2	26340	1880	19.65	20.80	1.303	0.05	0.292	0.381
	LTE Band 25	20M	QPSK	1	49	Bottom Side	10mm	2	26340	1880	19.86	20.80	1.242	0.16	0.815	1.012
	LTE Band 25	20M	QPSK	1	49	Bottom Side	10mm	2	26140	1860	19.83	20.80	1.250	-0.13	0.808	1.010
	LTE Band 25	20M	QPSK	1	49	Bottom Side	10mm	2	26590	1905	19.85	20.80	1.245	0.04	0.839	1.044
	LTE Band 25	20M	QPSK	50	24	Bottom Side	10mm	2	26340	1880	19.65	20.80	1.303	-0.03	0.831	1.083
	LTE Band 25	20M	QPSK	50	24	Bottom Side	10mm	2	26140	1860	19.49	20.80	1.352	0.11	0.814	1.101
41	LTE Band 25	20M	QPSK	50	24	Bottom Side	10mm	2	26590	1905	19.56	20.80	1.330	0.04	0.839	1.116
	LTE Band 25	20M	QPSK	100	0	Bottom Side	10mm	2	26340	1880	19.61	20.80	1.315	-0.04	0.834	1.097
42	LTE Band 26	15M	QPSK	1	37	Front	10mm	2	26865	831.5	22.20	23.00	1.202	0.13	0.870	1.046
	LTE Band 26	15M	QPSK	36	0	Front	10mm	2	26865	831.5	22.00	23.00	1.259	0.04	0.645	0.812
	LTE Band 26	15M	QPSK	75	0	Front	10mm	2	26865	831.5	21.81	23.00	1.315	0.15	0.635	0.835
	LTE Band 26	15M	QPSK	1	37	Back	10mm	2	26865	831.5	22.20	23.00	1.202	0.01	0.796	0.957
	LTE Band 26	15M	QPSK	36	0	Back	10mm	2	26865	831.5	22.00	23.00	1.259	-0.12	0.615	0.774
	LTE Band 26	15M	QPSK	75	0	Back	10mm	2	26865	831.5	21.81	23.00	1.315	-0.15	0.570	0.750
	LTE Band 26	15M	QPSK	1	37	Left Side	10mm	2	26865	831.5	22.20	23.00	1.202	-0.11	0.536	0.644
	LTE Band 26	15M	QPSK	36	0	Left Side	10mm	2	26865	831.5	22.00	23.00	1.259	-0.05	0.382	0.481
	LTE Band 26	15M	QPSK	1	37	Right Side	10mm	2	26865	831.5	22.20	23.00	1.202	-0.12	0.332	0.399
	LTE Band 26	15M	QPSK	36	0	Right Side	10mm	2	26865	831.5	22.00	23.00	1.259	-0.15	0.194	0.244
	LTE Band 26	15M	QPSK	1	37	Bottom Side	10mm	2	26865	831.5	22.20	23.00	1.202	-0.13	0.355	0.427
	LTE Band 26	15M	QPSK	36	0	Bottom Side	10mm	2	26865	831.5	22.00	23.00	1.259	-0.15	0.262	0.330

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 30	10M	QPSK	1	49	Front	10mm	2	27710	2355	21.06	22.20	1.300	-0.13	0.397	0.516
	LTE Band 30	10M	QPSK	25	25	Front	10mm	2	27710	2355	20.89	22.20	1.352	0.07	0.418	0.565
	LTE Band 30	10M	QPSK	1	49	Back	10mm	2	27710	2355	21.06	22.20	1.300	-0.18	0.711	0.924
	LTE Band 30	10M	QPSK	25	25	Back	10mm	2	27710	2355	20.89	22.20	1.352	-0.13	0.785	1.061
43	LTE Band 30	10M	QPSK	50	0	Back	10mm	2	27710	2355	20.96	22.20	1.330	0.02	0.894	1.189
	LTE Band 30	10M	QPSK	1	49	Left Side	10mm	2	27710	2355	21.06	22.20	1.300	0.11	0.087	0.113
	LTE Band 30	10M	QPSK	25	25	Left Side	10mm	2	27710	2355	20.89	22.20	1.352	0.17	0.093	0.126
	LTE Band 30	10M	QPSK	1	49	Right Side	10mm	2	27710	2355	21.06	22.20	1.300	-0.19	0.046	0.060
	LTE Band 30	10M	QPSK	25	25	Right Side	10mm	2	27710	2355	20.89	22.20	1.352	0.02	0.052	0.070
	LTE Band 30	10M	QPSK	1	49	Bottom Side	10mm	2	27710	2355	21.06	22.20	1.300	0.03	0.725	0.943
	LTE Band 30	10M	QPSK	25	25	Bottom Side	10mm	2	27710	2355	20.89	22.20	1.352	0.04	0.784	1.060
	LTE Band 30	10M	QPSK	50	0	Bottom Side	10mm	2	27710	2355	20.96	22.20	1.330	0.15	0.796	1.059
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132572	1770	20.99	21.50	1.125	0.08	0.827	0.930
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132072	1720	20.64	21.50	1.219	0.1	0.795	0.969
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132322	1745	20.87	21.50	1.156	-0.01	0.768	0.888
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132572	1770	20.63	21.50	1.222	-0.14	0.787	0.962
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132072	1720	20.24	21.50	1.337	-0.11	0.697	0.932
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132322	1745	20.44	21.50	1.276	-0.13	0.738	0.942
	LTE Band 66	20M	QPSK	100	0	Front	10mm	2	132572	1770	20.59	21.50	1.233	-0.05	0.789	0.973
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132572	1770	20.99	21.50	1.125	0.07	0.748	0.841
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132072	1720	20.64	21.50	1.219	-0.15	0.706	0.861
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132322	1745	20.87	21.50	1.156	-0.13	0.733	0.847
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132572	1770	20.63	21.50	1.222	-0.03	0.709	0.866
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132072	1720	20.24	21.50	1.337	0.06	0.650	0.869
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132322	1745	20.44	21.50	1.276	0.09	0.688	0.878
	LTE Band 66	20M	QPSK	100	0	Back	10mm	2	132572	1770	20.59	21.50	1.233	0.01	0.712	0.878
	LTE Band 66	20M	QPSK	1	99	Left Side	10mm	2	132572	1770	20.99	21.50	1.125	-0.15	0.295	0.332
	LTE Band 66	20M	QPSK	50	50	Left Side	10mm	2	132572	1770	20.63	21.50	1.222	-0.05	0.209	0.255
	LTE Band 66	20M	QPSK	1	99	Right Side	10mm	2	132572	1770	20.99	21.50	1.125	-0.12	0.544	0.612
	LTE Band 66	20M	QPSK	50	50	Right Side	10mm	2	132572	1770	20.63	21.50	1.222	0.17	0.386	0.472
44	LTE Band 66	20M	QPSK	1	99	Bottom Side	10mm	2	132572	1770	20.99	21.50	1.125	-0.18	0.884	0.994
	LTE Band 66	20M	QPSK	1	99	Bottom Side	10mm	2	132072	1720	20.64	21.50	1.219	-0.12	0.742	0.904
	LTE Band 66	20M	QPSK	1	99	Bottom Side	10mm	2	132322	1745	20.87	21.50	1.156	-0.12	0.799	0.924
	LTE Band 66	20M	QPSK	50	50	Bottom Side	10mm	2	132572	1770	20.63	21.50	1.222	0.04	0.805	0.984
	LTE Band 66	20M	QPSK	50	50	Bottom Side	10mm	2	132072	1720	20.24	21.50	1.337	0.14	0.715	0.956
	LTE Band 66	20M	QPSK	50	50	Bottom Side	10mm	2	132322	1745	20.44	21.50	1.276	0.1	0.773	0.987
	LTE Band 66	20M	QPSK	100	0	Bottom Side	10mm	2	132572	1770	20.59	21.50	1.233	0.07	0.804	0.991

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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)
	LTE Band 38	20M	QPSK	1	99	Front	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.16	0.319	0.441
	LTE Band 38	20M	QPSK	50	50	Front	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	0.11	0.239	0.341
	LTE Band 38	20M	QPSK	1	99	Back	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.09	0.418	0.578
	LTE Band 38	20M	QPSK	50	50	Back	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.16	0.326	0.465
	LTE Band 38	20M	QPSK	1	99	Left Side	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.05	0.109	0.151
	LTE Band 38	20M	QPSK	50	50	Left Side	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.1	0.085	0.121
	LTE Band 38	20M	QPSK	1	99	Right Side	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	-0.05	0.040	0.055
	LTE Band 38	20M	QPSK	50	50	Right Side	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	0.01	0.031	0.044
	LTE Band 38	20M	QPSK	1	99	Bottom Side	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.12	0.423	0.585
45	LTE Band 38	20M	QPSK	1	49	Bottom Side	10mm	3	38000	2595	22.44	24.00	1.432	62.9	1.006	0.17	0.473	0.681
	LTE Band 38	20M	QPSK	1	99	Bottom Side	10mm	3	38150	2610	22.39	24.00	1.449	62.9	1.006	0.07	0.449	0.654
	LTE Band 38	20M	QPSK	50	50	Bottom Side	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	0.03	0.337	0.481
	LTE Band 41	20M	QPSK	1	99	Front	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	-0.05	0.427	0.597
	LTE Band 41	20M	QPSK	50	50	Front	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.06	0.408	0.561
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	-0.07	0.505	0.706
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	39750	2506	22.47	24.00	1.422	62.9	1.006	0.19	0.535	0.766
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	40185	2549.5	22.56	24.00	1.393	62.9	1.006	0.08	0.564	0.790
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	41055	2636.5	22.31	24.00	1.476	62.9	1.006	-0.04	0.438	0.650
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	41490	2680	22.44	24.00	1.432	62.9	1.006	-0.15	0.431	0.621
	LTE Band 41	20M	QPSK	50	50	Back	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.04	0.360	0.495
	LTE Band 41	20M	QPSK	100	0	Back	10mm	3	40185	2549.5	21.54	23.00	1.400	62.9	1.006	0.16	0.527	0.742
	LTE Band 41	20M	QPSK	1	99	Left Side	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	0.1	0.150	0.210
	LTE Band 41	20M	QPSK	50	50	Left Side	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.04	0.107	0.147
	LTE Band 41	20M	QPSK	1	99	Right Side	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	0.06	0.056	0.078
	LTE Band 41	20M	QPSK	50	50	Right Side	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	0.06	0.037	0.051
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	-0.09	0.600	0.839
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	3	39750	2506	22.47	24.00	1.422	62.9	1.006	-0.12	0.628	0.899
46	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	3	40185	2549.5	22.56	24.00	1.393	62.9	1.006	-0.02	0.650	0.911
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	3	41055	2636.5	22.31	24.00	1.476	62.9	1.006	-0.01	0.551	0.818
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	3	41490	2680	22.44	24.00	1.432	62.9	1.006	-0.13	0.514	0.741
	LTE Band 41	20M	QPSK	50	50	Bottom Side	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.1	0.433	0.596
	LTE Band 41	20M	QPSK	100	0	Bottom Side	10mm	3	40185	2549.5	21.54	23.00	1.400	62.9	1.006	-0.15	0.451	0.635

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	0.019	0.286	0.319
47	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	-0.044	0.361	0.403
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	1	2412	17.90	18.00	1.023	97.63	1.024	-0.047	0.314	0.329
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	11	2462	17.51	18.00	1.119	97.63	1.024	0.021	0.327	0.375
	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	0.118	0.026	0.029
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	0.152	0.082	0.091
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	0.058	0.134	0.149
	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	3	46	5230	20.08	20.50	1.102	85.14	1.175	-0.077	0.125	0.162
48	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	46	5230	20.08	20.50	1.102	85.14	1.175	0.001	0.364	0.471
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	38	5190	14.05	14.50	1.109	85.14	1.175	-0.12	0.070	0.091
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	10mm	3	46	5230	20.08	20.50	1.102	85.14	1.175	-0.128	0.015	0.019
	WLAN5GHz	802.11n-HT40 MCS0	Right Side	10mm	3	46	5230	20.08	20.50	1.102	85.14	1.175	-0.081	0.035	0.045
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	10mm	3	46	5230	20.08	20.50	1.102	85.14	1.175	0.053	0.084	0.109
	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	0.104	0.222	0.293
49	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	-0.144	0.226	0.298
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	151	5755	16.59	17.00	1.099	85.14	1.175	-0.103	0.176	0.227
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	-0.077	0.027	0.036
	WLAN5GHz	802.11n-HT40 MCS0	Right Side	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	-0.18	0.073	0.096
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	0.011	0.076	0.100

14.3 Product Specific SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	Bottom Side	0mm	3	9538	1907.6	20.83	22.00	1.309	-0.18	2.800	3.666
50	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	3	9262	1852.4	20.56	22.00	1.393	-0.17	2.640	3.678
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	3	9400	1880	20.63	22.00	1.371	0.07	2.670	3.660
51	WCDMA V	RMC 12.2Kbps	Left Side	0mm	3	4182	836.4	22.86	24.00	1.300	0.18	1.660	2.158
	WCDMA V	RMC 12.2Kbps	Left Side	0mm	3	4132	826.4	22.62	24.00	1.374	0.19	1.570	2.157
	WCDMA V	RMC 12.2Kbps	Left Side	0mm	3	4233	846.6	22.58	24.00	1.387	0.19	1.530	2.122

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
52	CDMA BC1	RTAP 153.6Kbps	Bottom Side	0mm	3	1175	1908.75	22.45	22.80	1.084	0.12	3.030	3.284
	CDMA BC1	RTAP 153.6Kbps	Bottom Side	0mm	3	600	1880	22.52	22.80	1.067	0.12	3.050	3.253
	CDMA BC1	RTAP 153.6Kbps	Bottom Side	0mm	3	25	1851.25	22.27	22.80	1.130	0.12	2.820	3.186
53	CDMA BC10	RTAP 153.6Kbps	Left Side	0mm	3	580	820.5	24.03	25.00	1.250	-0.04	1.210	1.513

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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	Bottom Side	0mm	3	18900	1880	20.91	22.30	1.377	-0.05	2.430	3.347
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	3	18700	1860	20.78	22.30	1.419	-0.04	2.290	3.250
54	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	3	19100	1900	20.82	22.30	1.406	0.04	2.440	3.431
55	LTE Band 4	20M	QPSK	50	0	Bottom Side	0mm	3	20175	1732.5	21.02	22.20	1.312	-0.18	1.970	2.585
56	LTE Band 12	10M	QPSK	1	25	Left Side	0mm	3	23095	707.5	22.69	24.00	1.352	-0.03	1.310	1.771
57	LTE Band 13	10M	QPSK	1	49	Left Side	0mm	3	23230	782	23.00	24.00	1.259	0.19	1.830	2.304
58	LTE Band 17	10M	QPSK	1	25	Left Side	0mm	3	23790	710	22.66	24.00	1.361	0.11	1.440	1.960
59	LTE Band 25	20M	QPSK	50	24	Bottom Side	0mm	3	26590	1905	20.47	21.40	1.239	0.05	2.390	2.961
	LTE Band 25	20M	QPSK	50	24	Bottom Side	0mm	3	26140	1860	20.36	21.40	1.271	0.01	2.320	2.948
	LTE Band 25	20M	QPSK	50	24	Bottom Side	0mm	3	26340	1880	20.53	21.40	1.222	0.07	2.390	2.920
60	LTE Band 30	10M	QPSK	50	0	Bottom Side	0mm	3	27710	2355	21.67	23.00	1.358	0.17	1.810	2.459
61	LTE Band 66	20M	QPSK	1	99	Bottom Side	0mm	3	132572	1770	22.57	22.90	1.079	-0.18	2.890	3.118
	LTE Band 66	20M	QPSK	1	99	Bottom Side	0mm	3	132072	1720	22.25	22.90	1.161	-0.12	2.330	2.706
	LTE Band 66	20M	QPSK	1	99	Bottom Side	0mm	3	132322	1745	22.32	22.90	1.143	-0.13	2.700	3.086

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
62	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.152	1.910	2.265
	WLAN5GHz	802.11a 6Mbps	Front	0mm	3	52	5260	19.06	19.70	1.159	86.92	1.150	-0.13	1.480	1.972
	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	0.008	0.649	0.770
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	0mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.039	0.023	0.027
	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.165	0.155	0.184
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	0mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.006	0.221	0.262
63	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	0.059	2.180	2.764
	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	3	134	5670	18.35	19.20	1.216	85.14	1.175	0.019	1.890	2.701
	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	-0.056	0.668	0.847
	WLAN5GHz	802.11n-HT40 MCS0	Left Side	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	-0.083	0.066	0.084
	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	0.139	0.184	0.233
	WLAN5GHz	802.11n-HT40 MCS0	Top Side	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	-0.039	0.147	0.186

14.4 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
64	GSM850	GPRS (4 Tx slots)	Front	10mm	3	189	836.4	25.72	27.50	1.507	-0.06	0.764	1.151
	GSM850	GPRS (4 Tx slots)	Front	10mm	3	128	824.2	25.69	27.50	1.517	0.06	0.743	1.127
	GSM850	GPRS (4 Tx slots)	Front	10mm	3	251	848.8	25.71	27.50	1.510	0.06	0.726	1.096
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	189	836.4	25.72	27.50	1.507	-0.1	0.660	0.994
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	128	824.2	25.69	27.50	1.517	-0.03	0.644	0.977
	GSM850	GPRS (4 Tx slots)	Back	10mm	3	251	848.8	25.71	27.50	1.510	0.09	0.653	0.986
65	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	512	1850.2	22.75	24.50	1.496	-0.04	0.483	0.723
	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	661	1880	22.63	24.50	1.538	0.01	0.449	0.691
	GSM1900	GPRS (4 Tx slots)	Front	10mm	3	810	1909.8	22.61	24.50	1.545	0.01	0.397	0.613
	GSM1900	GPRS (4 Tx slots)	Back	10mm	3	512	1850.2	22.75	24.50	1.496	-0.07	0.413	0.618

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
66	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9538	1907.6	20.19	21.30	1.291	-0.01	0.926	1.196
	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9262	1852.4	19.90	21.30	1.380	-0.04	0.865	1.194
	WCDMA II	RMC 12.2Kbps	Front	10mm	2	9400	1880	19.97	21.30	1.358	-0.04	0.880	1.195
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9538	1907.6	20.19	21.30	1.291	-0.05	0.816	1.054
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9262	1852.4	19.90	21.30	1.380	-0.01	0.751	1.037
	WCDMA II	RMC 12.2Kbps	Back	10mm	2	9400	1880	19.97	21.30	1.358	-0.02	0.786	1.068
	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1513	1752.6	20.88	21.20	1.076	-0.03	0.801	0.862
67	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1312	1712.4	20.68	21.20	1.127	-0.04	0.799	0.901
	WCDMA IV	RMC 12.2Kbps	Front	10mm	2	1413	1732.6	20.76	21.20	1.107	-0.01	0.812	0.899
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1513	1752.6	20.88	21.20	1.076	0.01	0.790	0.850
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1312	1712.4	20.68	21.20	1.127	0.01	0.762	0.859
	WCDMA IV	RMC 12.2Kbps	Back	10mm	2	1413	1732.6	20.76	21.20	1.107	-0.1	0.767	0.849
	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4182	836.4	21.50	22.20	1.175	-0.17	0.809	0.950
68	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4132	826.4	21.28	22.20	1.236	-0.07	0.795	0.983
	WCDMA V	RMC 12.2Kbps	Front	10mm	2	4233	846.6	21.18	22.20	1.265	-0.07	0.771	0.975
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4182	836.4	21.50	22.20	1.175	-0.06	0.760	0.893
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4132	826.4	21.28	22.20	1.236	-0.19	0.689	0.852
	WCDMA V	RMC 12.2Kbps	Back	10mm	2	4233	846.6	21.18	22.20	1.265	-0.15	0.646	0.817

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)
69	CDMA BC0	1xRTT RC3 SO32	Front	10mm	2	384	836.52	21.73	22.90	1.309	0.02	0.883	1.156
	CDMA BC0	1xRTT RC3 SO32	Front	10mm	2	1013	824.7	21.70	22.90	1.318	-0.03	0.844	1.113
	CDMA BC0	1xRTT RC3 SO32	Front	10mm	2	777	848.31	21.68	22.90	1.324	-0.09	0.833	1.103
	CDMA BC0	1xRTT RC3 SO32	Back	10mm	2	384	836.52	21.73	22.90	1.309	-0.02	0.804	1.053
	CDMA BC0	1xRTT RC3 SO32	Back	10mm	2	1013	824.7	21.70	22.90	1.318	-0.04	0.799	1.053
	CDMA BC0	1xRTT RC3 SO32	Back	10mm	2	777	848.31	21.68	22.90	1.324	0.05	0.819	1.085
	CDMA BC1	1xRTT RC3 SO32	Front	10mm	2	600	1880	21.86	22.50	1.159	-0.18	0.992	1.150
	CDMA BC1	1xRTT RC3 SO32	Front	10mm	2	25	1851.25	21.64	22.50	1.219	-0.04	0.906	1.104
70	CDMA BC1	1xRTT RC3 SO32	Front	10mm	2	1175	1908.75	21.84	22.50	1.164	0.04	1.000	1.164
	CDMA BC1	1xRTT RC3 SO32	Back	10mm	2	600	1880	21.86	22.50	1.159	-0.07	0.857	0.993
	CDMA BC1	1xRTT RC3 SO32	Back	10mm	2	25	1851.25	21.64	22.50	1.219	0.11	0.818	0.997
	CDMA BC1	1xRTT RC3 SO32	Back	10mm	2	1175	1908.75	21.84	22.50	1.164	0	0.864	1.006
71	CDMA BC1C	1xRTT RC3 SO32	Front	10mm	2	580	820.5	20.04	21.00	1.247	-0.03	0.655	0.817
	CDMA BC10	1xRTT RC3 SO32	Back	10mm	2	580	820.5	20.04	21.00	1.247	-0.14	0.583	0.727

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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	10mm	2	18900	1880	20.23	21.50	1.340	0	0.688	0.922
	LTE Band 2	20M	QPSK	1	0	Front	10mm	2	18700	1860	20.08	21.50	1.387	-0.02	0.664	0.921
	LTE Band 2	20M	QPSK	1	0	Front	10mm	2	19100	1900	20.17	21.50	1.358	0.07	0.708	0.962
72	LTE Band 2	20M	QPSK	50	0	Front	10mm	2	19100	1900	20.18	21.50	1.355	-0.13	0.727	0.985
	LTE Band 2	20M	QPSK	50	0	Front	10mm	2	18700	1860	19.98	21.50	1.419	-0.05	0.677	0.961
	LTE Band 2	20M	QPSK	50	24	Front	10mm	2	18900	1880	20.11	21.50	1.377	0.02	0.700	0.964
	LTE Band 2	20M	QPSK	100	0	Front	10mm	2	19100	1900	20.14	21.50	1.368	-0.09	0.711	0.972
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	18900	1880	20.23	21.50	1.340	0.14	0.626	0.839
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	18700	1860	20.08	21.50	1.387	-0.02	0.659	0.914
	LTE Band 2	20M	QPSK	1	0	Back	10mm	2	19100	1900	20.17	21.50	1.358	-0.05	0.689	0.936
	LTE Band 2	20M	QPSK	50	0	Back	10mm	2	19100	1900	20.18	21.50	1.355	-0.05	0.663	0.898
	LTE Band 2	20M	QPSK	50	0	Back	10mm	2	18700	1860	19.98	21.50	1.419	0.04	0.633	0.898
	LTE Band 2	20M	QPSK	50	24	Back	10mm	2	18900	1880	20.11	21.50	1.377	-0.03	0.657	0.905
	LTE Band 2	20M	QPSK	100	0	Back	10mm	2	19100	1900	20.14	21.50	1.368	0.07	0.656	0.897
	LTE Band 4	20M	QPSK	1	0	Front	10mm	2	20175	1732.5	19.58	20.70	1.294	-0.12	0.711	0.920
	LTE Band 4	20M	QPSK	50	0	Front	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.15	0.796	1.061
73	LTE Band 4	20M	QPSK	100	0	Front	10mm	2	20175	1732.5	19.45	20.70	1.334	-0.04	0.808	1.077
	LTE Band 4	20M	QPSK	1	0	Back	10mm	2	20175	1732.5	19.58	20.70	1.294	-0.01	0.680	0.880
	LTE Band 4	20M	QPSK	50	0	Back	10mm	2	20175	1732.5	19.45	20.70	1.334	0.01	0.742	0.989
	LTE Band 4	20M	QPSK	100	0	Back	10mm	2	20175	1732.5	19.45	20.70	1.334	0.08	0.737	0.983
	LTE Band 5	10M	QPSK	1	0	Front	10mm	2	20525	836.5	21.28	22.10	1.208	-0.13	0.711	0.859
	LTE Band 5	10M	QPSK	25	0	Front	10mm	2	20525	836.5	20.94	22.10	1.306	0.06	0.610	0.797
	LTE Band 5	10M	QPSK	50	0	Front	10mm	2	20525	836.5	20.97	22.10	1.297	-0.1	0.642	0.833
74	LTE Band 5	10M	QPSK	1	0	Back	10mm	2	20525	836.5	21.28	22.10	1.208	-0.03	0.740	0.894
	LTE Band 5	10M	QPSK	25	0	Back	10mm	2	20525	836.5	20.94	22.10	1.306	-0.05	0.594	0.776
	LTE Band 5	10M	QPSK	50	0	Back	10mm	2	20525	836.5	20.97	22.10	1.297	-0.13	0.590	0.765

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 7	20M	QPSK	1	99	Front	10mm	2	21350	2560	21.64	23.20	1.432	0.1	0.624	0.894
75	LTE Band 7	20M	QPSK	1	99	Front	10mm	2	20850	2510	21.65	23.20	1.429	0.12	0.721	1.030
	LTE Band 7	20M	QPSK	1	99	Front	10mm	2	21100	2535	21.81	23.20	1.377	0.07	0.668	0.920
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	21350	2560	21.51	23.00	1.409	0.08	0.612	0.862
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	20850	2510	21.48	23.00	1.419	0.1	0.678	0.962
	LTE Band 7	20M	QPSK	50	0	Front	10mm	2	21100	2535	21.46	23.00	1.426	0.13	0.646	0.921
	LTE Band 7	20M	QPSK	100	0	Front	10mm	2	21350	2560	21.47	23.00	1.422	0.11	0.606	0.862
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	21350	2560	21.64	23.20	1.432	-0.1	0.624	0.894
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	20850	2510	21.65	23.20	1.429	-0.04	0.705	1.007
	LTE Band 7	20M	QPSK	1	99	Back	10mm	2	21100	2535	21.81	23.20	1.377	-0.1	0.671	0.924
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	21350	2560	21.51	23.00	1.409	0.01	0.589	0.830
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	20850	2510	21.48	23.00	1.419	-0.11	0.633	0.898
	LTE Band 7	20M	QPSK	50	0	Back	10mm	2	21100	2535	21.46	23.00	1.426	-0.01	0.613	0.874
	LTE Band 7	20M	QPSK	100	0	Back	10mm	2	21350	2560	21.47	23.00	1.422	-0.14	0.584	0.831
76	LTE Band 12	10M	QPSK	1	25	Front	10mm	2	23095	707.5	21.08	22.20	1.294	-0.05	0.766	0.991
	LTE Band 12	10M	QPSK	25	12	Front	10mm	2	23095	707.5	20.93	22.20	1.340	0.11	0.607	0.813
	LTE Band 12	10M	QPSK	50	0	Front	10mm	2	23095	707.5	20.89	22.20	1.352	0.03	0.578	0.781
	LTE Band 12	10M	QPSK	1	25	Back	10mm	2	23095	707.5	21.08	22.20	1.294	0.01	0.752	0.973
	LTE Band 12	10M	QPSK	25	12	Back	10mm	2	23095	707.5	20.93	22.20	1.340	-0.08	0.596	0.798
	LTE Band 12	10M	QPSK	50	0	Back	10mm	2	23095	707.5	20.89	22.20	1.352	-0.15	0.565	0.764
	LTE Band 13	10M	QPSK	1	0	Front	10mm	2	23230	782	21.63	22.40	1.194	-0.03	0.934	1.115
	LTE Band 13	10M	QPSK	25	0	Front	10mm	2	23230	782	21.54	22.40	1.219	-0.15	0.818	0.997
	LTE Band 13	10M	QPSK	50	0	Front	10mm	2	23230	782	21.36	22.40	1.271	-0.01	0.799	1.015
77	LTE Band 13	10M	QPSK	1	0	Back	10mm	2	23230	782	21.63	22.40	1.194	-0.13	1.000	1.194
	LTE Band 13	10M	QPSK	25	0	Back	10mm	2	23230	782	21.54	22.40	1.219	-0.13	0.721	0.879
	LTE Band 13	10M	QPSK	50	0	Back	10mm	2	23230	782	21.36	22.40	1.271	0	0.667	0.847
	LTE Band 17	10M	QPSK	1	25	Front	10mm	2	23790	710	20.98	22.00	1.265	0.07	0.673	0.851
	LTE Band 17	10M	QPSK	25	12	Front	10mm	2	23790	710	20.81	22.00	1.315	-0.19	0.609	0.801
	LTE Band 17	10M	QPSK	50	0	Front	10mm	2	23790	710	20.64	22.00	1.368	-0.1	0.594	0.812
78	LTE Band 17	10M	QPSK	1	25	Back	10mm	2	23790	710	20.98	22.00	1.265	0.06	0.752	0.951
	LTE Band 17	10M	QPSK	25	12	Back	10mm	2	23790	710	20.81	22.00	1.315	-0.02	0.598	0.787
	LTE Band 17	10M	QPSK	50	0	Back	10mm	2	23790	710	20.64	22.00	1.368	0.03	0.571	0.781
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26340	1880	19.86	20.80	1.242	-0.17	0.733	0.910
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26140	1860	19.83	20.80	1.250	0.01	0.726	0.908
	LTE Band 25	20M	QPSK	1	49	Front	10mm	2	26590	1905	19.85	20.80	1.245	0.11	0.772	0.961
	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26340	1880	19.65	20.80	1.303	0.04	0.735	0.958
	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26140	1860	19.49	20.80	1.352	-0.03	0.732	0.990
79	LTE Band 25	20M	QPSK	50	24	Front	10mm	2	26590	1905	19.56	20.80	1.330	-0.04	0.779	1.036
	LTE Band 25	20M	QPSK	100	0	Front	10mm	2	26340	1880	19.61	20.80	1.315	-0.02	0.749	0.985
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26340	1880	19.86	20.80	1.242	0.08	0.717	0.890
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26140	1860	19.83	20.80	1.250	-0.11	0.726	0.908
	LTE Band 25	20M	QPSK	1	49	Back	10mm	2	26590	1905	19.85	20.80	1.245	0	0.747	0.930
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26340	1880	19.65	20.80	1.303	0	0.718	0.936
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26140	1860	19.49	20.80	1.352	-0.1	0.692	0.936
	LTE Band 25	20M	QPSK	50	24	Back	10mm	2	26590	1905	19.56	20.80	1.330	0	0.722	0.961
	LTE Band 25	20M	QPSK	100	0	Back	10mm	2	26340	1880	19.61	20.80	1.315	-0.06	0.717	0.943
80	LTE Band 26	15M	QPSK	1	37	Front	10mm	2	26865	831.5	22.20	23.00	1.202	0.13	0.870	1.046
	LTE Band 26	15M	QPSK	36	0	Front	10mm	2	26865	831.5	22.00	23.00	1.259	0.04	0.645	0.812
	LTE Band 26	15M	QPSK	75	0	Front	10mm	2	26865	831.5	21.81	23.00	1.315	0.15	0.635	0.835
	LTE Band 26	15M	QPSK	1	37	Back	10mm	2	26865	831.5	22.20	23.00	1.202	0.01	0.796	0.957
	LTE Band 26	15M	QPSK	36	0	Back	10mm	2	26865	831.5	22.00	23.00	1.259	-0.12	0.615	0.774
	LTE Band 26	15M	QPSK	75	0	Back	10mm	2	26865	831.5	21.81	23.00	1.315	-0.15	0.570	0.750

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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 30	10M	QPSK	1	49	Front	10mm	2	27710	2355	21.06	22.20	1.300	-0.13	0.397	0.516
	LTE Band 30	10M	QPSK	25	25	Front	10mm	2	27710	2355	20.89	22.20	1.352	0.07	0.418	0.565
	LTE Band 30	10M	QPSK	1	49	Back	10mm	2	27710	2355	21.06	22.20	1.300	-0.18	0.711	0.924
	LTE Band 30	10M	QPSK	25	25	Back	10mm	2	27710	2355	20.89	22.20	1.352	-0.13	0.785	1.061
81	LTE Band 30	10M	QPSK	50	0	Back	10mm	2	27710	2355	20.96	22.20	1.330	0.02	0.894	1.189
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132572	1770	20.99	21.50	1.125	0.08	0.827	0.930
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132072	1720	20.64	21.50	1.219	0.1	0.795	0.969
	LTE Band 66	20M	QPSK	1	99	Front	10mm	2	132322	1745	20.87	21.50	1.156	-0.01	0.768	0.888
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132572	1770	20.63	21.50	1.222	-0.14	0.787	0.962
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132072	1720	20.24	21.50	1.337	-0.11	0.697	0.932
	LTE Band 66	20M	QPSK	50	50	Front	10mm	2	132322	1745	20.44	21.50	1.276	-0.13	0.738	0.942
82	LTE Band 66	20M	QPSK	100	0	Front	10mm	2	132572	1770	20.59	21.50	1.233	-0.05	0.789	0.973
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132572	1770	20.99	21.50	1.125	0.07	0.748	0.841
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132072	1720	20.64	21.50	1.219	-0.15	0.706	0.861
	LTE Band 66	20M	QPSK	1	99	Back	10mm	2	132322	1745	20.87	21.50	1.156	-0.13	0.733	0.847
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132572	1770	20.63	21.50	1.222	-0.03	0.709	0.866
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132072	1720	20.24	21.50	1.337	0.06	0.650	0.869
	LTE Band 66	20M	QPSK	50	50	Back	10mm	2	132322	1745	20.44	21.50	1.276	0.09	0.688	0.878
	LTE Band 66	20M	QPSK	100	0	Back	10mm	2	132572	1770	20.59	21.50	1.233	0.01	0.712	0.878

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Output Power States	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)
	LTE Band 38	20M	QPSK	1	99	Front	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.16	0.319	0.441
	LTE Band 38	20M	QPSK	50	50	Front	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	0.11	0.239	0.341
83	LTE Band 38	20M	QPSK	1	99	Back	10mm	3	37850	2580	22.62	24.00	1.374	62.9	1.006	0.09	0.418	0.578
	LTE Band 38	20M	QPSK	50	50	Back	10mm	3	37850	2580	21.48	23.00	1.419	62.9	1.006	-0.16	0.326	0.465
	LTE Band 41	20M	QPSK	1	99	Front	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	-0.05	0.427	0.597
	LTE Band 41	20M	QPSK	50	50	Front	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.06	0.408	0.561
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	40620	2593	22.57	24.00	1.390	62.9	1.006	-0.07	0.505	0.706
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	39750	2506	22.47	24.00	1.422	62.9	1.006	0.19	0.535	0.766
84	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	40185	2549.5	22.56	24.00	1.393	62.9	1.006	0.08	0.564	0.790
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	41055	2636.5	22.31	24.00	1.476	62.9	1.006	-0.04	0.438	0.650
	LTE Band 41	20M	QPSK	1	99	Back	10mm	3	41490	2680	22.44	24.00	1.432	62.9	1.006	-0.15	0.431	0.621
	LTE Band 41	20M	QPSK	50	50	Back	10mm	3	40185	2549.5	21.64	23.00	1.368	62.9	1.006	-0.04	0.360	0.495
	LTE Band 41	20M	QPSK	100	0	Back	10mm	3	40185	2549.5	21.54	23.00	1.400	62.9	1.006	0.16	0.527	0.742

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	0.019	0.286	0.319
85	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	6	2437	18.63	19.00	1.089	97.63	1.024	-0.044	0.361	0.403
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	1	2412	17.90	18.00	1.023	97.63	1.024	-0.047	0.314	0.329
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	3	11	2462	17.51	18.00	1.119	97.63	1.024	0.021	0.327	0.375
	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.142	0.231	0.274
86	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	54	5270	19.66	19.70	1.009	85.14	1.175	-0.063	0.437	0.518
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	62	5310	13.42	13.50	1.019	85.14	1.175	-0.105	0.126	0.151
	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	0.051	0.322	0.408
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	0.063	0.341	0.432
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	102	5510	15.85	16.00	1.035	85.14	1.175	-0.046	0.168	0.204
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	134	5670	18.35	19.20	1.216	85.14	1.175	0.074	0.353	0.504
87	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	142	5710	18.30	19.20	1.230	85.14	1.175	0.132	0.373	0.539
	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	0.104	0.222	0.293
88	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	159	5795	18.50	19.00	1.122	85.14	1.175	-0.144	0.226	0.298
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	3	151	5755	16.59	17.00	1.099	85.14	1.175	-0.103	0.176	0.227

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	10mm	3	39	2441	11.96	12.00	1.009	76.6	1.087	-0.176	0.046	0.050
89	Bluetooth	1Mbps	Back	10mm	3	39	2441	11.96	12.00	1.009	76.6	1.087	0.102	0.060	0.066
	Bluetooth	1Mbps	Back	10mm	3	0	2402	11.36	11.50	1.033	76.6	1.087	-0.17	0.043	0.048
	Bluetooth	1Mbps	Back	10mm	3	78	2480	8.75	9.00	1.059	76.6	1.087	-0.197	0.027	0.031

14.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	0.014	1.240		1.292
2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	1	1	2412	15.92	16.00	1.018	97.63	1.024	-0.031	1.120	1.11	1.167
1st	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	1	64	5320	15.46	15.50	1.010	86.92	1.150	-0.157	0.952		1.105
2nd	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	1	64	5320	15.46	15.50	1.010	86.92	1.150	-0.042	0.923	1.03	1.072
1st	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	-0.045	1.080		1.281
2nd	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	134	5670	15.46	15.50	1.009	85.14	1.175	-0.108	1.050	1.03	1.245
1st	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	151	5755	15.31	15.50	1.045	85.14	1.175	-0.131	1.060		1.301
2nd	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	1	151	5755	15.31	15.50	1.045	85.14	1.175	-0.036	1.010	1.05	1.240
1st	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	2	1513	1752.6	20.88	21.20	1.076		1.000	-0.15	0.921		0.991
2nd	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	2	1513	1752.6	20.88	21.20	1.076		1.000	-0.15	0.908	1.01	0.977
1st	CDMA BC0	RTAP 153.6Kbps	Front	10mm	2	1013	824.7	21.72	22.90	1.312		1.000	-0.08	0.889		1.167
2nd	CDMA BC0	RTAP 153.6Kbps	Front	10mm	2	1013	824.7	21.72	22.90	1.312		1.000	-0.06	0.840	1.06	1.102
1st	CDMA BC1	RTAP 153.6Kbps	Front	10mm	2	1175	1908.75	21.87	22.50	1.156		1.000	-0.11	1.010		1.168
2nd	CDMA BC1	RTAP 153.6Kbps	Front	10mm	2	1175	1908.75	21.87	22.50	1.156		1.000	-0.13	0.972	1.04	1.124
1st	LTE Band 13	10M_QPSK_1_0	Back	10mm	2	23230	782	21.63	22.40	1.194		1.000	-0.13	1.000		1.194
2nd	LTE Band 13	10M_QPSK_1_0	Back	10mm	2	23230	782	21.63	22.40	1.194		1.000	-0.15	0.991	1.01	1.183
1st	LTE Band 30	10M_QPSK_50_0	Back	10mm	2	27710	2355	20.96	22.20	1.330		1.000	0.02	0.894		1.189
2nd	LTE Band 30	10M_QPSK_50_0	Back	10mm	2	27710	2355	20.96	22.20	1.330		1.000	0.15	0.871	1.03	1.159

No.	Band	Mode	Test Position	Gap (mm)	Output Power States	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)	Ratio	Reported 10g SAR (W/kg)
1st	CDMA BC1	RTAP 153.6Kbps	Bottom Side	0mm	3	600	1880	22.52	22.80	1.067		1.000	0.12	3.050		3.253
2nd	CDMA BC1	RTAP 153.6Kbps	Bottom Side	0mm	3	600	1880	22.52	22.80	1.067		1.000	-0.04	3.050	1.00	3.253
1st	LTE Band 66	20M_QPSK_1_99	Bottom Side	0mm	3	132572	1770	22.57	22.90	1.079		1.000	-0.18	2.890		3.118
2nd	LTE Band 66	20M_QPSK_1_99	Bottom Side	0mm	3	132572	1770	22.57	22.90	1.079		1.000	-0.1	2.690	1.07	2.902
1st	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	0.059	2.180		2.764
2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	3	110	5550	18.87	19.20	1.079	85.14	1.175	-0.188	1.840	1.18	2.333

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 Product Specific repeated SAR is necessary, the same procedures should be adapted for measurements according to Product Specific and occupational exposure limits by applying a factor of 2.5 for Product Specific 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.

15. 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
6.	GPRS/EDGE + Bluetooth		Yes		Yes
7.	WCDMA+ Bluetooth		Yes		Yes
8.	LTE + Bluetooth		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
13.	GSM Voice + WLAN5GHz + Bluetooth		Yes		Yes
14.	GPRS/EDGE + WLAN5GHz + Bluetooth		Yes		Yes
15.	WCDMA + WLAN5GHz + Bluetooth		Yes		Yes
16.	LTE + WLAN5GHz + Bluetooth		Yes		Yes

General Note:

1. This device 2.4GHz / 5.2GHz / 5.8GHz WLAN supports Hotspot operation.
2. The worst case WLAN reported SAR for each configuration was used for SAR summation. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with WLAN.
3. 2.4GHz WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. 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.
5. The Scaled SAR summation is calculated based on the same configuration and test position.
6. 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 15.5.
7. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v06 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

Bluetooth Max Power	Exposure Position	Product Specific
	Test separation	5 mm
12dBm	Estimated 10g SAR (W/kg)	0.269W/kg

15.1 Head Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.268	0.513	**0.78**		
		Right Tilted	0.125	0.455	**0.58**		
		Left Cheek	0.360	1.292	**1.65**	0.02	Case 1
		Left Tilted	0.124	0.792	**0.92**		
	GSM1900	Right Cheek	0.196	0.513	**0.71**		
		Right Tilted	0.087	0.455	**0.54**		
		Left Cheek	0.266	1.292	**1.56**		
		Left Tilted	0.087	0.792	**0.88**		
WCDMA	WCDMA II	Right Cheek	0.560	0.513	**1.07**		
		Right Tilted	0.177	0.455	**0.63**		
		Left Cheek	0.391	1.292	**1.68**	0.02	Case 2
		Left Tilted	0.152	0.792	**0.94**		
	WCDMA IV	Right Cheek	0.518	0.513	**1.03**		
		Right Tilted	0.215	0.455	**0.67**		
		Left Cheek	0.629	1.292	**1.92**	0.03	Case 3
		Left Tilted	0.193	0.792	**0.99**		
	WCDMA V	Right Cheek	0.359	0.513	**0.87**		
		Right Tilted	0.166	0.455	**0.62**		
		Left Cheek	0.410	1.292	**1.70**	0.02	Case 4
		Left Tilted	0.164	0.792	**0.96**		
CDMA	CDMA BC0	Right Cheek	0.357	0.513	**0.87**		
		Right Tilted	0.154	0.455	**0.61**		
		Left Cheek	0.417	1.292	**1.71**	0.02	Case 5
		Left Tilted	0.185	0.792	**0.98**		
	CDMA BC1	Right Cheek	0.394	0.513	**0.91**		
		Right Tilted	0.193	0.455	**0.65**		
		Left Cheek	0.482	1.292	**1.77**	0.02	Case 6
		Left Tilted	0.146	0.792	**0.94**		
	CDMA BC10	Right Cheek	0.454	0.513	**0.97**		
		Right Tilted	0.205	0.455	**0.66**		
		Left Cheek	0.501	1.292	**1.79**	0.02	Case 7
		Left Tilted	0.203	0.792	**1.00**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 2	Right Cheek	0.491	0.513	**1.00**		
		Right Tilted	0.193	0.455	**0.65**		
		Left Cheek	0.371	1.292	**1.66**	0.02	Case 8
		Left Tilted	0.156	0.792	**0.95**		
	LTE Band 4	Right Cheek	0.588	0.513	**1.10**		
		Right Tilted	0.185	0.455	**0.64**		
		Left Cheek	0.622	1.292	**1.91**	0.03	Case 9
		Left Tilted	0.162	0.792	**0.95**		
	LTE Band 5	Right Cheek	0.435	0.513	**0.95**		
		Right Tilted	0.211	0.455	**0.67**		
		Left Cheek	0.468	1.292	**1.76**	0.02	Case 10
		Left Tilted	0.233	0.792	**1.03**		
	LTE Band 7	Right Cheek	0.147	0.513	**0.66**		
		Right Tilted	0.120	0.455	**0.58**		
		Left Cheek	0.564	1.292	**1.86**	0.02	Case 11
		Left Tilted	0.175	0.792	**0.97**		
	LTE Band 12	Right Cheek	0.141	0.513	**0.65**		
		Right Tilted	0.055	0.455	**0.51**		
		Left Cheek	0.288	1.292	**1.58**		
		Left Tilted	0.073	0.792	**0.87**		
	LTE Band 13	Right Cheek	0.366	0.513	**0.88**		
		Right Tilted	0.172	0.455	**0.63**		
		Left Cheek	0.428	1.292	**1.72**	0.02	Case 12
		Left Tilted	0.188	0.792	**0.98**		
	LTE Band 17	Right Cheek	0.274	0.513	**0.79**		
		Right Tilted	0.101	0.455	**0.56**		
		Left Cheek	0.364	1.292	**1.66**	0.02	Case 13
		Left Tilted	0.078	0.792	**0.87**		
	LTE Band 25	Right Cheek	0.713	0.513	**1.23**		
		Right Tilted	0.240	0.455	**0.70**		
		Left Cheek	0.528	1.292	**1.82**	0.03	Case 14
		Left Tilted	0.217	0.792	**1.01**		
	LTE Band 26	Right Cheek	0.377	0.513	**0.89**		
		Right Tilted	0.164	0.455	**0.62**		
		Left Cheek	0.409	1.292	**1.70**	0.02	Case 15
		Left Tilted	0.197	0.792	**0.99**		
	LTE Band 30	Right Cheek	0.156	0.513	**0.67**		
		Right Tilted	0.084	0.455	**0.54**		
		Left Cheek	0.319	1.292	**1.61**	0.02	Case 16
		Left Tilted	0.122	0.792	**0.91**		
	LTE Band 38	Right Cheek	0.102	0.513	**0.62**		
		Right Tilted	0.062	0.455	**0.52**		
		Left Cheek	0.292	1.292	**1.58**		
		Left Tilted	0.061	0.792	**0.85**		
	LTE Band 41	Right Cheek	0.136	0.513	**0.65**		
		Right Tilted	0.076	0.455	**0.53**		
		Left Cheek	0.322	1.292	**1.61**	0.02	Case 17
		Left Tilted	0.060	0.792	**0.85**		
	LTE Band 66	Right Cheek	0.532	0.513	**1.05**		
		Right Tilted	0.144	0.455	**0.60**		
		Left Cheek	0.417	1.292	**1.71**	0.02	Case 18
		Left Tilted	0.147	0.792	**0.94**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.268	0.669	**0.94**		
		Right Tilted	0.125	0.536	**0.66**		
		Left Cheek	0.360	1.301	**1.66**	0.02	Case 19
		Left Tilted	0.124	0.963	**1.09**		
	GSM1900	Right Cheek	0.196	0.669	**0.87**		
		Right Tilted	0.087	0.536	**0.62**		
		Left Cheek	0.266	1.301	**1.57**		
		Left Tilted	0.087	0.963	**1.05**		
WCDMA	WCDMA II	Right Cheek	0.560	0.669	**1.23**		
		Right Tilted	0.177	0.536	**0.71**		
		Left Cheek	0.391	1.301	**1.69**	0.02	Case 20
		Left Tilted	0.152	0.963	**1.12**		
	WCDMA IV	Right Cheek	0.518	0.669	**1.19**		
		Right Tilted	0.215	0.536	**0.75**		
		Left Cheek	0.629	1.301	**1.93**	0.03	Case 21
		Left Tilted	0.193	0.963	**1.16**		
	WCDMA V	Right Cheek	0.359	0.669	**1.03**		
		Right Tilted	0.166	0.536	**0.70**		
		Left Cheek	0.410	1.301	**1.71**	0.02	Case 22
		Left Tilted	0.164	0.963	**1.13**		
CDMA	CDMA BC0	Right Cheek	0.357	0.669	**1.03**		
		Right Tilted	0.154	0.536	**0.69**		
		Left Cheek	0.417	1.301	**1.72**	0.02	Case 23
		Left Tilted	0.185	0.963	**1.15**		
	CDMA BC1	Right Cheek	0.394	0.669	**1.06**		
		Right Tilted	0.193	0.536	**0.73**		
		Left Cheek	0.482	1.301	**1.78**	0.02	Case 24
		Left Tilted	0.146	0.963	**1.11**		
	CDMA BC10	Right Cheek	0.454	0.669	**1.12**		
		Right Tilted	0.205	0.536	**0.74**		
		Left Cheek	0.501	1.301	**1.80**	0.02	Case 25
		Left Tilted	0.203	0.963	**1.17**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 2	Right Cheek	0.491	0.669	**1.16**		
		Right Tilted	0.193	0.536	**0.73**		
		Left Cheek	0.371	1.301	**1.67**	0.02	Case 26
		Left Tilted	0.156	0.963	**1.12**		
	LTE Band 4	Right Cheek	0.588	0.669	**1.26**		
		Right Tilted	0.185	0.536	**0.72**		
		Left Cheek	0.622	1.301	**1.92**	0.03	Case 27
		Left Tilted	0.162	0.963	**1.13**		
	LTE Band 5	Right Cheek	0.435	0.669	**1.10**		
		Right Tilted	0.211	0.536	**0.75**		
		Left Cheek	0.468	1.301	**1.77**	0.02	Case 28
		Left Tilted	0.233	0.963	**1.20**		
	LTE Band 7	Right Cheek	0.147	0.669	**0.82**		
		Right Tilted	0.120	0.536	**0.66**		
		Left Cheek	0.564	1.301	**1.87**	0.02	Case 29
		Left Tilted	0.175	0.963	**1.14**		
	LTE Band 12	Right Cheek	0.141	0.669	**0.81**		
		Right Tilted	0.055	0.536	**0.59**		
		Left Cheek	0.288	1.301	**1.59**		
		Left Tilted	0.073	0.963	**1.04**		
	LTE Band 13	Right Cheek	0.366	0.669	**1.04**		
		Right Tilted	0.172	0.536	**0.71**		
		Left Cheek	0.428	1.301	**1.73**	0.02	Case 30
		Left Tilted	0.188	0.963	**1.15**		
	LTE Band 17	Right Cheek	0.274	0.669	**0.94**		
		Right Tilted	0.101	0.536	**0.64**		
		Left Cheek	0.364	1.301	**1.67**	0.02	Case 31
		Left Tilted	0.078	0.963	**1.04**		
	LTE Band 25	Right Cheek	0.713	0.669	**1.38**		
		Right Tilted	0.240	0.536	**0.78**		
		Left Cheek	0.528	1.301	**1.83**	0.02	Case 32
		Left Tilted	0.217	0.963	**1.18**		
	LTE Band 26	Right Cheek	0.377	0.669	**1.05**		
		Right Tilted	0.164	0.536	**0.70**		
		Left Cheek	0.409	1.301	**1.71**	0.02	Case 33
		Left Tilted	0.197	0.963	**1.16**		
	LTE Band 30	Right Cheek	0.156	0.669	**0.83**		
		Right Tilted	0.084	0.536	**0.62**		
		Left Cheek	0.319	1.301	**1.62**	0.02	Case 34
		Left Tilted	0.122	0.963	**1.09**		
	LTE Band 38	Right Cheek	0.102	0.669	**0.77**		
		Right Tilted	0.062	0.536	**0.60**		
		Left Cheek	0.292	1.301	**1.59**		
		Left Tilted	0.061	0.963	**1.02**		
	LTE Band 41	Right Cheek	0.136	0.669	**0.81**		
		Right Tilted	0.076	0.536	**0.61**		
		Left Cheek	0.322	1.301	**1.62**	0.02	Case 35
		Left Tilted	0.060	0.963	**1.02**		
	LTE Band 66	Right Cheek	0.532	0.669	**1.20**		
		Right Tilted	0.144	0.536	**0.68**		
		Left Cheek	0.417	1.301	**1.72**	0.02	Case 36
		Left Tilted	0.147	0.963	**1.11**		

15.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	1.151	0.319	**1.47**		
		Back	0.994	0.403	**1.40**		
		Left side	0.695	0.029	**0.72**		
		Right side	0.365	0.091	**0.46**		
		Top side		0.149	**0.15**		
		Bottom side	0.411		**0.41**		
	GSM1900	Front	0.723	0.319	**1.04**		
		Back	0.618	0.403	**1.02**		
		Left side	0.148	0.029	**0.18**		
		Right side	0.265	0.091	**0.36**		
		Top side		0.149	**0.15**		
		Bottom side	0.729		**0.73**		
WCDMA	WCDMA II	Front	1.196	0.319	**1.52**		
		Back	1.068	0.403	**1.47**		
		Left side	0.243	0.029	**0.27**		
		Right side	0.394	0.091	**0.49**		
		Top side		0.149	**0.15**		
		Bottom side	1.179		**1.18**		
	WCDMA IV	Front	0.901	0.319	**1.22**		
		Back	0.859	0.403	**1.26**		
		Left side	0.225	0.029	**0.25**		
		Right side	0.343	0.091	**0.43**		
		Top side		0.149	**0.15**		
		Bottom side	0.991		**0.99**		
	WCDMA V	Front	0.983	0.319	**1.30**		
		Back	0.893	0.403	**1.30**		
		Left side	0.954	0.029	**0.98**		
		Right side	0.457	0.091	**0.55**		
		Top side		0.149	**0.15**		
		Bottom side	0.348		**0.35**		
CDMA	CDMA BC0	Front	1.167	0.319	**1.49**		
		Back	1.040	0.403	**1.44**		
		Left side	0.737	0.029	**0.77**		
		Right side	0.391	0.091	**0.48**		
		Top side		0.149	**0.15**		
		Bottom side	0.515		**0.52**		
	CDMA BC1	Front	1.168	0.319	**1.49**		
		Back	1.065	0.403	**1.47**		
		Left side	0.352	0.029	**0.38**		
		Right side	0.513	0.091	**0.60**		
		Top side		0.149	**0.15**		
		Bottom side	1.188		**1.19**		
	CDMA BC10	Front	0.810	0.319	**1.13**		
		Back	0.696	0.403	**1.10**		
		Left side	0.710	0.029	**0.74**		
		Right side	0.394	0.091	**0.49**		
		Top side		0.149	**0.15**		
		Bottom side	0.324		**0.32**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 2	Front	0.985	0.319	**1.30**		
		Back	0.936	0.403	**1.34**		
		Left side	0.355	0.029	**0.38**		
		Right side	0.584	0.091	**0.68**		
		Top side		0.149	**0.15**		
		Bottom side	1.061		**1.06**		
	LTE Band 4	Front	1.077	0.319	**1.40**		
		Back	0.989	0.403	**1.39**		
		Left side	0.480	0.029	**0.51**		
		Right side	0.786	0.091	**0.88**		
		Top side		0.149	**0.15**		
		Bottom side	1.073		**1.07**		
	LTE Band 5	Front	0.859	0.319	**1.18**		
		Back	0.894	0.403	**1.30**		
		Left side	0.592	0.029	**0.62**		
		Right side	0.478	0.091	**0.57**		
		Top side		0.149	**0.15**		
		Bottom side	0.420		**0.42**		
	LTE Band 7	Front	1.030	0.319	**1.35**		
		Back	1.007	0.403	**1.41**		
		Left side	0.185	0.029	**0.21**		
		Right side	0.095	0.091	**0.19**		
		Top side		0.149	**0.15**		
		Bottom side	0.995		**1.00**		
	LTE Band 12	Front	0.991	0.319	**1.31**		
		Back	0.973	0.403	**1.38**		
		Left side	0.981	0.029	**1.01**		
		Right side	0.233	0.091	**0.32**		
		Top side		0.149	**0.15**		
		Bottom side	0.327		**0.33**		
	LTE Band 13	Front	1.115	0.319	**1.43**		
		Back	1.194	0.403	**1.60**	0.01	Case 37
		Left side	1.108	0.029	**1.14**		
		Right side	0.654	0.091	**0.75**		
		Top side		0.149	**0.15**		
		Bottom side	0.515		**0.52**		
	LTE Band 17	Front	0.851	0.319	**1.17**		
		Back	0.951	0.403	**1.35**		
		Left side	1.104	0.029	**1.13**		
		Right side	0.259	0.091	**0.35**		
		Top side		0.149	**0.15**		
		Bottom side	0.300		**0.30**		
	LTE Band 25	Front	1.036	0.319	**1.36**		
		Back	0.961	0.403	**1.36**		
		Left side	0.427	0.029	**0.46**		
		Right side	0.682	0.091	**0.77**		
		Top side		0.149	**0.15**		
		Bottom side	1.116		**1.12**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 26	Front	1.046	0.319	**1.37**		
		Back	0.957	0.403	**1.36**		
		Left side	0.644	0.029	**0.67**		
		Right side	0.399	0.091	**0.49**		
		Top side		0.149	**0.15**		
		Bottom side	0.427		**0.43**		
	LTE Band 30	Front	0.565	0.319	**0.88**		
		Back	1.189	0.403	**1.59**		
		Left side	0.126	0.029	**0.16**		
		Right side	0.070	0.091	**0.16**		
		Top side		0.149	**0.15**		
		Bottom side	1.060		**1.06**		
	LTE Band 38	Front	0.441	0.319	**0.76**		
		Back	0.578	0.403	**0.98**		
		Left side	0.151	0.029	**0.18**		
		Right side	0.055	0.091	**0.15**		
		Top side		0.149	**0.15**		
		Bottom side	0.681		**0.68**		
	LTE Band 41	Front	0.597	0.319	**0.92**		
		Back	0.790	0.403	**1.19**		
		Left side	0.210	0.029	**0.24**		
		Right side	0.078	0.091	**0.17**		
		Top side		0.149	**0.15**		
		Bottom side	0.911		**0.91**		
	LTE Band 66	Front	0.973	0.319	**1.29**		
		Back	0.878	0.403	**1.28**		
		Left side	0.332	0.029	**0.36**		
		Right side	0.612	0.091	**0.70**		
		Top side		0.149	**0.15**		
		Bottom side	0.994		**0.99**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	1.151	0.293	**1.44**		
		Back	0.994	0.471	**1.47**		
		Left side	0.695	0.036	**0.73**		
		Right side	0.365	0.096	**0.46**		
		Top side		0.109	**0.11**		
		Bottom side	0.411		**0.41**		
	GSM1900	Front	0.723	0.293	**1.02**		
		Back	0.618	0.471	**1.09**		
		Left side	0.148	0.036	**0.18**		
		Right side	0.265	0.096	**0.36**		
		Top side		0.109	**0.11**		
		Bottom side	0.729		**0.73**		
WCDMA	WCDMA II	Front	1.196	0.293	**1.49**		
		Back	1.068	0.471	**1.54**		
		Left side	0.243	0.036	**0.28**		
		Right side	0.394	0.096	**0.49**		
		Top side		0.109	**0.11**		
		Bottom side	1.179		**1.18**		
	WCDMA IV	Front	0.901	0.293	**1.19**		
		Back	0.859	0.471	**1.33**		
		Left side	0.225	0.036	**0.26**		
		Right side	0.343	0.096	**0.44**		
		Top side		0.109	**0.11**		
		Bottom side	0.991		**0.99**		
	WCDMA V	Front	0.983	0.293	**1.28**		
		Back	0.893	0.471	**1.36**		
		Left side	0.954	0.036	**0.99**		
		Right side	0.457	0.096	**0.55**		
		Top side		0.109	**0.11**		
		Bottom side	0.348		**0.35**		
CDMA	CDMA BC0	Front	1.167	0.293	**1.46**		
		Back	1.040	0.471	**1.51**		
		Left side	0.737	0.036	**0.77**		
		Right side	0.391	0.096	**0.49**		
		Top side		0.109	**0.11**		
		Bottom side	0.515		**0.52**		
	CDMA BC1	Front	1.168	0.293	**1.46**		
		Back	1.065	0.471	**1.54**		
		Left side	0.352	0.036	**0.39**		
		Right side	0.513	0.096	**0.61**		
		Top side		0.109	**0.11**		
		Bottom side	1.188		**1.19**		
	CDMA BC10	Front	0.810	0.293	**1.10**		
		Back	0.696	0.471	**1.17**		
		Left side	0.710	0.036	**0.75**		
		Right side	0.394	0.096	**0.49**		
		Top side		0.109	**0.11**		
		Bottom side	0.324		**0.32**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 2	Front	0.985	0.293	**1.28**		
		Back	0.936	0.471	**1.41**		
		Left side	0.355	0.036	**0.39**		
		Right side	0.584	0.096	**0.68**		
		Top side		0.109	**0.11**		
		Bottom side	1.061		**1.06**		
	LTE Band 4	Front	1.077	0.293	**1.37**		
		Back	0.989	0.471	**1.46**		
		Left side	0.480	0.036	**0.52**		
		Right side	0.786	0.096	**0.88**		
		Top side		0.109	**0.11**		
		Bottom side	1.073		**1.07**		
	LTE Band 5	Front	0.859	0.293	**1.15**		
		Back	0.894	0.471	**1.37**		
		Left side	0.592	0.036	**0.63**		
		Right side	0.478	0.096	**0.57**		
		Top side		0.109	**0.11**		
		Bottom side	0.420		**0.42**		
	LTE Band 7	Front	1.030	0.293	**1.32**		
		Back	1.007	0.471	**1.48**		
		Left side	0.185	0.036	**0.22**		
		Right side	0.095	0.096	**0.19**		
		Top side		0.109	**0.11**		
		Bottom side	0.995		**1.00**		
	LTE Band 12	Front	0.991	0.293	**1.28**		
		Back	0.973	0.471	**1.44**		
		Left side	0.981	0.036	**1.02**		
		Right side	0.233	0.096	**0.33**		
		Top side		0.109	**0.11**		
		Bottom side	0.327		**0.33**		
	LTE Band 13	Front	1.115	0.293	**1.41**		
		Back	1.194	0.471	**1.67**	0.01	Case 38
		Left side	1.108	0.036	**1.14**		
		Right side	0.654	0.096	**0.75**		
		Top side		0.109	**0.11**		
		Bottom side	0.515		**0.52**		
	LTE Band 17	Front	0.851	0.293	**1.14**		
		Back	0.951	0.471	**1.42**		
		Left side	1.104	0.036	**1.14**		
		Right side	0.259	0.096	**0.36**		
		Top side		0.109	**0.11**		
		Bottom side	0.300		**0.30**		
	LTE Band 25	Front	1.036	0.293	**1.33**		
		Back	0.961	0.471	**1.43**		
		Left side	0.427	0.036	**0.46**		
		Right side	0.682	0.096	**0.78**		
		Top side		0.109	**0.11**		
		Bottom side	1.116		**1.12**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR	Case No
LTE	LTE Band 26	Front	1.046	0.293	**1.34**		
		Back	0.957	0.471	**1.43**		
		Left side	0.644	0.036	**0.68**		
		Right side	0.399	0.096	**0.50**		
		Top side		0.109	**0.11**		
		Bottom side	0.427		**0.43**		
	LTE Band 30	Front	0.565	0.293	**0.86**		
		Back	1.189	0.471	**1.66**	0.01	Case 39
		Left side	0.126	0.036	**0.16**		
		Right side	0.070	0.096	**0.17**		
		Top side		0.109	**0.11**		
		Bottom side	1.060		**1.06**		
	LTE Band 38	Front	0.441	0.293	**0.73**		
		Back	0.578	0.471	**1.05**		
		Left side	0.151	0.036	**0.19**		
		Right side	0.055	0.096	**0.15**		
		Top side		0.109	**0.11**		
		Bottom side	0.681		**0.68**		
	LTE Band 41	Front	0.597	0.293	**0.89**		
		Back	0.790	0.471	**1.26**		
		Left side	0.210	0.036	**0.25**		
		Right side	0.078	0.096	**0.17**		
		Top side		0.109	**0.11**		
		Bottom side	0.911		**0.91**		
	LTE Band 66	Front	0.973	0.293	**1.27**		
		Back	0.878	0.471	**1.35**		
		Left side	0.332	0.036	**0.37**		
		Right side	0.612	0.096	**0.71**		
		Top side		0.109	**0.11**		
		Bottom side	0.994		**0.99**		

15.3 Product Specific Exposure Conditions

General Note:

1. The worst case 5GHz WLAN results are taking from 5.3GHz (U-NII-2A) and 5.5GHz (U-NII-2C) perform product specific simultaneous transmission analysis.
2. According to KDB 648474 D04v01r03, for WWAN and 2.4GHz WLAN SAR ("-") was excluded, due to hotspot SAR was < 1.2W/kg.
3. According to KDB 941225 D06 v02r01, for Bluetooth and 5GHz WLAN SAR ("-") was excluded, due to transmitting antenna located larger 25mm from that surface or edge

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 Estimated 10g SAR (W/kg)	1+3+4 Summed 10g SAR (W/kg)
WCDMA	WCDMA II	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	3.678	-	-	-	**3.68**
	WCDMA V	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	2.158	-	0.084	0.269	**2.51**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	-	-	-	-	**0.00**
CDMA	CDMA BC1	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	3.284	-	-	-	**3.28**
	CDMA BC10	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	1.513	-	0.084	0.269	**1.87**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	-	-	-	-	**0.00**

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 Estimated 10g SAR (W/kg)	1+3+4 Summed 10g SAR (W/kg)
LTE	LTE Band 2	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	3.431	-	-	-	**3.43**
	LTE Band 4	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	2.585	-	-	-	**2.59**
	LTE Band 12	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	1.771	-	0.084	0.269	**2.12**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	-	-	-	-	**0.00**
	LTE Band 13	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	2.304	-	0.084	0.269	**2.66**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	-	-	-	-	**0.00**
	LTE Band 17	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	1.960	-	0.084	0.269	**2.31**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	-	-	-	-	**0.00**
	LTE Band 25	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	2.961	-	-	-	**2.96**
	LTE Band 30	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	2.459	-	-	-	**2.46**
	LTE Band 66	Front	-	-	2.764	0.269	**3.03**
		Back	-	-	0.847	0.269	**1.12**
		Left side	-	-	0.084	0.269	**0.35**
		Right side	-	-	0.233	0.269	**0.50**
		Top side	-	-	0.262	0.269	**0.53**
		Bottom side	3.118	-	-	-	**3.12**

15.4 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+2 SPLSR	1+2 Case No
GSM	GSM850	Front	1.151	0.319	**1.47**		
		Back	0.994	0.403	**1.40**		
	GSM1900	Front	0.723	0.319	**1.04**		
		Back	0.618	0.403	**1.02**		
WCDMA	WCDMA II	Front	1.196	0.319	**1.52**		
		Back	1.068	0.403	**1.47**		
	WCDMA IV	Front	0.901	0.319	**1.22**		
		Back	0.859	0.403	**1.26**		
	WCDMA V	Front	0.983	0.319	**1.30**		
		Back	0.893	0.403	**1.30**		
CDMA	CDMA BC0	Front	1.156	0.319	**1.48**		
		Back	1.085	0.403	**1.49**		
	CDMA BC1	Front	1.164	0.319	**1.48**		
		Back	1.006	0.403	**1.41**		
	CDMA BC10	Front	0.817	0.319	**1.14**		
		Back	0.727	0.403	**1.13**		
LTE	LTE Band 2	Front	0.985	0.319	**1.30**		
		Back	0.936	0.403	**1.34**		
	LTE Band 4	Front	1.077	0.319	**1.40**		
		Back	0.989	0.403	**1.39**		
	LTE Band 5	Front	0.859	0.319	**1.18**		
		Back	0.894	0.403	**1.30**		
	LTE Band 7	Front	1.030	0.319	**1.35**		
		Back	1.007	0.403	**1.41**		
	LTE Band 12	Front	0.991	0.319	**1.31**		
		Back	0.973	0.403	**1.38**		
	LTE Band 13	Front	1.115	0.319	**1.43**		
		Back	1.194	0.403	**1.60**	0.01	Case 37
	LTE Band 17	Front	0.851	0.319	**1.17**		
		Back	0.951	0.403	**1.35**		
	LTE Band 25	Front	1.036	0.319	**1.36**		
		Back	0.961	0.403	**1.36**		
	LTE Band 26	Front	1.046	0.319	**1.37**		
		Back	0.957	0.403	**1.36**		
	LTE Band 30	Front	0.565	0.319	**0.88**		
		Back	1.189	0.403	**1.59**		
	LTE Band 38	Front	0.441	0.319	**0.76**		
		Back	0.578	0.403	**0.98**		
	LTE Band 41	Front	0.597	0.319	**0.92**		
		Back	0.790	0.403	**1.19**		
	LTE Band 66	Front	0.973	0.319	**1.29**		
		Back	0.878	0.403	**1.28**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+3+4 SPLSR	1+3+4 Case No
GSM	GSM850	Front	1.151	0.408	0.050	**1.56**	**1.61**	**1.20**	0.01	Case 40
		Back	0.994	0.539	0.066	**1.53**	**1.60**	**1.06**	0.01	Case 41
	GSM1900	Front	0.723	0.408	0.050	**1.13**	**1.18**	**0.77**		
		Back	0.618	0.539	0.066	**1.16**	**1.22**	**0.68**		
WCDMA	WCDMA II	Front	1.196	0.408	0.050	**1.60**	**1.65**	**1.25**	0.01	Case 42
		Back	1.068	0.539	0.066	**1.61**	**1.67**	**1.13**	0.02	Case 43
	WCDMA IV	Front	0.901	0.408	0.050	**1.31**	**1.36**	**0.95**		
		Back	0.859	0.539	0.066	**1.40**	**1.46**	**0.93**		
	WCDMA V	Front	0.983	0.408	0.050	**1.39**	**1.44**	**1.03**		
		Back	0.893	0.539	0.066	**1.43**	**1.50**	**0.96**		
CDMA	CDMA BC0	Front	1.156	0.408	0.050	**1.56**	**1.61**	**1.21**	0.01	Case 44
		Back	1.085	0.539	0.066	**1.62**	**1.69**	**1.15**	0.01	Case 45
	CDMA BC1	Front	1.164	0.408	0.050	**1.57**	**1.62**	**1.21**	0.01	Case 46
		Back	1.006	0.539	0.066	**1.55**	**1.61**	**1.07**	0.01	Case 47
	CDMA BC10	Front	0.817	0.408	0.050	**1.23**	**1.28**	**0.87**		
		Back	0.727	0.539	0.066	**1.27**	**1.33**	**0.79**		
LTE	LTE Band 2	Front	0.985	0.408	0.050	**1.39**	**1.44**	**1.04**		
		Back	0.936	0.539	0.066	**1.48**	**1.54**	**1.00**		
	LTE Band 4	Front	1.077	0.408	0.050	**1.49**	**1.54**	**1.13**		
		Back	0.989	0.539	0.066	**1.53**	**1.59**	**1.06**		
	LTE Band 5	Front	0.859	0.408	0.050	**1.27**	**1.32**	**0.91**		
		Back	0.894	0.539	0.066	**1.43**	**1.50**	**0.96**		
	LTE Band 7	Front	1.030	0.408	0.050	**1.44**	**1.49**	**1.08**		
		Back	1.007	0.539	0.066	**1.55**	**1.61**	**1.07**	0.01	Case 48
	LTE Band 12	Front	0.991	0.408	0.050	**1.40**	**1.45**	**1.04**		
		Back	0.973	0.539	0.066	**1.51**	**1.58**	**1.04**		
	LTE Band 13	Front	1.115	0.408	0.050	**1.52**	**1.57**	**1.17**		
		Back	1.194	0.539	0.066	**1.73**	**1.80**	**1.26**	0.02	Case 49
	LTE Band 17	Front	0.851	0.408	0.050	**1.26**	**1.31**	**0.90**		
		Back	0.951	0.539	0.066	**1.49**	**1.56**	**1.02**		
	LTE Band 25	Front	1.036	0.408	0.050	**1.44**	**1.49**	**1.09**		
		Back	0.961	0.539	0.066	**1.50**	**1.57**	**1.03**		
	LTE Band 26	Front	1.046	0.408	0.050	**1.45**	**1.50**	**1.10**		
		Back	0.957	0.539	0.066	**1.50**	**1.56**	**1.02**		
	LTE Band 30	Front	0.565	0.408	0.050	**0.97**	**1.02**	**0.62**		
		Back	1.189	0.539	0.066	**1.73**	**1.79**	**1.26**	0.02	Case 50
	LTE Band 38	Front	0.441	0.408	0.050	**0.85**	**0.90**	**0.49**		
		Back	0.578	0.539	0.066	**1.12**	**1.18**	**0.64**		
	LTE Band 41	Front	0.597	0.408	0.050	**1.01**	**1.06**	**0.65**		
		Back	0.790	0.539	0.066	**1.33**	**1.40**	**0.86**		
	LTE Band 66	Front	0.973	0.408	0.050	**1.38**	**1.43**	**1.02**		
		Back	0.878	0.539	0.066	**1.42**	**1.48**	**0.94**		

15.5 SPLSR Evaluation and Analysis

General Note:

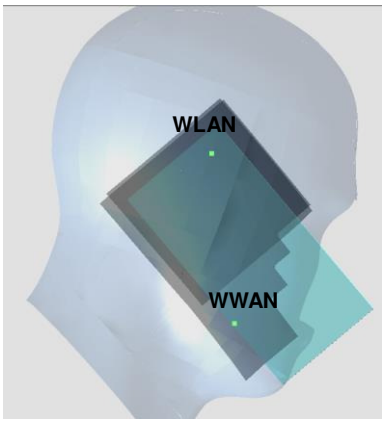
1. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

Case 1	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Left Cheek	0.360	0mm	66.69	-82.5	9.37	117.2	1.65	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 2	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Left Cheek	0.391	0mm	50.84	-62.71	1.13	91.9	1.68	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

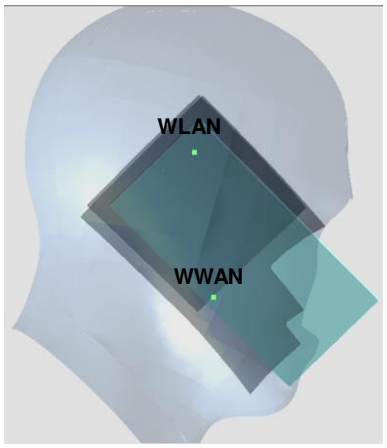
Case 3	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Left Cheek	0.629	0mm	48.04	-66.8	0.22	94.5	1.92	0.03	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 4	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Left Cheek	0.41	0mm	69.17	-82.21	10.46	118.2	1.70	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

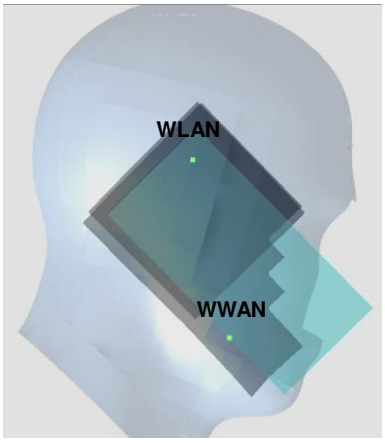


Case 5	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Left Cheek	0.417	0mm	71.54	-88.94	13.92	125.6	1.71	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 6	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Left Cheek	0.482	0mm	49.89	-67.75	0.87	96.1	1.77	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

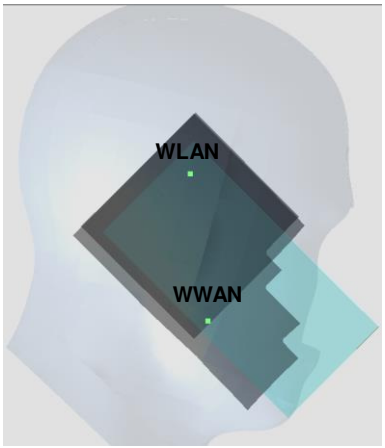


Case 7	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Left Cheek	0.501	0mm	68.4	-83.49	10.47	119.0	1.79	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

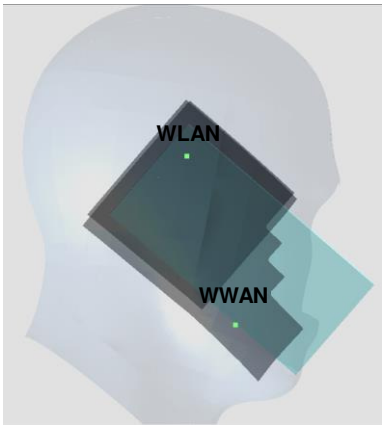


Case 8	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 2	Left Cheek	0.371	0mm	52.9	-62.16	1.48	92.3	1.66	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

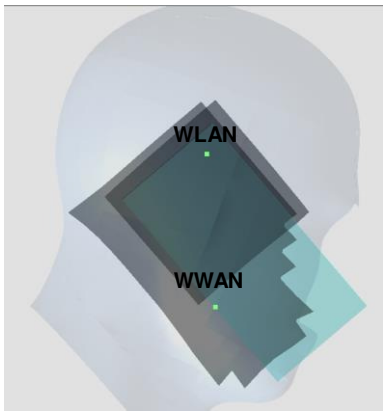
Case 9	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 4	Left Cheek	0.622	0mm	51.7	-63.22	1.46	92.7	1.91	0.03	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



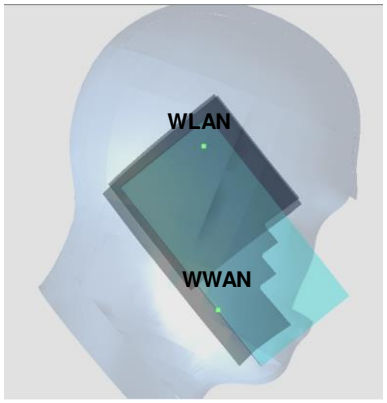
Case 10	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 5	Left Cheek	0.468	0mm	64.59	-86.86	10.19	120.2	1.76	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



Case 11	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Left Cheek	0.564	0mm	54.3	-73.52	1.11	103.1	1.86	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



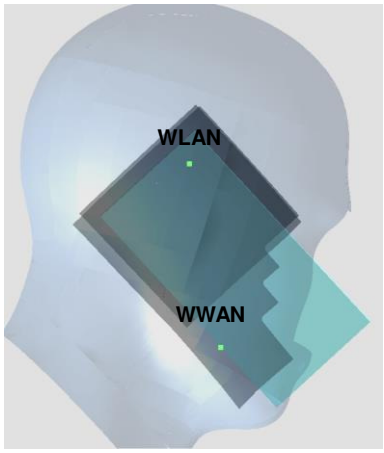
Case 12	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Left Cheek	0.428	0mm	67.32	-82.78	9.69	117.8	1.72	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



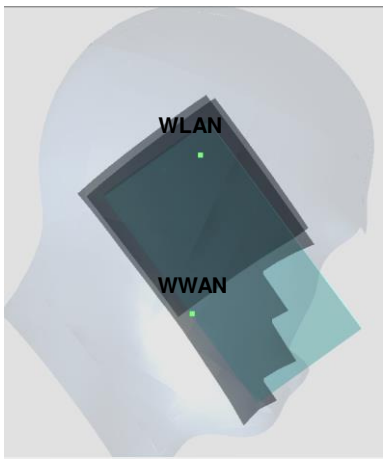
Case 13	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 17	Left Cheek	0.364	0mm	68.28	-86.84	11.64	122.0	1.66	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 14	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Left Cheek	0.528	0mm	53.96	-66.37	2.4	96.6	1.82	0.03	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 15	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Left Cheek	0.409	0mm	65.95	-82.11	8.92	116.5	1.70	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



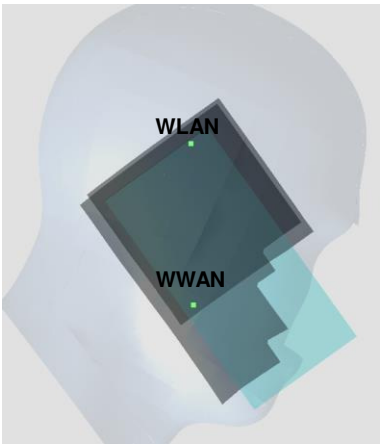
Case 16	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 30	Left Cheek	0.319	0mm	45.19	-72.59	0.98	98.8	1.61	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				



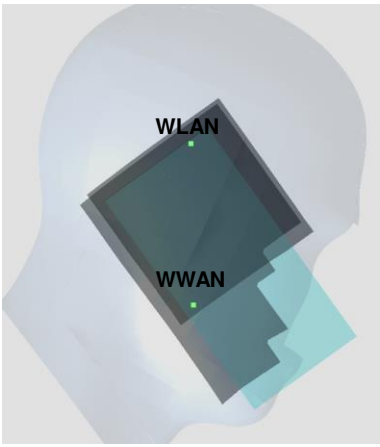
Case 17	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Left Cheek	0.322	0mm	46.61	-73.11	1.23	99.8	1.61	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

Case 18	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 66	Left Cheek	0.417	0mm	50.4	-62.46	1.05	91.5	1.71	0.02	Not required
	2.4GHz WLAN		1.292	0mm	11.62	20.32	-1.96				

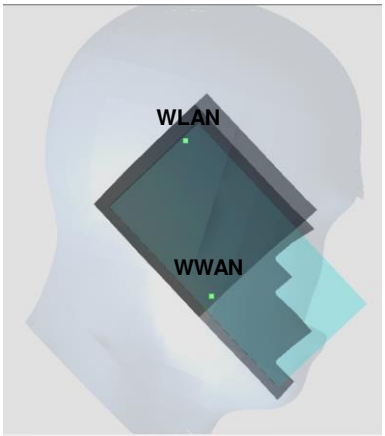
Case 19	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Left Cheek	0.360	0mm	66.69	-82.5	9.37	122.8	1.66	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



Case 20	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Left Cheek	0.391	0mm	50.84	-62.71	1.13	97.5	1.69	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



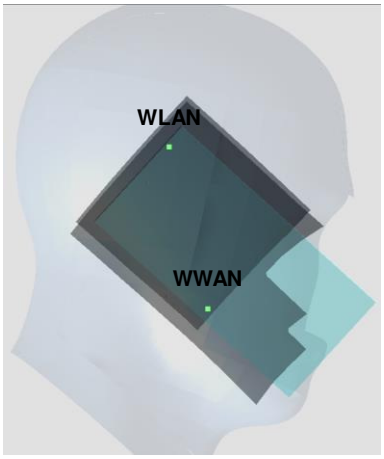
Case 21	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Left Cheek	0.629	0mm	48.04	-66.8	0.22	100.0	1.93	0.03	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



Case 22	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Left Cheek	0.41	0mm	69.17	-82.21	10.46	123.8	1.71	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

Case 23	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Left Cheek	0.417	0mm	71.54	-88.94	13.92	131.2	1.72	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

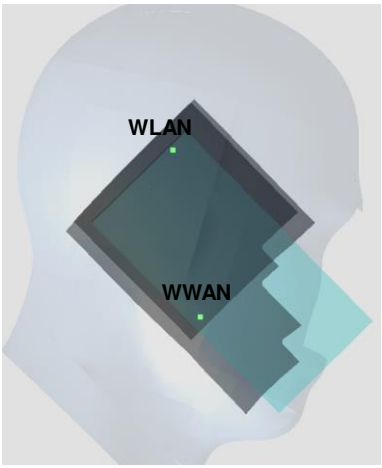
Case 24	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Left Cheek	0.482	0mm	49.89	-67.75	0.87	101.6	1.78	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



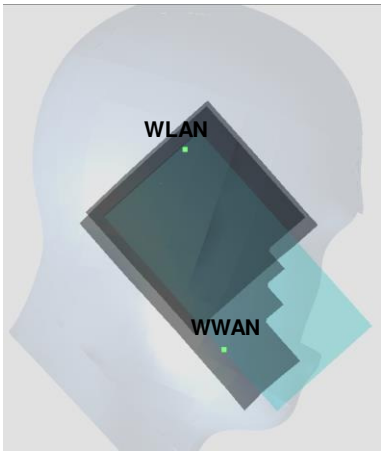
Case 25	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Left Cheek	0.501	0mm	68.4	-83.49	10.47	124.6	1.80	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

Case 26	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 2	Left Cheek	0.371	0mm	52.9	-62.16	1.48	97.9	1.67	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

Case 27	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 4	Left Cheek	0.622	0mm	51.7	-63.22	1.46	98.3	1.92	0.03	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



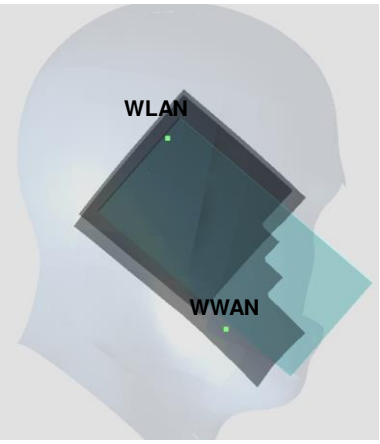
Case 28	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 5	Left Cheek	0.468	0mm	64.59	-86.86	10.19	125.7	1.77	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



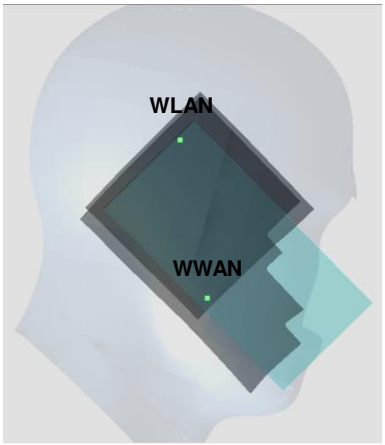
Case 29	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Left Cheek	0.564	0mm	54.3	-73.52	1.11	108.7	1.87	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

Case 30	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Left Cheek	0.428	0mm	67.32	-82.78	9.69	123.4	1.73	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

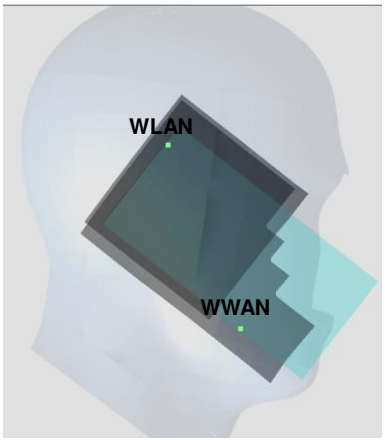
Case 31	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 17	Left Cheek	0.364	0mm	68.28	-86.84	11.64	127.6	1.67	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



Case 32	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Left Cheek	0.528	0mm	53.96	-66.37	2.4	102.2	1.83	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

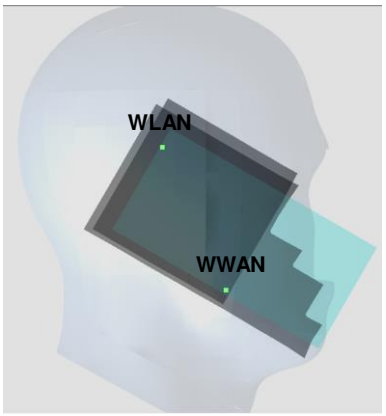


Case 33	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Left Cheek	0.409	0mm	65.95	-82.11	8.92	122.1	1.71	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

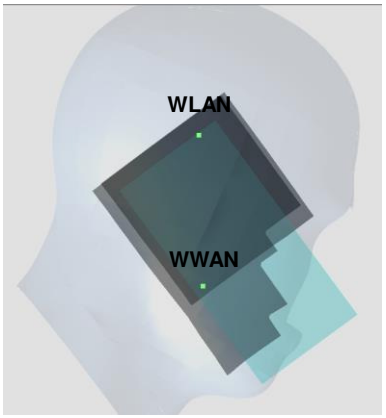


Case 34	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 30	Left Cheek	0.319	0mm	45.19	-72.59	0.98	104.3	1.62	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				

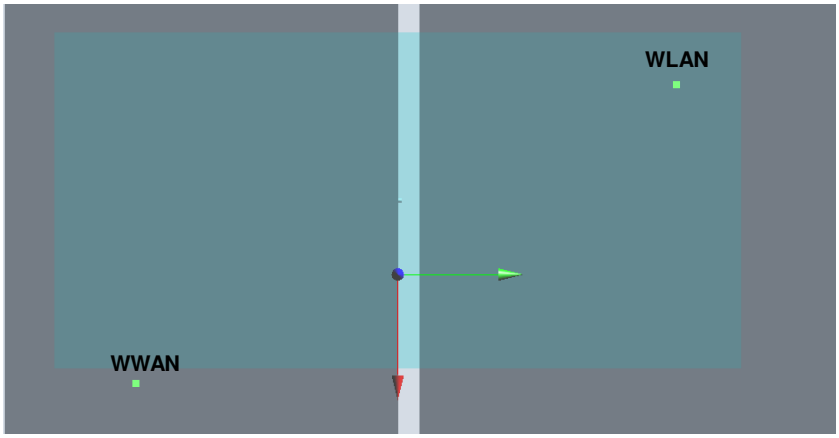
Case 35	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Left Cheek	0.322	0mm	46.61	-73.11	1.23	105.3	1.62	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



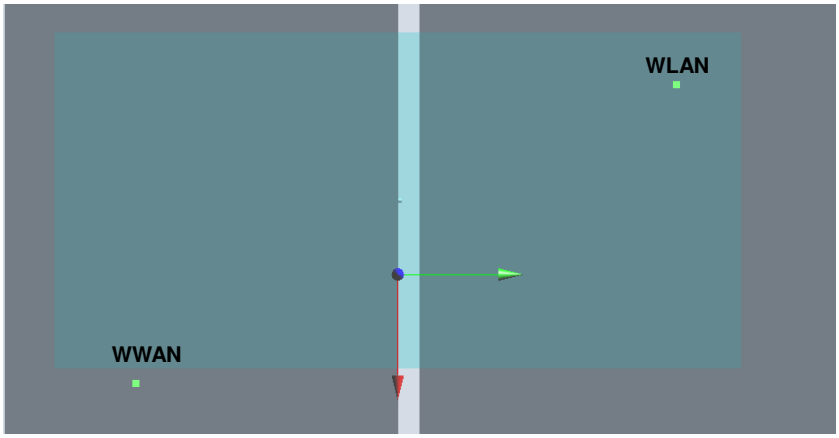
Case 36	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 66	Left Cheek	0.417	0mm	50.4	-62.46	1.05	97.1	1.72	0.02	Not required
	5GHz WLAN		1.301	0mm	7.65	24.66	-1.04				



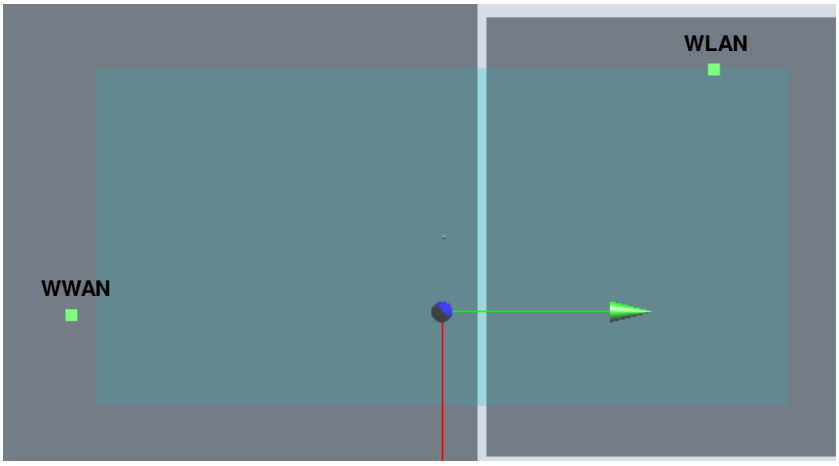
Case 37	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Back	1.194	10mm	41	-60.6	-0.96	142.3	1.60	0.01	Not required
	2.4GHz WLAN		0.403	10mm	-22.43	66.81	-1.98				



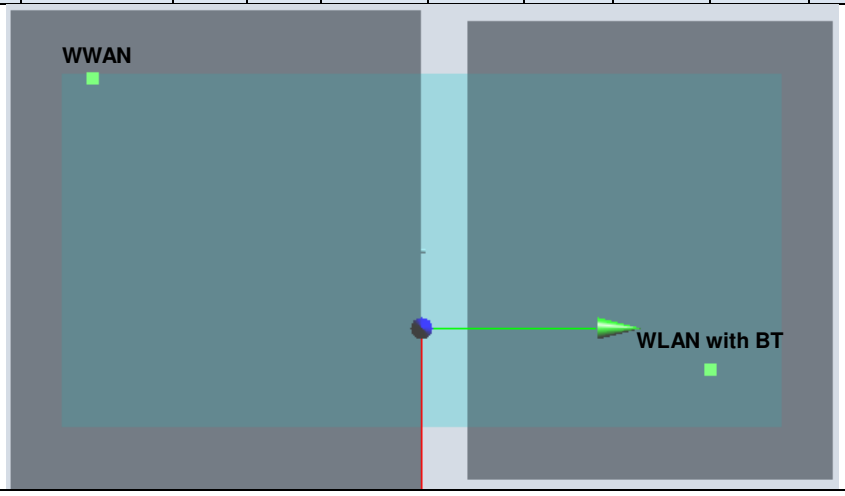
Case 38	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Back	1.194	10mm	41	-60.6	-0.96	146.8	1.67	0.01	Not required
	5GHz WLAN		0.471	10mm	-38.22	63.02	-1.74				



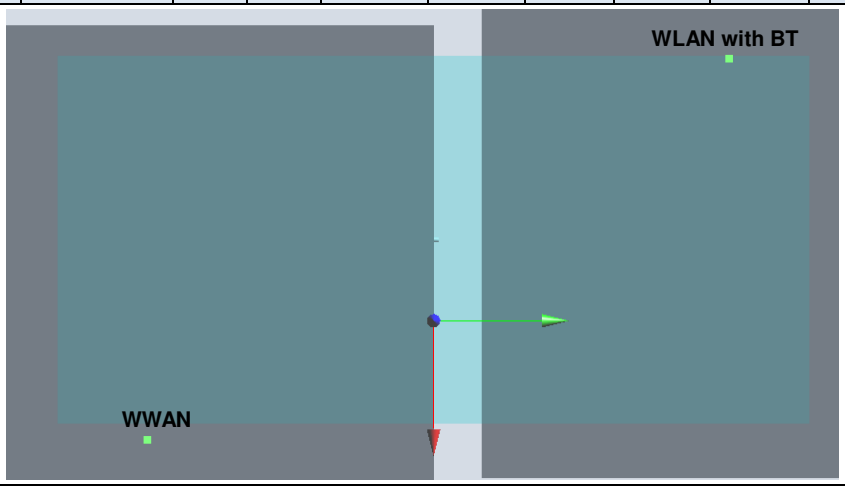
Case 39	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 30	Back	1.189	10mm	45.19	-72.59	0.98	159.2	1.66	0.01	Not required
	5GHz WLAN		0.471	10mm	-38.22	63.02	-1.74				



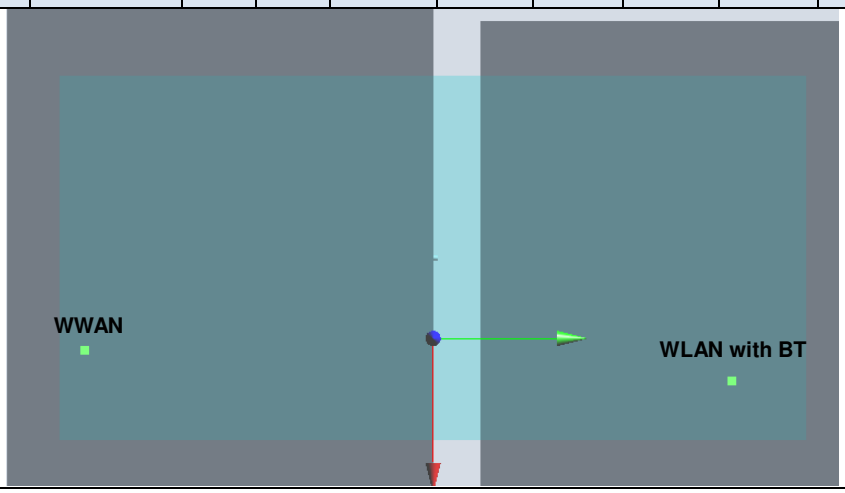
Case 40	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Front	1.151	10mm	-43.2	-66.2	-0.38	146.2	1.61	0.01	Not required
	5GHz WLAN with BT		0.458	10mm	23.37	64.01	-1.87				



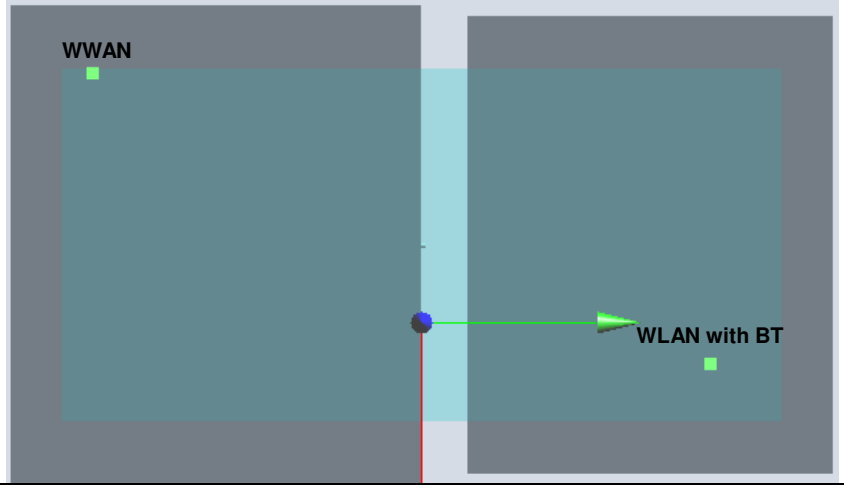
Case 41	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Back	0.994	10mm	39.4	-71.5	-0.07	155.3	1.60	0.01	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



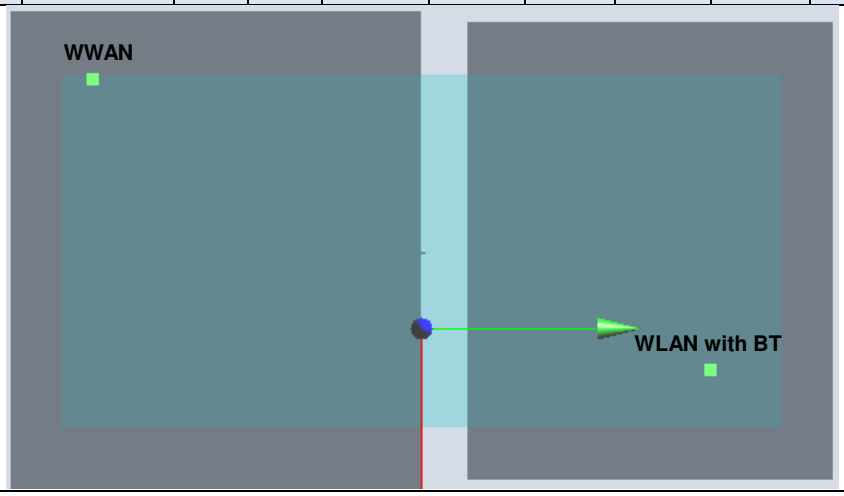
Case 42	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Front	1.196	10mm	18.5	-78.9	-0.78	143.0	1.65	0.01	Not required
	5GHz WLAN with BT		0.458	10mm	23.37	64.01	-1.87				



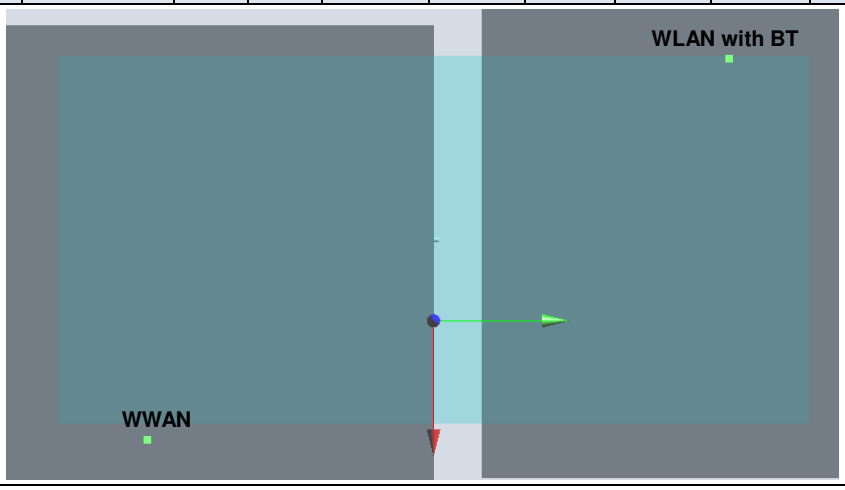
Case 43	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Back	1.156	10mm	-24.5	-78.9	-1.03	142.6	1.67	0.02	Not required
	5GHz WLAN with BT		0.458	10mm	23.37	64.01	-1.87				



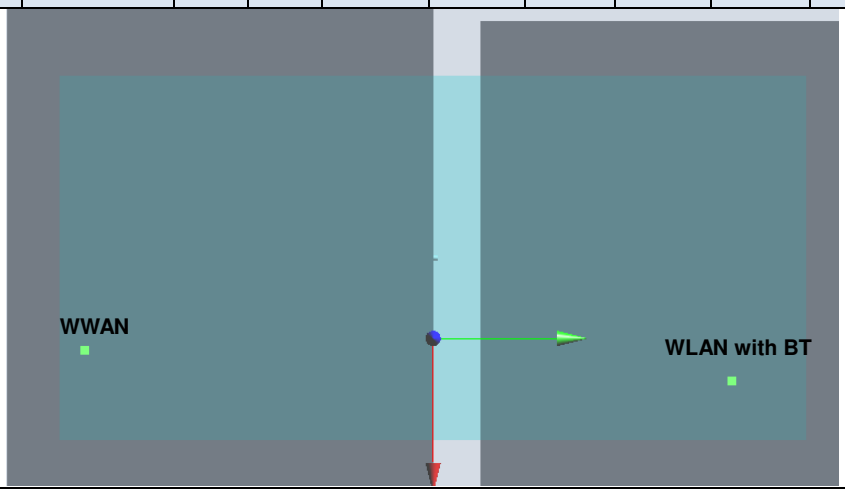
Case 44	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Front	1.156	10mm	-41.7	-67.8	-1.43	147.0	1.61	0.01	Not required
	5GHz WLAN with BT		0.458	10mm	23.37	64.01	-1.87				



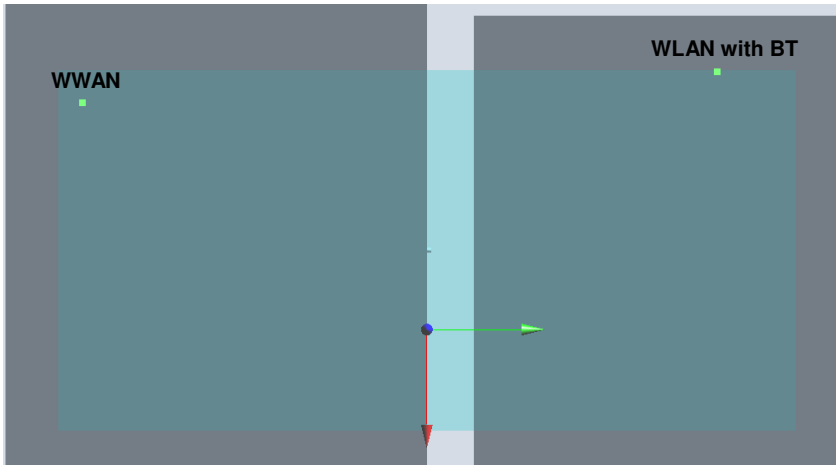
Case 45	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Back	1.085	10mm	39.7	-69.4	-0.91	153.6	1.69	0.01	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



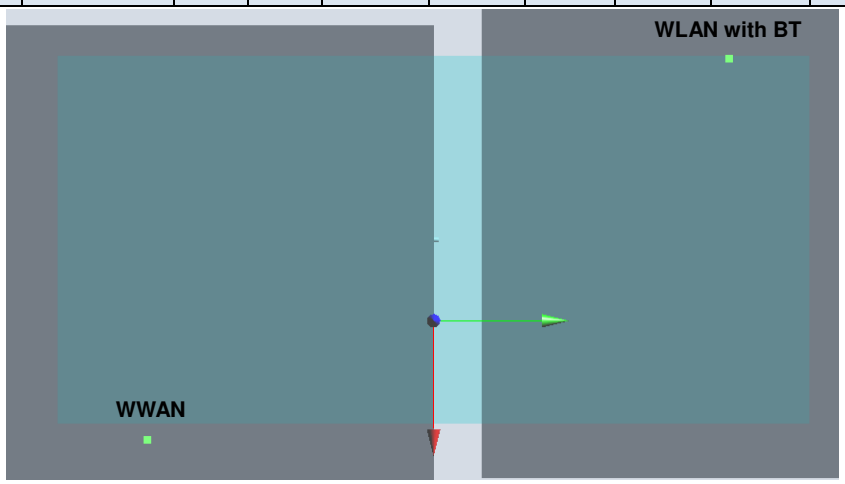
Case 46	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Front	1.164	10mm	18.5	-78.9	-0.78	143.0	1.62	0.01	Not required
	5GHz WLAN with BT		0.458	10mm	23.37	64.01	-1.87				



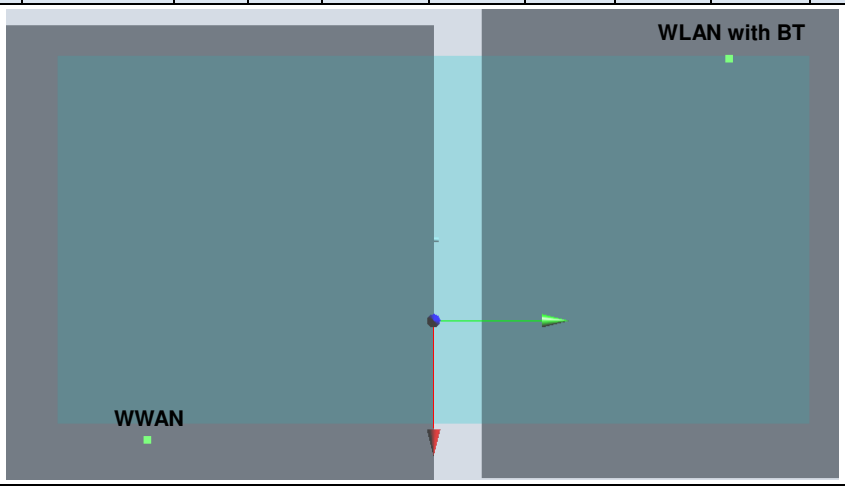
Case 47	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Back	1.006	10mm	-24.4	-80.5	-0.96	144.2	1.61	0.01	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



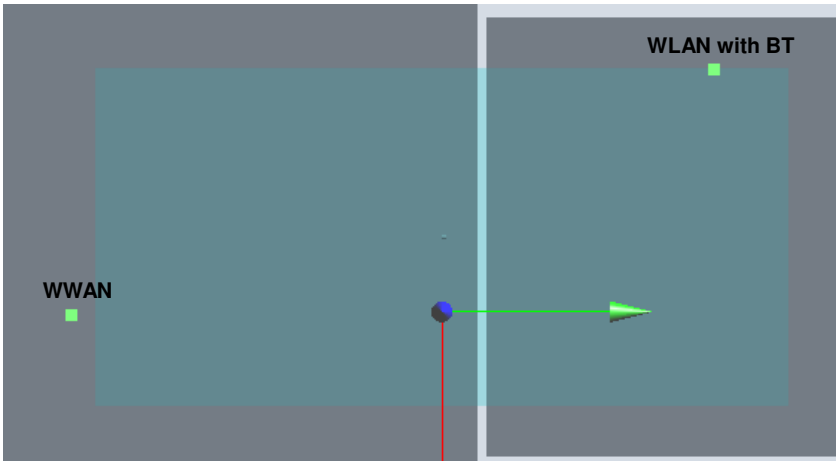
Case 48	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Back	1.007	10mm	20.3	-82.2	0.06	156.6	1.61	0.01	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



Case 49	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 13	Back	1.194	10mm	41	-60.6	-0.96	146.8	1.80	0.02	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



Case 50	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 30	Back	1.189	10mm	16.7	-82.4	-0.04	155.5	1.79	0.02	Not required
	5GHz WLAN with BT		0.605	10mm	-38.22	63.02	-1.74				



16. 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. The bands which are dynamically tuned are split into two separate antennas, so each antenna system will have its own test plan to cover the corresponding 144 tuner states.
3. The operational decryption contains more information about the design and implementation of the dynamic antenna tuning.

16.1 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 (State 98)	Default (State 98)	1	11	21	31	41	51	61	71	81	91	101	111	121	131	142
LTE B5	10M_QPSK	836.5	20525	1	0	Left Cheek	0 mm	0.359	0.592	0.591	0.491	0.279	0.148	0.097	0.385	0.318	0.101	0.185	0.157	0.195	0.436	0.018	0.175	0.206	0.054
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 (State 98)	Default (State 97)	2	12	22	32	42	52	62	72	82	92	102	112	122	132	143
CDMA BC0	1xRTT RC3 SO55	836.52	384	N/A	N/A	Left Cheek	0 mm	0.329	0.554	0.494	0.292	0.219	0.096	0.076	0.25	0.249	0.073	0.139	0.125	0.149	0.312	0.055	0.106	0.063	0.033
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 (State 98)	Default (State 98)	3	13	23	33	43	53	63	73	83	93	103	113	123	133	144
WCDMA B5	RMC12.2Kbps	836.4	4182	N/A	N/A	Left Cheek	0 mm	0.315	0.473	0.471	0.235	0.191	0.199	0.059	0.208	0.209	0.054	0.119	0.106	0.121	0.238	0.231	0.091	0.439	0.005
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 (State 70)	Default (State 12)	4	14	24	34	44	54	64	74	84	94	104	114	124	134	
LTE B13	10M_QPSK	782	23230	1	49	Left Cheek	0 mm	0.34	0.571	0.439	0.551	0.413	0.396	0.075	0.487	0.036	0.073	0.359	0.093	0.015	0.479	0.553	0.095	0.428	
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 (State 99)	Default (State 98)	5	15	25	35	45	55	65	75	85	95	105	115	125	135	
CDMA BC10	1xRTT RC3 SO55	820.5	580	N/A	N/A	Left Cheek	0 mm	0.406	0.615	0.501	0.295	0.219	0.42	0.045	0.217	0.372	0.02	0.195	0.106	0.076	0.288	0.273	0.109	0.336	
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 (State 93)	Default (State 16)	6	16	26	36	46	56	66	76	86	96	106	116	126	136	
LTE B30	10M_QPSK	2310	27710	1	0	Left Cheek	0 mm	0.244	0.393	0.301	0.259	0.3	0.259	0.28	0.001	0.102	0.133	0.348	0.247	0.245	0.345	0.189	0.146	0.191	
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 (State 60)	Default (State 60)	7	17	27	37	47	57	67	77	87	97	107	117	127	137	
LTE B12	10M_QPSK	707.5	23095	1	25	Left Cheek	0 mm	0.213	0.371	0.367	0.141	0.241	0.217	0.164	0.255	0.163	0.063	0.188	0.142	0.028	0.25	0.148	0.138	0.235	
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 (State 60)	Default (State 60)	8	18	28	38	48	58	68	78	88	98	108	118	128	138	
LTE B17	10M_QPSK	710	23790	1	25	Left Cheek	0 mm	0.267	0.416	0.411	0.122	0.286	0.199	0.045	0.238	0.173	0.032	0.194	0.136	0.036	0.321	0.196	0.126	0.269	
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 (State 98)	Default (State 98)	9	19	29	39	49	59	69	79	89	99	109	119	129	139	
LTE B26	15M_QPSK	831.5	26865	1	74	Left Cheek	0 mm	0.329	0.566	0.557	0.231	0.156	0.24	0.295	0.099	0.255	0.243	0.126	0.069	0.549	0.044	0.152	0.066	0.157	
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 (State 130)	Default (State 127)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
LTE B41	20M_QPSK	2549.5	40185	1	99	Left Cheek	0 mm	0.23	0.432	0.405	0.395	0.368	0.397	0.171	0.347	0.101	0.401	0.385	0.382	0.398	0.377	0.404	0.429	0.396	
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 (State 131)	Default (State 127)	11	21	31	41	51	61	71	81	91	101	111	121	131	141	
LTE B7	20M_QPSK	2535	21100	1	49	Left Cheek	0 mm	0.386	0.701	0.597	0.625	0.563	0.118	0.443	0.592	0.198	0.595	0.6	0.596	0.605	0.586	0.667	0.689	0.106	

16.2 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 (State 98)	Default (State 98)	1	11	21	31	41	51	61	71	81	91	101	111	121	131	142
LTE B5	10M_QPSK	836.5	20525	1	0	Back	10 mm	0.74	1.256	1.247	0.906	0.66	0.43	0.25	0.76	0.56	0.25	0.427	0.389	0.349	0.94	0.056	0.4	0.42	0.14
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 (State 97)	Default (State 97)	2	12	22	32	42	52	62	72	82	92	102	112	122	132	143
CDMA BC0	1xRTT RC3 SO32	836.52	384	N/A	N/A	Front	10 mm	0.883	1.623	1.591	0.778	0.748	0.405	0.306	0.778	0.746	0.298	0.478	0.457	0.463	0.978	0.222	0.434	0.296	0.142
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 (State 98)	Default (State 98)	3	13	23	33	43	53	63	73	83	93	103	113	123	133	144
WCDMA B5	RMC12.2Kbps	826.4	4132	N/A	N/A	Front	10 mm	0.795	1.325	1.32	0.804	0.707	0.519	0.237	0.753	0.745	0.224	0.453	0.413	0.45	0.861	0.644	0.356	1.308	0.025
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 (State 5)	Default (State 12)	4	14	24	34	44	54	64	74	84	94	104	114	124	134	
LTE B13	10M_QPSK	782	23230	1	0	Back	10 mm	1	2.061	1.856	1.732	1.768	1.38	0.438	1.918	0.176	0.399	1.573	0.472	0.0796	1.699	1.561	0.482	1.523	
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 (State 99)	Default (State 98)	5	15	25	35	45	55	65	75	85	95	105	115	125	135	
CDMA BC10	1xRTT RC3 SO32	820.5	580	N/A	N/A	Front	10 mm	0.655	1.153	1.124	0.753	0.651	0.981	0.165	0.674	0.891	0.0901	0.431	0.275	0.294	0.604	0.529	0.298	0.703	
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 (State 93)	Default (State 16)	6	16	26	36	46	56	66	76	86	96	106	116	126	136	
LTE B30	10M_QPSK	2355	27710	50	0	Back	10 mm	0.894	1.836	1.497	1.315	1.493	1.311	1.404	0.02	0.57	0.721	1.694	1.271	1.194	1.677	0.987	0.8	1.003	
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 (State 60)	Default (State 60)	7	17	27	37	47	57	67	77	87	97	107	117	127	137	
LTE B12	10M_QPSK	707.5	23095	1	25	Front	10 mm	0.766	1.381	1.333	0.539	1.015	0.798	0.498	0.982	0.623	0.192	0.666	0.549	0.106	0.863	0.569	0.523	0.838	
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 (State 60)	Default (State 60)	8	18	28	38	48	58	68	78	88	98	108	118	128	138	
LTE B17	10M_QPSK	710	23790	1	25	Back	10 mm	0.752	1.285	1.282	0.591	0.963	0.871	0.168	0.826	0.786	0.149	0.717	0.467	0.145	0.972	0.728	0.413	0.982	
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 (State 98)	Default (State 98)	9	19	29	39	49	59	69	79	89	99	109	119	129	139	
LTE B26	15M_QPSK	831.5	26865	1	37	Front	10 mm	0.87	1.606	1.568	0.792	0.647	0.849	0.979	0.429	0.939	0.454	0.477	0.244	1.384	0.179	0.527	0.271	0.573	
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 (State 121)	Default (State 127)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	
LTE B41	20M_QPSK	2506	39750	1	99	Back	10 mm	0.555	1.142	0.857	0.991	0.836	0.958	0.171	0.837	0.0137	0.937	0.943	0.983	0.962	0.926	1.054	1.002	1.082	
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 (State 121)	Default (State 127)	11	21	31	41	51	61	71	81	91	101	111	121	131	141	
LTE B7	20M_QPSK	2510	20850	1	99	Front	10 mm	0.721	1.413	1.149	1.262	1.144	0.0956	0.709	1.123	0.254	1.248	1.242	1.267	1.245	1.243	1.384	1.381	0.0446	

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17. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[(a)]	1/k[(b)]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 17.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.00	N	1	1	1	6.0	6.0
Axial Isotropy	4.70	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.60	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	1.00	R	1.732	1	1	0.6	0.6
Linearity	4.70	R	1.732	1	1	2.7	2.7
System Detection Limits	1.00	R	1.732	1	1	0.6	0.6
Modulation Response	4.68	R	1.732	1	1	2.7	2.7
Readout Electronics	0.30	N	1	1	1	0.3	0.3
Response Time	0.00	R	1.732	1	1	0.0	0.0
Integration Time	2.60	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.00	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.00	R	1.732	1	1	1.7	1.7
Probe Positioner	0.40	R	1.732	1	1	0.2	0.2
Probe Positioning	2.90	R	1.732	1	1	1.7	1.7
Max. SAR Eval.	2.00	R	1.732	1	1	1.2	1.2
Test Sample Related							
Device Positioning	3.03	N	1	1	1	3.0	3.0
Device Holder	3.60	N	1	1	1	3.6	3.6
Power Drift	5.00	R	1.732	1	1	2.9	2.9
Power Scaling	0.00	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.10	R	1.732	1	1	3.5	3.5
SAR correction	0.00	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.03	N	1	0.78	0.71	0.0	0.0
Liquid Conductivity (target)	5.00	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.50	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.68	R	1.732	0.78	0.71	1.7	1.5
Liquid Permittivity Repeatability	0.02	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.00	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.50	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.84	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						11.6%	11.6%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						23.2%	23.1%

Table 17.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	7.00	N	1	1	1	7.0	7.0
Axial Isotropy	4.70	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.60	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	2.00	R	1.732	1	1	1.2	1.2
Linearity	4.70	R	1.732	1	1	2.7	2.7
System Detection Limits	1.00	R	1.732	1	1	0.6	0.6
Modulation Response	4.68	R	1.732	1	1	2.7	2.7
Readout Electronics	0.30	N	1	1	1	0.3	0.3
Response Time	0.00	R	1.732	1	1	0.0	0.0
Integration Time	2.60	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.00	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.00	R	1.732	1	1	1.7	1.7
Probe Positioner	0.40	R	1.732	1	1	0.2	0.2
Probe Positioning	6.70	R	1.732	1	1	3.9	3.9
Max. SAR Eval.	4.00	R	1.732	1	1	2.3	2.3
Test Sample Related							
Device Positioning	3.03	N	1	1	1	3.0	3.0
Device Holder	3.60	N	1	1	1	3.6	3.6
Power Drift	5.00	R	1.732	1	1	2.9	2.9
Power Scaling	0.00	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.60	R	1.732	1	1	3.8	3.8
SAR correction	0.00	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.03	N	1	0.78	0.71	0.0	0.0
Liquid Conductivity (target)	5.00	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.50	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.68	R	1.732	0.78	0.71	1.7	1.5
Liquid Permittivity Repeatability	0.02	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.00	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.50	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.84	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						12.9%	12.9%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						25.9%	25.8%

Table 17.3. Uncertainty Budget for frequency range 3 GHz to 6 GHz

18. References

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

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