FCC SAR TEST REPORT

FCC ID	:	**UZ7TC26AK**
Equipment	:	**Touch computer**
Brand Name	:	**Zebra**
Model Name	:	**TC26AK**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza Holtsville, NY 11742**
Standard	:	**FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013**

The product was received on Jan. 15, 2020 and testing was started from Mar. 26, 2020 and completed on Apr. 24, 2020. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

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

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FA010720	01	Initial issue of report	Apr. 30, 2020

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Zebra Technologies Corporation, Touch computer, TC26AK, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 0mm)	Hotspot (Separation 10mm)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	WCDMA II	1.26	0.84	1.33	3.36	1.59
	WCDMA IV	1.20	1.17	1.29	3.49	
	WCDMA V	0.85	0.54	0.83		
	LTE Band 7	1.38	0.60	1.13		
	LTE Band 12 / 17	0.40	0.57	0.57		
	LTE Band 13	0.46	0.53	0.53		
	LTE Band 14	0.56	0.33	0.57		
	LTE Band 2 / 25	0.64	0.80	1.28	2.95	
	LTE Band 5 / 26	0.61	0.28	0.64		
	LTE Band 41	0.64	0.44	0.75		
	LTE Band 4 / 66	1.07	1.29	1.28	3.07	
DTS	2.4GHz WLAN	1.19	0.10	0.42		1.59
NII	5GHz WLAN	1.32	0.79	0.98	2.20	1.58
DSS	Bluetooth	0.09	0.00	0.03		1.41
Date of Testing:		2020/3/26 ~ 2020/4/24				

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

Reviewed by: Jason Wang
Report Producer: Wan Liu

2. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 941225 D07 UMPC Mini Tablet v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	Touch computer
Brand Name	Zebra
Model Name	TC26AK
FCC ID	UZ7TC26AK
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz
Mode	RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DV0
SW Version	Android version 10
OS Version	FUSION_QA_2_1.0.0.008_Q
FW Version	Zebra/TC26PA/TC26:10/03-09-09.00-QN-U00-PRD/Nabe03091333:userdebug/test-keys
MFD	20FEB20
EUT Stage	Engineering sample
Remark: 1. This device WLAN 2.4GHz/5.2GHz/5.8GHz supports Hotspot operation and Bluetooth support tethering applications. 2. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of WCDMA B2/B4 and LTE B2/B4/B25/B66. 3. There are three batteries of these device, RF exposure evaluation chose battery 1 as the main test, battery 2 and 3 was spot checked the worst case of battery 1.	

Specification of Accessories				
AC Adapter	Brand Name	Zebra	Part Number	PWR-WUA5V12W0US
AC Adapter	Brand Name	Zebra	Part Number	PWR-WUA5V12W0EU
Battery 1	Brand Name	Zebra	Part Number	BT-000409-00
Battery 2	Brand Name	Zebra	Part Number	BT-000410-50
Battery 3	Brand Name	Zebra	Part Number	BT-000411-08
USB Cable (TypeA plug to TypeC plug)	Brand Name	Zebra	Part Number	CBL-TC5X-USBC2A-01
Headset 3.5mm type with PTT/micassy	Brand Name	Zebra	Part Number	HDST-35MM-PTVP-01
Adapter Cable PTT headset (3.5mm to 3.5mm)	Brand Name	Zebra	Part Number	CBL-TC51-HDST35-01
Snap on Trigger handle	Brand Name	Zebra	Part Number	TRG-TC2Y-SNP1-01
Belt Holster	Brand Name	Zebra	Part Number	SG-TC2Y-HLSTR1-01
Wearable Arm Mount	Brand Name	Zebra	Part Number	SG-TC2Y-ARMNT-01

Supported Unit Used in Test Configuration and System				
Type C to 3.5mm headset adaptor	Brand Name	Google	Part Number	Pixel-2-2XL

3.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>UZ7TC26AK</td></tr>
<tr><td>Equipment Name</td><td>Touch computer</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 13: 777 MHz ~ 787 MHz
LTE Band 14: 788 MHz ~ 798 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 25: 1850 MHz ~ 1915 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 66: 1710 MHz ~ 1780 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 14: 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 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 / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>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 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in hotspot mode that LTE B2 / B4 / B25 / B66 power reduction applied to satisfy SAR compliance.</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 14				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Channel #	Channel #	Freq.(MHz)
L	23305	790.5	23330	793
M	23330	793		
H	23355	795.5		
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 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
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	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

4. RF Exposure Limits

4.1 Uncontrolled Environment

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

4.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

5. Specific Absorption Rate (SAR)

5.1 Introduction

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

5.2 SAR Definition

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

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

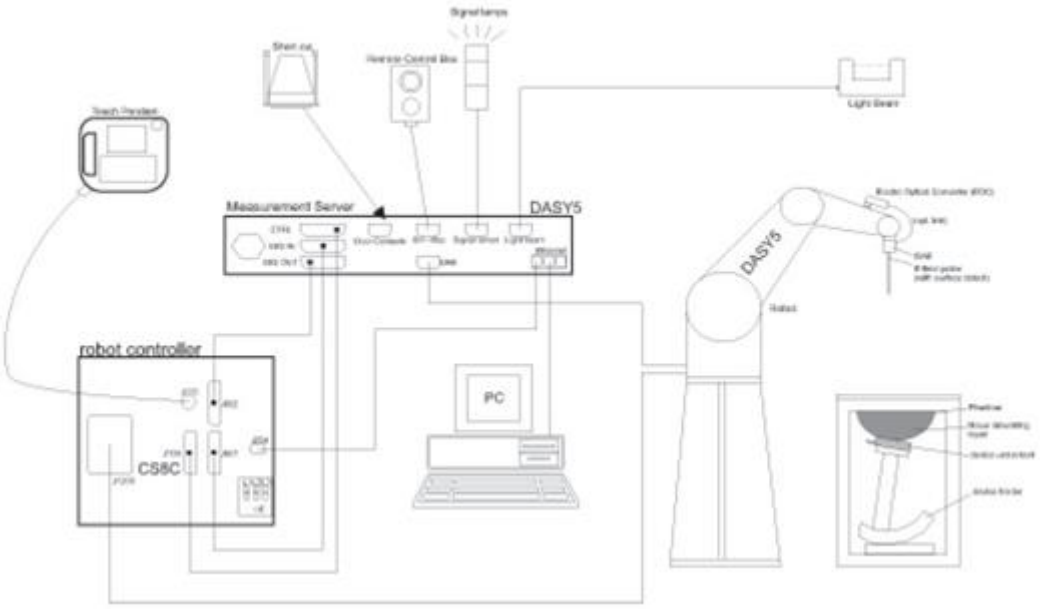
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

6. System Description and Setup

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



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

6.1 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

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

6.2 Data Acquisition Electronics (DAE)

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

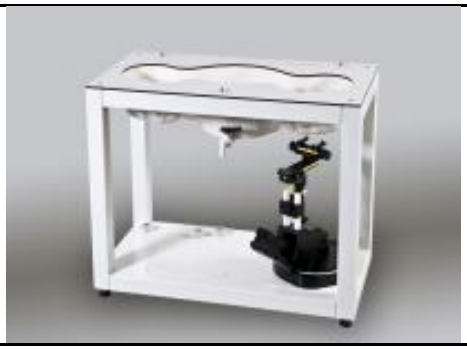
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

6.3 Phantom

<SAM Twin Phantom>

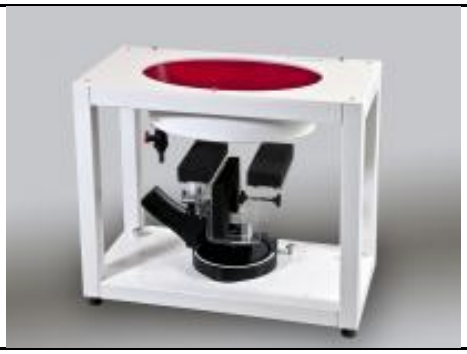
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



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

6.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

7.1 Spatial Peak SAR Evaluation

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

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

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

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

7.2 Power Reference Measurement

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

7.3 Area Scan

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

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

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

7.4 Zoom Scan

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

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

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

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

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

7.5 Volume Scan Procedures

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

7.6 Power Drift Monitoring

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

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Mar. 08, 2019	Mar. 06, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d167	Nov. 25, 2019	Nov. 24, 2020
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Mar. 07, 2019	Mar. 05, 2021
SPEAG	1900MHz System Validation Kit	D1900V2	5d185	Mar. 07, 2019	Mar. 05, 2021
SPEAG	2450MHz System Validation Kit	D2450V2	929	Nov. 21, 2019	Nov. 20, 2020
SPEAG	2600MHz System Validation Kit	D2600V2	1078	Mar. 06, 2019	Mar. 04, 2021
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	Sep. 27, 2018	Sep. 25, 2020
SPEAG	Data Acquisition Electronics	DAE4	376	Dec. 06, 2019	Dec. 05, 2020
SPEAG	Data Acquisition Electronics	DAE3	495	May. 21, 2019	May. 20, 2020
SPEAG	Data Acquisition Electronics	DAE3	577	Sep. 17, 2019	Sep. 16, 2020
SPEAG	Data Acquisition Electronics	DAE4	854	May. 21, 2019	May. 20, 2020
SPEAG	Data Acquisition Electronics	DAE4	1311	Aug. 27, 2019	Aug. 26, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3642	Apr. 29, 2019	Apr. 28, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	3728	Feb. 04, 2020	Feb. 03, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Sep. 26, 2019	Sep. 25, 2020
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 22, 2019	Jul. 21, 2020
RCPTWN	Thermometer	HTC-1	TM685-1	Nov. 12, 2019	Nov. 11, 2020
RCPTWN	Thermometer	HTC-1	TM560-2	Nov. 12, 2019	Nov. 11, 2020
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 31, 2019	Oct. 30, 2020
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 27, 2019	May. 26, 2020
R&S	BT Base Station	CBT32	100519	Jun. 04, 2019	Jun. 03, 2020
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Nov. 20, 2019	Nov. 19, 2020
Agilent	ENA Network Analyzer	E5071C	MY46104758	Sep. 06, 2019	Sep. 05, 2020
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 18, 2019	Sep. 17, 2020
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3169	Sep. 10, 2019	Sep. 09, 2020
Anritsu	Power Meter	ML2495A	1036004	Aug. 08, 2019	Aug. 07, 2020
Anritsu	Power Sensor	MA2411B	1027253	Aug. 08, 2019	Aug. 07, 2020
Anritsu	Power Meter	ML2495A	1419002	May. 29, 2019	May. 28, 2020
Anritsu	Power Sensor	MA2411B	1339124	May. 29, 2019	May. 28, 2020
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 27, 2019	Aug. 26, 2020
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 27, 2019	Jun. 26, 2020
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 16, 2019	Oct. 15, 2020
Mini-Circuits	Power Amplifier	ZVE-8G+	6382	Aug. 12, 2019	Aug. 11, 2020
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.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D750V3, SN: 1107, D1750V2, SN: 1112, D1900V2, SN: 5d185, D2600V2, SN: 1078, D5GHzV2, SN: 1006, can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

9. System Verification

9.1 Tissue Simulating Liquids

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

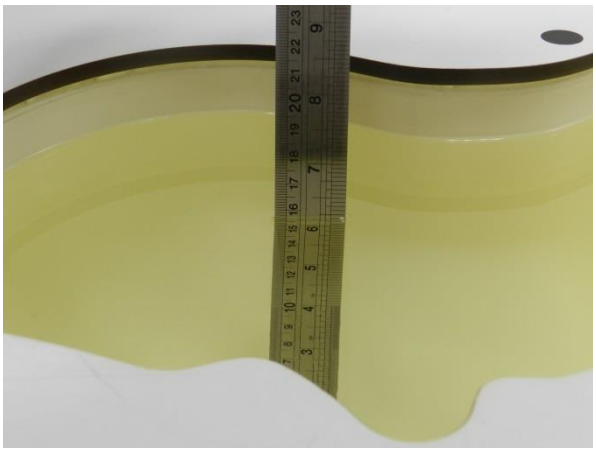


Fig 10.1Photo of Liquid Height for Head SAR

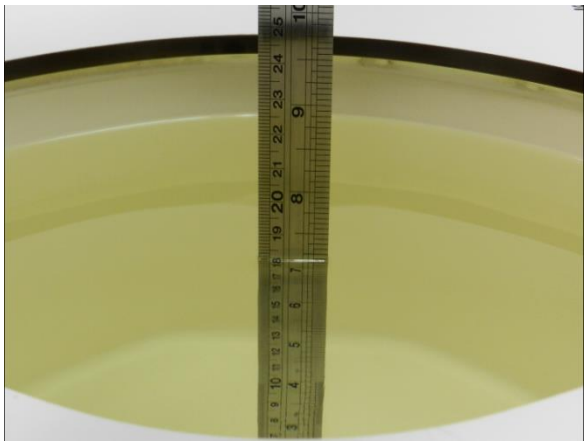


Fig 10.2 Photo of Liquid Height for Body SAR

9.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
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

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)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	22.3	0.890	43.548	0.89	41.90	0.00	3.93	±5	2020/3/26
750	22.4	0.890	42.349	0.89	41.90	0.00	1.07	±5	2020/4/8
750	22.6	0.901	42.070	0.89	41.90	1.24	0.41	±5	2020/4/11
835	22.5	0.887	42.375	0.90	41.50	-1.44	2.11	±5	2020/4/9
835	22.7	0.899	42.474	0.90	41.50	-0.11	2.35	±5	2020/4/13
835	22.8	0.904	41.453	0.90	41.50	0.44	-0.11	±5	2020/4/21
1750	22.5	1.389	41.369	1.37	40.10	1.39	3.16	±5	2020/4/9
1750	22.6	1.365	40.523	1.37	40.10	-0.36	1.05	±5	2020/4/11
1750	22.6	1.391	40.433	1.37	40.10	1.53	0.83	±5	2020/4/15
1900	22.5	1.390	38.710	1.40	40.00	-0.71	-3.23	±5	2020/4/9
1900	22.7	1.416	38.866	1.40	40.00	1.14	-2.84	±5	2020/4/13
1900	22.7	1.428	39.477	1.40	40.00	2.00	-1.31	±5	2020/4/19
1900	22.8	1.418	39.377	1.40	40.00	1.29	-1.56	±5	2020/4/21
2450	22.5	1.800	39.388	1.80	39.20	0.00	0.48	±5	2020/4/16
2450	22.8	1.752	38.735	1.80	39.20	-2.67	-1.19	±5	2020/4/22
2600	22.4	1.964	39.381	1.96	39.00	0.20	0.98	±5	2020/4/8
2600	22.8	1.922	38.357	1.96	39.00	-1.94	-1.65	±5	2020/4/22
5250	22.5	4.885	36.480	4.71	35.95	3.72	1.47	±5	2020/4/17
5250	22.5	4.690	36.880	4.71	35.95	-0.42	2.59	±5	2020/4/21
5600	22.6	4.903	35.363	5.07	35.50	-3.29	-0.39	±5	2020/4/24
5750	22.6	5.063	35.131	5.22	35.35	-3.01	-0.62	±5	2020/4/24

9.3 System Performance Check Results

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

Date	Frequency (MHz)	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 (%)
2020/3/26	750	250	D750V3-1107	EX3DV4 - SN3642	DAE4 Sn376	2.14	8.32	8.56	2.88
2020/4/8	750	250	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn854	2.21	8.32	8.84	6.25
2020/4/11	750	250	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn854	2.03	8.32	8.12	-2.40
2020/4/9	835	250	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn854	2.34	9.55	9.36	-1.99
2020/4/13	835	250	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn854	2.50	9.55	10	4.71
2020/4/21	835	250	D835V2-4d167	EX3DV4 - SN3728	DAE3 Sn495	2.38	9.55	9.52	-0.31
2020/4/9	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	9.69	36.70	38.76	5.61
2020/4/11	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	9.38	36.70	37.52	2.23
2020/4/15	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	8.74	36.70	34.96	-4.74
2020/4/9	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn854	9.47	39.40	37.88	-3.86
2020/4/13	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn854	10.40	39.40	41.6	5.58
2020/4/19	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1311	10.60	39.40	42.4	7.61
2020/4/21	1900	250	D1900V2-5d185	EX3DV4 - SN3728	DAE3 Sn495	9.99	39.40	39.96	1.42
2020/4/16	2450	250	D2450V2-929	EX3DV4 - SN3931	DAE4 Sn854	13.30	53.10	53.2	0.19
2020/4/22	2450	250	D2450V2-929	EX3DV4 - SN3728	DAE3 Sn495	12.40	53.10	49.6	-6.59
2020/4/8	2600	250	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn854	14.20	57.60	56.8	-1.39
2020/4/22	2600	250	D2600V2-1078	EX3DV4 - SN3728	DAE3 Sn495	14.30	57.60	57.2	-0.69
2020/4/17	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN3931	DAE4 Sn854	8.27	80.70	82.7	2.48
2020/4/21	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN7306	DAE3 Sn577	7.73	80.70	77.3	-4.21
2020/4/24	5600	100	D5GHzV2-1006-5600	EX3DV4 - SN3728	DAE3 Sn495	8.33	83.30	83.3	0.00
2020/4/24	5750	100	D5GHzV2-1006-5750	EX3DV4 - SN3728	DAE3 Sn495	7.66	80.40	76.6	-4.73

Date	Frequency (MHz)	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 (%)
2020/4/9	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	5.16	19.40	20.64	6.39
2020/4/11	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	4.97	19.40	19.88	2.47
2020/4/15	1750	250	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn854	4.69	19.40	18.76	-3.30
2020/4/9	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn854	4.93	20.50	19.72	-3.80
2020/4/13	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn854	5.42	20.50	21.68	5.76
2020/4/19	1900	250	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1311	5.59	20.50	22.36	9.07
2020/4/21	1900	250	D1900V2-5d185	EX3DV4 - SN3728	DAE3 Sn495	5.18	20.50	20.72	1.07
2020/4/17	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN3931	DAE4 Sn854	2.33	23.20	23.3	0.43
2020/4/21	5250	100	D5GHzV2-1006-5250	EX3DV4 - SN7306	DAE3 Sn577	2.20	23.20	22	-5.17
2020/4/24	5600	100	D5GHzV2-1006-5600	EX3DV4 - SN3728	DAE3 Sn495	2.35	23.80	23.5	-1.26
2020/4/24	5750	100	D5GHzV2-1006-5750	EX3DV4 - SN3728	DAE3 Sn495	2.16	22.90	21.6	-5.68

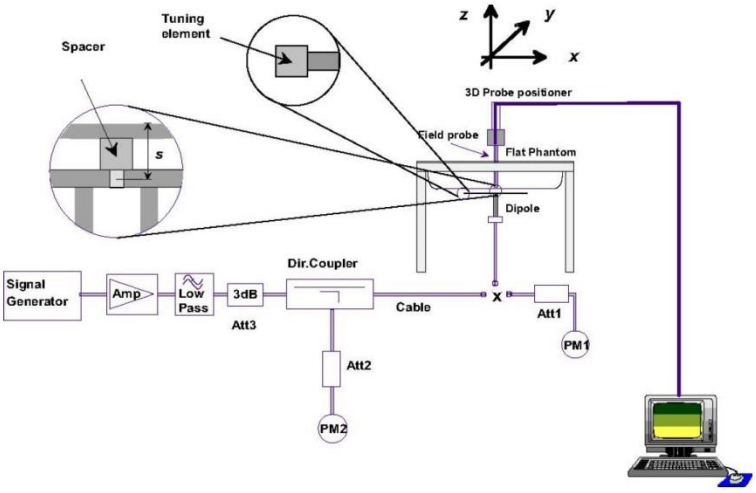


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 Ear and handset reference point

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

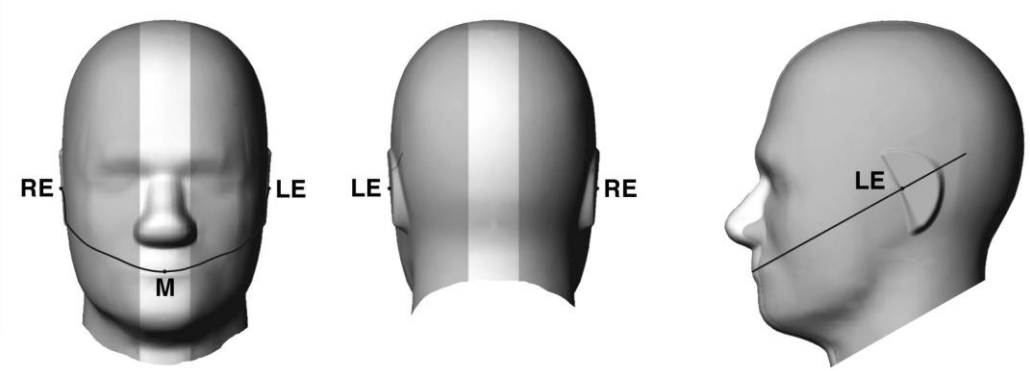


Fig 9.1.1 Front, back, and side views of SAM twin phantom

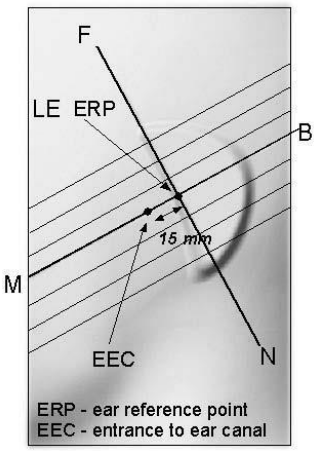


Fig 9.1.2 Close-up side view of phantom showing the ear region.

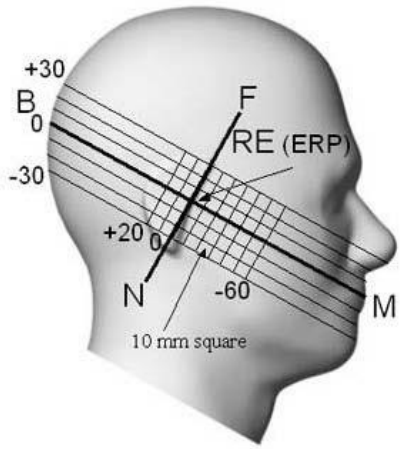


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.2 Definition of the cheek position

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

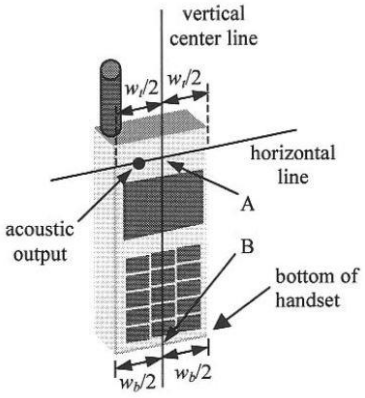


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

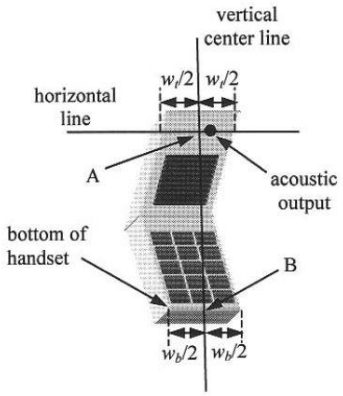


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

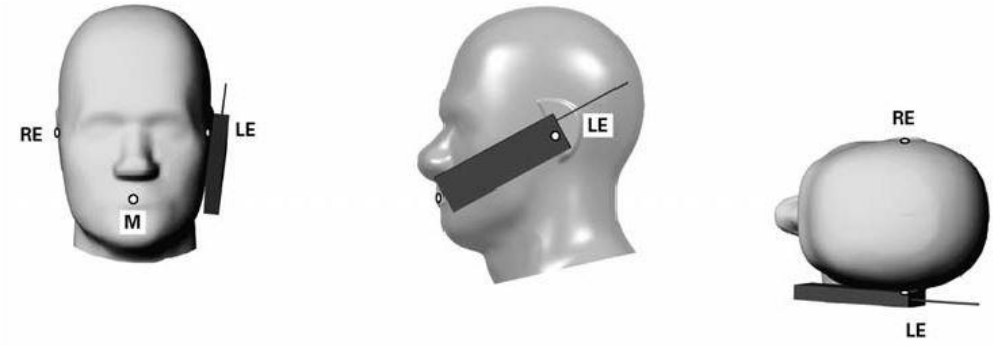


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3 Definition of the tilt position

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

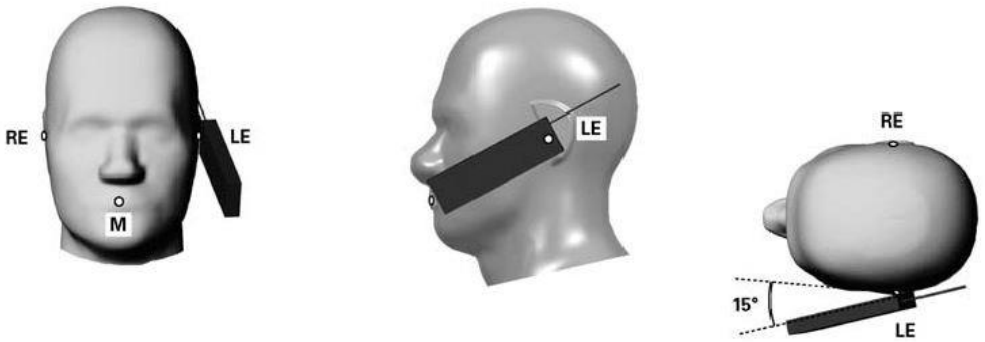


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

10.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

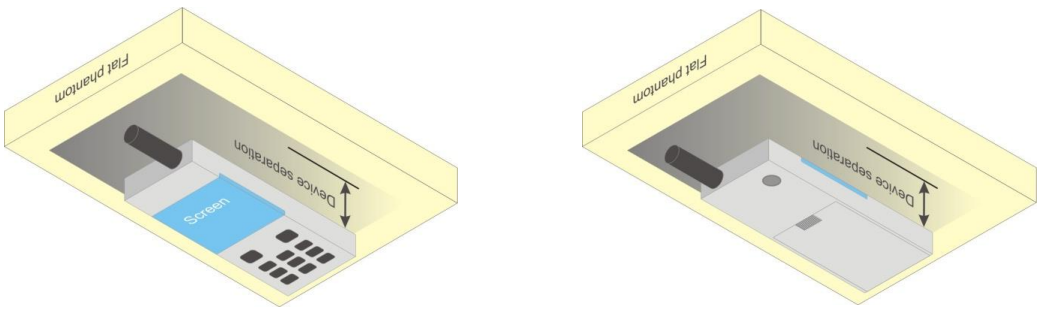


Fig 9.4 Body Worn Position

10.5 Product Specific Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

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

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

10.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

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

11. UMTS/LTE Output Power (Unit: dBm)

<WCDMA Conducted Power>

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

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

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

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

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

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

Setup Configuration

HSUPA Setup Configuration:

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

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

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

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

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

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

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

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

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

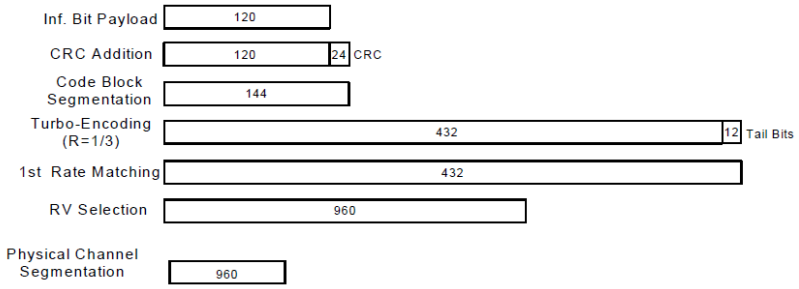


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

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

<Default Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	23.20	23.58	23.49	24.00	24.27	24.41	24.40	24.50	25.07	25.39	24.72	25.50
3GPP Rel 99	RMC 12.2Kbps	23.31	23.75	23.71	24.00	24.40	24.48	24.47	24.50	25.25	25.46	25.12	25.50
3GPP Rel 6	HSDPA Subtest-1	22.25	22.47	22.60	23.00	23.30	23.44	23.46	23.50	24.12	24.27	23.60	24.50
3GPP Rel 6	HSDPA Subtest-2	22.28	22.50	22.64	23.00	23.37	23.46	23.43	23.50	24.13	24.28	23.62	24.50
3GPP Rel 6	HSDPA Subtest-3	21.80	22.01	22.13	22.50	22.82	22.97	22.94	23.00	23.58	23.82	23.12	24.00
3GPP Rel 6	HSDPA Subtest-4	21.78	21.96	22.10	22.50	22.81	22.93	22.94	23.00	23.62	23.79	23.11	24.00
3GPP Rel 8	DC-HSDPA Subtest-1	22.22	22.47	22.57	23.00	23.29	23.40	23.45	23.50	24.02	24.21	23.46	24.50
3GPP Rel 8	DC-HSDPA Subtest-2	22.23	22.41	22.63	23.00	23.28	23.46	23.34	23.50	24.06	24.32	23.61	24.50
3GPP Rel 8	DC-HSDPA Subtest-3	21.72	22.01	22.11	22.50	22.79	22.97	22.94	23.00	23.52	23.80	23.12	24.00
3GPP Rel 8	DC-HSDPA Subtest-4	21.78	21.91	22.07	22.50	22.78	22.91	22.91	23.00	23.62	23.80	23.06	24.00
3GPP Rel 6	HSUPA Subtest-1	22.24	22.51	22.62	23.00	23.35	23.42	23.44	23.50	24.07	24.28	23.57	24.50
3GPP Rel 6	HSUPA Subtest-2	20.28	20.39	20.67	21.00	21.32	21.49	21.44	21.50	22.04	22.28	21.60	22.50
3GPP Rel 6	HSUPA Subtest-3	21.24	21.49	21.65	22.00	22.37	22.42	22.42	22.50	23.04	23.29	22.59	23.50
3GPP Rel 6	HSUPA Subtest-4	20.25	20.46	20.58	21.00	21.33	21.44	21.38	21.50	22.09	22.27	21.54	22.50
3GPP Rel 6	HSUPA Subtest-5	22.20	22.40	22.60	23.00	23.37	23.39	23.40	23.50	24.14	24.32	23.62	24.50

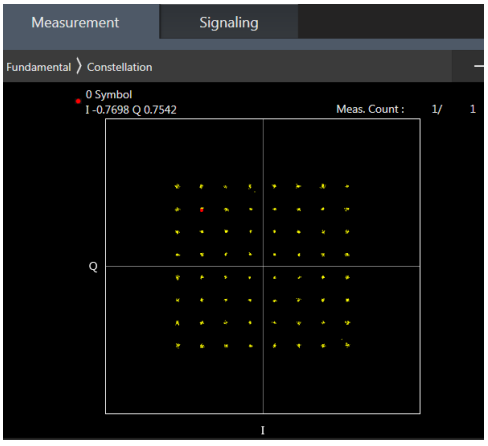
<Reduced Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	AMR 12.2Kbps	23.24	23.31	23.30	23.50	22.65	22.71	22.68	23.00
3GPP Rel 99	RMC 12.2Kbps	23.25	23.32	23.31	23.50	22.86	22.93	22.89	23.00
3GPP Rel 6	HSDPA Subtest-1	21.84	22.05	22.20	22.50	21.70	21.60	21.89	22.00
3GPP Rel 6	HSDPA Subtest-2	21.80	22.06	22.21	22.50	21.73	21.63	21.93	22.00
3GPP Rel 6	HSDPA Subtest-3	21.33	21.46	21.57	22.00	21.25	21.14	21.42	21.50
3GPP Rel 6	HSDPA Subtest-4	21.27	21.42	21.61	22.00	21.23	21.09	21.39	21.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.76	22.04	22.13	22.50	21.67	21.60	21.86	22.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.78	21.95	22.04	22.50	21.68	21.54	21.92	22.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.25	21.45	21.59	22.00	21.17	21.14	21.40	21.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.38	21.38	21.66	22.00	21.23	21.04	21.36	21.50
3GPP Rel 6	HSUPA Subtest-1	21.78	21.98	22.10	22.50	21.69	21.64	21.91	22.00
3GPP Rel 6	HSUPA Subtest-2	19.74	19.84	20.16	20.50	19.73	19.52	19.96	20.00
3GPP Rel 6	HSUPA Subtest-3	20.72	20.97	21.10	21.50	20.69	20.62	20.94	21.00
3GPP Rel 6	HSUPA Subtest-4	19.66	20.05	20.00	20.50	19.70	19.59	19.87	20.00
3GPP Rel 6	HSUPA Subtest-5	21.60	22.00	22.02	22.50	21.65	21.53	21.89	22.00

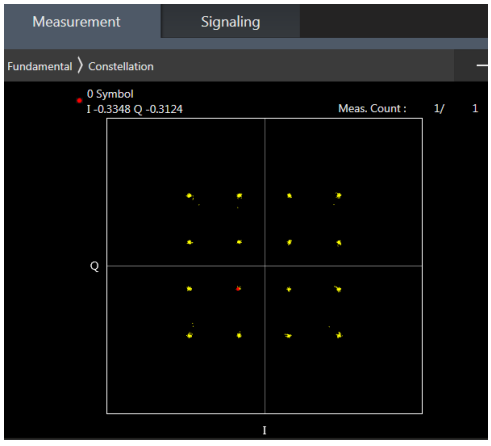
<LTE Conducted Power>

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 B12/B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2/4/5/17 SAR test was covered by Band 25/66/26/12; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM



16QAM

Default Power Mode

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	24.30	24.40	24.42	24.5	0
20	QPSK	1	49	24.29	24.35	24.39		
20	QPSK	1	99	24.29	24.05	22.83		
20	QPSK	50	0	23.39	23.49	23.50	23.5	1
20	QPSK	50	24	23.38	23.48	23.44		
20	QPSK	50	50	23.38	23.41	23.43		
20	QPSK	100	0	23.30	23.46	23.49		
20	16QAM	1	0	23.44	23.48	23.43	23.5	1
20	16QAM	1	49	23.49	23.47	23.46		
20	16QAM	1	99	23.43	23.41	22.21		
20	16QAM	50	0	22.48	22.43	22.48	22.5	2
20	16QAM	50	24	22.48	22.49	22.48		
20	16QAM	50	50	22.50	22.44	22.44		
20	16QAM	100	0	22.42	22.42	22.40		
20	64QAM	1	0	22.42	22.47	22.46	22.5	2
20	64QAM	1	49	22.44	22.40	22.44		
20	64QAM	1	99	22.49	22.45	21.28		
20	64QAM	50	0	21.41	21.40	21.44	21.5	3
20	64QAM	50	24	21.48	21.41	21.40		
20	64QAM	50	50	21.41	21.46	21.46		
20	64QAM	100	0	21.44	21.46	21.40		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	24.15	24.20	24.25	24.5	0
15	QPSK	1	37	24.12	24.23	24.25		
15	QPSK	1	74	24.20	23.90	22.83		
15	QPSK	36	0	23.36	23.32	23.31	23.5	1
15	QPSK	36	20	23.25	23.33	23.29		
15	QPSK	36	39	23.34	23.34	23.34		
15	QPSK	75	0	23.10	23.43	23.31		
15	16QAM	1	0	23.29	23.42	23.26	23.5	1
15	16QAM	1	37	23.48	23.28	23.31		
15	16QAM	1	74	23.42	23.36	22.12		
15	16QAM	36	0	22.37	22.37	22.39	22.5	2
15	16QAM	36	20	22.28	22.31	22.30		
15	16QAM	36	39	22.45	22.42	22.36		
15	16QAM	75	0	22.27	22.29	22.30		
15	64QAM	1	0	22.25	22.27	22.39	22.5	2
15	64QAM	1	37	22.29	22.20	22.40		
15	64QAM	1	74	22.48	22.43	21.23		
15	64QAM	36	0	21.30	21.33	21.42	21.5	3
15	64QAM	36	20	21.38	21.25	21.39		
15	64QAM	36	39	21.32	21.29	21.37		
15	64QAM	75	0	21.42	21.33	21.30		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	24.24	24.36	24.31	24.5	0
10	QPSK	1	25	24.19	24.18	24.26		
10	QPSK	1	49	24.27	24.02	22.81		
10	QPSK	25	0	23.34	23.36	23.41	23.5	1

10	QPSK	25	12	23.19	23.38	23.39		
10	QPSK	25	25	23.29	23.37	23.29		
10	QPSK	50	0	23.17	23.36	23.33		
10	16QAM	1	0	23.26	23.47	23.40		
10	16QAM	1	25	23.40	23.32	23.40	23.5	1
10	16QAM	1	49	23.37	23.24	22.17		
10	16QAM	25	0	22.39	22.25	22.40		
10	16QAM	25	12	22.35	22.42	22.42	22.5	2
10	16QAM	25	25	22.48	22.36	22.25		
10	16QAM	50	0	22.29	22.29	22.33		
10	64QAM	1	0	22.23	22.42	22.39		
10	64QAM	1	25	22.26	22.24	22.33	22.5	2
10	64QAM	1	49	22.46	22.27	21.19		
10	64QAM	25	0	21.23	21.20	21.38		
10	64QAM	25	12	21.43	21.35	21.28	21.5	3
10	64QAM	25	25	21.27	21.29	21.41		
10	64QAM	50	0	21.26	21.34	21.34		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	24.16	24.33	24.30		
5	QPSK	1	12	24.17	24.24	24.29	24.5	0
5	QPSK	1	24	24.25	23.96	22.75		
5	QPSK	12	0	23.30	23.46	23.36		
5	QPSK	12	7	23.18	23.31	23.35	23.5	1
5	QPSK	12	13	23.31	23.26	23.29		
5	QPSK	25	0	23.22	23.43	23.29		
5	16QAM	1	0	23.42	23.44	23.40		
5	16QAM	1	12	23.40	23.29	23.42	23.5	1
5	16QAM	1	24	23.28	23.29	22.21		
5	16QAM	12	0	22.45	22.36	22.48		
5	16QAM	12	7	22.28	22.34	22.38	22.5	2
5	16QAM	12	13	22.46	22.26	22.32		
5	16QAM	25	0	22.39	22.29	22.27		
5	64QAM	1	0	22.29	22.37	22.40		
5	64QAM	1	12	22.29	22.37	22.37	22.5	2
5	64QAM	1	24	22.36	22.45	21.23		
5	64QAM	12	0	21.30	21.26	21.37		
5	64QAM	12	7	21.36	21.27	21.21	21.5	3
5	64QAM	12	13	21.34	21.39	21.34		
5	64QAM	25	0	21.33	21.35	21.25		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	24.10	24.38	24.27		
3	QPSK	1	8	24.13	24.33	24.34	24.5	0
3	QPSK	1	14	24.19	23.98	22.74		
3	QPSK	8	0	23.38	23.44	23.44		
3	QPSK	8	4	23.23	23.31	23.39	23.5	1
3	QPSK	8	7	23.25	23.25	23.28		
3	QPSK	15	0	23.14	23.41	23.42		
3	16QAM	1	0	23.27	23.45	23.25		
3	16QAM	1	8	23.34	23.35	23.35	23.5	1
3	16QAM	1	14	23.40	23.31	22.21		
3	16QAM	8	0	22.30	22.38	22.37		
3	16QAM	8	4	22.30	22.34	22.34	22.5	2
3	16QAM	8	7	22.42	22.26	22.41		
3	16QAM	15	0	22.26	22.27	22.28		

3	64QAM	1	0	22.24	22.46	22.42	22.5	2
3	64QAM	1	8	22.43	22.24	22.32		
3	64QAM	1	14	22.30	22.30	21.19		
3	64QAM	8	0	21.26	21.31	21.24	21.5	3
3	64QAM	8	4	21.28	21.25	21.33		
3	64QAM	8	7	21.22	21.34	21.29		
3	64QAM	15	0	21.35	21.41	21.36		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	24.24	24.26	24.36	24.5	0
1.4	QPSK	1	3	24.09	24.20	24.35		
1.4	QPSK	1	5	24.15	24.00	22.76		
1.4	QPSK	3	0	23.38	23.43	23.41		
1.4	QPSK	3	1	23.28	23.38	23.28		
1.4	QPSK	3	3	23.24	23.24	23.25		
1.4	QPSK	6	0	23.27	23.35	23.35	23.5	1
1.4	16QAM	1	0	23.41	23.48	23.43	23.5	1
1.4	16QAM	1	3	23.39	23.39	23.42		
1.4	16QAM	1	5	23.33	23.24	22.17		
1.4	16QAM	3	0	22.34	22.32	22.48		
1.4	16QAM	3	1	22.28	22.37	22.40		
1.4	16QAM	3	3	22.46	22.28	22.37		
1.4	16QAM	6	0	22.24	22.23	22.21	22.5	2
1.4	64QAM	1	0	22.24	22.27	22.45	22.5	2
1.4	64QAM	1	3	22.44	22.34	22.36		
1.4	64QAM	1	5	22.45	22.39	21.14		
1.4	64QAM	3	0	21.39	21.22	21.43		
1.4	64QAM	3	1	21.37	21.24	21.35		
1.4	64QAM	3	3	21.25	21.45	21.35		
1.4	64QAM	6	0	21.30	21.44	21.25	21.5	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	24.47	24.45	24.48	24.5	0
20	QPSK	1	49	24.31	24.33	24.44		
20	QPSK	1	99	24.20	24.10	24.34		
20	QPSK	50	0	23.39	23.38	23.40	23.5	1
20	QPSK	50	24	23.42	23.38	23.42		
20	QPSK	50	50	23.37	23.36	23.45		
20	QPSK	100	0	23.37	23.38	23.39		
20	16QAM	1	0	23.50	23.49	23.35	23.5	1
20	16QAM	1	49	23.42	23.43	23.47		
20	16QAM	1	99	23.46	23.15	23.45		
20	16QAM	50	0	22.48	22.49	22.42	22.5	2
20	16QAM	50	24	22.49	22.45	22.41		
20	16QAM	50	50	22.47	22.46	22.44		
20	16QAM	100	0	22.43	22.47	22.47		
20	64QAM	1	0	22.41	22.49	22.32	22.5	2
20	64QAM	1	49	22.44	22.50	22.50		
20	64QAM	1	99	22.46	22.12	22.43		
20	64QAM	50	0	21.50	21.42	21.43	21.5	3
20	64QAM	50	24	21.49	21.44	21.44		
20	64QAM	50	50	21.48	21.50	21.47		
20	64QAM	100	0	21.50	21.44	21.50		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	24.39	24.45	24.43	24.5	0
15	QPSK	1	37	24.20	24.30	24.41		
15	QPSK	1	74	24.19	24.02	24.30		
15	QPSK	36	0	23.21	23.21	23.27	23.5	1
15	QPSK	36	20	23.37	23.38	23.42		
15	QPSK	36	39	23.21	23.16	23.34		
15	QPSK	75	0	23.35	23.35	23.30		
15	16QAM	1	0	23.49	23.33	23.28	23.5	1
15	16QAM	1	37	23.42	23.39	23.44		
15	16QAM	1	74	23.26	22.99	23.33		
15	16QAM	36	0	22.42	22.35	22.31	22.5	2
15	16QAM	36	20	22.46	22.40	22.22		
15	16QAM	36	39	22.31	22.41	22.27		
15	16QAM	75	0	22.24	22.38	22.28		
15	64QAM	1	0	22.26	22.46	22.25	22.5	2
15	64QAM	1	37	22.33	22.46	22.31		
15	64QAM	1	74	22.28	21.93	22.38		
15	64QAM	36	0	21.32	21.42	21.30	21.5	3
15	64QAM	36	20	21.48	21.28	21.33		
15	64QAM	36	39	21.43	21.34	21.46		
15	64QAM	75	0	21.42	21.37	21.41		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	24.28	24.38	24.36	24.5	0
10	QPSK	1	25	24.21	24.33	24.29		
10	QPSK	1	49	24.04	24.08	24.17		
10	QPSK	25	0	23.24	23.22	23.33	23.5	1
10	QPSK	25	12	23.22	23.22	23.39		

10	QPSK	25	25	23.25	23.23	23.27		
10	QPSK	50	0	23.27	23.18	23.39		
10	16QAM	1	0	23.44	23.43	23.19	23.5	1
10	16QAM	1	25	23.36	23.39	23.28		
10	16QAM	1	49	23.37	23.14	23.36		
10	16QAM	25	0	22.44	22.41	22.41	22.5	2
10	16QAM	25	12	22.46	22.41	22.25		
10	16QAM	25	25	22.35	22.29	22.42		
10	16QAM	50	0	22.31	22.35	22.33		
10	64QAM	1	0	22.27	22.37	22.27	22.5	2
10	64QAM	1	25	22.28	22.35	22.36		
10	64QAM	1	49	22.34	22.11	22.27		
10	64QAM	25	0	21.38	21.22	21.28	21.5	3
10	64QAM	25	12	21.30	21.25	21.28		
10	64QAM	25	25	21.28	21.37	21.34		
10	64QAM	50	0	21.33	21.30	21.43		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	24.31	24.44	24.46	24.5	0
5	QPSK	1	12	24.31	24.14	24.26		
5	QPSK	1	24	24.04	24.07	24.14		
5	QPSK	12	0	23.19	23.34	23.36	23.5	1
5	QPSK	12	7	23.32	23.25	23.25		
5	QPSK	12	13	23.21	23.24	23.36		
5	QPSK	25	0	23.24	23.32	23.20		
5	16QAM	1	0	23.47	23.33	23.16	23.5	1
5	16QAM	1	12	23.29	23.31	23.30		
5	16QAM	1	24	23.34	23.06	23.43		
5	16QAM	12	0	22.46	22.35	22.42	22.5	2
5	16QAM	12	7	22.48	22.35	22.26		
5	16QAM	12	13	22.32	22.32	22.41		
5	16QAM	25	0	22.33	22.33	22.37		
5	64QAM	1	0	22.29	22.42	22.18	22.5	2
5	64QAM	1	12	22.41	22.50	22.43		
5	64QAM	1	24	22.30	21.98	22.33		
5	64QAM	12	0	21.49	21.38	21.36	21.5	3
5	64QAM	12	7	21.43	21.38	21.41		
5	64QAM	12	13	21.41	21.48	21.30		
5	64QAM	25	0	21.36	21.31	21.45		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	24.41	24.32	24.45	24.5	0
3	QPSK	1	8	24.31	24.17	24.43		
3	QPSK	1	14	24.10	23.94	24.24		
3	QPSK	8	0	23.25	23.30	23.38	23.5	1
3	QPSK	8	4	23.41	23.25	23.38		
3	QPSK	8	7	23.28	23.33	23.39		
3	QPSK	15	0	23.36	23.36	23.26		
3	16QAM	1	0	23.32	23.38	23.18	23.5	1
3	16QAM	1	8	23.33	23.33	23.47		
3	16QAM	1	14	23.38	22.96	23.35		
3	16QAM	8	0	22.37	22.41	22.31	22.5	2
3	16QAM	8	4	22.40	22.41	22.30		
3	16QAM	8	7	22.42	22.36	22.28		
3	16QAM	15	0	22.37	22.32	22.33		
3	64QAM	1	0	22.23	22.34	22.31	22.5	2

3	64QAM	1	8	22.32	22.47	22.37		
3	64QAM	1	14	22.34	21.92	22.24		
3	64QAM	8	0	21.42	21.23	21.40	21.5	3
3	64QAM	8	4	21.38	21.24	21.29		
3	64QAM	8	7	21.46	21.50	21.33		
3	64QAM	15	0	21.49	21.38	21.31		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	24.41	24.44	24.36	24.5	0
1.4	QPSK	1	3	24.22	24.18	24.44		
1.4	QPSK	1	5	24.00	23.97	24.20		
1.4	QPSK	3	0	23.33	23.32	23.33		
1.4	QPSK	3	1	23.32	23.21	23.38		
1.4	QPSK	3	3	23.33	23.33	23.35		
1.4	QPSK	6	0	23.26	23.19	23.37	23.5	1
1.4	16QAM	1	0	23.36	23.44	23.25	23.5	1
1.4	16QAM	1	3	23.39	23.30	23.37		
1.4	16QAM	1	5	23.31	23.15	23.44		
1.4	16QAM	3	0	22.37	22.30	22.36		
1.4	16QAM	3	1	22.32	22.27	22.36		
1.4	16QAM	3	3	22.47	22.26	22.32		
1.4	16QAM	6	0	22.29	22.41	22.43	22.5	2
1.4	64QAM	1	0	22.29	22.48	22.15	22.5	2
1.4	64QAM	1	3	22.28	22.33	22.36		
1.4	64QAM	1	5	22.34	22.02	22.26		
1.4	64QAM	3	0	21.32	21.29	21.40		
1.4	64QAM	3	1	21.45	21.39	21.43		
1.4	64QAM	3	3	21.28	21.30	21.29		
1.4	64QAM	6	0	21.40	21.44	21.30	21.5	3

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	24.91	24.85	24.84	25	0
10	QPSK	1	25	24.71	24.84	24.83		
10	QPSK	1	49	24.89	24.77	24.74		
10	QPSK	25	0	23.83	23.93	23.76	24	1
10	QPSK	25	12	23.93	23.92	23.87		
10	QPSK	25	25	23.82	23.86	23.79		
10	QPSK	50	0	23.85	23.89	23.77		
10	16QAM	1	0	23.95	23.90	23.99	24	1
10	16QAM	1	25	23.93	23.97	23.94		
10	16QAM	1	49	23.94	23.93	23.98		
10	16QAM	25	0	22.91	22.99	22.91	23	2
10	16QAM	25	12	22.98	22.99	22.98		
10	16QAM	25	25	22.95	22.91	22.94		
10	16QAM	50	0	22.98	22.95	22.88		
10	64QAM	1	0	22.87	22.97	22.95	23	2
10	64QAM	1	25	22.97	22.93	22.94		
10	64QAM	1	49	22.98	22.94	23.00		
10	64QAM	25	0	21.89	22.00	21.87	22	3
10	64QAM	25	12	22.00	21.93	21.99		
10	64QAM	25	25	21.98	21.97	21.92		
10	64QAM	50	0	21.95	21.98	21.84		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	24.86	24.78	24.82	25	0
5	QPSK	1	12	24.63	24.72	24.70		
5	QPSK	1	24	24.82	24.57	24.57		
5	QPSK	12	0	23.69	23.90	23.56	24	1
5	QPSK	12	7	23.82	23.87	23.78		
5	QPSK	12	13	23.65	23.66	23.70		
5	QPSK	25	0	23.74	23.73	23.66		
5	16QAM	1	0	23.83	23.86	23.89	24	1
5	16QAM	1	12	23.88	23.79	23.74		
5	16QAM	1	24	23.80	23.91	23.80		
5	16QAM	12	0	22.71	22.81	22.87	23	2
5	16QAM	12	7	22.82	22.88	22.87		
5	16QAM	12	13	22.91	22.73	22.87		
5	16QAM	25	0	22.93	22.86	22.88		
5	64QAM	1	0	22.79	22.82	22.79	23	2
5	64QAM	1	12	22.81	22.73	22.93		
5	64QAM	1	24	22.85	22.74	22.81		
5	64QAM	12	0	21.80	21.98	21.85	22	3
5	64QAM	12	7	21.96	21.87	21.91		
5	64QAM	12	13	21.79	21.89	21.89		
5	64QAM	25	0	21.75	21.85	21.72		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.78	24.76	24.67	25	0
3	QPSK	1	8	24.54	24.68	24.78		
3	QPSK	1	14	24.88	24.74	24.64		
3	QPSK	8	0	23.72	23.90	23.71	24	1
3	QPSK	8	4	23.80	23.88	23.69		

3	QPSK	8	7	23.80	23.76	23.74		
3	QPSK	15	0	23.76	23.70	23.64		
3	16QAM	1	0	23.89	23.74	23.87	24	1
3	16QAM	1	8	23.92	23.84	23.93		
3	16QAM	1	14	23.86	23.73	23.89		
3	16QAM	8	0	22.74	22.87	22.74	23	2
3	16QAM	8	4	22.98	22.95	22.93		
3	16QAM	8	7	22.90	22.84	22.90		
3	16QAM	15	0	22.78	22.75	22.87		
3	64QAM	1	0	22.82	22.86	22.79	23	2
3	64QAM	1	8	22.86	22.89	22.74		
3	64QAM	1	14	22.94	22.80	22.84		
3	64QAM	8	0	21.84	21.86	21.73	22	3
3	64QAM	8	4	21.81	21.85	21.99		
3	64QAM	8	7	21.93	21.95	21.92		
3	64QAM	15	0	21.91	21.81	21.72		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.85	24.65	24.79	25	0
1.4	QPSK	1	3	24.56	24.64	24.63		
1.4	QPSK	1	5	24.71	24.75	24.72		
1.4	QPSK	3	0	23.78	23.75	23.66		
1.4	QPSK	3	1	23.82	23.80	23.84		
1.4	QPSK	3	3	23.72	23.69	23.75		
1.4	QPSK	6	0	23.76	23.76	23.65	24	1
1.4	16QAM	1	0	23.80	23.83	23.83	24	1
1.4	16QAM	1	3	23.74	23.89	23.78		
1.4	16QAM	1	5	23.93	23.88	23.96		
1.4	16QAM	3	0	22.78	22.81	22.87		
1.4	16QAM	3	1	22.89	22.99	22.90		
1.4	16QAM	3	3	22.88	22.90	22.74		
1.4	16QAM	6	0	22.91	22.87	22.82	23	2
1.4	64QAM	1	0	22.85	22.85	22.88	23	2
1.4	64QAM	1	3	22.93	22.74	22.82		
1.4	64QAM	1	5	22.89	22.81	22.97		
1.4	64QAM	3	0	21.85	21.85	21.79		
1.4	64QAM	3	1	21.89	21.75	21.84		
1.4	64QAM	3	3	21.87	21.94	21.89		
1.4	64QAM	6	0	21.79	21.84	21.82	22	3

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	23.38	23.21	23.09	23.5	0
20	QPSK	1	49	23.32	23.11	22.99		
20	QPSK	1	99	23.26	23.20	23.08		
20	QPSK	50	0	22.38	22.19	22.08	22.5	1
20	QPSK	50	24	22.37	22.17	22.06		
20	QPSK	50	50	22.31	22.18	22.07		
20	QPSK	100	0	22.28	22.16	22.07		
20	16QAM	1	0	22.45	22.44	22.35	22.5	1
20	16QAM	1	49	22.46	22.48	22.35		
20	16QAM	1	99	22.40	22.43	22.40		
20	16QAM	50	0	21.45	21.30	21.17	21.5	2
20	16QAM	50	24	21.48	21.28	21.18		
20	16QAM	50	50	21.40	21.27	21.18		
20	16QAM	100	0	21.37	21.28	21.15		
20	64QAM	1	0	21.43	21.39	21.29	21.5	2
20	64QAM	1	49	21.40	21.39	21.29		
20	64QAM	1	99	21.44	21.41	21.36		
20	64QAM	50	0	20.50	20.31	20.18	20.5	3
20	64QAM	50	24	20.45	20.31	20.22		
20	64QAM	50	50	20.44	20.31	20.19		
20	64QAM	100	0	20.40	20.33	20.18		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.32	23.05	23.06	23.5	0
15	QPSK	1	37	23.16	22.99	22.92		
15	QPSK	1	74	23.12	23.04	22.96		
15	QPSK	36	0	22.36	22.13	22.02	22.5	1
15	QPSK	36	20	22.19	22.08	21.88		
15	QPSK	36	39	22.21	22.03	22.01		
15	QPSK	75	0	22.08	22.08	22.01		
15	16QAM	1	0	22.40	22.43	22.24	22.5	1
15	16QAM	1	37	22.38	22.37	22.25		
15	16QAM	1	74	22.37	22.40	22.39		
15	16QAM	36	0	21.25	21.19	20.99	21.5	2
15	16QAM	36	20	21.29	21.21	20.98		
15	16QAM	36	39	21.40	21.20	21.14		
15	16QAM	75	0	21.28	21.26	21.03		
15	64QAM	1	0	21.29	21.37	21.24	21.5	2
15	64QAM	1	37	21.27	21.28	21.22		
15	64QAM	1	74	21.35	21.26	21.25		
15	64QAM	36	0	20.42	20.31	20.04	20.5	3
15	64QAM	36	20	20.41	20.17	20.06		
15	64QAM	36	39	20.40	20.30	20.08		
15	64QAM	75	0	20.25	20.15	20.02		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.30	22.96	22.98	23.5	0
10	QPSK	1	25	23.31	23.03	22.85		
10	QPSK	1	49	23.19	23.13	23.08		
10	QPSK	25	0	22.38	22.02	22.04	22.5	1
10	QPSK	25	12	22.26	22.11	22.06		

10	QPSK	25	25	22.16	22.00	22.03		
10	QPSK	50	0	22.17	21.97	22.02		
10	16QAM	1	0	22.45	22.24	22.15	22.5	1
10	16QAM	1	25	22.40	22.33	22.25		
10	16QAM	1	49	22.29	22.41	22.24		
10	16QAM	25	0	21.25	21.20	21.13	21.5	2
10	16QAM	25	12	21.38	21.08	21.12		
10	16QAM	25	25	21.39	21.25	21.16		
10	16QAM	50	0	21.28	21.19	21.06		
10	64QAM	1	0	21.32	21.23	21.13	21.5	2
10	64QAM	1	25	21.33	21.20	21.16		
10	64QAM	1	49	21.38	21.34	21.29		
10	64QAM	25	0	20.40	20.16	20.13	20.5	3
10	64QAM	25	12	20.28	20.17	20.21		
10	64QAM	25	25	20.26	20.21	20.14		
10	64QAM	50	0	20.37	20.24	20.07		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	23.18	23.00	23.09	23.5	0
5	QPSK	1	12	23.26	22.99	22.99		
5	QPSK	1	24	23.16	23.01	23.04		
5	QPSK	12	0	22.31	22.17	21.95	22.5	1
5	QPSK	12	7	22.33	22.05	22.01		
5	QPSK	12	13	22.29	22.17	21.91		
5	QPSK	25	0	22.28	22.12	21.93		
5	16QAM	1	0	22.44	22.38	22.32	22.5	1
5	16QAM	1	12	22.30	22.37	22.22		
5	16QAM	1	24	22.30	22.26	22.36		
5	16QAM	12	0	21.39	21.25	21.02	21.5	2
5	16QAM	12	7	21.32	21.13	21.16		
5	16QAM	12	13	21.28	21.07	21.07		
5	16QAM	25	0	21.17	21.24	21.11		
5	64QAM	1	0	21.28	21.32	21.12	21.5	2
5	64QAM	1	12	21.32	21.32	21.13		
5	64QAM	1	24	21.44	21.34	21.18		
5	64QAM	12	0	20.36	20.14	20.14	20.5	3
5	64QAM	12	7	20.28	20.27	20.11		
5	64QAM	12	13	20.24	20.21	20.15		
5	64QAM	25	0	20.29	20.14	19.99		

<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	24.12	24.78	24.44	25	0
10	QPSK	1	25	24.65	24.50	24.77		
10	QPSK	1	49	24.31	24.75	24.69		
10	QPSK	25	0	23.63	23.79	23.76	24	1
10	QPSK	25	12	23.75	23.77	23.73		
10	QPSK	25	25	23.80	23.74	23.82		
10	QPSK	50	0	23.72	23.77	23.73		
10	16QAM	1	0	23.49	23.77	23.82	24	1
10	16QAM	1	25	23.92	23.91	23.97		
10	16QAM	1	49	23.69	23.97	23.96		
10	16QAM	25	0	22.69	22.86	22.83	23	2
10	16QAM	25	12	22.83	22.88	22.86		
10	16QAM	25	25	22.87	22.86	22.87		
10	16QAM	50	0	22.83	22.84	22.80		
10	64QAM	1	0	22.50	22.78	22.84	23	2
10	64QAM	1	25	22.89	22.88	23.00		
10	64QAM	1	49	22.67	22.91	22.94		
10	64QAM	25	0	21.73	21.87	21.82	22	3
10	64QAM	25	12	21.87	21.90	21.84		
10	64QAM	25	25	21.92	21.84	21.89		
10	64QAM	50	0	21.83	21.88	21.85		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.94	24.71	24.25	25	0
5	QPSK	1	12	24.51	24.32	24.72		
5	QPSK	1	24	24.26	24.73	24.63		
5	QPSK	12	0	23.51	23.78	23.67	24	1
5	QPSK	12	7	23.56	23.65	23.73		
5	QPSK	12	13	23.71	23.55	23.78		
5	QPSK	25	0	23.56	23.67	23.68		
5	16QAM	1	0	23.35	23.60	23.75	24	1
5	16QAM	1	12	23.80	23.76	23.79		
5	16QAM	1	24	23.57	23.96	23.79		
5	16QAM	12	0	22.57	22.72	22.78	23	2
5	16QAM	12	7	22.72	22.74	22.67		
5	16QAM	12	13	22.76	22.84	22.69		
5	16QAM	25	0	22.70	22.68	22.66		
5	64QAM	1	0	22.30	22.72	22.84	23	2
5	64QAM	1	12	22.83	22.79	22.88		
5	64QAM	1	24	22.61	22.76	22.76		
5	64QAM	12	0	21.62	21.82	21.74	22	3
5	64QAM	12	7	21.67	21.88	21.70		
5	64QAM	12	13	21.87	21.77	21.86		
5	64QAM	25	0	21.72	21.85	21.69		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.99	24.66	24.26	25	0
3	QPSK	1	8	24.47	24.32	24.60		
3	QPSK	1	14	24.29	24.70	24.51		
3	QPSK	8	0	23.56	23.74	23.71	24	1
3	QPSK	8	4	23.56	23.72	23.62		

3	QPSK	8	7	23.67	23.73	23.74		
3	QPSK	15	0	23.59	23.59	23.62		
3	16QAM	1	0	23.37	23.57	23.70	24	1
3	16QAM	1	8	23.80	23.85	23.77		
3	16QAM	1	14	23.57	23.92	23.88		
3	16QAM	8	0	22.68	22.74	22.76	23	2
3	16QAM	8	4	22.78	22.77	22.81		
3	16QAM	8	7	22.77	22.85	22.83		
3	16QAM	15	0	22.79	22.67	22.74		
3	64QAM	1	0	22.38	22.76	22.78	23	2
3	64QAM	1	8	22.82	22.68	22.82		
3	64QAM	1	14	22.66	22.90	22.91		
3	64QAM	8	0	21.73	21.78	21.82	22	3
3	64QAM	8	4	21.73	21.75	21.74		
3	64QAM	8	7	21.86	21.68	21.85		
3	64QAM	15	0	21.63	21.87	21.68		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	24.07	24.58	24.39	25	0
1.4	QPSK	1	3	24.48	24.43	24.77		
1.4	QPSK	1	5	24.15	24.63	24.49		
1.4	QPSK	3	0	23.43	23.66	23.76		
1.4	QPSK	3	1	23.75	23.62	23.68		
1.4	QPSK	3	3	23.66	23.69	23.65		
1.4	QPSK	6	0	23.66	23.62	23.59	24	1
1.4	16QAM	1	0	23.44	23.66	23.81	24	1
1.4	16QAM	1	3	23.77	23.76	23.89		
1.4	16QAM	1	5	23.55	23.78	23.86		
1.4	16QAM	3	0	22.52	22.70	22.66		
1.4	16QAM	3	1	22.63	22.68	22.81		
1.4	16QAM	3	3	22.72	22.67	22.81		
1.4	16QAM	6	0	22.64	22.73	22.73	23	2
1.4	64QAM	1	0	22.37	22.67	22.66	23	2
1.4	64QAM	1	3	22.85	22.76	22.86		
1.4	64QAM	1	5	22.66	22.77	22.75		
1.4	64QAM	3	0	21.61	21.76	21.66		
1.4	64QAM	3	1	21.81	21.74	21.71		
1.4	64QAM	3	3	21.72	21.64	21.80		
1.4	64QAM	6	0	21.75	21.70	21.70	22	3

<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		24.39		24.5	0
10	QPSK	1	25		24.22			
10	QPSK	1	49		24.14			
10	QPSK	25	0		23.32		23.5	1
10	QPSK	25	12		23.31			
10	QPSK	25	25		23.26			
10	QPSK	50	0		23.29			
10	16QAM	1	0		23.48		23.5	1
10	16QAM	1	25		23.44			
10	16QAM	1	49		23.50			
10	16QAM	25	0		22.40		22.5	2
10	16QAM	25	12		22.37			
10	16QAM	25	25		22.34			
10	16QAM	50	0		22.36			
10	64QAM	1	0		22.48		22.5	2
10	64QAM	1	25		22.42			
10	64QAM	1	49		22.44			
10	64QAM	25	0		21.39		21.5	3
10	64QAM	25	12		21.41			
10	64QAM	25	25		21.35			
10	64QAM	50	0		21.39			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	24.31	24.35	24.36	24.5	0
5	QPSK	1	12	24.22	24.14	24.04		
5	QPSK	1	24	24.01	23.97	24.02		
5	QPSK	12	0	23.19	23.32	23.19	23.5	1
5	QPSK	12	7	23.23	23.18	23.25		
5	QPSK	12	13	23.16	23.10	23.11		
5	QPSK	25	0	23.27	23.12	23.28		
5	16QAM	1	0	23.40	23.47	23.40	23.5	1
5	16QAM	1	12	23.44	23.36	23.38		
5	16QAM	1	24	23.40	23.41	23.42		
5	16QAM	12	0	22.20	22.40	22.23	22.5	2
5	16QAM	12	7	22.31	22.25	22.26		
5	16QAM	12	13	22.33	22.23	22.26		
5	16QAM	25	0	22.35	22.30	22.36		
5	64QAM	1	0	22.29	22.48	22.28	22.5	2
5	64QAM	1	12	22.42	22.30	22.31		
5	64QAM	1	24	22.42	22.28	22.42		
5	64QAM	12	0	21.31	21.37	21.23	21.5	3
5	64QAM	12	7	21.40	21.31	21.36		
5	64QAM	12	13	21.35	21.33	21.32		
5	64QAM	25	0	21.38	21.32	21.32		

<LTE Band 14>

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					23330			
Frequency (MHz)					793			
10	QPSK	1	0		24.51		25	0
10	QPSK	1	25		24.48			
10	QPSK	1	49		24.50			
10	QPSK	25	0		23.58		24	1
10	QPSK	25	12		23.55			
10	QPSK	25	25		23.47			
10	QPSK	50	0		23.51			
10	16QAM	1	0		23.84		24	1
10	16QAM	1	25		23.81			
10	16QAM	1	49		23.86			
10	16QAM	25	0		22.66		23	2
10	16QAM	25	12		22.67			
10	16QAM	25	25		22.60			
10	16QAM	50	0		22.66			
10	64QAM	1	0		22.79		23	2
10	64QAM	1	25		22.78			
10	64QAM	1	49		22.82			
10	64QAM	25	0		21.67		22	3
10	64QAM	25	12		21.67			
10	64QAM	25	25		21.62			
10	64QAM	50	0		21.66			
Channel				23305	23330	23355	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				790.5	793	795.5		
5	QPSK	1	0	24.44	24.41	24.47	25	0
5	QPSK	1	12	24.30	24.30	24.43		
5	QPSK	1	24	24.34	24.33	24.38		
5	QPSK	12	0	23.55	23.42	23.56	24	1
5	QPSK	12	7	23.36	23.50	23.42		
5	QPSK	12	13	23.41	23.39	23.34		
5	QPSK	25	0	23.42	23.34	23.31		
5	16QAM	1	0	23.80	23.70	23.65	24	1
5	16QAM	1	12	23.63	23.81	23.75		
5	16QAM	1	24	23.84	23.69	23.74		
5	16QAM	12	0	22.53	22.52	22.56	23	2
5	16QAM	12	7	22.62	22.51	22.62		
5	16QAM	12	13	22.43	22.53	22.60		
5	16QAM	25	0	22.66	22.66	22.63		
5	64QAM	1	0	22.69	22.78	22.68	23	2
5	64QAM	1	12	22.70	22.64	22.59		
5	64QAM	1	24	22.63	22.62	22.71		
5	64QAM	12	0	21.57	21.54	21.61	22	3
5	64QAM	12	7	21.65	21.63	21.65		
5	64QAM	12	13	21.62	21.46	21.62		
5	64QAM	25	0	21.56	21.59	21.61		

<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	24.73	24.74	24.64	25	0
10	QPSK	1	25	24.57	24.62	24.63		
10	QPSK	1	49	24.72	24.70	24.61		
10	QPSK	25	0	23.76	23.75	23.75	24	1
10	QPSK	25	12	23.75	23.72	23.72		
10	QPSK	25	25	23.70	23.68	23.71		
10	QPSK	50	0	23.75	23.73	23.72		
10	16QAM	1	0	23.73	23.84	23.71	24	1
10	16QAM	1	25	23.98	23.95	23.91		
10	16QAM	1	49	23.98	23.94	23.96		
10	16QAM	25	0	22.84	22.83	22.84	23	2
10	16QAM	25	12	22.83	22.86	22.85		
10	16QAM	25	25	22.80	22.77	22.78		
10	16QAM	50	0	22.81	22.80	22.80		
10	64QAM	1	0	22.71	22.79	22.69	23	2
10	64QAM	1	25	22.94	22.94	22.87		
10	64QAM	1	49	22.97	22.95	22.92		
10	64QAM	25	0	21.82	21.82	21.80	22	3
10	64QAM	25	12	21.88	21.83	21.82		
10	64QAM	25	25	21.81	21.81	21.77		
10	64QAM	50	0	21.86	21.83	21.83		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	24.72	24.66	24.50	25	0
5	QPSK	1	12	24.37	24.51	24.58		
5	QPSK	1	24	24.67	24.54	24.50		
5	QPSK	12	0	23.67	23.74	23.61	24	1
5	QPSK	12	7	23.66	23.69	23.55		
5	QPSK	12	13	23.58	23.58	23.62		
5	QPSK	25	0	23.67	23.58	23.56		
5	16QAM	1	0	23.65	23.78	23.51	24	1
5	16QAM	1	12	23.93	23.78	23.87		
5	16QAM	1	24	23.90	23.86	23.96		
5	16QAM	12	0	22.73	22.71	22.79	23	2
5	16QAM	12	7	22.76	22.75	22.68		
5	16QAM	12	13	22.69	22.65	22.60		
5	16QAM	25	0	22.69	22.67	22.61		
5	64QAM	1	0	22.69	22.67	22.50	23	2
5	64QAM	1	12	22.76	22.74	22.80		
5	64QAM	1	24	22.95	22.82	22.87		
5	64QAM	12	0	21.64	21.73	21.64	22	3
5	64QAM	12	7	21.79	21.77	21.79		
5	64QAM	12	13	21.78	21.76	21.64		
5	64QAM	25	0	21.74	21.78	21.83		

<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	24.06	24.15	24.24	24.5	0
20	QPSK	1	49	24.05	24.13	24.23		
20	QPSK	1	99	23.91	24.14	24.23		
20	QPSK	50	0	23.13	23.13	23.30	23.5	1
20	QPSK	50	24	23.11	23.12	23.24		
20	QPSK	50	50	23.03	23.12	23.29		
20	QPSK	100	0	23.08	23.07	23.21		
20	16QAM	1	0	23.31	23.41	23.46	23.5	1
20	16QAM	1	49	23.35	23.44	23.48		
20	16QAM	1	99	23.23	23.39	23.46		
20	16QAM	50	0	22.24	22.21	22.33	22.5	2
20	16QAM	50	24	22.23	22.23	22.32		
20	16QAM	50	50	22.15	22.22	22.32		
20	16QAM	100	0	22.19	22.18	22.25		
20	64QAM	1	0	22.25	22.38	22.42	22.5	2
20	64QAM	1	49	22.28	22.43	22.46		
20	64QAM	1	99	22.19	22.37	22.30		
20	64QAM	50	0	21.24	21.24	21.32	21.5	3
20	64QAM	50	24	21.24	21.23	21.34		
20	64QAM	50	50	21.15	21.23	21.35		
20	64QAM	100	0	21.20	21.19	21.30		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	23.92	24.00	24.18	24.5	0
15	QPSK	1	37	23.98	24.13	24.07		
15	QPSK	1	74	23.72	24.02	24.17		
15	QPSK	36	0	22.99	22.96	23.15	23.5	1
15	QPSK	36	20	22.96	23.10	23.08		
15	QPSK	36	39	22.97	23.09	23.18		
15	QPSK	75	0	22.99	23.07	23.11		
15	16QAM	1	0	23.24	23.21	23.33	23.5	1
15	16QAM	1	37	23.23	23.33	23.46		
15	16QAM	1	74	23.16	23.21	23.43		
15	16QAM	36	0	22.24	22.20	22.23	22.5	2
15	16QAM	36	20	22.03	22.13	22.24		
15	16QAM	36	39	22.09	22.05	22.30		
15	16QAM	75	0	22.15	22.16	22.07		
15	64QAM	1	0	22.05	22.20	22.35	22.5	2
15	64QAM	1	37	22.22	22.29	22.36		
15	64QAM	1	74	22.00	22.19	22.17		
15	64QAM	36	0	21.11	21.22	21.18	21.5	3
15	64QAM	36	20	21.19	21.10	21.23		
15	64QAM	36	39	21.00	21.12	21.17		
15	64QAM	75	0	21.19	21.07	21.17		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	23.85	23.93	24.11	24.5	0
10	QPSK	1	25	24.04	24.06	24.03		
10	QPSK	1	49	23.83	23.98	24.08		
10	QPSK	25	0	23.06	23.05	23.10	23.5	1
10	QPSK	25	12	22.94	23.12	23.05		

10	QPSK	25	25	22.94	22.98	23.25		
10	QPSK	50	0	22.96	23.06	23.10		
10	16QAM	1	0	23.11	23.40	23.42	23.5	1
10	16QAM	1	25	23.29	23.40	23.44		
10	16QAM	1	49	23.23	23.35	23.29		
10	16QAM	25	0	22.10	22.06	22.17	22.5	2
10	16QAM	25	12	22.06	22.17	22.30		
10	16QAM	25	25	21.99	22.14	22.26		
10	16QAM	50	0	22.01	22.17	22.08		
10	64QAM	1	0	22.19	22.28	22.34	22.5	2
10	64QAM	1	25	22.20	22.31	22.30		
10	64QAM	1	49	22.11	22.19	22.16		
10	64QAM	25	0	21.14	21.11	21.23	21.5	3
10	64QAM	25	12	21.17	21.13	21.16		
10	64QAM	25	25	21.11	21.06	21.30		
10	64QAM	50	0	21.12	21.04	21.17		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	23.99	24.02	24.15	24.5	0
5	QPSK	1	12	23.91	24.07	24.19		
5	QPSK	1	24	23.91	24.12	24.16		
5	QPSK	12	0	23.07	22.96	23.21	23.5	1
5	QPSK	12	7	22.97	23.10	23.21		
5	QPSK	12	13	22.87	22.93	23.29		
5	QPSK	25	0	22.92	22.98	23.07		
5	16QAM	1	0	23.17	23.29	23.34	23.5	1
5	16QAM	1	12	23.16	23.29	23.32		
5	16QAM	1	24	23.05	23.28	23.27		
5	16QAM	12	0	22.20	22.06	22.20	22.5	2
5	16QAM	12	7	22.23	22.11	22.24		
5	16QAM	12	13	22.04	22.20	22.23		
5	16QAM	25	0	21.99	21.99	22.25		
5	64QAM	1	0	22.17	22.36	22.29	22.5	2
5	64QAM	1	12	22.24	22.29	22.44		
5	64QAM	1	24	22.19	22.17	22.28		
5	64QAM	12	0	21.13	21.07	21.18	21.5	3
5	64QAM	12	7	21.09	21.20	21.22		
5	64QAM	12	13	21.08	21.10	21.35		
5	64QAM	25	0	21.11	21.05	21.19		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	23.87	24.11	24.16	24.5	0
3	QPSK	1	8	23.98	23.99	24.20		
3	QPSK	1	14	23.89	24.14	24.07		
3	QPSK	8	0	23.11	23.04	23.11	23.5	1
3	QPSK	8	4	23.10	22.92	23.08		
3	QPSK	8	7	22.98	22.99	23.23		
3	QPSK	15	0	22.94	22.99	23.17		
3	16QAM	1	0	23.24	23.34	23.26	23.5	1
3	16QAM	1	8	23.29	23.37	23.44		
3	16QAM	1	14	23.16	23.35	23.33		
3	16QAM	8	0	22.19	22.19	22.15	22.5	2
3	16QAM	8	4	22.15	22.21	22.23		
3	16QAM	8	7	22.11	22.12	22.14		
3	16QAM	15	0	22.19	22.08	22.05		
3	64QAM	1	0	22.19	22.32	22.32	22.5	2

3	64QAM	1	8	22.24	22.37	22.26		
3	64QAM	1	14	21.99	22.18	22.10		
3	64QAM	8	0	21.09	21.16	21.28	21.5	3
3	64QAM	8	4	21.19	21.19	21.24		
3	64QAM	8	7	21.15	21.15	21.30		
3	64QAM	15	0	21.05	21.02	21.11		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	23.85	23.94	24.21	24.5	0
1.4	QPSK	1	3	23.92	24.07	24.21		
1.4	QPSK	1	5	23.84	24.00	24.11		
1.4	QPSK	3	0	23.92	23.97	24.16		
1.4	QPSK	3	1	23.97	24.03	24.17		
1.4	QPSK	3	3	23.89	24.09	24.19		
1.4	QPSK	6	0	22.91	22.98	23.22	23.5	1
1.4	16QAM	1	0	23.12	23.21	23.20	23.5	1
1.4	16QAM	1	3	23.17	23.37	23.30		
1.4	16QAM	1	5	23.08	23.30	23.21		
1.4	16QAM	3	0	22.94	23.06	23.10		
1.4	16QAM	3	1	22.97	23.08	23.15		
1.4	16QAM	3	3	22.93	23.11	23.09		
1.4	16QAM	6	0	22.08	22.14	22.31	22.5	2
1.4	64QAM	1	0	22.10	22.19	22.21	22.5	2
1.4	64QAM	1	3	22.15	22.33	22.28		
1.4	64QAM	1	5	22.08	22.28	22.17		
1.4	64QAM	3	0	22.10	22.20	22.27		
1.4	64QAM	3	1	22.16	22.26	22.31		
1.4	64QAM	3	3	22.11	22.29	22.26		
1.4	64QAM	6	0	21.03	21.09	21.23	21.5	3

<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	24.19	24.22	24.19	25	0
15	QPSK	1	37	24.15	24.20	24.09		
15	QPSK	1	74	24.18	24.13	24.00		
15	QPSK	36	0	23.28	23.32	23.22	24	1
15	QPSK	36	20	23.34	23.31	23.21		
15	QPSK	36	39	23.27	23.25	23.14		
15	QPSK	75	0	23.27	23.28	23.14		
15	16QAM	1	0	23.44	23.55	23.54	24	1
15	16QAM	1	37	23.50	23.59	23.42		
15	16QAM	1	74	23.53	23.50	23.29		
15	16QAM	36	0	22.31	22.41	22.26	23	2
15	16QAM	36	20	22.39	22.38	22.28		
15	16QAM	36	39	22.32	22.32	22.23		
15	16QAM	75	0	22.38	22.35	22.27		
15	64QAM	1	0	22.40	22.51	22.47	23	2
15	64QAM	1	37	22.43	22.50	22.39		
15	64QAM	1	74	22.44	22.43	22.27		
15	64QAM	36	0	21.36	21.43	21.32	22	3
15	64QAM	36	20	21.44	21.44	21.28		
15	64QAM	36	39	21.39	21.39	21.22		
15	64QAM	75	0	21.37	21.39	21.24		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	24.14	24.12	24.03	25	0
10	QPSK	1	25	23.97	24.04	24.05		
10	QPSK	1	49	24.09	23.93	23.91		
10	QPSK	25	0	23.23	23.16	23.17	24	1
10	QPSK	25	12	23.14	23.15	23.17		
10	QPSK	25	25	23.21	23.06	23.01		
10	QPSK	50	0	23.27	23.18	23.02		
10	16QAM	1	0	23.39	23.36	23.53	24	1
10	16QAM	1	25	23.35	23.50	23.33		
10	16QAM	1	49	23.51	23.36	23.11		
10	16QAM	25	0	22.24	22.36	22.20	23	2
10	16QAM	25	12	22.27	22.24	22.24		
10	16QAM	25	25	22.20	22.16	22.09		
10	16QAM	50	0	22.35	22.26	22.27		
10	64QAM	1	0	22.34	22.32	22.27	23	2
10	64QAM	1	25	22.34	22.48	22.20		
10	64QAM	1	49	22.35	22.39	22.17		
10	64QAM	25	0	21.34	21.28	21.28	22	3
10	64QAM	25	12	21.44	21.31	21.27		
10	64QAM	25	25	21.20	21.25	21.03		
10	64QAM	50	0	21.30	21.38	21.17		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	24.11	24.08	24.10	25	0
5	QPSK	1	12	24.11	24.04	24.02		
5	QPSK	1	24	24.13	24.09	23.88		
5	QPSK	12	0	23.10	23.09	23.07	24	1
5	QPSK	12	7	23.23	23.26	23.21		

5	QPSK	12	13	23.08	23.17	23.02		
5	QPSK	25	0	23.12	23.14	22.96		
5	16QAM	1	0	23.26	23.38	23.47	24	1
5	16QAM	1	12	23.41	23.53	23.29		
5	16QAM	1	24	23.50	23.43	23.21		
5	16QAM	12	0	22.11	22.21	22.17	23	2
5	16QAM	12	7	22.19	22.23	22.11		
5	16QAM	12	13	22.32	22.31	22.08		
5	16QAM	25	0	22.34	22.20	22.18		
5	64QAM	1	0	22.25	22.41	22.30	23	2
5	64QAM	1	12	22.41	22.46	22.30		
5	64QAM	1	24	22.28	22.26	22.24		
5	64QAM	12	0	21.19	21.23	21.16	22	3
5	64QAM	12	7	21.36	21.37	21.24		
5	64QAM	12	13	21.22	21.23	21.10		
5	64QAM	25	0	21.35	21.39	21.24		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.93	24.19	24.11	25	0
3	QPSK	1	8	24.02	24.01	24.02		
3	QPSK	1	14	24.05	24.05	23.97		
3	QPSK	8	0	23.14	23.25	23.05	24	1
3	QPSK	8	4	23.34	23.25	23.09		
3	QPSK	8	7	23.22	23.13	22.96		
3	QPSK	15	0	23.08	23.23	23.01		
3	16QAM	1	0	23.28	23.51	23.50	24	1
3	16QAM	1	8	23.46	23.47	23.22		
3	16QAM	1	14	23.48	23.45	23.20		
3	16QAM	8	0	22.21	22.41	22.07	23	2
3	16QAM	8	4	22.36	22.24	22.18		
3	16QAM	8	7	22.28	22.27	22.14		
3	16QAM	15	0	22.33	22.31	22.17		
3	64QAM	1	0	22.29	22.50	22.42	23	2
3	64QAM	1	8	22.42	22.47	22.27		
3	64QAM	1	14	22.38	22.25	22.27		
3	64QAM	8	0	21.34	21.32	21.12	22	3
3	64QAM	8	4	21.33	21.34	21.26		
3	64QAM	8	7	21.36	21.19	21.06		
3	64QAM	15	0	21.22	21.20	21.18		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.99	24.10	23.93	25	0
1.4	QPSK	1	3	24.05	24.17	24.01		
1.4	QPSK	1	5	23.97	24.10	23.90		
1.4	QPSK	3	0	24.05	24.14	23.97		
1.4	QPSK	3	1	24.07	24.17	24.04		
1.4	QPSK	3	3	24.04	24.13	23.98		
1.4	QPSK	6	0	23.01	23.17	23.00	24	1
1.4	16QAM	1	0	23.31	23.42	23.23	24	1
1.4	16QAM	1	3	23.39	23.54	23.27		
1.4	16QAM	1	5	23.27	23.45	23.17		
1.4	16QAM	3	0	23.12	23.23	23.01		
1.4	16QAM	3	1	23.16	23.28	23.08		
1.4	16QAM	3	3	23.11	23.24	23.01		
1.4	16QAM	6	0	22.18	22.31	22.16	23	2
1.4	64QAM	1	0	22.24	22.41	22.18	23	2

1.4	64QAM	1	3	22.31	22.46	22.25		
1.4	64QAM	1	5	22.24	22.36	22.14		
1.4	64QAM	3	0	22.26	22.37	22.21		
1.4	64QAM	3	1	22.31	22.43	22.21		
1.4	64QAM	3	3	22.25	22.37	22.20		
1.4	64QAM	6	0	21.15	21.28	21.10	22	3

<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	24.09	24.24	24.46	24.5	0
20	QPSK	1	49	24.03	24.23	24.45		
20	QPSK	1	99	24.08	24.18	24.04		
20	QPSK	50	0	22.96	23.16	23.37	23.5	1
20	QPSK	50	24	22.93	23.14	23.26		
20	QPSK	50	50	22.92	23.12	23.36		
20	QPSK	100	0	22.96	23.11	23.30		
20	16QAM	1	0	23.17	23.07	23.44	23.5	1
20	16QAM	1	49	23.27	23.49	23.46		
20	16QAM	1	99	23.19	23.39	23.12		
20	16QAM	50	0	22.01	22.26	22.37	22.5	2
20	16QAM	50	24	22.03	22.23	22.31		
20	16QAM	50	50	22.03	22.19	22.33		
20	16QAM	100	0	22.00	22.20	22.31		
20	64QAM	1	0	22.19	22.02	22.42	22.5	2
20	64QAM	1	49	22.27	22.47	22.49		
20	64QAM	1	99	22.19	22.34	22.25		
20	64QAM	50	0	21.05	21.31	21.41	21.5	3
20	64QAM	50	24	21.07	21.28	21.33		
20	64QAM	50	50	21.05	21.21	21.37		
20	64QAM	100	0	21.05	21.25	21.31		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.92	24.20	24.31	24.5	0
15	QPSK	1	37	23.88	24.13	24.32		
15	QPSK	1	74	23.88	24.05	24.04		
15	QPSK	36	0	22.79	23.04	23.29	23.5	1
15	QPSK	36	20	22.73	23.08	23.16		
15	QPSK	36	39	22.89	23.11	23.23		
15	QPSK	75	0	22.82	23.01	23.13		
15	16QAM	1	0	23.15	22.96	23.27	23.5	1
15	16QAM	1	37	23.15	23.44	23.29		
15	16QAM	1	74	23.11	23.31	23.09		
15	16QAM	36	0	21.94	22.25	22.37	22.5	2
15	16QAM	36	20	21.92	22.04	22.15		
15	16QAM	36	39	21.97	22.12	22.19		
15	16QAM	75	0	21.88	22.16	22.23		
15	64QAM	1	0	22.03	21.94	22.23	22.5	2
15	64QAM	1	37	22.11	22.34	22.39		
15	64QAM	1	74	22.13	22.22	22.16		
15	64QAM	36	0	20.92	21.19	21.40	21.5	3
15	64QAM	36	20	20.87	21.20	21.13		
15	64QAM	36	39	20.95	21.14	21.33		
15	64QAM	75	0	20.90	21.18	21.29		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.99	24.07	24.43	24.5	0
10	QPSK	1	25	23.88	24.03	24.35		
10	QPSK	1	49	24.04	24.06	23.92		
10	QPSK	25	0	22.90	23.04	23.34	23.5	1
10	QPSK	25	12	22.82	23.07	23.25		

10	QPSK	25	25	22.80	22.95	23.26		
10	QPSK	50	0	22.85	23.01	23.26		
10	16QAM	1	0	23.15	23.07	23.34	23.5	1
10	16QAM	1	25	23.19	23.37	23.40		
10	16QAM	1	49	23.04	23.39	22.99		
10	16QAM	25	0	21.94	22.06	22.18	22.5	2
10	16QAM	25	12	22.02	22.06	22.26		
10	16QAM	25	25	21.95	22.16	22.25		
10	16QAM	50	0	21.89	22.07	22.14		
10	64QAM	1	0	22.18	21.83	22.31	22.5	2
10	64QAM	1	25	22.21	22.32	22.32		
10	64QAM	1	49	22.00	22.27	22.12		
10	64QAM	25	0	20.94	21.18	21.39	21.5	3
10	64QAM	25	12	20.89	21.28	21.18		
10	64QAM	25	25	20.92	21.14	21.35		
10	64QAM	50	0	20.96	21.19	21.15		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.92	24.17	24.28	24.5	0
5	QPSK	1	12	23.85	24.11	24.30		
5	QPSK	1	24	23.97	24.00	23.87		
5	QPSK	12	0	22.96	23.13	23.17	23.5	1
5	QPSK	12	7	22.74	22.94	23.15		
5	QPSK	12	13	22.76	23.00	23.21		
5	QPSK	25	0	22.91	23.11	23.13		
5	16QAM	1	0	23.08	22.88	23.35	23.5	1
5	16QAM	1	12	23.14	23.31	23.30		
5	16QAM	1	24	23.19	23.33	23.01		
5	16QAM	12	0	21.97	22.19	22.33	22.5	2
5	16QAM	12	7	22.00	22.05	22.12		
5	16QAM	12	13	22.00	22.06	22.13		
5	16QAM	25	0	21.93	22.20	22.19		
5	64QAM	1	0	22.04	21.83	22.42	22.5	2
5	64QAM	1	12	22.09	22.35	22.40		
5	64QAM	1	24	22.11	22.30	22.09		
5	64QAM	12	0	21.00	21.26	21.23	21.5	3
5	64QAM	12	7	20.99	21.18	21.26		
5	64QAM	12	13	20.85	21.07	21.20		
5	64QAM	25	0	20.95	21.19	21.23		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	24.08	24.20	24.26	24.5	0
3	QPSK	1	8	23.86	24.04	24.36		
3	QPSK	1	14	24.07	24.10	23.89		
3	QPSK	8	0	22.78	23.13	23.34	23.5	1
3	QPSK	8	4	22.93	23.00	23.09		
3	QPSK	8	7	22.85	22.98	23.28		
3	QPSK	15	0	22.87	23.06	23.23		
3	16QAM	1	0	23.11	22.90	23.28	23.5	1
3	16QAM	1	8	23.27	23.38	23.46		
3	16QAM	1	14	23.17	23.37	23.08		
3	16QAM	8	0	21.81	22.25	22.32	22.5	2
3	16QAM	8	4	21.99	22.05	22.31		
3	16QAM	8	7	21.88	22.12	22.31		
3	16QAM	15	0	21.87	22.16	22.12		
3	64QAM	1	0	22.00	21.89	22.32	22.5	2

3	64QAM	1	8	22.10	22.31	22.33		
3	64QAM	1	14	22.00	22.15	22.22		
3	64QAM	8	0	20.97	21.15	21.23	21.5	3
3	64QAM	8	4	20.90	21.14	21.19		
3	64QAM	8	7	21.02	21.16	21.31		
3	64QAM	15	0	20.86	21.11	21.18		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.95	24.11	24.43	24.5	0
1.4	QPSK	1	3	23.94	24.10	24.44		
1.4	QPSK	1	5	24.00	24.14	23.94		
1.4	QPSK	3	0	22.81	23.10	23.22		
1.4	QPSK	3	1	22.74	23.04	23.17		
1.4	QPSK	3	3	22.86	22.98	23.17		
1.4	QPSK	6	0	22.90	23.01	23.19	23.5	1
1.4	16QAM	1	0	23.00	22.94	23.41	23.5	1
1.4	16QAM	1	3	23.22	23.47	23.38		
1.4	16QAM	1	5	23.09	23.31	23.12		
1.4	16QAM	3	0	21.97	22.21	22.18		
1.4	16QAM	3	1	21.92	22.12	22.28		
1.4	16QAM	3	3	21.83	22.06	22.23		
1.4	16QAM	6	0	21.99	22.09	22.15	22.5	2
1.4	64QAM	1	0	22.06	21.86	22.28	22.5	2
1.4	64QAM	1	3	22.23	22.36	22.42		
1.4	64QAM	1	5	22.10	22.14	22.12		
1.4	64QAM	3	0	20.88	21.20	21.21		
1.4	64QAM	3	1	20.91	21.14	21.16		
1.4	64QAM	3	3	21.05	21.13	21.19		
1.4	64QAM	6	0	21.04	21.05	21.11	21.5	3

Reduced 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	23.50	23.62	23.59	24	0
20	QPSK	1	49	23.49	23.61	23.58		
20	QPSK	1	99	23.45	23.58	22.91		
20	QPSK	50	0	22.53	22.71	22.66	23	1
20	QPSK	50	24	22.52	22.70	22.65		
20	QPSK	50	50	22.52	22.58	22.63		
20	QPSK	100	0	22.48	22.68	22.67		
20	16QAM	1	0	22.83	22.87	22.84	23	1
20	16QAM	1	49	22.87	22.92	22.86		
20	16QAM	1	99	22.82	22.92	22.32		
20	16QAM	50	0	21.67	21.78	21.69	22	2
20	16QAM	50	24	21.66	21.80	21.75		
20	16QAM	50	50	21.69	21.70	21.73		
20	16QAM	100	0	21.61	21.74	21.73		
20	64QAM	1	0	21.78	21.84	21.82	22	2
20	64QAM	1	49	21.81	21.83	21.83		
20	64QAM	1	99	21.76	21.89	21.37		
20	64QAM	50	0	20.68	20.78	20.70	21	3
20	64QAM	50	24	20.68	20.80	20.78		
20	64QAM	50	50	20.68	20.72	20.76		
20	64QAM	100	0	20.60	20.76	20.79		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.43	23.45	23.53	24	0
15	QPSK	1	37	23.48	23.50	23.56		
15	QPSK	1	74	23.35	23.53	22.82		
15	QPSK	36	0	22.40	22.57	22.47	23	1
15	QPSK	36	20	22.51	22.65	22.64		
15	QPSK	36	39	22.47	22.56	22.59		
15	QPSK	75	0	22.39	22.53	22.62		
15	16QAM	1	0	22.75	22.82	22.82	23	1
15	16QAM	1	37	22.83	22.88	22.85		
15	16QAM	1	74	22.72	22.86	22.22		
15	16QAM	36	0	21.59	21.76	21.60	22	2
15	16QAM	36	20	21.56	21.76	21.68		
15	16QAM	36	39	21.64	21.63	21.73		
15	16QAM	75	0	21.58	21.66	21.70		
15	64QAM	1	0	21.69	21.82	21.82	22	2
15	64QAM	1	37	21.77	21.82	21.80		
15	64QAM	1	74	21.75	21.84	21.32		
15	64QAM	36	0	20.61	20.76	20.70	21	3
15	64QAM	36	20	20.66	20.70	20.73		
15	64QAM	36	39	20.63	20.63	20.71		
15	64QAM	75	0	20.55	20.73	20.69		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.37	23.45	23.50	24	0
10	QPSK	1	25	23.41	23.59	23.58		
10	QPSK	1	49	23.42	23.51	22.86		
10	QPSK	25	0	22.49	22.56	22.56	23	1

10	QPSK	25	12	22.51	22.58	22.61		
10	QPSK	25	25	22.46	22.58	22.63		
10	QPSK	50	0	22.44	22.55	22.64		
10	16QAM	1	0	22.73	22.79	22.74		
10	16QAM	1	25	22.77	22.90	22.79	23	1
10	16QAM	1	49	22.76	22.88	22.22		
10	16QAM	25	0	21.66	21.77	21.64		
10	16QAM	25	12	21.57	21.78	21.66	22	2
10	16QAM	25	25	21.63	21.64	21.72		
10	16QAM	50	0	21.57	21.71	21.68		
10	64QAM	1	0	21.73	21.81	21.76		
10	64QAM	1	25	21.79	21.81	21.75	22	2
10	64QAM	1	49	21.72	21.84	21.30		
10	64QAM	25	0	20.58	20.73	20.69		
10	64QAM	25	12	20.64	20.76	20.77	21	3
10	64QAM	25	25	20.65	20.64	20.70		
10	64QAM	50	0	20.59	20.75	20.71		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.41	23.53	23.49		
5	QPSK	1	12	23.45	23.54	23.51	24	0
5	QPSK	1	24	23.45	23.57	22.84		
5	QPSK	12	0	22.46	22.65	22.52		
5	QPSK	12	7	22.46	22.62	22.66	23	1
5	QPSK	12	13	22.43	22.57	22.56		
5	QPSK	25	0	22.39	22.55	22.58		
5	16QAM	1	0	22.74	22.87	22.74		
5	16QAM	1	12	22.84	22.88	22.83	23	1
5	16QAM	1	24	22.76	22.87	22.23		
5	16QAM	12	0	21.58	21.68	21.67		
5	16QAM	12	7	21.59	21.70	21.75	22	2
5	16QAM	12	13	21.69	21.65	21.65		
5	16QAM	25	0	21.58	21.66	21.73		
5	64QAM	1	0	21.72	21.77	21.73		
5	64QAM	1	12	21.78	21.82	21.73	22	2
5	64QAM	1	24	21.67	21.80	21.32		
5	64QAM	12	0	20.66	20.72	20.66		
5	64QAM	12	7	20.63	20.74	20.68	21	3
5	64QAM	12	13	20.61	20.64	20.71		
5	64QAM	25	0	20.60	20.70	20.74		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.40	23.47	23.54		
3	QPSK	1	8	23.46	23.53	23.56	24	0
3	QPSK	1	14	23.42	23.53	22.90		
3	QPSK	8	0	22.44	22.64	22.48		
3	QPSK	8	4	22.51	22.61	22.62	23	1
3	QPSK	8	7	22.51	22.56	22.55		
3	QPSK	15	0	22.41	22.61	22.65		
3	16QAM	1	0	22.77	22.81	22.82		
3	16QAM	1	8	22.82	22.90	22.80	23	1
3	16QAM	1	14	22.74	22.92	22.22		
3	16QAM	8	0	21.61	21.69	21.69		
3	16QAM	8	4	21.58	21.79	21.71	22	2
3	16QAM	8	7	21.66	21.65	21.70		
3	16QAM	15	0	21.56	21.70	21.71		

3	64QAM	1	0	21.78	21.74	21.76	22	2
3	64QAM	1	8	21.75	21.82	21.79		
3	64QAM	1	14	21.68	21.86	21.37		
3	64QAM	8	0	20.58	20.78	20.67	21	3
3	64QAM	8	4	20.66	20.75	20.78		
3	64QAM	8	7	20.60	20.66	20.74		
3	64QAM	15	0	20.60	20.69	20.79		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.30	23.51	23.59	24	0
1.4	QPSK	1	3	23.36	23.57	23.60		
1.4	QPSK	1	5	23.28	23.46	23.53		
1.4	QPSK	3	0	23.34	23.56	23.56		
1.4	QPSK	3	1	23.40	23.58	23.56		
1.4	QPSK	3	3	23.33	23.57	23.50		
1.4	QPSK	6	0	22.35	22.53	22.65	23	1
1.4	16QAM	1	0	22.64	22.84	22.79	23	1
1.4	16QAM	1	3	22.73	22.93	22.83		
1.4	16QAM	1	5	22.63	22.83	22.77		
1.4	16QAM	3	0	22.45	22.64	22.63		
1.4	16QAM	3	1	22.49	22.69	22.67		
1.4	16QAM	3	3	22.45	22.64	22.61		
1.4	16QAM	6	0	21.56	21.74	21.81	22	2
1.4	64QAM	1	0	21.65	21.79	21.81	22	2
1.4	64QAM	1	3	21.68	21.90	21.86		
1.4	64QAM	1	5	21.64	21.82	21.77		
1.4	64QAM	3	0	21.61	21.81	21.81		
1.4	64QAM	3	1	21.68	21.87	21.85		
1.4	64QAM	3	3	21.63	21.82	21.79		
1.4	64QAM	6	0	20.51	20.69	20.77	21	3

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.08	22.24	22.15	23	0
20	QPSK	1	49	22.07	22.23	22.12		
20	QPSK	1	99	22.02	22.13	22.12		
20	QPSK	50	0	21.13	21.22	21.16	22	1
20	QPSK	50	24	21.06	21.12	21.07		
20	QPSK	50	50	21.12	21.21	21.15		
20	QPSK	100	0	21.09	21.12	21.11		
20	16QAM	1	0	21.48	21.55	21.64	22	1
20	16QAM	1	49	21.49	21.60	21.67		
20	16QAM	1	99	21.47	21.50	21.53		
20	16QAM	50	0	20.21	20.26	20.25	21	2
20	16QAM	50	24	20.19	20.29	20.30		
20	16QAM	50	50	20.21	20.25	20.32		
20	16QAM	100	0	20.21	20.27	20.22		
20	64QAM	1	0	20.40	20.44	20.52	21	2
20	64QAM	1	49	20.41	20.48	20.57		
20	64QAM	1	99	20.40	20.41	20.44		
20	64QAM	50	0	19.22	19.26	19.27	20	3
20	64QAM	50	24	19.24	19.28	19.28		
20	64QAM	50	50	19.23	19.23	19.35		
20	64QAM	100	0	19.22	19.26	19.28		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.06	21.99	22.05	23	0
15	QPSK	1	37	22.06	22.17	22.07		
15	QPSK	1	74	21.94	22.10	22.07		
15	QPSK	36	0	21.05	21.07	21.12	22	1
15	QPSK	36	20	21.04	21.12	21.15		
15	QPSK	36	39	21.00	21.13	20.98		
15	QPSK	75	0	21.03	21.04	21.05		
15	16QAM	1	0	21.44	21.55	21.56	22	1
15	16QAM	1	37	21.48	21.55	21.59		
15	16QAM	1	74	21.42	21.42	21.44		
15	16QAM	36	0	20.12	20.16	20.19	21	2
15	16QAM	36	20	20.14	20.27	20.26		
15	16QAM	36	39	20.18	20.23	20.23		
15	16QAM	75	0	20.20	20.23	20.21		
15	64QAM	1	0	20.39	20.40	20.48	21	2
15	64QAM	1	37	20.34	20.40	20.49		
15	64QAM	1	74	20.34	20.31	20.35		
15	64QAM	36	0	19.17	19.17	19.25	20	3
15	64QAM	36	20	19.24	19.20	19.19		
15	64QAM	36	39	19.23	19.13	19.33		
15	64QAM	75	0	19.13	19.23	19.28		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.00	22.00	22.05	23	0
10	QPSK	1	25	22.03	22.10	22.12		
10	QPSK	1	49	22.00	22.12	22.04		
10	QPSK	25	0	21.00	21.08	21.09	22	1
10	QPSK	25	12	21.05	21.06	21.13		

10	QPSK	25	25	21.02	21.16	21.01		
10	QPSK	50	0	21.03	21.03	21.01		
10	16QAM	1	0	21.45	21.47	21.61	22	1
10	16QAM	1	25	21.39	21.57	21.57		
10	16QAM	1	49	21.38	21.49	21.50		
10	16QAM	25	0	20.15	20.25	20.18	21	2
10	16QAM	25	12	20.17	20.29	20.20		
10	16QAM	25	25	20.17	20.15	20.28		
10	16QAM	50	0	20.21	20.24	20.14		
10	64QAM	1	0	20.38	20.39	20.42	21	2
10	64QAM	1	25	20.34	20.43	20.54		
10	64QAM	1	49	20.35	20.41	20.39		
10	64QAM	25	0	19.18	19.25	19.22	20	3
10	64QAM	25	12	19.15	19.27	19.24		
10	64QAM	25	25	19.18	19.16	19.35		
10	64QAM	50	0	19.21	19.16	19.18		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	21.98	21.97	22.13	23	0
5	QPSK	1	12	21.97	22.20	22.12		
5	QPSK	1	24	21.94	22.12	22.10		
5	QPSK	12	0	20.97	21.04	21.03	22	1
5	QPSK	12	7	21.07	21.09	21.11		
5	QPSK	12	13	21.01	21.12	20.98		
5	QPSK	25	0	21.00	21.11	21.02		
5	16QAM	1	0	21.48	21.55	21.57	22	1
5	16QAM	1	12	21.47	21.53	21.65		
5	16QAM	1	24	21.37	21.48	21.47		
5	16QAM	12	0	20.19	20.21	20.20	21	2
5	16QAM	12	7	20.19	20.20	20.22		
5	16QAM	12	13	20.11	20.20	20.28		
5	16QAM	25	0	20.21	20.23	20.16		
5	64QAM	1	0	20.34	20.42	20.48	21	2
5	64QAM	1	12	20.35	20.42	20.48		
5	64QAM	1	24	20.39	20.39	20.41		
5	64QAM	12	0	19.19	19.16	19.25	20	3
5	64QAM	12	7	19.24	19.21	19.22		
5	64QAM	12	13	19.20	19.16	19.27		
5	64QAM	25	0	19.22	19.17	19.20		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.00	22.02	22.09	23	0
3	QPSK	1	8	22.03	22.17	22.07		
3	QPSK	1	14	21.93	22.04	22.08		
3	QPSK	8	0	20.96	21.06	21.03	22	1
3	QPSK	8	4	21.02	21.04	21.13		
3	QPSK	8	7	21.06	21.19	21.04		
3	QPSK	15	0	21.02	21.08	21.08		
3	16QAM	1	0	21.39	21.47	21.60	22	1
3	16QAM	1	8	21.47	21.58	21.61		
3	16QAM	1	14	21.43	21.43	21.45		
3	16QAM	8	0	20.15	20.20	20.21	21	2
3	16QAM	8	4	20.16	20.25	20.22		
3	16QAM	8	7	20.11	20.23	20.26		
3	16QAM	15	0	20.13	20.23	20.12		
3	64QAM	1	0	20.36	20.42	20.43	21	2

3	64QAM	1	8	20.33	20.38	20.53		
3	64QAM	1	14	20.33	20.36	20.39		
3	64QAM	8	0	19.16	19.16	19.21	20	3
3	64QAM	8	4	19.19	19.20	19.20		
3	64QAM	8	7	19.16	19.23	19.29		
3	64QAM	15	0	19.22	19.22	19.26		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	21.94	22.00	22.14	23	0
1.4	QPSK	1	3	22.02	22.07	22.22		
1.4	QPSK	1	5	21.93	21.97	22.14		
1.4	QPSK	3	0	22.01	22.04	22.18		
1.4	QPSK	3	1	22.03	22.08	22.21		
1.4	QPSK	3	3	21.99	22.05	22.18		
1.4	QPSK	6	0	20.97	21.02	21.18	22	1
1.4	16QAM	1	0	21.35	21.47	21.53	22	1
1.4	16QAM	1	3	21.45	21.54	21.57		
1.4	16QAM	1	5	21.37	21.48	21.54		
1.4	16QAM	3	0	21.14	21.22	21.31		
1.4	16QAM	3	1	21.17	21.28	21.36		
1.4	16QAM	3	3	21.13	21.22	21.31		
1.4	16QAM	6	0	20.19	20.23	20.37	21	2
1.4	64QAM	1	0	20.32	20.41	20.49	21	2
1.4	64QAM	1	3	20.39	20.48	20.53		
1.4	64QAM	1	5	20.30	20.41	20.47		
1.4	64QAM	3	0	20.29	20.39	20.47		
1.4	64QAM	3	1	20.34	20.41	20.51		
1.4	64QAM	3	3	20.28	20.38	20.45		
1.4	64QAM	6	0	19.13	19.17	19.30	20	3

<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	23.41	23.52	23.65	24	0
20	QPSK	1	49	23.39	23.46	23.58		
20	QPSK	1	99	23.30	23.50	23.57		
20	QPSK	50	0	22.48	22.47	22.62	23	1
20	QPSK	50	24	22.45	22.43	22.57		
20	QPSK	50	50	22.36	22.46	22.60		
20	QPSK	100	0	22.42	22.40	22.55		
20	16QAM	1	0	22.47	22.58	22.55	23	1
20	16QAM	1	49	22.39	22.60	22.68		
20	16QAM	1	99	22.43	22.48	22.46		
20	16QAM	50	0	21.29	21.32	21.52	22	2
20	16QAM	50	24	21.43	21.27	21.39		
20	16QAM	50	50	21.33	21.32	21.48		
20	16QAM	100	0	21.38	21.26	21.32		
20	64QAM	1	0	21.36	21.51	21.42	22	2
20	64QAM	1	49	21.39	21.51	21.46		
20	64QAM	1	99	21.33	21.57	21.49		
20	64QAM	50	0	20.40	20.29	20.37	21	3
20	64QAM	50	24	20.40	20.41	20.53		
20	64QAM	50	50	20.30	20.40	20.51		
20	64QAM	100	0	20.30	20.30	20.46		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	23.33	23.52	23.62	24	0
15	QPSK	1	37	23.31	23.40	23.54		
15	QPSK	1	74	23.23	23.43	23.50		
15	QPSK	36	0	22.42	22.39	22.54	23	1
15	QPSK	36	20	22.40	22.39	22.49		
15	QPSK	36	39	22.30	22.41	22.58		
15	QPSK	75	0	22.39	22.40	22.53		
15	16QAM	1	0	22.37	22.49	22.51	23	1
15	16QAM	1	37	22.32	22.59	22.60		
15	16QAM	1	74	22.34	22.47	22.45		
15	16QAM	36	0	21.29	21.25	21.51	22	2
15	16QAM	36	20	21.34	21.23	21.36		
15	16QAM	36	39	21.30	21.31	21.42		
15	16QAM	75	0	21.38	21.17	21.32		
15	64QAM	1	0	21.26	21.44	21.32	22	2
15	64QAM	1	37	21.29	21.47	21.38		
15	64QAM	1	74	21.26	21.56	21.46		
15	64QAM	36	0	20.33	20.21	20.31	21	3
15	64QAM	36	20	20.34	20.39	20.44		
15	64QAM	36	39	20.26	20.31	20.46		
15	64QAM	75	0	20.25	20.20	20.43		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	23.31	23.47	23.58	24	0
10	QPSK	1	25	23.31	23.39	23.58		
10	QPSK	1	49	23.24	23.48	23.54		
10	QPSK	25	0	22.41	22.40	22.56	23	1
10	QPSK	25	12	22.35	22.43	22.51		

10	QPSK	25	25	22.31	22.43	22.54		
10	QPSK	50	0	22.33	22.39	22.51		
10	16QAM	1	0	22.47	22.50	22.49	23	1
10	16QAM	1	25	22.29	22.57	22.60		
10	16QAM	1	49	22.43	22.46	22.42		
10	16QAM	25	0	21.24	21.28	21.46	22	2
10	16QAM	25	12	21.34	21.19	21.31		
10	16QAM	25	25	21.33	21.29	21.48		
10	16QAM	50	0	21.35	21.21	21.30		
10	64QAM	1	0	21.28	21.43	21.39	22	2
10	64QAM	1	25	21.29	21.44	21.39		
10	64QAM	1	49	21.31	21.47	21.49		
10	64QAM	25	0	20.31	20.27	20.30	21	3
10	64QAM	25	12	20.33	20.41	20.46		
10	64QAM	25	25	20.29	20.36	20.47		
10	64QAM	50	0	20.22	20.25	20.43		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	23.39	23.46	23.61	24	0
5	QPSK	1	12	23.30	23.44	23.51		
5	QPSK	1	24	23.24	23.50	23.55		
5	QPSK	12	0	22.42	22.42	22.54	23	1
5	QPSK	12	7	22.38	22.33	22.54		
5	QPSK	12	13	22.33	22.38	22.52		
5	QPSK	25	0	22.37	22.39	22.46		
5	16QAM	1	0	22.40	22.54	22.49	23	1
5	16QAM	1	12	22.33	22.51	22.65		
5	16QAM	1	24	22.39	22.43	22.43		
5	16QAM	12	0	21.28	21.27	21.43	22	2
5	16QAM	12	7	21.37	21.25	21.36		
5	16QAM	12	13	21.25	21.24	21.41		
5	16QAM	25	0	21.37	21.16	21.26		
5	64QAM	1	0	21.32	21.48	21.34	22	2
5	64QAM	1	12	21.39	21.41	21.40		
5	64QAM	1	24	21.23	21.51	21.43		
5	64QAM	12	0	20.40	20.27	20.29	21	3
5	64QAM	12	7	20.39	20.36	20.51		
5	64QAM	12	13	20.29	20.33	20.43		
5	64QAM	25	0	20.22	20.24	20.41		
Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	23.38	23.48	23.59	24	0
3	QPSK	1	8	23.34	23.44	23.50		
3	QPSK	1	14	23.23	23.50	23.51		
3	QPSK	8	0	22.48	22.42	22.61	23	1
3	QPSK	8	4	22.45	22.38	22.48		
3	QPSK	8	7	22.33	22.45	22.54		
3	QPSK	15	0	22.40	22.33	22.49		
3	16QAM	1	0	22.47	22.58	22.46	23	1
3	16QAM	1	8	22.32	22.52	22.63		
3	16QAM	1	14	22.42	22.38	22.38		
3	16QAM	8	0	21.27	21.31	21.43	22	2
3	16QAM	8	4	21.36	21.23	21.34		
3	16QAM	8	7	21.33	21.27	21.46		
3	16QAM	15	0	21.38	21.23	21.30		
3	64QAM	1	0	21.29	21.43	21.39	22	2

3	64QAM	1	8	21.30	21.46	21.45		
3	64QAM	1	14	21.24	21.50	21.45		
3	64QAM	8	0	20.33	20.24	20.30	21	3
3	64QAM	8	4	20.37	20.41	20.49		
3	64QAM	8	7	20.28	20.30	20.49		
3	64QAM	15	0	20.20	20.30	20.40		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	23.21	23.35	23.59	24	0
1.4	QPSK	1	3	23.25	23.42	23.61		
1.4	QPSK	1	5	23.19	23.38	23.52		
1.4	QPSK	3	0	23.35	23.32	23.52		
1.4	QPSK	3	1	23.31	23.42	23.53		
1.4	QPSK	3	3	23.22	23.51	23.56		
1.4	QPSK	6	0	22.28	22.35	22.61	23	1
1.4	16QAM	1	0	22.55	22.61	22.56	23	1
1.4	16QAM	1	3	22.54	22.78	22.66		
1.4	16QAM	1	5	22.43	22.70	22.59		
1.4	16QAM	3	0	22.35	22.44	22.49		
1.4	16QAM	3	1	22.36	22.50	22.48		
1.4	16QAM	3	3	22.32	22.51	22.50		
1.4	16QAM	6	0	21.41	21.57	21.66	22	2
1.4	64QAM	1	0	21.50	21.62	21.62	22	2
1.4	64QAM	1	3	21.55	21.76	21.61		
1.4	64QAM	1	5	21.44	21.70	21.58		
1.4	64QAM	3	0	21.49	21.53	21.69		
1.4	64QAM	3	1	21.59	21.67	21.64		
1.4	64QAM	3	3	21.44	21.62	21.64		
1.4	64QAM	6	0	20.36	20.47	20.56	21	3

<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	22.83	22.88	22.92	23	0
20	QPSK	1	49	22.76	22.75	22.82		
20	QPSK	1	99	22.48	22.46	22.73		
20	QPSK	50	0	20.98	21.14	21.35	22	1
20	QPSK	50	24	20.95	21.10	21.24		
20	QPSK	50	50	20.97	21.13	21.34		
20	QPSK	100	0	20.99	21.10	21.24		
20	16QAM	1	0	21.49	21.75	21.75	22	1
20	16QAM	1	49	21.57	21.74	21.85		
20	16QAM	1	99	21.51	21.61	21.55		
20	16QAM	50	0	20.10	20.25	20.40	21	2
20	16QAM	50	24	20.10	20.28	20.38		
20	16QAM	50	50	20.09	20.22	20.45		
20	16QAM	100	0	20.07	20.27	20.34		
20	64QAM	1	0	20.41	20.65	20.65	21	2
20	64QAM	1	49	20.48	20.70	20.82		
20	64QAM	1	99	20.37	20.53	20.55		
20	64QAM	50	0	19.10	19.30	19.39	20	3
20	64QAM	50	24	19.07	19.24	19.36		
20	64QAM	50	50	19.09	19.24	19.43		
20	64QAM	100	0	19.10	19.29	19.37		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	22.05	22.22	22.32	23	0
15	QPSK	1	37	22.11	22.24	22.44		
15	QPSK	1	74	22.03	22.14	22.28		
15	QPSK	36	0	20.95	21.10	21.24	22	1
15	QPSK	36	20	21.02	21.20	21.37		
15	QPSK	36	39	20.93	21.06	21.28		
15	QPSK	75	0	20.95	21.08	21.19		
15	16QAM	1	0	21.47	21.71	21.75	22	1
15	16QAM	1	37	21.50	21.68	21.81		
15	16QAM	1	74	21.45	21.55	21.57		
15	16QAM	36	0	20.05	20.27	20.34	21	2
15	16QAM	36	20	20.13	20.32	20.49		
15	16QAM	36	39	20.05	20.19	20.35		
15	16QAM	75	0	20.04	20.23	20.31		
15	64QAM	1	0	20.40	20.63	20.67	21	2
15	64QAM	1	37	20.45	20.65	20.76		
15	64QAM	1	74	20.36	20.43	20.55		
15	64QAM	36	0	19.10	19.30	19.39	20	3
15	64QAM	36	20	19.17	19.36	19.54		
15	64QAM	36	39	19.05	19.21	19.40		
15	64QAM	75	0	19.06	19.22	19.31		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	22.00	22.17	22.36	23	0
10	QPSK	1	25	22.04	22.18	22.36		
10	QPSK	1	49	21.94	22.10	22.26		
10	QPSK	25	0	20.98	21.12	21.34	22	1
10	QPSK	25	12	20.97	21.10	21.30		

10	QPSK	25	25	20.96	21.09	21.30		
10	QPSK	50	0	20.97	21.11	21.32		
10	16QAM	1	0	21.39	21.63	21.75	22	1
10	16QAM	1	25	21.43	21.62	21.71		
10	16QAM	1	49	21.38	21.52	21.55		
10	16QAM	25	0	20.09	20.28	20.47	21	2
10	16QAM	25	12	20.09	20.27	20.43		
10	16QAM	25	25	20.04	20.24	20.42		
10	16QAM	50	0	20.07	20.26	20.45		
10	64QAM	1	0	20.38	20.56	20.68	21	2
10	64QAM	1	25	20.39	20.56	20.63		
10	64QAM	1	49	20.29	20.44	20.52		
10	64QAM	25	0	19.11	19.28	19.49	20	3
10	64QAM	25	12	19.08	19.28	19.43		
10	64QAM	25	25	19.04	19.24	19.40		
10	64QAM	50	0	19.06	19.27	19.44		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	21.83	22.00	22.17	23	0
5	QPSK	1	12	22.00	22.15	22.33		
5	QPSK	1	24	21.82	21.98	22.13		
5	QPSK	12	0	20.95	21.09	21.29	22	1
5	QPSK	12	7	21.02	21.20	21.40		
5	QPSK	12	13	20.94	21.09	21.29		
5	QPSK	25	0	20.91	21.06	21.32		
5	16QAM	1	0	21.28	21.46	21.53	22	1
5	16QAM	1	12	21.44	21.63	21.65		
5	16QAM	1	24	21.23	21.41	21.43		
5	16QAM	12	0	20.09	20.28	20.43	21	2
5	16QAM	12	7	20.18	20.35	20.46		
5	16QAM	12	13	20.06	20.23	20.35		
5	16QAM	25	0	20.03	20.22	20.38		
5	64QAM	1	0	20.22	20.41	20.52	21	2
5	64QAM	1	12	20.37	20.56	20.63		
5	64QAM	1	24	20.18	20.36	20.40		
5	64QAM	12	0	19.13	19.33	19.43	20	3
5	64QAM	12	7	19.19	19.41	19.53		
5	64QAM	12	13	19.11	19.29	19.42		
5	64QAM	25	0	19.04	19.24	19.37		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	21.77	21.94	22.15	23	0
3	QPSK	1	8	21.97	22.09	22.26		
3	QPSK	1	14	21.72	21.94	22.07		
3	QPSK	8	0	20.85	21.04	21.21	22	1
3	QPSK	8	4	20.92	21.18	21.33		
3	QPSK	8	7	20.84	21.02	21.19		
3	QPSK	15	0	20.91	21.05	21.24		
3	16QAM	1	0	21.23	21.45	21.46	22	1
3	16QAM	1	8	21.39	21.60	21.56		
3	16QAM	1	14	21.21	21.35	21.35		
3	16QAM	8	0	19.99	20.26	20.43	21	2
3	16QAM	8	4	20.12	20.32	20.36		
3	16QAM	8	7	20.04	20.16	20.35		
3	16QAM	15	0	19.93	20.17	20.30		
3	64QAM	1	0	20.18	20.35	20.49	21	2

3	64QAM	1	8	20.32	20.50	20.54		
3	64QAM	1	14	20.09	20.34	20.38		
3	64QAM	8	0	19.08	19.30	19.38	20	3
3	64QAM	8	4	19.14	19.39	19.45		
3	64QAM	8	7	19.08	19.20	19.42		
3	64QAM	15	0	19.04	19.16	19.28		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	21.74	21.98	22.10	23	0
1.4	QPSK	1	3	21.99	22.06	22.31		
1.4	QPSK	1	5	21.72	21.92	22.03		
1.4	QPSK	3	0	21.75	21.99	22.11		
1.4	QPSK	3	1	21.90	22.14	22.28		
1.4	QPSK	3	3	21.81	21.95	22.03		
1.4	QPSK	6	0	20.93	21.04	21.25	22	1
1.4	16QAM	1	0	20.93	21.16	21.33	22	1
1.4	16QAM	1	3	20.88	21.05	21.27		
1.4	16QAM	1	5	20.87	21.02	21.21		
1.4	16QAM	3	0	20.93	21.18	21.38		
1.4	16QAM	3	1	20.91	21.03	21.29		
1.4	16QAM	3	3	20.92	21.02	21.24		
1.4	16QAM	6	0	20.06	20.19	20.35	21	2
1.4	64QAM	1	0	20.17	20.31	20.43	21	2
1.4	64QAM	1	3	20.02	20.15	20.34		
1.4	64QAM	1	5	20.00	20.20	20.33		
1.4	64QAM	3	0	20.10	20.35	20.45		
1.4	64QAM	3	1	20.05	20.21	20.26		
1.4	64QAM	3	3	20.02	20.18	20.41		
1.4	64QAM	6	0	19.19	19.36	19.43	20	3

<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.

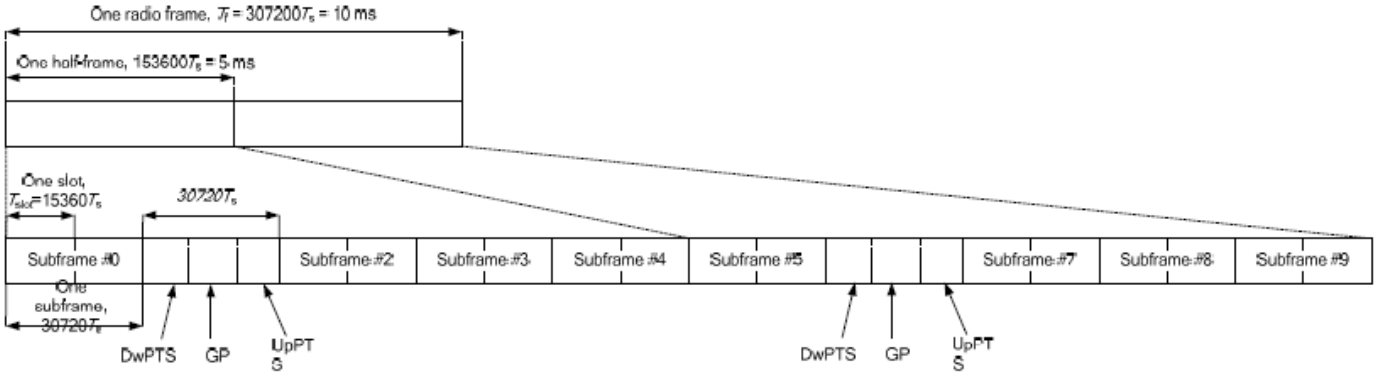


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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 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	22.97	24.34	24.22	23.99	22.53	24.5	0
20	QPSK	1	49	24.35	24.35	24.38	24.12	22.82		
20	QPSK	1	99	24.39	24.41	24.40	24.18	22.83		
20	QPSK	50	0	23.43	23.41	23.41	23.30	22.71	23.5	1
20	QPSK	50	24	23.47	23.42	23.40	23.23	22.83		
20	QPSK	50	50	23.48	23.49	23.42	23.31	22.84		
20	QPSK	100	0	23.44	23.46	23.44	23.24	22.69		
20	16QAM	1	0	23.31	23.40	23.40	23.17	21.82	23.5	1
20	16QAM	1	49	23.37	23.45	23.48	23.21	22.34		
20	16QAM	1	99	23.50	23.42	23.33	23.23	21.84		
20	16QAM	50	0	22.31	22.42	22.43	22.12	22.00	22.5	2
20	16QAM	50	24	22.33	22.43	22.41	22.17	22.14		
20	16QAM	50	50	22.42	22.48	22.35	22.10	22.04		
20	16QAM	100	0	22.41	22.46	22.38	22.14	22.00		
20	64QAM	1	0	20.65	22.10	22.01	21.79	20.86	22.5	2
20	64QAM	1	49	22.03	22.05	22.02	21.79	21.03		
20	64QAM	1	99	22.09	22.13	21.95	21.84	20.89		
20	64QAM	50	0	21.33	21.38	21.42	21.11	21.13	21.5	3
20	64QAM	50	24	21.34	21.42	21.41	21.15	21.23		
20	64QAM	50	50	21.43	21.46	21.34	21.17	21.17		
20	64QAM	100	0	21.38	21.49	21.39	21.13	21.14		
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	22.83	24.18	24.15	23.92	22.50	24.5	0
15	QPSK	1	37	24.30	24.27	24.22	23.93	22.73		
15	QPSK	1	74	24.35	24.18	24.01	24.10	22.50		
15	QPSK	36	0	23.24	23.39	23.33	23.20	22.57	23.5	1
15	QPSK	36	20	23.44	23.32	23.40	23.20	22.80		
15	QPSK	36	39	23.41	23.21	23.25	23.15	22.69		
15	QPSK	75	0	23.41	23.27	23.44	23.08	22.69		
15	16QAM	1	0	23.11	23.26	23.32	23.09	21.65	23.5	1
15	16QAM	1	37	23.24	23.26	23.30	23.15	22.14		
15	16QAM	1	74	23.32	23.34	23.33	23.10	21.66		
15	16QAM	36	0	22.28	22.33	22.30	22.01	21.88	22.5	2
15	16QAM	36	20	22.27	22.39	22.26	22.03	22.12		
15	16QAM	36	39	22.27	22.32	22.24	22.03	21.96		
15	16QAM	75	0	22.26	22.33	22.18	21.95	21.84		
15	64QAM	1	0	21.00	22.08	21.81	21.62	20.79	22.5	2
15	64QAM	1	37	21.84	21.99	21.91	21.71	20.89		
15	64QAM	1	74	21.98	22.00	21.87	21.80	20.74		
15	64QAM	36	0	21.19	21.26	21.25	20.91	20.93	21.5	3
15	64QAM	36	20	21.26	21.34	21.29	21.03	21.07		
15	64QAM	36	39	21.34	21.32	21.23	20.99	21.17		
15	64QAM	75	0	21.32	21.31	21.39	21.09	20.96		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.86	24.15	24.17	23.93	22.50	24.5	0
10	QPSK	1	25	24.16	24.40	24.23	24.04	22.76		
10	QPSK	1	49	24.39	24.18	24.04	23.99	22.51		
10	QPSK	25	0	23.41	23.26	23.40	23.24	22.53	23.5	1

10	QPSK	25	12	23.29	23.33	23.37	23.16	22.78		
10	QPSK	25	25	23.37	23.41	23.28	23.15	22.59		
10	QPSK	50	0	23.40	23.39	23.25	23.19	22.69		
10	16QAM	1	0	23.16	23.29	23.20	23.15	21.74	23.5	1
10	16QAM	1	25	23.37	23.34	23.29	23.11	22.34		
10	16QAM	1	49	23.36	23.24	23.32	23.16	21.84		
10	16QAM	25	0	22.21	22.38	22.36	22.10	21.96	22.5	2
10	16QAM	25	12	22.17	22.36	22.21	21.98	22.10		
10	16QAM	25	25	22.32	22.46	22.26	22.02	22.03		
10	16QAM	50	0	22.30	22.42	22.24	22.12	21.93		
10	64QAM	1	0	20.55	21.94	21.90	21.71	20.86	22.5	2
10	64QAM	1	25	21.94	21.85	21.92	21.76	20.90		
10	64QAM	1	49	22.04	21.94	21.78	21.83	20.75		
10	64QAM	25	0	21.28	21.34	21.37	21.02	21.11	21.5	3
10	64QAM	25	12	21.23	21.41	21.22	21.04	21.03		
10	64QAM	25	25	21.23	21.45	21.15	21.03	21.06		
10	64QAM	50	0	21.28	21.42	21.21	20.93	21.14		
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	22.89	24.15	24.07	23.88	22.52	24.5	0
5	QPSK	1	12	24.22	24.26	24.30	24.02	22.79		
5	QPSK	1	24	24.38	24.30	24.10	24.16	22.50		
5	QPSK	12	0	23.42	23.26	23.37	23.24	22.55	23.5	1
5	QPSK	12	7	23.31	23.28	23.24	23.18	22.65		
5	QPSK	12	13	23.33	23.39	23.25	23.02	22.59		
5	QPSK	25	0	23.43	23.23	23.26	23.19	22.69		
5	16QAM	1	0	23.30	23.22	23.32	23.01	21.72	23.5	1
5	16QAM	1	12	23.35	23.41	23.48	23.21	22.19		
5	16QAM	1	24	23.45	23.26	23.29	23.18	21.74		
5	16QAM	12	0	22.22	22.26	22.42	21.98	21.87	22.5	2
5	16QAM	12	7	22.21	22.27	22.39	22.08	22.11		
5	16QAM	12	13	22.33	22.31	22.25	21.93	21.97		
5	16QAM	25	0	22.36	22.44	22.23	21.96	21.97		
5	64QAM	1	0	20.59	21.97	21.96	21.65	20.74	22.5	2
5	64QAM	1	12	22.01	22.03	21.92	21.70	20.97		
5	64QAM	1	24	21.97	21.94	21.92	21.84	20.74		
5	64QAM	12	0	21.24	21.27	21.31	21.03	20.96	21.5	3
5	64QAM	12	7	21.16	21.23	21.35	20.98	21.12		
5	64QAM	12	13	21.24	21.32	21.15	21.01	21.05		
5	64QAM	25	0	21.21	21.41	21.20	21.03	20.99		

12. WiFi/Bluetooth Output Power (Unit: dBm)

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.

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	19.65	20.00	99.19
		6	2437	19.65	20.00	
		11	2462	19.65	20.00	
	802.11g 6Mbps	1	2412	14.35	15.00	98.31
		6	2437	19.65	20.00	
		11	2462	15.35	16.00	
	802.11n-HT20 MCS0	1	2412	12.55	13.50	97.92
		6	2437	19.85	20.00	
		11	2462	15.05	16.00	
	802.11n-HT40 MCS0	3	2422	11.85	12.00	94.49
		6	2437	14.15	15.00	
		9	2452	11.95	12.50	
	802.11ac-VHT20 MCS0	1	2412	12.65	13.50	98.19
		6	2437	19.95	20.00	
		11	2462	15.15	16.00	
	802.11ac-VHT40 MCS0	3	2422	11.95	12.00	94.64
		6	2437	14.25	15.00	
		9	2452	12.05	12.50	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	17.71	18.00	98.45
		40	5200	17.51	18.00	
		44	5220	17.41	18.00	
		48	5240	17.51	18.00	
	802.11n-HT20 MCS0	36	5180	17.31	17.50	98.44
		40	5200	17.21	18.00	
		44	5220	17.01	17.50	
		48	5240	17.21	17.50	
	802.11n-HT40 MCS0	38	5190	17.91	18.00	96.37
		46	5230	17.71	18.00	
	802.11ac-VHT20 MCS0	36	5180	17.41	17.50	97.94
		40	5200	17.31	18.00	
		44	5220	17.11	17.50	
		48	5240	17.31	17.50	
	802.11ac-VHT40 MCS0	38	5190	17.99	18.00	95.90
		46	5230	17.81	18.00	
	802.11ac-VHT80 MCS0	42	5210	17.71	18.00	92.68

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	20.11	20.50	98.45
		56	5280	19.91	20.00	
		60	5300	19.91	20.00	
		64	5320	20.11	20.50	
	802.11n-HT20 MCS0	52	5260	19.51	20.00	98.44
		56	5280	19.61	20.00	
		60	5300	19.71	20.00	
		64	5320	19.91	20.00	
	802.11n-HT40 MCS0	54	5270	19.61	20.00	96.37
		62	5310	16.61	17.00	
	802.11ac-VHT20 MCS0	52	5260	19.61	20.00	97.94
		56	5280	19.71	20.00	
		60	5300	19.81	20.00	
		64	5320	20.01	20.50	
	802.11ac-VHT40 MCS0	54	5270	19.71	20.00	95.90
		62	5310	16.71	17.00	
	802.11ac-VHT80 MCS0	58	5290	16.11	17.50	92.68

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	18.91	19.50	98.45
		116	5580	19.11	19.50	
		124	5620	19.01	19.50	
		132	5660	19.01	19.50	
		144	5720	19.11	19.50	
	802.11n-HT20 MCS0	100	5500	19.21	19.50	98.44
		116	5580	18.91	19.50	
		124	5620	18.81	19.50	
		132	5660	18.81	19.50	
		144	5720	19.11	19.50	
	802.11n-HT40 MCS0	102	5510	17.81	18.00	96.37
		110	5550	18.11	18.50	
		126	5630	18.01	18.50	
		134	5670	17.91	18.50	
		142	5710	18.41	18.55	
	802.11ac-VHT20 MCS0	100	5500	19.31	19.50	97.94
		116	5580	19.01	19.50	
		124	5620	18.91	19.50	
		132	5660	18.91	19.50	
		144	5720	19.21	19.50	
	802.11ac-VHT40 MCS0	102	5510	17.91	18.00	95.90
		110	5550	18.21	18.50	
		126	5630	18.11	18.50	
		134	5670	18.01	18.50	
		142	5710	18.51	18.55	
	802.11ac-VHT80 MCS0	106	5530	15.51	16.00	92.68
		122	5610	18.61	19.00	
		138	5690	18.91	19.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	17.61	18.00	98.45
		157	5785	17.81	18.00	
		165	5825	17.61	18.00	
	802.11n-HT20 MCS0	149	5745	17.21	18.00	98.44
		157	5785	17.81	18.00	
		165	5825	17.31	18.00	
	802.11n-HT40 MCS0	151	5755	17.51	18.00	96.37
		159	5795	17.71	18.00	
	802.11ac-VHT20 MCS0	149	5745	17.31	18.00	97.94
		157	5785	17.91	18.00	
		165	5825	17.41	18.00	
	802.11ac-VHT40 MCS0	151	5755	17.61	18.00	95.90
		159	5795	17.81	18.00	
	802.11ac-VHT80 MCS0	155	5775	17.91	18.00	92.68

<2.4GHz Bluetooth>

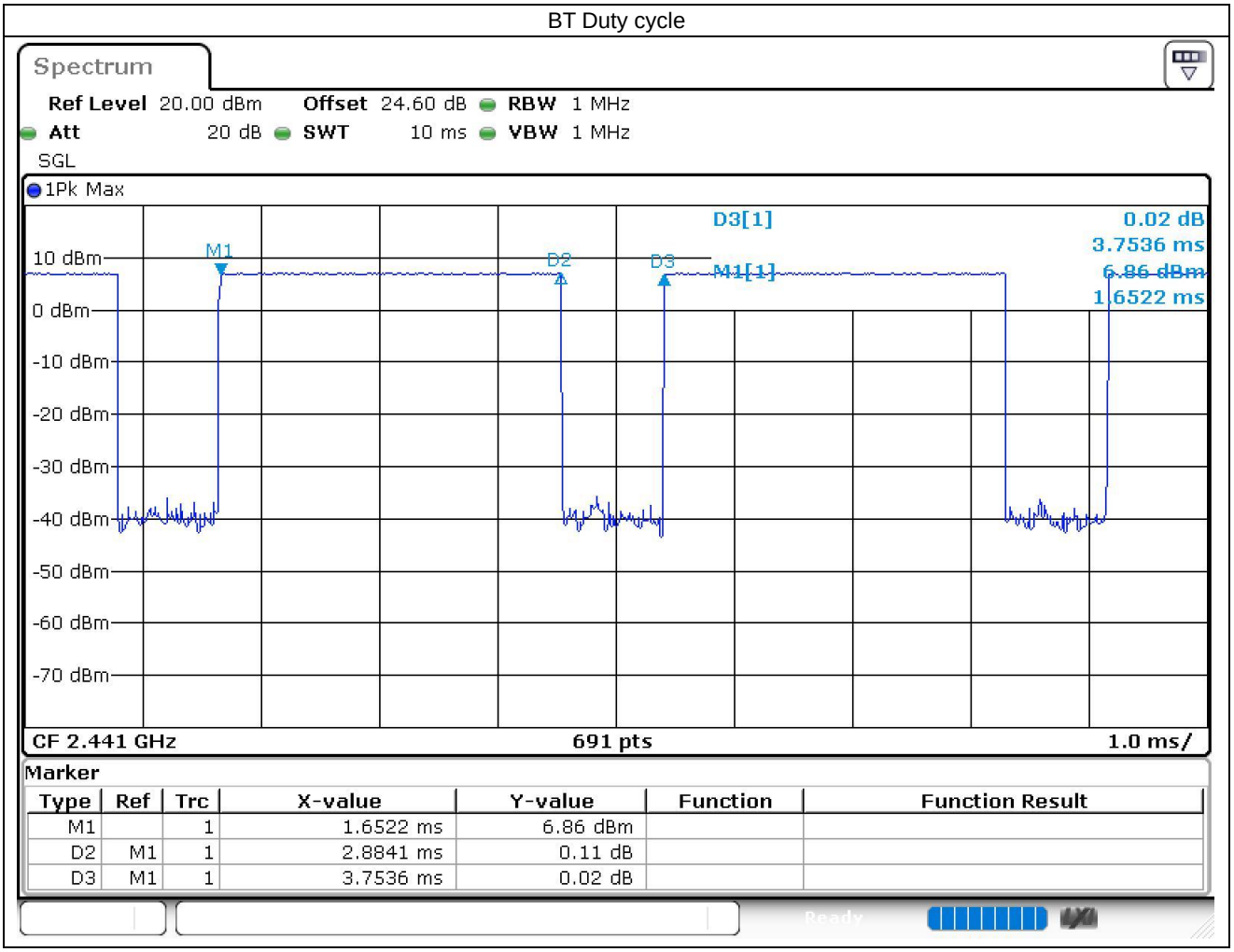
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	7.45	4.20	4.21
	CH 39	2441	7.05	3.89	3.88
	CH 78	2480	6.71	3.64	3.61
Tune-up Limit			8.50	5.50	5.50

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	1.65	1.65
	CH 19	2440	2.15	2.15
	CH 39	2480	2.25	2.25
Tune-up Limit			2.50	2.50

General Note:

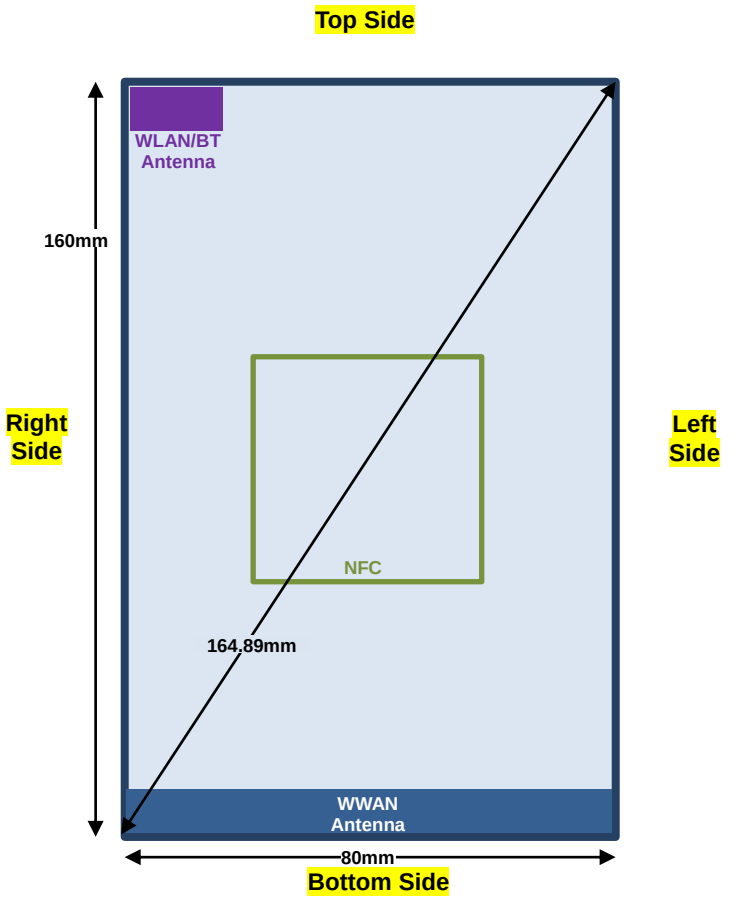
1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.84% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

BT Duty cycle



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	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
BT&WLAN	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

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

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: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   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. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of WCDMA B2/B4 and LTE B2/B4/B25/B66.
5. Pre KDB648474 D04v01r03, when the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for this device only bottom side SAR for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg of WCDMA B2/B4 and LTE B25/B66, therefore product specific SAR is necessary.
7. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.

UMTS Note:

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

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 B12/B26 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.
7. LTE band 2/4/5/17 SAR test was covered by Band 25/66/26/12; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

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

14.1 Head SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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	Battery 1	9400	1880	23.75	24.00	1.059	-0.02	0.974	1.032
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	9262	1852.4	23.31	24.00	1.172	-0.02	0.863	1.012
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	9538	1907.6	23.71	24.00	1.069	-0.02	1.030	1.101
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	Battery 1	9400	1880	23.75	24.00	1.059	-0.13	0.264	0.280
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	9400	1880	23.75	24.00	1.059	-0.09	0.992	1.051
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	9262	1852.4	23.31	24.00	1.172	-0.01	0.901	1.056
01	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	9538	1907.6	23.71	24.00	1.069	-0.07	1.180	1.261
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	Battery 1	9400	1880	23.75	24.00	1.059	-0.03	0.266	0.282
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Battery 2	9538	1907.6	23.71	24.00	1.069	0.03	1.120	1.197
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Battery 3	9538	1907.6	23.71	24.00	1.069	0.05	1.090	1.165
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	1413	1732.6	24.48	24.50	1.005	-0.03	0.772	0.776
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	1312	1712.4	24.40	24.50	1.023	-0.14	0.807	0.826
02	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	1513	1752.6	24.47	24.50	1.007	-0.07	1.190	1.198
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	Battery 1	1413	1732.6	24.48	24.50	1.005	-0.13	0.252	0.253
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	1413	1732.6	24.48	24.50	1.005	-0.14	0.623	0.626
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	Battery 1	1413	1732.6	24.48	24.50	1.005	-0.11	0.198	0.199
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Battery 2	1513	1752.6	24.47	24.50	1.007	0.05	1.110	1.118
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Battery 3	1513	1752.6	24.47	24.50	1.007	0.01	1.100	1.108
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	Battery 1	4182	836.4	25.46	25.50	1.009	0	0.685	0.691
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	Battery 1	4182	836.4	25.46	25.50	1.009	0.02	0.390	0.394
03	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	4182	836.4	25.46	25.50	1.009	-0.08	0.837	0.845
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	4132	826.4	25.25	25.50	1.059	0.02	0.743	0.787
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	4233	846.6	25.12	25.50	1.091	-0.05	0.721	0.787
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	Battery 1	4182	836.4	25.46	25.50	1.009	-0.07	0.469	0.473
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 2	4182	836.4	25.46	25.50	1.009	-0.11	0.824	0.832
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 3	4182	836.4	25.46	25.50	1.009	0.09	0.830	0.838

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	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)
04	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	20850	2510	23.38	23.50	1.028	0.05	1.340	1.378
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	21100	2535	23.21	23.50	1.069	0.12	1.060	1.133
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	21350	2560	23.09	23.50	1.099	0.13	0.997	1.096
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	20850	2510	22.38	22.50	1.028	-0.01	0.889	0.914
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	21100	2535	22.19	22.50	1.074	0.06	0.850	0.913
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	21350	2560	22.08	22.50	1.102	0.11	0.818	0.901
	LTE Band 7	20M	QPSK	100	0	Right Cheek	0mm	Battery 1	20850	2510	22.28	22.50	1.052	0.11	0.864	0.909
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Battery 1	20850	2510	23.38	23.50	1.028	-0.08	0.297	0.305
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Battery 1	20850	2510	22.38	22.50	1.028	-0.05	0.229	0.235
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	20850	2510	23.38	23.50	1.028	-0.18	0.568	0.584
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Battery 1	20850	2510	22.38	22.50	1.028	-0.14	0.526	0.541
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Battery 1	20850	2510	23.38	23.50	1.028	-0.12	0.528	0.543
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Battery 1	20850	2510	22.38	22.50	1.028	-0.09	0.400	0.411
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Battery 2	20850	2510	23.38	23.50	1.028	0.02	1.280	1.316
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Battery 3	20850	2510	23.38	23.50	1.028	0.09	1.200	1.234
	LTE Band 12	10M	QPSK	1	0	Right Cheek	0mm	Battery 1	23095	707.5	24.78	25.00	1.052	-0.19	0.318	0.335
	LTE Band 12	10M	QPSK	25	0	Right Cheek	0mm	Battery 1	23095	707.5	23.79	24.00	1.050	-0.12	0.244	0.256
	LTE Band 12	10M	QPSK	1	0	Right Tilted	0mm	Battery 1	23095	707.5	24.78	25.00	1.052	-0.12	0.198	0.208
	LTE Band 12	10M	QPSK	25	0	Right Tilted	0mm	Battery 1	23095	707.5	23.79	24.00	1.050	-0.06	0.160	0.168
05	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	Battery 1	23095	707.5	24.78	25.00	1.052	-0.19	0.383	0.403
	LTE Band 12	10M	QPSK	25	0	Left Cheek	0mm	Battery 1	23095	707.5	23.79	24.00	1.050	-0.01	0.279	0.293
	LTE Band 12	10M	QPSK	1	0	Left Tilted	0mm	Battery 1	23095	707.5	24.78	25.00	1.052	-0.12	0.179	0.188
	LTE Band 12	10M	QPSK	25	0	Left Tilted	0mm	Battery 1	23095	707.5	23.79	24.00	1.050	-0.11	0.153	0.161
	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	Battery 2	23095	707.5	24.78	25.00	1.052	0.03	0.376	0.396
	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	Battery 3	23095	707.5	24.78	25.00	1.052	0.05	0.374	0.393
	LTE Band 13	10M	QPSK	1	0	Right Cheek	0mm	Battery 1	23230	782	24.39	24.50	1.026	-0.19	0.371	0.381
	LTE Band 13	10M	QPSK	25	0	Right Cheek	0mm	Battery 1	23230	782	23.32	23.50	1.042	-0.1	0.288	0.300
	LTE Band 13	10M	QPSK	1	0	Right Tilted	0mm	Battery 1	23230	782	24.39	24.50	1.026	-0.17	0.255	0.262
	LTE Band 13	10M	QPSK	25	0	Right Tilted	0mm	Battery 1	23230	782	23.32	23.50	1.042	-0.12	0.202	0.211
06	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Battery 1	23230	782	24.39	24.50	1.026	-0.15	0.452	0.464
	LTE Band 13	10M	QPSK	25	0	Left Cheek	0mm	Battery 1	23230	782	23.32	23.50	1.042	-0.11	0.337	0.351
	LTE Band 13	10M	QPSK	1	0	Left Tilted	0mm	Battery 1	23230	782	24.39	24.50	1.026	-0.1	0.321	0.329
	LTE Band 13	10M	QPSK	25	0	Left Tilted	0mm	Battery 1	23230	782	23.32	23.50	1.042	-0.18	0.211	0.220
	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Battery 2	23230	782	24.39	24.50	1.026	0.06	0.442	0.453
	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Battery 3	23230	782	24.39	24.50	1.026	-0.01	0.438	0.449
	LTE Band 14	10M	QPSK	1	0	Right Cheek	0mm	Battery 1	23330	793	24.51	25.00	1.119	-0.03	0.429	0.480
	LTE Band 14	10M	QPSK	25	0	Right Cheek	0mm	Battery 1	23330	793	23.58	24.00	1.102	-0.01	0.349	0.384
	LTE Band 14	10M	QPSK	1	0	Right Tilted	0mm	Battery 1	23330	793	24.51	25.00	1.119	-0.05	0.291	0.326
	LTE Band 14	10M	QPSK	25	0	Right Tilted	0mm	Battery 1	23330	793	23.58	24.00	1.102	0.02	0.227	0.250
07	LTE Band 14	10M	QPSK	1	0	Left Cheek	0mm	Battery 1	23330	793	24.51	25.00	1.119	0	0.503	0.563
	LTE Band 14	10M	QPSK	25	0	Left Cheek	0mm	Battery 1	23330	793	23.58	24.00	1.102	0.1	0.406	0.447
	LTE Band 14	10M	QPSK	1	0	Left Tilted	0mm	Battery 1	23330	793	24.51	25.00	1.119	-0.11	0.342	0.383
	LTE Band 14	10M	QPSK	25	0	Left Tilted	0mm	Battery 1	23330	793	23.58	24.00	1.102	-0.06	0.269	0.296
	LTE Band 14	10M	QPSK	1	0	Left Cheek	0mm	Battery 2	23330	793	24.51	25.00	1.119	-0.08	0.479	0.536
	LTE Band 14	10M	QPSK	1	0	Left Cheek	0mm	Battery 3	23330	793	24.51	25.00	1.119	0.09	0.462	0.517

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	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 25	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	26590	1905	24.24	24.50	1.062	0.01	0.568	0.603
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	26590	1905	23.30	23.50	1.047	0.06	0.454	0.475
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Battery 1	26590	1905	24.24	24.50	1.062	0.15	0.175	0.186
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Battery 1	26590	1905	23.30	23.50	1.047	0.02	0.140	0.147
08	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	26590	1905	24.24	24.50	1.062	0.19	0.603	0.640
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	26140	1860	24.06	24.50	1.107	0.11	0.552	0.611
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	26340	1880	24.15	24.50	1.084	0.1	0.571	0.619
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Battery 1	26590	1905	23.30	23.50	1.047	0.01	0.472	0.494
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Battery 1	26590	1905	24.24	24.50	1.062	0.13	0.200	0.212
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Battery 1	26590	1905	23.30	23.50	1.047	-0.08	0.163	0.171
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Battery 2	26590	1905	24.24	24.50	1.062	0.14	0.552	0.586
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Battery 3	26590	1905	24.24	24.50	1.062	0.13	0.566	0.601
09	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Battery 1	26865	831.5	24.22	25.00	1.197	-0.04	0.506	0.606
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Battery 1	26865	831.5	23.32	24.00	1.169	0.07	0.410	0.479
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Battery 1	26865	831.5	24.22	25.00	1.197	0.01	0.216	0.258
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Battery 1	26865	831.5	23.32	24.00	1.169	0.06	0.174	0.203
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Battery 1	26865	831.5	24.22	25.00	1.197	-0.1	0.456	0.546
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Battery 1	26865	831.5	23.32	24.00	1.169	0.1	0.361	0.422
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Battery 1	26865	831.5	24.22	25.00	1.197	0	0.294	0.352
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Battery 1	26865	831.5	23.32	24.00	1.169	-0.1	0.235	0.275
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Battery 2	26865	831.5	24.22	25.00	1.197	0.12	0.462	0.553
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Battery 3	26865	831.5	24.22	25.00	1.197	0.16	0.453	0.542
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	132572	1770	24.46	24.50	1.009	-0.17	0.940	0.949
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	132072	1720	24.09	24.50	1.099	-0.12	0.660	0.725
10	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Battery 1	132322	1745	24.24	24.50	1.062	-0.05	1.010	1.072
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Battery 1	132572	1770	23.37	23.50	1.030	-0.09	0.730	0.752
	LTE Band 66	20M	QPSK	100	0	Right Cheek	0mm	Battery 1	132572	1770	23.30	23.50	1.047	0.04	0.730	0.764
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Battery 1	132572	1770	24.46	24.50	1.009	-0.06	0.220	0.222
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Battery 1	132572	1770	23.37	23.50	1.030	-0.17	0.184	0.190
	LTE Band 66	20M	QPSK	1	0	Left Cheek	0mm	Battery 1	132572	1770	24.46	24.50	1.009	-0.04	0.762	0.769
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	Battery 1	132572	1770	23.37	23.50	1.030	-0.02	0.637	0.656
	LTE Band 66	20M	QPSK	1	0	Left Tilted	0mm	Battery 1	132572	1770	24.46	24.50	1.009	-0.15	0.175	0.177
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	Battery 1	132572	1770	23.37	23.50	1.030	-0.11	0.144	0.148
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Battery 2	132322	1745	24.24	24.50	1.062	0.12	0.987	1.048
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Battery 3	132322	1745	24.24	24.50	1.062	-0.06	0.954	1.013

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	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 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 1	40185	2549.5	24.41	24.50	1.021	62.9	1.006	0.12	0.582	0.598
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 1	39750	2506	24.39	24.50	1.026	62.9	1.006	0.16	0.554	0.572
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 1	40620	2593	24.40	24.50	1.023	62.9	1.006	0.12	0.516	0.531
11	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 1	41055	2636.5	24.18	24.50	1.076	62.9	1.006	0	0.592	0.641
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 1	41490	2680	22.83	24.50	1.469	62.9	1.006	0.18	0.421	0.622
	LTE Band 41	20M	QPSK	50	50	Right Cheek	0mm	Battery 1	40185	2549.5	23.49	23.50	1.002	62.9	1.006	-0.02	0.506	0.510
	LTE Band 41	20M	QPSK	100	0	Right Cheek	0mm	Battery 1	40185	2549.5	23.46	23.50	1.009	62.9	1.006	0.06	0.498	0.506
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Battery 1	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.16	0.124	0.127
	LTE Band 41	20M	QPSK	50	50	Right Tilted	0mm	Battery 1	40185	2549.5	23.49	23.50	1.002	62.9	1.006	0.02	0.100	0.101
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	Battery 1	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.08	0.415	0.426
	LTE Band 41	20M	QPSK	50	50	Left Cheek	0mm	Battery 1	40185	2549.5	23.49	23.50	1.002	62.9	1.006	-0.08	0.417	0.420
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Battery 1	40185	2549.5	24.41	24.50	1.021	62.9	1.006	0.13	0.242	0.249
	LTE Band 41	20M	QPSK	50	50	Left Tilted	0mm	Battery 1	40185	2549.5	23.49	23.50	1.002	62.9	1.006	0	0.194	0.196
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 2	41055	2636.5	24.18	24.50	1.076	62.9	1.006	0.01	0.522	0.565
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Battery 3	41055	2636.5	24.18	24.50	1.076	62.9	1.006	0.05	0.541	0.586

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.06	0.466	0.509
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.04	0.341	0.373
12	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.03	1.090	1.191
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 1	1	2412	19.65	20.00	1.084	99.19	1.008	-0.03	0.972	1.062
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 1	11	2462	19.65	20.00	1.084	99.19	1.008	0.03	1.070	1.169
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.14	0.691	0.755
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 2	6	2437	19.65	20.00	1.084	99.19	1.008	0.05	1.030	1.125
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 3	6	2437	19.65	20.00	1.084	99.19	1.008	0.13	0.998	1.090
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	-0.08	0.433	0.481
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	0	0.319	0.355
13	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	0	1.190	1.323
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	56	5280	19.91	20.00	1.021	98.45	1.016	0.09	1.100	1.141
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	60	5300	19.91	20.00	1.021	98.45	1.016	0.18	0.962	0.998
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	64	5320	20.11	20.50	1.094	98.45	1.016	0.1	1.120	1.245
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	0.16	0.441	0.490
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 2	52	5260	20.11	20.50	1.094	98.45	1.016	0.13	1.130	1.256
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 3	52	5260	20.11	20.50	1.094	98.45	1.016	-0.12	1.070	1.189
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	-0.13	0.208	0.231
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	-0.09	0.187	0.208
14	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	-0.12	0.859	0.955
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	100	5500	18.91	19.50	1.146	98.45	1.016	0.02	0.743	0.865
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	124	5620	19.01	19.50	1.119	98.45	1.016	-0.06	0.752	0.855
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	132	5660	19.01	19.50	1.119	98.45	1.016	-0.01	0.798	0.908
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	144	5720	19.11	19.50	1.094	98.45	1.016	-0.06	0.726	0.807
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	-0.07	0.424	0.471
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 2	116	5580	19.11	19.50	1.094	98.45	1.016	-0.1	0.811	0.901
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 3	116	5580	19.11	19.50	1.094	98.45	1.016	-0.07	0.824	0.916
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	0.05	0.253	0.279
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	-0.05	0.157	0.173
15	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	0.05	0.469	0.517
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	0.08	0.265	0.292
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Battery 2	155	5775	17.91	18.00	1.021	92.68	1.079	0.02	0.422	0.465
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Battery 3	155	5775	17.91	18.00	1.021	92.68	1.079	-0.09	0.411	0.453

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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	Right Cheek	0mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	0.09	0.024	0.033
	Bluetooth	1Mbps	Right Tilted	0mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	-0.1	0.018	0.024
16	Bluetooth	1Mbps	Left Cheek	0mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	-0.12	0.065	0.090
	Bluetooth	1Mbps	Left Cheek	0mm	Battery 1	39	2441	7.05	8.50	1.395	76.84	1.084	-0.04	0.055	0.083
	Bluetooth	1Mbps	Left Cheek	0mm	Battery 1	78	2480	6.71	8.50	1.509	76.84	1.084	0.08	0.053	0.087
	Bluetooth	1Mbps	Left Tilted	0mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	0.05	0.025	0.034
	Bluetooth	1Mbps	Left Cheek	0mm	Battery 2	0	2402	7.45	8.50	1.273	76.84	1.084	0.05	0.057	0.079
	Bluetooth	1Mbps	Left Cheek	0mm	Battery 3	0	2402	7.45	8.50	1.273	76.84	1.084	-0.08	0.053	0.073

14.2 Hotspot SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 1	ON	9400	1880	23.32	23.50	1.042	-0.15	1.170	1.220
	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 1	ON	9262	1852.4	23.25	23.50	1.059	-0.09	1.110	1.176
17	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 1	ON	9538	1907.6	23.31	23.50	1.045	-0.04	1.270	1.327
	WCDMA II	RMC 12.2Kbps	Back	10mm	Battery 1	ON	9400	1880	23.32	23.50	1.042	-0.12	0.834	0.869
	WCDMA II	RMC 12.2Kbps	Back	10mm	Battery 1	ON	9262	1852.4	23.25	23.50	1.059	-0.05	0.760	0.805
	WCDMA II	RMC 12.2Kbps	Back	10mm	Battery 1	ON	9538	1907.6	23.31	23.50	1.045	-0.1	0.864	0.903
	WCDMA II	RMC 12.2Kbps	Left Side	10mm	Battery 1	ON	9400	1880	23.32	23.50	1.042	-0.03	0.327	0.341
	WCDMA II	RMC 12.2Kbps	Right Side	10mm	Battery 1	ON	9400	1880	23.32	23.50	1.042	-0.1	0.734	0.765
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	Battery 1	ON	9400	1880	23.32	23.50	1.042	-0.08	0.438	0.457
	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 2	ON	9538	1907.6	23.31	23.50	1.045	-0.08	1.210	1.264
	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 3	ON	9538	1907.6	23.31	23.50	1.045	-0.09	1.150	1.201
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 1	ON	1413	1732.6	22.93	23.00	1.016	-0.03	1.260	1.280
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 1	ON	1312	1712.4	22.86	23.00	1.033	-0.09	1.070	1.105
18	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 1	ON	1513	1752.6	22.89	23.00	1.026	0.04	1.260	1.292
	WCDMA IV	RMC 12.2Kbps	Back	10mm	Battery 1	ON	1413	1732.6	22.93	23.00	1.016	-0.11	0.432	0.439
	WCDMA IV	RMC 12.2Kbps	Left Side	10mm	Battery 1	ON	1413	1732.6	22.93	23.00	1.016	-0.19	0.144	0.146
	WCDMA IV	RMC 12.2Kbps	Right Side	10mm	Battery 1	ON	1413	1732.6	22.93	23.00	1.016	-0.09	0.415	0.422
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	Battery 1	ON	1413	1732.6	22.93	23.00	1.016	-0.09	0.223	0.227
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 2	ON	1513	1752.6	22.89	23.00	1.026	-0.12	1.230	1.262
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 3	ON	1513	1752.6	22.89	23.00	1.026	-0.07	1.250	1.282
	WCDMA V	RMC 12.2Kbps	Front	10mm	Battery 1	OFF	4182	836.4	25.46	25.50	1.009	-0.16	0.715	0.722
	WCDMA V	RMC 12.2Kbps	Back	10mm	Battery 1	OFF	4182	836.4	25.46	25.50	1.009	-0.1	0.754	0.761
19	WCDMA V	RMC 12.2Kbps	Back	10mm	Battery 1	OFF	4132	826.4	25.25	25.50	1.059	-0.02	0.784	0.830
	WCDMA V	RMC 12.2Kbps	Back	10mm	Battery 1	OFF	4233	846.6	25.12	25.50	1.091	-0.07	0.750	0.819
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	Battery 1	OFF	4182	836.4	25.46	25.50	1.009	-0.18	0.415	0.419
	WCDMA V	RMC 12.2Kbps	Right Side	10mm	Battery 1	OFF	4182	836.4	25.46	25.50	1.009	-0.14	0.375	0.378
	WCDMA V	RMC 12.2Kbps	Bottom Side	10mm	Battery 1	OFF	4182	836.4	25.46	25.50	1.009	-0.11	0.583	0.588
	WCDMA V	RMC 12.2Kbps	Back	10mm	Battery 2	OFF	4132	826.4	25.25	25.50	1.059	-0.01	0.769	0.815
	WCDMA V	RMC 12.2Kbps	Back	10mm	Battery 3	OFF	4132	826.4	25.25	25.50	1.059	0.05	0.669	0.709

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Power Reduction	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	0	Front	10mm	Battery 1	OFF	20850	2510	23.38	23.50	1.028	-0.11	1.000	1.028
	LTE Band 7	20M	QPSK	1	0	Front	10mm	Battery 1	OFF	21100	2535	23.21	23.50	1.069	-0.07	0.954	1.020
	LTE Band 7	20M	QPSK	1	0	Front	10mm	Battery 1	OFF	21350	2560	23.09	23.50	1.099	-0.12	0.883	0.970
	LTE Band 7	20M	QPSK	50	0	Front	10mm	Battery 1	OFF	20850	2510	22.38	22.50	1.028	-0.08	0.800	0.822
	LTE Band 7	20M	QPSK	50	0	Front	10mm	Battery 1	OFF	21100	2535	22.19	22.50	1.074	-0.12	0.802	0.861
	LTE Band 7	20M	QPSK	50	0	Front	10mm	Battery 1	OFF	21350	2560	22.08	22.50	1.102	-0.11	0.744	0.820
	LTE Band 7	20M	QPSK	100	0	Front	10mm	Battery 1	OFF	20850	2510	22.28	22.50	1.052	-0.16	0.831	0.874
	LTE Band 7	20M	QPSK	1	0	Back	10mm	Battery 1	OFF	20850	2510	23.38	23.50	1.028	-0.14	0.975	1.002
	LTE Band 7	20M	QPSK	1	0	Back	10mm	Battery 1	OFF	21100	2535	23.21	23.50	1.069	-0.15	0.963	1.029
	LTE Band 7	20M	QPSK	1	0	Back	10mm	Battery 1	OFF	21350	2560	23.09	23.50	1.099	-0.19	0.947	1.041
	LTE Band 7	20M	QPSK	50	0	Back	10mm	Battery 1	OFF	20850	2510	22.38	22.50	1.028	-0.16	0.773	0.795
	LTE Band 7	20M	QPSK	50	0	Back	10mm	Battery 1	OFF	21100	2535	22.19	22.50	1.074	-0.12	0.799	0.858
	LTE Band 7	20M	QPSK	50	0	Back	10mm	Battery 1	OFF	21350	2560	22.08	22.50	1.102	-0.18	0.772	0.850
	LTE Band 7	20M	QPSK	100	0	Back	10mm	Battery 1	OFF	20850	2510	22.28	22.50	1.052	-0.11	0.741	0.780
	LTE Band 7	20M	QPSK	1	0	Left Side	10mm	Battery 1	OFF	20850	2510	23.38	23.50	1.028	-0.03	0.109	0.112
	LTE Band 7	20M	QPSK	50	0	Left Side	10mm	Battery 1	OFF	20850	2510	22.38	22.50	1.028	-0.05	0.086	0.088
	LTE Band 7	20M	QPSK	1	0	Right Side	10mm	Battery 1	OFF	20850	2510	23.38	23.50	1.028	-0.14	0.774	0.796
	LTE Band 7	20M	QPSK	50	0	Right Side	10mm	Battery 1	OFF	20850	2510	22.38	22.50	1.028	-0.15	0.713	0.733
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	20850	2510	23.38	23.50	1.028	-0.09	1.020	1.049
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	21100	2535	23.21	23.50	1.069	-0.06	1.030	1.101
20	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	21350	2560	23.09	23.50	1.099	-0.08	1.030	1.132
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	OFF	20850	2510	22.38	22.50	1.028	-0.02	0.824	0.847
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	OFF	21100	2535	22.19	22.50	1.074	-0.09	0.821	0.882
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	OFF	21350	2560	22.08	22.50	1.102	-0.03	0.800	0.881
	LTE Band 7	20M	QPSK	100	0	Bottom Side	10mm	Battery 1	OFF	20850	2510	22.28	22.50	1.052	-0.08	0.780	0.821
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Battery 2	OFF	21350	2560	23.09	23.50	1.099	-0.05	0.989	1.087
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	Battery 3	OFF	21350	2560	23.09	23.50	1.099	-0.13	0.981	1.078
	LTE Band 12	10M	QPSK	1	0	Front	10mm	Battery 1	OFF	23095	707.5	24.78	25.00	1.052	-0.02	0.431	0.453
	LTE Band 12	10M	QPSK	25	0	Front	10mm	Battery 1	OFF	23095	707.5	23.79	24.00	1.050	-0.1	0.334	0.351
21	LTE Band 12	10M	QPSK	1	0	Back	10mm	Battery 1	OFF	23095	707.5	24.78	25.00	1.052	-0.03	0.543	0.571
	LTE Band 12	10M	QPSK	25	0	Back	10mm	Battery 1	OFF	23095	707.5	23.79	24.00	1.050	-0.11	0.414	0.435
	LTE Band 12	10M	QPSK	1	0	Left Side	10mm	Battery 1	OFF	23095	707.5	24.78	25.00	1.052	-0.12	0.414	0.436
	LTE Band 12	10M	QPSK	25	0	Left Side	10mm	Battery 1	OFF	23095	707.5	23.79	24.00	1.050	-0.09	0.331	0.347
	LTE Band 12	10M	QPSK	1	0	Right Side	10mm	Battery 1	OFF	23095	707.5	24.78	25.00	1.052	-0.13	0.256	0.269
	LTE Band 12	10M	QPSK	25	0	Right Side	10mm	Battery 1	OFF	23095	707.5	23.79	24.00	1.050	-0.14	0.197	0.207
	LTE Band 12	10M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	23095	707.5	24.78	25.00	1.052	-0.09	0.151	0.159
	LTE Band 12	10M	QPSK	25	0	Bottom Side	10mm	Battery 1	OFF	23095	707.5	23.79	24.00	1.050	-0.06	0.117	0.123
	LTE Band 12	10M	QPSK	1	0	Back	10mm	Battery 2	OFF	23095	707.5	24.78	25.00	1.052	0.05	0.512	0.539
	LTE Band 12	10M	QPSK	1	0	Back	10mm	Battery 3	OFF	23095	707.5	24.78	25.00	1.052	-0.01	0.419	0.441

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Power Reduction	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 13	10M	QPSK	1	0	Front	10mm	Battery 1	OFF	23230	782	24.39	24.50	1.026	-0.13	0.492	0.505
	LTE Band 13	10M	QPSK	25	0	Front	10mm	Battery 1	OFF	23230	782	23.32	24.50	1.312	-0.14	0.381	0.500
22	LTE Band 13	10M	QPSK	1	0	Back	10mm	Battery 1	OFF	23230	782	24.39	24.50	1.026	-0.11	0.520	0.533
	LTE Band 13	10M	QPSK	25	0	Back	10mm	Battery 1	OFF	23230	782	23.32	24.50	1.312	-0.11	0.379	0.497
	LTE Band 13	10M	QPSK	1	0	Left Side	10mm	Battery 1	OFF	23230	782	24.39	24.50	1.026	-0.12	0.462	0.474
	LTE Band 13	10M	QPSK	25	0	Left Side	10mm	Battery 1	OFF	23230	782	23.32	24.50	1.312	-0.12	0.354	0.465
	LTE Band 13	10M	QPSK	1	0	Right Side	10mm	Battery 1	OFF	23230	782	24.39	24.50	1.026	-0.11	0.374	0.384
	LTE Band 13	10M	QPSK	25	0	Right Side	10mm	Battery 1	OFF	23230	782	23.32	24.50	1.312	-0.07	0.236	0.310
	LTE Band 13	10M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	23230	782	24.39	24.50	1.026	-0.08	0.231	0.237
	LTE Band 13	10M	QPSK	25	0	Bottom Side	10mm	Battery 1	OFF	23230	782	23.32	24.50	1.312	-0.09	0.182	0.239
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Battery 2	OFF	23230	782	24.39	24.50	1.026	-0.09	0.507	0.520
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Battery 3	OFF	23230	782	24.39	24.50	1.026	-0.17	0.495	0.508
23	LTE Band 14	10M	QPSK	1	0	Front	10mm	Battery 1	OFF	23330	793	24.51	25.00	1.119	-0.14	0.509	0.570
	LTE Band 14	10M	QPSK	25	0	Front	10mm	Battery 1	OFF	23330	793	23.58	24.00	1.102	0	0.373	0.411
	LTE Band 14	10M	QPSK	1	0	Back	10mm	Battery 1	OFF	23330	793	24.51	25.00	1.119	-0.02	0.403	0.451
	LTE Band 14	10M	QPSK	25	0	Back	10mm	Battery 1	OFF	23330	793	23.58	24.00	1.102	-0.07	0.308	0.339
	LTE Band 14	10M	QPSK	1	0	Left Side	10mm	Battery 1	OFF	23330	793	24.51	25.00	1.119	-0.14	0.365	0.409
	LTE Band 14	10M	QPSK	25	0	Left Side	10mm	Battery 1	OFF	23330	793	23.58	24.00	1.102	-0.09	0.279	0.307
	LTE Band 14	10M	QPSK	1	0	Right Side	10mm	Battery 1	OFF	23330	793	24.51	25.00	1.119	-0.15	0.332	0.372
	LTE Band 14	10M	QPSK	25	0	Right Side	10mm	Battery 1	OFF	23330	793	23.58	24.00	1.102	-0.17	0.258	0.284
	LTE Band 14	10M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	23330	793	24.51	25.00	1.119	-0.09	0.257	0.288
	LTE Band 14	10M	QPSK	25	0	Bottom Side	10mm	Battery 1	OFF	23330	793	23.58	24.00	1.102	-0.04	0.206	0.227
	LTE Band 14	10M	QPSK	1	0	Front	10mm	Battery 2	OFF	23330	793	24.51	25.00	1.119	0.09	0.463	0.518
	LTE Band 14	10M	QPSK	1	0	Front	10mm	Battery 3	OFF	23330	793	24.51	25.00	1.119	0.05	0.455	0.509
24	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 1	ON	26590	1905	23.65	24.00	1.084	-0.05	1.180	1.279
	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 1	ON	26140	1860	23.41	24.00	1.146	-0.03	1.050	1.203
	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 1	ON	26340	1880	23.52	24.00	1.117	0.01	1.120	1.251
	LTE Band 25	20M	QPSK	50	0	Front	10mm	Battery 1	ON	26590	1905	22.62	23.00	1.091	-0.04	0.953	1.040
	LTE Band 25	20M	QPSK	50	0	Front	10mm	Battery 1	ON	26140	1860	22.48	23.00	1.127	-0.01	0.855	0.964
	LTE Band 25	20M	QPSK	50	0	Front	10mm	Battery 1	ON	26340	1880	22.47	23.00	1.130	-0.04	0.903	1.020
	LTE Band 25	20M	QPSK	100	0	Front	10mm	Battery 1	ON	26590	1905	22.55	23.00	1.109	0	0.961	1.066
	LTE Band 25	20M	QPSK	1	0	Back	10mm	Battery 1	ON	26590	1905	23.65	24.00	1.084	-0.05	0.676	0.733
	LTE Band 25	20M	QPSK	50	0	Back	10mm	Battery 1	ON	26590	1905	22.62	23.00	1.091	0.08	0.549	0.599
	LTE Band 25	20M	QPSK	1	0	Left Side	10mm	Battery 1	ON	26590	1905	23.65	24.00	1.084	0.11	0.074	0.080
	LTE Band 25	20M	QPSK	50	0	Left Side	10mm	Battery 1	ON	26590	1905	22.62	23.00	1.091	0.07	0.061	0.067
	LTE Band 25	20M	QPSK	1	0	Right Side	10mm	Battery 1	ON	26590	1905	23.65	24.00	1.084	0.15	0.497	0.539
	LTE Band 25	20M	QPSK	50	0	Right Side	10mm	Battery 1	ON	26590	1905	22.62	23.00	1.091	0.07	0.419	0.457
	LTE Band 25	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	ON	26590	1905	23.65	24.00	1.084	0.19	0.533	0.578
	LTE Band 25	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	ON	26590	1905	22.62	23.00	1.091	0.08	0.428	0.467
	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 2	ON	26590	1905	23.65	24.00	1.084	-0.05	1.060	1.149
	LTE Band 25	20M	QPSK	1	0	Front	10mm	Battery 3	ON	26590	1905	23.65	24.00	1.084	-0.09	0.920	0.997

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Power Reduction	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)
25	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 1	OFF	26865	831.5	24.22	25.00	1.197	-0.01	0.534	0.639
	LTE Band 26	15M	QPSK	36	0	Front	10mm	Battery 1	OFF	26865	831.5	23.32	24.00	1.169	-0.09	0.435	0.509
	LTE Band 26	15M	QPSK	1	0	Back	10mm	Battery 1	OFF	26865	831.5	24.22	25.00	1.197	-0.13	0.505	0.604
	LTE Band 26	15M	QPSK	36	0	Back	10mm	Battery 1	OFF	26865	831.5	23.32	24.00	1.169	0.04	0.412	0.482
	LTE Band 26	15M	QPSK	1	0	Left Side	10mm	Battery 1	OFF	26865	831.5	24.22	25.00	1.197	-0.14	0.254	0.304
	LTE Band 26	15M	QPSK	36	0	Left Side	10mm	Battery 1	OFF	26865	831.5	23.32	24.00	1.169	0.01	0.216	0.253
	LTE Band 26	15M	QPSK	1	0	Right Side	10mm	Battery 1	OFF	26865	831.5	24.22	25.00	1.197	0.01	0.214	0.256
	LTE Band 26	15M	QPSK	36	0	Right Side	10mm	Battery 1	OFF	26865	831.5	23.32	24.00	1.169	0.02	0.175	0.205
	LTE Band 26	15M	QPSK	1	0	Bottom Side	10mm	Battery 1	OFF	26865	831.5	24.22	25.00	1.197	0.12	0.355	0.425
	LTE Band 26	15M	QPSK	36	0	Bottom Side	10mm	Battery 1	OFF	26865	831.5	23.32	24.00	1.169	0.06	0.298	0.349
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 2	OFF	26865	831.5	24.22	25.00	1.197	-0.01	0.511	0.612
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Battery 3	OFF	26865	831.5	24.22	25.00	1.197	-0.01	0.506	0.606
	LTE Band 66	20M	QPSK	1	0	Front	10mm	Battery 1	ON	132572	1770	22.92	23.00	1.019	-0.1	1.210	1.232
	LTE Band 66	20M	QPSK	1	0	Front	10mm	Battery 1	ON	132072	1720	22.83	23.00	1.040	-0.08	1.100	1.144
26	LTE Band 66	20M	QPSK	1	0	Front	10mm	Battery 1	ON	132322	1745	22.88	23.00	1.028	-0.06	1.240	1.275
	LTE Band 66	20M	QPSK	50	0	Front	10mm	Battery 1	ON	132572	1770	21.35	22.00	1.161	0.03	0.976	1.134
	LTE Band 66	20M	QPSK	50	0	Front	10mm	Battery 1	ON	132072	1720	20.98	22.00	1.265	0	0.877	1.109
	LTE Band 66	20M	QPSK	50	0	Front	10mm	Battery 1	ON	132322	1745	21.14	22.00	1.219	0.02	0.999	1.218
	LTE Band 66	20M	QPSK	100	0	Front	10mm	Battery 1	ON	132572	1770	21.24	22.00	1.191	-0.01	0.978	1.165
	LTE Band 66	20M	QPSK	1	0	Back	10mm	Battery 1	ON	132572	1770	22.92	23.00	1.019	-0.01	0.387	0.394
	LTE Band 66	20M	QPSK	50	0	Back	10mm	Battery 1	ON	132572	1770	21.35	22.00	1.161	-0.02	0.288	0.334
	LTE Band 66	20M	QPSK	1	0	Left Side	10mm	Battery 1	ON	132572	1770	22.92	23.00	1.019	-0.06	0.182	0.185
	LTE Band 66	20M	QPSK	50	0	Left Side	10mm	Battery 1	ON	132572	1770	21.35	22.00	1.161	-0.14	0.148	0.172
	LTE Band 66	20M	QPSK	1	0	Right Side	10mm	Battery 1	ON	132572	1770	22.92	23.00	1.019	-0.11	0.467	0.476
	LTE Band 66	20M	QPSK	50	0	Right Side	10mm	Battery 1	ON	132572	1770	21.35	22.00	1.161	-0.08	0.371	0.431
	LTE Band 66	20M	QPSK	1	0	Bottom Side	10mm	Battery 1	ON	132572	1770	22.92	23.00	1.019	-0.11	0.240	0.244
	LTE Band 66	20M	QPSK	50	0	Bottom Side	10mm	Battery 1	ON	132572	1770	21.35	22.00	1.161	-0.06	0.193	0.224
	LTE Band 66	20M	QPSK	1	0	Front	10mm	Battery 2	ON	132322	1745	22.88	23.00	1.028	-0.05	1.160	1.192
	LTE Band 66	20M	QPSK	1	0	Front	10mm	Battery 3	ON	132322	1745	22.88	23.00	1.028	-0.03	1.190	1.223

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
27	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 1	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.1	0.727	0.747
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 1	OFF	39750	2506	24.39	24.50	1.026	62.9	1.006	-0.13	0.701	0.723
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 1	OFF	40620	2593	24.40	24.50	1.023	62.9	1.006	0.11	0.711	0.732
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 1	OFF	41055	2636.5	24.18	24.50	1.076	62.9	1.006	0.14	0.632	0.684
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 1	OFF	41490	2680	22.83	24.50	1.469	62.9	1.006	-0.15	0.442	0.653
	LTE Band 41	15M	QPSK	50	50	Front	10mm	Battery 1	OFF	40185	2549.5	23.49	23.50	1.002	62.9	1.006	-0.03	0.580	0.585
	LTE Band 41	15M	QPSK	100	0	Front	10mm	Battery 1	OFF	40185	2549.5	23.46	23.50	1.009	62.9	1.006	0.11	0.561	0.570
	LTE Band 41	20M	QPSK	1	99	Back	10mm	Battery 1	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.07	0.711	0.730
	LTE Band 41	20M	QPSK	1	99	Back	10mm	Battery 1	OFF	39750	2506	24.39	24.50	1.026	62.9	1.006	-0.07	0.698	0.720
	LTE Band 41	20M	QPSK	1	99	Back	10mm	Battery 1	OFF	40620	2593	24.40	24.50	1.023	62.9	1.006	-0.05	0.703	0.724
	LTE Band 41	20M	QPSK	1	99	Back	10mm	Battery 1	OFF	41055	2636.5	24.18	24.50	1.076	62.9	1.006	-0.02	0.639	0.692
	LTE Band 41	20M	QPSK	1	99	Back	10mm	Battery 1	OFF	41490	2680	22.83	24.50	1.469	62.9	1.006	-0.07	0.484	0.715
	LTE Band 41	15M	QPSK	50	50	Back	10mm	Battery 1	OFF	40185	2549.5	23.49	23.50	1.002	62.9	1.006	0.08	0.541	0.546
	LTE Band 41	15M	QPSK	100	0	Back	10mm	Battery 1	OFF	40185	2549.5	23.46	23.50	1.009	62.9	1.006	0.16	0.525	0.533
	LTE Band 41	20M	QPSK	1	99	Left Side	10mm	Battery 1	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	0.14	0.022	0.023
	LTE Band 41	15M	QPSK	50	50	Left Side	10mm	Battery 1	OFF	40185	2549.5	23.49	23.50	1.002	62.9	1.006	-0.02	0.013	0.013
	LTE Band 41	20M	QPSK	1	99	Right Side	10mm	Battery 1	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	0.11	0.571	0.586
	LTE Band 41	15M	QPSK	50	50	Right Side	10mm	Battery 1	OFF	40185	2549.5	23.49	23.50	1.002	62.9	1.006	0.07	0.452	0.456
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	Battery 1	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.13	0.698	0.717
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	Battery 1	OFF	39750	2506	24.39	24.50	1.026	62.9	1.006	-0.1	0.670	0.691
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	Battery 1	OFF	40620	2593	24.40	24.50	1.023	62.9	1.006	-0.08	0.685	0.705
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	Battery 1	OFF	41055	2636.5	24.18	24.50	1.076	62.9	1.006	0.01	0.587	0.636
	LTE Band 41	20M	QPSK	1	99	Bottom Side	10mm	Battery 1	OFF	41490	2680	22.83	24.50	1.469	62.9	1.006	-0.01	0.475	0.702
	LTE Band 41	15M	QPSK	50	50	Bottom Side	10mm	Battery 1	OFF	40185	2549.5	23.49	23.50	1.002	62.9	1.006	0.04	0.549	0.554
	LTE Band 41	15M	QPSK	100	0	Bottom Side	10mm	Battery 1	OFF	40185	2549.5	23.46	23.50	1.009	62.9	1.006	0.14	0.541	0.549
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 2	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	0.12	0.713	0.732
	LTE Band 41	20M	QPSK	1	99	Front	10mm	Battery 3	OFF	40185	2549.5	24.41	24.50	1.021	62.9	1.006	-0.15	0.667	0.685

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.08	0.204	0.223
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.11	0.328	0.358
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Battery 1	1	2412	19.65	20.00	1.084	99.19	1.008	-0.04	0.345	0.377
28	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Battery 1	11	2462	19.65	20.00	1.084	99.19	1.008	-0.03	0.381	0.416
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.08	0.304	0.332
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Battery 1	6	2437	19.65	20.00	1.084	99.19	1.008	-0.05	0.129	0.141
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Battery 2	11	2462	19.65	20.00	1.084	99.19	1.008	0.11	0.331	0.362
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Battery 3	11	2462	19.65	20.00	1.084	99.19	1.008	0.09	0.205	0.224
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Battery 1	42	5210	17.71	18.00	1.069	92.68	1.079	-0.03	0.144	0.166
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Battery 1	42	5210	17.71	18.00	1.069	92.68	1.079	-0.17	0.758	0.874
29	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 1	38	5190	17.91	18.00	1.021	96.37	1.038	-0.17	0.923	0.978
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Battery 1	42	5210	17.71	18.00	1.069	92.68	1.079	-0.01	0.523	0.603
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Battery 1	42	5210	17.71	18.00	1.069	92.68	1.079	0.02	0.037	0.043
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 2	38	5190	17.91	18.00	1.021	96.37	1.038	-0.01	0.901	0.955
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 3	38	5190	17.91	18.00	1.021	96.37	1.038	-0.02	0.678	0.719
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	0.03	0.130	0.143
30	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	-0.06	0.794	0.875
	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 1	159	5795	17.71	18.00	1.069	96.37	1.038	0.07	0.766	0.850
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	-0.06	0.605	0.666
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Battery 1	155	5775	17.91	18.00	1.021	92.68	1.079	0.02	0.062	0.068
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Battery 2	155	5775	17.91	18.00	1.021	92.68	1.079	-0.09	0.755	0.832
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Battery 3	155	5775	17.91	18.00	1.021	92.68	1.079	0.1	0.731	0.805

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	-0.03	0.010	0.013
31	Bluetooth	1Mbps	Back	10mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	0.11	0.018	0.025
	Bluetooth	1Mbps	Back	10mm	Battery 1	39	2441	7.05	8.50	1.395	76.84	1.084	-0.06	0.015	0.023
	Bluetooth	1Mbps	Back	10mm	Battery 1	78	2480	6.71	8.50	1.509	76.84	1.084	0.07	0.014	0.023
	Bluetooth	1Mbps	Right Side	10mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	-0.01	0.016	0.022
	Bluetooth	1Mbps	Top Side	10mm	Battery 1	0	2402	7.45	8.50	1.273	76.84	1.084	-0.04	0.007	0.009
	Bluetooth	1Mbps	Back	10mm	Battery 2	0	2402	7.45	8.50	1.273	76.84	1.084	-0.04	0.015	0.021
	Bluetooth	1Mbps	Back	10mm	Battery 3	0	2402	7.45	8.50	1.273	76.84	1.084	0.04	0.013	0.018

14.3 Body Worn Accessory SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9400	1880	Soft Holster	23.75	24.00	1.059	-0.05	0.656	0.695
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9262	1852.4	Soft Holster	23.31	24.00	1.172	-0.02	0.619	0.726
32	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9538	1907.6	Soft Holster	23.71	24.00	1.069	0.01	0.788	0.842
	WCDMA II	RMC 12.2Kbps	Back	0mm	Battery 1	9400	1880	Soft Holster	23.75	24.00	1.059	-0.01	0.442	0.468
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 2	9538	1907.6	Soft Holster	23.71	24.00	1.069	0.04	0.762	0.815
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 3	9538	1907.6	Soft Holster	23.71	24.00	1.069	0.09	0.754	0.806
	WCDMA II	RMC 12.2Kbps	Back	0mm	Battery 1	9538	1907.6	Wearable Wrist	23.71	24.00	1.069	-0.03	0.418	0.447
33	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1413	1732.6	Soft Holster	24.48	24.50	1.005	-0.03	1.160	1.165
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1312	1712.4	Soft Holster	24.40	24.50	1.023	-0.06	0.972	0.995
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1513	1752.6	Soft Holster	24.47	24.50	1.007	-0.01	1.130	1.138
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Battery 1	1413	1732.6	Soft Holster	24.48	24.50	1.005	0.03	0.664	0.667
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 2	1413	1732.6	Soft Holster	24.48	24.50	1.005	0.05	1.110	1.115
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 3	1413	1732.6	Soft Holster	24.48	24.50	1.005	0.08	1.030	1.035
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Battery 1	1413	1732.6	Wearable Wrist	24.48	24.50	1.005	0	0.637	0.640
	WCDMA V	RMC 12.2Kbps	Front	0mm	Battery 1	4182	836.4	Soft Holster	25.46	25.50	1.009	-0.06	0.478	0.482
	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 1	4182	836.4	Soft Holster	25.46	25.50	1.009	-0.05	0.495	0.500
34	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 1	4132	826.4	Soft Holster	25.25	25.50	1.059	-0.11	0.512	0.542
	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 1	4233	846.6	Soft Holster	25.12	25.50	1.091	-0.03	0.371	0.405
	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 2	4132	826.4	Soft Holster	25.25	25.50	1.059	0.02	0.498	0.528
	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 3	4132	826.4	Soft Holster	25.25	25.50	1.059	-0.03	0.432	0.458
	WCDMA V	RMC 12.2Kbps	Back	0mm	Battery 1	4132	826.4	Wearable Wrist	25.25	25.50	1.059	-0.03	0.465	0.493

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	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	0	Front	0mm	Battery 1	20850	2510	Soft Holster	23.38	23.50	1.028	0.06	0.527	0.542
	LTE Band 7	20M	QPSK	50	0	Front	0mm	Battery 1	20850	2510	Soft Holster	22.38	22.50	1.028	-0.11	0.437	0.449
35	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 1	20850	2510	Soft Holster	23.38	23.50	1.028	-0.13	0.588	0.604
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 1	21100	2535	Soft Holster	23.21	23.50	1.069	0.04	0.549	0.587
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 1	21350	2560	Soft Holster	23.09	23.50	1.099	-0.18	0.524	0.576
	LTE Band 7	20M	QPSK	50	0	Back	0mm	Battery 1	20850	2510	Soft Holster	22.38	22.50	1.028	-0.14	0.483	0.497
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 2	20850	2510	Soft Holster	23.38	23.50	1.028	0.06	0.567	0.583
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 3	20850	2510	Soft Holster	23.38	23.50	1.028	-0.01	0.532	0.547
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Battery 1	20850	2510	Wearable Wrist	23.38	23.50	1.028	-0.07	0.484	0.498
	LTE Band 12	10M	QPSK	1	0	Front	0mm	Battery 1	23095	707.5	Soft Holster	24.78	25.00	1.052	-0.02	0.431	0.453
	LTE Band 12	10M	QPSK	25	0	Front	0mm	Battery 1	23095	707.5	Soft Holster	23.79	24.00	1.050	-0.1	0.334	0.351
36	LTE Band 12	10M	QPSK	1	0	Back	0mm	Battery 1	23095	707.5	Soft Holster	24.78	25.00	1.052	-0.03	0.543	0.571
	LTE Band 12	10M	QPSK	25	0	Back	0mm	Battery 1	23095	707.5	Soft Holster	23.79	24.00	1.050	-0.11	0.414	0.435
	LTE Band 12	10M	QPSK	1	0	Back	0mm	Battery 2	23095	707.5	Soft Holster	24.78	25.00	1.052	0.08	0.531	0.559
	LTE Band 12	10M	QPSK	1	0	Back	0mm	Battery 3	23095	707.5	Soft Holster	24.78	25.00	1.052	0.11	0.502	0.528
	LTE Band 12	10M	QPSK	1	0	Back	0mm	Battery 1	23095	707.5	Wearable Wrist	24.78	25.00	1.052	0.02	0.315	0.331

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	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 13	10M	QPSK	1	0	Front	0mm	Battery 1	23230	782	Soft Holster	24.39	24.50	1.026	-0.13	0.492	0.505
	LTE Band 13	10M	QPSK	25	0	Front	0mm	Battery 1	23230	782	Soft Holster	23.32	24.50	1.312	-0.14	0.381	0.500
37	LTE Band 13	10M	QPSK	1	0	Back	0mm	Battery 1	23230	782	Soft Holster	24.39	24.50	1.026	-0.11	0.520	0.533
	LTE Band 13	10M	QPSK	25	0	Back	0mm	Battery 1	23230	782	Soft Holster	23.32	24.50	1.312	-0.11	0.379	0.497
	LTE Band 13	10M	QPSK	1	0	Back	0mm	Battery 2	23230	782	Soft Holster	24.39	24.50	1.026	0.06	0.482	0.494
	LTE Band 13	10M	QPSK	1	0	Back	0mm	Battery 3	23230	782	Soft Holster	24.39	24.50	1.026	0.11	0.459	0.471
	LTE Band 13	10M	QPSK	1	0	Back	0mm	Battery 1	23230	782	Wearable Wrist	24.39	24.50	1.026	-0.08	0.320	0.328
38	LTE Band 14	10M	QPSK	1	0	Front	0mm	Battery 1	23330	793	Soft Holster	24.51	25.00	1.119	-0.06	0.293	0.328
	LTE Band 14	10M	QPSK	25	0	Front	0mm	Battery 1	23330	793	Soft Holster	23.58	24.00	1.102	-0.06	0.228	0.251
	LTE Band 14	10M	QPSK	1	0	Back	0mm	Battery 1	23330	793	Soft Holster	24.51	25.00	1.119	-0.01	0.261	0.292
	LTE Band 14	10M	QPSK	25	0	Back	0mm	Battery 1	23330	793	Soft Holster	23.58	24.00	1.102	0.01	0.201	0.221
	LTE Band 14	10M	QPSK	1	0	Front	0mm	Battery 2	23330	793	Soft Holster	24.51	25.00	1.119	0.03	0.285	0.319
	LTE Band 14	10M	QPSK	1	0	Front	0mm	Battery 3	23330	793	Soft Holster	24.51	25.00	1.119	-0.09	0.281	0.315
	LTE Band 14	10M	QPSK	1	0	Back	0mm	Battery 1	23330	793	Wearable Wrist	24.51	25.00	1.119	0.02	0.221	0.247
39	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26590	1905	Soft Holster	24.24	24.50	1.062	0	0.749	0.795
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26140	1860	Soft Holster	24.06	24.50	1.107	0.02	0.656	0.726
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26340	1880	Soft Holster	24.15	24.50	1.084	-0.05	0.690	0.748
	LTE Band 25	20M	QPSK	50	0	Front	0mm	Battery 1	26590	1905	Soft Holster	23.30	23.50	1.047	-0.01	0.589	0.617
	LTE Band 25	20M	QPSK	1	0	Back	0mm	Battery 1	26590	1905	Soft Holster	24.24	24.50	1.062	-0.14	0.326	0.346
	LTE Band 25	20M	QPSK	50	0	Back	0mm	Battery 1	26590	1905	Soft Holster	23.30	23.50	1.047	0.08	0.254	0.266
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 2	26590	1905	Soft Holster	24.24	24.50	1.062	0.02	0.726	0.771
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 3	26590	1905	Soft Holster	24.24	24.50	1.062	0.06	0.709	0.753
	LTE Band 25	20M	QPSK	1	0	Back	0mm	Battery 1	26590	1905	Wearable Wrist	24.24	24.50	1.062	-0.07	0.259	0.275
	LTE Band 26	15M	QPSK	1	0	Front	0mm	Battery 1	26865	831.5	Soft Holster	24.22	25.00	1.197	-0.14	0.229	0.274
	LTE Band 26	15M	QPSK	36	0	Front	0mm	Battery 1	26865	831.5	Soft Holster	23.32	24.00	1.169	-0.07	0.183	0.214
40	LTE Band 26	15M	QPSK	1	0	Back	0mm	Battery 1	26865	831.5	Soft Holster	24.22	25.00	1.197	-0.1	0.231	0.276
	LTE Band 26	15M	QPSK	36	0	Back	0mm	Battery 1	26865	831.5	Soft Holster	23.32	24.00	1.169	0.04	0.189	0.221
	LTE Band 26	15M	QPSK	1	0	Back	0mm	Battery 2	26865	831.5	Soft Holster	24.22	25.00	1.197	0.09	0.219	0.262
	LTE Band 26	15M	QPSK	1	0	Back	0mm	Battery 3	26865	831.5	Soft Holster	24.22	25.00	1.197	-0.08	0.207	0.248
	LTE Band 26	15M	QPSK	1	0	Back	0mm	Battery 1	26865	831.5	Wearable Wrist	24.22	25.00	1.197	0.09	0.216	0.258
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132572	1770	Soft Holster	24.46	24.50	1.009	-0.06	1.170	1.181
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132072	1720	Soft Holster	24.09	24.50	1.099	-0.05	1.070	1.176
41	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132322	1745	Soft Holster	24.24	24.50	1.062	-0.01	1.210	1.285
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Battery 1	132572	1770	Soft Holster	23.37	23.50	1.030	0.04	0.891	0.918
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Battery 1	132072	1720	Soft Holster	22.96	23.50	1.132	0.11	0.851	0.964
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Battery 1	132322	1745	Soft Holster	23.16	23.50	1.081	0.05	0.905	0.979
	LTE Band 66	20M	QPSK	100	0	Front	0mm	Battery 1	132572	1770	Soft Holster	23.30	23.50	1.047	0.04	0.893	0.935
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Battery 1	132572	1770	Soft Holster	24.46	24.50	1.009	-0.05	0.438	0.442
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Battery 1	132572	1770	Soft Holster	23.37	23.50	1.030	0.09	0.209	0.215
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 2	132322	1745	Soft Holster	24.24	24.50	1.062	0.03	1.150	1.221
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 3	132322	1745	Soft Holster	24.24	24.50	1.062	-0.09	1.110	1.178
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Battery 1	132322	1745	Wearable Wrist	24.24	24.50	1.062	-0.05	0.742	0.788

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	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 41	20M	QPSK	1	99	Front	0mm	Battery 1	40185	2549.5	Soft Holster	24.41	24.50	1.021	62.9	1.006	0.05	0.387	0.397
	LTE Band 41	20M	QPSK	50	50	Front	0mm	Battery 1	40185	2549.5	Soft Holster	23.49	23.50	1.002	62.9	1.006	-0.03	0.306	0.309
42	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	40185	2549.5	Soft Holster	24.41	24.50	1.021	62.9	1.006	-0.1	0.427	0.439
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	39750	2506	Soft Holster	24.39	24.50	1.026	62.9	1.006	-0.11	0.359	0.370
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	40620	2593	Soft Holster	24.40	24.50	1.023	62.9	1.006	-0.13	0.375	0.386
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	41055	2636.5	Soft Holster	24.18	24.50	1.076	62.9	1.006	-0.18	0.386	0.418
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	41490	2680	Soft Holster	22.83	24.50	1.469	62.9	1.006	-0.16	0.264	0.390
	LTE Band 41	20M	QPSK	50	50	Back	0mm	Battery 1	40185	2549.5	Soft Holster	23.49	23.50	1.002	62.9	1.006	-0.08	0.331	0.334
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 2	40185	2549.5	Soft Holster	24.41	24.50	1.021	62.9	1.006	0.14	0.277	0.284
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 3	40185	2549.5	Soft Holster	24.41	24.50	1.021	62.9	1.006	0.18	0.255	0.262
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Battery 1	40185	2549.5	Wearable Wrist	24.41	24.50	1.021	62.9	1.006	-0.09	0.290	0.298

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	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	0mm	Battery 1	6	2437	Soft Holster	19.65	20.00	1.084	99.19	1.008	0.04	0.034	0.037
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 1	6	2437	Soft Holster	19.65	20.00	1.084	99.19	1.008	-0.08	0.079	0.086
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 1	1	2412	Soft Holster	19.65	20.00	1.084	99.19	1.008	-0.05	0.077	0.085
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 1	11	2462	Soft Holster	19.65	20.00	1.084	99.19	1.008	-0.04	0.076	0.083
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 2	6	2437	Soft Holster	19.65	20.00	1.084	99.19	1.008	0.05	0.076	0.083
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 3	6	2437	Soft Holster	19.65	20.00	1.084	99.19	1.008	0.01	0.073	0.080
43	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Battery 1	6	2437	Wearable Wrist	19.65	20.00	1.084	99.19	1.008	-0.15	0.088	0.096
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Battery 1	52	5260	Soft Holster	20.11	20.50	1.094	98.45	1.016	0.04	0.151	0.168
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	52	5260	Soft Holster	20.11	20.50	1.094	98.45	1.016	-0.07	0.527	0.586
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	56	5280	Soft Holster	19.91	20.00	1.021	98.45	1.016	-0.17	0.570	0.591
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	60	5300	Soft Holster	19.91	20.00	1.021	98.45	1.016	-0.12	0.452	0.469
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	64	5320	Soft Holster	20.11	20.50	1.094	98.45	1.016	-0.03	0.526	0.585
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	56	5280	Soft Holster	19.91	20.00	1.021	98.45	1.016	-0.07	0.650	0.674
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 3	56	5280	Soft Holster	19.91	20.00	1.021	98.45	1.016	0.04	0.502	0.521
44	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	56	5280	Wearable Wrist	19.91	20.00	1.021	98.45	1.016	-0.17	0.704	0.730
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Battery 1	116	5580	Soft Holster	19.11	19.50	1.094	98.45	1.016	0.09	0.178	0.198
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	116	5580	Soft Holster	19.11	19.50	1.094	98.45	1.016	0.1	0.391	0.435
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	100	5500	Soft Holster	18.91	19.50	1.146	98.45	1.016	0.1	0.368	0.428
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	124	5620	Soft Holster	19.01	19.50	1.119	98.45	1.016	-0.03	0.341	0.388
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	132	5660	Soft Holster	19.01	19.50	1.119	98.45	1.016	-0.08	0.333	0.379
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	144	5720	Soft Holster	19.11	19.50	1.094	98.45	1.016	0.02	0.307	0.341
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	116	5580	Soft Holster	19.11	19.50	1.094	98.45	1.016	-0.03	0.622	0.691
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 3	116	5580	Soft Holster	19.11	19.50	1.094	98.45	1.016	0.06	0.577	0.641
45	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	116	5580	Wearable Wrist	19.11	19.50	1.094	98.45	1.016	-0.15	0.712	0.791
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Battery 1	155	5775	Soft Holster	17.91	18.00	1.021	92.68	1.079	0.01	0.082	0.090
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Battery 1	155	5775	Soft Holster	17.91	18.00	1.021	92.68	1.079	0.01	0.204	0.225
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Battery 2	155	5775	Soft Holster	17.91	18.00	1.021	92.68	1.079	0.07	0.411	0.453
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Battery 3	155	5775	Soft Holster	17.91	18.00	1.021	92.68	1.079	-0.01	0.359	0.395
46	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Battery 2	155	5775	Wearable Wrist	17.91	18.00	1.021	92.68	1.079	0.12	0.500	0.551

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Accessories	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	0mm	Battery 1	0	2402	Soft Holster	7.45	8.50	1.273	76.84	1.084	0.04	0.001	0.001
47	Bluetooth	1Mbps	Back	0mm	Battery 1	0	2402	Soft Holster	7.45	8.50	1.273	76.84	1.084	-0.09	0.002	0.002
	Bluetooth	1Mbps	Back	0mm	Battery 1	39	2441	Soft Holster	7.05	8.50	1.395	76.84	1.084	-0.07	0.001	0.002
	Bluetooth	1Mbps	Back	0mm	Battery 1	78	2480	Soft Holster	6.71	8.50	1.509	76.84	1.084	0.1	0.001	0.002
	Bluetooth	1Mbps	Back	0mm	Battery 2	0	2402	Soft Holster	7.45	8.50	1.273	76.84	1.084	0.07	0.001	0.001
	Bluetooth	1Mbps	Back	0mm	Battery 3	0	2402	Soft Holster	7.45	8.50	1.273	76.84	1.084	-0.07	0.001	0.001
	Bluetooth	1Mbps	Back	0mm	Battery 1	0	2402	Wearable Wrist	7.45	8.50	1.273	76.84	1.084	-0.05	0.001	0.001

14.4 Product Specific SAR

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9400	1880	23.75	24.00	1.059	-0.09	2.540	2.691
48	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9538	1907.6	23.31	24.00	1.172	-0.17	2.870	3.364
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9262	1852.4	23.71	24.00	1.069	-0.14	2.390	2.555
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 2	9538	1907.6	23.31	24.00	1.172	0.01	2.780	3.259
	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 3	9538	1907.6	23.31	24.00	1.172	0.08	2.730	3.200
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1413	1732.6	24.48	24.50	1.005	-0.04	3.300	3.315
49	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1513	1752.6	24.47	24.50	1.007	0.06	3.470	3.494
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1312	1712.4	24.40	24.50	1.023	-0.07	3.140	3.213
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 2	1513	1752.6	24.47	24.50	1.007	-0.12	3.380	3.403
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 3	1513	1752.6	24.47	24.50	1.007	0.09	3.320	3.343

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Battery	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)
50	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26590	1905	24.24	24.50	1.062	-0.15	2.780	2.952
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26140	1860	24.06	24.50	1.107	-0.14	2.450	2.711
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 1	26340	1880	24.15	24.50	1.084	-0.13	2.650	2.872
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 2	26590	1905	24.24	24.50	1.062	0.04	2.690	2.856
	LTE Band 25	20M	QPSK	1	0	Front	0mm	Battery 3	26590	1905	24.24	24.50	1.062	-0.1	2.620	2.782
51	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132572	1770	24.46	24.50	1.009	-0.04	3.040	3.068
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132072	1720	24.09	24.50	1.099	-0.19	2.520	2.769
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 1	132322	1745	24.24	24.50	1.062	-0.11	2.810	2.983
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 2	132572	1770	24.46	24.50	1.009	0.03	2.980	3.008
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Battery 3	132572	1770	24.46	24.50	1.009	0.05	2.920	2.947

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Battery	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)
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	-0.13	0.441	0.490
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	-0.04	1.930	2.145
52	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	56	5280	19.91	20.00	1.021	98.45	1.016	-0.14	2.120	2.199
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	60	5300	19.91	20.00	1.021	98.45	1.016	-0.01	1.670	1.732
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	64	5320	20.11	20.50	1.094	98.45	1.016	-0.03	1.790	1.990
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	-0.08	1.440	1.601
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Battery 1	52	5260	20.11	20.50	1.094	98.45	1.016	-0.18	0.081	0.090
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	56	5280	19.91	20.00	1.021	98.45	1.016	-0.08	1.980	2.054
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 3	56	5280	19.91	20.00	1.021	98.45	1.016	-0.03	1.710	1.774
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	-0.15	0.374	0.416
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	0.13	1.090	1.211
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	100	5500	18.91	19.50	1.146	98.45	1.016	-0.03	1.120	1.304
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	124	5620	19.01	19.50	1.119	98.45	1.016	0	1.160	1.319
53	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	132	5660	19.01	19.50	1.119	98.45	1.016	-0.12	1.240	1.410
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	144	5720	19.11	19.50	1.094	98.45	1.016	0.11	1.080	1.200
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	0.13	0.922	1.025
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Battery 1	116	5580	19.11	19.50	1.094	98.45	1.016	0.15	0.086	0.096
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 2	132	5660	19.01	19.50	1.119	98.45	1.016	-0.12	1.130	1.285
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 3	132	5660	19.01	19.50	1.119	98.45	1.016	-0.14	1.090	1.240

14.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Battery	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	-	4182	836.4	25.46	25.50	1.009	-	1.000	-0.08	0.837	-	0.845
2nd	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Battery 1	-	4182	836.4	25.46	25.50	1.009	-	1.000	0.06	0.812	1.03	0.820
1st	LTE Band 7	20M_QPSK_1_0	Right Cheek	0mm	Battery 1	-	20850	2510	23.38	23.50	1.028	-	1.000	0.05	1.340	-	1.378
2nd	LTE Band 7	20M_QPSK_1_0	Right Cheek	0mm	Battery 1	-	20850	2510	23.38	23.50	1.028	-	1.000	0.07	1.260	1.06	1.295
1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 1	-	6	2437	19.65	20.00	1.084	99.19	1.008	-0.03	1.090	-	1.191
2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Battery 1	-	6	2437	19.65	20.00	1.084	99.19	1.008	-0.08	1.040	1.05	1.136
1st	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	-	52	5260	20.11	20.50	1.094	98.45	1.016	0	1.190	-	1.323
2nd	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	-	52	5260	20.11	20.50	1.094	98.45	1.016	0.11	1.120	1.06	1.245
1st	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	-	116	5580	19.11	19.50	1.094	98.45	1.016	-0.12	0.859	-	0.955
2nd	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Battery 1	-	116	5580	19.11	19.50	1.094	98.45	1.016	-0.15	0.838	1.03	0.931
1st	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 1	ON	9538	1907.6	23.31	23.50	1.045	-	1.000	-0.04	1.270	-	1.327
2nd	WCDMA II	RMC 12.2Kbps	Front	10mm	Battery 1	ON	9538	1907.6	23.31	23.50	1.045	-	1.000	-0.04	1.200	1.06	1.254
1st	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 1	ON	1513	1752.6	22.89	23.00	1.026	-	1.000	0.04	1.260	-	1.292
2nd	WCDMA IV	RMC 12.2Kbps	Front	10mm	Battery 1	ON	1513	1752.6	22.89	23.00	1.026	-	1.000	0	1.250	1.01	1.282
1st	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 1	-	38	5190	17.91	18.00	1.021	-	1.038	-0.17	0.923	-	0.978
2nd	WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	Battery 1	-	38	5190	17.91	18.00	1.021	96.37	1.038	-0.07	0.890	1.04	0.943

No.	Band	Mode	Test Position	Gap (mm)	Battery	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	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9538	1907.6	23.31	24.00	1.172	-	1.000	-0.17	2.870	-	3.364
2nd	WCDMA II	RMC 12.2Kbps	Front	0mm	Battery 1	9538	1907.6	23.31	24.00	1.172	-	1.000	-0.16	2.660	1.08	3.118
1st	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1513	1752.6	24.47	24.50	1.007	-	1.000	0.06	3.470	-	3.494
2nd	WCDMA IV	RMC 12.2Kbps	Front	0mm	Battery 1	1513	1752.6	24.47	24.50	1.007	-	1.000	-0.12	3.340	1.04	3.363
1st	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	56	5280	19.91	20.00	1.021	98.45	1.016	-0.14	2.120	-	2.199
2nd	WLAN5GHz	802.11a 6Mbps	Back	0mm	Battery 1	56	5280	19.91	20.00	1.021	98.45	1.016	-0.11	2.080	1.02	2.158

General Note:

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

15. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product Specific
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
3.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes

General Note:

1. This device WLAN 2.4GHz/5.2GHz/5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. All licensed modes share the same antenna part 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.

15.1 Head Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
WCDMA	WCDMA II	Right Cheek	1.101	0.509	0.481	0.033	1.610	1.582	1.134	0.03	Case 1
		Right Tilted	0.280	0.373	0.355	0.024	0.653	0.635	0.304		
		Left Cheek	1.261	1.191	1.323	0.090	2.452	2.584	1.351	0.04	Case 2
		Left Tilted	0.282	0.755	0.490	0.034	1.037	0.772	0.316		
	WCDMA IV	Right Cheek	1.198	0.509	0.481	0.033	1.707	1.679	1.231	0.03	Case 3
		Right Tilted	0.253	0.373	0.355	0.024	0.626	0.608	0.277		
		Left Cheek	0.626	1.191	1.323	0.090	1.817	1.949	0.716	0.03	Case 4
		Left Tilted	0.199	0.755	0.490	0.034	0.954	0.689	0.233		
	WCDMA V	Right Cheek	0.691	0.509	0.481	0.033	1.200	1.172	0.724		
		Right Tilted	0.394	0.373	0.355	0.024	0.767	0.749	0.418		
		Left Cheek	0.845	1.191	1.323	0.090	2.036	2.168	0.935	0.04	Case 5
		Left Tilted	0.473	0.755	0.490	0.034	1.228	0.963	0.507		
LTE	LTE Band 7	Right Cheek	1.378	0.509	0.481	0.033	1.887	1.859	1.411	0.04	Case 6
		Right Tilted	0.305	0.373	0.355	0.024	0.678	0.660	0.329		
		Left Cheek	0.584	1.191	1.323	0.090	1.775	1.907	0.674	0.04	Case 7
		Left Tilted	0.543	0.755	0.490	0.034	1.298	1.033	0.577		
	LTE Band 12	Right Cheek	0.335	0.509	0.481	0.033	0.844	0.816	0.368		
		Right Tilted	0.208	0.373	0.355	0.024	0.581	0.563	0.232		
		Left Cheek	0.403	1.191	1.323	0.090	1.594	1.726	0.493	0.03	Case 8
		Left Tilted	0.188	0.755	0.490	0.034	0.943	0.678	0.222		
	LTE Band 13	Right Cheek	0.381	0.509	0.481	0.033	0.890	0.862	0.414		
		Right Tilted	0.262	0.373	0.355	0.024	0.635	0.617	0.286		
		Left Cheek	0.464	1.191	1.323	0.090	1.655	1.787	0.554	0.03	Case 9
		Left Tilted	0.329	0.755	0.490	0.034	1.084	0.819	0.363		
	LTE Band 14	Right Cheek	0.480	0.509	0.481	0.033	0.989	0.961	0.513		
		Right Tilted	0.326	0.373	0.355	0.024	0.699	0.681	0.350		
		Left Cheek	0.563	1.191	1.323	0.090	1.754	1.886	0.653	0.04	Case 10
		Left Tilted	0.383	0.755	0.490	0.034	1.138	0.873	0.417		
	LTE Band 25	Right Cheek	0.603	0.509	0.481	0.033	1.112	1.084	0.636		
		Right Tilted	0.186	0.373	0.355	0.024	0.559	0.541	0.210		
		Left Cheek	0.640	1.191	1.323	0.090	1.831	1.963	0.730	0.03	Case 11
		Left Tilted	0.212	0.755	0.490	0.034	0.967	0.702	0.246		
	LTE Band 26	Right Cheek	0.606	0.509	0.481	0.033	1.115	1.087	0.639		
		Right Tilted	0.258	0.373	0.355	0.024	0.631	0.613	0.282		
		Left Cheek	0.546	1.191	1.323	0.090	1.737	1.869	0.636	0.04	Case 12
		Left Tilted	0.352	0.755	0.490	0.034	1.107	0.842	0.386		
	LTE Band 41	Right Cheek	0.641	0.509	0.481	0.033	1.150	1.122	0.674		
		Right Tilted	0.127	0.373	0.355	0.024	0.500	0.482	0.151		
		Left Cheek	0.426	1.191	1.323	0.090	1.617	1.749	0.516	0.04	Case 13
		Left Tilted	0.249	0.755	0.490	0.034	1.004	0.739	0.283		
	LTE Band 66	Right Cheek	1.072	0.509	0.481	0.033	1.581	1.553	1.105		
		Right Tilted	0.222	0.373	0.355	0.024	0.595	0.577	0.246		
		Left Cheek	0.769	1.191	1.323	0.090	1.960	2.092	0.859	0.04	Case 14
		Left Tilted	0.177	0.755	0.490	0.034	0.932	0.667	0.211		

15.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR	Case No
WCDMA	WCDMA II	Front	1.327	0.223	0.166	0.013	**1.550**	**1.493**	**1.340**		
		Back	0.903	0.416	0.978	0.025	**1.319**	**1.881**	**0.928**	0.02	Case 15
		Left side	0.341				**0.341**	**0.341**	**0.341**		
		Right side	0.765	0.332	0.666	0.022	**1.097**	**1.431**	**0.787**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.457				**0.457**	**0.457**	**0.457**		
	WCDMA IV	Front	1.292	0.223	0.166	0.013	**1.515**	**1.458**	**1.305**		
		Back	0.439	0.416	0.978	0.025	**0.855**	**1.417**	**0.464**		
		Left side	0.146				**0.146**	**0.146**	**0.146**		
		Right side	0.422	0.332	0.666	0.022	**0.754**	**1.088**	**0.444**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.227				**0.227**	**0.227**	**0.227**		
	WCDMA V	Front	0.722	0.223	0.166	0.013	**0.945**	**0.888**	**0.735**		
		Back	0.830	0.416	0.978	0.025	**1.246**	**1.808**	**0.855**	0.02	Case 16
		Left side	0.419				**0.419**	**0.419**	**0.419**		
		Right side	0.378	0.332	0.666	0.022	**0.710**	**1.044**	**0.400**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.588				**0.588**	**0.588**	**0.588**		
LTE	LTE Band 7	Front	1.028	0.223	0.166	0.013	**1.251**	**1.194**	**1.041**		
		Back	1.041	0.416	0.978	0.025	**1.457**	**2.019**	**1.066**	0.03	Case 17
		Left side	0.112				**0.112**	**0.112**	**0.112**		
		Right side	0.796	0.332	0.666	0.022	**1.128**	**1.462**	**0.818**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	1.132				**1.132**	**1.132**	**1.132**		
	LTE Band 12	Front	0.453	0.223	0.166	0.013	**0.676**	**0.619**	**0.466**		
		Back	0.571	0.416	0.978	0.025	**0.987**	**1.549**	**0.596**		
		Left side	0.436				**0.436**	**0.436**	**0.436**		
		Right side	0.269	0.332	0.666	0.022	**0.601**	**0.935**	**0.291**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.159				**0.159**	**0.159**	**0.159**		
	LTE Band 13	Front	0.505	0.223	0.166	0.013	**0.728**	**0.671**	**0.518**		
		Back	0.533	0.416	0.978	0.025	**0.949**	**1.511**	**0.558**		
		Left side	0.474				**0.474**	**0.474**	**0.474**		
		Right side	0.384	0.332	0.666	0.022	**0.716**	**1.050**	**0.406**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.239				**0.239**	**0.239**	**0.239**		
	LTE Band 14	Front	0.570	0.223	0.166	0.013	**0.793**	**0.736**	**0.583**		
		Back	0.451	0.416	0.978	0.025	**0.867**	**1.429**	**0.476**		
		Left side	0.409				**0.409**	**0.409**	**0.409**		
		Right side	0.372	0.332	0.666	0.022	**0.704**	**1.038**	**0.394**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.288				**0.288**	**0.288**	**0.288**		
	LTE Band 25	Front	1.279	0.223	0.166	0.013	**1.502**	**1.445**	**1.292**		
		Back	0.733	0.416	0.978	0.025	**1.149**	**1.711**	**0.758**	0.02	Case 18
		Left side	0.080				**0.080**	**0.080**	**0.080**		
		Right side	0.539	0.332	0.666	0.022	**0.871**	**1.205**	**0.561**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.578				**0.578**	**0.578**	**0.578**		
	LTE Band 26	Front	0.639	0.223	0.166	0.013	**0.862**	**0.805**	**0.652**		
		Back	0.604	0.416	0.978	0.025	**1.020**	**1.582**	**0.629**		
		Left side	0.304				**0.304**	**0.304**	**0.304**		

		Right side	0.256	0.332	0.666	0.022	**0.588**	**0.922**	**0.278**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.425				**0.425**	**0.425**	**0.425**		
	LTE Band 41	Front	0.747	0.223	0.166	0.013	**0.970**	**0.913**	**0.760**		
		Back	0.730	0.416	0.978	0.025	**1.146**	**1.708**	**0.755**	0.02	Case 19
		Left side	0.023				**0.023**	**0.023**	**0.023**		
		Right side	0.586	0.332	0.666	0.022	**0.918**	**1.252**	**0.608**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.717				**0.717**	**0.717**	**0.717**		
	LTE Band 66	Front	1.275	0.223	0.166	0.013	**1.498**	**1.441**	**1.288**		
		Back	0.394	0.416	0.978	0.025	**0.810**	**1.372**	**0.419**		
		Left side	0.185				**0.185**	**0.185**	**0.185**		
		Right side	0.476	0.332	0.666	0.022	**0.808**	**1.142**	**0.498**		
		Top side		0.141	0.068	0.009	**0.141**	**0.068**	**0.009**		
		Bottom side	0.244				**0.244**	**0.244**	**0.244**		

15.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
WCDMA	WCDMA II	Front	0.842	0.037	0.198	0.001	**0.879**	**1.040**	**0.843**
		Back	0.468	0.096	0.791	0.002	**0.564**	**1.259**	**0.470**
	WCDMA IV	Front	1.165	0.037	0.198	0.001	**1.202**	**1.363**	**1.166**
		Back	0.667	0.096	0.791	0.002	**0.763**	**1.458**	**0.669**
	WCDMA V	Front	0.482	0.037	0.198	0.001	**0.519**	**0.680**	**0.483**
		Back	0.542	0.096	0.791	0.002	**0.638**	**1.333**	**0.544**
LTE	LTE Band 7	Front	0.542	0.037	0.198	0.001	**0.579**	**0.740**	**0.543**
		Back	0.604	0.096	0.791	0.002	**0.700**	**1.395**	**0.606**
	LTE Band 12	Front	0.453	0.037	0.198	0.001	**0.490**	**0.651**	**0.454**
		Back	0.571	0.096	0.791	0.002	**0.667**	**1.362**	**0.573**
	LTE Band 13	Front	0.505	0.037	0.198	0.001	**0.542**	**0.703**	**0.506**
		Back	0.533	0.096	0.791	0.002	**0.629**	**1.324**	**0.535**
	LTE Band 14	Front	0.328	0.037	0.198	0.001	**0.365**	**0.526**	**0.329**
		Back	0.292	0.096	0.791	0.002	**0.388**	**1.083**	**0.294**
	LTE Band 25	Front	0.795	0.037	0.198	0.001	**0.832**	**0.993**	**0.796**
		Back	0.346	0.096	0.791	0.002	**0.442**	**1.137**	**0.348**
	LTE Band 26	Front	0.274	0.037	0.198	0.001	**0.311**	**0.472**	**0.275**
		Back	0.276	0.096	0.791	0.002	**0.372**	**1.067**	**0.278**
	LTE Band 41	Front	0.397	0.037	0.198	0.001	**0.434**	**0.595**	**0.398**
		Back	0.439	0.096	0.791	0.002	**0.535**	**1.230**	**0.441**
	LTE Band 66	Front	1.285	0.037	0.198	0.001	**1.322**	**1.483**	**1.286**
		Back	0.788	0.096	0.791	0.002	**0.884**	**1.579**	**0.790**

15.4 Product Specific Exposure Conditions

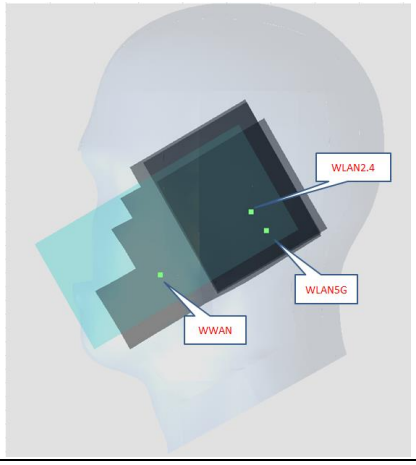
WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	3 5GHz WLAN 10g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
WCDMA	WCDMA II	Front	3.364	0.490	**3.854**
		Back		1.410	**1.410**
		Left side			**0.000**
		Right side		1.601	**1.601**
		Top side		0.096	**0.096**
		Bottom side			**0.000**
	WCDMA IV	Front	3.494	0.490	**3.984**
		Back		1.410	**1.410**
		Left side			**0.000**
		Right side		1.601	**1.601**
		Top side		0.096	**0.096**
		Bottom side			**0.000**
LTE	LTE Band 25	Front	2.952	0.490	**3.442**
		Back		1.410	**1.410**
		Left side			**0.000**
		Right side		1.601	**1.601**
		Top side		0.096	**0.096**
		Bottom side			**0.000**
	LTE Band 66	Front	3.068	0.490	**3.558**
		Back		1.410	**1.410**
		Left side			**0.000**
		Right side		1.601	**1.601**
		Top side		0.096	**0.096**
		Bottom side			**0.000**

15.5 SPLSR Evaluation and Analysis

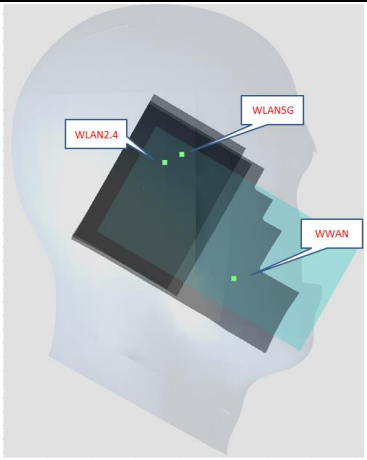
General Note:

1. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
2. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.

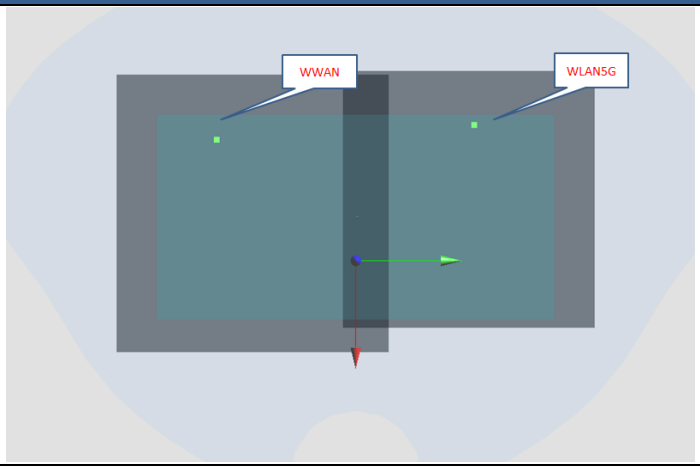
Right Cheek



Left Cheek



Back



	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 1	WCDMA II	Right Cheek	1.101	0	50.44	60.68	-0.23	70.3	1.61	0.03	Not required
	WLAN2.4GHz		0.509	0	-5.28	17.93	2.26				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 2	WCDMA II	Left Cheek	1.261	0	53.92	-63.49	0.32	86.3	2.45	0.04	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	WCDMA II	Left Cheek	1.261	0	53.92	-63.49	0.32	92.3	2.58	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 3	WCDMA IV	Right Cheek	1.198	0	57.84	59.59	1.68	75.6	1.71	0.03	Not required
	WLAN2.4GHz		0.509	0	-5.28	17.93	2.26				
	WCDMA IV	Right Cheek	1.198	0	57.84	59.59	1.68	76.1	1.68	0.03	Not required
	WLAN5GHz		0.481	0	-11.14	27.71	4.7				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 4	WCDMA IV	Left Cheek	0.626	0	57.91	-59.53	1.43	84.9	1.82	0.03	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	WCDMA IV	Left Cheek	0.626	0	57.91	-59.53	1.43	90.1	1.95	0.03	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 5	WCDMA V	Left Cheek	0.845	0	53.02	-41.01	-1.63	66.9	2.04	0.04	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	WCDMA V	Left Cheek	0.845	0	53.02	-41.01	-1.63	71.1	2.17	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 6	LTE Band 7	Right Cheek	1.378	0	49.97	60	0.13	69.5	1.89	0.04	Not required
	WLAN2.4GHz		0.509	0	-5.28	17.93	2.26				
	LTE Band 7	Right Cheek	1.378	0	49.97	60	0.13	69.3	1.86	0.04	Not required
	WLAN5GHz		0.481	0	-11.14	27.71	4.7				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 7	LTE Band 7	Left Cheek	0.584	0	60.67	-22.84	-5.83	59.7	1.78	0.04	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 7	Left Cheek	0.584	0	60.67	-22.84	-5.83	59.6	1.91	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 8	LTE Band 12	Left Cheek	0.403	0	54.32	-41.9	-1.04	72.5	1.73	0.03	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 9	LTE Band 13	Left Cheek	0.464	0	52.98	-41.13	-1.39	66.9	1.66	0.03	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 13	Left Cheek	0.464	0	52.98	-41.13	-1.39	71.2	1.79	0.03	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 10	LTE Band 14	Left Cheek	0.563	0	53.09	-41.05	-1.74	66.9	1.75	0.03	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 14	Left Cheek	0.563	0	53.09	-41.05	-1.74	71.1	1.89	0.04	Not required

	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
Case 11	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Left Cheek	0.64	0	46.45	-53.05	-1.83	73.6	1.83	0.03	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 25	Left Cheek	0.64	0	46.45	-53.05	-1.83	80.0	1.96	0.03	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
Case 12	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 26	Left Cheek	0.546	0	53.27	-29.85	-2.2	58.5	1.74	0.04	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 26	Left Cheek	0.546	0	53.27	-29.85	-2.2	61.2	1.87	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
Case 13	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Left Cheek	0.426	0	60.52	-12.86	3.48	54.2	1.62	0.04	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 41	Left Cheek	0.426	0	60.52	-12.86	3.48	52.5	1.75	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
Case 14	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 66	Left Cheek	0.769	0	48.62	-57.89	-1.04	78.9	1.96	0.03	Not required
	WLAN2.4GHz		1.191	0	12.67	12.3	-0.85				
	LTE Band 66	Left Cheek	0.769	0	48.62	-57.89	-1.04	85.3	2.09	0.04	Not required
	WLAN5GHz		1.323	0	23.39	23.58	-3.28				
Case 15	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Back	0.903	10	7.5	-53.9	-0.95	108.8	1.88	0.02	Not required
	WLAN5GHz		0.978	10	-35.2	46.2	-1.66				
Case 16	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Back	0.83	10	21.1	-66.3	0.09	125.8	1.81	0.02	Not required
	WLAN5GHz		0.978	10	-35.2	46.2	-1.66				
Case 17	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7	Back	1.041	10	-31.3	-55.4	-1.1	101.7	2.02	0.03	Not required
	WLAN5GHz		0.978	10	-35.2	46.2	-1.66				
Case 18	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 25	Back	0.733	10	7.5	-54.7	-0.89	109.6	1.71	0.02	Not required
	WLAN5GHz		0.978	10	-35.2	46.2	-1.66				
Case 19	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41	Back	0.73	10	-34.7	-52	-1.16	98.2	1.71	0.02	Not required
	WLAN5GHz		0.978	10	-35.2	46.2	-1.66				

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16. Uncertainty Assessment

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

17. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

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

[11] FCC KDB 941225 D07 v01r02, " SAR Evaluation Procedures for UMPC Mini-Tablet Devices", Oct 2015.

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

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