FCC SAR Test Report

APPLICANT	:	mixi, Inc.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	RATEL
MODEL NAME	:	CELL
MODEL NUMBER	:	R1020
FCC ID	:	2AN7THST-101-1
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

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

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

Reviewed by: Eric Huang / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA7D0829	Rev. 01	Initial issue of report	May 25, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for mixi, Inc., Mobile Phone, CELL, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 15mm)	Hotspot (Separation 10mm)	Specific Product (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.83	0.90	1.03		1.51
	GSM1900	0.42	0.94	1.16	3.14	
	WCDMA II	0.46	1.03	1.05	3.54	
	WCDMA IV	0.35	1.01	1.00	3.19	
	WCDMA V	0.44	0.56	0.68		
	LTE Band 2	0.56	1.00	1.35	3.11	
	LTE Band 4	0.37	0.98	1.15	3.20	
	LTE Band 7	0.14	0.35	0.88		
	LTE Band 12 / 17	0.26	0.49	0.58		
	LTE Band 5 / 26	0.28	0.45	0.62		
	LTE Band 41	0.07	0.16	0.42		
DTS	2.4GHz WLAN	0.61	0.03	0.05		1.41
NII	5GHz WLAN	1.19	0.08	0.15	0.28	1.51
DSS	Bluetooth	0.24	0.01	0.01		1.40
Date of Testing:		2018/1/8 ~ 2018/2/13				

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.

2. Administration Data

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.

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

Applicant	
Company Name	mixi, Inc.
Address	Sumitomo Fudosan Shibuya First Tower 7F, 1-2-20 Higashi, Shibuya-ku, Tokyo, 150-0011, Japan

Manufacturer	
Company Name	Wistron Corporation
Address	21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Dist, New Taipei City 221,Taiwan R.O.C.

3. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 447498 D02 SAR Procedures for Dongle Xmtr v02r01
- 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

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	RATEL
Model Name	CELL
Model Number	R1020
FCC ID	2AN7THST-101-1
IMEI Code	SIM 1: 359343080007983 SIM 2: 359343080002156
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz : 802.11b/g/n HT20/HT40 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DVT3
SW Version	Android O
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. The device has two SIM slots and supports Dual SIM Dual Standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active).
2. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
3. When the device operating in hotspot and free space will limit different maximum output powers for GSM1900, UMTS B2/B and LTE B2/B4 transmitters, the detail mechanisms description is included in the operation description.

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	2AN7THST-101-1
Equipment Name	Mobile Phone
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz
Channel Bandwidth	LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Data
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3** Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | MPR (dB) QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 256 QAM | ≥ 1 | ≤ 5
LTE A-MPR	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)
Spectrum plots for RB configuration	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.
Power reduction applied to satisfy SAR compliance	Yes, when operating in hotspot mode that LTE B2 / B4 power reduction applied to satisfy SAR compliance.

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844

LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 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
L M	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
H M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

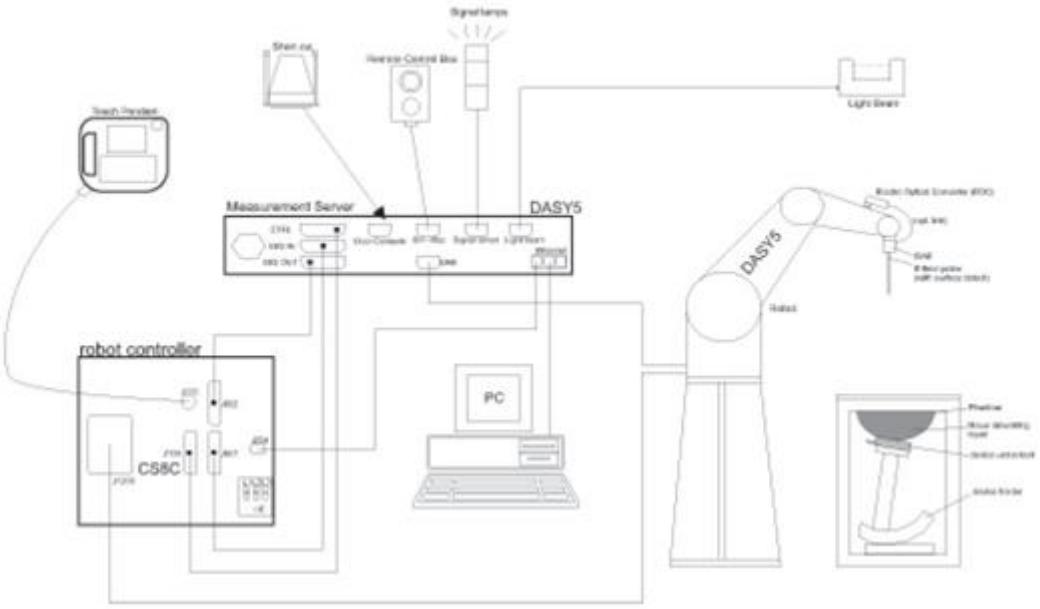
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



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

7.1 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

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

7.2 Data Acquisition Electronics (DAE)

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

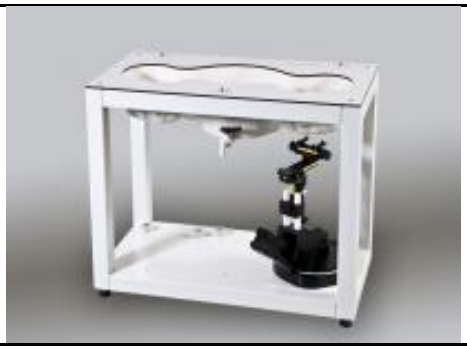
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

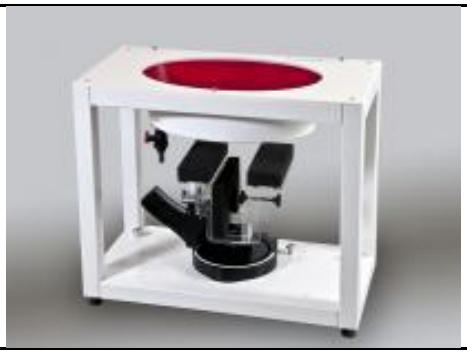
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



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

<ELI Phantom>

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



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

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

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

8.3 Area Scan

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

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

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

8.4 Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 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.

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	May. 22, 2017	May. 21, 2018
SPEAG	835MHz System Validation Kit	D835V2	499	Mar. 21, 2017	Mar. 20, 2018
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 15, 2017	Nov. 14, 2018
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Sep. 28, 2017	Sep. 27, 2018
SPEAG	2450MHz System Validation Kit	D2450V2	736	Sep. 18, 2017	Sep. 17, 2018
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Sep. 18, 2017	Sep. 17, 2018
SPEAG	5GHz System Validation Kit	D5GHzV2	1171	Jul. 18, 2017	Jul. 17, 2018
SPEAG	Data Acquisition Electronics	DAE3	495	May. 22, 2017	May. 21, 2018
SPEAG	Data Acquisition Electronics	DAE4	854	May. 02, 2017	May. 01, 2018
SPEAG	Data Acquisition Electronics	DAE4	853	Jul. 19, 2017	Jul. 18, 2018
SPEAG	Dosimetric E-Field Probe	EX3DV4	3925	May. 24, 2017	May. 23, 2018
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Sep. 25, 2017	Sep. 24, 2018
SPEAG	Dosimetric E-Field Probe	ES3DV3	3169	May. 11, 2017	May. 10, 2018
WonDer	Thermometer	WD-5016	TM642-1	Mar. 17, 2017	Mar. 16, 2018
WonDer	Thermometer	WD-5016	TM642-2	Mar. 17, 2017	Mar. 16, 2018
WonDer	Thermometer	WD-5016	TM281-1	Mar. 17, 2017	Mar. 16, 2018
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Apr. 20, 2017	Apr. 19, 2018
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 30, 2017	May. 29, 2018
R&S	BT Base Station	CBT32	100522	Mar. 14, 2017	Mar. 13, 2018
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Dec. 07, 2017	Dec. 06, 2018
Agilent	ENA Network Analyzer	E5071C	MY46104758	Aug. 24, 2017	Aug. 23, 2018
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 26, 2017	Sep. 25, 2018
LINE SEIKI	Digital Thermometer	LKMelectronic	DTM3000SPEZIAL	Sep. 06, 2017	Sep. 05, 2018
Anritsu	Power Meter	ML2495A	1419002	May. 15, 2017	May. 14, 2018
Anritsu	Power Sensor	MA2411B	1339124	May. 15, 2017	May. 14, 2018
Anritsu	Power Meter	ML2495A	1218006	Oct. 06, 2017	Oct. 05, 2018
Anritsu	Power Sensor	MA2411B	1207363	Oct. 06, 2017	Oct. 05, 2018
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 23, 2017	Aug. 22, 2018
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 26, 2017	Jun. 25, 2018
Mini-Circuits	Power Amplifier	ZVE-8G+	D120604	Mar. 09, 2017	Mar. 08, 2018
Mini-Circuits	Power Amplifier	ZHL-42W+	QA1344002	Mar. 09, 2017	Mar. 08, 2018
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

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

10. System Verification

10.1 Tissue Simulating Liquids

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

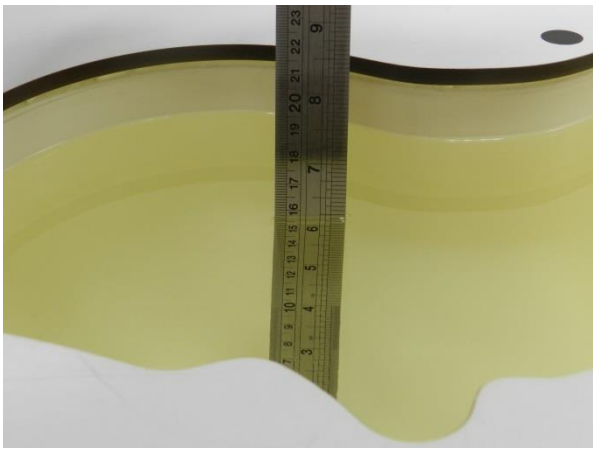


Fig 10.1Photo of Liquid Height for Head SAR

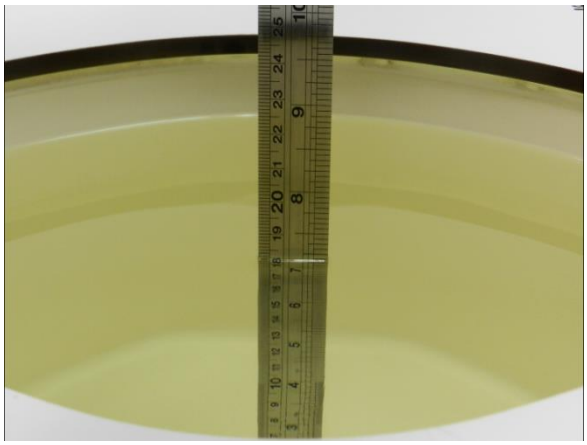


Fig 10.2 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

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

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

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	HSL	22.6	0.901	40.523	0.89	41.90	1.24	-3.29	±5	2018/1/21
750	MSL	22.2	0.954	56.339	0.96	55.50	-0.63	1.51	±5	2018/1/25
835	HSL	22.2	0.881	42.679	0.90	41.50	-2.11	2.84	±5	2018/1/20
835	HSL	22.6	0.876	42.600	0.90	41.50	-2.67	2.65	±5	2018/1/31
835	MSL	22.2	1.004	56.128	0.97	55.20	3.51	1.68	±5	2018/1/24
835	MSL	22.8	0.954	55.026	0.97	55.20	-1.65	-0.32	±5	2018/1/30
1750	HSL	22.4	1.342	41.085	1.37	40.10	-2.04	2.46	±5	2018/1/25
1750	MSL	22.6	1.484	54.244	1.49	53.40	-0.40	1.58	±5	2018/1/25
1750	MSL	22.5	1.492	52.638	1.49	53.40	0.13	-1.43	±5	2018/1/26
1900	HSL	22.1	1.450	39.336	1.40	40.00	3.57	-1.66	±5	2018/1/27
1900	HSL	22.6	1.388	39.981	1.40	40.00	-0.86	-0.05	±5	2018/1/31
1900	MSL	22.3	1.541	54.959	1.52	53.30	1.38	3.11	±5	2018/1/26
1900	MSL	22.2	1.537	54.824	1.52	53.30	1.12	2.86	±5	2018/1/27
1900	MSL	22.8	1.528	52.999	1.52	53.30	0.53	-0.56	±5	2018/1/30
2450	HSL	22.6	1.810	38.914	1.80	39.20	0.56	-0.73	±5	2018/2/13
2450	MSL	22.4	2.006	53.474	1.95	52.70	2.87	1.47	±5	2018/2/13
2600	HSL	22.7	1.919	38.097	1.96	39.00	-2.09	-2.32	±5	2018/1/22
2600	HSL	22.6	2.036	40.182	1.96	39.00	3.88	3.03	±5	2018/1/23
2600	MSL	22.6	2.183	54.420	2.16	52.50	1.06	3.66	±5	2018/1/8
2600	MSL	22.4	2.194	54.151	2.16	52.50	1.57	3.14	±5	2018/1/23
5250	HSL	22.6	4.489	36.761	4.71	35.95	-4.69	2.26	±5	2018/2/11
5250	MSL	22.6	5.489	48.167	5.36	48.95	2.41	-1.60	±5	2018/2/12
5600	HSL	22.6	4.829	36.277	5.07	35.50	-4.75	2.19	±5	2018/2/11
5600	MSL	22.6	5.960	47.573	5.77	48.50	3.29	-1.91	±5	2018/2/12
5750	HSL	22.6	4.982	36.089	5.22	35.35	-4.56	2.09	±5	2018/2/11
5750	MSL	22.6	6.171	47.329	5.94	48.28	3.89	-1.97	±5	2018/2/12

10.3 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/1/21	750	HSL	250	D750V3-1012	ES3DV3 - SN3270	DAE4 Sn854	2.10	8.22	8.4	2.19
2018/1/25	750	MSL	250	D750V3-1012	EX3DV4 - SN3925	DAE4 Sn853	2.26	8.71	9.04	3.79
2018/1/20	835	HSL	250	D835V2-499	ES3DV3 - SN3270	DAE4 Sn854	2.28	9.45	9.12	-3.49
2018/1/31	835	HSL	250	D835V2-499	EX3DV4 - SN3925	DAE4 Sn853	2.27	9.45	9.08	-3.92
2018/1/24	835	MSL	250	D835V2-499	EX3DV4 - SN3925	DAE4 Sn853	2.53	9.67	10.12	4.65
2018/1/30	835	MSL	250	D835V2-499	EX3DV4 - SN3925	DAE4 Sn853	2.44	9.67	9.76	0.93
2018/1/25	1750	HSL	250	D1750V2-1068	EX3DV4 - SN3925	DAE4 Sn853	8.93	36.70	35.72	-2.67
2018/1/25	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3925	DAE4 Sn853	9.07	37.20	36.28	-2.47
2018/1/26	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3925	DAE4 Sn853	9.12	37.20	36.48	-1.94
2018/1/27	1900	HSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	9.96	40.50	39.84	-1.63
2018/1/31	1900	HSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	9.43	40.50	37.72	-6.86
2018/1/26	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	9.53	40.70	38.12	-6.34
2018/1/27	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	10.00	40.70	40	-1.72
2018/1/30	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	9.95	40.70	39.8	-2.21
2018/2/13	2450	HSL	250	D2450V2-736	EX3DV4 - SN3925	DAE4 Sn853	12.50	52.40	50	-4.58
2018/2/13	2450	MSL	250	D2450V2-736	EX3DV4 - SN3925	DAE4 Sn853	13.50	50.80	54	6.30
2018/1/22	2600	HSL	250	D2600V2-1008	ES3DV3 - SN3270	DAE4 Sn854	14.00	56.80	56	-1.41
2018/1/23	2600	HSL	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn853	13.80	56.80	55.2	-2.82
2018/1/8	2600	MSL	250	D2600V2-1008	ES3DV3 - SN3169	DAE3 Sn495	13.80	55.00	55.2	0.36
2018/1/23	2600	MSL	250	D2600V2-1008	EX3DV4 - SN3925	DAE4 Sn853	13.90	55.00	55.6	1.09
2018/2/11	5250	HSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	8.04	81.20	80.4	-0.99
2018/2/12	5250	MSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	8.17	78.10	81.7	4.61
2018/2/11	5600	HSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	8.83	84.90	88.3	4.00
2018/2/12	5600	MSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	8.58	81.00	85.8	5.93
2018/2/11	5750	HSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	7.94	82.20	79.4	-3.41
2018/2/12	5750	MSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	8.28	78.70	82.8	5.21

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2018/1/26	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3925	DAE4 Sn853	4.90	19.70	19.6	-0.51
2018/1/26	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	5.03	21.40	20.12	-5.98
2018/1/27	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	5.23	21.40	20.92	-2.24
2018/1/30	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3925	DAE4 Sn853	5.20	21.40	20.8	-2.80
2018/2/12	5250	MSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	2.22	21.80	22.2	1.83
2018/2/12	5600	MSL	100	D5GHzV2-1171	EX3DV4 - SN3925	DAE4 Sn853	2.28	22.80	22.8	0.00

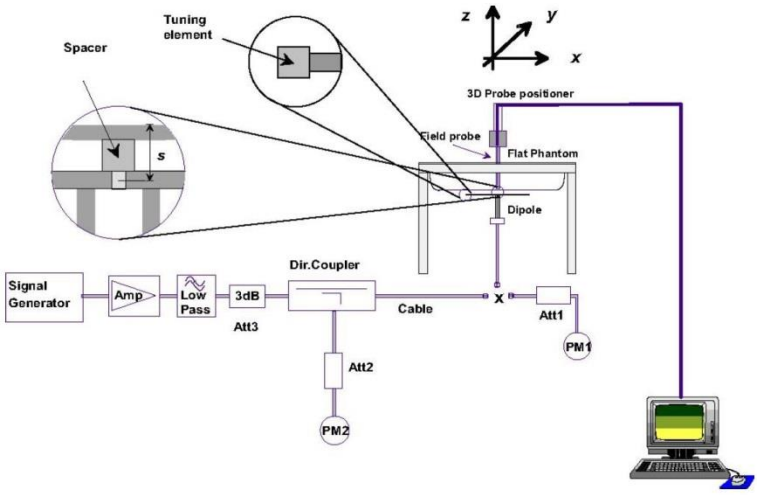


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

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

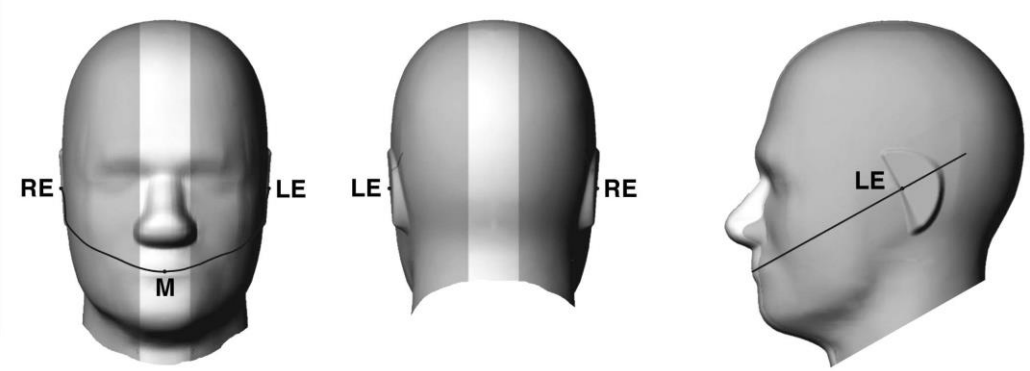


Fig 9.1.1 Front, back, and side views of SAM twin phantom

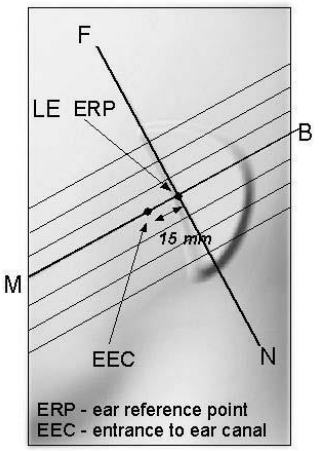


Fig 9.1.2 Close-up side view of phantom showing the ear region.

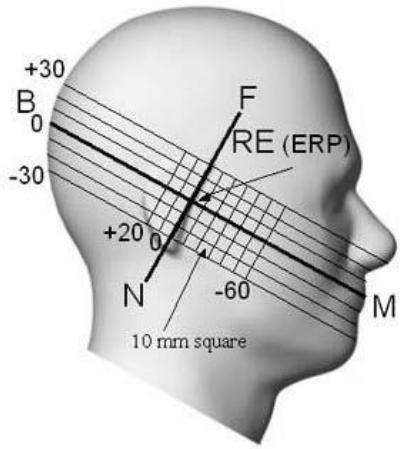


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

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

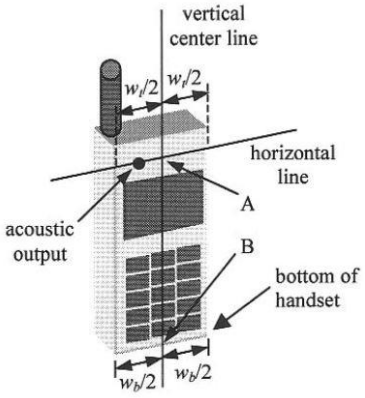


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

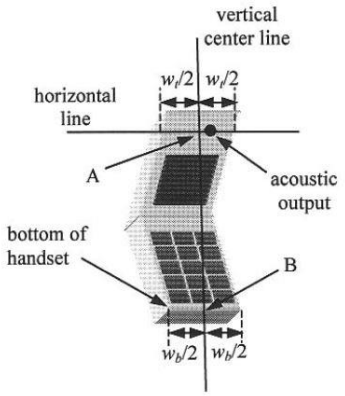


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

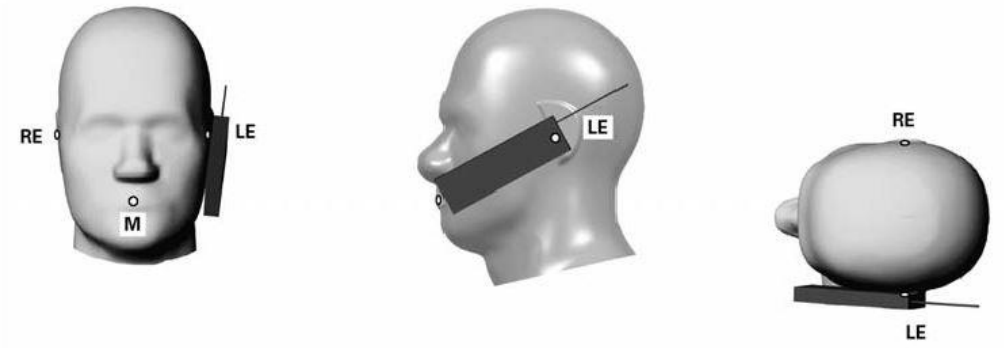


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

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

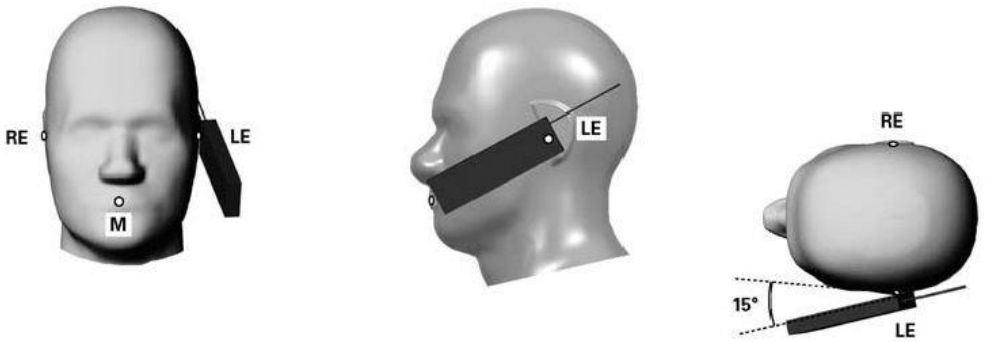


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

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

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

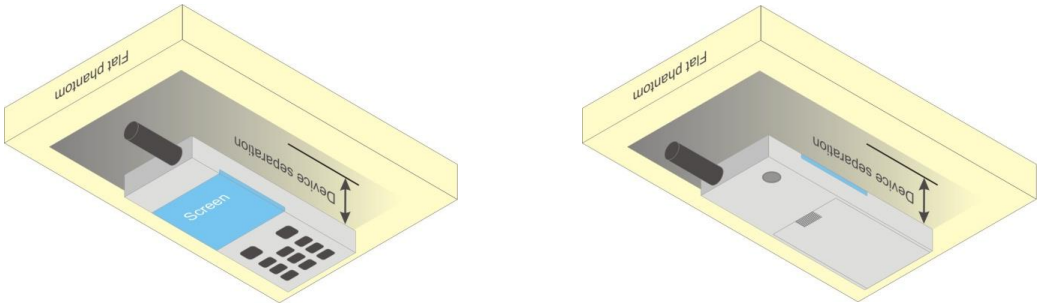


Fig 9.4 Body Worn Position

11.5 Product Specific

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

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

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g 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.

12. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850 and GPRS (3Tx slots) for GSM1900 is considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode
4. Power reduction which is triggered by hotspot mode is implemented in GSM1900 band, for hotspot mode SAR testing EUT was set in reduced power mode and GPRS 3Tx slot due to its highest frame-average power.

<Default Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.95	33.24	33.46	34.00	23.95	24.24	24.46	25.00
GPRS 1 Tx slot	32.98	33.26	33.48	34.00	23.98	24.26	24.48	25.00
GPRS 2 Tx slots	32.05	32.12	32.08	32.50	26.05	26.12	26.08	26.50
GPRS 3 Tx slots	29.93	29.85	29.72	30.50	25.67	25.59	25.46	26.24
GPRS 4 Tx slots	28.49	28.40	28.49	29.50	25.49	25.40	25.49	26.50
EDGE 1 Tx slot	26.10	26.16	26.12	27.00	17.10	17.16	17.12	18.00
EDGE 2 Tx slots	25.94	25.98	26.01	27.00	19.94	19.98	20.01	21.00
EDGE 3 Tx slots	25.85	25.93	25.94	27.00	21.59	21.67	21.68	22.74
EDGE 4 Tx slots	25.80	25.77	25.81	27.00	22.80	22.77	22.81	24.00

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.84	29.65	29.73	31.00	20.84	20.65	20.73	22.00
GPRS 1 Tx slot	29.86	29.68	29.75	31.00	20.86	20.68	20.75	22.00
GPRS 2 Tx slots	29.19	28.95	29.17	30.00	23.19	22.95	23.17	24.00
GPRS 3 Tx slots	27.91	27.72	27.88	28.50	23.65	23.46	23.62	24.24
GPRS 4 Tx slots	25.85	25.68	25.57	27.00	22.85	22.68	22.57	24.00
EDGE 1 Tx slot	26.03	25.91	25.95	27.00	17.03	16.91	16.95	18.00
EDGE 2 Tx slots	25.93	25.81	25.87	27.00	19.93	19.81	19.87	21.00
EDGE 3 Tx slots	25.84	25.69	25.77	27.00	21.58	21.43	21.51	22.74
EDGE 4 Tx slots	25.77	25.58	25.71	27.00	22.77	22.58	22.71	24.00

<Reduced Power Mode>

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	30.00	29.87	29.86	30.50	21.00	20.87	20.86	21.50
GPRS 1 Tx slot	30.00	29.87	29.86	30.50	21.00	20.87	20.86	21.50
GPRS 2 Tx slots	27.49	27.45	27.44	27.50	21.49	21.45	21.44	21.50
GPRS 3 Tx slots	26.00	25.92	25.96	26.00	21.74	21.66	21.70	21.74
GPRS 4 Tx slots	24.31	24.25	24.23	24.50	21.31	21.25	21.23	21.50
EDGE 1 Tx slot	26.21	26.09	26.21	27.00	17.21	17.09	17.21	18.00
EDGE 2 Tx slots	26.10	26.00	26.12	27.00	20.10	20.00	20.12	21.00
EDGE 3 Tx slots	25.96	25.87	25.98	26.00	21.70	21.61	21.72	21.74
EDGE 4 Tx slots	24.25	24.15	24.28	24.50	21.25	21.15	21.28	21.50

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. 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.		

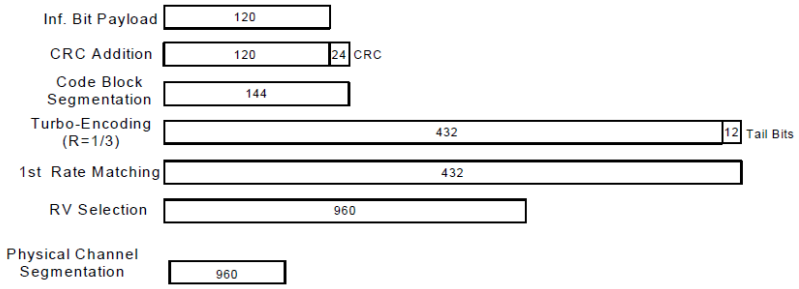


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, 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 = 5.2E:HSPA+:UL with 16QAM
   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, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>

General Note:

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

<Default Power Mode>

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	22.36	22.49	22.02	23.00	21.35	22.41	21.23	23.00	22.49	22.72	22.80	24.00
3GPP Rel 99	RMC 12.2Kbps	22.38	22.50	22.03	23.00	21.36	22.45	21.25	23.00	22.50	22.76	22.82	24.00
3GPP Rel 6	HSDPA Subtest-1	20.18	21.52	20.56	22.00	20.35	21.47	20.25	22.00	21.50	21.78	21.83	23.00
3GPP Rel 6	HSDPA Subtest-2	21.06	21.56	20.54	22.00	20.32	21.45	20.23	22.00	21.49	21.76	21.81	23.00
3GPP Rel 6	HSDPA Subtest-3	19.75	21.04	20.12	21.50	19.85	20.90	19.75	21.50	21.00	21.23	21.29	22.50
3GPP Rel 6	HSDPA Subtest-4	20.55	21.07	20.16	21.50	19.79	20.89	19.69	21.50	20.98	21.21	21.25	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	20.15	21.50	20.54	22.00	20.34	21.32	20.17	22.00	21.36	21.74	21.78	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	21.01	21.54	20.53	22.00	20.16	21.43	20.05	22.00	21.43	21.70	21.79	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	19.71	21.02	20.18	21.50	19.84	20.88	19.66	21.50	20.87	21.18	21.25	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	20.52	21.05	20.14	21.50	19.73	20.79	19.59	21.50	20.90	21.13	21.21	22.50
3GPP Rel 6	HSUPA Subtest-1	21.01	21.60	20.58	22.00	20.36	21.48	20.25	22.00	21.52	21.79	21.82	23.00
3GPP Rel 6	HSUPA Subtest-2	19.01	19.60	18.16	20.00	18.32	19.44	18.31	20.00	19.54	19.76	19.84	21.00
3GPP Rel 6	HSUPA Subtest-3	20.06	20.54	19.06	21.00	19.38	20.46	19.35	21.00	20.54	20.73	20.81	22.00
3GPP Rel 6	HSUPA Subtest-4	18.99	19.59	18.08	20.00	18.35	19.42	18.34	20.00	19.53	19.71	19.82	21.00
3GPP Rel 6	HSUPA Subtest-5	20.40	21.60	20.08	22.00	20.36	21.45	20.26	22.00	21.55	21.79	21.83	23.00

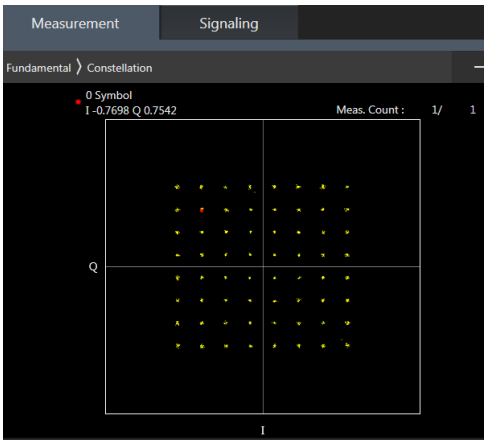
<Reduced Power Mode>

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	20.33	20.36	20.49	20.50	20.13	20.27	20.23	20.50
3GPP Rel 99	RMC 12.2Kbps	20.33	20.36	20.50	20.50	20.13	20.28	20.23	20.50
3GPP Rel 6	HSDPA Subtest-1	19.35	19.38	19.50	20.50	19.16	19.30	19.26	20.50
3GPP Rel 6	HSDPA Subtest-2	19.31	19.35	19.50	20.50	19.15	19.30	19.24	20.50
3GPP Rel 6	HSDPA Subtest-3	18.87	18.88	19.00	20.00	18.65	18.80	18.75	20.00
3GPP Rel 6	HSDPA Subtest-4	18.86	18.90	19.00	20.00	18.64	18.79	18.73	20.00
3GPP Rel 8	DC-HSDPA Subtest-1	19.25	19.32	19.42	20.50	19.07	19.27	19.24	20.50
3GPP Rel 8	DC-HSDPA Subtest-2	19.31	19.26	19.43	20.50	19.07	19.26	19.22	20.50
3GPP Rel 8	DC-HSDPA Subtest-3	18.87	18.81	18.91	20.00	18.57	18.77	18.68	20.00
3GPP Rel 8	DC-HSDPA Subtest-4	18.84	18.82	18.93	20.00	18.55	18.74	18.65	20.00
3GPP Rel 6	HSUPA Subtest-1	19.17	19.15	19.44	20.50	18.50	18.60	18.51	20.50
3GPP Rel 6	HSUPA Subtest-2	17.27	17.24	17.45	18.50	16.94	17.10	16.99	18.50
3GPP Rel 6	HSUPA Subtest-3	18.27	18.20	18.44	19.50	17.92	18.08	17.99	19.50
3GPP Rel 6	HSUPA Subtest-4	17.15	17.18	17.37	18.50	16.94	17.09	17.01	18.50
3GPP Rel 6	HSUPA Subtest-5	19.19	19.17	19.36	20.50	18.96	19.14	19.03	20.50

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / 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 5 / 17 SAR test was covered by Band 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	22.60	22.61	22.82	23.5	0
20	QPSK	1	49	22.11	22.30	22.56		
20	QPSK	1	99	22.24	22.42	22.36		
20	QPSK	50	0	21.42	21.46	21.82	22.5	1
20	QPSK	50	24	21.33	21.37	21.81		
20	QPSK	50	50	21.24	21.41	21.05		
20	QPSK	100	0	21.34	21.38	21.02		
20	16QAM	1	0	21.34	21.90	21.99	22.5	1
20	16QAM	1	49	21.47	21.62	21.95		
20	16QAM	1	99	21.69	21.71	21.02		
20	16QAM	50	0	20.44	20.48	20.82	21.5	2
20	16QAM	50	24	20.35	20.40	20.82		
20	16QAM	50	50	20.26	20.42	20.03		
20	16QAM	100	0	20.35	20.39	20.02		
20	64QAM	1	0	21.78	21.84	21.77	21.5	2
20	64QAM	1	49	21.34	21.44	21.81		
20	64QAM	1	99	21.44	21.56	20.75		
20	64QAM	50	0	20.43	20.47	20.81	20.5	3
20	64QAM	50	24	20.34	20.39	20.82		
20	64QAM	50	50	20.26	20.43	19.63		
20	64QAM	100	0	20.35	20.40	19.15		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.55	22.57	22.62	23.5	0
15	QPSK	1	37	22.30	22.34	21.51		
15	QPSK	1	74	22.25	22.39	22.06		
15	QPSK	36	0	21.38	21.42	21.84	22.5	1
15	QPSK	36	20	21.33	21.37	21.76		
15	QPSK	36	39	21.25	21.41	20.92		
15	QPSK	75	0	21.33	21.37	21.03		
15	16QAM	1	0	21.79	21.80	21.92	22.5	1
15	16QAM	1	37	21.50	21.57	20.98		
15	16QAM	1	74	21.48	21.52	20.56		
15	16QAM	36	0	20.40	20.44	20.84	21.5	2
15	16QAM	36	20	20.34	20.39	20.72		
15	16QAM	36	39	20.26	20.42	19.53		
15	16QAM	75	0	20.31	20.38	19.98		
15	64QAM	1	0	21.38	21.40	21.50	21.5	2
15	64QAM	1	37	21.36	21.43	21.10		
15	64QAM	1	74	21.26	21.46	20.63		
15	64QAM	36	0	20.39	20.45	20.50	20.5	3
15	64QAM	36	20	20.33	20.38	20.46		
15	64QAM	36	39	20.26	20.43	19.48		
15	64QAM	75	0	20.33	20.38	19.02		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.58	22.61	22.81	23.5	0
10	QPSK	1	25	22.22	22.29	22.52		
10	QPSK	1	49	22.36	22.51	22.50		
10	QPSK	25	0	21.33	21.37	21.77	22.5	1
10	QPSK	25	12	21.30	21.34	21.83		
10	QPSK	25	25	21.27	21.30	21.78		
10	QPSK	50	0	21.30	21.33	21.75		
10	16QAM	1	0	21.84	21.87	22.05	22.5	1
10	16QAM	1	25	21.52	21.55	21.46		
10	16QAM	1	49	21.64	21.73	21.62		
10	16QAM	25	0	20.37	20.42	20.77	21.5	2
10	16QAM	25	12	20.33	20.38	20.83		
10	16QAM	25	25	20.27	20.33	20.74		
10	16QAM	50	0	20.34	20.38	20.72		
10	64QAM	1	0	21.46	21.50	21.50	21.5	2
10	64QAM	1	25	21.43	21.46	21.42		
10	64QAM	1	49	21.41	21.34	21.35		
10	64QAM	25	0	20.34	20.40	20.48	20.5	3
10	64QAM	25	12	20.31	20.37	20.50		
10	64QAM	25	25	20.26	20.31	20.41		
10	64QAM	50	0	20.33	20.37	20.49		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.34	22.35	22.61	23.5	0
5	QPSK	1	12	22.29	22.29	22.59		
5	QPSK	1	24	22.26	22.27	22.45		
5	QPSK	12	0	21.32	21.33	21.77	22.5	1
5	QPSK	12	7	21.32	21.33	21.78		
5	QPSK	12	13	21.26	21.29	21.74		
5	QPSK	25	0	21.26	21.31	21.73		
5	16QAM	1	0	21.59	21.57	21.98	22.5	1
5	16QAM	1	12	21.51	21.54	21.88		
5	16QAM	1	24	21.53	21.51	21.70		
5	16QAM	12	0	20.33	20.38	20.73	21.5	2
5	16QAM	12	7	20.32	20.37	20.81		
5	16QAM	12	13	20.28	20.32	20.76		
5	16QAM	25	0	20.29	20.34	20.67		
5	64QAM	1	0	21.50	21.46	21.50	21.5	2
5	64QAM	1	12	21.35	21.46	21.46		
5	64QAM	1	24	21.41	21.48	21.37		
5	64QAM	12	0	20.30	20.33	20.25	20.5	3
5	64QAM	12	7	20.31	20.33	20.48		
5	64QAM	12	13	20.26	20.30	20.25		
5	64QAM	25	0	20.27	20.32	20.45		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.28	22.27	22.49	23.5	0
3	QPSK	1	8	22.19	22.23	22.52		
3	QPSK	1	14	22.19	22.20	22.39		
3	QPSK	8	0	21.24	21.26	21.70	22.5	1
3	QPSK	8	4	21.24	21.28	21.73		
3	QPSK	8	7	21.22	21.26	21.63		
3	QPSK	15	0	21.25	21.28	21.69		
3	16QAM	1	0	21.51	21.50	21.80	22.5	1
3	16QAM	1	8	21.45	21.49	21.81		
3	16QAM	1	14	21.46	21.45	21.52		
3	16QAM	8	0	20.31	20.34	20.77	21.5	2
3	16QAM	8	4	20.32	20.36	20.81		
3	16QAM	8	7	20.29	20.32	20.78		
3	16QAM	15	0	20.24	20.31	20.67		
3	64QAM	1	0	20.39	20.43	20.39	21.5	2
3	64QAM	1	8	20.38	20.42	20.08		
3	64QAM	1	14	20.34	20.39	19.73		
3	64QAM	8	0	19.23	19.34	18.61	20.5	3
3	64QAM	8	4	19.20	19.35	18.53		
3	64QAM	8	7	19.14	19.31	19.00		
3	64QAM	15	0	19.25	19.30	19.00		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.15	22.16	22.38	23.5	0
1.4	QPSK	1	3	22.21	22.22	22.35		
1.4	QPSK	1	5	22.13	22.15	22.24		
1.4	QPSK	3	0	22.16	22.21	22.38		
1.4	QPSK	3	1	22.21	22.28	22.39		
1.4	QPSK	3	3	22.15	22.22	22.31		
1.4	QPSK	6	0	21.19	21.18	21.48	22.5	1
1.4	16QAM	1	0	21.45	21.41	21.61	22.5	1
1.4	16QAM	1	3	21.56	21.49	21.48		
1.4	16QAM	1	5	21.42	21.39	21.31		
1.4	16QAM	3	0	21.19	21.21	21.47		
1.4	16QAM	3	1	21.23	21.27	21.58		
1.4	16QAM	3	3	21.17	21.20	21.47		
1.4	16QAM	6	0	20.26	20.28	20.62	21.5	2
1.4	64QAM	1	0	20.27	20.36	20.56	21.5	2
1.4	64QAM	1	3	20.31	20.42	20.15		
1.4	64QAM	1	5	20.27	20.35	19.58		
1.4	64QAM	3	0	20.33	20.34	20.22		
1.4	64QAM	3	1	20.37	20.39	20.59		
1.4	64QAM	3	3	20.29	20.33	20.25		
1.4	64QAM	6	0	19.20	19.23	19.07	20.5	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	22.93	23.05	22.95	24	0
20	QPSK	1	49	22.71	22.85	22.80		
20	QPSK	1	99	22.68	22.77	22.75		
20	QPSK	50	0	21.86	21.99	21.96	23	1
20	QPSK	50	24	21.80	21.89	21.87		
20	QPSK	50	50	21.70	21.85	21.82		
20	QPSK	100	0	21.82	21.88	21.84		
20	16QAM	1	0	22.20	22.24	22.22	23	1
20	16QAM	1	49	21.94	22.22	22.20		
20	16QAM	1	99	21.90	22.08	22.01		
20	16QAM	50	0	20.82	20.94	20.92	22	2
20	16QAM	50	24	20.85	20.86	20.91		
20	16QAM	50	50	20.72	20.86	20.91		
20	16QAM	100	0	20.79	20.85	20.81		
20	64QAM	1	0	21.14	21.18	21.15	22	2
20	64QAM	1	49	20.92	21.00	21.00		
20	64QAM	1	99	20.84	20.98	20.97		
20	64QAM	50	0	19.77	20.00	19.99	21	3
20	64QAM	50	24	19.81	19.95	19.93		
20	64QAM	50	50	19.72	19.91	19.89		
20	64QAM	100	0	19.81	19.88	19.87		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.88	22.98	23.02	24	0
15	QPSK	1	37	22.70	22.74	22.81		
15	QPSK	1	74	22.65	22.79	22.78		
15	QPSK	36	0	21.80	21.90	21.96	23	1
15	QPSK	36	20	21.81	21.85	21.90		
15	QPSK	36	39	21.75	21.72	21.89		
15	QPSK	75	0	21.81	21.82	21.87		
15	16QAM	1	0	22.17	22.26	22.30	23	1
15	16QAM	1	37	21.96	22.00	22.08		
15	16QAM	1	74	21.88	22.09	22.06		
15	16QAM	36	0	20.83	20.92	20.97	22	2
15	16QAM	36	20	20.81	20.83	20.88		
15	16QAM	36	39	20.74	20.75	20.91		
15	16QAM	75	0	20.82	20.82	20.87		
15	64QAM	1	0	21.09	21.20	21.23	22	2
15	64QAM	1	37	20.92	20.94	20.99		
15	64QAM	1	74	20.82	21.00	20.98		
15	64QAM	36	0	19.82	19.93	20.01	21	3
15	64QAM	36	20	19.85	19.88	19.92		
15	64QAM	36	39	19.76	19.80	19.93		
15	64QAM	75	0	19.80	19.83	19.87		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.79	22.91	22.90	24	0
10	QPSK	1	25	22.65	22.76	22.87		
10	QPSK	1	49	22.66	22.68	22.87		
10	QPSK	25	0	21.75	21.84	22.87	23	1
10	QPSK	25	12	21.68	21.83	21.94		
10	QPSK	25	25	21.76	21.73	21.88		
10	QPSK	50	0	21.68	21.81	21.91		
10	16QAM	1	0	22.05	22.14	22.13	23	1
10	16QAM	1	25	21.93	22.01	22.13		
10	16QAM	1	49	21.92	21.95	22.02		
10	16QAM	25	0	20.77	20.84	20.89	22	2
10	16QAM	25	12	20.74	20.83	20.93		
10	16QAM	25	25	20.75	20.74	20.87		
10	16QAM	50	0	20.72	20.79	20.92		
10	64QAM	1	0	21.00	21.07	21.06	22	2
10	64QAM	1	25	20.86	20.95	21.08		
10	64QAM	1	49	20.85	20.87	20.95		
10	64QAM	25	0	19.77	19.85	19.89	21	3
10	64QAM	25	12	19.74	19.83	19.94		
10	64QAM	25	25	19.76	19.77	19.86		
10	64QAM	50	0	19.73	19.81	19.95		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.71	22.79	22.90	24	0
5	QPSK	1	12	22.63	22.72	22.80		
5	QPSK	1	24	22.62	22.71	22.77		
5	QPSK	12	0	21.71	21.77	21.89	23	1
5	QPSK	12	7	21.71	21.77	21.85		
5	QPSK	12	13	21.64	21.70	21.82		
5	QPSK	25	0	21.66	21.77	21.87		
5	16QAM	1	0	21.97	22.03	22.14	23	1
5	16QAM	1	12	21.86	21.98	22.06		
5	16QAM	1	24	21.86	21.98	22.02		
5	16QAM	12	0	20.74	20.82	20.91	22	2
5	16QAM	12	7	20.75	20.80	20.92		
5	16QAM	12	13	20.69	20.73	20.84		
5	16QAM	25	0	20.68	20.77	20.86		
5	64QAM	1	0	20.91	21.00	21.12	22	2
5	64QAM	1	12	20.83	20.92	20.99		
5	64QAM	1	24	20.78	20.89	20.95		
5	64QAM	12	0	19.74	19.81	19.93	21	3
5	64QAM	12	7	19.75	19.83	19.93		
5	64QAM	12	13	19.72	19.78	19.90		
5	64QAM	25	0	19.68	19.76	19.85		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.68	22.77	22.83	24	0
3	QPSK	1	8	22.64	22.73	22.79		
3	QPSK	1	14	22.61	22.71	22.77		
3	QPSK	8	0	21.69	21.78	21.87	23	1
3	QPSK	8	4	21.70	21.77	21.89		
3	QPSK	8	7	21.66	21.72	21.84		
3	QPSK	15	0	21.70	21.73	21.86		
3	16QAM	1	0	21.93	22.01	22.07	23	1
3	16QAM	1	8	21.89	22.01	22.07		
3	16QAM	1	14	21.81	21.95	22.00		
3	16QAM	8	0	20.76	20.81	20.93	22	2
3	16QAM	8	4	20.77	20.82	20.91		
3	16QAM	8	7	20.73	20.81	20.89		
3	16QAM	15	0	20.72	20.75	20.85		
3	64QAM	1	0	20.86	20.92	20.99	22	2
3	64QAM	1	8	20.82	20.90	20.96		
3	64QAM	1	14	20.79	20.88	20.95		
3	64QAM	8	0	19.72	19.80	19.89	21	3
3	64QAM	8	4	19.72	19.80	19.88		
3	64QAM	8	7	19.69	19.75	19.85		
3	64QAM	15	0	19.69	19.74	19.84		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.59	22.66	22.74	24	0
1.4	QPSK	1	3	22.64	22.74	22.80		
1.4	QPSK	1	5	22.55	22.63	22.70		
1.4	QPSK	3	0	22.63	22.70	22.75		
1.4	QPSK	3	1	22.67	22.76	22.83		
1.4	QPSK	3	3	22.60	22.69	22.75		
1.4	QPSK	6	0	21.61	21.68	21.76	23	1
1.4	16QAM	1	0	21.80	21.93	21.98	23	1
1.4	16QAM	1	3	21.91	22.00	22.07		
1.4	16QAM	1	5	21.82	21.89	21.96		
1.4	16QAM	3	0	21.64	21.72	21.80		
1.4	16QAM	3	1	21.71	21.75	21.85		
1.4	16QAM	3	3	21.62	21.70	21.80		
1.4	16QAM	6	0	20.69	20.73	20.85	22	2
1.4	64QAM	1	0	20.75	20.87	20.92	22	2
1.4	64QAM	1	3	20.81	20.89	20.98		
1.4	64QAM	1	5	20.75	20.82	20.90		
1.4	64QAM	3	0	20.73	20.84	20.89		
1.4	64QAM	3	1	20.81	20.87	20.93		
1.4	64QAM	3	3	20.73	20.81	20.89		
1.4	64QAM	6	0	19.61	19.67	19.75	21	3

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.37	23.44	23.35	24	0
10	QPSK	1	25	23.38	23.42	23.26		
10	QPSK	1	49	23.36	23.32	23.14		
10	QPSK	25	0	22.35	22.51	22.38	23	1
10	QPSK	25	12	22.46	22.49	22.31		
10	QPSK	25	25	22.37	22.45	22.27		
10	QPSK	50	0	22.45	22.45	22.31		
10	16QAM	1	0	22.61	22.68	22.62	23	1
10	16QAM	1	25	22.67	22.64	22.56		
10	16QAM	1	49	22.59	22.62	22.39		
10	16QAM	25	0	21.35	21.51	21.36	22	2
10	16QAM	25	12	21.46	21.52	21.35		
10	16QAM	25	25	21.37	21.44	21.26		
10	16QAM	50	0	21.46	21.50	21.33		
10	64QAM	1	0	21.49	21.54	21.51	22	2
10	64QAM	1	25	21.55	21.57	21.44		
10	64QAM	1	49	21.54	21.46	21.28		
10	64QAM	25	0	20.35	20.53	20.38	21	3
10	64QAM	25	12	20.47	20.51	20.36		
10	64QAM	25	25	20.39	20.42	20.25		
10	64QAM	50	0	20.43	20.48	20.33		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.30	23.43	23.23	24	0
5	QPSK	1	12	23.26	23.38	23.15		
5	QPSK	1	24	23.33	23.35	23.11		
5	QPSK	12	0	22.34	22.45	22.24	23	1
5	QPSK	12	7	22.36	22.49	22.24		
5	QPSK	12	13	22.41	22.45	22.18		
5	QPSK	25	0	22.29	22.46	22.22		
5	16QAM	1	0	22.57	22.67	22.46	23	1
5	16QAM	1	12	22.55	22.68	22.46		
5	16QAM	1	24	22.62	22.65	22.37		
5	16QAM	12	0	21.35	21.47	21.27	22	2
5	16QAM	12	7	21.37	21.48	21.25		
5	16QAM	12	13	21.44	21.45	21.17		
5	16QAM	25	0	21.31	21.48	21.21		
5	64QAM	1	0	21.47	21.58	21.40	22	2
5	64QAM	1	12	21.43	21.55	21.34		
5	64QAM	1	24	21.50	21.53	21.28		
5	64QAM	12	0	20.37	20.51	20.29	21	3
5	64QAM	12	7	20.37	20.52	20.29		
5	64QAM	12	13	20.43	20.47	20.24		
5	64QAM	25	0	20.32	20.44	20.22		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.29	23.39	23.18	24	0
3	QPSK	1	8	23.25	23.37	23.13		
3	QPSK	1	14	23.23	23.33	23.09		
3	QPSK	8	0	22.32	22.45	22.22	23	1
3	QPSK	8	4	22.31	22.46	22.22		
3	QPSK	8	7	22.27	22.41	22.18		
3	QPSK	15	0	22.28	22.45	22.21		
3	16QAM	1	0	22.54	22.61	22.44	23	1
3	16QAM	1	8	22.54	22.67	22.43		
3	16QAM	1	14	22.51	22.62	22.39		
3	16QAM	8	0	21.38	21.51	21.28	22	2
3	16QAM	8	4	21.39	21.51	21.28		
3	16QAM	8	7	21.34	21.49	21.23		
3	16QAM	15	0	21.34	21.46	21.21		
3	64QAM	1	0	21.44	21.55	21.35	22	2
3	64QAM	1	8	21.45	21.53	21.30		
3	64QAM	1	14	21.41	21.51	21.26		
3	64QAM	8	0	20.35	20.50	20.26	21	3
3	64QAM	8	4	20.37	20.50	20.26		
3	64QAM	8	7	20.35	20.48	20.21		
3	64QAM	15	0	20.32	20.45	20.20		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.20	23.29	23.06	24	0
1.4	QPSK	1	3	23.25	23.38	23.11		
1.4	QPSK	1	5	23.19	23.29	23.05		
1.4	QPSK	3	0	23.25	23.35	23.10		
1.4	QPSK	3	1	23.30	23.39	23.14		
1.4	QPSK	3	3	23.24	23.35	23.09		
1.4	QPSK	6	0	22.22	22.39	22.08	23	1
1.4	16QAM	1	0	22.44	22.57	22.33	23	1
1.4	16QAM	1	3	22.53	22.67	22.41		
1.4	16QAM	1	5	22.46	22.56	22.32		
1.4	16QAM	3	0	22.25	22.39	22.12		
1.4	16QAM	3	1	22.29	22.43	22.17		
1.4	16QAM	3	3	22.26	22.37	22.11		
1.4	16QAM	6	0	21.29	21.44	21.18	22	2
1.4	64QAM	1	0	21.37	21.50	21.24	22	2
1.4	64QAM	1	3	21.41	21.53	21.28		
1.4	64QAM	1	5	21.37	21.49	21.22		
1.4	64QAM	3	0	21.36	21.48	21.23		
1.4	64QAM	3	1	21.39	21.53	21.27		
1.4	64QAM	3	3	21.35	21.48	21.21		
1.4	64QAM	6	0	20.24	20.36	20.10	21	3

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.75	22.76	22.96	24	0
20	QPSK	1	49	22.72	22.75	22.67		
20	QPSK	1	99	22.20	22.65	22.69		
20	QPSK	50	0	21.76	21.88	21.90	23	1
20	QPSK	50	24	21.83	21.89	21.80		
20	QPSK	50	50	21.77	21.81	21.76		
20	QPSK	100	0	21.84	21.86	21.78		
20	16QAM	1	0	21.94	22.02	22.13	23	1
20	16QAM	1	49	21.98	22.01	21.92		
20	16QAM	1	99	21.96	21.91	21.92		
20	16QAM	50	0	20.78	20.87	20.91	22	2
20	16QAM	50	24	20.85	20.88	20.81		
20	16QAM	50	50	20.79	20.81	20.73		
20	16QAM	100	0	20.82	20.84	20.77		
20	64QAM	1	0	20.99	20.99	21.12	22	2
20	64QAM	1	49	20.97	20.98	20.89		
20	64QAM	1	99	20.93	20.86	20.89		
20	64QAM	50	0	19.81	19.91	19.93	21	3
20	64QAM	50	24	19.87	19.90	19.84		
20	64QAM	50	50	19.83	19.85	19.80		
20	64QAM	100	0	19.86	19.89	19.81		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.40	22.92	22.95	24	0
15	QPSK	1	37	22.42	22.82	22.76		
15	QPSK	1	74	22.70	22.77	22.77		
15	QPSK	36	0	21.73	21.95	21.90	23	1
15	QPSK	36	20	21.71	21.96	21.87		
15	QPSK	36	39	21.76	21.89	21.84		
15	QPSK	75	0	21.70	21.91	21.84		
15	16QAM	1	0	21.34	22.19	22.20	23	1
15	16QAM	1	37	21.88	22.07	22.02		
15	16QAM	1	74	21.93	22.08	22.00		
15	16QAM	36	0	20.74	20.96	20.89	22	2
15	16QAM	36	20	20.73	20.96	20.87		
15	16QAM	36	39	20.77	20.90	20.83		
15	16QAM	75	0	20.72	20.96	20.85		
15	64QAM	1	0	20.88	21.04	21.08	22	2
15	64QAM	1	37	20.82	20.94	20.85		
15	64QAM	1	74	20.92	20.96	20.90		
15	64QAM	36	0	19.80	19.89	19.85	21	3
15	64QAM	36	20	19.77	19.91	19.85		
15	64QAM	36	39	19.81	19.87	19.80		
15	64QAM	75	0	19.74	19.85	19.80		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.04	22.79	22.72	24	0
10	QPSK	1	25	22.63	22.79	22.70		
10	QPSK	1	49	22.72	22.74	22.71		
10	QPSK	25	0	21.65	21.81	21.76	23	1
10	QPSK	25	12	21.68	21.82	21.76		
10	QPSK	25	25	21.65	21.78	21.76		
10	QPSK	50	0	21.68	21.78	21.73		
10	16QAM	1	0	21.64	22.03	21.96	23	1
10	16QAM	1	25	21.88	22.00	21.95		
10	16QAM	1	49	21.91	21.96	21.89		
10	16QAM	25	0	20.69	20.81	20.74	22	2
10	16QAM	25	12	20.71	20.83	20.78		
10	16QAM	25	25	20.66	20.80	20.72		
10	16QAM	50	0	20.69	20.80	20.76		
10	64QAM	1	0	20.77	21.01	20.93	22	2
10	64QAM	1	25	20.84	20.97	20.91		
10	64QAM	1	49	20.91	20.93	20.89		
10	64QAM	25	0	19.74	19.85	19.80	21	3
10	64QAM	25	12	19.74	19.86	19.81		
10	64QAM	25	25	19.70	19.82	19.74		
10	64QAM	50	0	19.73	19.85	19.79		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.11	22.76	22.71	24	0
5	QPSK	1	12	22.52	22.77	22.72		
5	QPSK	1	24	22.58	22.75	22.73		
5	QPSK	12	0	21.55	21.81	21.77	23	1
5	QPSK	12	7	21.73	21.81	21.79		
5	QPSK	12	13	21.67	21.77	21.72		
5	QPSK	25	0	21.61	21.81	21.75		
5	16QAM	1	0	21.59	21.99	21.95	23	1
5	16QAM	1	12	21.84	22.00	21.94		
5	16QAM	1	24	21.81	21.97	21.88		
5	16QAM	12	0	20.61	20.81	20.75	22	2
5	16QAM	12	7	20.73	20.83	20.81		
5	16QAM	12	13	20.67	20.78	20.75		
5	16QAM	25	0	20.72	20.80	20.75		
5	64QAM	1	0	20.76	20.95	20.91	22	2
5	64QAM	1	12	20.83	20.94	20.87		
5	64QAM	1	24	20.79	20.93	20.86		
5	64QAM	12	0	19.74	19.86	19.82	21	3
5	64QAM	12	7	19.79	19.90	19.85		
5	64QAM	12	13	19.74	19.85	19.79		
5	64QAM	25	0	19.70	19.81	19.76		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.44	22.41	22.36	24	0
10	QPSK	1	25	22.43	22.31	22.36		
10	QPSK	1	49	22.41	22.35	22.14		
10	QPSK	25	0	21.39	21.45	21.41	23	1
10	QPSK	25	12	21.48	21.48	21.44		
10	QPSK	25	25	21.47	21.40	21.39		
10	QPSK	50	0	21.47	21.45	21.40		
10	16QAM	1	0	21.62	21.57	21.67	23	1
10	16QAM	1	25	21.68	21.69	21.60		
10	16QAM	1	49	21.68	21.59	21.43		
10	16QAM	25	0	20.36	20.45	20.40	22	2
10	16QAM	25	12	20.51	20.47	20.44		
10	16QAM	25	25	20.45	20.42	20.40		
10	16QAM	50	0	20.50	20.46	20.41		
10	64QAM	1	0	20.52	20.47	20.53	22	2
10	64QAM	1	25	20.59	20.56	20.53		
10	64QAM	1	49	20.53	20.53	20.41		
10	64QAM	25	0	19.37	19.45	19.41	21	3
10	64QAM	25	12	19.50	19.46	19.43		
10	64QAM	25	25	19.46	19.41	19.39		
10	64QAM	50	0	19.47	19.44	19.40		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.35	22.37	22.33	24	0
5	QPSK	1	12	22.32	22.36	22.31		
5	QPSK	1	24	22.42	22.37	22.06		
5	QPSK	12	0	21.35	21.41	21.37	23	1
5	QPSK	12	7	21.40	21.46	21.39		
5	QPSK	12	13	21.35	21.43	21.34		
5	QPSK	25	0	21.37	21.41	21.37		
5	16QAM	1	0	21.59	21.67	21.60	23	1
5	16QAM	1	12	21.62	21.65	21.56		
5	16QAM	1	24	21.66	21.62	21.32		
5	16QAM	12	0	20.39	20.43	20.40	22	2
5	16QAM	12	7	20.39	20.45	20.37		
5	16QAM	12	13	20.37	20.42	20.32		
5	16QAM	25	0	20.35	20.41	20.37		
5	64QAM	1	0	20.51	20.57	20.51	22	2
5	64QAM	1	12	20.51	20.52	20.49		
5	64QAM	1	24	20.58	20.54	20.32		
5	64QAM	12	0	19.40	19.45	19.41	21	3
5	64QAM	12	7	19.43	19.47	19.43		
5	64QAM	12	13	19.39	19.44	19.39		
5	64QAM	25	0	19.35	19.42	19.35		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.34	22.35	22.28	24	0
3	QPSK	1	8	22.29	22.34	22.26		
3	QPSK	1	14	22.30	22.35	22.08		
3	QPSK	8	0	21.38	21.39	21.34	23	1
3	QPSK	8	4	21.38	21.43	21.36		
3	QPSK	8	7	21.34	21.38	21.30		
3	QPSK	15	0	21.35	21.40	21.33		
3	16QAM	1	0	21.57	21.62	21.56	23	1
3	16QAM	1	8	21.60	21.61	21.55		
3	16QAM	1	14	21.57	21.58	21.28		
3	16QAM	8	0	20.43	20.45	20.38	22	2
3	16QAM	8	4	20.43	20.47	20.41		
3	16QAM	8	7	20.41	20.44	20.36		
3	16QAM	15	0	20.35	20.41	20.33		
3	64QAM	1	0	20.48	20.53	20.47	22	2
3	64QAM	1	8	20.48	20.52	20.45		
3	64QAM	1	14	20.47	20.51	20.25		
3	64QAM	8	0	19.41	19.45	19.38	21	3
3	64QAM	8	4	19.41	19.47	19.40		
3	64QAM	8	7	19.39	19.43	19.37		
3	64QAM	15	0	19.36	19.39	19.35		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.23	22.28	22.15	24	0
1.4	QPSK	1	3	22.31	22.34	22.05		
1.4	QPSK	1	5	22.24	22.22	22.04		
1.4	QPSK	3	0	22.29	22.32	22.10		
1.4	QPSK	3	1	22.33	22.37	22.08		
1.4	QPSK	3	3	22.29	22.31	22.01		
1.4	QPSK	6	0	21.28	21.32	21.10	23	1
1.4	16QAM	1	0	21.48	21.54	21.42	23	1
1.4	16QAM	1	3	21.60	21.63	21.31		
1.4	16QAM	1	5	21.52	21.49	21.14		
1.4	16QAM	3	0	21.32	21.35	21.20		
1.4	16QAM	3	1	21.37	21.39	21.18		
1.4	16QAM	3	3	21.30	21.34	21.04		
1.4	16QAM	6	0	20.35	20.38	20.20	22	2
1.4	64QAM	1	0	20.43	20.45	20.38	22	2
1.4	64QAM	1	3	20.48	20.51	20.30		
1.4	64QAM	1	5	20.44	20.46	20.15		
1.4	64QAM	3	0	20.42	20.44	20.36		
1.4	64QAM	3	1	20.46	20.48	20.33		
1.4	64QAM	3	3	20.41	20.43	20.13		
1.4	64QAM	6	0	19.29	19.32	19.15	21	3

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.38	22.37	22.36	24	0
10	QPSK	1	25	22.36	22.36	22.34		
10	QPSK	1	49	22.32	22.31	22.08		
10	QPSK	25	0	21.42	21.40	21.41	23	1
10	QPSK	25	12	21.42	21.44	21.42		
10	QPSK	25	25	21.42	21.40	21.38		
10	QPSK	50	0	21.41	21.40	21.41		
10	16QAM	1	0	21.63	21.63	21.65	23	1
10	16QAM	1	25	21.66	21.60	21.57		
10	16QAM	1	49	21.60	21.56	21.32		
10	16QAM	25	0	20.43	20.41	20.42	22	2
10	16QAM	25	12	20.45	20.43	20.43		
10	16QAM	25	25	20.39	20.39	20.38		
10	16QAM	50	0	20.43	20.43	20.41		
10	64QAM	1	0	20.55	20.53	20.52	22	2
10	64QAM	1	25	20.55	20.53	20.50		
10	64QAM	1	49	20.49	20.46	20.35		
10	64QAM	25	0	19.43	19.42	19.41	21	3
10	64QAM	25	12	19.46	19.44	19.44		
10	64QAM	25	25	19.40	19.39	19.39		
10	64QAM	50	0	19.42	19.42	19.41		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.37	22.34	22.34	24	0
5	QPSK	1	12	22.37	22.34	22.30		
5	QPSK	1	24	22.34	22.32	22.03		
5	QPSK	12	0	21.42	21.38	21.37	23	1
5	QPSK	12	7	21.42	21.41	21.36		
5	QPSK	12	13	21.41	21.37	21.32		
5	QPSK	25	0	21.42	21.39	21.38		
5	16QAM	1	0	21.62	21.61	21.56	23	1
5	16QAM	1	12	21.66	21.55	21.57		
5	16QAM	1	24	21.60	21.53	21.23		
5	16QAM	12	0	20.43	20.40	20.37	22	2
5	16QAM	12	7	20.44	20.43	20.37		
5	16QAM	12	13	20.41	20.38	20.33		
5	16QAM	25	0	20.43	20.38	20.36		
5	64QAM	1	0	20.56	20.52	20.49	22	2
5	64QAM	1	12	20.51	20.50	20.47		
5	64QAM	1	24	20.53	20.48	20.18		
5	64QAM	12	0	19.46	19.44	19.40	21	3
5	64QAM	12	7	19.48	19.47	19.43		
5	64QAM	12	13	19.45	19.41	19.39		
5	64QAM	25	0	19.41	19.37	19.36		

<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	23.20	23.17	23.26	24	0
15	QPSK	1	37	23.19	23.15	23.23		
15	QPSK	1	74	23.14	23.14	22.99		
15	QPSK	36	0	22.17	22.27	22.32	23	1
15	QPSK	36	20	22.27	22.27	22.27		
15	QPSK	36	39	22.16	22.16	22.15		
15	QPSK	75	0	22.22	22.24	22.25		
15	16QAM	1	0	22.38	22.47	22.46	23	1
15	16QAM	1	37	22.48	22.50	22.50		
15	16QAM	1	74	22.39	22.42	21.98		
15	16QAM	36	0	21.17	21.31	21.31	22	2
15	16QAM	36	20	21.25	21.27	21.29		
15	16QAM	36	39	21.16	21.16	21.15		
15	16QAM	75	0	21.22	21.21	21.24		
15	64QAM	1	0	21.24	21.35	21.39	22	2
15	64QAM	1	37	21.35	21.35	21.39		
15	64QAM	1	74	21.29	21.30	21.17		
15	64QAM	36	0	20.19	20.30	20.33	21	3
15	64QAM	36	20	20.27	20.30	20.32		
15	64QAM	36	39	20.16	20.17	20.17		
15	64QAM	75	0	20.19	20.21	20.22		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.01	23.19	23.20	24	0
10	QPSK	1	25	23.05	23.11	23.00		
10	QPSK	1	49	23.04	23.02	22.25		
10	QPSK	25	0	22.13	22.19	22.19	23	1
10	QPSK	25	12	22.13	22.16	22.19		
10	QPSK	25	25	22.02	22.13	22.10		
10	QPSK	50	0	22.06	22.16	22.16		
10	16QAM	1	0	22.31	22.46	22.49	23	1
10	16QAM	1	25	22.32	22.37	22.37		
10	16QAM	1	49	22.31	22.31	22.23		
10	16QAM	25	0	21.11	21.19	21.18	22	2
10	16QAM	25	12	21.11	21.20	21.18		
10	16QAM	25	25	21.00	21.11	21.09		
10	16QAM	50	0	21.06	21.17	21.16		
10	64QAM	1	0	21.18	21.36	21.37	22	2
10	64QAM	1	25	21.23	21.28	21.30		
10	64QAM	1	49	21.23	21.20	21.13		
10	64QAM	25	0	20.14	20.21	20.22	21	3
10	64QAM	25	12	20.11	20.19	20.21		
10	64QAM	25	25	20.03	20.12	20.10		
10	64QAM	50	0	20.10	20.19	20.18		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.99	23.12	23.11	24	0
5	QPSK	1	12	23.04	23.11	23.03		
5	QPSK	1	24	23.02	23.05	23.00		
5	QPSK	12	0	22.01	22.18	22.09	23	1
5	QPSK	12	7	22.12	22.14	22.09		
5	QPSK	12	13	22.05	22.11	22.04		
5	QPSK	25	0	22.10	22.14	22.08		
5	16QAM	1	0	22.29	22.42	22.37	23	1
5	16QAM	1	12	22.34	22.34	22.32		
5	16QAM	1	24	22.32	22.27	22.23		
5	16QAM	12	0	21.03	21.18	21.11	22	2
5	16QAM	12	7	21.12	21.18	21.10		
5	16QAM	12	13	21.06	21.12	21.03		
5	16QAM	25	0	21.08	21.13	21.08		
5	64QAM	1	0	21.19	21.33	21.29	22	2
5	64QAM	1	12	21.24	21.28	21.22		
5	64QAM	1	24	21.19	21.23	21.17		
5	64QAM	12	0	20.06	20.20	20.17	21	3
5	64QAM	12	7	20.16	20.24	20.14		
5	64QAM	12	13	20.11	20.16	20.10		
5	64QAM	25	0	20.10	20.15	20.08		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.94	23.10	23.05	24	0
3	QPSK	1	8	23.05	23.07	23.02		
3	QPSK	1	14	23.04	23.05	22.99		
3	QPSK	8	0	22.00	22.14	22.08	23	1
3	QPSK	8	4	22.09	22.15	22.10		
3	QPSK	8	7	22.05	22.10	22.05		
3	QPSK	15	0	22.06	22.14	22.06		
3	16QAM	1	0	22.26	22.41	22.37	23	1
3	16QAM	1	8	22.32	22.36	22.32		
3	16QAM	1	14	22.31	22.35	22.28		
3	16QAM	8	0	21.06	21.20	21.15	22	2
3	16QAM	8	4	21.16	21.22	21.14		
3	16QAM	8	7	21.11	21.17	21.10		
3	16QAM	15	0	21.08	21.15	21.08		
3	64QAM	1	0	21.13	21.28	21.26	22	2
3	64QAM	1	8	21.23	21.25	21.21		
3	64QAM	1	14	21.18	21.23	21.18		
3	64QAM	8	0	20.05	20.20	20.15	21	3
3	64QAM	8	4	20.14	20.21	20.14		
3	64QAM	8	7	20.11	20.17	20.09		
3	64QAM	15	0	20.10	20.14	20.08		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.90	23.01	22.94	24	0
1.4	QPSK	1	3	22.95	23.07	23.00		
1.4	QPSK	1	5	22.89	23.03	22.93		
1.4	QPSK	3	0	22.95	23.06	23.00		
1.4	QPSK	3	1	22.99	23.12	23.04		
1.4	QPSK	3	3	22.94	23.05	22.98		
1.4	QPSK	6	0	21.94	22.07	22.00	23	1
1.4	16QAM	1	0	22.18	22.33	22.22	23	1
1.4	16QAM	1	3	22.24	22.35	22.22		
1.4	16QAM	1	5	22.15	22.30	21.96		
1.4	16QAM	3	0	21.98	22.11	22.02		
1.4	16QAM	3	1	22.00	22.14	22.06		
1.4	16QAM	3	3	21.94	22.06	22.00		
1.4	16QAM	6	0	20.99	21.14	21.06	22	2
1.4	64QAM	1	0	21.08	21.20	21.10	22	2
1.4	64QAM	1	3	21.14	21.24	21.15		
1.4	64QAM	1	5	21.07	21.18	21.11		
1.4	64QAM	3	0	21.07	21.21	21.10		
1.4	64QAM	3	1	21.13	21.23	21.14		
1.4	64QAM	3	3	21.07	21.17	21.08		
1.4	64QAM	6	0	19.95	20.08	19.99	21	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	19.57	19.55	19.86	21	0
20	QPSK	1	49	19.14	19.27	19.66		
20	QPSK	1	99	19.17	19.37	19.74		
20	QPSK	50	0	18.39	18.39	18.79	20	1
20	QPSK	50	24	18.28	18.36	18.78		
20	QPSK	50	50	18.21	18.37	18.78		
20	QPSK	100	0	18.29	18.38	18.77		
20	16QAM	1	0	19.11	19.14	19.27	20	1
20	16QAM	1	49	18.64	18.55	19.18		
20	16QAM	1	99	18.75	18.59	18.93		
20	16QAM	50	0	17.41	17.48	17.78	19	2
20	16QAM	50	24	17.30	17.39	17.79		
20	16QAM	50	50	17.22	17.39	17.76		
20	16QAM	100	0	17.30	17.34	17.78		
20	64QAM	1	0	17.86	17.89	18.04	19	2
20	64QAM	1	49	17.35	17.51	17.79		
20	64QAM	1	99	17.54	17.54	17.53		
20	64QAM	50	0	16.38	16.46	16.75	18	3
20	64QAM	50	24	16.28	16.36	16.62		
20	64QAM	50	50	16.07	16.39	16.26		
20	64QAM	100	0	16.27	16.34	16.56		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.58	19.42	19.80	21	0
15	QPSK	1	37	19.28	19.23	19.75		
15	QPSK	1	74	19.27	19.25	19.73		
15	QPSK	36	0	18.30	18.39	18.79	20	1
15	QPSK	36	20	18.26	18.32	18.72		
15	QPSK	36	39	18.19	18.35	18.76		
15	QPSK	75	0	18.27	18.34	18.74		
15	16QAM	1	0	18.83	18.73	19.27	20	1
15	16QAM	1	37	18.51	18.54	19.05		
15	16QAM	1	74	18.61	18.57	19.13		
15	16QAM	36	0	17.34	17.39	17.81	19	2
15	16QAM	36	20	17.27	17.36	17.72		
15	16QAM	36	39	17.21	17.37	17.72		
15	16QAM	75	0	17.24	17.32	17.69		
15	64QAM	1	0	17.62	17.61	17.97	19	2
15	64QAM	1	37	17.38	17.46	17.72		
15	64QAM	1	74	17.28	17.42	17.72		
15	64QAM	36	0	16.33	16.42	16.78	18	3
15	64QAM	36	20	16.27	16.36	16.52		
15	64QAM	36	39	16.19	16.38	16.28		
15	64QAM	75	0	16.25	16.34	16.40		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.48	19.52	19.78	21	0
10	QPSK	1	25	19.18	19.23	19.73		
10	QPSK	1	49	19.28	19.44	19.67		
10	QPSK	25	0	18.29	18.34	18.72	20	1
10	QPSK	25	12	18.25	18.29	18.78		
10	QPSK	25	25	18.20	18.26	18.74		
10	QPSK	50	0	18.26	18.31	18.77		
10	16QAM	1	0	18.75	18.82	18.98	20	1
10	16QAM	1	25	18.43	18.44	19.15		
10	16QAM	1	49	18.56	18.73	19.05		
10	16QAM	25	0	17.29	17.37	17.72	19	2
10	16QAM	25	12	17.27	17.34	17.80		
10	16QAM	25	25	17.20	17.27	17.74		
10	16QAM	50	0	17.26	17.33	17.80		
10	64QAM	1	0	17.69	17.72	17.91	19	2
10	64QAM	1	25	17.38	17.38	17.88		
10	64QAM	1	49	17.50	17.64	17.87		
10	64QAM	25	0	16.30	16.38	16.75	18	3
10	64QAM	25	12	16.27	16.32	16.85		
10	64QAM	25	25	16.22	16.30	16.76		
10	64QAM	50	0	16.27	16.34	16.81		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.23	19.29	19.84	21	0
5	QPSK	1	12	19.16	19.18	19.71		
5	QPSK	1	24	19.13	19.20	19.66		
5	QPSK	12	0	18.22	18.28	18.77	20	1
5	QPSK	12	7	18.24	18.31	18.75		
5	QPSK	12	13	18.20	18.24	18.71		
5	QPSK	25	0	18.20	18.27	18.72		
5	16QAM	1	0	18.49	18.50	19.09	20	1
5	16QAM	1	12	18.44	18.44	19.03		
5	16QAM	1	24	18.42	18.44	18.97		
5	16QAM	12	0	17.25	17.32	17.79	19	2
5	16QAM	12	7	17.24	17.32	17.77		
5	16QAM	12	13	17.21	17.25	17.74		
5	16QAM	25	0	17.22	17.28	17.76		
5	64QAM	1	0	17.41	17.46	17.90	19	2
5	64QAM	1	12	17.34	17.37	17.91		
5	64QAM	1	24	17.33	17.37	17.87		
5	64QAM	12	0	16.29	16.32	16.82	18	3
5	64QAM	12	7	16.28	16.34	16.82		
5	64QAM	12	13	16.25	16.32	16.79		
5	64QAM	25	0	16.21	16.29	16.77		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.56	19.62	19.85	21	0
3	QPSK	1	8	19.57	19.60	19.84		
3	QPSK	1	14	19.51	19.54	19.84		
3	QPSK	8	0	19.00	19.08	19.52	20	1
3	QPSK	8	4	19.00	19.08	19.52		
3	QPSK	8	7	18.98	19.04	19.50		
3	QPSK	15	0	18.98	19.06	19.52		
3	16QAM	1	0	19.24	19.24	19.80	20	1
3	16QAM	1	8	19.24	19.23	19.78		
3	16QAM	1	14	19.18	19.17	19.84		
3	16QAM	8	0	18.09	18.13	18.61	19	2
3	16QAM	8	4	18.07	18.12	18.61		
3	16QAM	8	7	18.03	18.11	18.56		
3	16QAM	15	0	18.02	18.07	18.53		
3	64QAM	1	0	18.16	18.18	18.70	19	2
3	64QAM	1	8	18.15	18.18	18.62		
3	64QAM	1	14	18.13	18.15	18.56		
3	64QAM	8	0	17.09	17.13	17.61	18	3
3	64QAM	8	4	17.08	17.14	17.61		
3	64QAM	8	7	17.03	17.08	17.58		
3	64QAM	15	0	17.00	17.09	17.54		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.63	19.65	19.68	21	0
1.4	QPSK	1	3	19.71	19.72	19.74		
1.4	QPSK	1	5	19.60	19.61	19.64		
1.4	QPSK	3	0	19.66	19.71	19.68		
1.4	QPSK	3	1	19.70	19.77	19.69		
1.4	QPSK	3	3	19.65	19.69	19.65		
1.4	QPSK	6	0	18.70	18.73	19.18	20	1
1.4	16QAM	1	0	18.89	18.91	19.41	20	1
1.4	16QAM	1	3	19.01	18.98	19.52		
1.4	16QAM	1	5	18.90	18.87	19.46		
1.4	16QAM	3	0	18.69	18.71	19.22		
1.4	16QAM	3	1	18.75	18.76	19.27		
1.4	16QAM	3	3	18.70	18.69	19.19		
1.4	16QAM	6	0	17.73	17.80	18.24	19	2
1.4	64QAM	1	0	17.84	17.86	18.24	19	2
1.4	64QAM	1	3	17.87	17.91	18.37		
1.4	64QAM	1	5	17.81	17.85	18.30		
1.4	64QAM	3	0	17.81	17.82	18.34		
1.4	64QAM	3	1	17.84	17.88	18.34		
1.4	64QAM	3	3	17.81	17.80	18.32		
1.4	64QAM	6	0	16.70	16.75	17.18	18	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	19.63	19.70	19.69	21	0
20	QPSK	1	49	19.33	19.38	19.55		
20	QPSK	1	99	19.30	19.41	19.46		
20	QPSK	50	0	18.56	18.61	18.60	20	1
20	QPSK	50	24	18.44	18.51	18.60		
20	QPSK	50	50	18.35	18.48	18.51		
20	QPSK	100	0	18.45	18.62	18.61		
20	16QAM	1	0	18.96	18.90	18.95	20	1
20	16QAM	1	49	18.58	18.62	19.06		
20	16QAM	1	99	18.52	18.83	18.78		
20	16QAM	50	0	17.56	17.59	17.64	19	2
20	16QAM	50	24	17.46	17.51	17.63		
20	16QAM	50	50	17.35	17.50	17.52		
20	16QAM	100	0	17.42	17.48	17.59		
20	64QAM	1	0	17.71	17.77	17.88	19	2
20	64QAM	1	49	17.53	17.56	17.78		
20	64QAM	1	99	17.43	17.64	17.64		
20	64QAM	50	0	16.56	16.61	16.63	18	3
20	64QAM	50	24	16.45	16.50	16.63		
20	64QAM	50	50	16.37	16.51	16.52		
20	64QAM	100	0	16.45	16.51	16.61		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	19.50	19.59	19.58	21	0
15	QPSK	1	37	19.35	19.36	19.56		
15	QPSK	1	74	19.27	19.40	19.49		
15	QPSK	36	0	18.43	18.53	18.64	20	1
15	QPSK	36	20	18.44	18.45	18.56		
15	QPSK	36	39	18.36	18.49	18.58		
15	QPSK	75	0	18.43	18.47	18.56		
15	16QAM	1	0	18.80	18.94	18.97	20	1
15	16QAM	1	37	18.60	18.64	18.86		
15	16QAM	1	74	18.50	18.79	18.80		
15	16QAM	36	0	17.46	17.54	17.67	19	2
15	16QAM	36	20	17.45	17.47	17.59		
15	16QAM	36	39	17.36	17.49	17.60		
15	16QAM	75	0	17.43	17.46	17.57		
15	64QAM	1	0	17.72	17.83	17.82	19	2
15	64QAM	1	37	17.56	17.59	17.74		
15	64QAM	1	74	17.46	17.60	17.72		
15	64QAM	36	0	16.45	16.55	16.67	18	3
15	64QAM	36	20	16.46	16.51	16.59		
15	64QAM	36	39	16.38	16.49	16.61		
15	64QAM	75	0	16.42	16.46	16.58		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	19.38	19.52	19.50	21	0
10	QPSK	1	25	19.24	19.38	19.43		
10	QPSK	1	49	19.28	19.39	19.46		
10	QPSK	25	0	18.38	18.48	18.56	20	1
10	QPSK	25	12	18.34	18.44	18.50		
10	QPSK	25	25	18.35	18.39	18.57		
10	QPSK	50	0	18.33	18.43	18.50		
10	16QAM	1	0	18.68	18.76	18.87	20	1
10	16QAM	1	25	18.53	18.64	18.74		
10	16QAM	1	49	18.55	18.69	18.74		
10	16QAM	25	0	17.40	17.46	17.57	19	2
10	16QAM	25	12	17.36	17.47	17.56		
10	16QAM	25	25	17.36	17.39	17.58		
10	16QAM	50	0	17.36	17.43	17.55		
10	64QAM	1	0	17.57	17.67	17.79	19	2
10	64QAM	1	25	17.44	17.56	17.64		
10	64QAM	1	49	17.47	17.57	17.64		
10	64QAM	25	0	16.41	16.50	16.58	18	3
10	64QAM	25	12	16.37	16.47	16.55		
10	64QAM	25	25	16.39	16.41	16.56		
10	64QAM	50	0	16.37	16.44	16.55		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.32	19.44	19.47	21	0
5	QPSK	1	12	19.24	19.36	19.50		
5	QPSK	1	24	19.20	19.34	19.49		
5	QPSK	12	0	18.37	18.42	18.58	20	1
5	QPSK	12	7	18.33	18.44	18.61		
5	QPSK	12	13	18.32	18.38	18.53		
5	QPSK	25	0	18.31	18.41	18.55		
5	16QAM	1	0	18.59	18.70	18.78	20	1
5	16QAM	1	12	18.51	18.63	18.78		
5	16QAM	1	24	18.47	18.61	18.74		
5	16QAM	12	0	17.38	17.46	17.63	19	2
5	16QAM	12	7	17.39	17.45	17.62		
5	16QAM	12	13	17.33	17.39	17.54		
5	16QAM	25	0	17.33	17.42	17.60		
5	64QAM	1	0	17.53	17.61	17.71	19	2
5	64QAM	1	12	17.44	17.54	17.72		
5	64QAM	1	24	17.41	17.51	17.68		
5	64QAM	12	0	16.39	16.49	16.65	18	3
5	64QAM	12	7	16.40	16.47	16.65		
5	64QAM	12	13	16.34	16.44	16.59		
5	64QAM	25	0	16.36	16.43	16.59		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.58	19.52	19.58	21	0
3	QPSK	1	8	19.56	19.45	19.51		
3	QPSK	1	14	19.51	19.55	19.55		
3	QPSK	8	0	19.16	19.22	19.34	20	1
3	QPSK	8	4	19.15	19.20	19.36		
3	QPSK	8	7	19.13	19.18	19.31		
3	QPSK	15	0	19.11	19.21	19.31		
3	16QAM	1	0	19.36	19.46	19.58	20	1
3	16QAM	1	8	19.35	19.45	19.58		
3	16QAM	1	14	19.28	19.42	19.52		
3	16QAM	8	0	18.22	18.29	18.45	19	2
3	16QAM	8	4	18.22	18.30	18.42		
3	16QAM	8	7	18.20	18.25	18.37		
3	16QAM	15	0	18.19	18.23	18.36		
3	64QAM	1	0	18.27	18.36	18.52	19	2
3	64QAM	1	8	18.26	18.32	18.49		
3	64QAM	1	14	18.23	18.30	18.44		
3	64QAM	8	0	17.21	17.26	17.41	18	3
3	64QAM	8	4	17.21	17.29	17.42		
3	64QAM	8	7	17.16	17.24	17.36		
3	64QAM	15	0	17.15	17.23	17.39		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.41	19.50	19.44	21	0
1.4	QPSK	1	3	19.50	19.57	19.52		
1.4	QPSK	1	5	19.42	19.49	19.42		
1.4	QPSK	3	0	19.48	19.57	19.49		
1.4	QPSK	3	1	19.52	19.61	19.55		
1.4	QPSK	3	3	19.46	19.57	19.50		
1.4	QPSK	6	0	18.79	18.84	19.02	20	1
1.4	16QAM	1	0	18.97	19.07	19.22	20	1
1.4	16QAM	1	3	19.05	19.14	19.27		
1.4	16QAM	1	5	18.96	19.05	19.16		
1.4	16QAM	3	0	18.79	18.88	19.01		
1.4	16QAM	3	1	18.84	18.92	19.05		
1.4	16QAM	3	3	18.74	18.87	18.97		
1.4	16QAM	6	0	17.85	17.93	18.06	19	2
1.4	64QAM	1	0	17.94	17.99	18.16	19	2
1.4	64QAM	1	3	17.98	18.04	18.19		
1.4	64QAM	1	5	17.91	17.99	18.12		
1.4	64QAM	3	0	17.90	18.00	18.13		
1.4	64QAM	3	1	17.95	18.04	18.18		
1.4	64QAM	3	3	17.88	17.97	18.11		
1.4	64QAM	6	0	16.78	16.86	17.01	18	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.

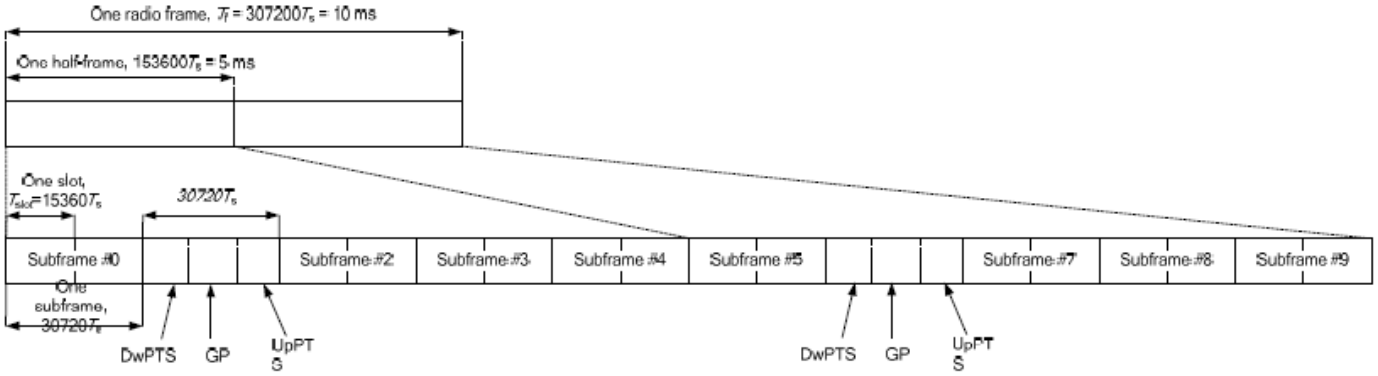


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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	22.71	22.62	22.48	22.48	22.54	24	0
20	QPSK	1	49	22.56	22.57	22.31	22.26	22.51		
20	QPSK	1	99	22.53	22.51	22.37	22.33	22.45		
20	QPSK	50	0	21.81	21.79	21.52	21.40	21.62	23	1
20	QPSK	50	24	21.76	21.75	21.45	21.40	21.66		
20	QPSK	50	50	21.69	21.70	21.47	21.43	21.55		
20	QPSK	100	0	21.76	21.75	21.44	21.50	21.48		
20	16QAM	1	0	21.96	21.90	21.72	21.71	21.79	23	1
20	16QAM	1	49	21.80	21.82	21.52	21.51	21.76		
20	16QAM	1	99	21.78	21.77	21.59	21.54	21.69		
20	16QAM	50	0	20.82	20.83	20.56	20.46	20.64	22	2
20	16QAM	50	24	20.80	20.79	20.48	20.45	20.69		
20	16QAM	50	50	20.72	20.71	20.52	20.45	20.63		
20	16QAM	100	0	20.77	20.76	20.46	20.51	20.67		
20	64QAM	1	0	20.87	20.79	20.65	20.61	20.74	22	2
20	64QAM	1	49	20.72	20.75	20.46	20.45	20.68		
20	64QAM	1	99	20.67	20.65	20.50	20.47	20.57		
20	64QAM	50	0	19.81	19.83	19.55	19.50	19.64	21	3
20	64QAM	50	24	19.77	19.78	19.49	19.44	19.69		
20	64QAM	50	50	19.72	19.71	19.48	19.48	19.61		
20	64QAM	100	0	19.76	19.76	19.47	19.53	19.69		
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	22.69	22.64	22.44	22.41	22.54	24	0
15	QPSK	1	37	22.61	22.57	22.31	22.35	22.54		
15	QPSK	1	74	22.60	22.57	22.38	22.34	22.47		
15	QPSK	36	0	21.75	21.77	21.47	21.37	21.67	23	1
15	QPSK	36	20	21.71	21.72	21.43	21.44	21.64		
15	QPSK	36	39	21.66	21.65	21.47	21.39	21.56		
15	QPSK	75	0	21.71	21.71	21.42	21.45	21.53		
15	16QAM	1	0	21.91	21.85	21.63	21.64	21.78	23	1
15	16QAM	1	37	21.86	21.86	21.54	21.61	21.75		
15	16QAM	1	74	21.79	21.79	21.60	21.54	21.67		
15	16QAM	36	0	20.74	20.77	20.46	20.39	20.67	22	2
15	16QAM	36	20	20.72	20.72	20.43	20.47	20.62		
15	16QAM	36	39	20.66	20.64	20.47	20.39	20.55		
15	16QAM	75	0	20.75	20.73	20.44	20.49	20.63		
15	64QAM	1	0	20.88	20.76	20.58	20.56	20.67	22	2
15	64QAM	1	37	20.70	20.70	20.41	20.47	20.64		
15	64QAM	1	74	20.68	20.67	20.52	20.47	20.63		
15	64QAM	36	0	19.76	19.77	19.49	19.43	19.69	21	3
15	64QAM	36	20	19.75	19.74	19.45	19.50	19.65		
15	64QAM	36	39	19.68	19.68	19.47	19.41	19.60		
15	64QAM	75	0	19.74	19.72	19.45	19.49	19.66		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.66	22.54	22.48	22.38	22.62	24	0
10	QPSK	1	25	22.63	22.60	22.35	22.42	22.46		
10	QPSK	1	49	22.56	22.55	22.44	22.35	22.43		
10	QPSK	25	0	21.71	21.72	21.44	21.44	21.67	23	1
10	QPSK	25	12	21.73	21.72	21.42	21.48	21.65		
10	QPSK	25	25	21.71	21.67	21.51	21.42	21.61		
10	QPSK	50	0	21.73	21.70	21.44	21.45	21.67		
10	16QAM	1	0	21.91	21.82	21.60	21.61	21.97	23	1
10	16QAM	1	25	21.83	21.84	21.54	21.61	21.86		
10	16QAM	1	49	21.78	21.80	21.63	21.56	21.87		
10	16QAM	25	0	20.78	20.75	20.48	20.52	20.82	22	2
10	16QAM	25	12	20.77	20.75	20.48	20.54	20.70		
10	16QAM	25	25	20.71	20.70	20.52	20.43	20.65		
10	16QAM	50	0	20.74	20.75	20.45	20.51	20.71		
10	64QAM	1	0	20.78	20.69	20.57	20.50	20.89	22	2
10	64QAM	1	25	20.72	20.75	20.46	20.53	20.82		
10	64QAM	1	49	20.67	20.67	20.54	20.44	20.75		
10	64QAM	25	0	19.81	19.81	19.54	19.56	19.77	21	3
10	64QAM	25	12	19.81	19.79	19.51	19.56	19.74		
10	64QAM	25	25	19.77	19.77	19.55	19.50	19.68		
10	64QAM	50	0	19.75	19.74	19.47	19.50	19.71		
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	22.66	22.48	22.34	22.42	22.60	24	0
5	QPSK	1	12	22.59	22.57	22.35	22.37	22.57		
5	QPSK	1	24	22.56	22.53	22.41	22.34	22.48		
5	QPSK	12	0	21.71	21.73	21.41	21.41	21.55	23	1
5	QPSK	12	7	21.74	21.74	21.44	21.44	21.55		
5	QPSK	12	13	21.69	21.68	21.50	21.40	21.49		
5	QPSK	25	0	21.67	21.67	21.39	21.35	21.53		
5	16QAM	1	0	21.81	21.73	21.51	21.59	21.76	23	1
5	16QAM	1	12	21.86	21.86	21.55	21.61	21.74		
5	16QAM	1	24	21.79	21.77	21.64	21.55	21.68		
5	16QAM	12	0	20.74	20.73	20.47	20.49	20.65	22	2
5	16QAM	12	7	20.77	20.75	20.47	20.50	20.65		
5	16QAM	12	13	20.72	20.71	20.52	20.44	20.63		
5	16QAM	25	0	20.76	20.75	20.45	20.49	20.63		
5	64QAM	1	0	20.72	20.65	20.48	20.52	20.67	22	2
5	64QAM	1	12	20.72	20.74	20.43	20.47	20.65		
5	64QAM	1	24	20.71	20.70	20.56	20.47	20.62		
5	64QAM	12	0	19.76	19.77	19.48	19.50	19.65	21	3
5	64QAM	12	7	19.77	19.78	19.48	19.52	19.68		
5	64QAM	12	13	19.73	19.71	19.52	19.46	19.62		
5	64QAM	25	0	19.78	19.77	19.47	19.51	19.67		

<WLAN Conducted Power>

General Note:

1. For each antenna, transmit power in SISO operation is larger than (or equal to) the power in MIMO operation, RF exposure compliance of MIMO mode can be deduced from the compliance simultaneous transmission of antennas operating in SISO mode.
2. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
3. 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.
4. 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).
5. 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.
6. 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 ANT 1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	CH 1	2412	14.03	14.50	98.57
		CH 6	2437	14.06	14.50	
		CH 11	2462	13.98	14.50	
	802.11g 6Mbps	CH 1	2412	14.12	14.50	92.79
		CH 6	2437	13.41	14.50	
		CH 11	2462	14.10	14.50	
	802.11n-HT20 MCS0	CH 1	2412	12.78	13.00	92.34
		CH 6	2437	12.98	13.00	
		CH 11	2462	12.88	13.00	
	802.11n-HT40 MCS0	CH 3	2422	12.74	13.00	87.04
		CH 6	2437	12.86	13.00	
		CH 9	2452	12.80	13.00	

<2.4GHz WLAN ANT 2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	CH 1	2412	13.94	14.50	98.57
		CH 6	2437	13.91	14.50	
		CH 11	2462	13.76	14.50	
	802.11g 6Mbps	CH 1	2412	14.03	14.50	92.79
		CH 6	2437	13.90	14.50	
		CH 11	2462	13.72	14.50	
	802.11n-HT20 MCS0	CH 1	2412	12.46	13.00	92.31
		CH 6	2437	12.26	13.00	
		CH 11	2462	12.09	13.00	
	802.11n-HT40 MCS0	CH 3	2422	12.50	13.00	87.04
		CH 6	2437	12.64	13.00	
		CH 9	2452	12.38	13.00	

<2.4GHz WLAN ANT 1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	CH 1	2412	17.49	17.50	98.57
		CH 6	2437	17.30	17.50	
		CH 11	2462	17.18	17.50	
	802.11g 6Mbps	CH 1	2412	17.38	17.50	92.79
		CH 6	2437	17.49	17.50	
		CH 11	2462	17.24	17.50	
	802.11n-HT20 MCS0	CH 1	2412	15.96	16.00	92.31
		CH 6	2437	15.98	16.00	
		CH 11	2462	15.87	16.00	
	802.11n-HT40 MCS0	CH 3	2422	15.90	16.00	87.04
		CH 6	2437	15.99	16.00	
		CH 9	2452	15.94	16.00	

<5GHz WLAN ANT1>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	8.97	9.00	93.64
		40	5200	8.95	9.00	
		44	5220	8.95	9.00	
		48	5240	8.92	9.00	
	802.11n-HT20 MCS0	36	5180	8.83	9.00	92.31
		40	5200	8.80	9.00	
		44	5220	8.78	9.00	
		48	5240	8.86	9.00	
	802.11n-HT40 MCS0	38	5190	8.88	9.00	87.16
		46	5230	8.69	9.00	
	802.11ac-VHT20 MCS0	36	5180	8.83	9.00	92.31
		40	5200	8.80	9.00	
		44	5220	8.81	9.00	
		48	5240	8.75	9.00	
	802.11ac-VHT40 MCS0	38	5190	8.87	9.00	87.16
		46	5230	8.82	9.00	
	802.11ac-VHT80 MCS0	42	5210	8.83	9.00	85.06

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	8.94	9.00	93.64
		56	5280	8.91	9.00	
		60	5300	8.98	9.00	
		64	5320	8.96	9.00	
	802.11n-HT20 MCS0	52	5260	8.85	9.00	92.31
		56	5280	8.81	9.00	
		60	5300	8.88	9.00	
		64	5320	8.84	9.00	
	802.11n-HT40 MCS0	54	5270	8.67	9.00	87.16
		62	5310	8.65	9.00	
	802.11ac-VHT20 MCS0	52	5260	8.81	9.00	92.31
		56	5280	8.82	9.00	
		60	5300	8.85	9.00	
		64	5320	8.88	9.00	
	802.11ac-VHT40 MCS0	54	5270	8.89	9.00	87.16
		62	5310	8.84	9.00	
	802.11ac-VHT80 MCS0	58	5290	8.89	9.00	85.06

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	8.92	9.00	93.64
		116	5580	8.94	9.00	
		124	5620	8.92	9.00	
		132	5660	8.93	9.00	
		140	5700	8.91	9.00	
		144	5720	8.93	9.00	
	802.11n-HT20 MCS0	100	5500	8.75	9.00	92.31
		116	5580	8.77	9.00	
		124	5620	8.72	9.00	
		132	5660	8.70	9.00	
		140	5700	8.85	9.00	
		144	5720	8.87	9.00	
	802.11n-HT40 MCS0	102	5510	8.80	9.00	87.16
		110	5550	8.85	9.00	
		126	5630	8.83	9.00	
		134	5670	8.81	9.00	
		142	5710	8.82	9.00	
	802.11ac-VHT20 MCS0	100	5500	8.63	9.00	92.31
		116	5580	8.68	9.00	
		124	5620	8.81	9.00	
		132	5660	8.80	9.00	
		140	5700	8.66	9.00	
		144	5720	8.89	9.00	
	802.11ac-VHT40 MCS0	102	5510	8.80	9.00	87.16
		110	5550	8.86	9.00	
		126	5630	8.49	9.00	
		134	5670	8.82	9.00	
		142	5710	8.89	9.00	
	802.11ac-VHT80 MCS0	106	5530	8.71	9.00	85.06
		122	5610	8.82	9.00	
		138	5690	8.88	9.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	8.97	9.00	93.64
		157	5785	8.93	9.00	
		165	5825	8.95	9.00	
	802.11n-HT20 MCS0	149	5745	8.67	9.00	92.31
		157	5785	8.77	9.00	
		165	5825	8.75	9.00	
	802.11n-HT40 MCS0	151	5755	8.70	9.00	87.16
		159	5795	8.72	9.00	
	802.11ac-VHT20 MCS0	149	5745	8.77	9.00	92.31
		157	5785	8.76	9.00	
		165	5825	8.81	9.00	
	802.11ac-VHT40 MCS0	151	5755	8.81	9.00	87.16
		159	5795	8.74	9.00	
	802.11ac-VHT80 MCS0	155	5775	8.72	9.00	85.06

<5GHz WLAN ANT2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	8.96	9.00	92.79
		40	5200	8.92	9.00	
		44	5220	8.93	9.00	
		48	5240	8.95	9.00	
	802.11n-HT20 MCS0	36	5180	8.81	9.00	93.20
		40	5200	8.79	9.00	
		44	5220	8.74	9.00	
		48	5240	8.71	9.00	
	802.11n-HT40 MCS0	38	5190	8.82	9.00	87.96
		46	5230	8.77	9.00	
	802.11ac-VHT20 MCS0	36	5180	8.72	9.00	93.24
		40	5200	8.79	9.00	
		44	5220	8.86	9.00	
		48	5240	8.80	9.00	
	802.11ac-VHT40 MCS0	38	5190	8.72	9.00	87.22
		46	5230	8.62	9.00	
	802.11ac-VHT80 MCS0	42	5210	8.90	9.00	85.06

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	CH 52	5260	8.94	9.00	92.79
		56	5280	8.95	9.00	
		60	5300	8.98	9.00	
		64	5320	8.96	9.00	
	802.11n-HT20 MCS0	52	5260	8.77	9.00	93.20
		56	5280	8.72	9.00	
		60	5300	8.73	9.00	
		64	5320	8.75	9.00	
	802.11n-HT40 MCS0	54	5270	8.67	9.00	87.96
		62	5310	8.64	9.00	
	802.11ac-VHT20 MCS0	52	5260	8.82	9.00	93.24
		56	5280	8.80	9.00	
		60	5300	8.76	9.00	
		64	5320	8.78	9.00	
	802.11ac-VHT40 MCS0	54	5270	8.69	9.00	87.22
		62	5310	8.67	9.00	
	802.11ac-VHT80 MCS0	58	5290	8.78	9.00	85.06

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	8.92	9.00	92.79
		116	5580	8.94	9.00	
		124	5620	8.90	9.00	
		132	5660	8.92	9.00	
		140	5700	8.93	9.00	
		144	5720	8.96	9.00	
	802.11n-HT20 MCS0	100	5500	8.81	9.00	93.20
		116	5580	8.84	9.00	
		124	5620	8.79	9.00	
		132	5660	8.83	9.00	
		140	5700	8.87	9.00	
		144	5720	8.89	9.00	
	802.11n-HT40 MCS0	102	5510	8.69	9.00	87.96
		110	5550	8.66	9.00	
		126	5630	8.68	9.00	
		134	5670	8.70	9.00	
		142	5710	8.82	9.00	
	802.11ac-VHT20 MCS0	100	5500	8.88	9.00	93.24
		116	5580	8.82	9.00	
		124	5620	8.80	9.00	
		132	5660	8.84	9.00	
		140	5700	8.86	9.00	
		144	5720	8.90	9.00	
	802.11ac-VHT40 MCS0	102	5510	8.64	9.00	87.22
		110	5550	8.67	9.00	
		126	5630	8.66	9.00	
		134	5670	8.69	9.00	
		142	5710	8.84	9.00	
	802.11ac-VHT80 MCS0	106	5530	8.65	9.00	85.06
		122	5610	8.82	9.00	
		138	5690	8.84	9.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	8.95	9.00	92.79
		157	5785	8.96	9.00	
		165	5825	8.97	9.00	
	802.11n-HT20 MCS0	149	5745	8.69	9.00	93.20
		157	5785	8.66	9.00	
		165	5825	8.72	9.00	
	802.11n-HT40 MCS0	151	5755	8.73	9.00	87.96
		159	5795	8.70	9.00	
	802.11ac-VHT20 MCS0	149	5745	8.76	9.00	93.24
		157	5785	8.73	9.00	
		165	5825	8.71	9.00	
	802.11ac-VHT40 MCS0	151	5755	8.73	9.00	87.22
		159	5795	8.81	9.00	
	802.11ac-VHT80 MCS0	155	5775	8.68	9.00	85.06

<5GHz WLAN ANT1+2>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.00	12.00	92.79
		40	5200	12.00	12.00	
		44	5220	11.99	12.00	
		48	5240	11.98	12.00	
	802.11n-HT20 MCS0	36	5180	11.99	12.00	92.31
		40	5200	11.97	12.00	
		44	5220	11.98	12.00	
		48	5240	11.97	12.00	
	802.11n-HT40 MCS0	38	5190	12.00	12.00	87.16
		46	5230	11.93	12.00	
	802.11ac-VHT20 MCS0	36	5180	11.91	12.00	93.20
		40	5200	11.90	12.00	
		44	5220	11.97	12.00	
		48	5240	11.92	12.00	
	802.11ac-VHT40 MCS0	38	5190	11.95	12.00	85.59
		46	5230	11.88	12.00	
	802.11ac-VHT80 MCS0	42	5210	11.91	12.00	86.05

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	11.99	12.00	92.79
		56	5280	12.00	12.00	
		60	5300	12.00	12.00	
		64	5320	11.98	12.00	
	802.11n-HT20 MCS0	52	5260	11.98	12.00	92.31
		56	5280	11.96	12.00	
		60	5300	11.98	12.00	
		64	5320	11.97	12.00	
	802.11n-HT40 MCS0	54	5270	11.95	12.00	87.16
		62	5310	11.94	12.00	
	802.11ac-VHT20 MCS0	52	5260	11.96	12.00	93.20
		56	5280	11.94	12.00	
		60	5300	11.96	12.00	
		64	5320	11.93	12.00	
	802.11ac-VHT40 MCS0	54	5270	11.93	12.00	85.59
		62	5310	11.93	12.00	
	802.11ac-VHT80 MCS0	58	5290	11.94	12.00	86.05

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	11.98	12.00	92.79
		116	5580	12.00	12.00	
		124	5620	11.99	12.00	
		132	5660	11.99	12.00	
		144	5720	11.99	12.00	
	802.11n-HT20 MCS0	100	5500	11.97	12.00	92.31
		116	5580	11.99	12.00	
		124	5620	11.96	12.00	
		132	5660	11.95	12.00	
		144	5720	11.98	12.00	
	802.11n-HT40 MCS0	102	5510	11.98	12.00	87.16
		110	5550	12.00	12.00	
		126	5630	11.97	12.00	
		134	5670	11.99	12.00	
		142	5710	11.99	12.00	
	802.11ac-VHT20 MCS0	100	5500	11.95	12.00	93.20
		116	5580	11.98	12.00	
		124	5620	11.93	12.00	
		132	5660	11.94	12.00	
		144	5720	11.94	12.00	
	802.11ac-VHT40 MCS0	102	5510	11.97	12.00	85.59
		110	5550	11.89	12.00	
		126	5630	11.76	12.00	
		134	5670	11.97	12.00	
		142	5710	11.97	12.00	
	802.11ac-VHT80 MCS0	106	5530	11.77	12.00	86.05
		122	5610	11.93	12.00	
		138	5690	11.98	12.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	11.99	12.00	92.79
		157	5785	11.99	12.00	
		165	5825	11.99	12.00	
	802.11n-HT20 MCS0	149	5745	11.95	12.00	92.31
		157	5785	11.97	12.00	
		165	5825	11.94	12.00	
	802.11n-HT40 MCS0	151	5755	11.96	12.00	87.16
		159	5795	11.95	12.00	
	802.11ac-VHT20 MCS0	149	5745	11.92	12.00	93.20
		157	5785	11.93	12.00	
		165	5825	11.87	12.00	
	802.11ac-VHT40 MCS0	151	5755	11.95	12.00	85.59
		159	5795	11.94	12.00	
	802.11ac-VHT80 MCS0	155	5775	11.87	12.00	86.05

<2.4GHz Bluetooth>

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	11.19	9.63	9.65
	CH 39	2441	11.06	8.83	8.83
	CH 78	2480	10.38	8.74	8.77
Tune-up Limit			11.50	10.00	10.00

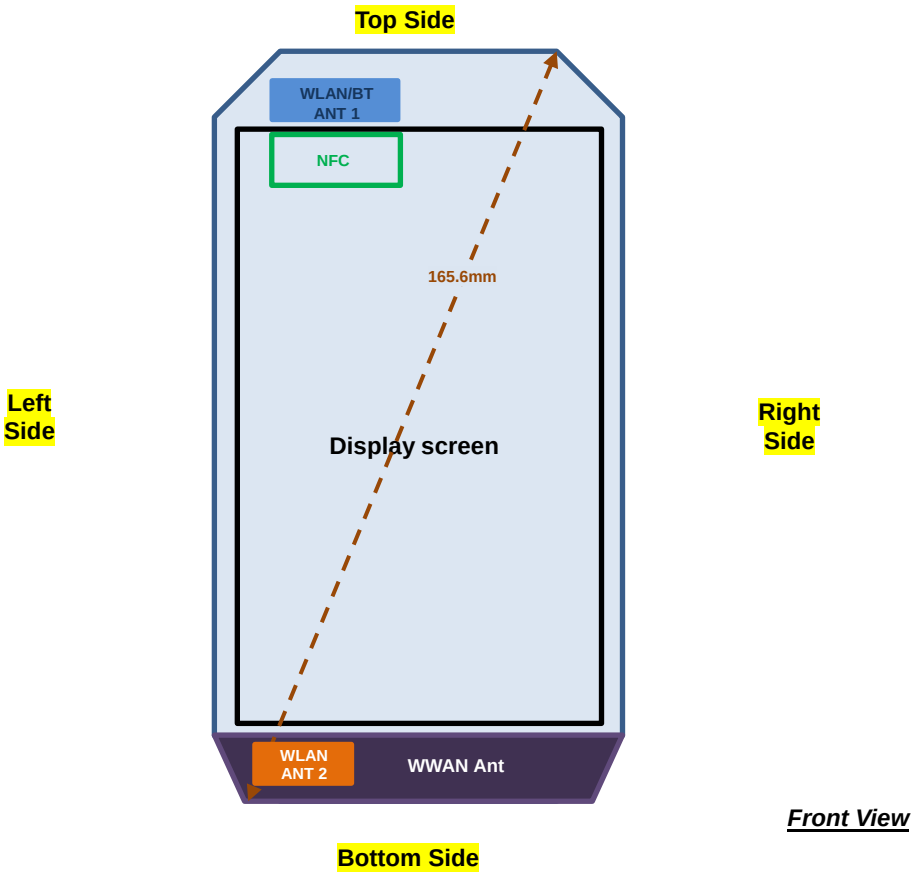
Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	1.61
	CH 19	2440	1.00
	CH 39	2480	0.63
Tune-up Limit			2.00

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and the duty cycle is 77.13% considered in SAR testing.

13. Antenna Location

<Mobile Phone>



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 ANT1	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WLAN ANT2	≤ 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 ANT1	Yes	Yes	Yes	No	No	Yes
WLAN ANT2	Yes	Yes	No	Yes	No	Yes

General Note:

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

14. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
5. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg of GSM1900, WCDMA B2/B4 and LTE B2/B4, therefore product specific SAR is necessary.
6. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.
7. Per KDB 648474 D04v01r03, for additional accessories (batteries, NFC and wireless charging battery covers or similar accessory), need repeat SAR testing at the worst position (head, and body-worn, and hotspot), for each wireless mode and each band. In addition, for test cases where the measured SAR for a handset without the accessory is greater than 1.2 W/kg, these tests should be repeated with the additional accessories.

GSM Note:

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

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 / B4 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 5/17 SAR test was covered by Band 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. For WLAN SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
6. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6W/kg and SAR peak to location ratio ≤ 0.04, no additional SAR measurements for MIMO.
7. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

14.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Right Cheek	0mm	128	824.2		28.49	29.50	1.262	-0.15	0.467	0.589
	GSM850	GPRS (4 Tx slots)	Right Tilted	0mm	128	824.2		28.49	29.50	1.262	0.03	0.255	0.322
	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	128	824.2		28.49	29.50	1.262	-0.01	0.544	0.686
01	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	189	836.4		28.40	29.50	1.288	0.08	0.644	0.830
	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	251	848.8		28.49	29.50	1.262	0.04	0.650	0.820
	GSM850	GPRS (4 Tx slots)	Left Tilted	0mm	128	848.8		28.49	29.50	1.262	0.08	0.289	0.365
	GSM850	GPRS (4 Tx slots)	Left Cheek	0mm	189	836.4	Battery Pack	28.40	29.50	1.288	-0.06	0.190	0.245
	GSM1900	GPRS (3 Tx slots)	Right Cheek	0mm	512	1850.2		27.91	28.50	1.146	0.14	0.364	0.417
02	GSM1900	GPRS (3 Tx slots)	Right Cheek	0mm	661	1880		27.72	28.50	1.197	-0.12	0.352	0.421
	GSM1900	GPRS (3 Tx slots)	Right Cheek	0mm	810	1909.8		27.88	28.50	1.153	-0.16	0.352	0.406
	GSM1900	GPRS (3 Tx slots)	Right Tilted	0mm	512	1850.2		27.91	28.50	1.146	0.03	0.092	0.105
	GSM1900	GPRS (3 Tx slots)	Left Cheek	0mm	512	1850.2		27.91	28.50	1.146	-0.02	0.184	0.211
	GSM1900	GPRS (3 Tx slots)	Left Tilted	0mm	512	1850.2		27.91	28.50	1.146	-0.01	0.122	0.140
	GSM1900	GPRS (3 Tx slots)	Right Cheek	0mm	661	1880	Battery Pack	27.72	28.50	1.197	0.08	0.293	0.351

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	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	9400	1880		22.50	23.00	1.122	-0.04	0.390	0.438
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	9262	1852.4		22.38	23.00	1.153	-0.1	0.328	0.378
03	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	9538	1907.6		22.03	23.00	1.250	-0.12	0.368	0.460
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	9400	1880		22.50	23.00	1.122	0.14	0.101	0.113
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	9400	1880		22.50	23.00	1.122	-0.14	0.193	0.217
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	9400	1880		22.50	23.00	1.122	0	0.144	0.162
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	9538	1907.6	Battery Pack	22.03	23.00	1.250	-0.15	0.281	0.351
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1413	1732.6		22.45	23.00	1.135	-0.17	0.283	0.321
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1312	1712.4		21.36	23.00	1.459	-0.11	0.196	0.286
04	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1513	1752.6		21.25	23.00	1.496	-0.15	0.233	0.349
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	1413	1732.6		22.45	23.00	1.135	-0.05	0.062	0.070
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1413	1732.6		22.45	23.00	1.135	-0.06	0.133	0.151
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	1413	1732.6		22.45	23.00	1.135	-0.05	0.078	0.089
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1513	1752.6	Battery Pack	21.25	23.00	1.496	-0.1	0.226	0.338
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	4233	846.6		22.82	24.00	1.312	-0.01	0.290	0.381
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	4233	846.6		22.82	24.00	1.312	0.01	0.175	0.230
05	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4233	846.6		22.82	24.00	1.312	0.05	0.336	0.441
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4132	826.4		22.50	24.00	1.413	0.04	0.293	0.414
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4182	836.4		22.76	24.00	1.330	0.07	0.317	0.422
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	4233	846.6		22.82	24.00	1.312	0.06	0.180	0.236
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4233	846.6	Battery Pack	22.82	24.00	1.312	0.16	0.134	0.176

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	19100	1900		22.82	23.50	1.169	0.16	0.462	0.540
	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	18700	1860		22.60	23.50	1.230	0.07	0.401	0.493
06	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	18900	1880		22.61	23.50	1.227	0.12	0.457	0.561
	LTE Band 2	20M	QPSK	50	0	Right Cheek	0mm	19100	1900		21.82	22.50	1.169	0.13	0.371	0.434
	LTE Band 2	20M	QPSK	1	0	Right Tilted	0mm	19100	1900		22.82	23.50	1.169	0.03	0.121	0.142
	LTE Band 2	20M	QPSK	50	0	Right Tilted	0mm	19100	1900		21.82	22.50	1.169	0.02	0.102	0.119
	LTE Band 2	20M	QPSK	1	0	Left Cheek	0mm	19100	1900		22.82	23.50	1.169	0.05	0.203	0.237
	LTE Band 2	20M	QPSK	50	0	Left Cheek	0mm	19100	1900		21.82	22.50	1.169	0.04	0.166	0.194
	LTE Band 2	20M	QPSK	1	0	Left Tilted	0mm	19100	1900		22.82	23.50	1.169	-0.03	0.137	0.160
	LTE Band 2	20M	QPSK	50	0	Left Tilted	0mm	19100	1900		21.82	22.50	1.169	0.07	0.115	0.134
	LTE Band 2	20M	QPSK	1	0	Right Cheek	0mm	18900	1880	Battery Pack	22.61	23.50	1.227	0.11	0.352	0.432
07	LTE Band 4	20M	QPSK	1	0	Right Cheek	0mm	20175	1732.5		23.05	24.00	1.245	-0.16	0.296	0.368
	LTE Band 4	20M	QPSK	50	0	Right Cheek	0mm	20175	1732.5		21.99	23.00	1.262	-0.03	0.224	0.283
	LTE Band 4	20M	QPSK	1	0	Right Tilted	0mm	20175	1732.5		23.05	24.00	1.245	0.19	0.076	0.095
	LTE Band 4	20M	QPSK	50	0	Right Tilted	0mm	20175	1732.5		21.99	23.00	1.262	0.1	0.058	0.073
	LTE Band 4	20M	QPSK	1	0	Left Cheek	0mm	20175	1732.5		23.05	24.00	1.245	0.13	0.116	0.144
	LTE Band 4	20M	QPSK	50	0	Left Cheek	0mm	20175	1732.5		21.99	23.00	1.262	-0.01	0.097	0.122
	LTE Band 4	20M	QPSK	1	0	Left Tilted	0mm	20175	1732.5		23.05	24.00	1.245	-0.19	0.071	0.088
	LTE Band 4	20M	QPSK	50	0	Left Tilted	0mm	20175	1732.5		21.99	23.00	1.262	0.04	0.056	0.071
	LTE Band 4	20M	QPSK	1	0	Right Cheek	0mm	20175	1732.5	Battery Pack	23.05	24.00	1.245	-0.18	0.263	0.327
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	21350	2560		22.96	24.00	1.271	-0.07	0.089	0.113
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	20850	2510		22.75	24.00	1.334	-0.02	0.049	0.065
08	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	21100	2535		22.76	24.00	1.330	0.07	0.104	0.138
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	21350	2560		21.90	23.00	1.288	0.12	0.066	0.085
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	21350	2560		22.96	24.00	1.271	0.19	0.077	0.098
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	21350	2560		21.90	23.00	1.288	0.17	0.059	0.076
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	21350	2560		22.96	24.00	1.271	0.14	0.082	0.104
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	21350	2560		21.90	23.00	1.288	0.16	0.062	0.080
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	21350	2560		22.96	24.00	1.271	0.13	0.057	0.072
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	21350	2560		21.90	23.00	1.288	0.17	0.043	0.055
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	21100	2535	Battery Pack	22.76	24.00	1.330	0.09	0.089	0.118
09	LTE Band 12	10M	QPSK	1	0	Right Cheek	0mm	23095	707.5		22.41	24.00	1.442	0.03	0.181	0.261
	LTE Band 12	10M	QPSK	25	12	Right Cheek	0mm	23095	707.5		21.48	23.00	1.419	0.06	0.147	0.209
	LTE Band 12	10M	QPSK	1	0	Right Tilted	0mm	23095	707.5		22.41	24.00	1.442	0.06	0.094	0.136
	LTE Band 12	10M	QPSK	25	12	Right Tilted	0mm	23095	707.5		21.48	23.00	1.419	0.02	0.075	0.106
	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	23095	707.5		22.41	24.00	1.442	0.01	0.168	0.242
	LTE Band 12	10M	QPSK	25	12	Left Cheek	0mm	23095	707.5		21.48	23.00	1.419	0.03	0.139	0.197
	LTE Band 12	10M	QPSK	1	0	Left Tilted	0mm	23095	707.5		22.41	24.00	1.442	0.04	0.083	0.120
	LTE Band 12	10M	QPSK	25	12	Left Tilted	0mm	23095	707.5		21.48	23.00	1.419	0.05	0.067	0.095
	LTE Band 12	10M	QPSK	1	0	Right Cheek	0mm	23095	707.5	Battery Pack	22.41	24.00	1.442	0.04	0.074	0.107
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	26865	831.5		23.17	24.00	1.211	0	0.224	0.271
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	26865	831.5		22.27	23.00	1.183	0.01	0.182	0.215
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	26865	831.5		23.17	24.00	1.211	0.04	0.138	0.167
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	26865	831.5		22.27	23.00	1.183	0.01	0.113	0.134
10	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	26865	831.5		23.17	24.00	1.211	0.05	0.233	0.282
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	26865	831.5		22.27	23.00	1.183	0.04	0.194	0.230
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	26865	831.5		23.17	24.00	1.211	0.07	0.111	0.134
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	26865	831.5		22.27	23.00	1.183	0.05	0.093	0.110
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	26865	831.5	Battery Pack	23.17	24.00	1.211	0.1	0.078	0.094

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	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	0	Right Cheek	0mm	39750	2506		22.71	24.00	1.346	62.9	1.006	-0.07	0.040	0.054
11	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	40185	2549.5		22.62	24.00	1.374	62.9	1.006	-0.11	0.050	0.069
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	40620	2593		22.48	24.00	1.419	62.9	1.006	-0.18	0.029	0.041
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	41055	2636.5		22.48	24.00	1.419	62.9	1.006	0.14	0.034	0.049
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	41490	2680		22.54	24.00	1.400	62.9	1.006	0.16	0.045	0.063
	LTE Band 41	20M	QPSK	50	0	Right Cheek	0mm	39750	2506		21.81	23.00	1.315	62.9	1.006	0.09	0.028	0.037
	LTE Band 41	20M	QPSK	1	0	Right Tilted	0mm	39750	2506		22.71	24.00	1.346	62.9	1.006	0.07	0.014	0.019
	LTE Band 41	20M	QPSK	50	0	Right Tilted	0mm	39750	2506		21.81	23.00	1.315	62.9	1.006	0.16	0.009	0.012
	LTE Band 41	20M	QPSK	1	0	Left Cheek	0mm	39750	2506		22.71	24.00	1.346	62.9	1.006	-0.15	0.011	0.015
	LTE Band 41	20M	QPSK	50	0	Left Cheek	0mm	39750	2506		21.81	23.00	1.315	62.9	1.006	-0.07	0.010	0.013
	LTE Band 41	20M	QPSK	1	0	Left Tilted	0mm	39750	2506		22.71	24.00	1.346	62.9	1.006	0.02	0.029	0.039
	LTE Band 41	20M	QPSK	50	0	Left Tilted	0mm	39750	2506		21.81	23.00	1.315	62.9	1.006	-0.12	0.020	0.026
	LTE Band 41	20M	QPSK	1	0	Right Cheek	0mm	40185	2549.5	Battery Pack	22.62	24.00	1.374	62.9	1.006	-0.13	0.032	0.044

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Battery Pack	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	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.02	0.126	0.141
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.11	0.466	0.523
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 1	1	2412		14.03	14.50	1.114	98.57	1.015	-0.16	0.528	0.597
12	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 1	11	2462		13.98	14.50	1.127	98.57	1.015	-0.11	0.534	0.611
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.08	0.046	0.052
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.05	0.090	0.101
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 1	11	2462	Battery Pack	13.98	14.50	1.127	98.57	1.015	-0.12	0.517	0.592
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0.02	0.009	0.010
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0.13	0.009	0.011
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0.07	0.017	0.020
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	-0.17	0.002	0.003
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 2	1	2412	Battery Pack	13.94	14.50	1.138	98.57	1.015	-0.18	0.011	0.013
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.08	0.605	0.729
13	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	0.14	0.985	1.187
	WLAN5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Ant 1	54	5270		8.67	9.00	1.080	87.16	1.147	0.13	0.897	1.111
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	0.11	0.297	0.358
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.03	0.434	0.523
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	58	5290	Battery Pack	8.89	9.00	1.025	85.06	1.176	0.16	0.946	1.140
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	0	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.1	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.02	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.01	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	58	5290	Battery Pack	8.78	9.00	1.051	85.06	1.176	-0.02	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	0.03	0.163	0.197
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.17	0.394	0.476
14	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	106	5530		8.71	9.00	1.068	85.06	1.176	0.03	0.523	0.657
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	122	5610		8.88	9.00	1.027	85.06	1.176	0.11	0.409	0.494
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.17	0.086	0.104
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.02	0.122	0.147
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	106	5530	Battery Pack	8.71	9.00	1.068	85.06	1.176	0.08	0.503	0.632
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	0	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.01	0.002	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.12	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.1	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	138	5690	Battery Pack	8.84	9.00	1.037	85.06	1.176	-0.02	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	0.05	0.111	0.139
15	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.01	0.268	0.336
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	0.08	0.057	0.071
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.18	0.106	0.133
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	155	5775	Battery Pack	8.72	9.00	1.066	85.06	1.176	-0.11	0.255	0.320
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	0.02	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	0	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	0.03	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	0.08	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 2	155	5775	Battery Pack	8.68	9.00	1.076	85.06	1.176	-0.15	0.001	0.001

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Right Cheek	0mm	0	2402		11.19	11.50	1.074	-0.12	0.048	0.052
	Bluetooth	1Mbps	Right Tilted	0mm	0	2402		11.19	11.50	1.074	0.11	0.098	0.105
	Bluetooth	1Mbps	Right Tilted	0mm	39	2441		11.06	11.50	1.107	-0.09	0.119	0.132
16	Bluetooth	1Mbps	Right Tilted	0mm	78	2480		10.38	11.50	1.294	-0.02	0.184	0.238
	Bluetooth	1Mbps	Left Cheek	0mm	0	2402		11.19	11.50	1.074	0.19	0.010	0.011
	Bluetooth	1Mbps	Left Tilted	0mm	0	2402		11.19	11.50	1.074	-0.17	0.023	0.025
	Bluetooth	1Mbps	Right Tilted	0mm	78	2480	Battery Pack	10.38	11.50	1.294	-0.08	0.174	0.225

14.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	10mm	OFF	128	824.2		28.49	29.50	1.262	-0.04	0.540	0.681
	GSM850	GPRS (4 Tx slots)	Back	10mm	OFF	128	824.2		28.49	29.50	1.262	0.13	0.676	0.853
	GSM850	GPRS (4 Tx slots)	Back	10mm	OFF	189	836.4		28.40	29.50	1.288	0.12	0.766	0.987
17	GSM850	GPRS (4 Tx slots)	Back	10mm	OFF	251	848.8		28.49	29.50	1.262	0.02	0.816	1.030
	GSM850	GPRS (4 Tx slots)	Left Side	10mm	OFF	128	824.2		28.49	29.50	1.262	-0.12	0.709	0.895
	GSM850	GPRS (4 Tx slots)	Left Side	10mm	OFF	189	836.4		28.40	29.50	1.288	-0.05	0.762	0.982
	GSM850	GPRS (4 Tx slots)	Left Side	10mm	OFF	251	848.8		28.49	29.50	1.262	-0.03	0.726	0.916
	GSM850	GPRS (4 Tx slots)	Right Side	10mm	OFF	128	824.2		28.49	29.50	1.262	-0.05	0.594	0.750
	GSM850	GPRS (4 Tx slots)	Bottom Side	10mm	OFF	128	824.2		28.49	29.50	1.262	-0.11	0.166	0.209
	GSM850	GPRS (4 Tx slots)	Back	10mm	OFF	251	848.8	Battery Pack	28.49	29.50	1.262	-0.12	0.249	0.314
	GSM1900	GPRS (3 Tx slots)	Front	10mm	ON	512	1850.2		26.00	26.00	1.000	-0.04	0.449	0.449
18	GSM1900	GPRS (3 Tx slots)	Back	10mm	ON	512	1850.2		26.00	26.00	1.000	-0.1	1.160	1.160
	GSM1900	GPRS (3 Tx slots)	Back	10mm	ON	661	1880		25.92	26.00	1.019	-0.11	1.060	1.080
	GSM1900	GPRS (3 Tx slots)	Back	10mm	ON	810	1909.8		25.96	26.00	1.009	-0.05	1.030	1.040
	GSM1900	GPRS (3 Tx slots)	Left Side	10mm	ON	512	1850.2		26.00	26.00	1.000	-0.15	0.030	0.030
	GSM1900	GPRS (3 Tx slots)	Right Side	10mm	ON	512	1850.2		26.00	26.00	1.000	-0.16	0.301	0.301
	GSM1900	GPRS (3 Tx slots)	Bottom Side	10mm	ON	512	1850.2		26.00	26.00	1.000	-0.11	0.913	0.913
	GSM1900	GPRS (3 Tx slots)	Bottom Side	10mm	ON	661	1880		25.92	26.00	1.019	0	0.870	0.886
	GSM1900	GPRS (3 Tx slots)	Bottom Side	10mm	ON	810	1909.8		25.96	26.00	1.009	0.04	0.807	0.814
	GSM1900	GPRS (3 Tx slots)	Back	10mm	ON	512	1850.2	Battery Pack	26.00	26.00	1.000	-0.15	0.464	0.464

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Battery Pack	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	ON	9538	1907.6		20.50	20.50	1.000	0.05	0.472	0.472
	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9538	1907.6		20.50	20.50	1.000	0.03	0.987	0.987
19	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9262	1852.4		20.33	20.50	1.040	0.05	1.010	1.050
	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9400	1880		20.36	20.50	1.033	0.01	0.959	0.990
	WCDMA II	RMC 12.2Kbps	Left Side	10mm	ON	9538	1907.6		20.50	20.50	1.000	-0.07	0.021	0.021
	WCDMA II	RMC 12.2Kbps	Right Side	10mm	ON	9538	1907.6		20.50	20.50	1.000	-0.07	0.260	0.260
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	ON	9538	1907.6		20.50	20.50	1.000	0.04	0.812	0.812
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	ON	9262	1852.4		20.33	20.50	1.040	-0.04	0.784	0.815
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	ON	9400	1880		20.36	20.50	1.033	-0.03	0.761	0.786
	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9262	1852.4	Battery Pack	20.33	20.50	1.040	0.06	0.339	0.353
	WCDMA IV	RMC 12.2Kbps	Front	10mm	ON	1413	1732.6		20.28	20.50	1.052	0.01	0.317	0.333
	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1413	1732.6		20.28	20.50	1.052	0.05	0.860	0.905
	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1312	1712.4		20.13	20.50	1.089	0.01	0.755	0.822
20	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1513	1752.6		20.23	20.50	1.064	0.04	0.943	1.003
	WCDMA IV	RMC 12.2Kbps	Left Side	10mm	ON	1413	1732.6		20.28	20.50	1.052	-0.19	0.023	0.024
	WCDMA IV	RMC 12.2Kbps	Right Side	10mm	ON	1413	1732.6		20.28	20.50	1.052	-0.01	0.152	0.160
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	ON	1413	1732.6		20.28	20.50	1.052	0.04	0.624	0.656
	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1413	1752.6	Battery Pack	20.23	20.50	1.064	0.02	0.378	0.402
	WCDMA V	RMC 12.2Kbps	Front	10mm	OFF	4233	846.6		22.82	24.00	1.312	-0.13	0.353	0.463
21	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4233	846.6		22.82	24.00	1.312	0.17	0.520	0.682
	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4132	826.4		22.50	24.00	1.413	0.14	0.404	0.571
	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4182	836.4		22.76	24.00	1.330	0.11	0.468	0.623
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	OFF	4233	846.6		22.82	24.00	1.312	-0.02	0.492	0.646
	WCDMA V	RMC 12.2Kbps	Right Side	10mm	OFF	4233	846.6		22.82	24.00	1.312	0	0.383	0.503
	WCDMA V	RMC 12.2Kbps	Bottom Side	10mm	OFF	4233	846.6		22.82	24.00	1.312	0.15	0.148	0.194
	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4233	846.6	Battery Pack	22.82	24.00	1.312	-0.1	0.251	0.329

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	10mm	ON	19100	1900		19.86	21.00	1.300	0.06	0.376	0.489
	LTE Band 2	20M	QPSK	50	0	Front	10mm	ON	19100	1900		18.79	20.00	1.321	0.02	0.297	0.392
22	LTE Band 2	20M	QPSK	1	0	Back	10mm	ON	19100	1900		19.86	21.00	1.300	0.1	1.040	1.352
	LTE Band 2	20M	QPSK	1	0	Back	10mm	ON	18700	1860		19.57	21.00	1.390	-0.09	0.943	1.311
	LTE Band 2	20M	QPSK	1	0	Back	10mm	ON	18900	1880		19.55	21.00	1.396	-0.03	0.915	1.278
	LTE Band 2	20M	QPSK	50	0	Back	10mm	ON	19100	1900		18.79	20.00	1.321	0.09	0.828	1.094
	LTE Band 2	20M	QPSK	50	0	Back	10mm	ON	18700	1860		18.39	20.00	1.449	-0.06	0.752	1.089
	LTE Band 2	20M	QPSK	50	0	Back	10mm	ON	18900	1880		18.39	20.00	1.449	-0.03	0.795	1.152
	LTE Band 2	20M	QPSK	100	0	Back	10mm	ON	19100	1900		18.77	20.00	1.327	-0.11	0.752	0.998
	LTE Band 2	20M	QPSK	1	0	Left Side	10mm	ON	19100	1900		19.86	21.00	1.300	-0.03	0.026	0.034
	LTE Band 2	20M	QPSK	50	0	Left Side	10mm	ON	19100	1900		18.79	20.00	1.321	-0.12	0.020	0.026
	LTE Band 2	20M	QPSK	1	0	Right Side	10mm	ON	19100	1900		19.86	21.00	1.300	-0.05	0.271	0.352
	LTE Band 2	20M	QPSK	50	0	Right Side	10mm	ON	19100	1900		18.79	20.00	1.321	-0.06	0.230	0.304
	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	ON	19100	1900		19.86	21.00	1.300	-0.07	0.895	1.164
	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	ON	18700	1860		19.57	21.00	1.390	0.07	0.778	1.081
	LTE Band 2	20M	QPSK	1	0	Bottom Side	10mm	ON	18900	1880		19.55	21.00	1.396	-0.07	0.753	1.051
	LTE Band 2	20M	QPSK	50	0	Bottom Side	10mm	ON	19100	1900		18.79	20.00	1.321	0.04	0.719	0.950
	LTE Band 2	20M	QPSK	50	0	Bottom Side	10mm	ON	18700	1860		18.39	20.00	1.449	-0.07	0.671	0.972
	LTE Band 2	20M	QPSK	50	0	Bottom Side	10mm	ON	18900	1880		18.39	20.00	1.449	-0.17	0.633	0.917
	LTE Band 2	20M	QPSK	100	0	Bottom Side	10mm	ON	19100	1900		18.77	20.00	1.327	0.09	0.676	0.897
	LTE Band 2	20M	QPSK	1	0	Back	10mm	ON	19100	1900	Battery Pack	19.86	21.00	1.300	-0.03	0.356	0.463
	LTE Band 4	20M	QPSK	1	0	Front	10mm	ON	20175	1732.5		19.70	21.00	1.349	0	0.326	0.440
	LTE Band 4	20M	QPSK	50	0	Front	10mm	ON	20175	1732.5		18.61	20.00	1.377	0.02	0.264	0.364
23	LTE Band 4	20M	QPSK	1	0	Back	10mm	ON	20175	1732.5		19.70	21.00	1.349	-0.06	0.851	1.148
	LTE Band 4	20M	QPSK	50	0	Back	10mm	ON	20175	1732.5		18.61	20.00	1.377	-0.1	0.686	0.945
	LTE Band 4	20M	QPSK	100	0	Back	10mm	ON	20175	1732.5		18.62	20.00	1.374	-0.05	0.686	0.943
	LTE Band 4	20M	QPSK	1	0	Left Side	10mm	ON	20175	1732.5		19.70	21.00	1.349	-0.11	0.027	0.036
	LTE Band 4	20M	QPSK	50	0	Left Side	10mm	ON	20175	1732.5		18.61	20.00	1.377	-0.04	0.023	0.032
	LTE Band 4	20M	QPSK	1	0	Right Side	10mm	ON	20175	1732.5		19.70	21.00	1.349	-0.09	0.149	0.201
	LTE Band 4	20M	QPSK	50	0	Right Side	10mm	ON	20175	1732.5		18.61	20.00	1.377	-0.1	0.122	0.168
	LTE Band 4	20M	QPSK	1	0	Bottom Side	10mm	ON	20175	1732.5		19.70	21.00	1.349	-0.08	0.671	0.905
	LTE Band 4	20M	QPSK	50	0	Bottom Side	10mm	ON	20175	1732.5		18.61	20.00	1.377	-0.1	0.549	0.756
	LTE Band 4	20M	QPSK	100	0	Bottom Side	10mm	ON	20175	1732.5		18.62	20.00	1.374	0.02	0.543	0.746
	LTE Band 4	20M	QPSK	1	0	Back	10mm	ON	20175	1732.5	Battery Pack	19.70	21.00	1.349	-0.13	0.390	0.526
	LTE Band 7	20M	QPSK	1	0	Front	10mm	OFF	21350	2560		22.96	24.00	1.271	-0.12	0.248	0.315
	LTE Band 7	20M	QPSK	50	0	Front	10mm	OFF	21350	2560		21.90	23.00	1.288	-0.09	0.185	0.238
	LTE Band 7	20M	QPSK	1	0	Back	10mm	OFF	21350	2560		22.96	24.00	1.271	0.1	0.481	0.611
	LTE Band 7	20M	QPSK	50	0	Back	10mm	OFF	21350	2560		21.90	23.00	1.288	0.06	0.353	0.455
	LTE Band 7	20M	QPSK	1	0	Left Side	10mm	OFF	21350	2560		22.96	24.00	1.271	-0.15	0.025	0.032
	LTE Band 7	20M	QPSK	50	0	Left Side	10mm	OFF	21350	2560		21.90	23.00	1.288	-0.07	0.020	0.026
	LTE Band 7	20M	QPSK	1	0	Right Side	10mm	OFF	21350	2560		22.96	24.00	1.271	-0.04	0.045	0.057
	LTE Band 7	20M	QPSK	50	0	Right Side	10mm	OFF	21350	2560		21.90	23.00	1.288	0	0.034	0.044
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	OFF	21350	2560		22.96	24.00	1.271	-0.14	0.559	0.710
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	OFF	20850	2510		22.75	24.00	1.334	-0.02	0.389	0.519
24	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	OFF	21100	2535		22.76	24.00	1.330	-0.03	0.664	0.883
	LTE Band 7	20M	QPSK	50	0	Bottom Side	10mm	OFF	21350	2560		21.90	23.00	1.288	0	0.417	0.537
	LTE Band 7	20M	QPSK	100	0	Bottom Side	10mm	OFF	21100	2535		21.86	23.00	1.300	-0.03	0.558	0.725
	LTE Band 7	20M	QPSK	1	0	Bottom Side	10mm	OFF	21100	2535	Battery Pack	22.76	24.00	1.330	-0.03	0.533	0.709

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	QPSK	1	0	Front	10mm	OFF	23095	707.5		22.41	24.00	1.442	-0.02	0.245	0.353
	LTE Band 12	10M	QPSK	25	12	Front	10mm	OFF	23095	707.5		21.48	23.00	1.419	-0.02	0.197	0.280
25	LTE Band 12	10M	QPSK	1	0	Back	10mm	OFF	23095	707.5		22.41	24.00	1.442	0.01	0.403	0.581
	LTE Band 12	10M	QPSK	25	12	Back	10mm	OFF	23095	707.5		21.48	23.00	1.419	0.01	0.325	0.461
	LTE Band 12	10M	QPSK	1	0	Left Side	10mm	OFF	23095	707.5		22.41	24.00	1.442	-0.01	0.293	0.423
	LTE Band 12	10M	QPSK	25	12	Left Side	10mm	OFF	23095	707.5		21.48	23.00	1.419	-0.05	0.231	0.328
	LTE Band 12	10M	QPSK	1	0	Right Side	10mm	OFF	23095	707.5		22.41	24.00	1.442	-0.06	0.282	0.407
	LTE Band 12	10M	QPSK	25	12	Right Side	10mm	OFF	23095	707.5		21.48	23.00	1.419	0	0.222	0.315
	LTE Band 12	10M	QPSK	1	0	Bottom Side	10mm	OFF	23095	707.5		22.41	24.00	1.442	0.1	0.043	0.062
	LTE Band 12	10M	QPSK	25	12	Bottom Side	10mm	OFF	23095	707.5		21.48	23.00	1.419	0.15	0.034	0.048
	LTE Band 12	10M	QPSK	1	0	Back	10mm	OFF	23095	707.5	Battery Pack	22.41	24.00	1.442	0.17	0.106	0.153
	LTE Band 26	15M	QPSK	1	0	Front	10mm	OFF	26865	831.5		23.17	24.00	1.211	-0.03	0.282	0.341
	LTE Band 26	15M	QPSK	36	0	Front	10mm	OFF	26865	831.5		22.27	23.00	1.183	-0.04	0.227	0.269
26	LTE Band 26	15M	QPSK	1	0	Back	10mm	OFF	26865	831.5		23.17	24.00	1.211	0.07	0.510	0.617
	LTE Band 26	15M	QPSK	36	0	Back	10mm	OFF	26865	831.5		22.27	23.00	1.183	0.07	0.409	0.484
	LTE Band 26	15M	QPSK	1	0	Left Side	10mm	OFF	26865	831.5		23.17	24.00	1.211	-0.01	0.434	0.525
	LTE Band 26	15M	QPSK	36	0	Left Side	10mm	OFF	26865	831.5		22.27	23.00	1.183	-0.04	0.364	0.431
	LTE Band 26	15M	QPSK	1	0	Right Side	10mm	OFF	26865	831.5		23.17	24.00	1.211	-0.07	0.303	0.367
	LTE Band 26	15M	QPSK	36	0	Right Side	10mm	OFF	26865	831.5		22.27	23.00	1.183	-0.05	0.246	0.291
	LTE Band 26	15M	QPSK	1	0	Bottom Side	10mm	OFF	26865	831.5		23.17	24.00	1.211	0.1	0.089	0.108
	LTE Band 26	15M	QPSK	36	0	Bottom Side	10mm	OFF	26865	831.5		22.27	23.00	1.183	0.12	0.073	0.086
	LTE Band 26	15M	QPSK	1	0	Back	10mm	OFF	26865	831.5	Battery Pack	23.17	24.00	1.211	-0.08	0.175	0.212

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Battery Pack	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	0	Front	10mm	OFF	39750	2506		22.71	24.00	1.346	62.9	1.006	-0.01	0.100	0.135
	LTE Band 41	20M	QPSK	50	0	Front	10mm	OFF	39750	2506		21.81	23.00	1.315	62.9	1.006	0.05	0.084	0.111
	LTE Band 41	20M	QPSK	1	0	Back	10mm	OFF	39750	2506		22.71	24.00	1.346	62.9	1.006	0.03	0.236	0.320
	LTE Band 41	20M	QPSK	50	0	Back	10mm	OFF	39750	2506		21.81	23.00	1.315	62.9	1.006	0.02	0.197	0.261
	LTE Band 41	20M	QPSK	1	0	Left Side	10mm	OFF	39750	2506		22.71	24.00	1.346	62.9	1.006	0	0.014	0.019
	LTE Band 41	20M	QPSK	50	0	Left Side	10mm	OFF	39750	2506		21.81	23.00	1.315	62.9	1.006	0.02	0.008	0.011
	LTE Band 41	20M	QPSK	1	0	Right Side	10mm	OFF	39750	2506		22.71	24.00	1.346	62.9	1.006	-0.12	0.087	0.118
	LTE Band 41	20M	QPSK	50	0	Right Side	10mm	OFF	39750	2506		21.81	23.00	1.315	62.9	1.006	0.06	0.062	0.082
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	39750	2506		22.71	24.00	1.346	62.9	1.006	0.01	0.286	0.387
27	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	40185	2549.5		22.62	24.00	1.374	62.9	1.006	0.09	0.304	0.420
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	40620	2593		22.48	24.00	1.419	62.9	1.006	-0.07	0.164	0.234
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	41055	2636.5		22.48	24.00	1.419	62.9	1.006	-0.01	0.089	0.127
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	41490	2680		22.54	24.00	1.400	62.9	1.006	-0.11	0.055	0.077
	LTE Band 41	20M	QPSK	50	0	Bottom Side	10mm	OFF	39750	2506		21.81	23.00	1.315	62.9	1.006	-0.01	0.226	0.299
	LTE Band 41	20M	QPSK	1	0	Bottom Side	10mm	OFF	40185	2549.5	Battery Pack	22.62	24.00	1.374	62.9	1.006	-0.08	0.214	0.296

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Battery Pack	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	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.03	0.029	0.032
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.04	0.020	0.022
	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	0.13	0.025	0.028
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.05	0.004	0.004
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 1	6	2437	Battery Pack	14.06	14.50	1.107	98.57	1.015	-0.08	0.028	0.031
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	-0.06	0.039	0.045
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0.02	0.035	0.040
	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	-0.04	0.026	0.030
	WLAN2.4GHz	802.11b 1Mbps	Bottom Side	10mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	-0.01	0.017	0.020
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 2	6	2437		13.91	14.50	1.146	98.57	1.015	-0.04	0.031	0.036
28	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 2	11	2462		13.76	14.50	1.186	98.57	1.015	0.02	0.044	0.053
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 2	11	2462	Battery Pack	13.76	14.50	1.186	98.57	1.015	-0.08	0.034	0.041
29	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 1	42	5210		8.83	9.00	1.039	85.06	1.176	0.15	0.123	0.150
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 1	42	5210		8.83	9.00	1.039	85.06	1.176	-0.17	0.012	0.015
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Ant 1	42	5210		8.83	9.00	1.039	85.06	1.176	-0.12	0.014	0.017
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 1	42	5210		8.83	9.00	1.039	85.06	1.176	-0.03	0.025	0.031
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 1	42	5210	Battery Pack	8.83	9.00	1.039	85.06	1.176	0.14	0.110	0.134
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 2	42	5210		8.90	9.00	1.023	85.06	1.176	-0.19	0.024	0.029
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 2	42	5210		8.90	9.00	1.023	85.06	1.176	-0.1	0.012	0.014
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Ant 2	42	5210		8.90	9.00	1.023	85.06	1.176	0	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Side	10mm	Ant 2	42	5210		8.90	9.00	1.023	85.06	1.176	-0.13	0.007	0.009
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 2	42	5210	Battery Pack	8.90	9.00	1.023	85.06	1.176	-0.03	0.012	0.014
30	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.06	0.019	0.024
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	0	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.12	0.017	0.021
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.08	0.009	0.011
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 1	155	5775	Battery Pack	8.72	9.00	1.066	85.06	1.176	-0.02	0.017	0.021
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.02	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.12	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	10mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.01	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Side	10mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.13	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 2	155	5775	Battery Pack	8.68	9.00	1.076	85.06	1.176	-0.06	0.001	0.001

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	10mm	0	2402		11.19	11.50	1.074	-0.07	0.007	0.008
	Bluetooth	1Mbps	Back	10mm	0	2402		11.19	11.50	1.074	-0.06	0.004	0.005
	Bluetooth	1Mbps	Left Side	10mm	0	2402		11.19	11.50	1.074	-0.16	0.007	0.007
	Bluetooth	1Mbps	Right Side	10mm	0	2402		11.19	11.50	1.074	0.1	0.001	0.001
	Bluetooth	1Mbps	Top Side	10mm	0	2402		11.19	11.50	1.074	-0.15	0.001	0.001
	Bluetooth	1Mbps	Front	10mm	39	2441		11.06	11.50	1.107	-0.17	0.008	0.008
31	Bluetooth	1Mbps	Front	10mm	78	2480		10.38	11.50	1.294	-0.12	0.008	0.010
	Bluetooth	1Mbps	Front	10mm	78	2480	Battery Pack	10.38	11.50	1.294	-0.11	0.007	0.009

14.3 Product Specific SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
32	GSM1900	GPRS (3 Tx slots)	Back	0mm	512	1850.2	27.91	28.50	1.146	0.12	2.740	3.139
	GSM1900	GPRS (3 Tx slots)	Back	0mm	661	1880	27.72	28.50	1.197	0.18	2.140	2.561
	GSM1900	GPRS (3 Tx slots)	Back	0mm	810	1909.8	27.88	28.50	1.153	0.11	1.880	2.168
	GSM1900	GPRS (3 Tx slots)	Bottom Side	0mm	512	1850.2	27.91	28.50	1.146	0.12	2.410	2.761
	GSM1900	GPRS (3 Tx slots)	Bottom Side	0mm	661	1880	27.72	28.50	1.197	-0.02	2.030	2.429
	GSM1900	GPRS (3 Tx slots)	Bottom Side	0mm	810	1909.8	27.88	28.50	1.153	-0.04	1.890	2.180

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WCDMA II	RMC 12.2Kbps	Back	0mm	9262	1852.4	22.38	23.00	1.153	0.04	2.660	3.068
	WCDMA II	RMC 12.2Kbps	Back	0mm	9400	1880	22.50	23.00	1.122	0.17	2.660	2.985
33	WCDMA II	RMC 12.2Kbps	Back	0mm	9538	1907.6	22.03	23.00	1.250	0.15	2.830	3.538
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9262	1852.4	22.38	23.00	1.153	-0.19	2.460	2.837
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9400	1880	22.50	23.00	1.122	-0.15	2.440	2.738
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	9538	1907.6	22.03	23.00	1.250	-0.08	2.530	3.163
34	WCDMA IV	RMC 12.2Kbps	Back	0mm	1513	1752.6	21.25	23.00	1.496	0.19	2.130	3.187
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1413	1732.6	22.45	23.00	1.135	0.16	1.550	1.759
	WCDMA IV	RMC 12.2Kbps	Back	0mm	1312	1712.4	21.36	23.00	1.459	0.15	1.480	2.159

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
35	LTE Band 2	20M	QPSK	1	0	Back	0mm	19100	1900	22.82	23.50	1.169	0.16	2.660	3.111
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18700	1860	22.60	23.50	1.230	0.11	2.360	2.903
	LTE Band 2	20M	QPSK	1	0	Back	0mm	18900	1880	22.61	23.50	1.227	0.19	2.510	3.081
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	19100	1900	22.82	23.50	1.169	0.1	2.150	2.514
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	18700	1860	22.60	23.50	1.230	0.12	1.940	2.387
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	18900	1880	22.61	23.50	1.227	0.1	2.020	2.479
36	LTE Band 4	20M	QPSK	1	0	Back	0mm	20175	1732.5	23.05	24.00	1.245	0.06	2.570	3.198
	LTE Band 4	20M	QPSK	1	0	Bottom Side	0mm	20175	1732.5	23.05	24.00	1.245	-0.05	1.790	2.228

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Battery Pack	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)
37	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.04	0.234	0.282
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.17	0.010	0.012
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.1	0.007	0.008
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.17	0.007	0.008
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.04	0.033	0.040
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	58	5290	Battery Pack	8.89	9.00	1.025	85.06	1.176	0.02	0.217	0.262
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.12	0.029	0.036
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.19	0.047	0.058
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	0.01	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.02	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Side	0mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.18	0.004	0.005
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 2	58	5290	Battery Pack	8.78	9.00	1.051	85.06	1.176	0	0.001	0.002
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.14	0.081	0.098
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	106	5530		8.71	9.00	1.068	85.06	1.176	0.1	0.094	0.118
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	122	5610		8.82	9.00	1.042	85.06	1.176	-0.14	0.078	0.096
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.14	0.056	0.068
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.12	0.008	0.010
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.17	0.008	0.009
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.05	0.039	0.047
38	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 1	106	5530	Battery Pack	8.71	9.00	1.068	85.06	1.176	0.16	0.097	0.122
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.02	0.015	0.018
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	0.01	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	0.03	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	0.03	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Bottom Side	0mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.18	0.004	0.005
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 2	138	5690	Battery Pack	8.84	9.00	1.037	85.06	1.176	-0.18	0.012	0.015

14.4 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	15mm	128	824.2		28.49	29.50	1.262	-0.17	0.553	0.698
	GSM850	GPRS (4 Tx slots)	Back	15mm	128	824.2		28.49	29.50	1.262	0.02	0.705	0.890
39	GSM850	GPRS (4 Tx slots)	Back	15mm	189	836.4		28.40	29.50	1.288	-0.1	0.697	0.898
	GSM850	GPRS (4 Tx slots)	Back	15mm	251	848.8		28.49	29.50	1.262	-0.04	0.662	0.835
	GSM850	GPRS (4 Tx slots)	Back	15mm	189	836.4	Battery Pack	28.40	29.50	1.288	0.14	0.095	0.122
	GSM1900	GPRS (3 Tx slots)	Front	15mm	512	1850.2		27.91	28.50	1.146	0	0.331	0.379
40	GSM1900	GPRS (3 Tx slots)	Back	15mm	512	1850.2		27.91	28.50	1.146	0.04	0.817	0.936
	GSM1900	GPRS (3 Tx slots)	Back	15mm	661	1880		27.72	28.50	1.197	0.07	0.780	0.933
	GSM1900	GPRS (3 Tx slots)	Back	15mm	810	1909.8		27.88	28.50	1.153	0.04	0.696	0.803
	GSM1900	GPRS (3 Tx slots)	Back	15mm	512	1850.2	Battery Pack	27.91	28.50	1.146	-0.11	0.415	0.475

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	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	15mm	9400	1880		22.50	23.00	1.122	-0.03	0.354	0.397
	WCDMA II	RMC 12.2Kbps	Back	15mm	9400	1880		22.50	23.00	1.122	0.05	0.851	0.955
	WCDMA II	RMC 12.2Kbps	Back	15mm	9262	1852.4		22.38	23.00	1.153	-0.08	0.858	0.990
41	WCDMA II	RMC 12.2Kbps	Back	15mm	9538	1907.6		22.03	23.00	1.250	-0.05	0.822	1.028
	WCDMA II	RMC 12.2Kbps	Back	15mm	9538	1907.6	Battery Pack	22.03	23.00	1.250	-0.09	0.315	0.394
	WCDMA IV	RMC 12.2Kbps	Front	15mm	1413	1732.6		22.45	23.00	1.135	-0.06	0.301	0.342
	WCDMA IV	RMC 12.2Kbps	Back	15mm	1413	1732.6		22.45	23.00	1.135	-0.07	0.821	0.932
	WCDMA IV	RMC 12.2Kbps	Back	15mm	1312	1712.4		21.36	23.00	1.459	-0.06	0.544	0.794
42	WCDMA IV	RMC 12.2Kbps	Back	15mm	1513	1752.6		21.25	23.00	1.496	-0.07	0.675	1.010
	WCDMA IV	RMC 12.2Kbps	Back	15mm	1513	1752.6	Battery Pack	21.25	23.00	1.496	0.01	0.340	0.509
	WCDMA V	RMC 12.2Kbps	Front	15mm	4233	846.6		22.82	24.00	1.312	-0.03	0.312	0.409
	WCDMA V	RMC 12.2Kbps	Back	15mm	4233	846.6		22.82	24.00	1.312	-0.03	0.414	0.543
43	WCDMA V	RMC 12.2Kbps	Back	15mm	4132	826.4		22.50	24.00	1.413	-0.13	0.396	0.559
	WCDMA V	RMC 12.2Kbps	Back	15mm	4182	836.4		22.76	24.00	1.330	-0.03	0.394	0.524
	WCDMA V	RMC 12.2Kbps	Back	15mm	4132	826.4	Battery Pack	22.50	24.00	1.413	0.1	0.091	0.129

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	15mm	19100	1900		22.82	23.50	1.169	-0.04	0.317	0.371
	LTE Band 2	20M	QPSK	50	0	Front	15mm	19100	1900		21.82	22.50	1.169	-0.07	0.251	0.294
	LTE Band 2	20M	QPSK	1	0	Back	15mm	19100	1900		22.82	23.50	1.169	0.13	0.846	0.989
	LTE Band 2	20M	QPSK	1	0	Back	15mm	18700	1860		22.60	23.50	1.230	0.02	0.794	0.977
44	LTE Band 2	20M	QPSK	1	0	Back	15mm	18900	1880		22.61	23.50	1.227	0.09	0.815	1.000
	LTE Band 2	20M	QPSK	50	0	Back	15mm	19100	1900		21.82	22.50	1.169	0.1	0.682	0.798
	LTE Band 2	20M	QPSK	100	0	Back	15mm	18900	1880		21.38	22.50	1.294	0.09	0.625	0.809
	LTE Band 2	20M	QPSK	1	0	Back	15mm	18900	1880	Battery Pack	22.61	23.50	1.227	0.01	0.335	0.411
	LTE Band 4	20M	QPSK	1	0	Front	15mm	20175	1732.5		23.05	24.00	1.245	-0.02	0.300	0.373
	LTE Band 4	20M	QPSK	50	0	Front	15mm	20175	1732.5		21.99	23.00	1.262	-0.05	0.247	0.312
45	LTE Band 4	20M	QPSK	1	0	Back	15mm	20175	1732.5		23.05	24.00	1.245	-0.1	0.787	0.979
	LTE Band 4	20M	QPSK	50	0	Back	15mm	20175	1732.5		21.99	23.00	1.262	-0.07	0.644	0.813
	LTE Band 4	20M	QPSK	100	0	Back	15mm	20175	1732.5		21.88	23.00	1.294	-0.04	0.647	0.837
	LTE Band 4	20M	QPSK	1	0	Back	15mm	20175	1732.5	Battery Pack	23.05	24.00	1.245	-0.05	0.414	0.515
	LTE Band 7	20M	QPSK	1	0	Front	15mm	21350	2560		22.96	24.00	1.271	-0.12	0.146	0.186
	LTE Band 7	20M	QPSK	50	0	Front	15mm	21350	2560		21.90	23.00	1.288	-0.02	0.105	0.135
	LTE Band 7	20M	QPSK	1	0	Back	15mm	21350	2560		22.96	24.00	1.271	0	0.207	0.263
	LTE Band 7	20M	QPSK	50	0	Back	15mm	21350	2560		21.90	23.00	1.288	-0.04	0.150	0.193
	LTE Band 7	20M	QPSK	1	0	Back	15mm	20850	2510		22.75	24.00	1.334	-0.17	0.139	0.185
46	LTE Band 7	20M	QPSK	1	0	Back	15mm	21100	2535		22.76	24.00	1.330	-0.03	0.261	0.347
	LTE Band 7	20M	QPSK	1	0	Back	15mm	21100	2535	Battery Pack	22.76	24.00	1.330	-0.02	0.214	0.285
	LTE Band 12	10M	QPSK	1	0	Front	15mm	23095	707.5		22.41	24.00	1.442	-0.04	0.234	0.337
	LTE Band 12	10M	QPSK	25	12	Front	15mm	23095	707.5		21.48	23.00	1.419	0.01	0.189	0.268
47	LTE Band 12	10M	QPSK	1	0	Back	15mm	23095	707.5		22.41	24.00	1.442	-0.01	0.342	0.493
	LTE Band 12	10M	QPSK	25	12	Back	15mm	23095	707.5		21.48	23.00	1.419	-0.02	0.274	0.389
	LTE Band 12	10M	QPSK	1	0	Back	15mm	23095	707.5	Battery Pack	22.41	24.00	1.442	0	0.300	0.433
	LTE Band 26	15M	QPSK	1	0	Front	15mm	26865	831.5		23.17	24.00	1.211	-0.04	0.299	0.362
	LTE Band 26	15M	QPSK	36	0	Front	15mm	26865	831.5		22.27	23.00	1.183	0.01	0.248	0.293
48	LTE Band 26	15M	QPSK	1	0	Back	15mm	26865	831.5		23.17	24.00	1.211	-0.12	0.374	0.453
	LTE Band 26	15M	QPSK	36	0	Back	15mm	26865	831.5		22.27	23.00	1.183	-0.03	0.311	0.368
	LTE Band 26	15M	QPSK	1	0	Back	15mm	26865	831.5	Battery Pack	23.17	24.00	1.211	-0.05	0.083	0.100

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	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	0	Front	15mm	39750	2506		22.71	24.00	1.346	62.9	1.006	0.05	0.075	0.102
	LTE Band 41	20M	QPSK	50	0	Front	15mm	39750	2506		21.81	23.00	1.315	62.9	1.006	0.1	0.057	0.075
	LTE Band 41	20M	QPSK	1	0	Back	15mm	39750	2506		22.71	24.00	1.346	62.9	1.006	-0.06	0.099	0.134
49	LTE Band 41	20M	QPSK	1	0	Back	15mm	40185	2549.5		22.62	24.00	1.374	62.9	1.006	-0.01	0.114	0.158
	LTE Band 41	20M	QPSK	1	0	Back	15mm	40620	2593		22.48	24.00	1.419	62.9	1.006	-0.02	0.051	0.073
	LTE Band 41	20M	QPSK	1	0	Back	15mm	41055	2636.5		22.48	24.00	1.419	62.9	1.006	0.05	0.032	0.046
	LTE Band 41	20M	QPSK	1	0	Back	15mm	41490	2680		22.54	24.00	1.400	62.9	1.006	0	0.026	0.037
	LTE Band 41	20M	QPSK	50	0	Back	15mm	39750	2506		21.81	23.00	1.315	62.9	1.006	-0.02	0.071	0.094
	LTE Band 41	20M	QPSK	1	0	Back	15mm	40185	2549.5	Battery Pack	22.62	24.00	1.374	62.9	1.006	-0.11	0.042	0.058

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Battery Pack	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	15mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	-0.19	0.013	0.015
	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 1	6	2437		14.06	14.50	1.107	98.57	1.015	0	0.007	0.008
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 1	6	2437	Battery Pack	14.06	14.50	1.107	98.57	1.015	-0.11	0.012	0.013
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0.09	0.014	0.016
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 2	6	2437		13.91	14.50	1.146	98.57	1.015	0.09	0.019	0.022
50	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 2	11	2462		13.76	14.50	1.186	98.57	1.015	-0.03	0.024	0.029
	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 2	1	2412		13.94	14.50	1.138	98.57	1.015	0	0.009	0.010
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 2	11	2462	Battery Pack	13.76	14.50	1.186	98.57	1.015	-0.08	0.022	0.026
51	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.15	0.070	0.084
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 1	58	5290		8.89	9.00	1.025	85.06	1.176	-0.01	0.006	0.007
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	58	5290	Battery Pack	8.89	9.00	1.025	85.06	1.176	-0.15	0.061	0.074
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.02	0.012	0.015
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 2	58	5290		8.78	9.00	1.051	85.06	1.176	-0.11	0.006	0.007
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	58	5290	Battery Pack	8.78	9.00	1.051	85.06	1.176	-0.09	0.008	0.010
52	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	-0.02	0.008	0.010
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	106	5530		8.71	9.00	1.068	85.06	1.176	-0.06	0.007	0.009
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	122	5610		8.82	9.00	1.042	85.06	1.176	-0.02	0.003	0.004
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 1	138	5690		8.88	9.00	1.027	85.06	1.176	0	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	138	5690	Battery Pack	8.88	9.00	1.027	85.06	1.176	-0.06	0.007	0.008
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.05	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 2	138	5690		8.84	9.00	1.037	85.06	1.176	-0.1	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	138	5690	Battery Pack	8.84	9.00	1.037	85.06	1.176	-0.03	0.001	0.001
53	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	-0.02	0.009	0.011
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 1	155	5775		8.72	9.00	1.066	85.06	1.176	0	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 1	155	5775	Battery Pack	8.72	9.00	1.066	85.06	1.176	-0.02	0.007	0.009
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.09	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	15mm	Ant 2	155	5775		8.68	9.00	1.076	85.06	1.176	-0.02	0.001	0.001
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	15mm	Ant 2	155	5775	Battery Pack	8.68	9.00	1.076	85.06	1.176	-0.08	0.001	0.001

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Battery Pack	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	1Mbps	Front	15mm	0	2402		11.19	11.50	1.074	-0.11	0.003	0.004
	Bluetooth	1Mbps	Front	15mm	39	2441		11.06	11.50	1.107	-0.03	0.004	0.004
54	Bluetooth	1Mbps	Front	15mm	78	2480		10.38	11.50	1.294	-0.07	0.004	0.005
	Bluetooth	1Mbps	Back	15mm	0	2402		11.19	11.50	1.074	-0.11	0.001	0.002
	Bluetooth	1Mbps	Front	15mm	78	2480	Battery Pack	10.38	11.50	1.294	-0.07	0.003	0.004

14.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Antenna	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	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	-	58	5290	8.89	9.00	1.025	85.06	1.176	0.14	0.985		1.187
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 1	-	58	5290	8.89	9.00	1.025	85.06	1.176	0.17	0.924	1.07	1.114
1st	GSM850	GPRS (4 Tx slots)	Back	10mm	-	OFF	251	848.8	28.49	29.50	1.262	-	-	0.02	0.816		1.030
2nd	GSM850	GPRS (4 Tx slots)	Back	10mm	-	OFF	251	848.8	28.49	29.50	1.262	-	-	0.13	0.749	1.09	0.945
1st	GSM1900	GPRS (3 Tx slots)	Back	10mm	-	ON	512	1850.2	26.00	26.00	1.000	-	-	-0.1	1.160		1.160
2nd	GSM1900	GPRS (3 Tx slots)	Back	10mm	-	ON	512	1850.2	26.00	26.00	1.000	-	-	-0.13	1.090	1.06	1.090
1st	WCDMA IV	RMC 12.2Kbps	Back	10mm	-	ON	1513	1752.6	20.23	20.50	1.064	-	-	0.04	0.943		1.003
2nd	WCDMA IV	RMC 12.2Kbps	Back	10mm	-	ON	1513	1752.6	20.23	20.50	1.064	-	-	-0.04	0.891	1.06	0.948

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA II	RMC 12.2Kbps	Back	0mm	OFF	9538	1907.6	22.03	23.00	1.250	0.15	2.830		3.538
2nd	WCDMA II	RMC 12.2Kbps	Back	0mm	OFF	9538	1907.6	22.03	23.00	1.250	-0.05	2.790	1.01	3.488
1st	LTE Band 4	20M_QPSK_1_0	Back	0mm	OFF	20175	1732.5	23.05	24.00	1.245	0.06	2.570		3.198
2nd	LTE Band 4	20M_QPSK_1_0	Back	0mm	OFF	20175	1732.5	23.05	24.00	1.245	0.08	2.520	1.02	3.136

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 + WLAN ANT1 + WLAN ANT2	Yes	Yes	Yes	Yes
2.	WWAN + Bluetooth ANT1 + WLAN ANT2	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. For SAR testing was performed on single antenna RF power in SISO mode is larger or equal to the single antenna RF power in MIMO mode, and for RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode.
3. WLAN and Bluetooth share the same antenna1, 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.

15.1 Head Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)	1+5+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth				
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
GSM	GSM850	Right Cheek	0.589	0.141	0.010	0.729	0.002	0.052	**0.740**	**1.320**	**0.651**	**0.643**
		Right Tilted	0.322	0.611	0.011	1.187	0.002	0.238	**0.944**	**1.511**	**0.571**	**0.562**
		Left Cheek	0.830	0.052	0.020	0.358	0.002	0.011	**0.902**	**1.190**	**0.861**	**0.843**
		Left Tilted	0.365	0.101	0.003	0.523	0.002	0.025	**0.469**	**0.890**	**0.393**	**0.392**
	GSM1900	Right Cheek	0.421	0.141	0.010	0.729	0.002	0.052	**0.572**	**1.152**	**0.483**	**0.475**
		Right Tilted	0.105	0.611	0.011	1.187	0.002	0.238	**0.727**	**1.294**	**0.354**	**0.345**
		Left Cheek	0.211	0.052	0.020	0.358	0.002	0.011	**0.283**	**0.571**	**0.242**	**0.224**
		Left Tilted	0.140	0.101	0.003	0.523	0.002	0.025	**0.244**	**0.665**	**0.168**	**0.167**
WCDMA	WCDMA II	Right Cheek	0.460	0.141	0.010	0.729	0.002	0.052	**0.611**	**1.191**	**0.522**	**0.514**
		Right Tilted	0.113	0.611	0.011	1.187	0.002	0.238	**0.735**	**1.302**	**0.362**	**0.353**
		Left Cheek	0.217	0.052	0.020	0.358	0.002	0.011	**0.289**	**0.577**	**0.248**	**0.230**
		Left Tilted	0.162	0.101	0.003	0.523	0.002	0.025	**0.266**	**0.687**	**0.190**	**0.189**
	WCDMA IV	Right Cheek	0.349	0.141	0.010	0.729	0.002	0.052	**0.500**	**1.080**	**0.411**	**0.403**
		Right Tilted	0.070	0.611	0.011	1.187	0.002	0.238	**0.692**	**1.259**	**0.319**	**0.310**
		Left Cheek	0.151	0.052	0.020	0.358	0.002	0.011	**0.223**	**0.511**	**0.182**	**0.164**
		Left Tilted	0.089	0.101	0.003	0.523	0.002	0.025	**0.193**	**0.614**	**0.117**	**0.116**
	WCDMA V	Right Cheek	0.381	0.141	0.010	0.729	0.002	0.052	**0.532**	**1.112**	**0.443**	**0.435**
		Right Tilted	0.230	0.611	0.011	1.187	0.002	0.238	**0.852**	**1.419**	**0.479**	**0.470**
		Left Cheek	0.441	0.052	0.020	0.358	0.002	0.011	**0.513**	**0.801**	**0.472**	**0.454**
		Left Tilted	0.236	0.101	0.003	0.523	0.002	0.025	**0.340**	**0.761**	**0.264**	**0.263**
LTE	LTE Band 2	Right Cheek	0.561	0.141	0.010	0.729	0.002	0.052	**0.712**	**1.292**	**0.623**	**0.615**
		Right Tilted	0.142	0.611	0.011	1.187	0.002	0.238	**0.764**	**1.331**	**0.391**	**0.382**
		Left Cheek	0.237	0.052	0.020	0.358	0.002	0.011	**0.309**	**0.597**	**0.268**	**0.250**
		Left Tilted	0.160	0.101	0.003	0.523	0.002	0.025	**0.264**	**0.685**	**0.188**	**0.187**
	LTE Band 4	Right Cheek	0.368	0.141	0.010	0.729	0.002	0.052	**0.519**	**1.099**	**0.430**	**0.422**
		Right Tilted	0.095	0.611	0.011	1.187	0.002	0.238	**0.717**	**1.284**	**0.344**	**0.335**
		Left Cheek	0.144	0.052	0.020	0.358	0.002	0.011	**0.216**	**0.504**	**0.175**	**0.157**
		Left Tilted	0.088	0.101	0.003	0.523	0.002	0.025	**0.192**	**0.613**	**0.116**	**0.115**
	LTE Band 7	Right Cheek	0.138	0.141	0.010	0.729	0.002	0.052	**0.289**	**0.869**	**0.200**	**0.192**
		Right Tilted	0.098	0.611	0.011	1.187	0.002	0.238	**0.720**	**1.287**	**0.347**	**0.338**
		Left Cheek	0.104	0.052	0.020	0.358	0.002	0.011	**0.176**	**0.464**	**0.135**	**0.117**
		Left Tilted	0.072	0.101	0.003	0.523	0.002	0.025	**0.176**	**0.597**	**0.100**	**0.099**
	LTE Band 12	Right Cheek	0.261	0.141	0.010	0.729	0.002	0.052	**0.412**	**0.992**	**0.323**	**0.315**
		Right Tilted	0.136	0.611	0.011	1.187	0.002	0.238	**0.758**	**1.325**	**0.385**	**0.376**
		Left Cheek	0.242	0.052	0.020	0.358	0.002	0.011	**0.314**	**0.602**	**0.273**	**0.255**
		Left Tilted	0.120	0.101	0.003	0.523	0.002	0.025	**0.224**	**0.645**	**0.148**	**0.147**
	LTE Band 26	Right Cheek	0.271	0.141	0.010	0.729	0.002	0.052	**0.422**	**1.002**	**0.333**	**0.325**
		Right Tilted	0.167	0.611	0.011	1.187	0.002	0.238	**0.789**	**1.356**	**0.416**	**0.407**
		Left Cheek	0.282	0.052	0.020	0.358	0.002	0.011	**0.354**	**0.642**	**0.313**	**0.295**
		Left Tilted	0.134	0.101	0.003	0.523	0.002	0.025	**0.238**	**0.659**	**0.162**	**0.161**
	LTE Band 41	Right Cheek	0.069	0.141	0.010	0.729	0.002	0.052	**0.220**	**0.800**	**0.131**	**0.123**
		Right Tilted	0.019	0.611	0.011	1.187	0.002	0.238	**0.641**	**1.208**	**0.268**	**0.259**
		Left Cheek	0.015	0.052	0.020	0.358	0.002	0.011	**0.087**	**0.375**	**0.046**	**0.028**
		Left Tilted	0.039	0.101	0.003	0.523	0.002	0.025	**0.143**	**0.564**	**0.067**	**0.066**

15.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)	1+5+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth				
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
GSM	GSM850	Front	0.681	0.032	0.053	0.150	0.029	0.010	**0.766**	**0.860**	**0.744**	**0.720**
		Back	1.030	0.022	0.040	0.015	0.014	0.005	**1.092**	**1.059**	**1.075**	**1.049**
		Left side	0.982	0.028	0.030	0.021	0.001	0.007	**1.040**	**1.004**	**1.019**	**0.990**
		Right side	0.750						**0.750**	**0.750**	**0.750**	**0.750**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.209		0.020		0.009		**0.229**	**0.218**	**0.229**	**0.218**
	GSM1900	Front	0.449	0.032	0.053	0.150	0.029	0.010	**0.534**	**0.628**	**0.512**	**0.488**
		Back	1.160	0.022	0.040	0.015	0.014	0.005	**1.222**	**1.189**	**1.205**	**1.179**
		Left side	0.030	0.028	0.030	0.021	0.001	0.007	**0.088**	**0.052**	**0.067**	**0.038**
		Right side	0.301						**0.301**	**0.301**	**0.301**	**0.301**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.913		0.020		0.009		**0.933**	**0.922**	**0.933**	**0.922**
WCDMA	WCDMA II	Front	0.472	0.032	0.053	0.150	0.029	0.010	**0.557**	**0.651**	**0.535**	**0.511**
		Back	1.050	0.022	0.040	0.015	0.014	0.005	**1.112**	**1.079**	**1.095**	**1.069**
		Left side	0.021	0.028	0.030	0.021	0.001	0.007	**0.079**	**0.043**	**0.058**	**0.029**
		Right side	0.260						**0.260**	**0.260**	**0.260**	**0.260**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.815		0.020		0.009		**0.835**	**0.824**	**0.835**	**0.824**
	WCDMA IV	Front	0.333	0.032	0.053	0.150	0.029	0.010	**0.418**	**0.512**	**0.396**	**0.372**
		Back	1.003	0.022	0.040	0.015	0.014	0.005	**1.065**	**1.032**	**1.048**	**1.022**
		Left side	0.024	0.028	0.030	0.021	0.001	0.007	**0.082**	**0.046**	**0.061**	**0.032**
		Right side	0.160						**0.160**	**0.160**	**0.160**	**0.160**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.656		0.020		0.009		**0.676**	**0.665**	**0.676**	**0.665**
	WCDMA V	Front	0.463	0.032	0.053	0.150	0.029	0.010	**0.548**	**0.642**	**0.526**	**0.502**
		Back	0.682	0.022	0.040	0.015	0.014	0.005	**0.744**	**0.711**	**0.727**	**0.701**
		Left side	0.646	0.028	0.030	0.021	0.001	0.007	**0.704**	**0.668**	**0.683**	**0.654**
		Right side	0.503						**0.503**	**0.503**	**0.503**	**0.503**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.194		0.020		0.009		**0.214**	**0.203**	**0.214**	**0.203**

WWAN Band		Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)	1+5+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth				
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
LTE	LTE Band 2	Front	0.489	0.032	0.053	0.150	0.029	0.010	**0.574**	**0.668**	**0.552**	**0.528**
		Back	1.352	0.022	0.040	0.015	0.014	0.005	**1.414**	**1.381**	**1.397**	**1.371**
		Left side	0.034	0.028	0.030	0.021	0.001	0.007	**0.092**	**0.056**	**0.071**	**0.042**
		Right side	0.352						**0.352**	**0.352**	**0.352**	**0.352**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	1.164		0.020		0.009		**1.184**	**1.173**	**1.184**	**1.173**
	LTE Band 4	Front	0.440	0.032	0.053	0.150	0.029	0.010	**0.525**	**0.619**	**0.503**	**0.479**
		Back	1.148	0.022	0.040	0.015	0.014	0.005	**1.210**	**1.177**	**1.193**	**1.167**
		Left side	0.036	0.028	0.030	0.021	0.001	0.007	**0.094**	**0.058**	**0.073**	**0.044**
		Right side	0.201						**0.201**	**0.201**	**0.201**	**0.201**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.905		0.020		0.009		**0.925**	**0.914**	**0.925**	**0.914**
	LTE Band 7	Front	0.315	0.032	0.053	0.150	0.029	0.010	**0.400**	**0.494**	**0.378**	**0.354**
		Back	0.611	0.022	0.040	0.015	0.014	0.005	**0.673**	**0.640**	**0.656**	**0.630**
		Left side	0.032	0.028	0.030	0.021	0.001	0.007	**0.090**	**0.054**	**0.069**	**0.040**
		Right side	0.057						**0.057**	**0.057**	**0.057**	**0.057**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.883		0.020		0.009		**0.903**	**0.892**	**0.903**	**0.892**
	LTE Band 12	Front	0.353	0.032	0.053	0.150	0.029	0.010	**0.438**	**0.532**	**0.416**	**0.392**
		Back	0.581	0.022	0.040	0.015	0.014	0.005	**0.643**	**0.610**	**0.626**	**0.600**
		Left side	0.423	0.028	0.030	0.021	0.001	0.007	**0.481**	**0.445**	**0.460**	**0.431**
		Right side	0.407						**0.407**	**0.407**	**0.407**	**0.407**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.062		0.020		0.009		**0.082**	**0.071**	**0.082**	**0.071**
	LTE Band 26	Front	0.341	0.032	0.053	0.150	0.029	0.010	**0.426**	**0.520**	**0.404**	**0.380**
		Back	0.617	0.022	0.040	0.015	0.014	0.005	**0.679**	**0.646**	**0.662**	**0.636**
		Left side	0.525	0.028	0.030	0.021	0.001	0.007	**0.583**	**0.547**	**0.562**	**0.533**
		Right side	0.367						**0.367**	**0.367**	**0.367**	**0.367**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.108		0.020		0.009		**0.128**	**0.117**	**0.128**	**0.117**
	LTE Band 41	Front	0.135	0.032	0.053	0.150	0.029	0.010	**0.220**	**0.314**	**0.198**	**0.174**
		Back	0.320	0.022	0.040	0.015	0.014	0.005	**0.382**	**0.349**	**0.365**	**0.339**
		Left side	0.019	0.028	0.030	0.021	0.001	0.007	**0.077**	**0.041**	**0.056**	**0.027**
		Right side	0.118						**0.118**	**0.118**	**0.118**	**0.118**
		Top side		0.004		0.031		0.001	**0.004**	**0.031**	**0.001**	**0.001**
		Bottom side	0.420		0.020		0.009		**0.440**	**0.429**	**0.440**	**0.429**

15.3 Product Specific Exposure Conditions

General Note:

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

WWAN Band		Exposure Position	1	2	3	4	5	6	1+4+5 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth	
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
GSM	GSM1900	Front	-	-	-	0.282	0.036	-	**0.32**
		Back	3.139	-	-	0.068	0.058	-	**3.27**
		Left side	-	-	-	0.010	0.001	-	**0.01**
		Top side	-	-	-	0.047	-	-	**0.05**
		Bottom side	2.761	-	-	-	0.005	-	**2.77**
WCDMA	WCDMA II	Front	-	-	-	0.282	0.036	-	**0.32**
		Back	3.538	-	-	0.068	0.058	-	**3.66**
		Left side	-	-	-	0.010	0.001	-	**0.01**
		Top side	-	-	-	0.047	-	-	**0.05**
		Bottom side	3.163	-	-	-	0.005	-	**3.17**
	WCDMA IV	Front	-	-	-	0.282	0.036	-	**0.32**
		Back	3.187	-	-	0.068	0.058	-	**3.31**
		Left side	-	-	-	0.010	0.001	-	**0.01**
		Top side	-	-	-	0.047	-	-	**0.05**
		Bottom side	-	-	-	-	0.005	-	**0.01**
LTE	LTE 2	Front	-	-	-	0.282	0.036	-	**0.32**
		Back	3.111	-	-	0.068	0.058	-	**3.24**
		Left side	-	-	-	0.010	0.001	-	**0.01**
		Top side	-	-	-	0.047	-	-	**0.05**
		Bottom side	2.514	-	-	-	0.005	-	**2.52**
	LTE 4	Front	-	-	-	0.282	0.036	-	**0.32**
		Back	3.198	-	-	0.068	0.058	-	**3.32**
		Left side	-	-	-	0.010	0.001	-	**0.01**
		Top side	-	-	-	0.047	-	-	**0.05**
		Bottom side	2.228	-	-	-	0.005	-	**2.23**

15.4 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+3+6 Summed 1g SAR (W/kg)	1+5+6 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth				
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
GSM	GSM850	Front	0.698	0.015	0.029	0.084	0.015	0.005	**0.742**	**0.797**	**0.732**	**0.718**
		Back	0.898	0.008	0.010	0.007	0.007	0.002	**0.916**	**0.912**	**0.910**	**0.907**
	GSM1900	Front	0.379	0.015	0.029	0.084	0.015	0.005	**0.423**	**0.478**	**0.413**	**0.399**
		Back	0.936	0.008	0.010	0.007	0.007	0.002	**0.954**	**0.950**	**0.948**	**0.945**
WCDMA	WCDMA II	Front	0.397	0.015	0.029	0.084	0.015	0.005	**0.441**	**0.496**	**0.431**	**0.417**
		Back	1.028	0.008	0.010	0.007	0.007	0.002	**1.046**	**1.042**	**1.040**	**1.037**
	WCDMA IV	Front	0.342	0.015	0.029	0.084	0.015	0.005	**0.386**	**0.441**	**0.376**	**0.362**
		Back	1.010	0.008	0.010	0.007	0.007	0.002	**1.028**	**1.024**	**1.022**	**1.019**
	WCDMA V	Front	0.409	0.015	0.029	0.084	0.015	0.005	**0.453**	**0.508**	**0.443**	**0.429**
		Back	0.559	0.008	0.010	0.007	0.007	0.002	**0.577**	**0.573**	**0.571**	**0.568**
LTE	LTE Band 2	Front	0.371	0.015	0.029	0.084	0.015	0.005	**0.415**	**0.470**	**0.405**	**0.391**
		Back	1.000	0.008	0.010	0.007	0.007	0.002	**1.018**	**1.014**	**1.012**	**1.009**
	LTE Band 4	Front	0.373	0.015	0.029	0.084	0.015	0.005	**0.417**	**0.472**	**0.407**	**0.393**
		Back	0.979	0.008	0.010	0.007	0.007	0.002	**0.997**	**0.993**	**0.991**	**0.988**
	LTE Band 7	Front	0.186	0.015	0.029	0.084	0.015	0.005	**0.230**	**0.285**	**0.220**	**0.206**
		Back	0.347	0.008	0.010	0.007	0.007	0.002	**0.365**	**0.361**	**0.359**	**0.356**
	LTE Band 12	Front	0.337	0.015	0.029	0.084	0.015	0.005	**0.381**	**0.436**	**0.371**	**0.357**
		Back	0.493	0.008	0.010	0.007	0.007	0.002	**0.511**	**0.507**	**0.505**	**0.502**
	LTE Band 26	Front	0.362	0.015	0.029	0.084	0.015	0.005	**0.406**	**0.461**	**0.396**	**0.382**
		Back	0.453	0.008	0.010	0.007	0.007	0.002	**0.471**	**0.467**	**0.465**	**0.462**
	LTE Band 41	Front	0.102	0.015	0.029	0.084	0.015	0.005	**0.146**	**0.201**	**0.136**	**0.122**
		Back	0.158	0.008	0.010	0.007	0.007	0.002	**0.176**	**0.172**	**0.170**	**0.167**

Test Engineer : James Chen Ted Hsieh Jay Jian Thomas Wang White Huang Wilson Lin Mood Huang Steven Chang Poa Pan and San Lin

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 D03 v01r04, “Evaluation and Approval Considerations for Handsets with Specific Wireless Charging Battery Covers” Dec 2015.

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

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

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

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

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

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